

MAIN LANDING GEAR AND DOORS - MAINTENANCE PRACTICES**1. General**

- A. The main landing gear actuator has a self-locking provision in the gear down position, the locking action is maintained with no hydraulic pressure. Therefore, no ground downlock pins are required when servicing the airplane. The main landing gear doors are hinged to the airplane wing structure and are actuated by a linkage rod attached to the main landing gear trunnion.

NOTE: The correct air pressure must be maintained on the oleo (shock strut) assembly to prevent bottoming out of the oleo on landing.

- B. For main landing gear assembly/disassembly reference information, refer to Main Landing Gear Assembly/Disassembly in step 4. below.

2. Tools and Equipment

- A. For a list of required tools and equipment refer to Landing Gear - General.

3. Main Landing Gear Removal/Installation

NOTE: The attaching hardware as referenced in the 560XL Illustrated Parts Catalog is to be replaced whenever the associated component is replaced to make sure that the Chapter 4 life limits are not exceeded.

NOTE: When a rental component is installed, it can be installed again with the existing hardware for no more than 300 landings. When the original component is reinstalled, it can be installed with the existing hardware. When a new or exchanged component is installed, the existing attaching hardware must be replaced.

- A. Remove Main Landing Gear (Refer to Figure 201).

- (1) Jack airplane until tires clear the ground. Refer to Chapter 7, Lifting - Maintenance Practices.
- (2) Disengage GEAR CONTROL and GEAR WARN circuit breakers located on the left circuit breaker panel in the cockpit.
- (3) Remove access panel(s) (512CB, 512DB, 511GB, 612CB, 612DB, and 611GB), refer to Chapter 6, Access Plates and Panels Identification - Description and Operation.

WARNING: Clear personnel from the main landing gears and speed brake areas before applying hydraulic to the airplane.

- (4) Release all hydraulic pressure from the hydraulic system.
- (5) Place a drip pan or cloths to capture any excess hydraulic fluid.
- (6) Disconnect hydraulic and pneumatic brakes lines from bracket assembly near top center of trunnion, by removing union, nut and washer.
- (7) Cap fittings on hydraulic and pneumatic hoses and trunnion to prevent entry of foreign material.
- (8) Remove main landing gear wire harness from trailing link assembly, by removing screws, nuts and clamps.
- (9) Disconnect antiskid transducer connector (PG001, left or PG002, right). Refer to Antiskid Wheel Transducer - Maintenance Practices.

NOTE: Prior to shrinking transmitter sleeve, wrap S-1030 adhesive tape around and in between wires to provide a moisture seal.

NOTE: Coil wire bundle a minimum of 5 turns prior to shrinking sleeve to provide expansion for removal of antiskid transmitter disconnect.

- (10) Disconnect squat switch connector (PL030, left or PR030, right). Refer to Landing Gear Warning Indication - Maintenance Practices.
- (11) Cut tie straps securing main landing gear wire harness to trunnion anchors.
- (12) Remove landing gear wire harness from trunnion and trailing link assemblies.
- (13) Remove main landing gear door linkage rod and attach fitting from trunnion, by removing cotter pin, nut, washers, spacer, bushing and bolt securing door linkage rod to trunnion. Swing main gear door outboard and support in order to provide working space and to prevent damage.
- (14) Remove the cotter pin, nut, washer, and bolt to release the actuator attach pin from the trunnion.
- (15) Remove the actuator attach pin from the trunnion and move the gear door outboard until the actuator is free.

- (16) Move the actuator aft and put it in a support to give sufficient space and to prevent damage.
- (17) Remove screw, washer, and bonding jumper from trunnion.
- (18) Remove the cotter pin, nut, washers, and bolt to release the forward pivot pin from the trunnion.
- (19) Remove lube fitting, washer and spacer from forward pivot pin.
- (20) Use the CJMDL32-003 main-landing-gear trunnion-pin removal tool to remove the forward pivot pin from the trunnion and forward spar. Refer to Main Landing Gear - General.
- (21) Remove the cotter pin, nut, washers, and bolt to release the aft pivot pin from the trunnion.
- (22) Remove lube fitting, washer and spacer from aft pivot pin.
- (23) Use the CJMDL32-003 main landing gear trunnion pin removal tool to remove the aft pivot pin from the trunnion and aft spar. Refer to Main Landing Gear - General.
- (24) Remove main landing gear from airplane wing by rotating trunnion down and pulling aft. Remove left or right landing gear from airplane.

B. Install the Main Landing Gear (Refer to Figure 201).

CAUTION: Make sure that the forward or aft trunnion fitting is not damaged when new bearings are installed.

- (1) If needed, install new trunnion pivot bearings in the forward and aft trunnion fittings.
 - (a) Use the CJMDL32-005 trunnion pivot bearing removal tool to remove the trunnion pivot bearing. Refer to the Citation Standard Practices Manual, Chapter 20, Bearing - Maintenance Practices.

CAUTION: Make sure that the bearings are installed flush with the machined surface of the forward or aft trunnion fitting.

 - (b) Install the new trunnion pivot bearings. Refer to the Citation Standard Practices Manual, Chapter 20, Bearing - Maintenance Practices.
 - 1 Apply a fillet seal around bearing with Type X Class B sealant, refer to the Citation Standard Practices Manual, Chapter 20, Fuel, Weather, Pressure, and High-Temperature Sealing - Maintenance Practices.
- (2) As necessary, do the main landing gear corrosion prevention procedures. Refer to Chapter 51, Corrosion Inhibitor, Landing Gear - Maintenance Practices.
- (3) Install forward pivot pin into trunnion as follows:
 - (a) Prior to installation, apply a fay seal to one spacer attaching it to the trunnion with Type X Class B sealant. Refer to the Citation Standard Practices Manual, Chapter 20, Fuel, Weather, Pressure, and High-Temperature Sealing - Maintenance Practices.
 - (b) Apply Type IV, Class I, CIC to trunnion end after spacer is sealed on. Refer to Chapter 52, Corrosion Inhibiting Compound (CIC) - Description and Operation.
 - (c) Apply a light layer of grease to outside diameter of the pivot pin, trunnion bore, and all thrust faces with Type I grease.
 - (d) Install forward pivot pin into trunnion.
 - (e) Prior to installation, brush coat roll pin with Type X, CIC. Refer to Chapter 52, Corrosion Inhibiting Compound (CIC) - Description and Operation.
 - (f) Install safety wire to the roll pin by putting wire through the roll pin and over the top of the trunnion.
 - (g) After you install the roll pin, completely seal the pin holes and cover them with Type X Class B sealant. Refer to the Citation Standard Practices Manual, Chapter 20, Fuel, Weather, Pressure, and High-Temperature Sealing - Maintenance Practices.
- (4) Put the remaining spacer (shim) in position on forward pivot pin and the slide pivot pin into the bearing and support of the landing gear.
- (5) Install the pivot pin in the aft trunnion support bearing as follows:
 - (a) Remove the aft pivot pin from the trunnion.
 - 1 Remove the lube fitting from the Aft Pivot Pin and clean all grease from inside the pivot pin.
 - (b) Before installation, apply a fay seal to one spacer and attach it to the trunnion with Type X Class B sealant. Refer to the Citation Standard Practices Manual, Chapter 20, Fuel, Weather, Pressure, and High-Temperature Sealing - Maintenance Practices.

- (c) Apply CIC Type IV Class I to the trunnion end after the spacer is sealed on. Refer to Chapter 51, Corrosion Inhibiting Compound (CIC) - Description and Operation.
 - (d) Apply a light layer of grease to the outside diameter of the pivot pin, trunnion bore, and all thrust faces with Type I grease. Refer to the Citation Standard Practices Manual, Chapter 20, Fuel, Weather, Pressure, and High-Temperature Sealing - Maintenance Practices
- (6) Install remaining spacers (shims) between trunnion and aft trunnion support. Slide pivot pin forward aligning hole in trunnion with hole in pivot pin and secure with bolt, washers, nut and cotter pin.
- NOTE:** Spacer (shim) quantities may vary. Quantities shown are for gear in nominal position. Maximum gap 0.019 inch (0.48 mm). Permissible for quantities to vary in order to shift gear forward or aft to increase clearance with surrounding structure. Minimum of one (1) shim each end. Maximum number of six (6) shims at either end.
- (a) Install the aft pivot pin into the aft trunnion.
 - (b) Apply a shank seal to the bolt with Type X Class B sealant. Refer to the Citation Standard Practices Manual, Chapter 20, Fuel, Weather, Pressure, and High-Temperature Sealing - Maintenance Practices
 - (c) Apply a fay seal to the washers that are attached to the trunnion. Refer to the Citation Standard Practices Manual, Chapter 20, Fuel, Weather, Pressure, and High-Temperature Sealing - Maintenance Practices.
 - (d) Install the bolt through the trunnion and pivot pin.
- CAUTION:** Incorrect installation of the aft pivot pin can result in damage to the main landing gear.
- 1 Make sure you can see the bolt that attaches the aft pivot pin when you look through the pivot pin from the aft side. If the bolt is not visible, remove the bolt. Make sure that the aft pivot pin is fully installed into the trunnion assembly and install the bolt again.
- (e) Completely cover the bolt head and nut with Type X, Class B sealant. Refer to the Citation Standard Practices Manual, Chapter 20, Fuel, Weather, Pressure, and High-Temperature Sealing - Maintenance Practices
- (7) Install the lube fitting in the aft pivot pin.
- (8) Put a 6-inch scale over the aft pivot pin grease cap and make sure it is flat against the aft spar web.
- (a) If the scale does not lie flat against the spar web, remove the pivot pin and make sure the spacer (shim) is in the correct position and install the pin again.
- NOTE:** You can get an incorrect indication if the scale is on the rivet heads or the attach angle.
- (9) Put the actuator rod end and attach fitting in its position on the trunnion.
- CAUTION:** If an alternate anti-seize compound is used, make sure it does not contain graphite. Graphite can react with cadmium-plated hardware and can result in corrosion.
- (a) Apply LPS Nickel Anti-Seize compound (P/N U000995) to the attachment bolt.
- NOTE:** You can use MIL-PRF-23827 grease as an alternative anti-seize compound.
- (b) Install the bolt, washers, bushings, nut, and cotter pin.
- (10) Put the main gear door linkage rod and attach fitting in its position on trunnion.
- CAUTION:** If an alternate anti-seize compound is used, make sure it does not contain graphite. Graphite can react with cadmium-plated hardware and can result in corrosion.
- (a) Apply LPS Nickel Anti-Seize compound (P/N U000995) to the attachment bolt.
- NOTE:** You can use MIL-PRF-23827 grease as an alternative anti-seize compound.
- (b) Install the bolt, washers, bushings, nut, and cotter pin.
- (11) Torque actuator rod end bolt assembly from 100 to 200 inch-pounds (11.3 to 22.6 N.m).
- (12) Connect pneumatic brake line and hydraulic brake line to fittings at bracket on trunnion. Safety wire all lines and fittings.
- (13) Position main landing gear wire harness to trunnion anchors and secure with tie straps.
- (14) Connect squat switch connector (PL030, left or PR030, right). Refer to Landing Gear Warning Indication - Maintenance Practices.
- (15) Position the antiskid wire harness on the trailing link.
- (a) Put the antiskid wire bundle just below the brake lines on the inboard side of the trailing link.

- (b) Attach the antiskid wire harness with clamps (3), bolts, washers and nuts.
- (c) Do the clearance checks between the antiskid wire bundle and the top of the wheel well. Refer to Antiskid Wheel Transducer - Maintenance Practices.
- (16) Connect antiskid transducer connector (PG001, left or PG002, right). Refer to Antiskid Wheel Transducer - Maintenance Practices.
- (17) Attach bonding jumper to trunnion web with screw and washer.
- (18) Position door linkage rod to trunnion attach fitting and secure with washer, bushings, nut and cotter pin.
- (19) Do the Main Landing Gear Lubrication. Refer to Chap 12, Scheduled Lubrication - Servicing, Landing Gear System Lubrication.
- (20) Install the access panel(s) (512CB, 512DB, 511GB, 612CB, 612DB, and 611GB). Refer to Chapter 6, Access Plates and Panels Identification - Description and Operation.
- (21) Bleed brake system. Refer to Brakes - Maintenance Practices.
- (22) Check wheel alignment and camber. Refer to Main Gear Wheel Camber Adjustment.
- (23) Perform functional test. Refer to Landing Gear Hydraulic Systems - Adjustment Test.

4. Main Landing Gear Assembly/Disassembly

NOTE: The attaching hardware as referenced in the 560XL Illustrated Parts Catalog is to be replaced whenever the associated component is replaced to make sure that the Chapter 4 life limits are not exceeded.

NOTE: When a rental component is installed, it can be installed again with the existing hardware for no more than 300 landings. When the original component is reinstalled, it can be installed with the existing hardware. When a new or exchanged component is installed, the existing attaching hardware must be replaced.

- A. For instructions on the disassembly and assembly of the main landing gear assembly to include the oleo and trunnion, refer to the Model 560XL Component Maintenance Manual, Chapter 32, Main Gear Assembly - Disassembly, and Main Gear Assembly - Assembly.

CAUTION: Do not remove the axle from the trailing link. Replacement of the trailing link axle assembly is recommended only if a problem occurs with the axle. Contact Cessna Customer Service if replacement of the trailing link axle assembly is necessary.

NOTE: During reassembly of the main landing gear, corrosion prevention is required in several areas. Refer to Chapter 51, Corrosion Inhibitor, Landing Gear - Maintenance Practices.

5. Main Landing Gear Wheel Camber Adjustment

- A. Adjust main landing gear wheel camber (Refer to Figure 202).

- (1) Jack airplane. Refer to Chapter 7, Lifting - Maintenance Practices.
- (2) Level airplane. Refer to Chapter 8, Leveling - Maintenance Practices.
- (3) Locate the Camber Adjustment Tool CJMDL32-008 on the outboard side of wheel hub.
 - (a) Line up screw holes with the wheel hub on the camber adjustment tool at 2 O'clock, 10 O'clock and 6 O'clock positions.
 - 1 Get the correct positive camber of 1.5 degrees, +0.25 or -0.25 degree, by measurement on the inclinometer.
 - (b) If the camber adjustment is not correct do the steps that follow.

CAUTION: Make sure that there is sufficient thread engagement of the rod end into the actuator shaft. Engagement length must have sufficient threads to cover the inspection hole.

- 1 Remove the safety wire, and loosen the jam nut on the actuator rod end.

NOTE: To make small adjustments, turn the shaft of the actuator with the rod end attached to the trunnion.

- 2 With the wrench flats, turn the shaft of the actuator to get the correct indication.
- 3 As necessary, do the landing gear linkage corrosion prevention procedures. Refer to Chapter 51, Corrosion Inhibitor, Landing Gear - Maintenance Practices.
- 4 Make sure you keep the lock tab inside the actuator key groove when you tighten the actuator rod end jam

nut.

5 Torque the jam nut from 450 to 500 in lbs. (50.85 to 56.49 N-m).

6 Install safety wire on the jam nut.

(4) Do a slow cycle gear test. Refer to Landing Gear Functional Test.

NOTE: This test is designed to ensure the landing gear will up and lock properly after the main landing gear camber is adjusted.

CAUTION: Incorrect wheel camber will cause tires to wear unevenly, and shorten tire life.

(5) Make sure that the camber adjustment is still correct.

(6) Lower airplane from jacks. Refer to Chapter 7, Lifting - Maintenance Practices.

6. Main Landing Gear Oleo Servicing

A. Refer to Chapter 12, Landing Gear Strut and Oleo - Servicing.

7. Main Landing-Gear Door Removal/Installation

A. Remove Main Landing-Gear Door (Refer to Figure 203).

(1) Disconnect door linkage rod from linkage fitting on main gear door, by removing bolt, washer, spacer, nut and cotter pin.

(2) Disconnect bonding jumper from linkage fitting on main gear door, by removing screw, washer and nut.

(3) Use pliers to bend the 45-degree angle on the end of the hinge pin until it is straight.

(a) Make sure that the end of the hinge pin is free of burrs.

(4) Hold the main landing-gear door in position and remove the hinge pin from the inboard/outboard hinge halves.

(5) Remove the main landing -gear door from the airplane.

B. Install Main Landing-Gear Door (Refer to Figure 203).

(1) As necessary, do the main landing gear linkages corrosion prevention procedures. Refer to Chapter 51, Corrosion Inhibitor, Landing Gear - Maintenance Practices.

(2) Put the main landing-gear door into position on the airplane.

(a) Make sure that you align the inboard/outboard hinge halves correctly.

(3) Install the hinge pin through the inboard/outboard hinge halves.

(4) Use pliers to bend each end of the hinge pin to a 45-degree angle from the centerline of the hinge pin.

(a) Make sure that you bend the hinge pin up and away from the airflow side of the main landing gear door assembly.

(5) Use the screw, washer, and nut to attach the bonding jumper to the linkage fitting on main landing-gear door.

CAUTION: If an alternate anti-seize compound is used, make sure it does not contain graphite. Graphite can react with cadmium-plated hardware and can result in corrosion.

(6) Apply LPS Nickel Anti-Seize compound (P/N U000995) to the attachment bolt.

NOTE: You can use MIL-PRF-23827 grease as an alternative anti-seize compound.

(7) Use the bolt, washer, spacer, nut, and cotter pin to attach the door linkage rod to the linkage fitting on the main landing-gear door.

(8) Do a check of the main landing-gear door adjustment. Refer to Main Landing Gear and Door Adjustment.

8. Main Gear Door Linkage Fitting Removal/Installation

A. Remove Main Landing Gear Door Linkage Fitting (Refer to Figure 203).

(1) Remove nuts and screws.

(2) Remove linkage fitting from door.

B. Install Main Landing Gear Door Linkage Fitting (Refer to Figure 203).

(1) As necessary, do the main landing gear linkage corrosion prevention procedure. Refer to Chapter 51, Corrosion Inhibitor, Landing Gear - Maintenance Practices.

(2) Position linkage fitting on main gear door.

(3) Secure linkage fitting to main gear door with screws and nuts.

9. Main Landing Gear Door Adjustment

A. Adjust Main Landing Gear Door.

- (1) Jack airplane, refer to Chapter 7, Lifting - Maintenance Practices.

WARNING: Clear personnel from the main landing gears and speed brake areas before applying hydraulic to the airplane.

- (2) Connect hydraulic power unit to airplane.
- (3) Connect ground power unit to airplane.
- (4) Ensure main gear door linkage rods are properly installed between door and main landing gear.
- (5) Raise main landing gear. Ensure gear is in locked position.
- (6) Inspect door for firm fit against wall and flush fit with lower wing surface. Door must be slightly preloaded to ensure door does not gap in flight.
- (7) If door requires adjustment, extend gear and adjust main landing gear door linkage rod.
 - (a) AS necessary, do the main landing gear linkage corrosion prevention procedure. Refer to Chapter 51, Corrosion Inhibitor, Landing Gear - Maintenance Practices.
- (8) Raise gear and inspect door fitting. Repeat adjustment until door fits firmly against wall and fits flush with lower wing surface.
- (9) Lower gear to the down and locked position.
- (10) Return electric systems to the OFF configuration. Disconnect hydraulic service unit and external electrical power.
- (11) Lower airplane from jacks. Refer to Chapter 7, Lifting - Maintenance Practices.

10. Main Landing Gear Door Cleaning/Painting

- ### A. Refer to the Citation Standard Practices Manual, Chapter 20, Exterior Finish - Cleaning/Painting for instructions on cleaning and painting the main gear door and associated hardware.

11. Main Landing Gear Door Inspection

A. Complete an inspection of the Main Landing Gear Door (Refer to Figure 203).

- (1) Visually examine the Main Landing Gear Door for the conditions that follow:
 - (a) Look at the door hinge and make sure there isn't any corrosion.
 - (b) Look at the door and make sure there is no evidence of damage.
- (2) Use the data in this section to repair or replace components, as required.

Figure 201 : Sheet 1 : Main Landing Gear Installation

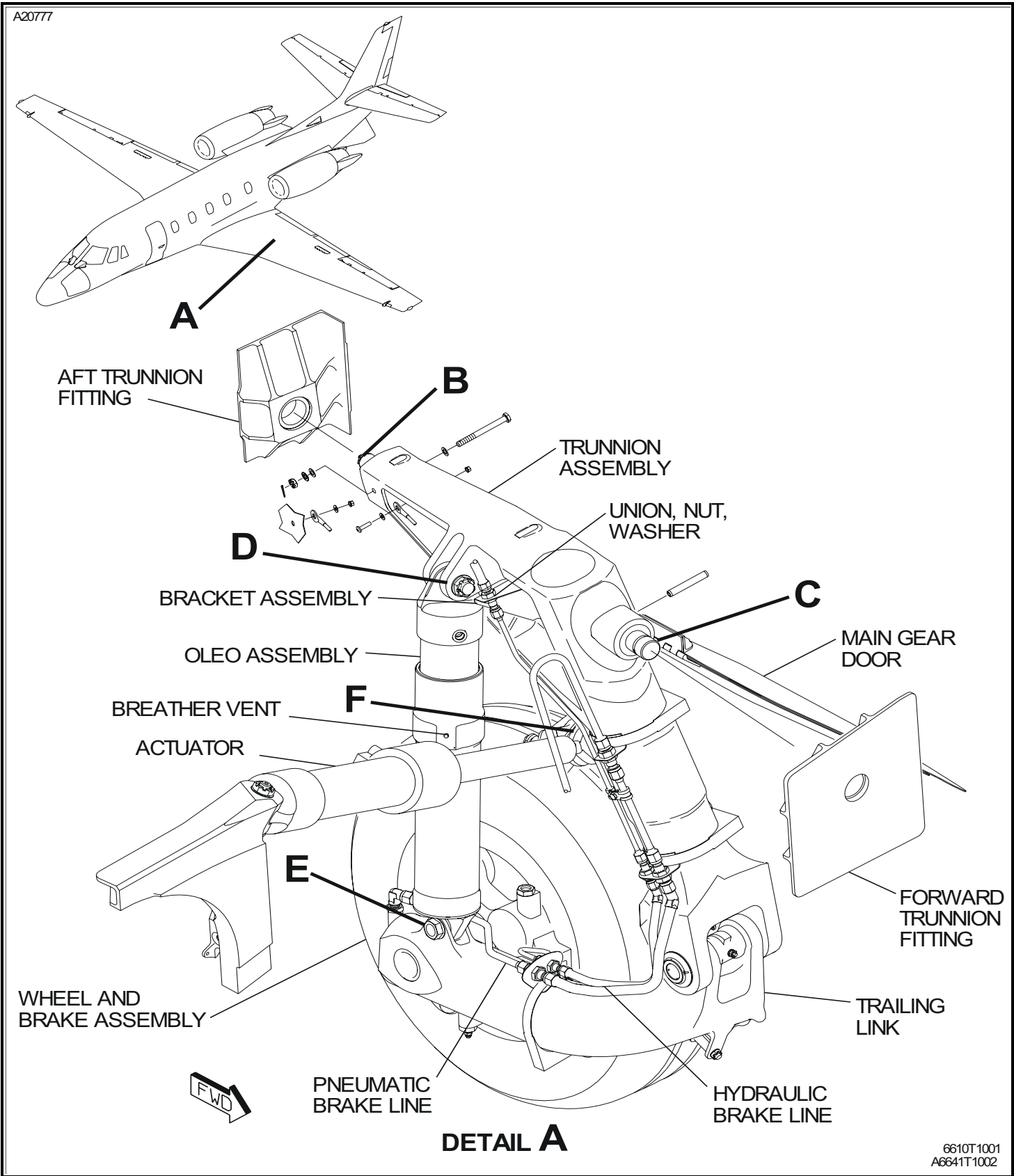


Figure 201 : Sheet 2 : Main Landing Gear Installation

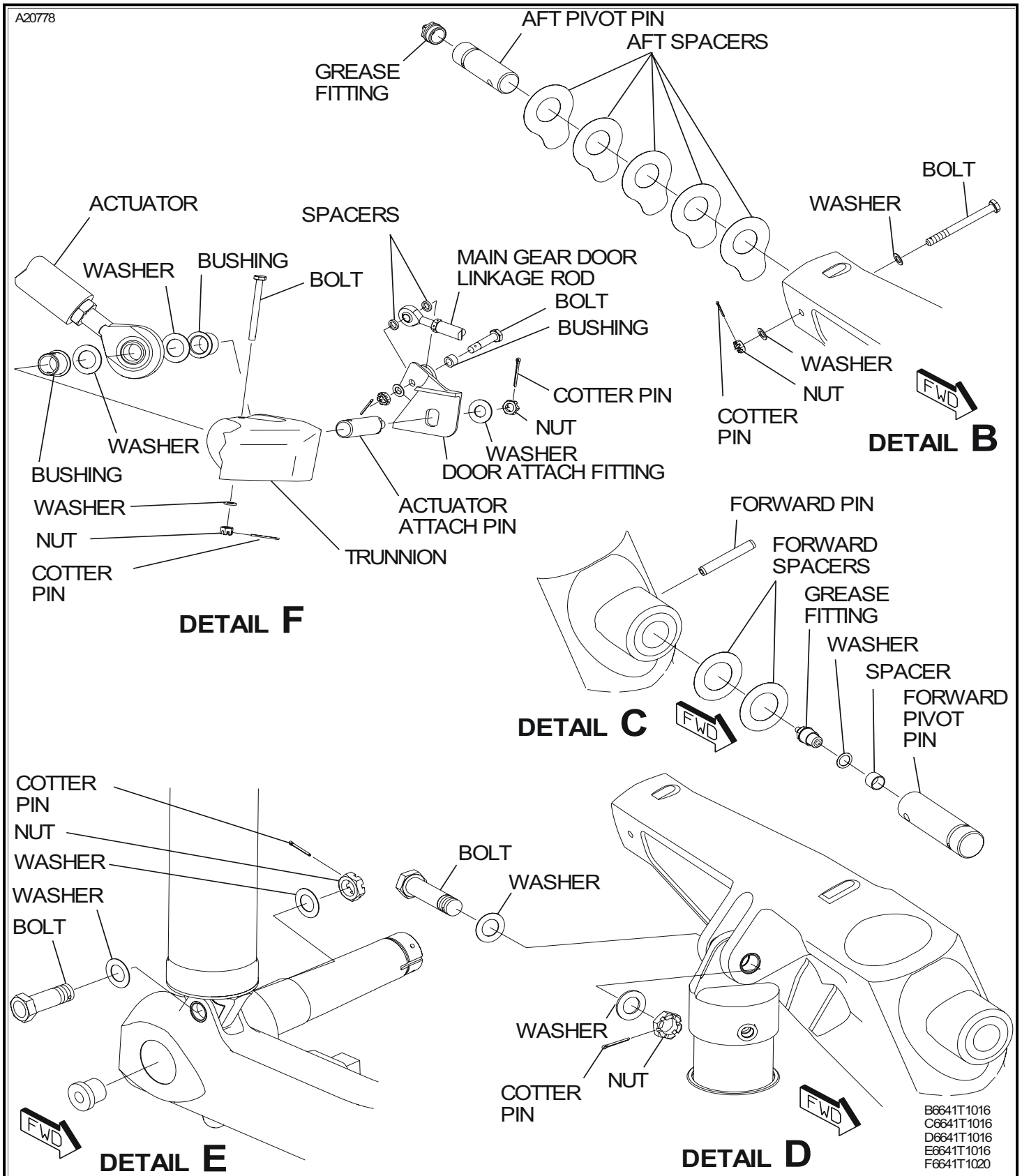
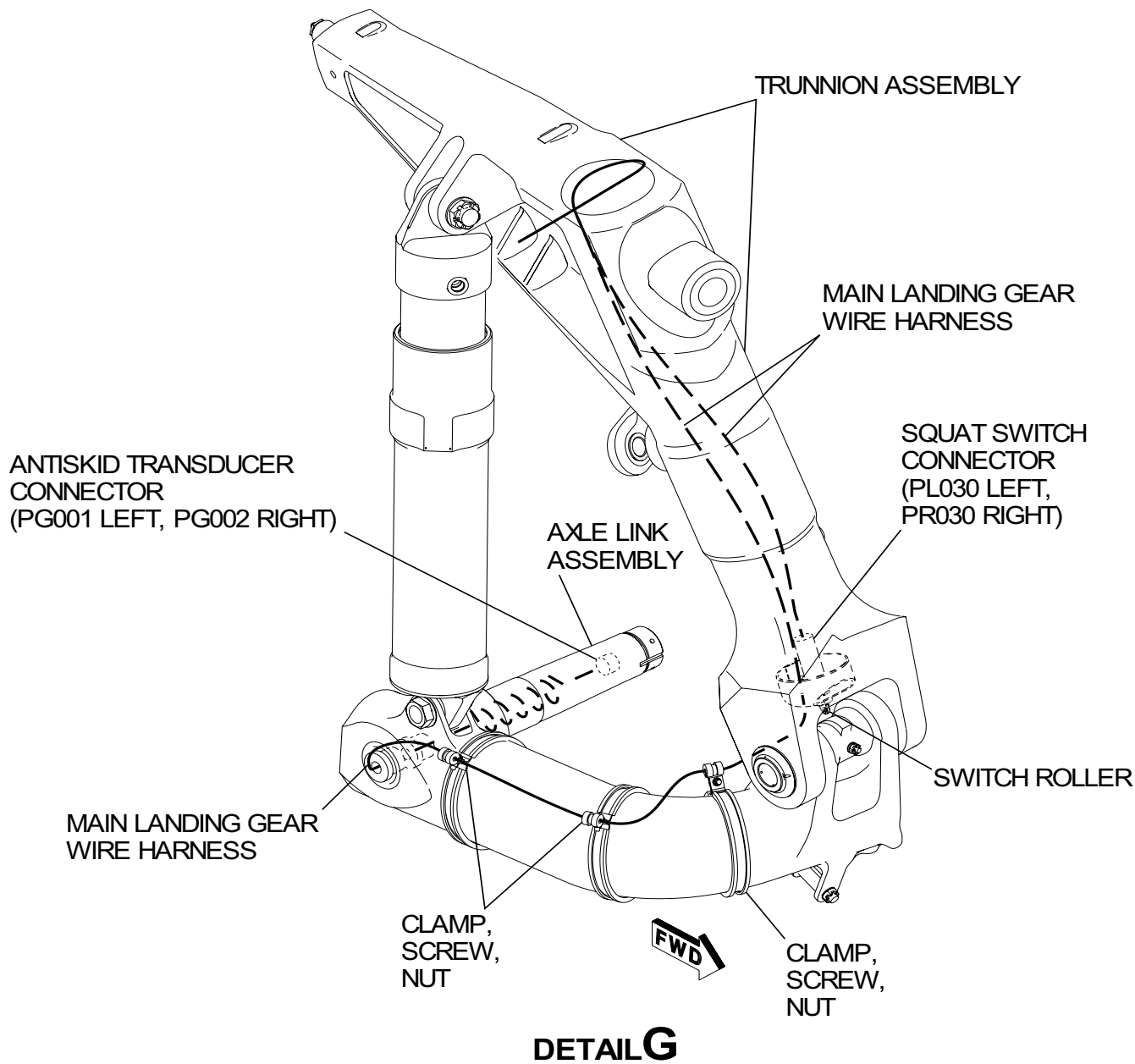


Figure 201 : Sheet 3 : Main Landing Gear Installation

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Figure 202 : Sheet 1 : Main Landing Wheel Camber Adjustment

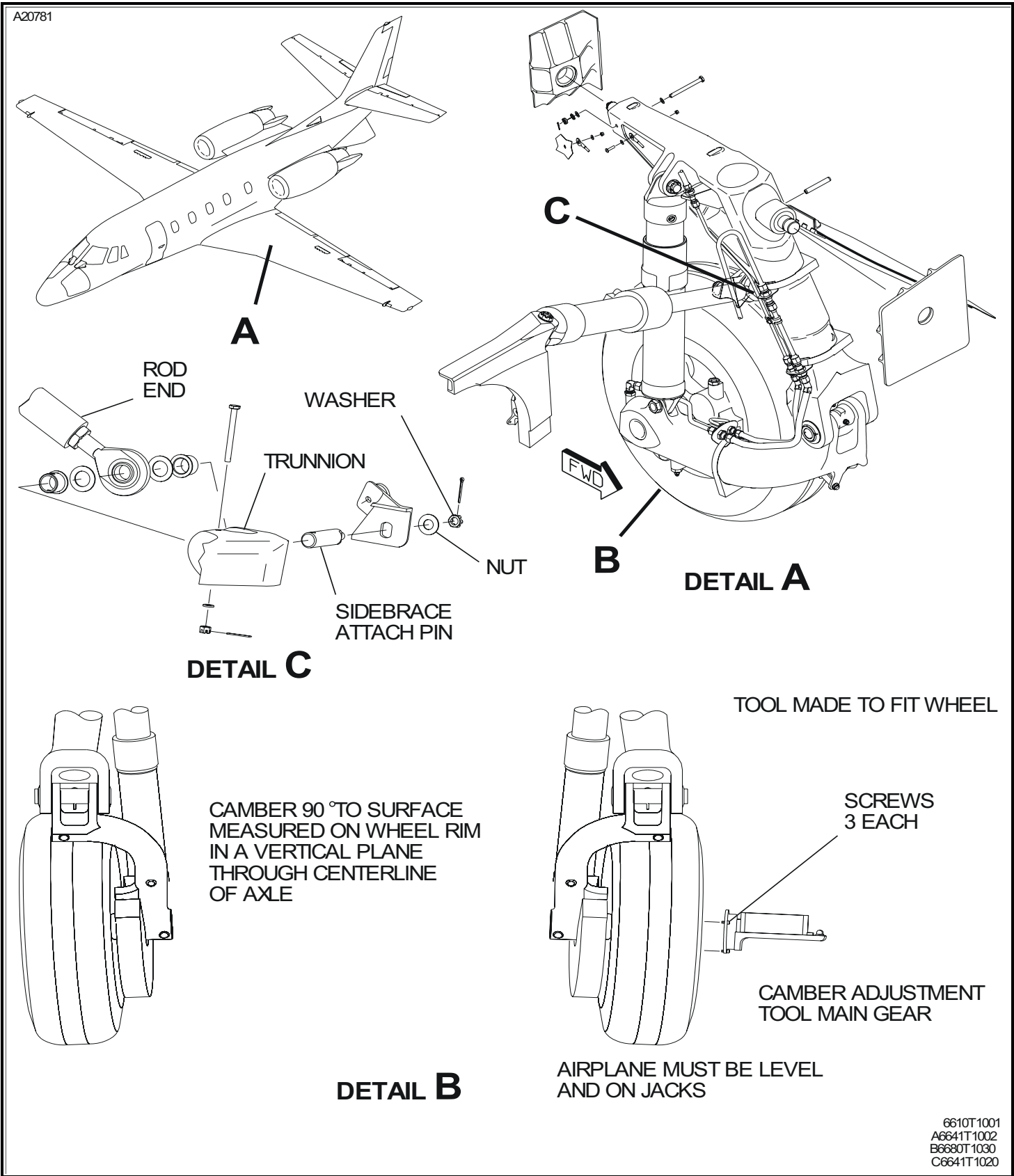


Figure 203 : Sheet 1 : Main Landing Gear Door Installation

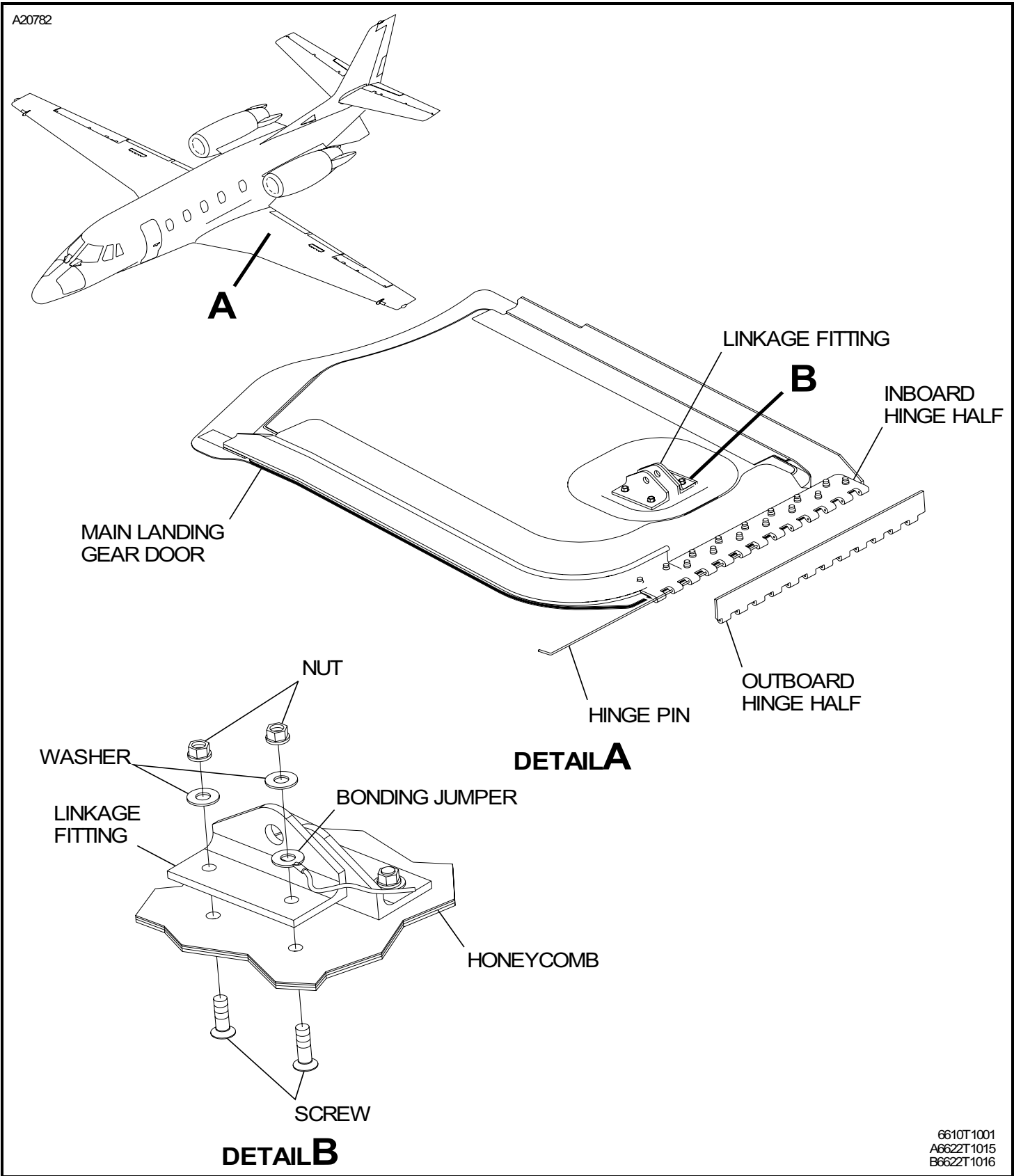


Figure 7 : Sheet 1 : Wing Access Panels

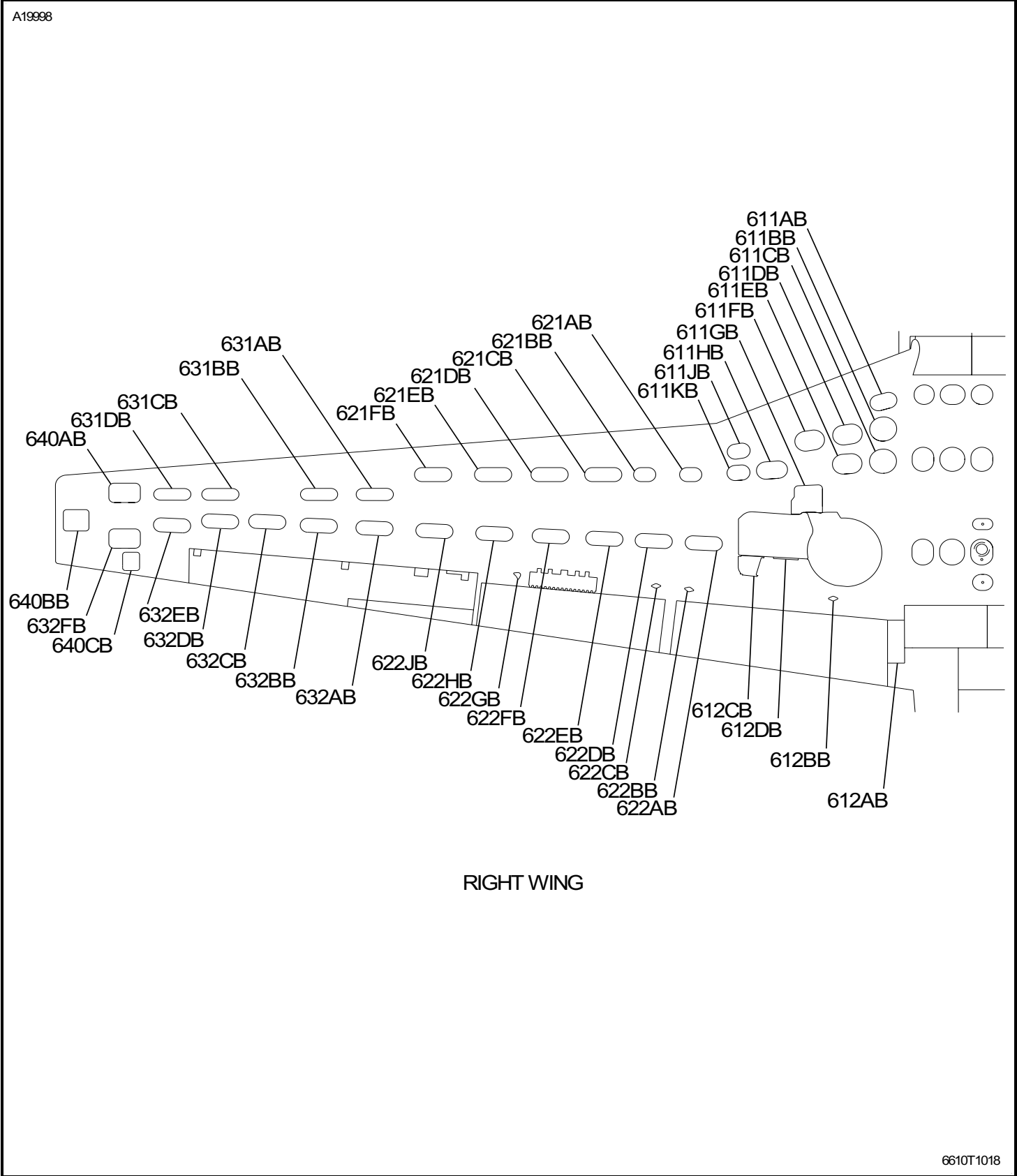


Figure 7 : Sheet 2 : Wing Access Panels

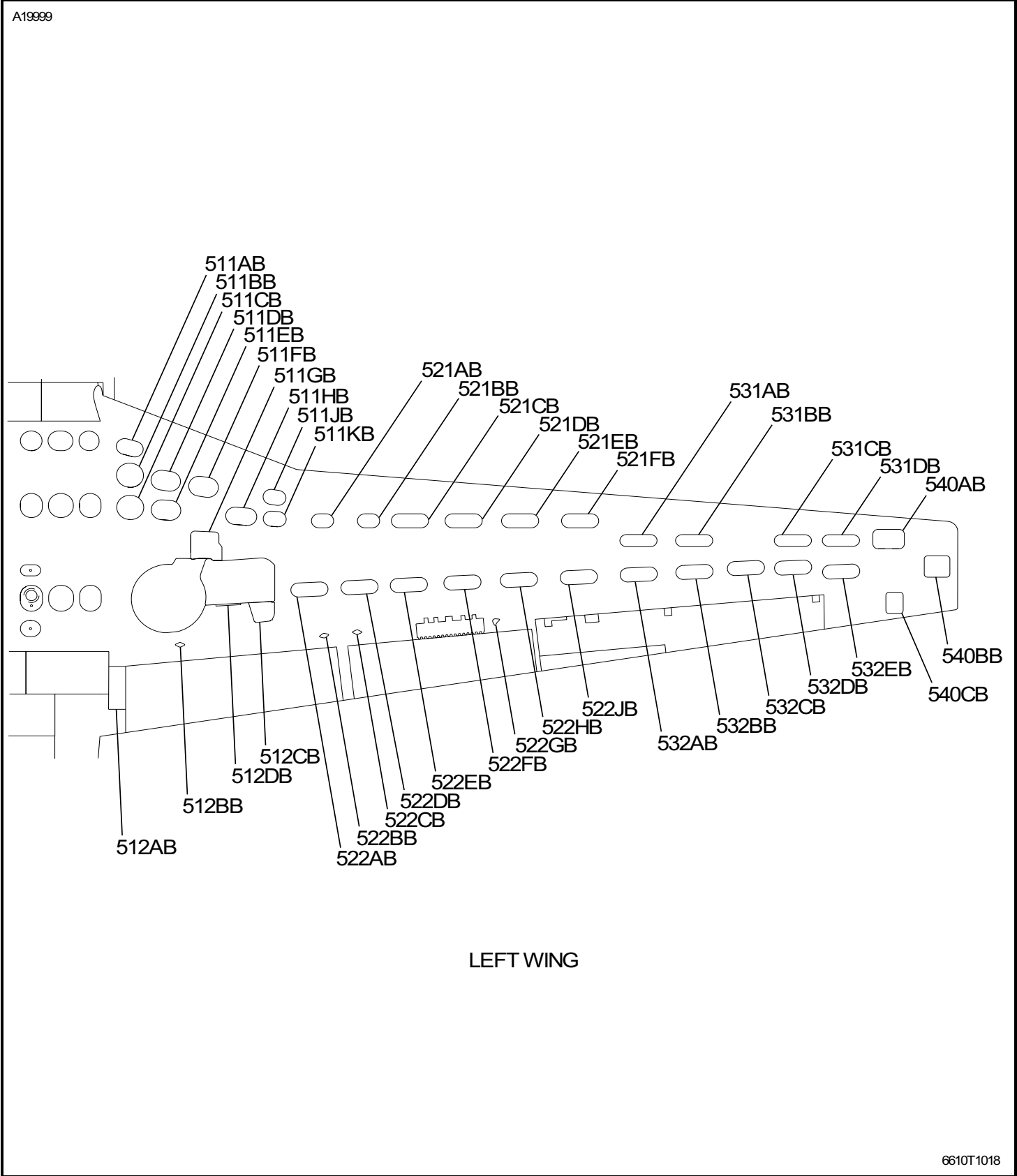


Figure 7 : Sheet 3 : Wing Access Panels

