STALL WARNING SYSTEM - MAINTENANCE PRACTICES

1. General

A. The following data contains instructions for the removal and installation of the detector, thermostat, horn, and the horn disconnect switch. This section also includes the stall warning operational check, detector adjustment and the stall warning heat check.

2. Stall Warning Detector Removal/Installation

A. Remove the Stall Warning Detector (Refer to Figure 201).

CAUTION: Do a careful check of the detector before you remove it from airplane. It is possible for the detector to be too hot to handle without hand protection.

NOTE: (Airplanes 20800316 and On and 208B0800 and On and Airplanes 20800001 thru 20800315 and 208B0001 thru 208B0799 incorporating CAB00-1) To preclude or disable nuisance stall warnings during ground operation, push the control yoke forward to the stop position. This will engage the disconnect switch for the ground stall warning horn.

(1) Make sure the airplane master switches are set in the OFF position.

(2) Remove the attaching screws and the lower wing panel 503BB. Refer to Chapter 6, Access Plates and Panels Identification - Description and Operation.

(3) Remove screws attaching detector to airplane.

(4) Mark exact fore and aft location of vane on wing to ensure correct installation.

(5) Identify and disconnect electrical wires from detector.

(6) Remove the detector from wing.

B. Install Stall Warning Detector (Refer to Figure 201).

(1) Position detector up to wing.

(2) Connect electrical wires to detector.

(3) Insert detector into leading edge.

(4) Secure detector to airplane using screws.

(5) Do an operational check of the stall warning system. Refer to Stall Warning System - Inspection/Check, Stall Warning System Operational Check.

(6) Install the lower wing panel 503BB with the attaching screws. Refer to Chapter 6, Access Plates and Panels Identification - Description and Operation.

(7) Perform a Stall Warning Flight Operational Check. Refer to Stall Warning Flight Operational Check.

(8) If the stall warning signal did not sound within the specified airspeed range, do the Stall Warning Detector Adjustment. Refer to Stall Warning Detector Adjustment (Airplanes 20800001 thru 20800056).

3. Stall Warning Lift Transducer Removal/Installation For TKS Equipped Airplane

A. Remove the Stall Warning Lift Transducer (Refer to Figure 202).

CAUTION: Do a careful check of the lift transducer before you remove it from airplane. It is possible for the lift transducer to be too hot to handle without hand protection.

(1) Make sure that the airplane master switches are set in the OFF position.

(2) Remove the attaching screws and the lower wing panel 503BB. Refer to Chapter 6, Access Plates and Panels Identification - Description and Operation.

(3) Mark the exact fore and aft location of vane on the wing for correct installation.

(4) Remove the sealant between the perimeter of the lift transducer and the wing porous panel.

(5) Remove and keep the screws and washers that attach the lift transducer to the wing. Discard the nuts.

(a) Make a note of the location of the shim washers that are between the lift transducer and the wing leading edge.

(6) Identify and disconnect the electrical wires from lift transducer.

(7) Remove the lift transducer from wing.

B. Install the Stall Warning Lift Transducer (Refer to Figure 202).

(1) Discard the gasket that comes with a new lift transducer.

(2) Connect the electrical wires to the lift transducer.

(3) Install the NAS1149FN816P Washer(s) and/or NAS1149FN832P Washer(s) to make the forward edge of the lift transducer flush or inset up to 0.010 inch with the outer surface of the porous panel.

(a) Make sure to install these washers in their original location and add or delete washers until the mounting plate is flush with the porous panel.

(4) Put the lift transducer in the left wing porous panel cutout.

(5) Make sure that the lift transducer vane is at the mark that you made on the wing during the removal procedure.

(6) Put the upper edge of the mounting plate 0.00 to 0.13 inches from the porous panel and each side of the mounting plate approximately a 0.04 inch distance from the porous panel.

(a) Make sure the space between the edges of the mounting plate and the porous panel is even and parallel.

(7) Install the lift transducer to the wing with the kept screws, washers, and new MS21044N08 nuts.

(8) Do an operational check of the stall warning system. Refer to Stall Warning System - Inspection/Check, Stall Warning System Operational Check.

(9) Apply a fillet seal around the mounting plate of the lift transducer with U060031 Sealant.

(10) Install the lower wing panel 503BB with the attaching screws. Refer to Chapter 6, Access Plates and Panels Identification - Description and Operation.

(11) Perform a Stall Warning Flight Operational Check. Refer to Stall Warning Flight Operational Check.

(12) If the stall warning signal did not sound within the specified airspeed range, do the Stall Lift Transducer Adjustment. Refer to Stall Lift Transducer Adjustment (Airplanes 20800057 and On and 208B00001 and On).

4. Stall Warning Thermostat Removal/Installation

A. Remove Stall Warning Thermostat (Refer to Figure 201).

(1) Ensure airplane electrical power is OFF.

(2) Remove screws and access plate from lower surface of wing.

(3) Remove screws attaching thermostat to mounting bracket.

(4) Identify, disconnect electrical wires and remove thermostat.

B. Install Stall Warning Thermostat (Refer to Figure 201).

(1) Position thermostat up to wing and connect electrical wires.

(2) Position thermostat on mounting bracket and install screws.

(3) Install access plate to lower surface of wing using screws.

5. Stall Warning Horn Disconnect Switch Removal/Installation (Airplanes 20800316 and On and 208B0800 and On and Airplanes 20800001 thru 20800315 and 208B0001 thru 208B0799 incorporating CAB00-1)

A. Remove Stall Warning Horn Disconnect Switch (Refer to Figure 201).

(1) Remove electrical power from airplane.

(2) Remove cabin floorboard panel 232AC. Refer to Chapter 6, Access Plates and Panels Identification - Description and Operation.

(3) Identify and disconnect electrical wires from the switch assembly.

(4) Loosen screws and slide mounting bracket fully forward.

(5) Loosen screws securing switch assembly to mounting bracket.

(6) Remove switch assembly from airplane.

B. Install Stall Warning Horn Disconnect Switch (Refer to Figure 201).

(1) Position switch assembly on mounting bracket.

(2) Install screws to loosely secure switch assembly to mounting bracket.

(3) Slide mounting bracket fully forward and tighten aft screw.

(4) Rotate switch assembly up until cam lobe makes contact with lower surface of bell crank.

(5) Rotate switch assembly up 0.062 inch past actuation point and tighten screws to secure to mounting bracket.

(6) Loosen aft screw and slide mounting bracket fully aft.

(7) With control column in full forward position, slide mounting bracket forward until switch assembly actuates.

(8) Slide mounting bracket 0.13 inch forward, past actuation point, and secure by tightening screws.

(9) Connect electrical wires to the switch assembly.

(10) Install cabin floorboard panel 232AC. Refer to Chapter 6, Access Plates and Panels Identification - Description and Operation.

(11) Restore electrical power to airplane.

6. Stall Warning Flight Operational Check

A. Perform a Flight Operational Check (Refer to Figure 201).

(1) Put the airplane in straight flight and trim it.

(2) Set the engine power to flight idle (approximately 65% Ng) while slowing to approximately 1.5 times the stall speed.

NOTE: The stall warning system will be checked at idle power.

(3) Reduce the airspeed with the elevator control until it is approximately 1.1 times the stall speed.

(4) Move the elevator control to slowly increase pitch attitude so that the airspeed decreases at a rate of no more than 1 knot per second. Do this until there is an unstoppable pitch down of the airplane, or the elevator control reaches the stop.

NOTE: An approach rate of 1 knot per second is a much slower entry rate then is used on a normal training stall.

NOTE: Up to the time the airplane pitches, it must be possible to produce and correct both roll and yaw by normal use of the controls. During recovery, with normal use of the controls, it must be possible to prevent: more than 15 degrees roll, more than 15 degrees yaw, and more than 30 degrees pitch below level flight.

(5) Record airplane speed that stall warning signal sounds.

(6) Record the airplane speed that the stall occurred.

NOTE: The stall is the indicated airspeed at which the airplane pitches down with the nose up elevator being held by the pilot (usually around 10-12 degrees nose up), or it is the minimum speed observed by the pilot with the elevator on the nose up stop if no pitch down has occurred. The maximum time on the aft stop for elevator-limited stalls must be no more than 2 seconds.

(7) Make sure that you hear the stall warning signal at 6 to 14 KIAS with the flaps fully up before the stall.

(8) Make sure that you hear the stall warning signal at 8 to 18 KIAS with the flaps fully extended before the stall.

7. Stall Warning Detector Adjustment (Airplanes 20800001 thru 20800056)

A. Adjust the stall warning vane to give a stall warning signal at 6 to 14 KIAS with the flaps fully up before the stall. Refer to Flight Operational Check.

B. Adjust the stall warning vane to give a stall warning signal at 8 to 18 KIAS with the flaps fully extended before the stall. Refer to Flight Operational Check.

C. Adjust the stall warning vane to a higher position to set the stall warning horn to a faster airspeed, or adjust the stall warning vane to a lower vane position to set the stall warning horn to a slower airspeed.

8. Stall Lift Transducer Adjustment (Airplanes 20800057 and On and 208B0001 and On)

A. Do the Stall Lift Transducer Adjustment (Refer to Figure 201).

(1) Make sure the airplane master switches are set in the OFF position.

(2) Remove the screws that attach the lower wing panel 503BB. Refer to Chapter 6, Access Plates and Panels Identification - Description and Operation.

(3) Using a 5/64 (19.837 mm) Allen hex wrench, adjust the Lift Transducer as follows:

(a) Clockwise: The warning signal will sound at a lower airspeed.

(b) Counter Clockwise: The warning signal will sound at a higher airspeed.

(4) Install the lower wing panel 503BB with the attaching screws. Refer to Chapter 6, Access Plates and Panels Identification - Description and Operation.

(5) Do a Flight Operational Check of the stall warning system. Refer to Flight Operational Check.

(6) Repeat the steps as required until the stall warning signal sounds within the required airspeed range.

Figure 201 : Sheet 1 : Stall Warning System Installation

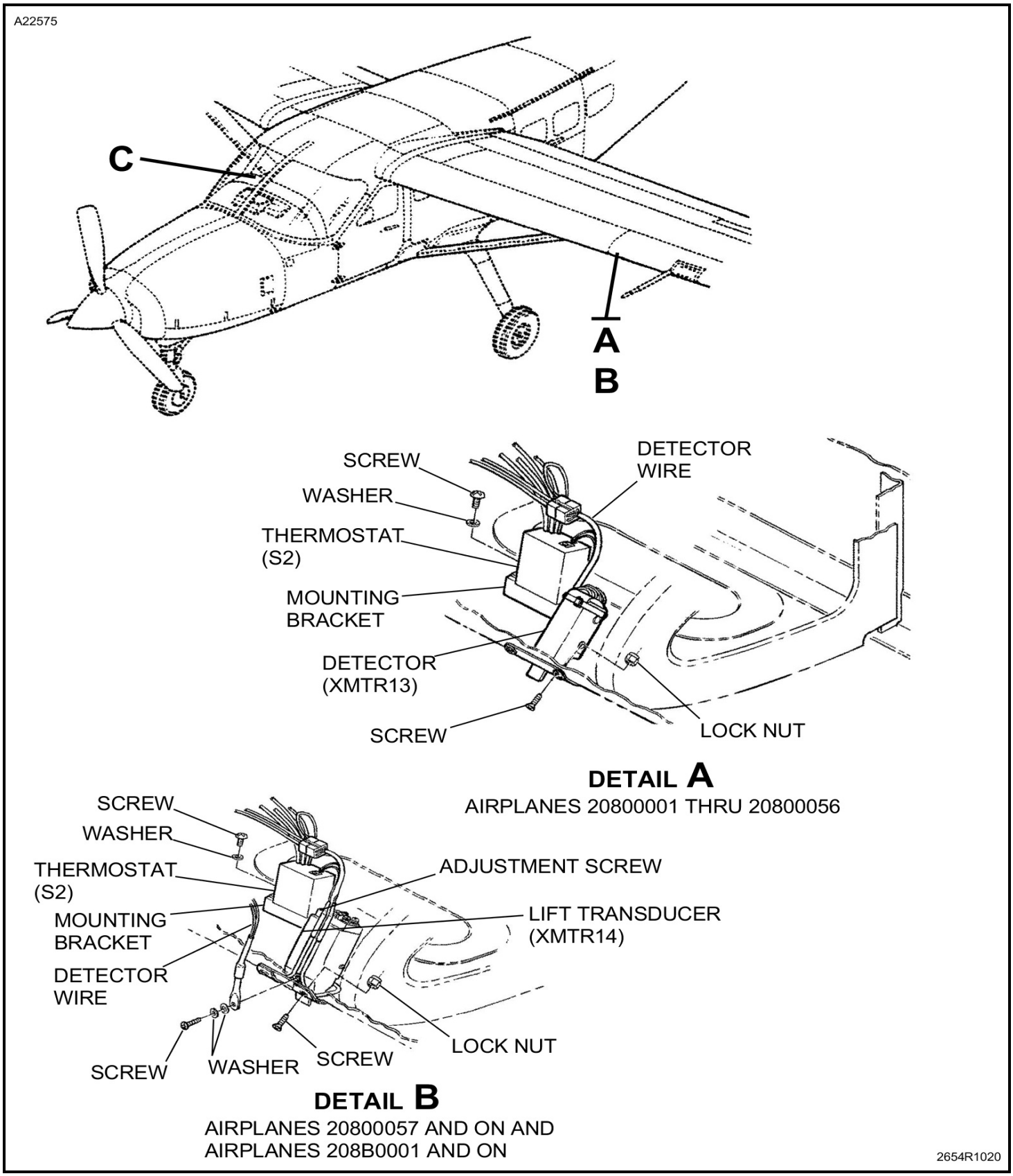

Figure 201 : Sheet 2 : Stall Warning System Installation

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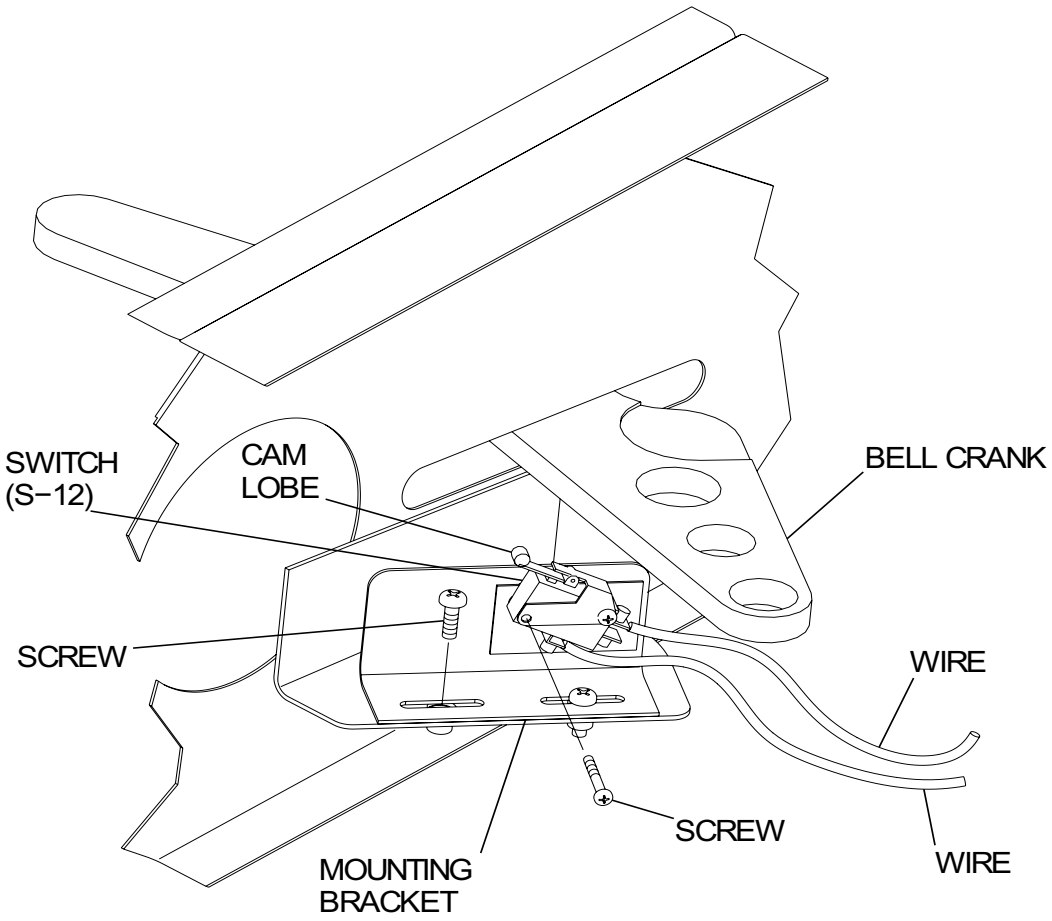

DETAIL C

AIRPLANES 20800316 AND ON AND
AIRPLANES 208B0800 AND ON AND
AIRPLANES 20800001 THRU 20800315 AND
AIRPLANES 208B0001 THRU 208B0799
INCORPORATING CAB00−1

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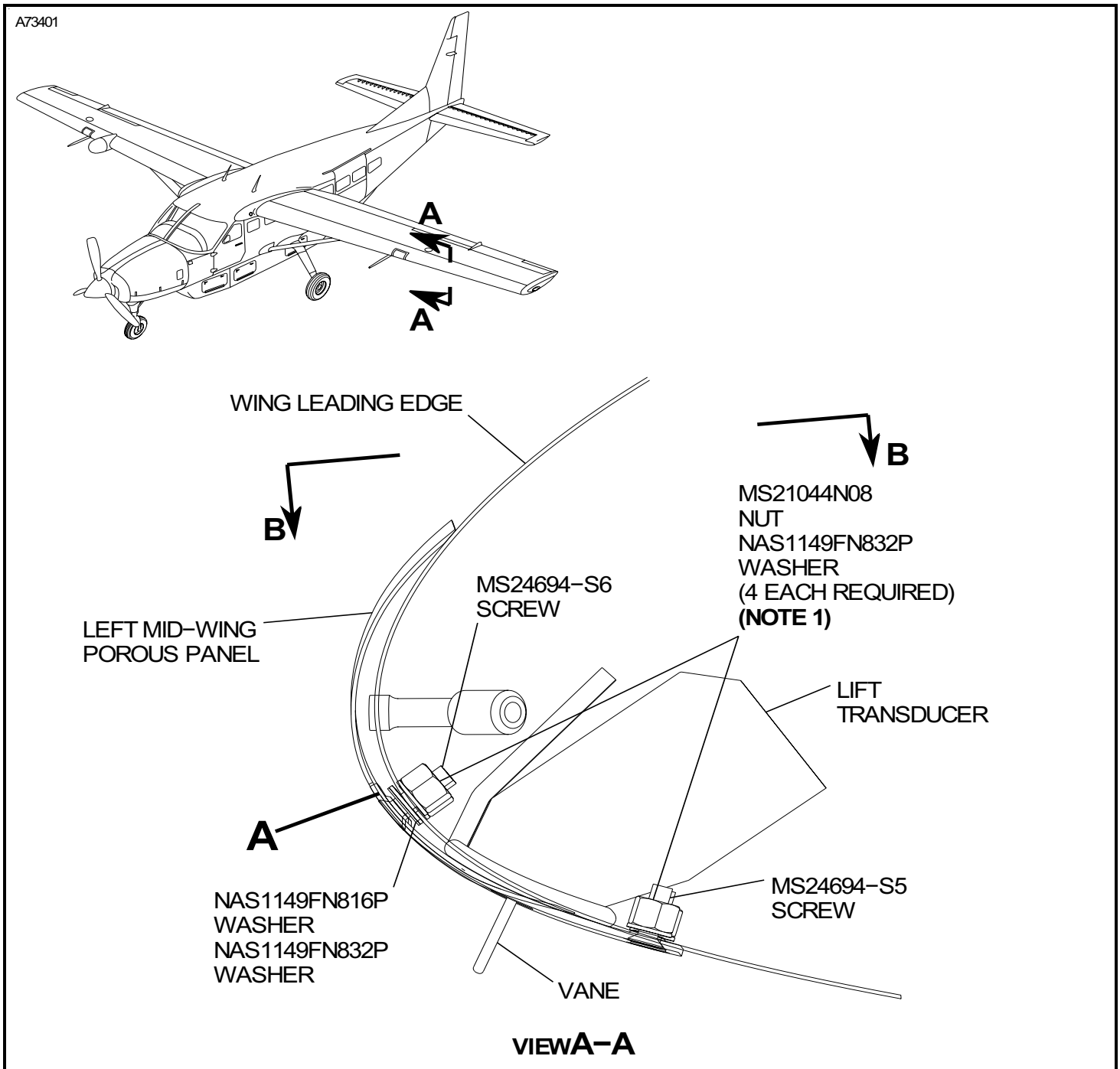
Figure 202 : Sheet 1 :



NOTE 1: INSTALL THE NAS1149FN832P WASHER UNDER THE NUT.

NOTE 2: APPLY A FILLET SEAL AROUND THE MOUNTING PLATE WITH U060031 SEALANT.

NOTE 3: THE LIFT TRANSDUCER MOUNTING FACE MUST BE EVEN WITH OR INSET NO MORE THAN 0.010 INCH FROM THE POROUS PANEL OUTER FACE.

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Figure 202 : Sheet 2 :

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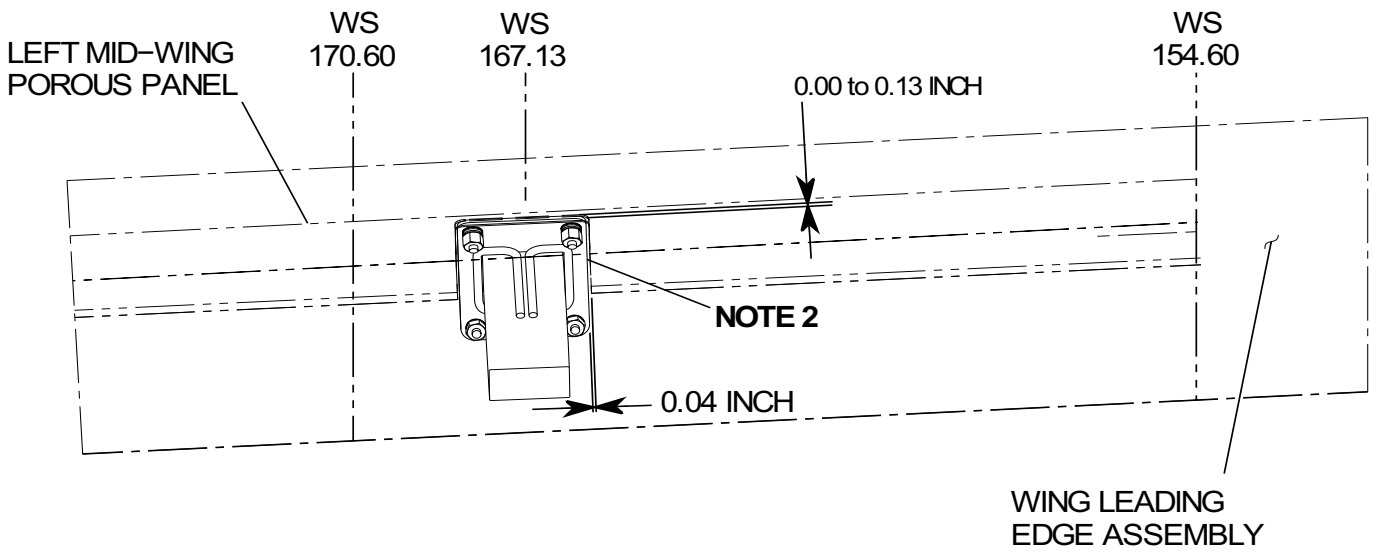
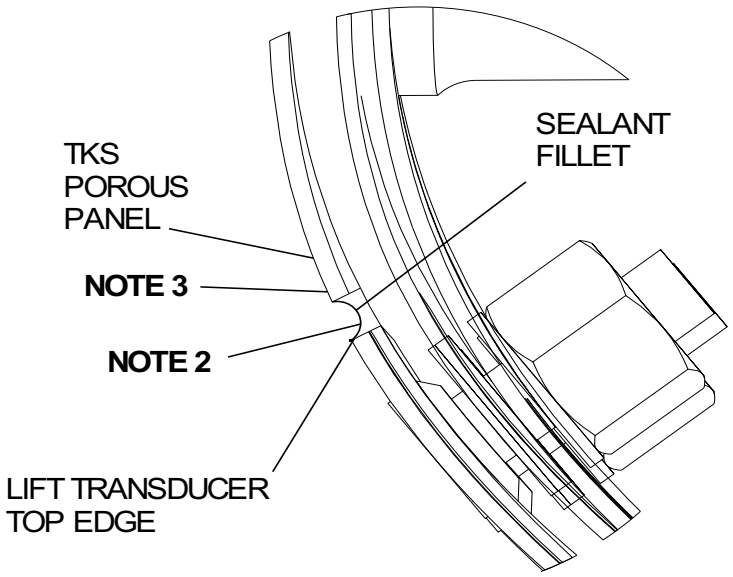


VIEW B−B
LOOKING DOWN AT WING REFERENCE PLANE
POROUS PANEL BACKPLATE NOT SHOWN



DETAIL A

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