

INSPECTION DOCUMENT 07

Date: _____
 Registration Number: _____
 Serial Number: _____
 Total Time: _____

1. Description

- A. Inspection Document 07 gives a list of item(s), which are completed at every 400 Hours or 12 calendar months, whichever occurs first.
- B. Inspection items are given in the sequence of the zone in which the inspection is completed. A description of the inspection, as well as the Item Code Number are supplied for cross-reference to section 5-10-01. Frequently, tasks give more information about each inspection. These tasks are found in the individual chapters of this manual.
- C. The right portion of each page gives space for the mechanic's and inspector's initials and remarks. You can use copies of these pages as a checklist while you complete the tasks in this Inspection Document.

2. General Inspection Criteria

- A. As you complete each of the inspection tasks in this Inspection Document, examine the adjacent area while access is available to find conditions that need more maintenance.
- B. If it is necessary to replace a component or to make a change to a system while you complete a task, do the task again before the system or component is returned to service.
- C. Inspection Kits are available for some Inspection Documents. They supply consumable materials used to complete the inspection item(s) given for the interval. Refer to the Model 208 Illustrated Parts Catalog, Introduction, Service Kit List to find applicable part numbers.

ITEM CODE NUMBER	TASK	ZONE	MECH	IN-SP	REMARKS
A243601	Standby Alternator Detailed Inspection Task 24-36-00-220	121			
B251001	Inertia Reel Operational Check Task 25-10-00-710	221 232			
A261001	Engine Fire Detection System General Visual Inspection Task 26-10-00-210	121 122			
C271001	Aileron Trim System Lubrication Task 27-10-02-640	211 212 217 218 233 234 253 254 251 252 551 571 651 671			

ITEM CODE NUMBER	TASK	ZONE	MECH	IN-SP	REMARKS
B271005	Aileron Trim Tab (Free Play) Functional Check Task 27-10-02-720	551 571 651 671			
B273003	Elevator Trim Tab (Free Play) Functional Check Task 27-30-02-720	371 372 375 376			
B282103	Firewall Fuel Shutoff Valve Control Operational Check Task 28-21-00-711	213 214 220			
C282301	Wing Shutoff Valve Linkage Lubrication Task 28-23-00-640	231 232 511 611			
B301001	Bleed Air Pressure Regulator Functional Check Task 30-10-00-720	122 AUX			
B301101	TKS Anti-Ice System Functional Check Task 30-11-00-720	AUX			
B304001	Windshield Anti-Ice System Operational Check Task 30-40-00-710	AUX			
B611001	Hartzell Propeller Functional Check Task 61-10-00-720	110			
B611101	McCauley Propeller Functional Check Task 61-11-00-720	110			
A712001	Engine Mounts and Firewall Detailed Inspection Task 71-20-00-220	130			
A716001	Inertial Air Separator Detailed Inspection Task 71-60-00-220	130			
B761001	Engine Controls Functional Check Task 76-10-00-720	130 211 212 ENG			
A801001	Starter-Generator (Part Number 23081 Series only) Detailed Inspection Task 80-10-00-220	130			
*** End of Inspection Document 07 Inspection Items ***					

Task 24-36-00-220

3. Standby Alternator Detailed Inspection

A. General

- (1) This task gives the procedures to do a detailed inspection of the standby alternator.

B. Special Tools

- (1) None

C. Access

- (1) Open the left side of the engine cowling. Refer to Chapter 71, Engine Cowling and Nose Cap - Maintenance Practices.

D. Do the Standby Alternator Detailed Inspection.

- (1) Examine the alternator for condition, security, correct safety of the mount bolts, and correct installation.
- (2) Examine the alternator drive for condition, leaks, and security.
 - (a) Move the top and the bottom of the drive pulley in and out by hand to examine for free play.
 - 1 If there are signs of free play, remove the drive and do a detailed inspection of the drive splines and the coupling.
- (3) Examine the mount for condition, cracks, corrosion, and security.
- (4) Examine the ground strap for condition and security.
- (5) Examine the alternator drive belt for condition and correct tension. Refer to the Standby Electrical System - Maintenance Practices, Alternator Removal/Installation .
 - (a) If it is necessary to adjust the tension, refer to Alternator Removal/Installation, Standby Electrical Systems - Maintenance Practices.
- (6) Examine the alternator electrical boots, and components for condition and security.
- (7) Examine the wiring for condition and security of the connectors at the alternator terminals.

NOTE: Make sure that the in-line resistor is attached with a plastic screw, washers, and a nut.

- (8) Examine the drive drain (if installed) for condition and security.
 - (a) Examine the drain hose for correct routing, kinks, and security.
 - (b) Examine the drain can for condition and security.
 - (c) Drain the contents of the can.
- (9) Examine the alternator filter capacitor, mounting bracket, and wire lead for security and condition.

E. Restore Access

- (1) Close the left side of the engine cowling. Refer to Chapter 71, Engine Cowling and Nose Cap - Maintenance Practices.

End Task

Task 25-10-00-710

4. Inertia Reel Operational Check

- A. General
 - (1) This task gives the information needed to complete the operational check of the inertia reel.
- B. Special Tools
 - (1) None
- C. Access
 - (1) None
- D. Do the Inertia Reel Operational Check.
 - (1) Examine the inertia reel locking mechanism.
 - (a) Pull the shoulder harness belt slowly to make sure that the belt extends smoothly.
 - (b) Make sure that the shoulder harness belt correctly retracts on the inertia reel when the belt is released.
 - (c) Pull the shoulder harness belt out rapidly from inertia reel and make sure that the inertia reel locks.
 - (d) Release tension on the belt and make sure that the locking mechanism releases the shoulder harness belt.
- E. Restore Access
 - (1) None

End Task

Task 26-10-00-210

2. Engine Fire Detection System General Visual Inspection

A. General

- (1) This task includes the steps necessary to do a general visual inspection of the engine fire detection system.

B. Special Tools

- (1) None

C. Access

- (1) Open the left and the right cowl doors. Refer to Chapter 71, Engine Cowling and Nose Cap - Maintenance Practices.

D. Do a General Visual Inspection of the Engine Fire Detection Loop.

- (1) Examine all three fire detection loop sections for condition, kinks in the loop, and for evidence of damage.
- (2) Examine the loop fittings for loose connections and for cracking at the tube to connector solder joints.
- (3) Examine the loop section for proper routing, security of the clamps and clamp insulators.
- (4) Examine the clamps and clamp insulators for proper positioning on the tube.

NOTE: The minimum loop bend radius is 0.50 inch (12.70 mm).

- (5) Examine the clamps and attachment hardware for condition and security.

E. Do a General Visual Inspection of the Engine Fire Detection Control Box.

NOTE: The fire detection control box is located on the aft side of the firewall.

- (1) Examine the fire detection control box for condition and security of installation.
- (2) Examine the control box wire harness for condition, proper routing, and security of the wire harness connector.

F. Do a General Visual Inspection of the Engine Fire Detection Alarm Assembly.

NOTE: The fire detection alarm assembly is located on the cockpit ceiling.

- (1) Examine the fire detection alarm assembly for condition and security of installation.
- (2) Examine the accessible wiring for condition, chafing, and security of the connectors.

G. Restore Access

- (1) Close the left and the right cowl doors. Refer to Chapter 71, Engine Cowling and Nose Cap - Maintenance Practices.

End Task

Task 27-10-02-640

3. Aileron Trim System Lubrication

A. General

- (1) This task gives the procedures to do the aileron trim system lubrication.

B. Special Tools

- (1) Dow Corning Molykote EC321R Bonded Lubrication Spray

C. Access

- (1) Remove the applicable wing panels to get to the aileron trim control cables. Refer to Chapter 6, Access Plates and Panels Identification - Description and Operation.

D. Do the Aileron Trim System Lubrication (Refer to Figure 201 found in Aileron Trim System - Maintenance Practices).

- (1) Move the aileron trim cables to the right until they stop.
- (2) Apply Dow Corning Molykote EC321R lubrication spray on a clean dry cloth until it is damp.

NOTE: This cloth is used to lubricate the aileron trim cables and to help keep the lubrication mist from a spray bottle off of the wing.

- (a) Rub the cloth with the lubrication along the exposed aileron trim cables between the cable ends and the cable housing.

- 1 Make sure that all exposed sides of the cables are coated with the lubrication.

- (b) Make sure that you apply the Dow Corning Molykote EC321R lubrication where the cable enters the cable housing opening.

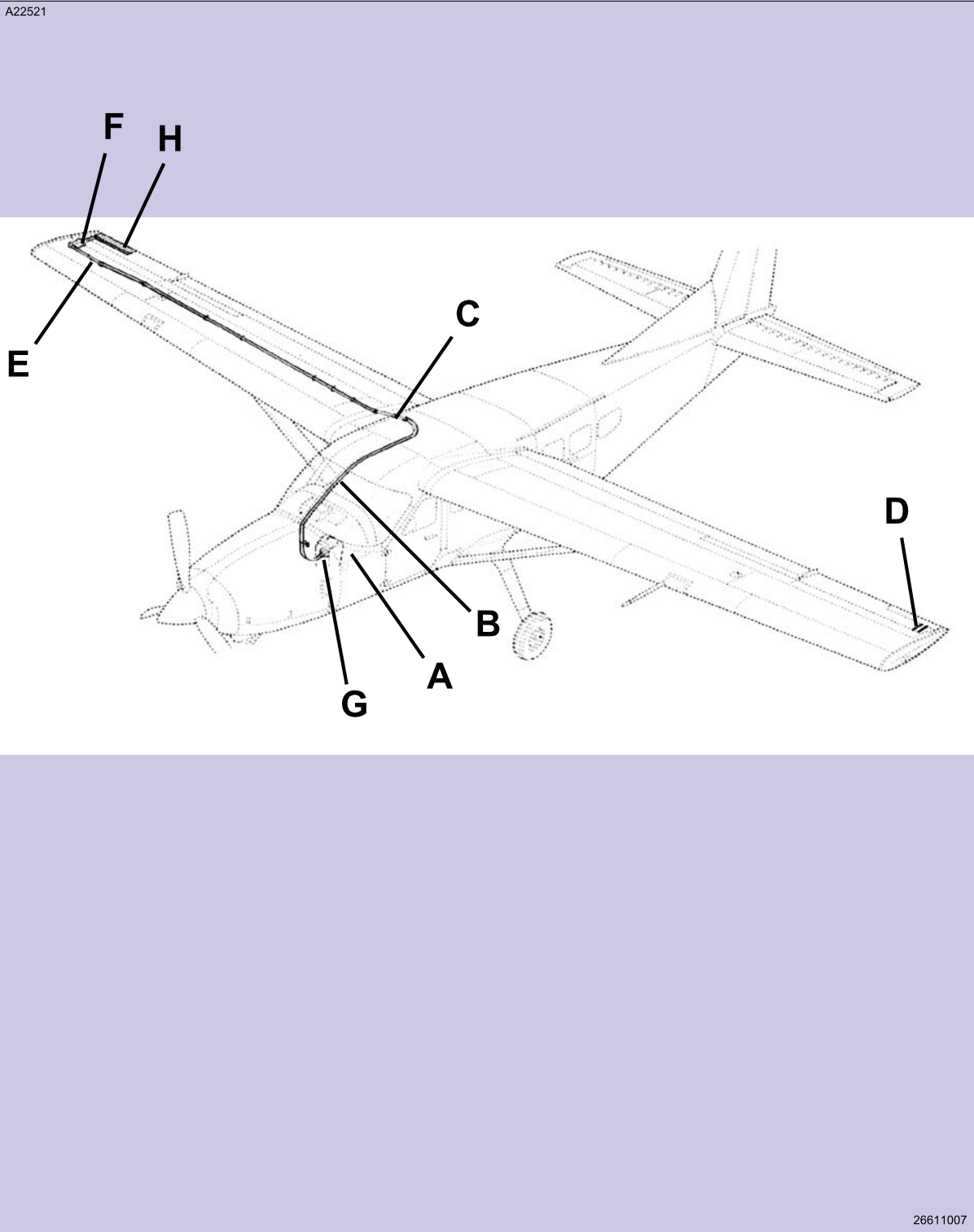
- (3) Move the aileron trim cables to the left until they stop and rub the cloth with the lubrication along the areas that were not initially lubricated.

E. Restore Access

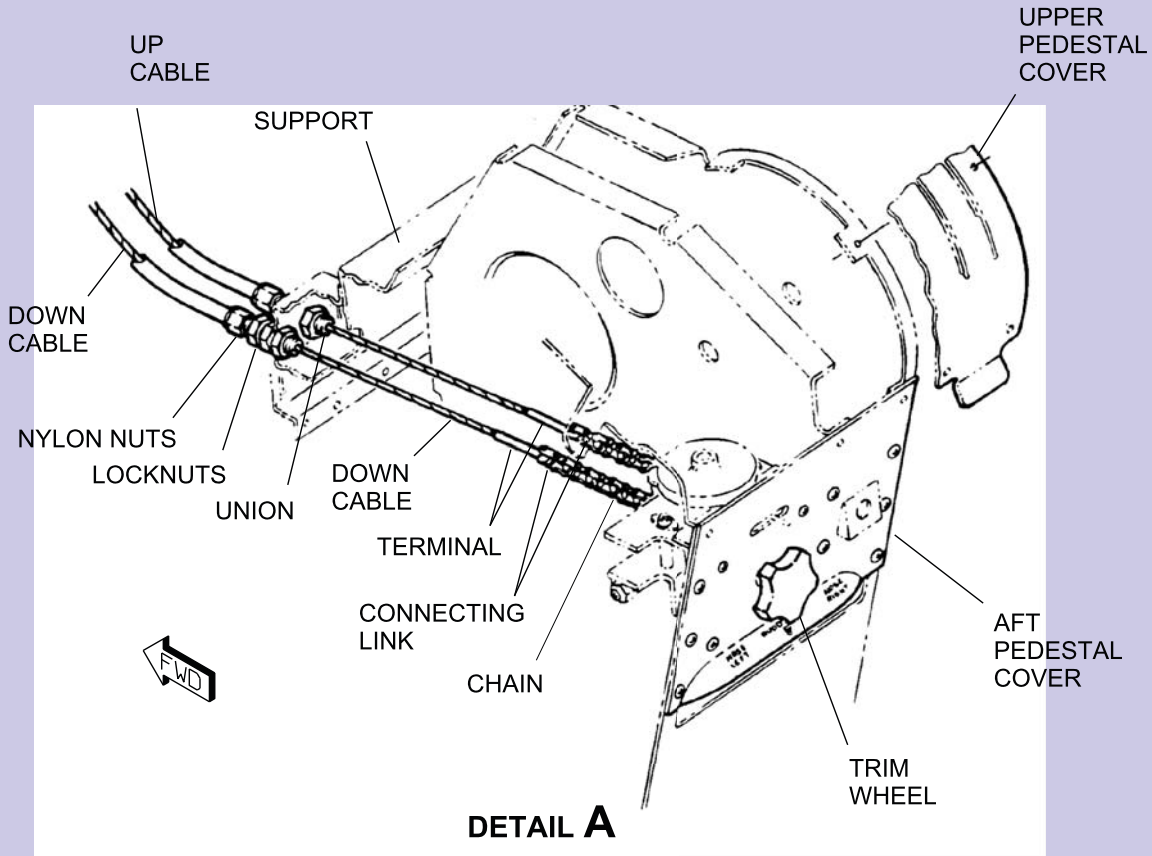
- (1) Install the wing access panels. Refer to Chapter 6, Access Plates and Panels Identification - Description and Operation.

End Task

Figure 201. Aileron Trim Installation

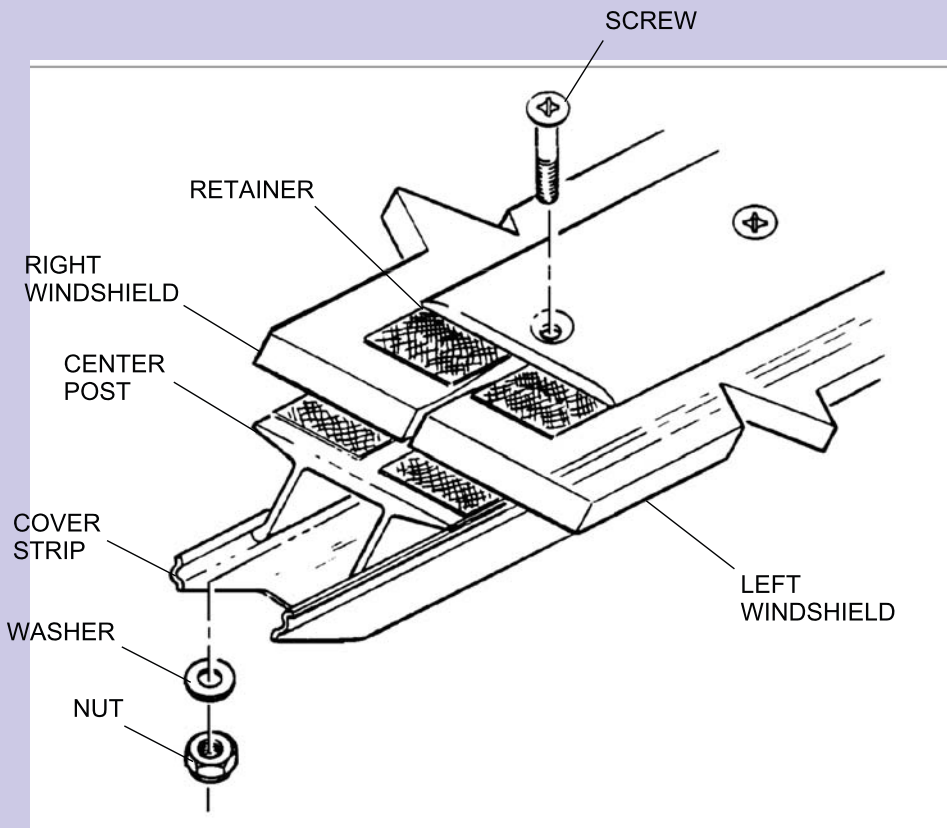


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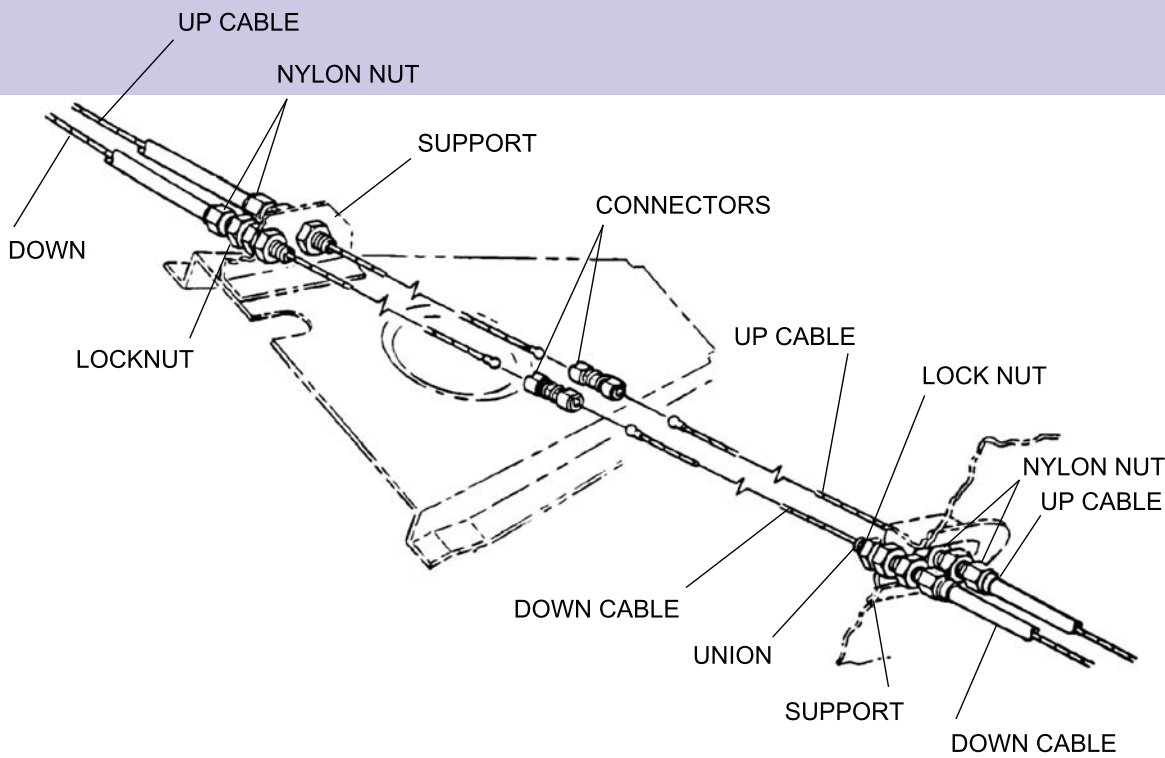
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DETAIL B

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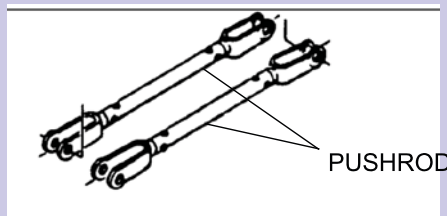
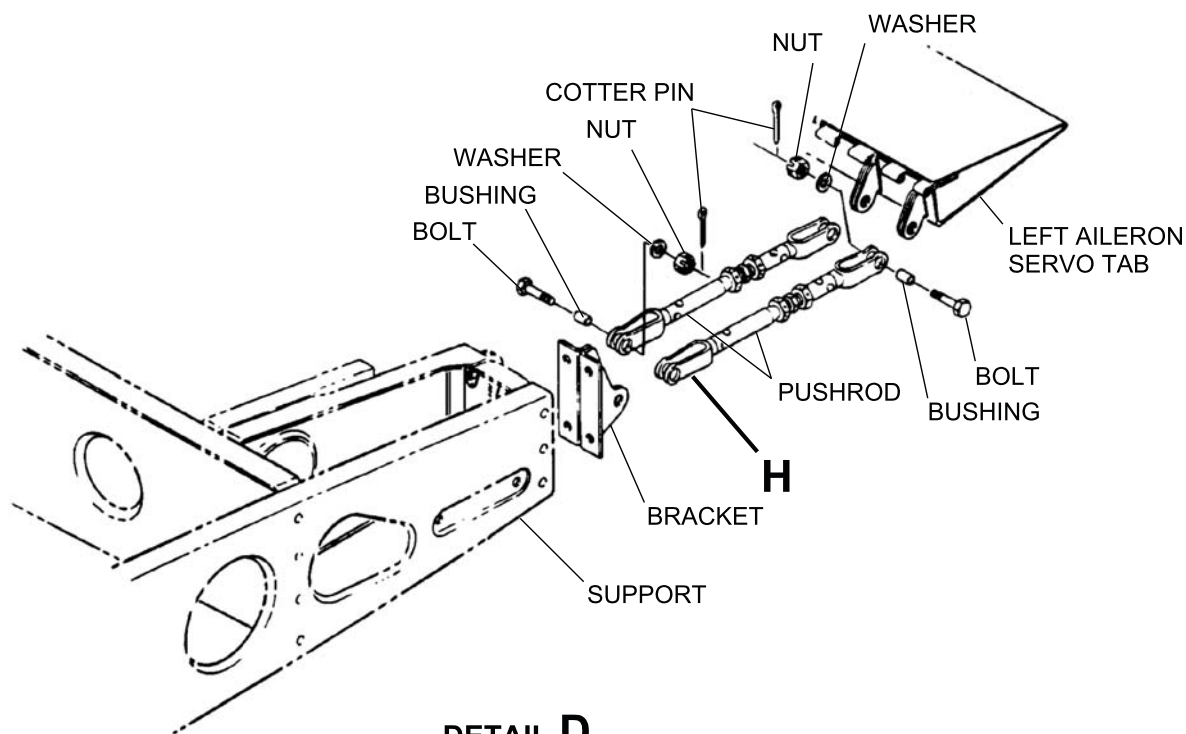
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DETAIL C

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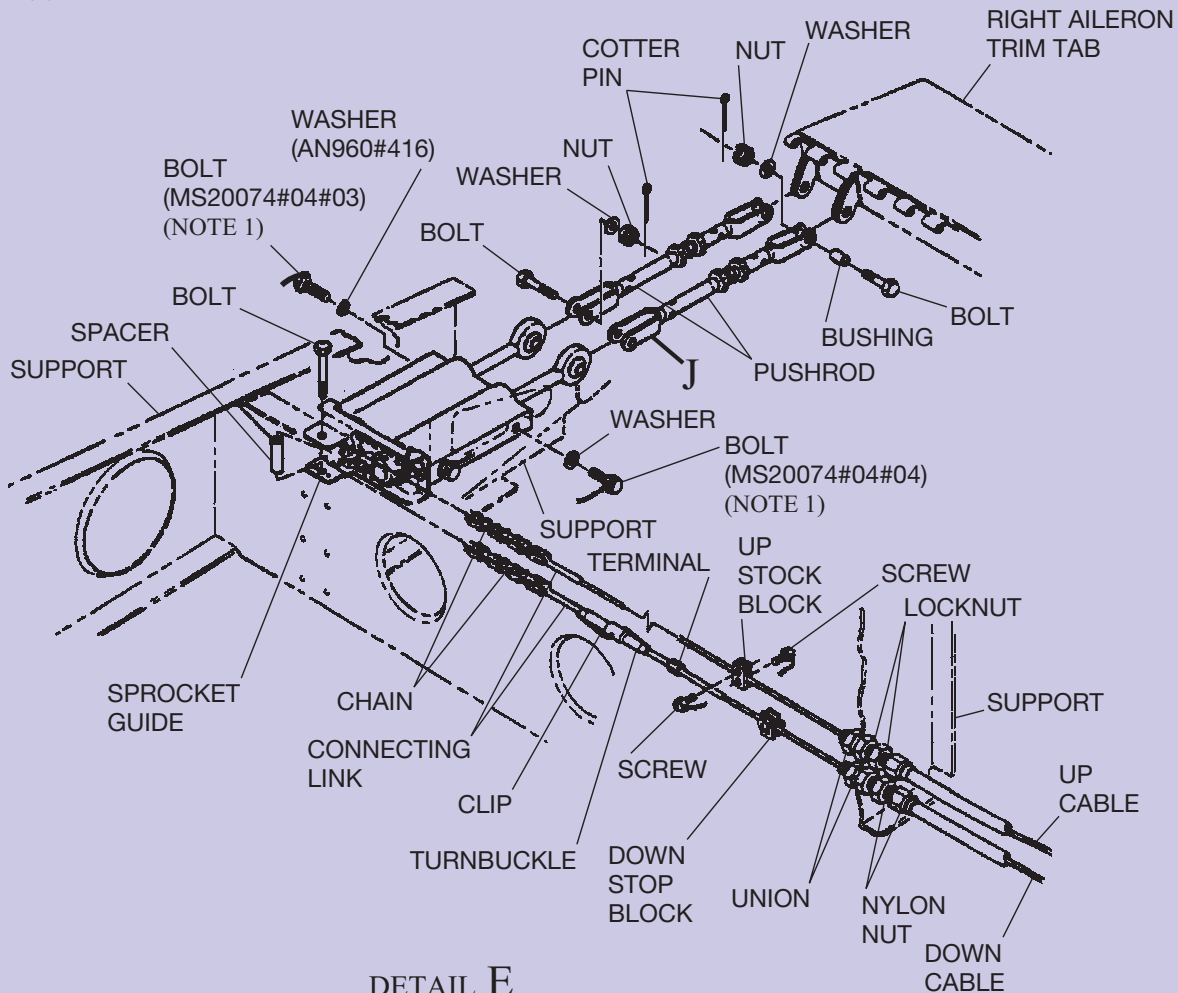


DETAIL H

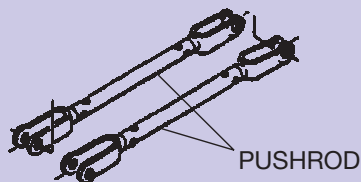
AIRPLANES 2080001 THRU
20800129 AND 208B0001
THRU 208B0039

C26612007A

A22528



DETAIL E



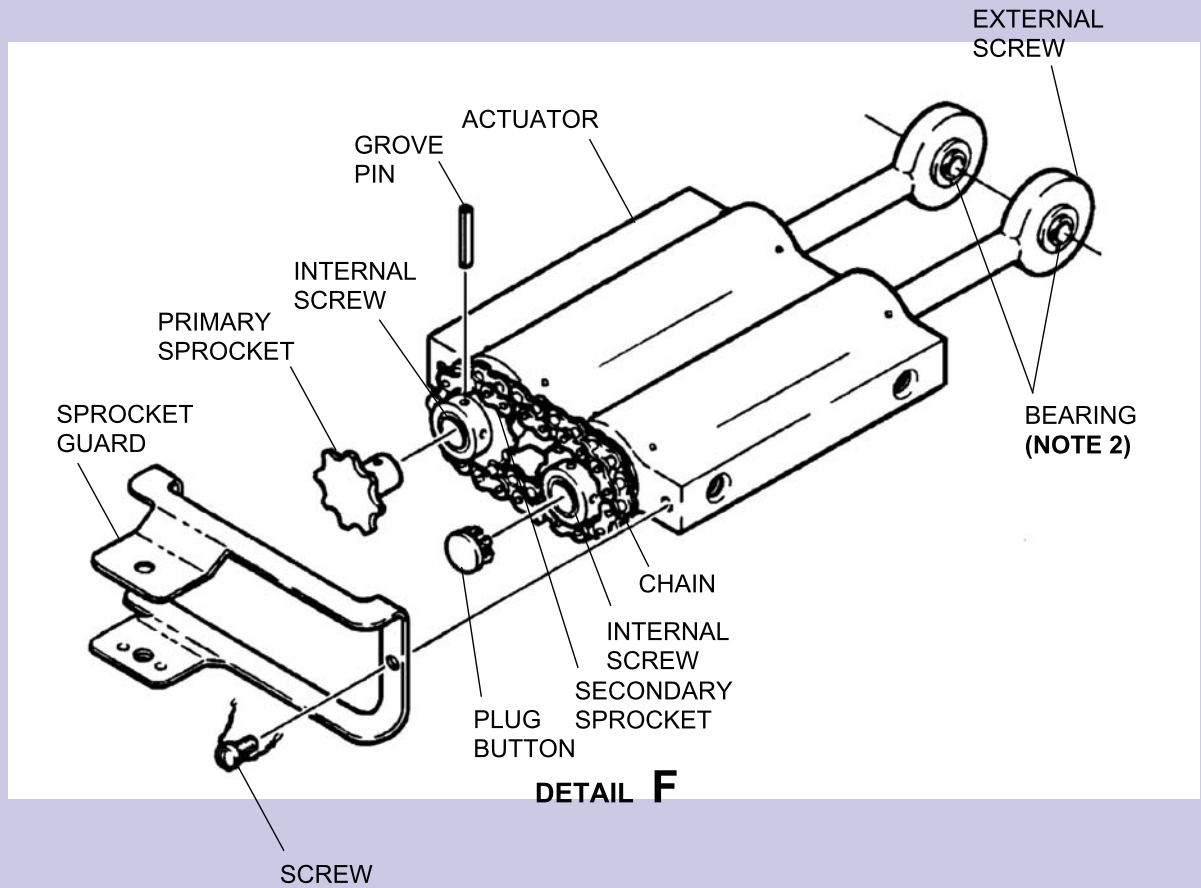
DETAIL J

AIRPLANES 20800001 THRU
20800129 AND 208B0001
THRU 208B0039

NOTE 1: INSTALL THE MS20074#04#04 BOLTS ON THE INBOARD SIDE OF THE ACTUATOR AND THE MS20074#04#03 BOLTS ON THE OUTBOARD SIDE OF THE ACTUATOR.

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J2661R1005

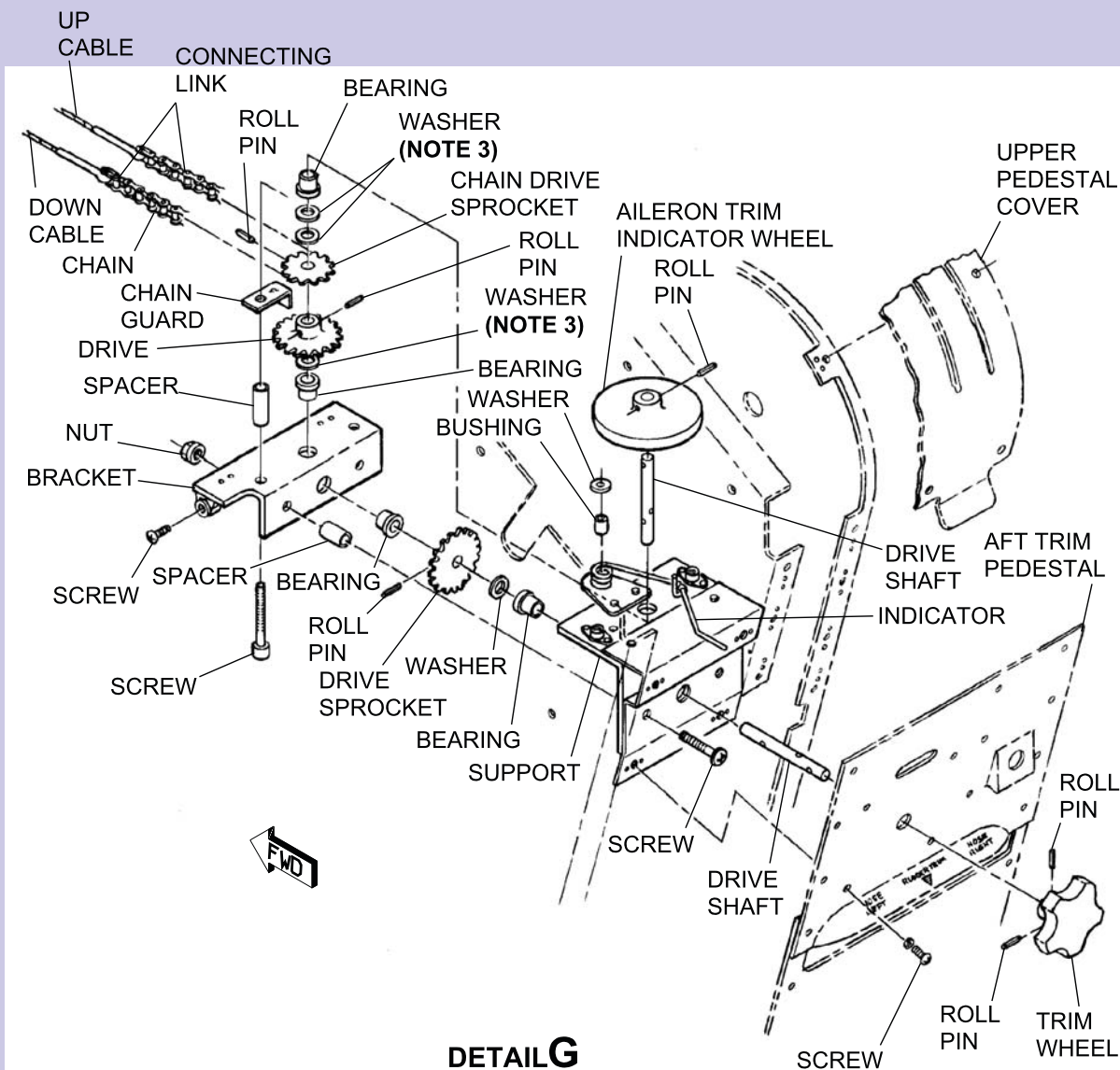
A22529



NOTE 2: THE BEARINGS IN THE EXTERNAL SCREWS MUST BE ALIGNED WITHIN 0.010 INCH TOTAL INDICATOR READING BEFORE INSTALLING THE ACTUATOR IN THE SYSTEM. INSTALL THE NUMBER 11 PIN THROUGH THE BEARINGS AND TAKE THE INDICATOR READINGS OVER THE TOP OF THE PIN.

F26612017

A22530



NOTE 3: SHIM THE TOP AND BOTTOM USING AN960-416 AND AN960-416L WASHERS AS REQUIRED TO PROVIDE PROPER ENGAGEMENT OF THE SPROCKET.

G26612010

Sheet 8 of 8

Task 27-10-02-720

2. Aileron Trim Tab (Free Play) Functional Check

A. General

- (1) This task gives the procedures to do an aileron trim tab (free play) functional check.

B. Special Tools

- (1) None

C. Access

- (1) None

D. Do the Aileron Trim Tab (Free Play) Functional Check (Refer to Figure 601).

- (1) Put the ailerons and the trim tab in the neutral position and secure them from movement.
- (2) Determine maximum allowable free play, measuring chord length at the extreme inboard end of the trim tab then multiply chord length by 0.025 to get the maximum allowable free play.
- (3) Use fingertip pressure and move the trim tab trailing edge up and down to examine free play.

NOTE: Measure free play at the same point on the trim tab that the chord length was measured. Total free play must not exceed the maximum allowable.

- (4) If the trim tab free play is less than the maximum allowable, no additional inspection is required.
- (5) If the trim tab free play is more than the maximum allowable, the following items must be examined:
 - (a) Look for loose fasteners on the trim tab doubler.
 - (b) Examine the hinge, hinge pin, and fasteners on the trim tab doubler.
 - (c) Examine both ends of the push-pull rods and fasteners for wear and loose component parts.
 - (d) If corrosion, worn parts, or loose fasteners are found, replace the fasteners and install new parts in system.
 - (e) Do a second free play inspection.
 - 1 If the free play is still excessive, remove the aileron trim tab actuator from the airplane and set it on a bench. Refer to Aileron Trim System - Maintenance Practices.
 - 2 Disassemble the actuator and examine the detail parts for corrosion and excessive wear. Refer to Aileron Trim System - Maintenance Practices.
 - 3 If corrosion or worn parts are found, replace the parts and reassemble the actuator.
 - (f) Install the actuator in the airplane. Refer to Aileron Trim System - Maintenance Practices.
 - (g) Do the free play inspection again.

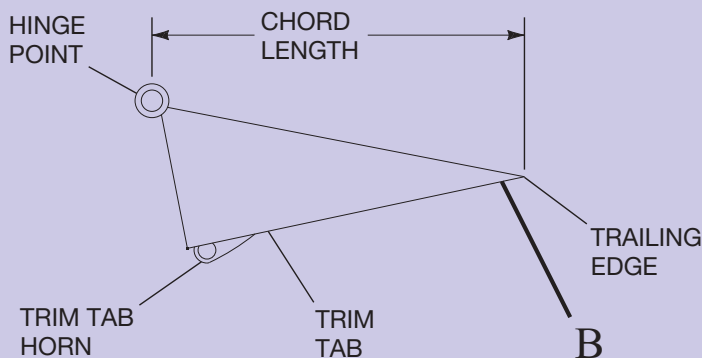
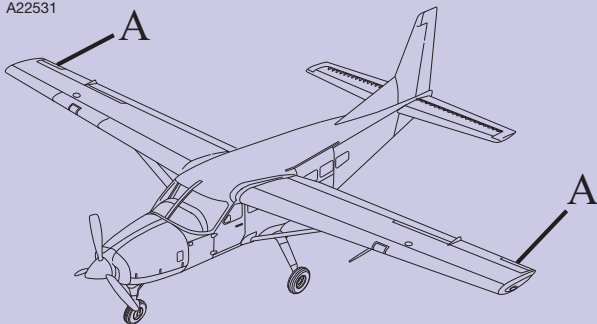
E. Restore Access

- (1) None

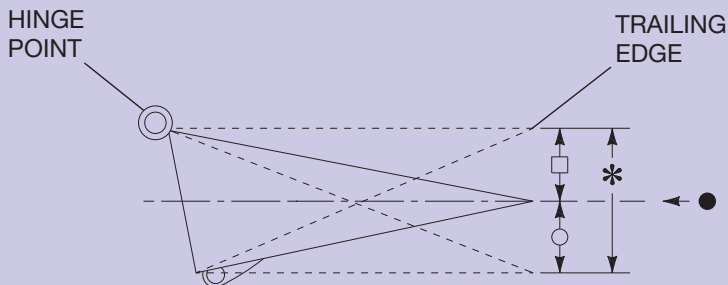
End Task

Figure 601. Aileron Trim Tab (Free Play) Functional Check

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DETAIL A



DETAIL B

- FREE PLAY UP
- NEUTRAL POSITION
- FREE PLAY DOWN
- * TOTAL FREE PLAY

1. MEASURE CHORD LENGTH AT EXTREME INBOARD END OF TRIM TAB AS SHOWN IN DETAIL A.
2. MULTIPLY CHORD LENGTH BY 0.025 TO OBTAIN MAXIMUM ALLOWABLE FREE#PLAY.
3. MEASURE FREE#PLAY AT SAME POINT ON TRIM TAB THAT CHORD LENGTH WAS MEASURED.
4. TOTAL FREE#PLAY MUST NOT EXCEED MAXIMUM ALLOWABLE. REFER TO DETAIL B.

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A2661T1033
B2661T1033

Task 27-30-02-720

2. Elevator Trim Tab (Free Play) Functional Check

A. General

- (1) This task gives the procedures to do a elevator trim tab (free play) functional check.

B. Special Tools

- (1) None

C. Access

- (1) None

D. Do the Elevator Trim Tab (Free Play) Functional Check (Refer to Figure 601).

- (1) Put the elevator and trim tab in the neutral position and secure from movement.
- (2) Determine the maximum allowable free play, measuring chord length at the extreme inboard end of the trim tab then multiply the chord length by 0.025 to get the maximum allowable free play.
- (3) Use fingertip pressure and move the trim tab trailing edge up and down to examine free play.

NOTE: Measure free play at the same point on the trim tab that the chord length was measured. Total free play must not exceed the maximum allowable.

- (4) If the trim tab free play is less than the maximum allowable, no additional inspection is required.
- (5) If the trim tab free play is more than the maximum allowable, the following items must be examined:
 - (a) Look for loose fasteners on the trim tab doubler.
 - (b) Examine the hinge, hinge pin, and fasteners on the trim tab doubler.
 - (c) Examine both ends of the push-pull rods and fasteners for wear and loose component parts.
 - (d) If corrosion, worn parts, or loose fasteners are found, replace the fasteners and install new parts in system.
 - (e) Do a second free play inspection.
 - 1 If the free play is still excessive, remove the elevator trim tab actuator from the airplane and set it on a bench. Refer to Elevator Trim - Maintenance Practices.
 - 2 Disassemble the actuator and examine the detail parts for corrosion and excessive wear. Refer to Elevator Trim - Maintenance Practices.
 - 3 If corrosion or worn parts are found, replace the parts and reassemble the actuator.
 - (f) Install the actuator in the airplane. Refer to Elevator Trim - Maintenance Practices.
 - (g) Do the free play inspection again.

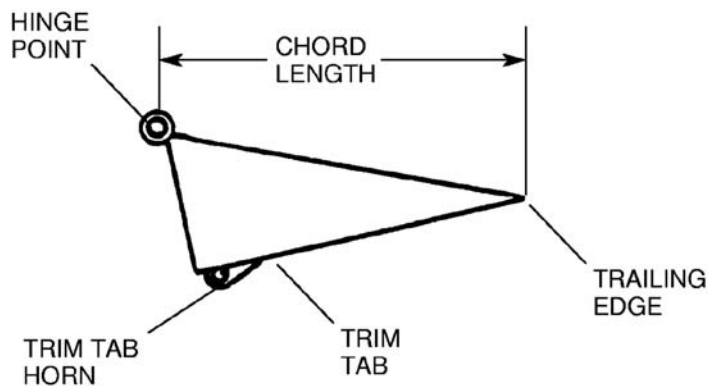
E. Restore Access

- (1) None

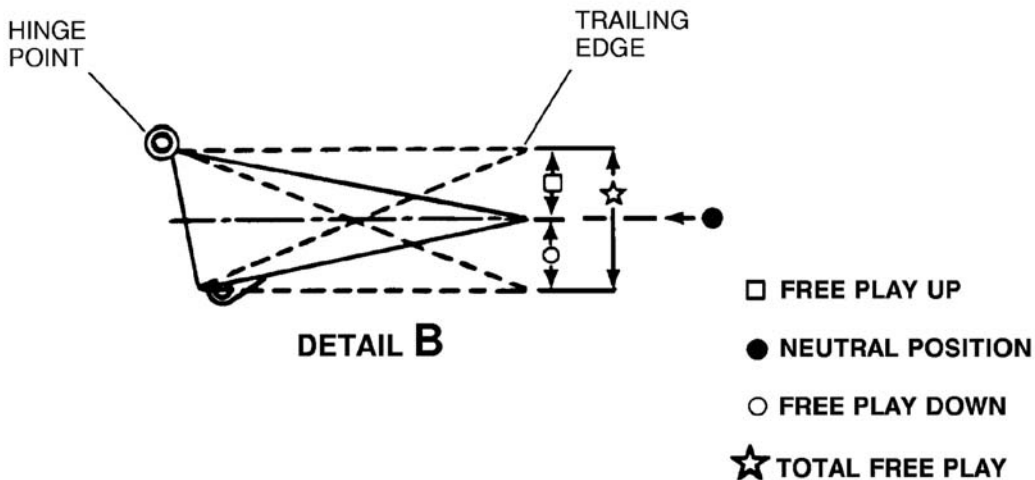
End Task

Figure 601. Elevator Trim Tab (Free Play) Functional Check

A22566



DETAIL A



1. MEASURE CHORD LENGTH AT EXTREME INBOARD END OF TRIM TAB AS SHOWN IN DETAIL A.
2. MULTIPLY CHORD LENGTH BY 0.025 TO OBTAIN MAXIMUM ALLOWABLE FREE PLAY.
3. MEASURE FREE PLAY AT SAME POINT ON TRIM TAB THAT CHORD LENGTH WAS MEASURED.
4. TOTAL FREE PLAY MUST NOT EXCEED MAXIMUM ALLOWABLE. REFER TO DETAIL B.

2651X1033

Task 28-21-00-711

3. Firewall Fuel Shutoff Valve Control Operational Check

A. General

- (1) This task gives the procedures to do the operational check of the firewall mounted fuel shutoff valve. The firewall mounted fuel shutoff valve is located on the cockpit side of the firewall on the lower left side.

B. Special Tools

- (1) B2 sealant or equivalent

C. Access

- (1) None

D. Do a Detailed Inspection of the Firewall Fuel Shutoff Valve Control. Refer to Fuel Lines, Valves, and Filters - Maintenance Practices, Figure 201.

- (1) Remove the shutoff valve access cover.
 - (a) Use a parting tool to loosen the B2 sealant.
 - (b) Clean the old sealant from the cover and the airframe structure.
- (2) Examine the fuel firewall shutoff valve for condition, signs of damage, leakage, security of installation, and freedom of operation.
- (3) Examine the control cable for security of attachment at the firewall shutoff valve and the control handle.
 - (a) Make sure that the cable housing clamps are installed correctly.
- (4) Examine the control cable housing for condition, correct routing, and security.
- (5) Examine the motive flow fuel line located adjacent to the shutoff valve for condition, leaks, and security.
- (6) Examine the main fuel line and motive flow fuel line sealing grommets for condition and security.
- (7) Examine the cavity drain hole for obstructions.

E. Do an Operational Check of the Firewall Fuel Shutoff Valve Control.

- (1) Operate the valve control and examine for freedom of movement and that the valve handle travels to the stop screw when the control is set to the ON and OFF position.
- (2) Examine the operation of the lock knob for positive locking of the control.
- (3) Examine the operation of the control for positive fuel shutoff at the firewall.
 - (a) With the control pulled OFF, open the drain valve on the firewall fuel filter.
 - 1 Make sure that fuel drains until the filter is empty.
- (4) Install the shutoff valve access cover.
 - (a) Apply a release agent to the panel and structure.
 - (b) Apply an approved sealant to the panel and the structure. Refer to Chapter 20, Fuel, Weather and High-Temperature Sealing - Maintenance Practices.
 - (c) Install the shutoff valve access cover.

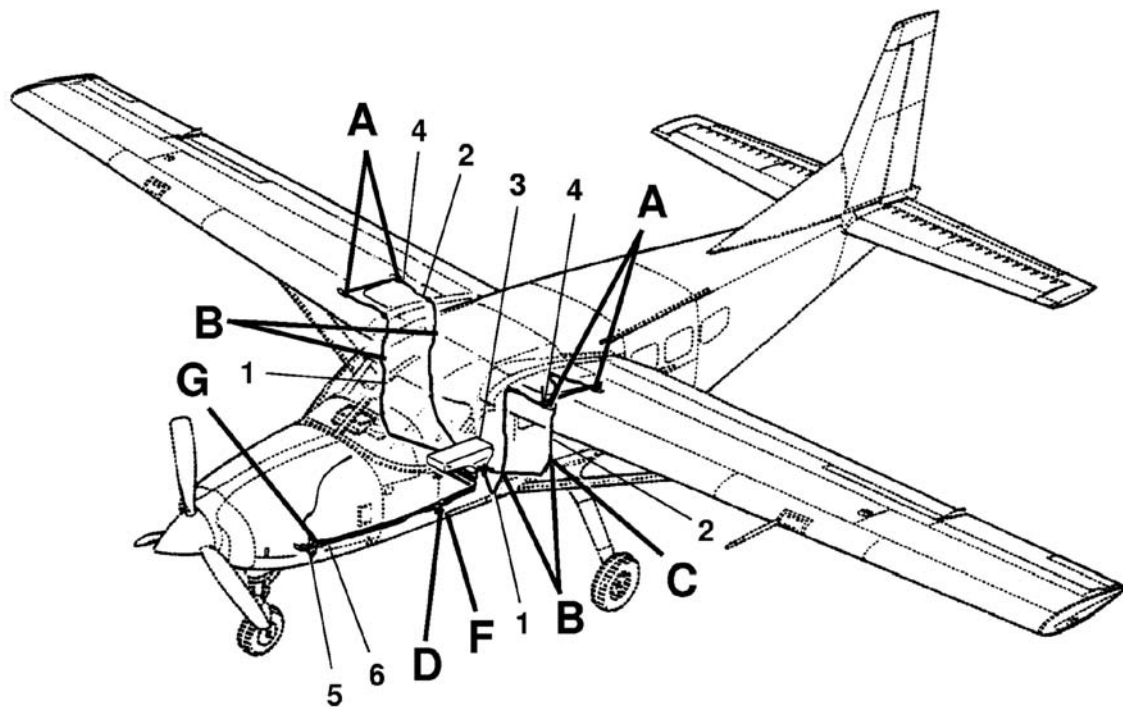
F. Restore Access

- (1) None

End Task

Figure 201. Fuel Lines, Valves, and Filters Installation

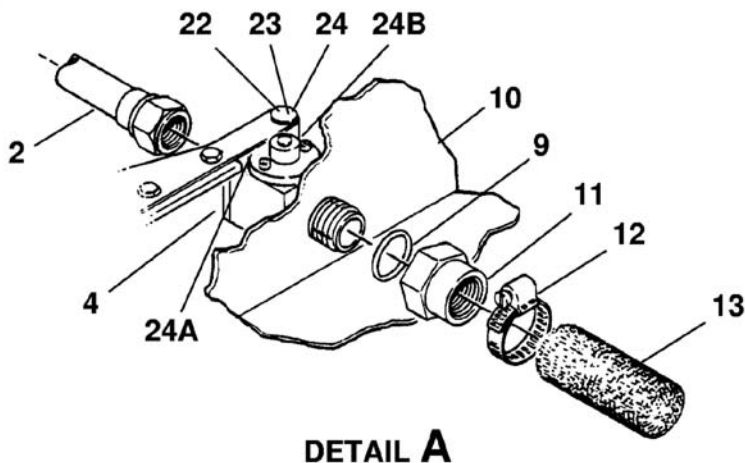
A22443



- 1. FORWARD FUEL LINES
- 2. AFT FUEL LINES
- 3. RESERVOIR
- 4. FUEL SHUTOFF VALVE
- 5. FUEL FILTER
- 6. FIREWALL SHUTOFF VALVE

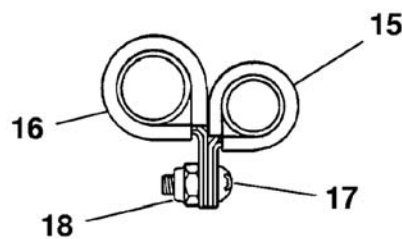
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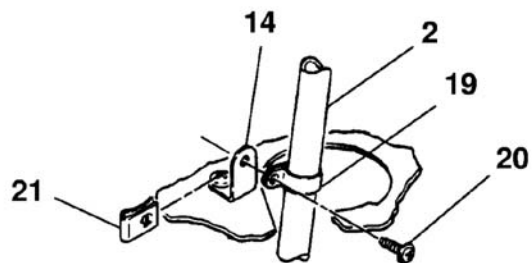


DETAIL A

- 2. AFT FUEL LINE
- 4. FUEL SHUTOFF VALVE
- 9. O-RING
- 10. FUEL BULKHEAD
- 11. ADAPTER
- 12. CLAMP
- 13. SCREEN
- 14. BRACKET
- 15. VENT LINE CLAMP
- 16. FUEL LINE CLAMP
- 17. SCREW
- 18. NUT
- 19. CLAMP
- 20. SCREW
- 21. NUT
- 22. PIN
- 23. WASHER
- 24. COTTER PIN
- 24A. LINK
- 24B. HANDLE



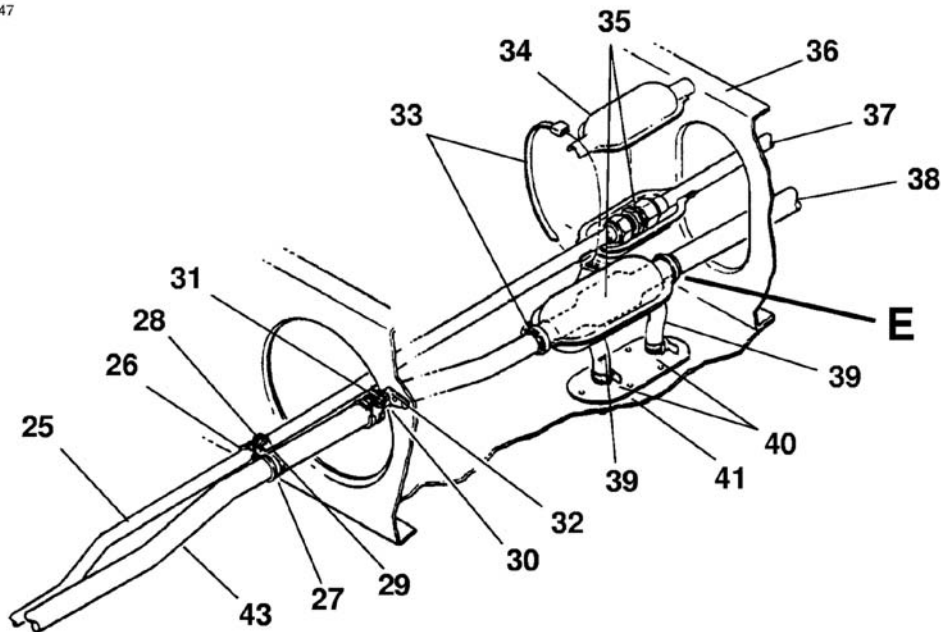
DETAIL B



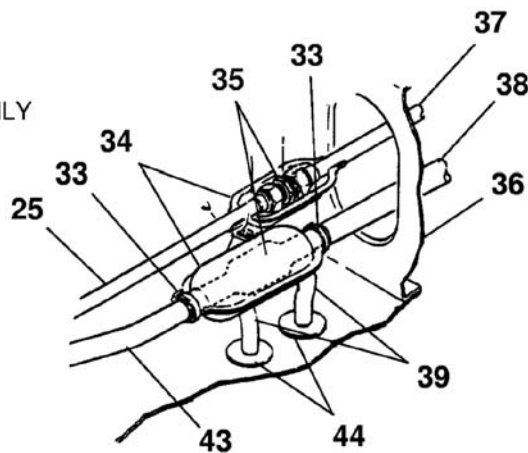
DETAIL C

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B26161004
C26161003

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DETAIL D
 EARLY MODEL 208 AIRPLANES ONLY

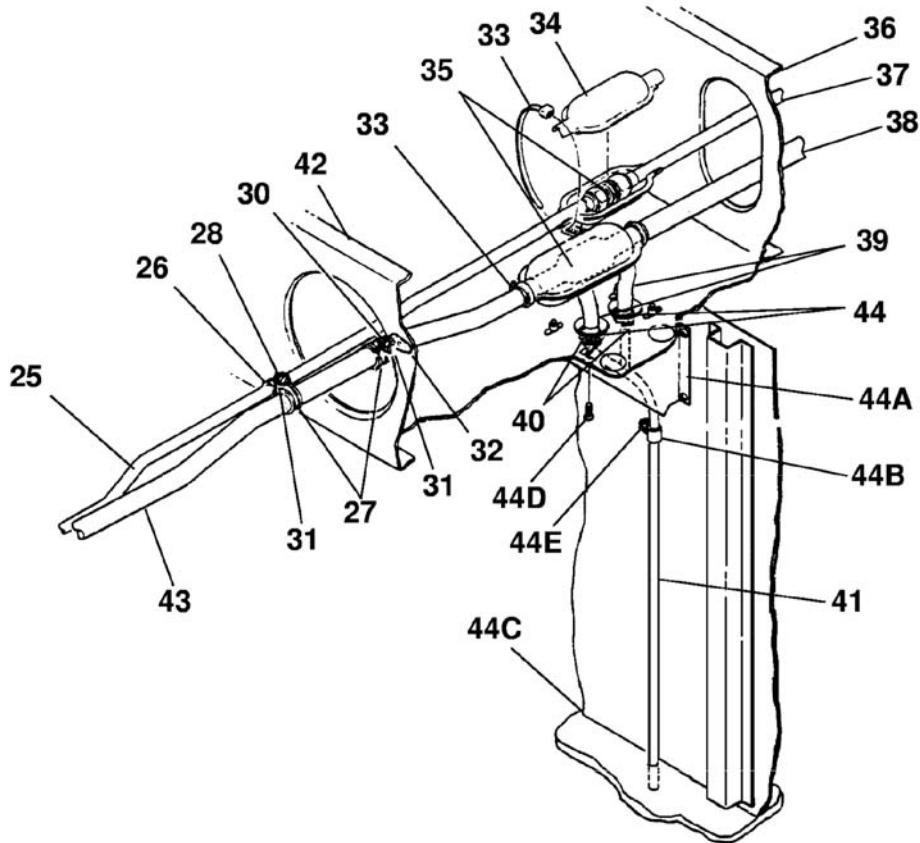


DETAIL E
 LATER MODEL 208 AIRPLANES

- 25. FORWARD MOTIVE FLOW LINE
- 26. MOTIVE FLOW LINE CLAMP
- 27. FUEL SUPPLY LINE CLAMP
- 28. SCREW
- 29. NUT
- 30. SCREW
- 31. NUT
- 32. FORWARD FLOORBOARD SUPPORT CLAMP
- 33. STA-STRAP
- 34. COVER
- 35. UNION
- 36. AFT FLOORBOARD SUPPORT
- 37. AFT MOTIVE FLOW LINE
- 38. AFT FUEL SUPPLY LINE
- 39. DRAIN HOSE
- 40. CLAMP
- 41. DRAIN
- 43. FORWARD FUEL SUPPLY LINE
- 44. GROMMET

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 E26161008A

A22436

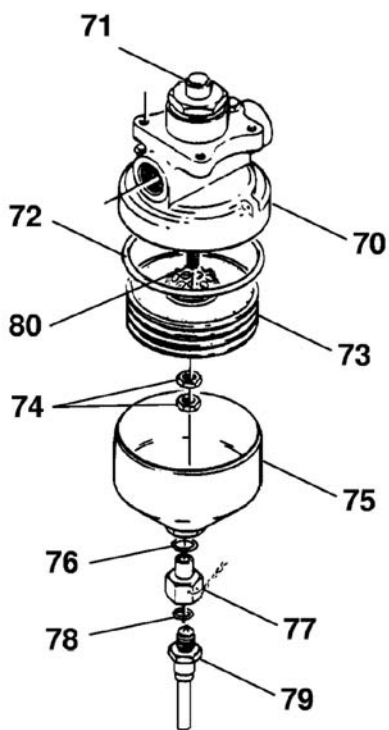


DETAIL F
AIRPLANES 20800007 AND ON

- | | |
|--------------------------------------|--------------------------------|
| 25. FORWARD MOTIVE FLOW LINE | 38. AFT FUEL SUPPLY LINE |
| 26. MOTIVE FLOW LINE CLAMP | 39. DRAIN HOSE |
| 27. FUEL SUPPLY LINE CLAMP | 40. CLAMPS |
| 28. SCREW | 41. DRAIN |
| 30. SCREW | 42. FORWARD FLOORBOARD SUPPORT |
| 31. NUT | 43. FORWARD FUEL SUPPLY LINE |
| 32. FORWARD FLOORBOARD SUPPORT CLAMP | 44. GROMMET |
| 33. STA-STRAP | 44A. COVER |
| 34. COVER | 44B. CLAMP |
| 35. UNION | 44C. CARGO POD |
| 36. AFT FLOORBOARD SUPPORT | 44D. SCREW |
| 37. AFT MOTIVE FLOW LINE | 44E. SCREW |

F26161008

A22441

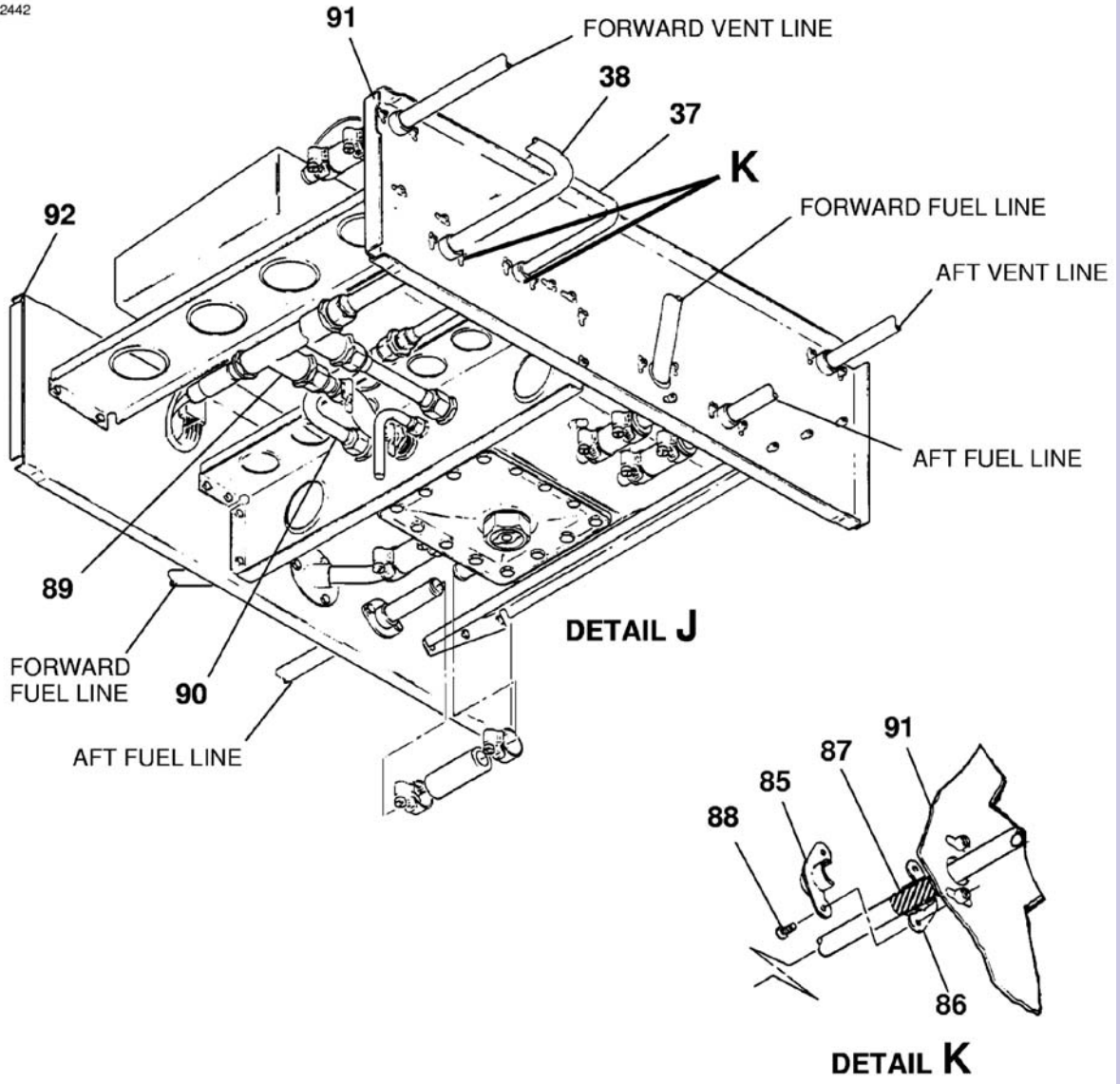


DETAIL H

- 70. FILTER BODY
- 71. WARNING BUTTON
- 72. O-RING
- 73. FILTER ELEMENT
- 74. LOCK NUT
- 75. BOWL
- 76. O-RING
- 77. DRAIN PORT
- 78. O-RING
- 79. DRAIN VALVE
- 80. THREADED ROD

H2616X1031

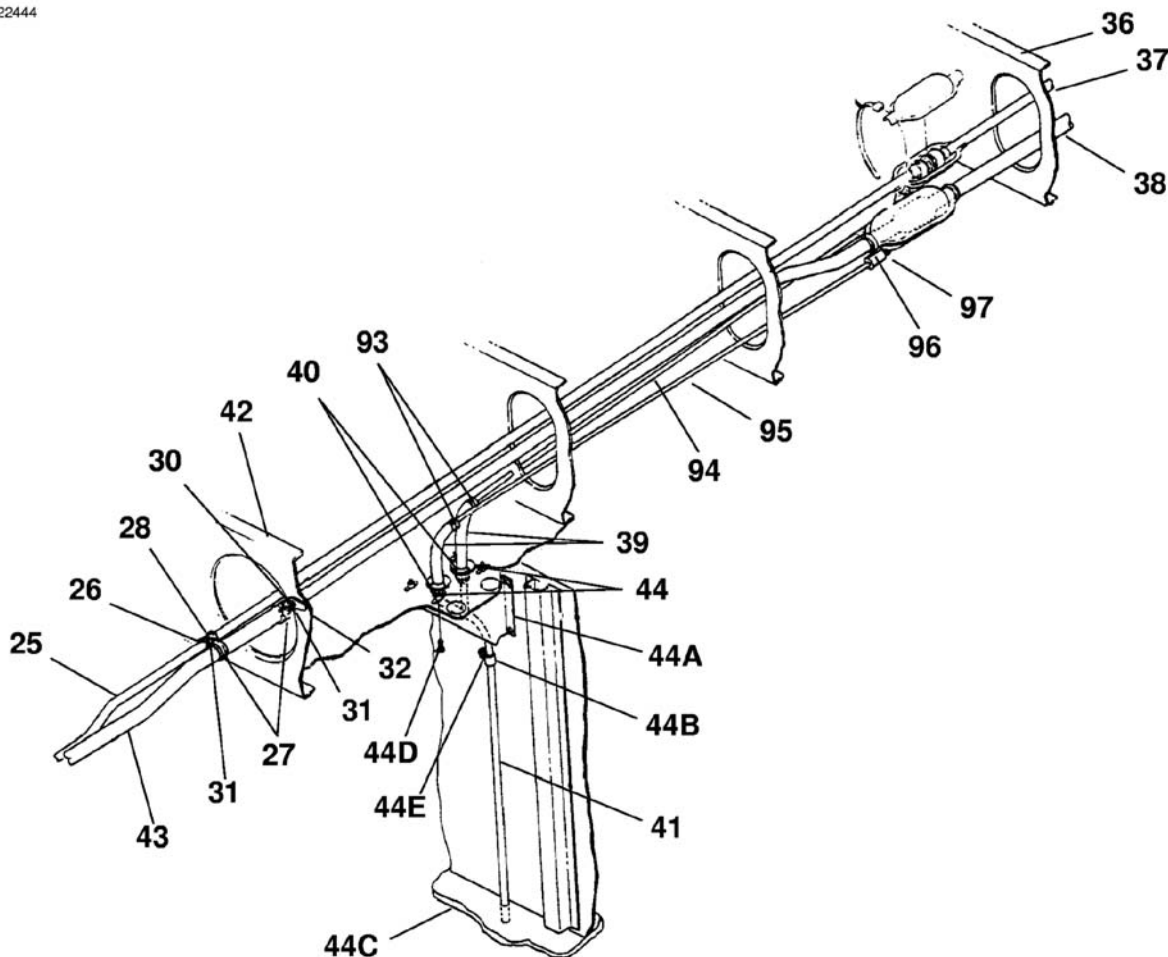
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- 37. AFT MOTIVE FLOW LINE
- 38. AFT FUEL SUPPLY LINE
- 85. UPPER SEAL HALF
- 86. LOWER SEAL HALF
- 87. SEAL
- 89. MANIFOLD
- 90. MOTIVE LINE ELBOW
- 91. RESERVOIR SUPPORT, LEFT
- 92. RESERVOIR SUPPORT, RIGHT

J2626X1016
 K2616X1027

A22444

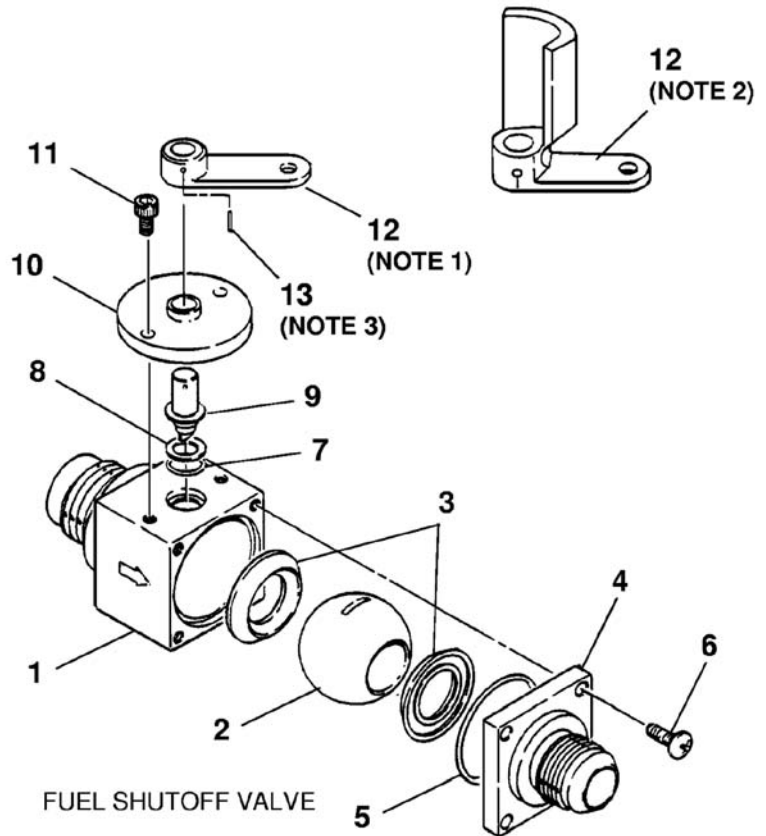


DETAIL F
MODEL 208B

- | | |
|--------------------------------------|--------------------------------|
| 25. FORWARD MOTIVE FLOW LINE | 40. CLAMPS |
| 26. MOTIVE FLOW LINE CLAMP | 41. DRAIN |
| 27. FUEL SUPPLY LINE CLAMP | 42. FORWARD FLOORBOARD SUPPORT |
| 28. SCREW | 43. FORWARD FUEL SUPPLY LINE |
| 29. NUT | 44. GROMMET |
| 30. SCREW | 44A. COVER |
| 31. NUT | 44B. CLAMP |
| 32. FORWARD FLOORBOARD SUPPORT CLAMP | 44C. CARGO POD |
| 33. STA-STRAP | 44D. SCREW |
| 34. COVER | 44E. SCREW |
| 35. UNION | 93. CLAMP |
| 36. AFT FLOORBOARD SUPPORT | 94. DRAIN LINE |
| 37. AFT MOTIVE FLOW LINE | 95. DRAIN LINE |
| 38. AFT FUEL SUPPLY LINE | 96. CLAMP |
| 39. DRAIN HOSE | 97. DRAIN HOSE |

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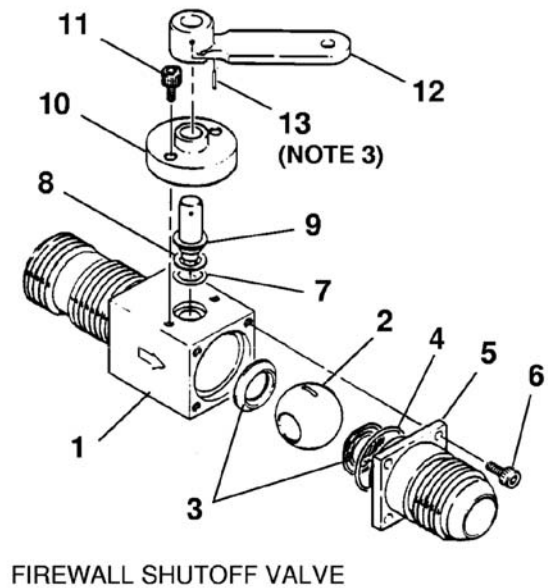


- 1. SHUTOFF VALVE BODY
- 2. BALL
- 3. SEAL
- 4. FITTING
- 5. O-RING
- 6. SCREW
- 7. O-RING
- 8. CUP SEAL
- 9. DRIVE SHAFT
- 10. RETAINER
- 11. SCREW
- 12. HANDLE (NOTE 1), (NOTE 2)
- 13. PIN (NOTE 3)

NOTE 1: USED ON LEFT AND RIGHT FORWARD VALVES.

NOTE 2: USED ON LEFT AND RIGHT AFT VALVES.

NOTE 3: SAFETY WIRE ROLL PINS.



FIREWALL SHUTOFF VALVE

26161007
26161006

Task 28-23-00-640

2. Wing Shutoff Valve Linkage Lubrication

A. General

- (1) This task gives the procedures to do the lubrication of the wing shutoff valve linkage.

B. Special Tools

- (1) LPS 1 Lubricant, or Equivalent

C. Access

- (1) Remove lower wing access panels 511AB and 611AB to get access to the wing shutoff valves. Refer to Chapter 6, Access Plates and Panels Identification - Description and Operation.

D. Do a Lubrication of the Wing Shutoff Valve Linkage

- (1) Apply lubricant to the pins that connect the interconnect link to the valve handle on all four valves.
- (2) Apply lubricant to the exposed part of the shutoff cable.
- (3) Operate the fuel selectors several times.
- (4) Wipe off any unwanted lubricant.

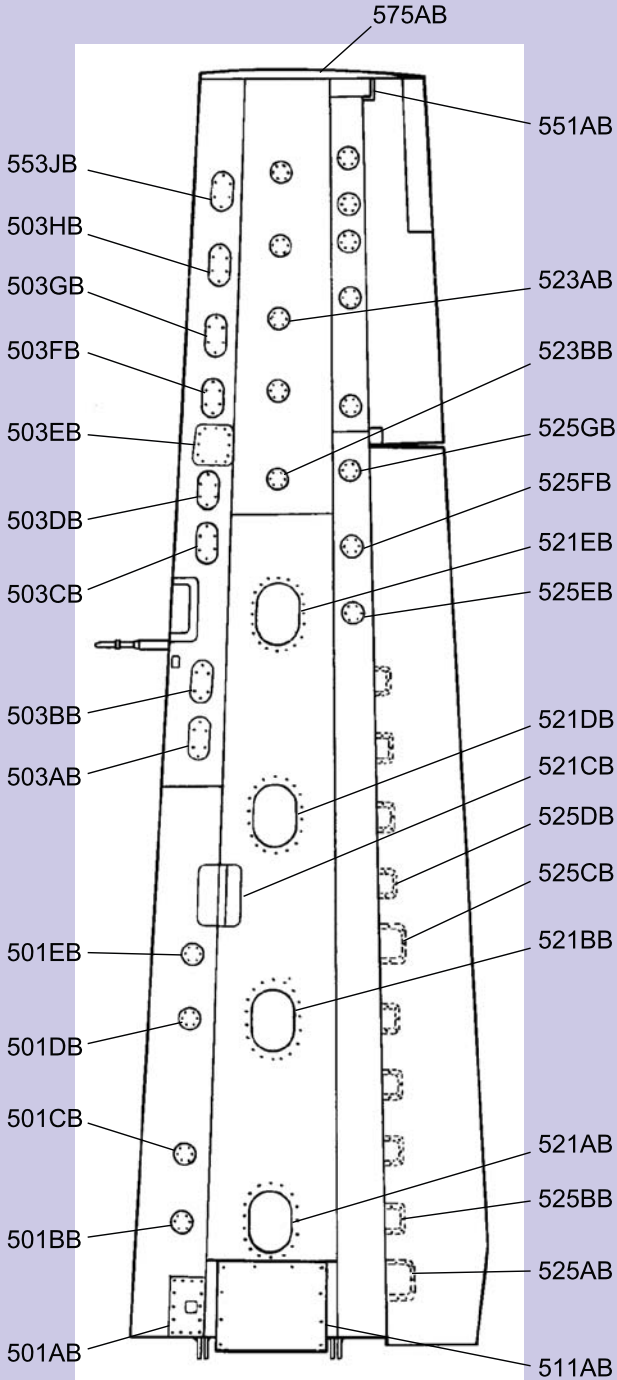
E. Restore Access

- (1) Install lower wing access panels 511AB and 611AB. Refer to Chapter 6, Access Plates and Panels Identification - Description and Operation.

End Task

Figure 7. Left Lower Wing Panels

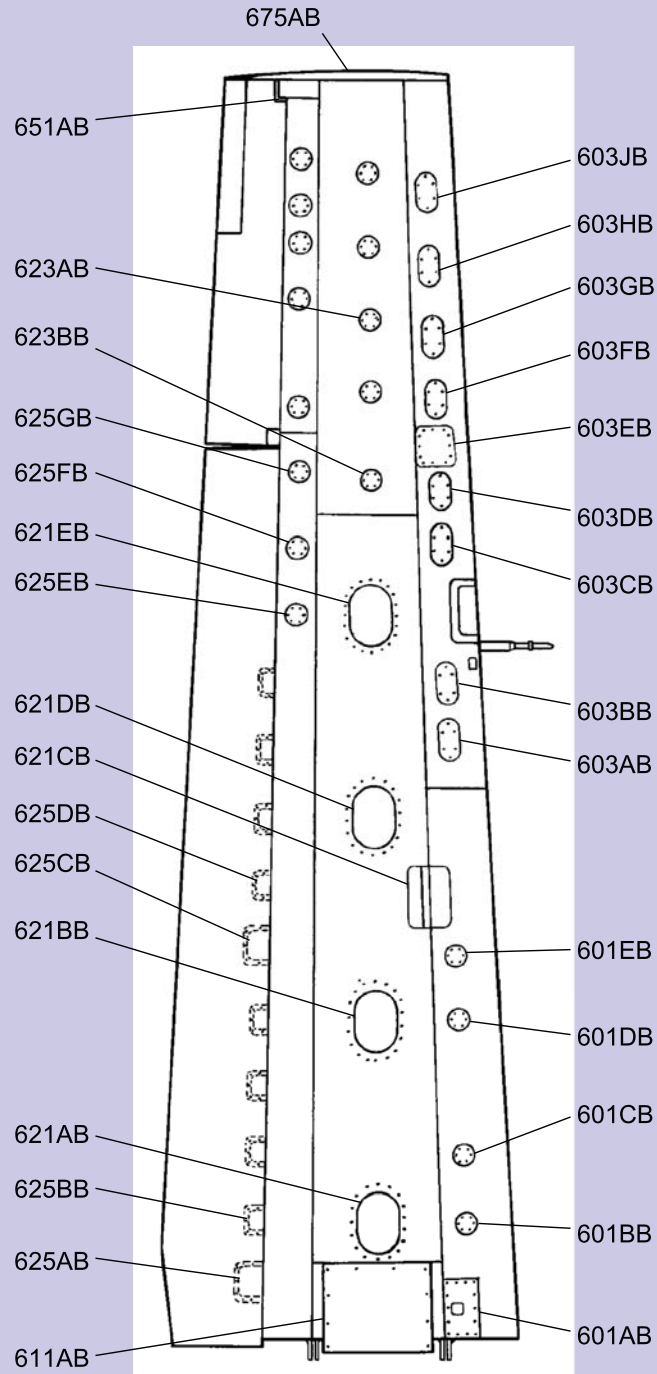
A22961



VIEW LOOKING UP AT LEFT WING

Figure 8. Right Lower Wing Panels

A22965



VIEW LOOKING UP AT RIGHT WING

Sheet 1 of 1

2610T2008

Task 30-10-00-720

2. Bleed Air Pressure Regulator Functional Check

A. General

- (1) This task gives the procedures to do a bleed air pressure regulator functional check.

B. Special Tools

- (1) Filtered Shop Air
- (2) Flexible Hose
- (3) Pressure Gage

C. Access

- (1) Open the right engine cowling door.

D. Do the Bleed Air Pressure Regulator Functional Check.

- (1) For the procedures necessary to do the bleed air pressure regulator functional check, refer to Chapter 36, Pneumatic Distribution - Maintenance Practices.

E. Restore Access

- (1) Close the right engine cowling door.

End Task

Task 30-11-00-720

2. TKS Anti-Ice System Functional Check

A. General

(1) This task gives the procedures to do a TKS anti-ice system functional check.

B. Special Tools

(1) None

C. Access

(1) None

D. Do the TKS Anti-Ice System Functional Check.

(1) For the procedures necessary to do a functional check of the TKS anti-ice system for airplanes with the fairing installation, do the TKS Anti-Ice System Test. Refer to TKS Anti-Ice System - Adjustment/Test (Fairing Installation).

(2) For the procedures necessary to do a functional check of the TKS anti-ice system for airplanes with the pod installation, do the TKS Anti-Ice Fluid Tank Component Test. Refer to TKS ANTI-ICE FLUID TANK COMPONENTS - Adjustment/Test (Pod Installation).

E. Restore Access

(1) None

End Task

Task 30-40-00-710

2. Windshield Anti-Ice System Operational Check

A. General

- (1) This task gives the procedures to do an operational check of the windshield anti-ice system (non TKS airplanes).

B. Tools and Equipment

- (1) None

C. Access

- (1) None

D. Do the Windshield Anti-Ice System Operational Check.

- (1) For Airplanes 20800001 thru 20800381 and 208B0001 thru 208B1087, and incorporating SK208-113

- (a) Put the battery switch to the ON position.
- (b) Put the windshield anti-ice switch to the AUTO position for one minute.
- (c) Make sure that the anti-ice panel temperature increases.

NOTE: The anti-ice panel will feel warm to the touch.

- (d) Put the battery switch to the OFF position.
- (e) Put the windshield anti-ice switches to the OFF position.

- (2) For Airplanes 20800382 and On and 208B1088 and On and incorporating SK208-146

- (a) Put the battery switch to the ON position.
- (b) Put the ammeter selector switch to the BATT position.
- (c) Make sure that the W/S ANTI-ICE PRI, W/S ANTI-ICE SEC and W/S ANTI-ICE CONT circuit breakers are engaged.

NOTE: Each time you move a switch as follows, there will be a change in the ammeter indication and illumination of the WINDSHIELD ANTI-ICE annunciator. If you do not see a change when you move the switch(es), then record the difference and continue the test.

- (d) Put the W/S PRIMARY switch to the AUTO position, then record the time.
- (e) Put the W/S SECONDARY switch to the AUTO position.
- (f) Make sure that the WINDSHIELD ANTI-ICE annunciator goes off in less than 120 seconds from the time that you put the W/S PRIMARY switch to the AUTO position.
- (g) If you do not see a change in the ammeter indication when you move the switch(es), then record the difference and continue the test.
- (h) Momentarily put the W/S PRIMARY switch to the MANUAL position.
- (i) Momentarily put the W/S SECONDARY switch to the MANUAL position.
- (j) Put the BATTERY switch to the OFF position.

E. Restore Access

- (1) None

End Task

Task 61-10-00-720

2. Hartzell Propeller Functional Check

A. General

- (1) This section gives the information needed to do the functional check of the Hartzell propeller.

B. Special Tools

- (1) Mild Soap and Water.
- (2) Age Master No. 1.
- (3) ICEX.
- (4) Stoddard Solvent or equivalent.
- (5) Isopropyl Alcohol.

C. Access

NOTE: The propeller spinner is removed after the propeller is washed for the inspection.

- (1) Remove the nose cap to get access to the propeller governor. Refer to Chapter 71, Engine Cowling and Nose Cap - Maintenance Practices.
- (2) Remove the upper left cowling door to get access to the overspeed governor. Refer to Chapter 71, Engine Cowling and Nose Cap - Maintenance Practices.

D. Do the Hartzell Propeller Detailed Inspection.

CAUTION: Moisture of any type must never touch exposed Kevlar composite material.

- (1) Examine the propeller blades for any openings in the Kevlar composite material before you wash the blades.
 - (a) If you find openings in the Kevlar composite material, apply paint to the exposed areas. Refer to Composite Propeller - Cleaning/Painting.
- (2) Wash the propeller blades and the boots with mild soap and water before you start the inspection.
 - (a) Do not let the soap solution come into contact with the blade clamps.
- (3) Put a mark on the spinner and the bulkhead to record the alignment for the next installation.
 - (a) Do not use a lead pencil.
- (4) Remove the propeller spinner. Refer to Propeller (Hartzell) - Maintenance Practices .
- (5) Be careful to not remove the spinner index mark when you clean the spinner and the bulkhead.
 - (a) Clean the spinner and the bulkhead with Stoddard solvent to remove all grease before you start the inspection.
- (6) Clean the slip ring and the deice brush block with isopropyl alcohol, Stoddard solvent, or equivalent.

E. Examine the Spinner and the Bulkhead.

- (1) Examine the accessible surface of the bulkhead and the inner and outer spinner surface for condition, cracks, corrosion, and fractures.
- (2) Examine the spinner bulkhead, spinner bulkhead support, spinner attach screws, and spinner attach nutplates for condition, corrosion, and wear.
- (3) Examine the attach holes in the spinner for cracks and hole elongation.
- (4) Examine the balance weights for condition, corrosion, security, and correct installation. Refer to Final Weight Installation found in Propeller (Hartzell) - Adjustment/Test.
- (5) Visually examine the spinner dome surface and the bulkhead for burned spots, pits, or other signs of a lightning strike.
 - (a) If there are signs of a lightning strike, refer to Chapter 5, Unscheduled Maintenance Checks, Lightning Strike.
- (6) Examine the attach screws for condition. Make sure that there is a fiber washer installed on each attach screw.
- (7) Examine the viewable area of the engine propeller shaft seal just aft of the spinner bulkhead for leaks and condition.

F. Examine the Blades.

- (1) Examine all blades for condition, gouges, scratches, leading edge looseness, erosion, debonds, delaminations, cracks, and exposed composite materials.
- (2) If installed, examine the anti-ice boots for abrasions, exposed heating elements, cuts, nicks, and security of attachment. Refer to Chapter 30, Propeller Anti-Ice - Maintenance Practices, Figure 201.
 - (a) Examine the wiring from the boots to the terminal strips on the spinner bulkhead for condition, chafing, correct routing, and security of attachment at all clamps.
 - (b) Examine the connector between the boot and the wire harness for security of attachment.
 - (c) Examine the wire harness connectors at the terminal strips for condition and security of attachment.
 - (d) Examine the boot edge dressing for condition.
 - 1 If necessary, touch-up damaged or exposed areas.
- (3) Examine the terminal strips for condition and security of attachment to spinner bulkhead.
- (4) Use the "Coin Tap" procedure to examine for debond damage adjacent to any crack in the paint between the erosion shield and the composite material. Refer to the Hartzell Propeller Owners Manual 146, Maintenance Practices.

NOTE: Paint cracks can occur along the line at which the erosion shield contacts the blade surface. Any crack in the paint of a composite blade finish is considered minor damage. Circumferential cracks can occur in the paint and the resin on the primary retention windings because of resin build-up during manufacture. Refer to the Hartzell Propeller Owners Manual.

- (5) Examine the blades and the blade clamps for condition, cracks, corrosion, evidence of lightning strikes, and security. Make sure that all hardware is correctly safetied.

NOTE: Lightning strike damage normally shows by burned spots on the blade clamps and the leading and trailing edges of the blades.

- (a) If there are signs of a lightning strike, refer to Chapter 5, Unscheduled Maintenance Checks, Lightning Strike.
- (6) Examine all blade clamp counter weights for condition and security.
- (7) Examine all blade clamp static balance weights (if installed) for condition and security.
- (8) Examine the red alignment marks on the blades and the clamps to make sure that the blades have not slipped in the blade clamps.
- (9) Move the counterweights back and forth to examine if there is freedom of blade movement on the hub pilot tube.
- (10) If the blade(s) are possibly tight (will not turn slightly), remove the link arm(s) from servo piston and turn each blade individually with your hand.

CAUTION: Make sure that you do not scratch or damage the link arms.

NOTE: Examine the blades for play. Radial play must not be more than 0.5 degrees. End play and fore and aft movement cannot be more than +/- 0.06 (1.5 mm).

- (11) If the blade(s) are tight, rough, or binding, return the propeller to an approved repair facility.
- (12) If the blades are serviceable, connect the link arms.
- (13) Lubricate the blade clamps. Refer to Chapter 12, Propeller (Hartzell) - Servicing.

G. Examine the Hub (Refer to Figure 601).

CAUTION: Oil leaks from the propeller or the engine can get on the wing, wing struts, and/or the horizontal stabilizer deice boots and cause damage.

- (1) Examine the exposed area for condition, cracks, corrosion, and security of the components to the hub.
- (2) Visually examine all three link arms for condition and security.
- (3) Examine the hub servo piston and the blade clamps for oil and grease leaks.
- (4) Visually examine the propeller for security of installation.

NOTE: If the safety wire installation is correct, the propeller is secured.

- (5) Examine the exterior area of the servo piston for condition, corrosion, and security of the flex lock nut.

NOTE: The flex lock nut installation is correct if the torque putty on nut and the shaft is not broken.

H. Examine the Beta Feedback Ring (Refer to Figure 601).

- (1) Examine the feedback ring for condition, corrosion, and security of installation.
- (2) Clean the feedback ring and the brush holder with isopropyl alcohol, Stoddard solvent, or equivalent.
- (3) Examine the wires between the feedback ring and the terminal strip for condition, chafing, and security.
- (4) Examine the reversing lever for condition and security.
- (5) Examine the reversing lever for free play.
 - (a) If there is free play at the beta valve, remove the bolt and examine the sleeve bushing for signs of wear at the attach location.
 - 1 If there is wear, replace the bushing.
 - (b) If the lever has free play at the beta cable clevis, remove bolt at the clevis and examine the sleeve spacer for signs of wear at the attach point.
 - 1 If there is wear, replace the spacer.
- (6) Examine the carbon brush for wear and signs of damage.
- (7) To examine the carbon brush for wear, do the steps that follow:
 - (a) Hold the carbon brush against the feedback ring.
 - (b) Turn the feedback ring and measure the clearance between the carbon brush and the feedback ring around the full circumference of the feedback ring.

NOTE: The clearance between the brush and the feedback ring must not be more than 0.010 inch (0.254 mm) at any area around the full circumference of the ring.

CAUTION: Do not turn the elastic low pitch stop nuts installed on the low pitch stop rods.

- (8) Examine the low pitch stop rods (3 each) for condition and security.
 - (a) The low pitch stop rod locknuts are installed correctly if the torque putty has not been disturbed.
- (9) Examine the varistor installed near the center at the top of the forward side of the firewall for condition and security of installation.
- (10) Examine the electrical connections for condition, routing, signs of chaffing, and security.
- (11) Discoloration of the varistor or the electrical leads, or a failure can be a sign that a lightning strike has occurred.
 - (a) If you think that there was a lightning strike to the airplane, refer to Chapter 5, Unscheduled Maintenance Checks, Lightning Strike.
- (12) Apply Age Master No. 1 to the de-ice boots in accordance with the manufactures recommendations. Refer to Chapter 30, Pneumatic Surface Deice - Maintenance Practices.
- (13) If the operating conditions make it necessary, apply ICEx II to the boots. Refer to Chapter 30, Pneumatic Surface Deice - Maintenance Practices.

I. Examine the Propeller Governor (Refer to Figure 601).

- (1) Examine the propeller governor for condition, oil leaks, and security.
- (2) Examine the speed adjuster return spring for condition and security.
- (3) Examine the air bleed link for corrosion, condition, and security.
- (4) Examine the governor interconnecting rod for corrosion, condition, security and wear.
 - (a) Make sure that the rod end bearings turn freely and do not bind.
- (5) Examine all hardware for corrosion, condition, and correct safety.

NOTE: It is not necessary to safety wire the four self locking mounting nuts.

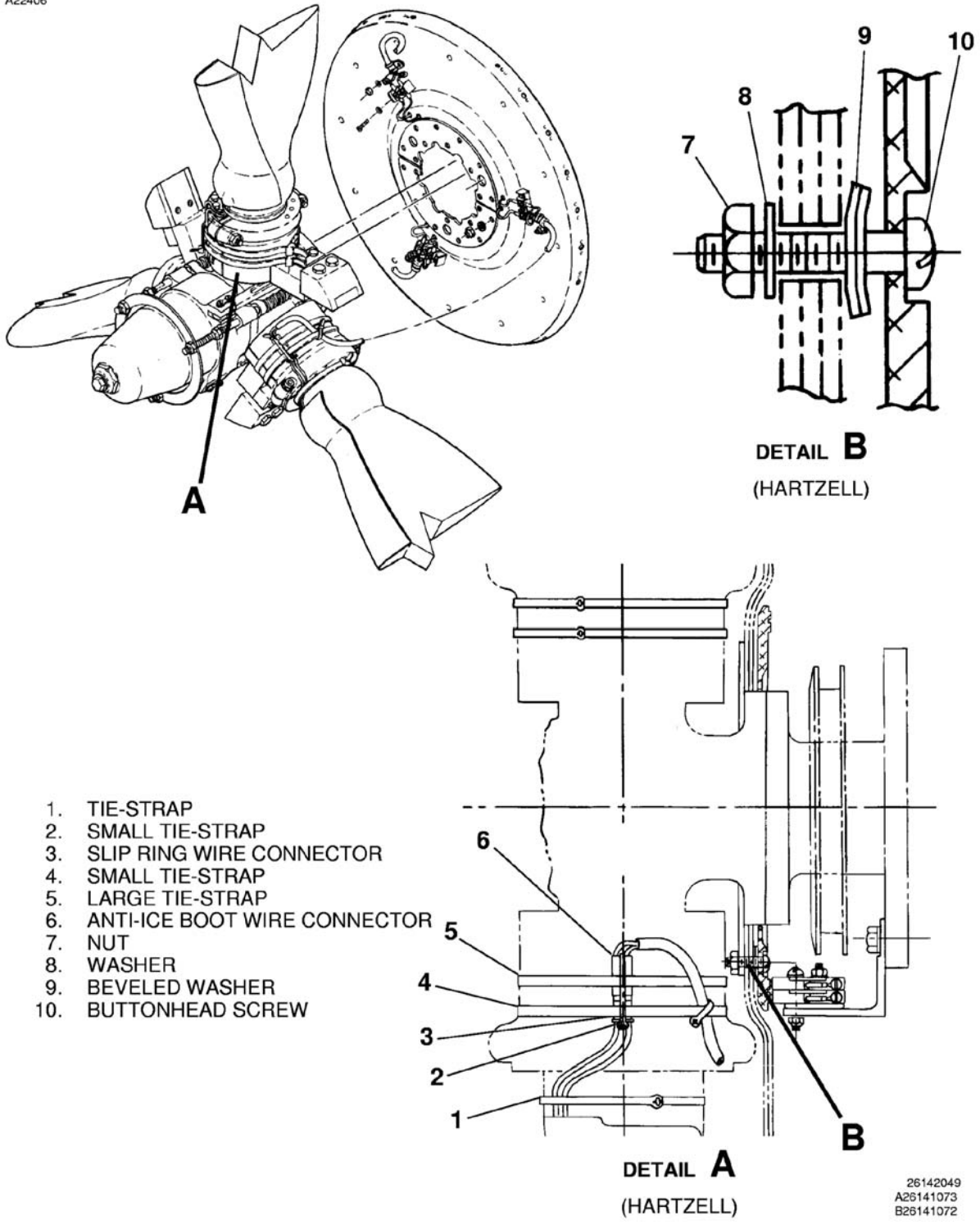
J. Examine the Propeller Cable Terminal Rod End (Refer to Chapter 76, PT6A-114/-114A Engine Rigging - Adjustment/Test, Figure 510).

- (1) Disconnect the rod end from the propeller speed adjusting lever. Refer to Chapter 76, Propeller Control - Maintenance Practices.
 - (2) Wipe the rod end clean using a clean lint-free cloth.
 - (3) Examine the rod end for corrosion, pitting, and cleanliness.
 - (4) Lubricate the rod end ball with MIL-L-7870.
 - (5) Connect the rod end to the adjusting lever. Refer to Chapter 76, Propeller Control - Maintenance Practices.
- K. Examine the Overspeed Governor (Refer to Propeller Control - Maintenance Practices, Figure 201).
- (1) Examine the overspeed governor for condition, oil leaks, and security.
 - (a) Make sure that the hardware is safety wired except for the four self-locking attach nuts.
 - (2) Examine the electrical wiring and the electrical connector at the governor reset test solenoid for signs of damage, correct wire routing, and security.
 - (3) Examine the governor reset test solenoid for condition and security.
 - (4) Install the upper left cowling door. Refer to Chapter 71, Engine Cowling and Nose Cap - Maintenance Practices.
 - (5) Install the nose cap. Refer to Chapter 71, Engine Cowling and Nose Cap - Maintenance Practices.
 - (6) Install the propeller spinner. Refer to Propeller (Hartzell) - Maintenance Practices .
 - (7) Do the Propeller Overspeed Governor Functional Check. Refer to Propeller Control - Maintenance Practices.
- L. Restore Access
- NOTE:** The propeller spinner, nose cap, and upper left cowling door were installed before the functional check.
- (1) None

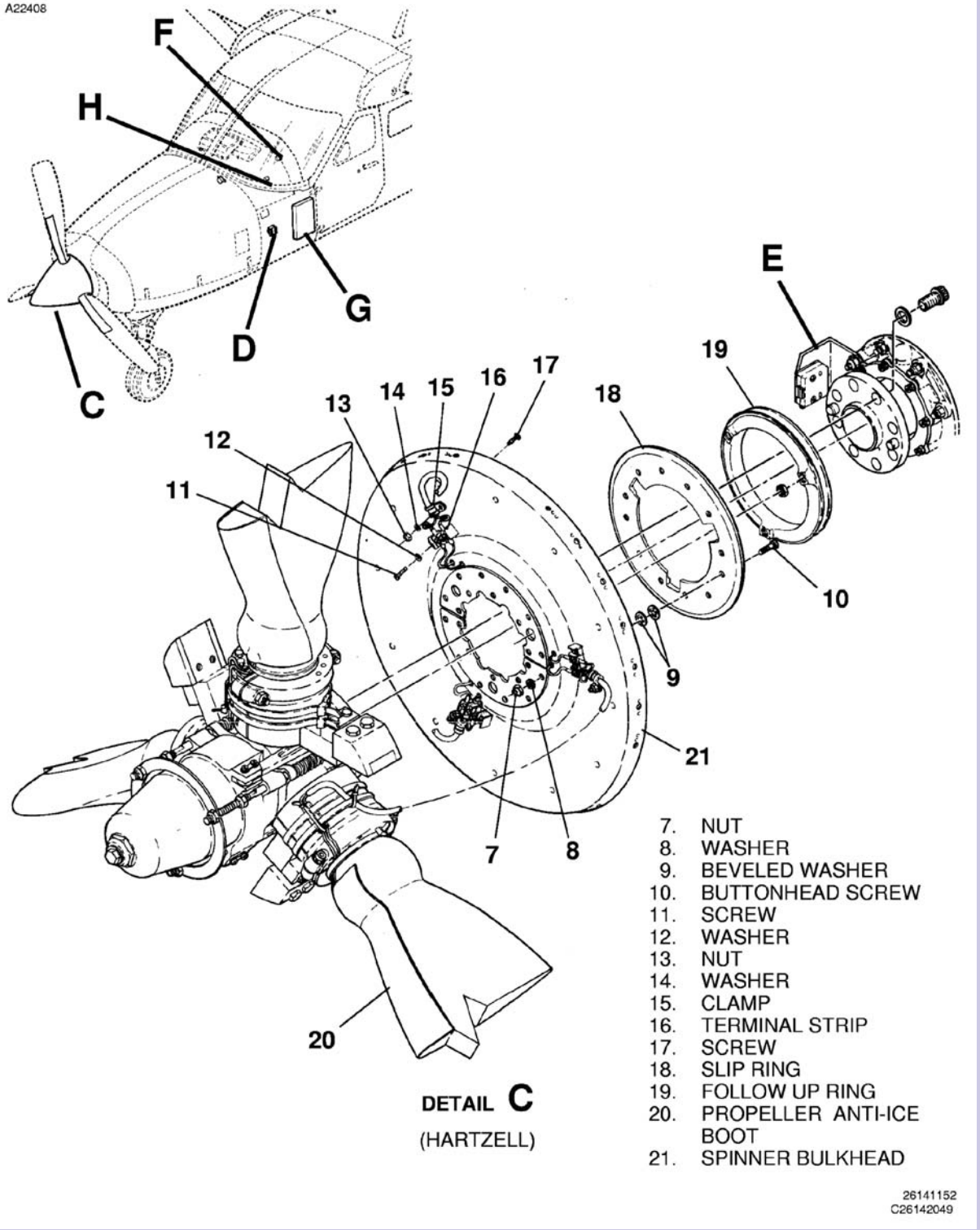
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Figure 201. Propeller Anti-Ice Boots Installation

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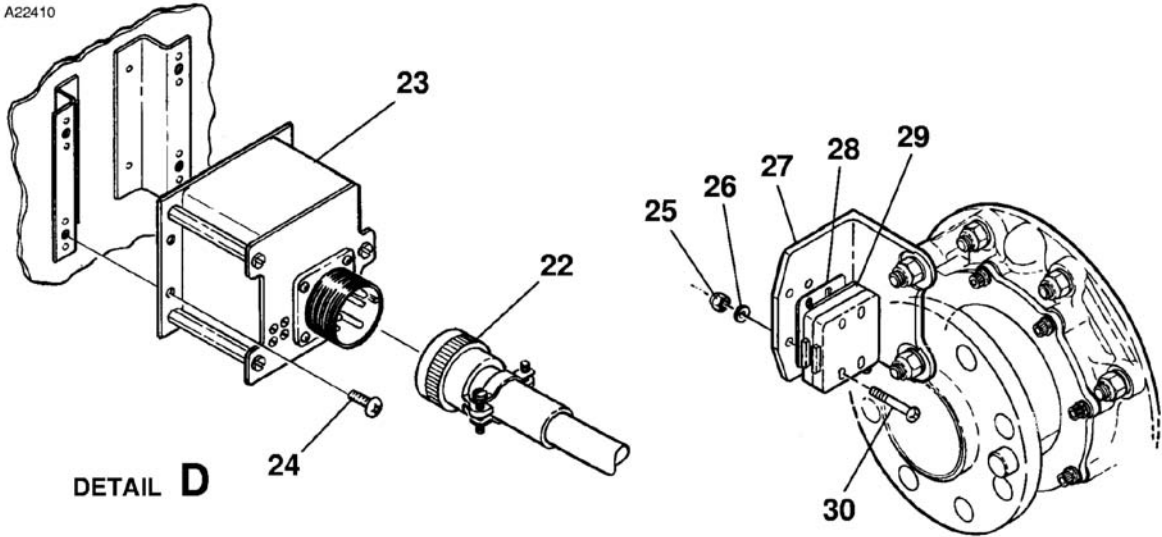
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- 7. NUT
- 8. WASHER
- 9. BEVELED WASHER
- 10. BUTTONHEAD SCREW
- 11. SCREW
- 12. WASHER
- 13. NUT
- 14. WASHER
- 15. CLAMP
- 16. TERMINAL STRIP
- 17. SCREW
- 18. SLIP RING
- 19. FOLLOW UP RING
- 20. PROPELLER ANTI-ICE BOOT
- 21. SPINNER BULKHEAD

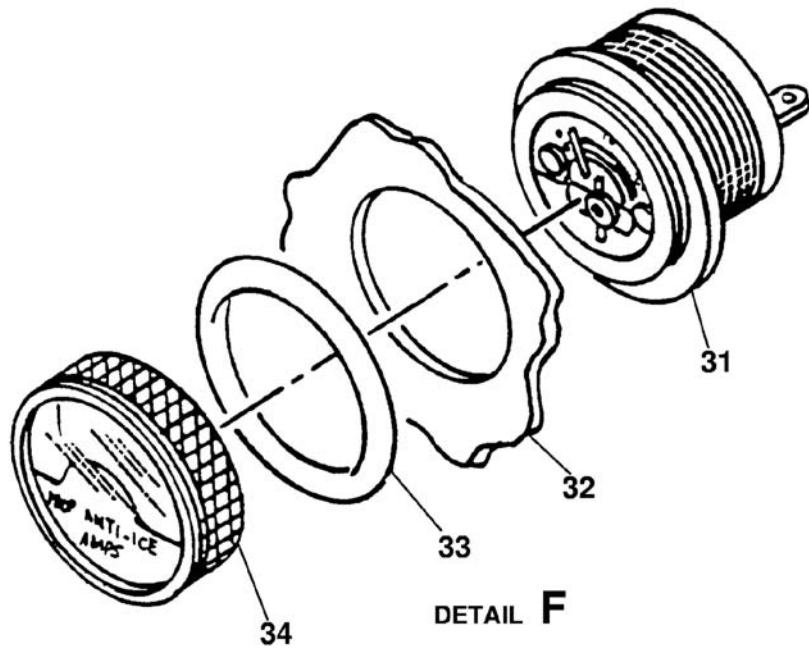
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DETAIL D

DETAIL E
 (HARTZELL)

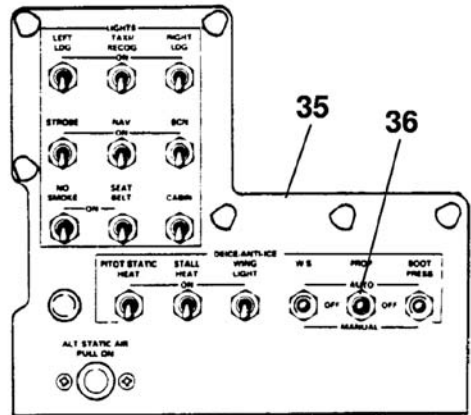


DETAIL F

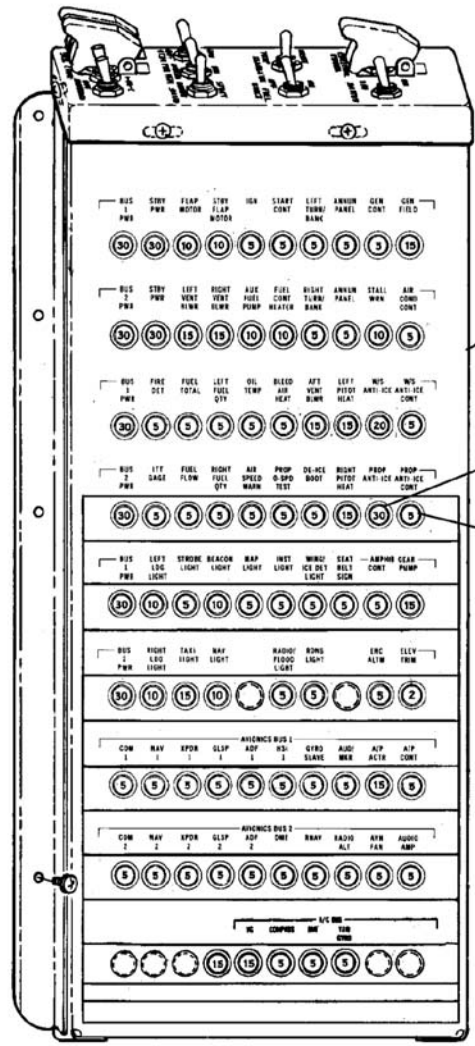
- 22. ELECTRICAL PLUG
- 23. TIMER
- 24. SCREW
- 25. NUT
- 26. WASHER
- 27. MOUNT
- 28. SHIM
- 29. BRUSH BLOCK
- 30. SCREW
- 31. AMMETER BODY
- 32. INSTRUMENT PANEL
- 33. O-RING
- 34. BEZEL

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DETAIL H



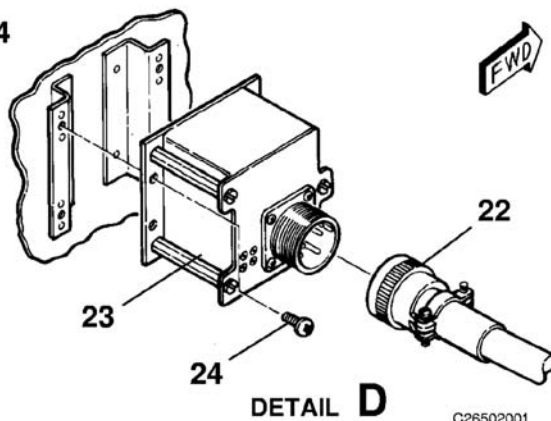
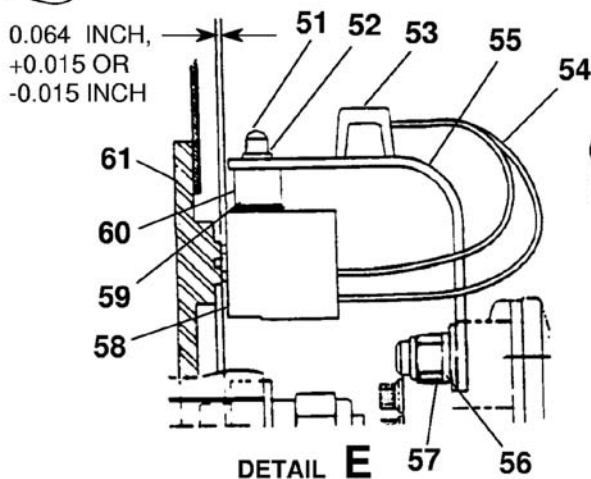
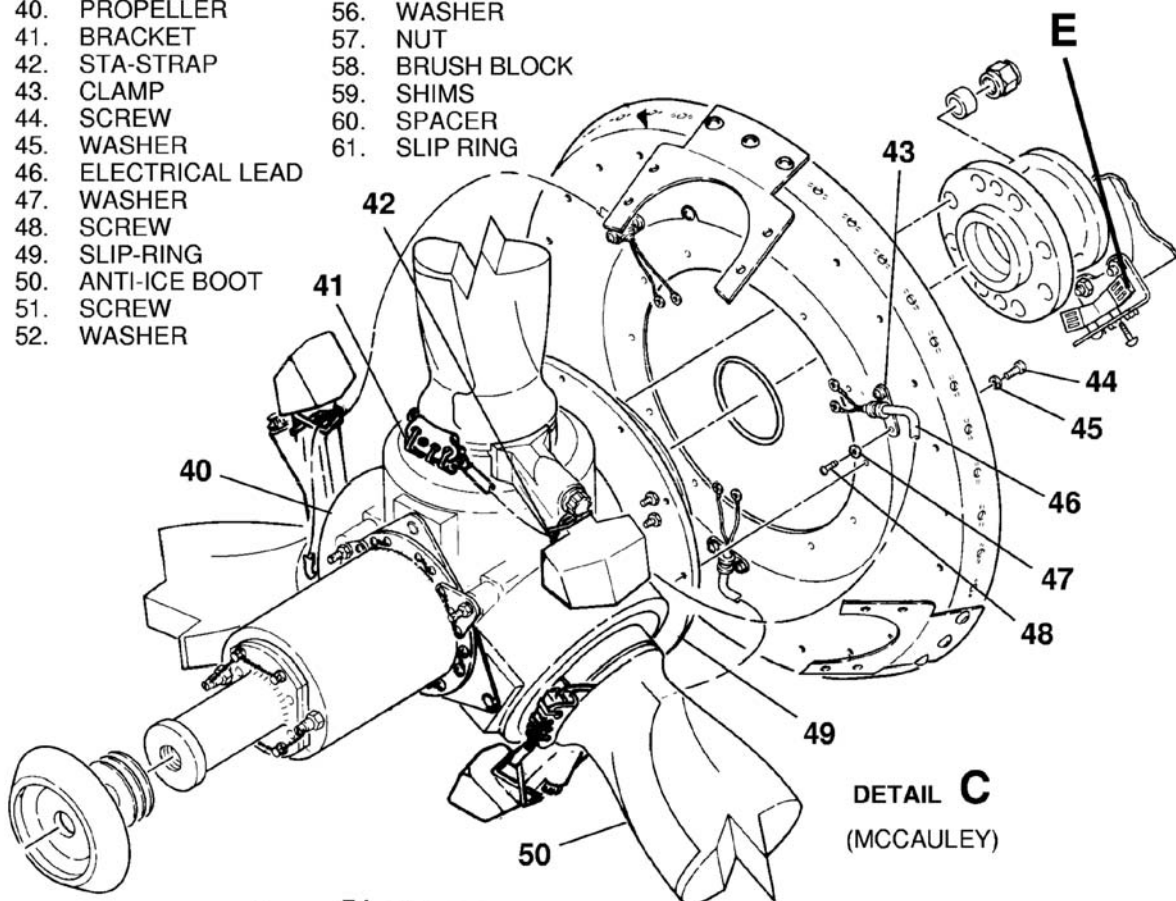
DETAIL G

- 37. CIRCUIT BREAKER PANEL
- 38. PROPELLER ANTI-ICE CIRCUIT BREAKER
- 39. PROPELLER ANTI-ICE CONTROL CIRCUIT BREAKER
- 35. DEICE / ANTI-ICE SWITCH PANEL
- 36. PROPELLER ANTI-ICE SWITCH

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A22413

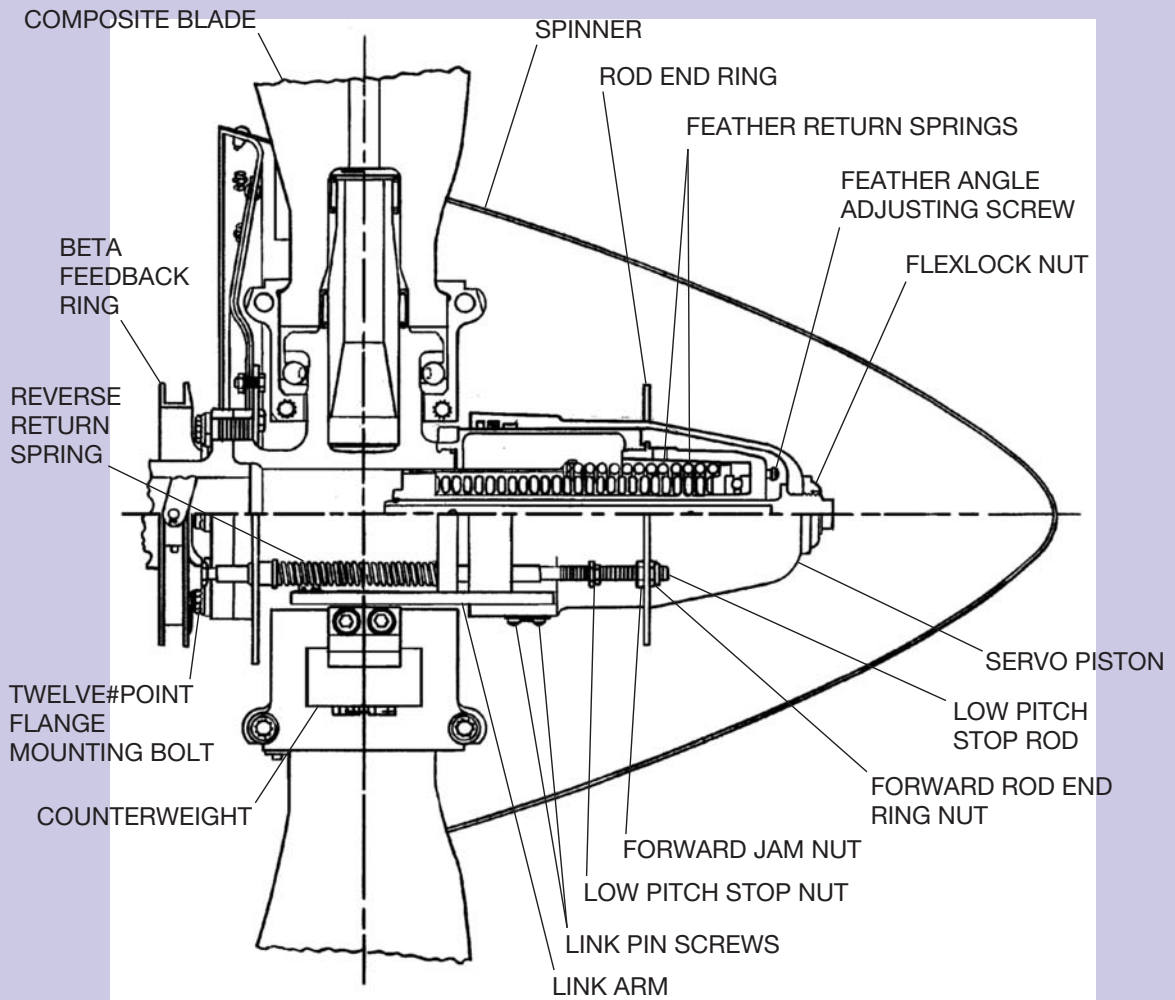
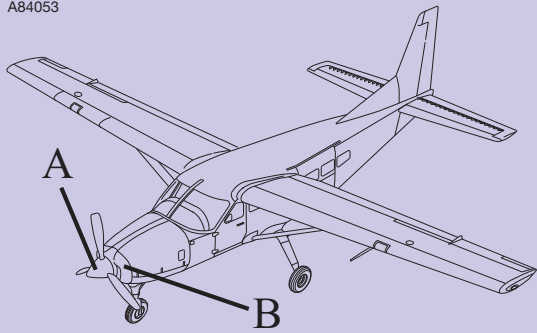
- | | |
|---------------------|----------------------|
| 22. ELECTRICAL PLUG | 53. TERMINAL BLOCK |
| 23. TIMER | 54. ELECTRICAL LEADS |
| 24. SCREW | 55. BRACKET |
| 40. PROPELLER | 56. WASHER |
| 41. BRACKET | 57. NUT |
| 42. STA-STRAP | 58. BRUSH BLOCK |
| 43. CLAMP | 59. SHIMS |
| 44. SCREW | 60. SPACER |
| 45. WASHER | 61. SLIP RING |
| 46. ELECTRICAL LEAD | |
| 47. WASHER | |
| 48. SCREW | |
| 49. SLIP-RING | |
| 50. ANTI-ICE BOOT | |
| 51. SCREW | |
| 52. WASHER | |



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Figure 601. Propeller and Spinner Installation - Hartzell

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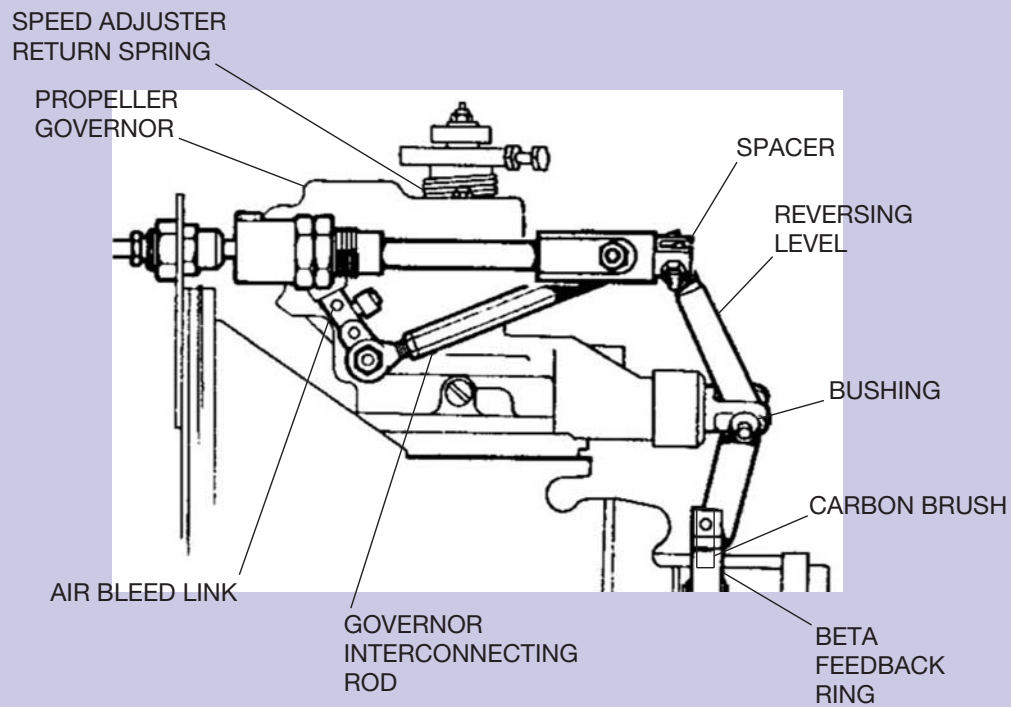


DETAIL A

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A2655R1012

Sheet 1 of 2

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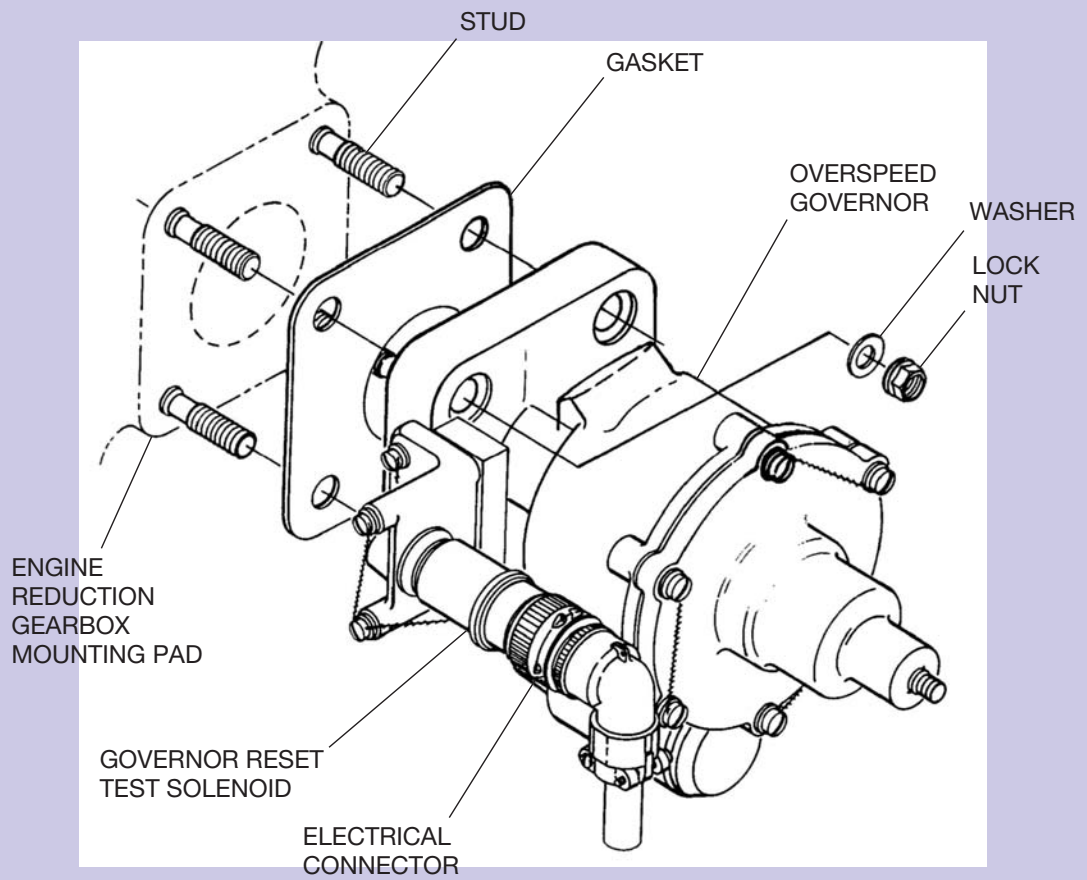
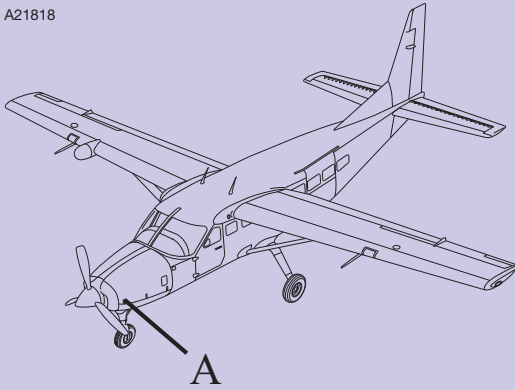


DETAIL B

B2615R1033

Figure 201. Propeller Overspeed Governor Installation

A21818



DETAIL A

2610T7005
A2655R1024

Sheet 1 of 1

Task 61-11-00-720

2. McCauley Propeller Functional Check

A. General

- (1) This task gives the information needed to do the functional check of the McCauley propeller.

B. Special Tools

- (1) Mild Soap and Water.
- (2) Stoddard Solvent or equivalent.
- (3) Isopropyl Alcohol.

C. Access

- (1) Remove the nose cap to get access to the propeller governor. Refer to Chapter 71, Engine Cowling and Nose Cap - Maintenance Practices.
- (2) Remove the upper left cowling door to get access to the overspeed governor. Refer to Chapter 71, Engine Cowling and Nose Cap - Maintenance Practices.

NOTE: The propeller spinner is removed after the propeller is washed for the inspection.

D. Do a McCauley Propeller Detailed Inspection.

- (1) Examine the propeller blades for any openings in the aluminum material before you wash the blades.
- (2) Wash the propeller blades and the boots with mild soap and water before you start the inspection.

CAUTION: Do not let the soap solution come into contact with the hub. The soap solution can contaminate the O-ring that is installed in the hub.

- (3) Put a mark on the spinner and the bulkhead to record the alignment for the next installation.
 - (a) Do not use a lead pencil.
- (4) Remove the propeller spinner. Refer to Propeller (McCauley) - Maintenance Practices .
 - (a) Make sure that you keep the front spinner support spacers for the next installation of the spinner.
- (5) Be careful to not remove the spinner index mark when you clean the spinner and the bulkhead.
 - (a) Clean the spinner and the bulkhead with Stoddard solvent to remove all oil and grease before you start the inspection.
- (6) If installed, clean the de-ice slip ring assembly and the de-ice brush block with isopropyl alcohol, Stoddard solvent, or equivalent.

E. Examine the Spinner and Bulkhead

- (1) Examine the accessible surface of the bulkhead and the inner and outer spinner surface for condition, cracks, corrosion, and fractures.
- (2) Examine the spinner bulkhead, spinner bulkhead support, spinner attach screws, and spinner attach nutplates for condition, corrosion, and wear.
- (3) Examine the attach holes in the spinner for cracks and hole elongation.
- (4) Examine the spinner fillets for condition, cracks, corrosion, and security.
- (5) Examine the balance weights for condition, corrosion, security, and correct installation. Refer to Final Weight Installation found in Dynamic Balancing (McCauley) - Adjustment/Test.
- (6) Visually examine the spinner dome surface and the bulkhead for burned spots, pits, or other signs of a lightning strike.
 - (a) If there are signs of a lightning strike, refer to Chapter 5, Unscheduled Maintenance Checks, Lightning Strike.
- (7) If installed, examine the deice leads for condition, chafing, and security.
- (8) For airplanes with TKS ,examine the feed shoes, slinger ring, propeller feed nozzle, propeller nozzle bracket, fitting, and propeller hose assembly for condition, corrosion, security, and correct installation. Refer to Chapter 30, TKS Anti-Ice Propeller (McCauley) - Maintenance Practices.

- (a) Make sure that the feed nozzle is extended into the slinger ring channel with an edge distance of 0.10 to 0.15 inches (2.54 to 3.81 mm) from the slinger ring. If necessary adjust. Refer to Chapter 30, TKS Anti-Ice Propeller (McCauley) - Maintenance Practices.
- (b) Turn the propeller slowly by hand and make sure that the distance between the slinger ring and the feeder tube stays in an alignment tolerance of 0.10 to 0.15 inches (2.54 to 3.81 mm). Refer to Chapter 30, TKS Anti-Ice Propeller (McCauley) - Maintenance Practices.
- (c) While turning the propeller, make sure that the propeller feeder nozzle is spraying on the second groove of the adjacent feed shoe when the propeller is in full fine pitch and that each tube has a 3/16 inch (4.76 mm) clearance from the propeller boot. Refer to Chapter 30, TKS Anti-Ice Propeller (McCauley) - Maintenance Practices.

F. Examine the Blades.

- (1) Examine all blades and blade surfaces for condition, gouges, scratches, corrosion, erosion, cracks, nicks, evidence of lightning strikes, and security.
 - (a) If there are signs of a lightning strike, refer to Chapter 5, Unscheduled Maintenance Checks, Lightning Strike.
- (2) Examine all blade attachment points for oil leaks.

CAUTION: Oil leaks from the propeller or the engine can get on the wing, wing struts, and/or the horizontal stabilizer deice boots and cause damage.

- (3) Examine the cylinder attachment point for oil leaks.
 - (a) If oil is coming from the area of the beta spring housing, the piston seal is possibly leaking. Remove the propeller from service and return it to a McCauley authorized repair facility. Refer to Propeller (McCauley) - Maintenance Practices .
- (4) Examine the area around the beta rod (3 each) bushings for oil leaks.

NOTE: The propeller hub is filled with turbine oil of the same type that is used in the engine. There are NO grease fittings on this propeller.

NOTE: Oil leaks found around the propeller mounting flange can or can not come from the flange. Other items such as the governor beta valve, or prop shaft seal can cause the oil leaks.

- (5) Examine the propeller mounting area for oil leaks.
- (6) Examine the viewable area of the engine propeller shaft seal just aft of the spinner bulkhead.
- (7) If installed, examine the anti-ice boots for abrasions, exposed heating elements, cuts, nicks, and security of attachment.
 - (a) Examine the wiring from the boots to the terminal strips on the spinner bulkhead for condition, chafing, correct routing, and security of attachment at all clamps.
 - (b) Examine the connector between the boot and the wire harness for security of attachment.
 - (c) Examine the wire harness connectors at the terminal strips for condition and security of attachment.
 - (d) Examine the boot edge dressing for condition.
 - 1 If necessary, touch-up damaged or exposed areas.
- (8) Examine the terminal strips for condition and security of attachment to spinner bulkhead.
- (9) For airplanes with TKS, examine the feeder boots for abrasions, cuts, nicks, and security of attachment.

G. Examine the Hub (Refer to Figure 601).

- (1) Examine the exposed area for condition, cracks, corrosion, and security of the components to the hub.
- (2) Examine the hub for oil leaks at the blade butts and the mount flange.
- (3) Examine the feathering spring housing for condition, cracks, corrosion, and security.
- (4) Examine the cylinder for condition, oil leaks at mount flange, and security of attachment.
- (5) Visually examine the propeller for security of installation.
- (6) Examine the attach nuts for condition and that each stud has a spacer under the elastic attach nut.
- (7) Visually examine the nuts for security.

NOTE: The nut installation is correct if the torque putty on the nuts is not broken.

- (a) If you are not sure that the installation is correct, torque the nuts again, and apply new torque putty. Refer to Propeller (McCauley) - Maintenance Practices .

H. Examine the Beta System Feedback Collar (Refer to Figure 601).

- (1) Examine the beta feedback collar for condition, corrosion, and security of installation.
- (2) Examine the reversing lever for condition and security.
- (3) Examine the reversing lever for free play.
 - (a) If there is free play at the beta valve, remove the clevis pin and examine the sleeve bushing for signs of wear at the attach location.
 - 1 If there is wear, replace the bushing.
 - (b) If the lever has free play at the beta cable clevis, remove bolt at the clevis and examine the sleeve spacer for signs of wear at the attach point.
 - 1 If there is wear, replace the spacer.
- (4) Examine the alignment pin for condition and security.
- (5) Examine the carbon brush for wear and signs of damage.
- (6) To examine the carbon brush for wear, do the steps that follow:
 - (a) Hold the carbon brush against the feedback collar.
 - (b) Turn the feedback collar and measure the clearance between the carbon brush and the feedback collar around the full circumference of the feedback collar.

NOTE: The clearance between the brush and the feedback collar must not be more than 0.010 inch (0.254 mm) at any area around the full circumference of the collar.

CAUTION: Do not turn the elastic low pitch stop nuts installed on the beta rods.

- (7) Examine the beta rods (3 each) for condition and security.
 - (a) The beta rod locknuts are installed correctly if the torque putty has not been disturbed.
- (8) Examine the varistor installed near the center at the top of the forward side of the firewall for condition and security of installation.
- (9) Examine the electrical connections for condition, routing, signs of chaffing, and security.
- (10) Discoloration of the varistor or the electrical leads, or a failure can be a sign that a lightning strike has occurred.
 - (a) If you think that there was a lightning strike to the airplane, refer to Chapter 5, Unscheduled Maintenance Checks, Lightning Strike.

I. Examine the Propeller Governor (Refer to Figure 601).

- (1) Examine the propeller governor for condition, oil leaks, and security.
 - (a) Make sure that the hardware is safety wired except for the four self-locking attach nuts.
- (2) Examine the speed adjusting lever return spring for condition and security.
- (3) Examine the air bleed link for corrosion, condition, and security.
- (4) Examine the governor interconnecting rod for corrosion, condition, security and wear.
- (5) Make sure that the rod end bearings turn freely and do not bind.
- (6) Examine all hardware for corrosion, condition, and correct safety.

NOTE: It is not necessary to safety wire the four self locking mounting nuts.

J. Examine the Propeller Cable Terminal Rod End (Refer to Chapter 76, PT6A-114/-114A Engine Rigging - Adjustment/Test, Figure 510).

- (1) Disconnect the rod end from the propeller speed adjusting lever. Refer to Chapter 76, Propeller Control - Maintenance Practices.
- (2) Wipe the rod end clean with a clean lint-free cloth.
- (3) Examine the rod end for corrosion, pitting, and cleanliness.
- (4) Lubricate the rod end ball with MIL-L-7870.
- (5) Connect the rod end to the adjusting lever. Refer to Chapter 76, Propeller Control - Maintenance Practices.

K. Examine the Overspeed Governor (Refer to Figure 601).

NOTE: Verify part number of governor to complete engine run portion of functional check.

- (1) Examine the overspeed governor for condition, oil leaks, and security.
 - (a) Make sure that the hardware is safety wired except for the four self-locking attach nuts.
- (2) Examine the electrical wiring and the electrical connection at the test solenoid for signs of damage, correct wire routing, and security.
- (3) Examine the governor reset test solenoid for condition and security.
- (4) Install the upper left cowling door. Refer to Chapter 71, Engine Cowling and Nose Cap - Maintenance Practices.
- (5) Install the nose cap. Refer to Chapter 71, Engine Cowling and Nose Cap - Maintenance Practices.
- (6) Install the propeller spinner. Refer to Propeller (McCauley) - Maintenance Practices .
 - (a) Make sure that the correct number of spacers between feathering spring housing and spinner support are installed at the locations that were recorded during the removal of the spinner.
- (7) Do the Propeller Overspeed Governor Functional Check. Refer to Propeller Control - Maintenance Practices.

L. Restore Access

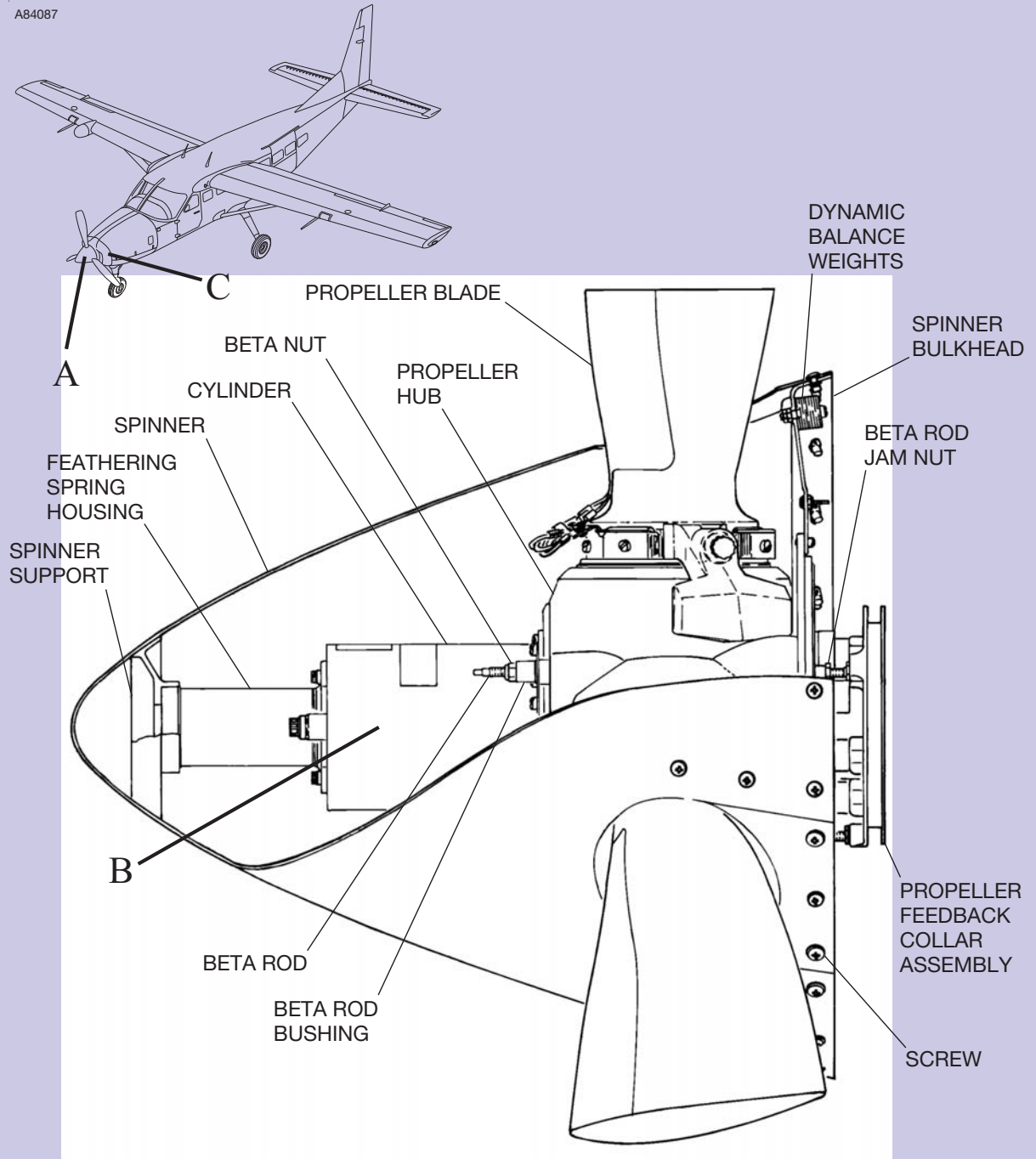
NOTE: The propeller spinner, nose cap, and upper left cowling door were installed before the functional check.

- (1) None

End Task

Figure 601. Propeller and Spinner Installation - McCauley

A84087

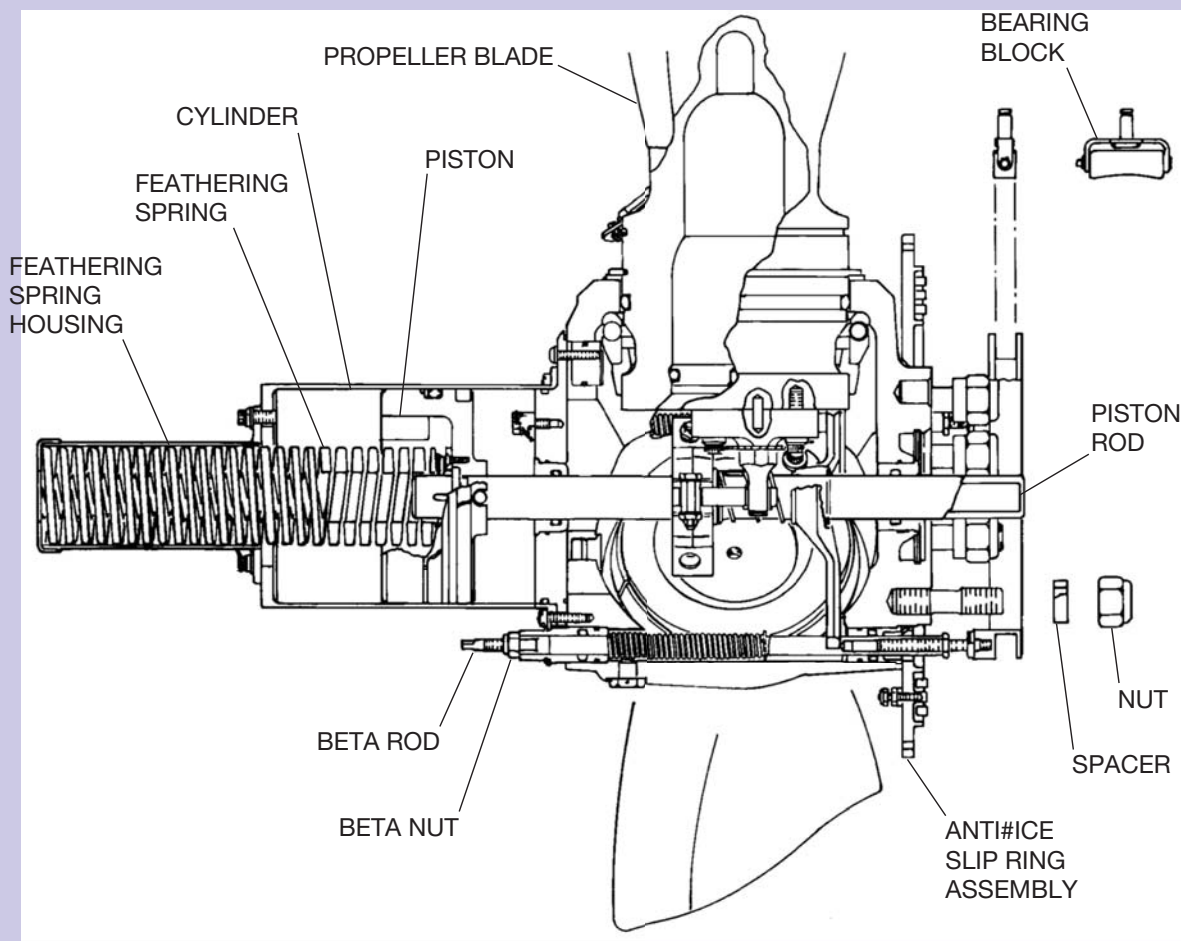


DETAIL A

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A2655R1020

Sheet 1 of 3

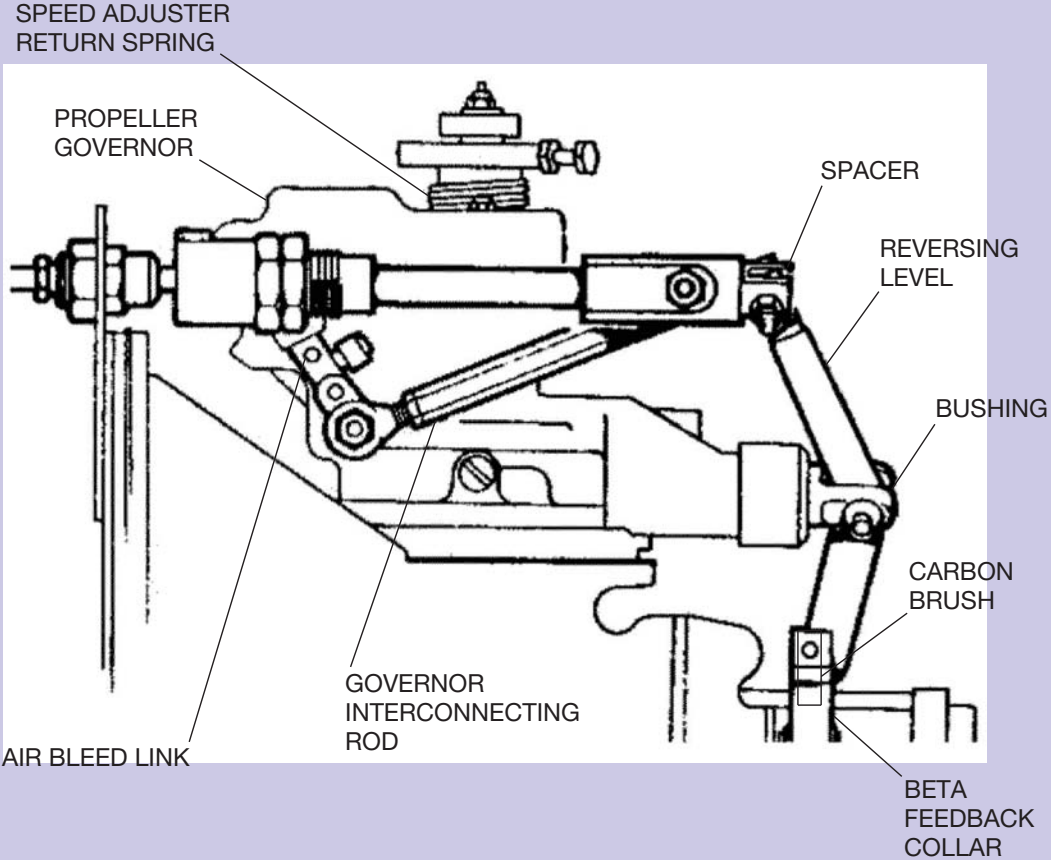
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DETAIL B

B2655R1021

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DETAIL C

C2615R1033

Task 71-20-00-220

2. Engine Mounts and Firewall Detailed Inspection

A. General

- (1) This task gives the procedures to do a detailed inspection of the engine mounts, ground straps, and firewall.

B. Special Tools

- (1) None

C. Access

- (1) Remove the engine cowlings. Refer to Engine Cowling and Nose Cap - Maintenance Practices.

D. Do a Detailed Inspection of the Tubular Mounts (Refer to Figure 201 found in Engine Mount - Maintenance Practices).

- (1) Examine the areas that follow for condition, cracks at welds, distortion, corrosion, and security of attachment:
 - Engine truss tube surface
 - Areas around the engine truss welds
 - Right and left side landing gear junctions
 - Engine truss to firewall attach bolts
 - ECTM instrument box (if applicable) attachment area at lower right side of truss
 - Lower truss tube and ignition exciter box attachment area at the right side of truss.
- (2) Examine the ground straps, attach bolts (5 ea.), and mount bolts (4 ea.) for security of installation.
 - (a) The mount bolts to engine mount ring must have the nuts installed against the mount ring (bolt heads aft) with cotter pins installed.

E. Do a Detailed Inspection of the Engine Shock Mounts.

- (1) Examine the engine upper, right, and left side mount brackets, ground straps, engine mounts, mount bolts and engine mount to engine ring attach bolts for condition, security, cracks, corrosion, and deterioration of elastomers.

NOTE: Mount brackets on airplanes 2080001 Thru 20800187 and 208B0001 Thru 208B0216 must be modified per CAB90-7 Rev.1 for improved drainage and mount bolt lubrication to aid in preventing corrosion.

- (2) Examine the elastomer closely where the rubber material is bonded to the plate for signs of separation.
 - (a) If separation is found, replace the elastomer.
- (3) If replacement of the elastomer is necessary, do the following with the components removed.
 - (a) Examine the mount bracket for condition, cracks, and corrosion.
 - (b) Examine the attaching bolt and nut for condition and corrosion.
 - (c) Examine the spacer and shims for condition and wear.
 - (d) When installing, make sure that the chamfer of the special washer is against the shoulder of the bolt head.

CAUTION: The mount bolt is an internal wrenching type. Where the shank meets the head there is a radius shoulder that must mate with the chamfer of the special washer. Incorrect installation of these parts could cause the head of the bolt to break off.

F. Do a Detailed Inspection of the Firewall Structure.

- (1) Examine the forward surface of the firewall for corrosion, condition, cracks, missing rivets, and signs of damage.
- (2) Examine the sealant for overall condition at the fittings where items pass through the firewall skin.

- (a) If sealant is found unserviceable, replace the sealant. Refer to Chapter 20, Fuel, Weather and High-Temperature Sealing - Maintenance Practices.

CAUTION: The firewall is sealed at skin overlaps and joints with a fire resistant sealant. Where items pass through the firewall such as control cables and wire harnesses, fittings are sealed with a white ablative type fire resistant sealant (DAPCO U000117).

- (3) Examine the brackets and fittings attached to the forward side of the firewall for condition, corrosion, and security.

G. Restore Access

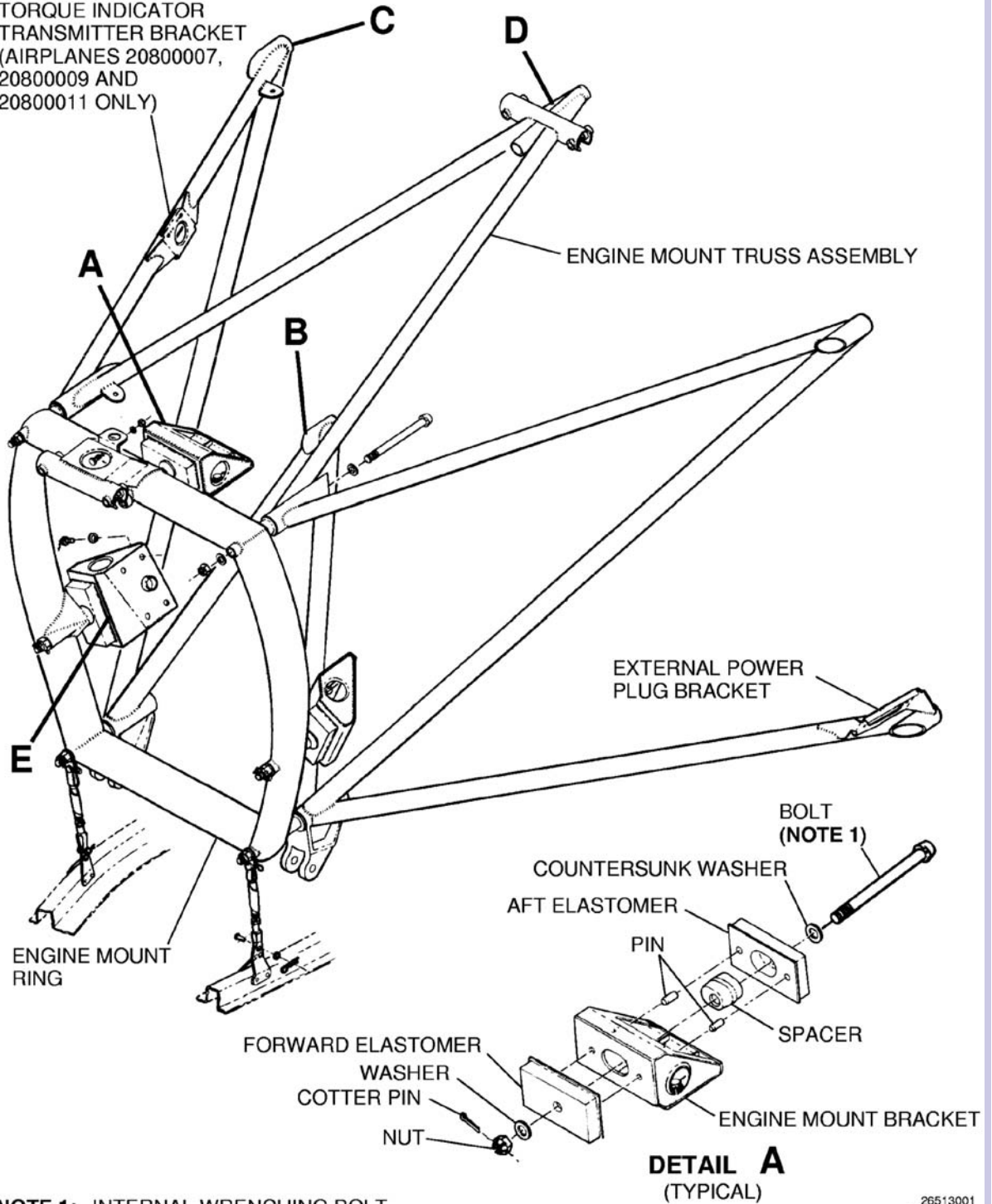
- (1) Install the engine cowlings. Refer to Engine Cowling and Nose Cap - Maintenance Practices.

End Task

Figure 201. Engine Mount

A21777

TORQUE INDICATOR
TRANSMITTER BRACKET
(AIRPLANES 20800007,
20800009 AND
20800011 ONLY)

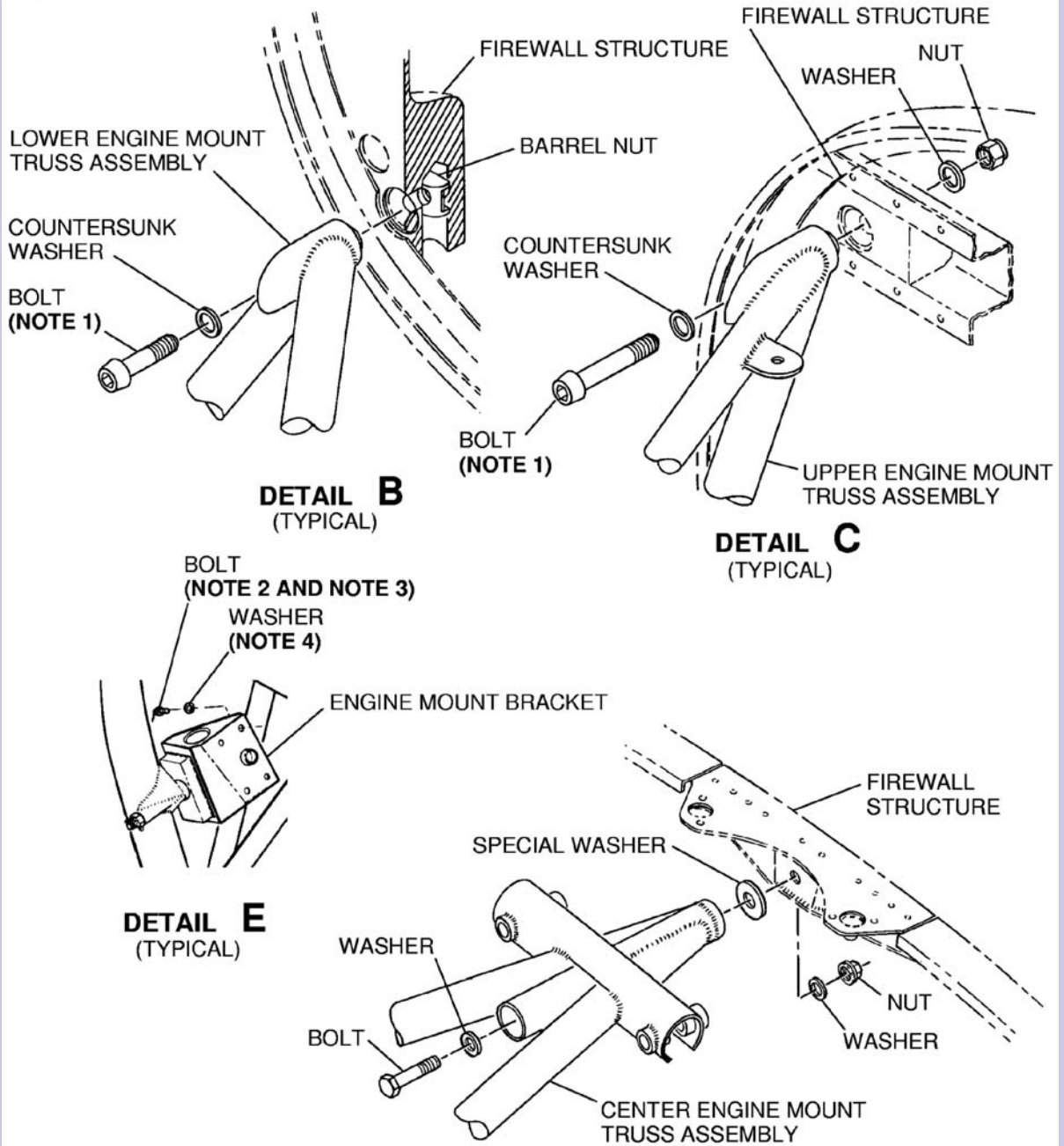


NOTE 1: INTERNAL WRENCHING BOLT

26513001
A2651R1006

Sheet 1 of 2

A21780



DETAIL B
(TYPICAL)

DETAIL C
(TYPICAL)

DETAIL E
(TYPICAL)

DETAIL D

- NOTE 1:** INTERNAL WRENCHING BOLT
- NOTE 2:** TORQUE TO A RANGE FROM 275 TO 300 INCH-POUNDS
- NOTE 3:** HEX HEAD BOLT OR INTERNAL WRENCHING BOLT
- NOTE 4:** FLAT WASHER WITH HEX HEAD BOLT, COUNTERSUNK WASHER WITH INTERNAL WRENCHING BOLT

B26511002
C26511003
D26511004
E26513001

Task 71-60-00-220

2. Inertial Air Separator Detailed Inspection

A. General

- (1) This task gives the procedures to do a detailed inspection of the inertial air separator.

B. Special Tools

- (1) None

C. Access

- (1) Open the upper cowling doors. Refer to Engine Cowling and Nose Cap - Maintenance Practices.
- (2) Remove the lower cowling panels. Refer to Engine Cowling and Nose Cap - Maintenance Practices.

D. Do the Inertial Air Separator Detailed Inspection (Refer to Figure 601).

- (1) Put the inertial separator vanes in the bypass mode.
- (2) Use a flashlight and a mirror to do an inspection of all rivets on both sides of the forward and the aft inertial separator vanes to find if rivets are loose or missing.
 - (a) If there are loose or missing rivets, do the Rivet Replacement in this section.
 - (b) If there are no loose or missing rivets, do the Restore Access in this section.

E. Rivet Replacement.

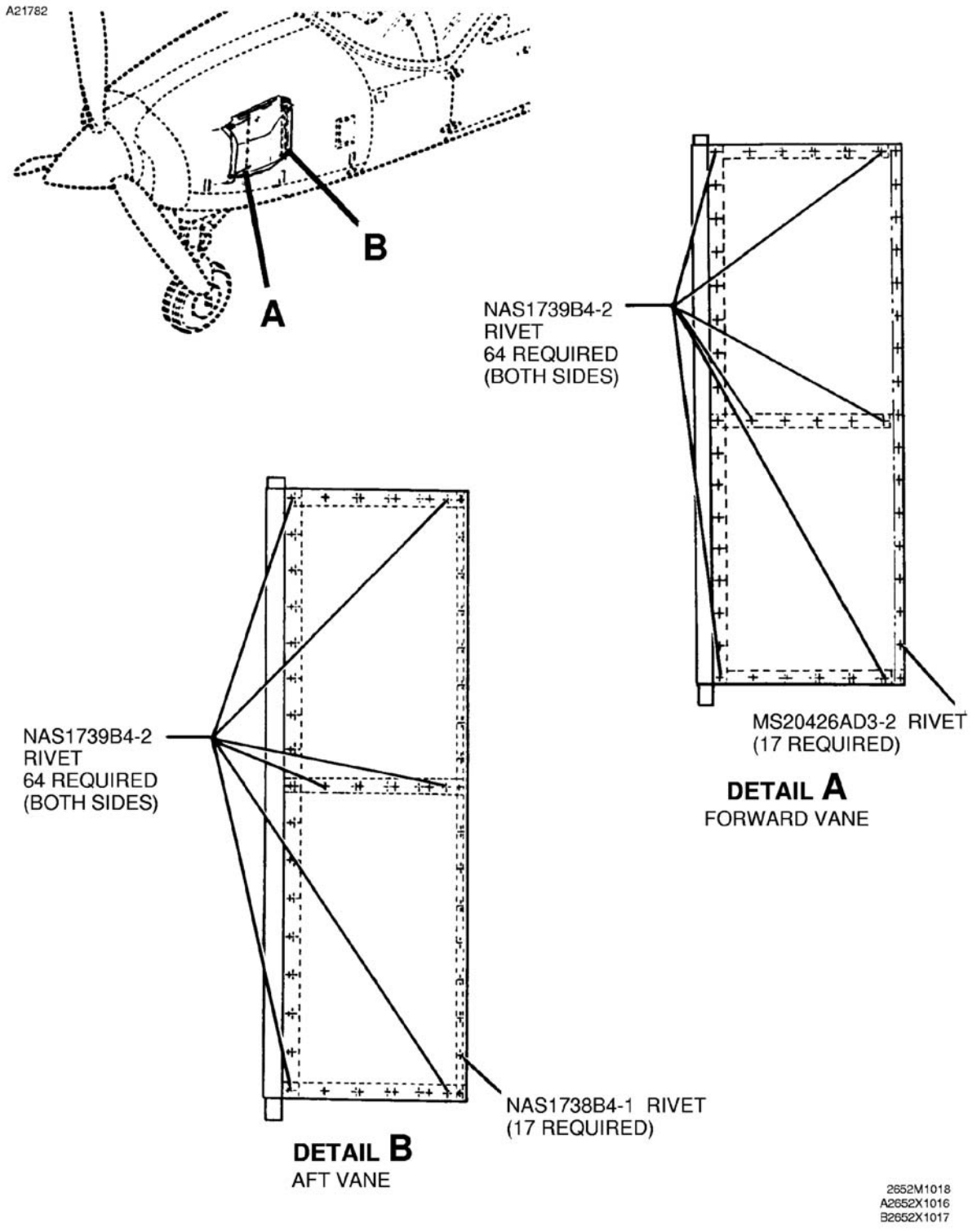
- (1) Remove the inertial separator and forward and/or aft vanes.
- (2) Examine the inertial air separator vanes for loose or missing rivets.
- (3) If there are missing rivets, do the steps that follow:
 - (a) Examine the induction air plenum and the engine inlet areas for the missing rivet(s) and debris.
 - (b) Examine the engine for foreign object damage (FOD). Refer to the Pratt & Whitney PT6A-114 Engine Maintenance Manual.
- (4) Replace all loose or missing rivets with same type rivet. If necessary, it is possible to use the next size larger diameter rivet.
- (5) Reinstall the forward and/or aft vanes.
- (6) Thoroughly clean any debris from the inside of the inertial separator.
- (7) Reinstall the inertial separator.

F. Restore Access

- (1) Install the lower cowling panels. Refer to Engine Cowling and Nose Cap - Maintenance Practices.
- (2) Close the upper cowling doors. Refer to Engine Cowling and Nose Cap - Maintenance Practices.

End Task

Figure 601. Inertial Air Separator Detailed Inspection



Sheet 1 of 1

Task 76-10-00-720

2. Engine Controls Functional Check

A. General

- (1) This task gives the procedures to do a functional check of the engine controls.

B. Special Tools

- (1) MIL-L-7870 lubricant, or equivalent.

C. Access

- (1) None

D. Do a Engine Power Lever Detailed Inspection. For illustrations of the power lever, refer to Quadrant Assembly and Controls - Maintenance Practices, Figure 202.

- (1) Examine the power control cable from the power lever to the cam box input lever for security of installation, wear, corrosion, routing, evidence of damage, and deterioration.
 - (a) Examine the cable for security at the firewall jam nut.
 - (b) Examine all cable attach brackets for condition and security.
- (2) Examine the rubber seals at the end of the flex cable for condition, security, and deterioration.
- (3) Disconnect the rod end from the lever arm. Refer to Quadrant Assembly and Controls - Maintenance Practices.
 - (a) Wipe the rod end clean using a clean lint-free cloth.
 - (b) Examine the rod end bearing for condition, corrosion, pitting, security, and freedom of movement.
 - (c) Lubricate the rod end ball with MIL-L-7870 oil or an equivalent.
- (4) Examine the lever arm for condition and security.
- (5) Connect the rod end to the lever arm. Refer to Quadrant Assembly and Controls - Maintenance Practices.
- (6) Examine the rod end clevis at the engine power control lever for condition, security, and freedom of movement.
- (7) Adjust the friction lock to ON.
 - (a) Examine the control for positive locking action.
- (8) Adjust the friction lock OFF.
 - (a) Move the control from the IDLE position to the FULL POWER position.
 - (b) Make sure that there is freedom of operation.

E. Do a Fuel Condition Control Lever Detailed Inspection. For illustrations of the fuel condition control lever, refer to Quadrant Assembly and Controls - Maintenance Practices, Figure 202.

- (1) Examine the control cable from the cockpit lever to the governor lever for security of installation, wear, corrosion, routing, evidence of damage, and deterioration.
 - (a) Examine the cable for security at the firewall jam nut.
 - (b) Examine all cable attach brackets for condition and security.
- (2) Examine the rubber seals at the end of the flex cable for condition, security, and deterioration.
- (3) Disconnect the rod end from the lever arm. Refer to Quadrant Assembly and Controls - Maintenance Practices.
 - (a) Wipe the rod end clean using a clean lint-free cloth.
 - (b) Examine the rod end bearing for condition, corrosion, pitting, security, and freedom of movement.
 - (c) Lubricate the rod end ball with MIL-L-7870 oil or an equivalent.
- (4) Examine the lever arm for condition and security.
- (5) Connect the rod end to the lever arm. Refer to Quadrant Assembly and Controls - Maintenance Practices.
- (6) Examine the rod end clevis at the fuel condition control lever for condition, security, and freedom of movement.
- (7) Adjust the friction lock to ON.
 - (a) Examine the control for positive locking action.
- (8) Adjust the friction lock OFF.
 - (a) Move the control from the CUTOFF position to the HIGH IDLE position.

- (b) Make sure that there is freedom of operation.
 - (c) Make sure that the lever on the fuel control contacts the HIGH IDLE stop.
- F. Propeller Speed Control Lever Detailed Inspection. For illustrations of the propeller speed control lever, refer to Quadrant Assembly and Controls - Maintenance Practices, Figure 202.
- (1) Examine the propeller speed control cable from the cockpit lever to the governor lever for security of installation, wear, corrosion, routing, evidence of damage, and deterioration.
 - (a) Examine the cable for security at the firewall jam nut.
 - (b) Examine all cable attach brackets for condition and security.
 - (2) Examine the rubber seals at the end of the flex cable for condition, security, and deterioration.
 - (3) Disconnect the rod end from the lever arm. Refer to Quadrant Assembly and Controls - Maintenance Practices.
 - (a) Wipe the rod end clean using a clean lint-free cloth.
 - (b) Examine the rod end bearing for condition, corrosion, pitting, security, and freedom of movement.
 - (c) Lubricate the rod end ball with MIL-L-7870 oil or an equivalent.
 - (4) Connect the rod end to the lever arm. Refer to Quadrant Assembly and Controls - Maintenance Practices.
 - (5) Examine the rod end clevis at the cable connection to the propeller speed control lever for condition, security, and freedom of movement.
 - (6) Adjust the friction lock to ON.
 - (a) Examine the control for positive locking action.
 - (7) Adjust the friction lock OFF.
 - (a) Move the control from the FEATHER position to the HIGH RPM position.
 - (b) Make sure that there is freedom of operation.
 - (c) Make sure that the lever arm contacts the HIGH RPM stop.
- G. Do a Functional Check of the Engine Power Control Lever.
- (1) Start the engine. Refer to the Model 208 Pilot's Operating Handbook and Approved Airplane Flight Manual.
 - (2) Operate the engine at IDLE for five minutes to let the temperatures stabilize.
 - (3) Put the propeller speed control lever to the MAX forward position.
 - (4) Move the power control lever from IDLE, then slowly aft to the REVERSE position.
 - (5) Make sure that the propeller RPM increases to peak, then decreases 10 RPM to 15 RPM before the gas generator (Ng) begins to increase from idle.
 - (a) If necessary, do the Power Control Lever Reverse Gas Generator (Ng) Pickup Adjustment. Refer to Engine Control Rigging - Adjustment/Test.
- H. Do a Functional Check of the Fuel Condition Control Lever.
- (1) Make sure that the engine temperature is stabilized.
 - (2) Make sure that the power control lever is at IDLE.
 - (3) Make sure that the fuel condition control lever is at LOW IDLE.
 - (4) Put the generator switch to the ON position.
 - (a) Adjust the electrical load to 40 Amperes.
 - (5) Put the BLEED AIR HEAT switch to the ON position.
 - (6) Turn the CABIN HEAT TEMP control knob to the full HOT position.
 - (7) Make sure that the Ng is from 52 percent to 55 percent.
 - (a) If the Ng is not at the specified range, do the Fuel Control Lower Idle Adjustment. Refer to Engine Control Rigging - Adjustment/Test.
 - (8) Put the fuel condition control lever to the HIGH IDLE position.
 - (9) Make sure that the Ng is from 64 percent to 66 percent.
 - (a) If the Ng is not at the specified range, do the Fuel Control High Idle Adjustment. Refer to Engine Control Rigging - Adjustment/Test.
 - (10) Move the fuel condition control lever to the LOW IDLE position.
- I. Do a Functional Check of the Propeller Control Lever Reverse Gas Generator Ng Pickup.
- (1) Make sure that the engine temperature is stabilized.
 - (2) Put the propeller speed control lever to the MAX RPM position.

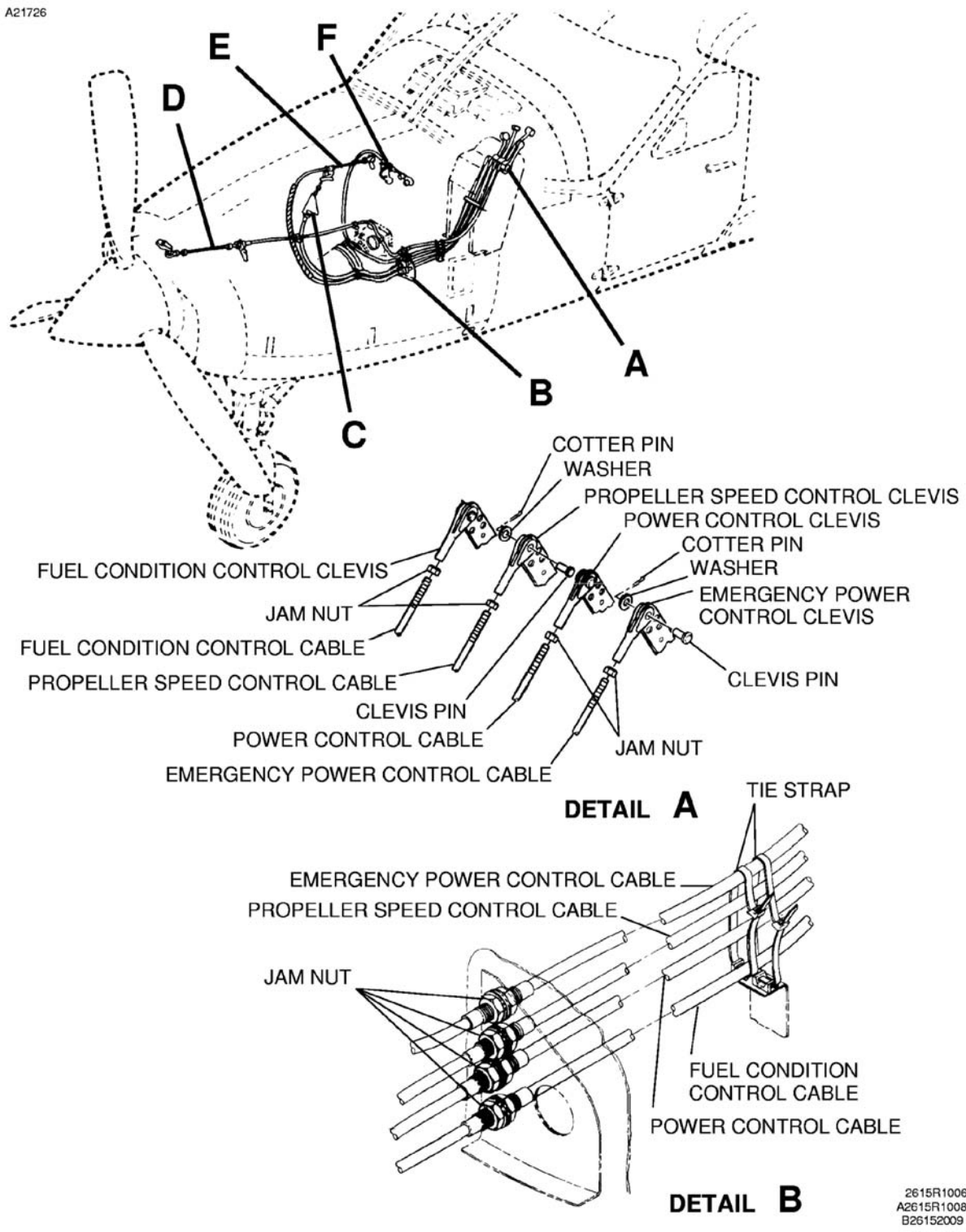
- (3) Put the power lever at the IDLE position (at the detent gate).
- (4) Slowly move the power control lever to the REVERSE position.
 - (a) Make sure that the propeller RPM increases to peak; then decreases 10 to 15 RPM before the gas generator (Ng) begins to increase from idle.
 - (b) If necessary, do the Propeller Speed Control Lever Adjustment. Refer to Engine Control Rigging - Adjustment/Test.
- (5) Move the power lever to the IDLE position.
- (6) Move the propeller speed control lever to the MIN RPM position.
- (7) Shut down the engine. Refer to the Model 208 Pilot's Operating Handbook and Approved Flight Manual.

- J. Restore Access
- (1) None

End Task

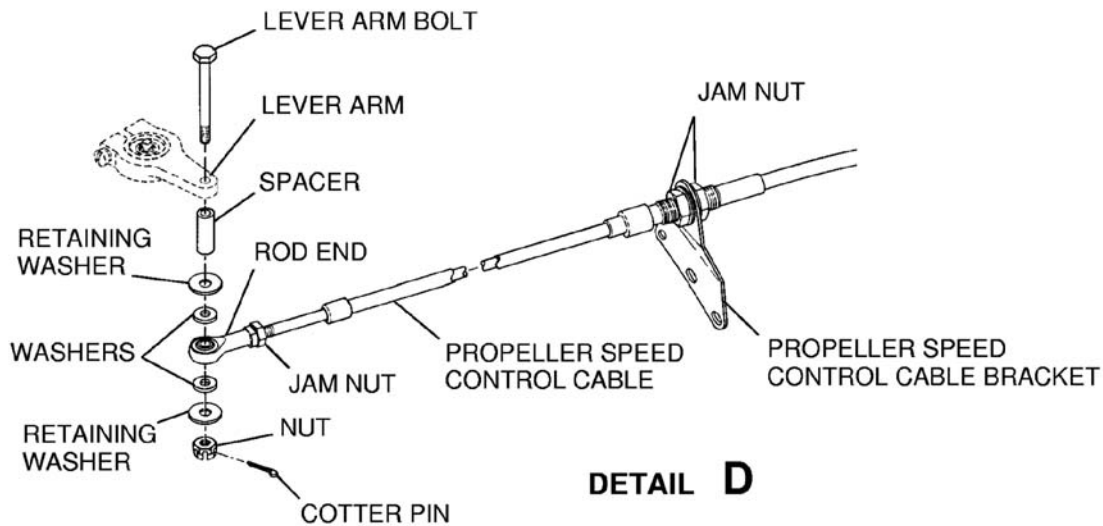
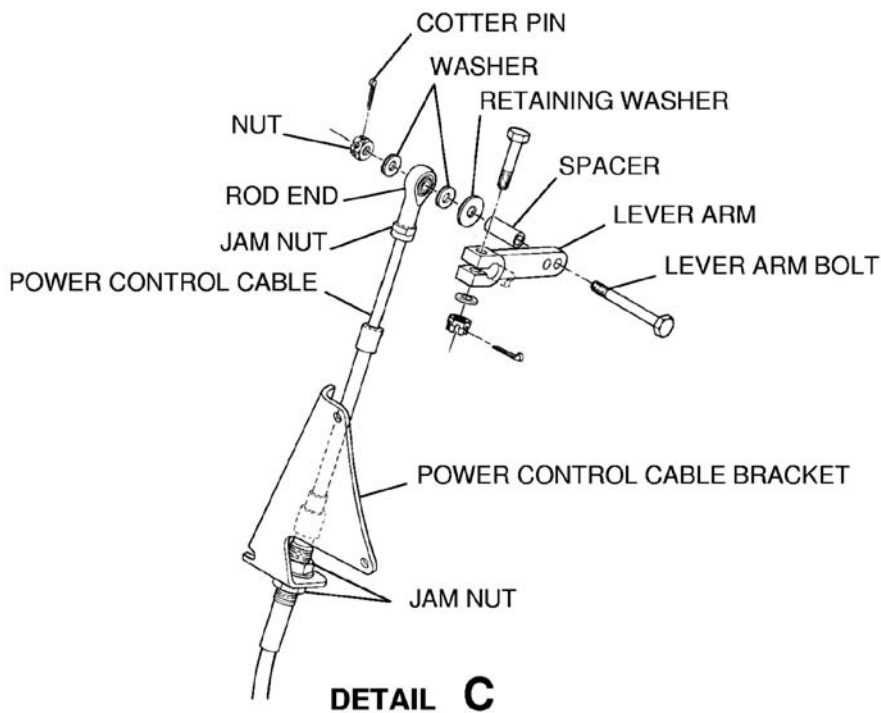
Figure 202. Engine Control Cable Installation

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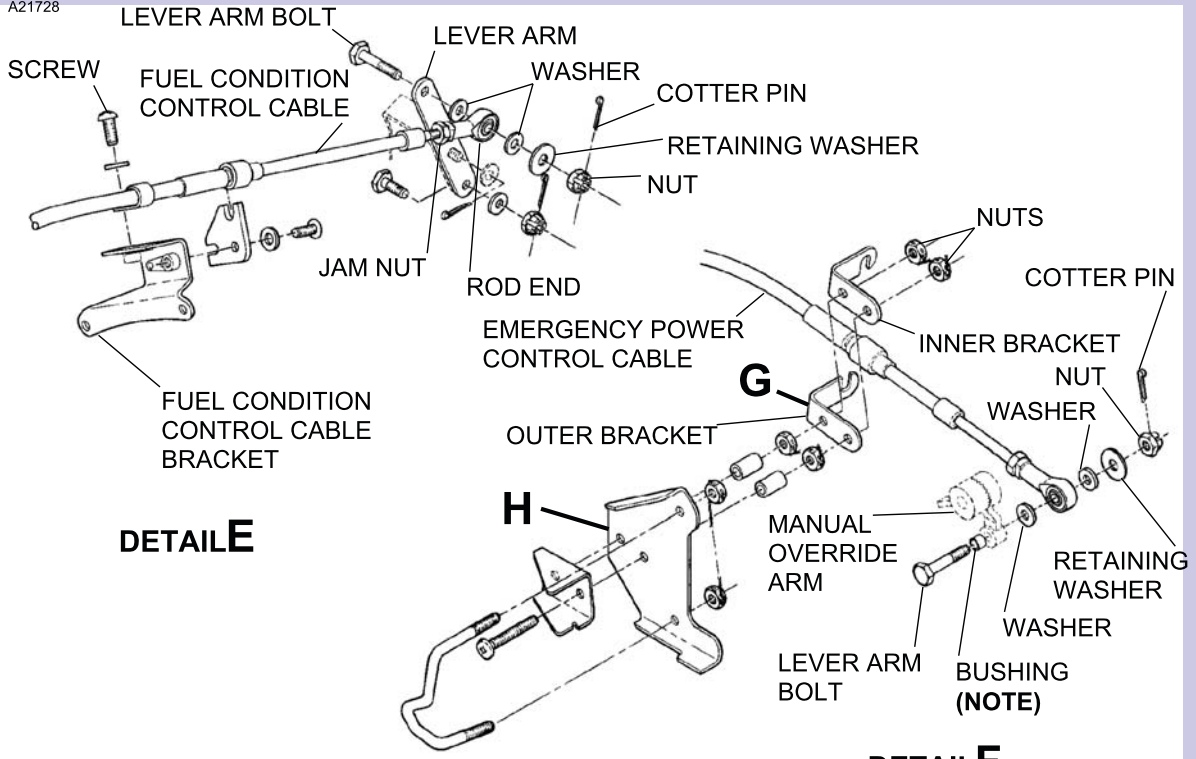
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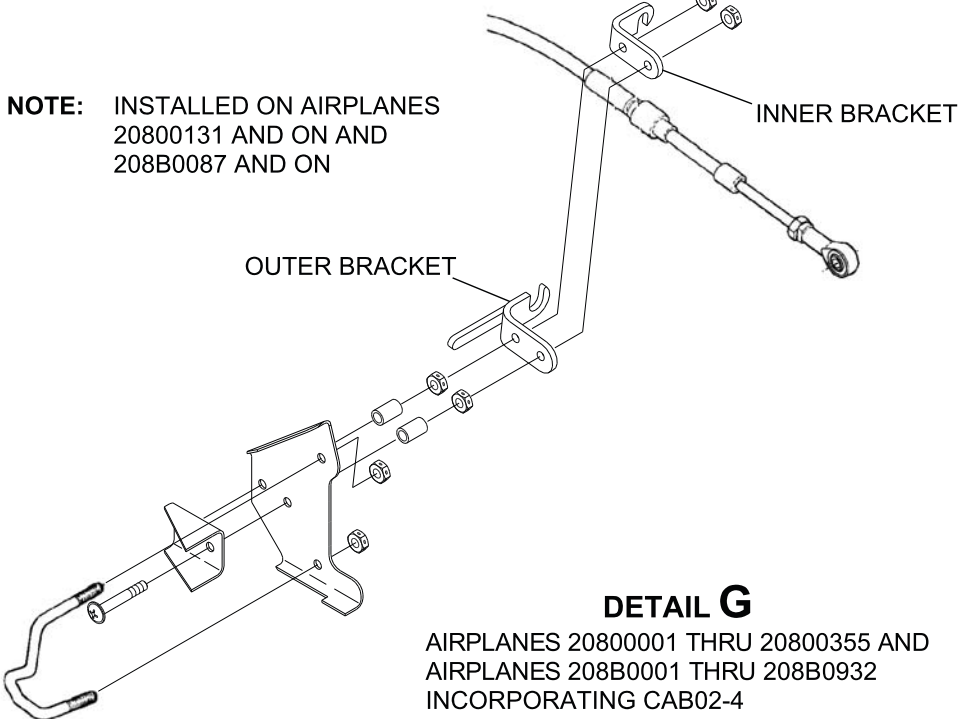
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DETAIL E

DETAIL F

NOTE: INSTALLED ON AIRPLANES
20800131 AND ON AND
208B0087 AND ON

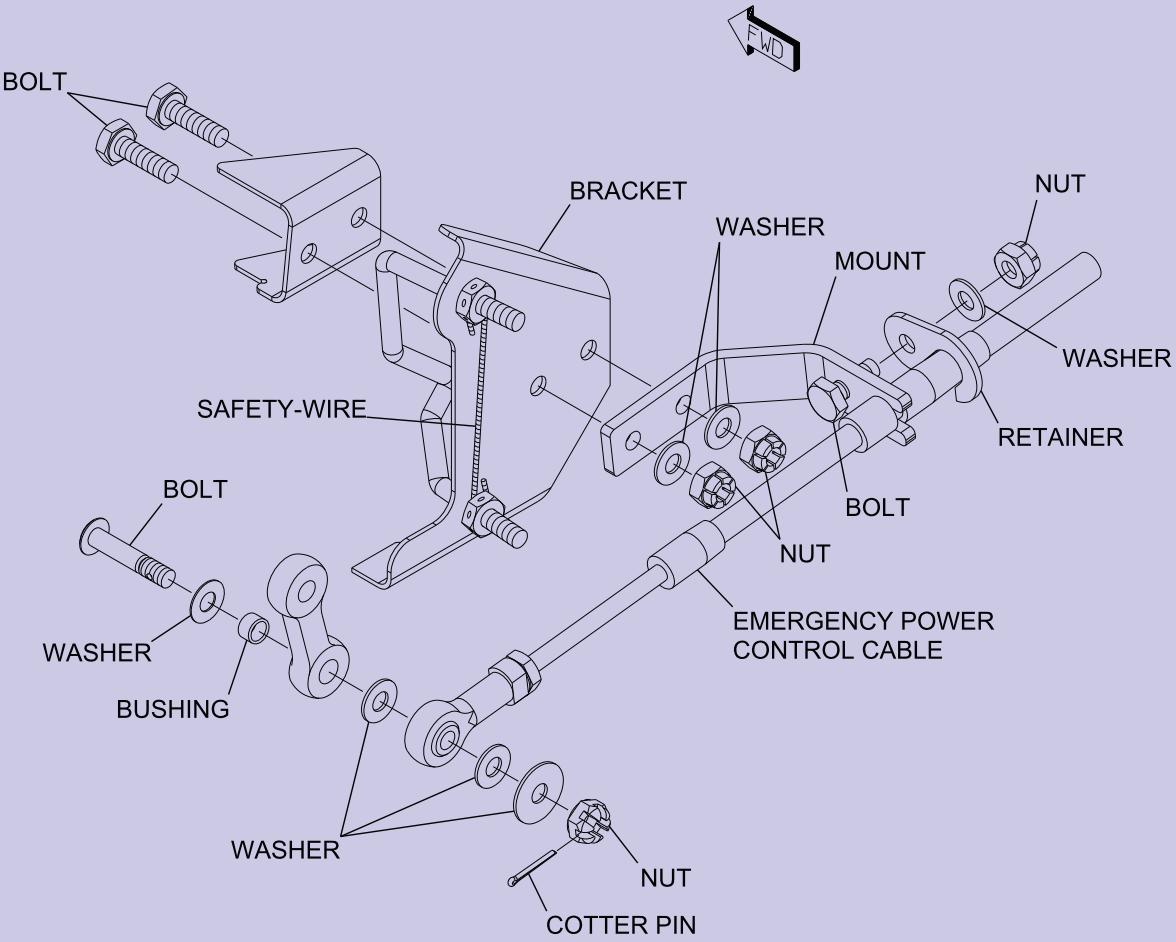


DETAIL G

AIRPLANES 20800001 THRU 20800355 AND
AIRPLANES 208B0001 THRU 208B0932
INCORPORATING CAB02-4

E26152006
F26152005
G2615T2005

A59861



DETAIL H
AIRPLANES 20800396 AND ON AND
AIRPLANES 208B01171 AND ON

H2615T1045

Task 80-10-00-220

2. Starter-Generator (Part Number 23081 Series only) Detailed Inspection

A. General

- (1) This task gives the procedures to do a detailed inspection of the starter-generator (Part Number 23081 Series only).

WARNING: Parts and brushes are not interchangeable between the 23081-023 and 23081-023A.

NOTE: The model 23081-023 starter/generator brushes have a diagonal wear mark that shows when the brush replacement is necessary.

B. Special Tools

- (1) None

C. Access

- (1) Remove the left and right upper cowling doors. Refer to Chapter 71, Engine Cowling and Nose Cap - Maintenance Practices.

D. Do a Detailed Inspection of the Starter-Generator (Part Number 23081 Series Only).

- (1) Examine the starter-generator for condition, security of installation, and signs of overheating.
- (2) Examine the terminal block and the boot for condition, cracks, and security.
- (3) Examine the electrical connections at terminal block for cleanliness, signs of heat or arcing, and signs of damage.
- (4) Examine the quick attach/detach mount for condition, cracks, corrosion, and security of installation.
- (5) Examine the mount clamp for condition, cracks, and security.
- (6) Remove the starter/generator from the airplane. Refer to Starter/Generator - Maintenance Practices.
- (7) Examine the starter-generator brushes and brush holders. Refer to Goodrich Component Manual With Illustrated Parts List, DC Starter-Generator 23081 Series I.
- (8) Clean the starter-generator splines. Refer to Task 80-10-00-160.
- (9) Install the starter/generator. Refer to Starter/Generator - Maintenance Practices.

E. Restore Access

- (1) Install the left and right upper cowling doors. Refer to Chapter 71, Engine Cowling and Nose Cap - Maintenance Practices.

End Task