

## MAIN LANDING GEAR - INSPECTION/CHECK

### 1. General

- A. This section has the inspections and checks necessary to keep the main landing gear in a serviceable condition.

#### TASK 32-10-00-220

### 2. Main Landing Gear Detailed Inspection

#### A. General

- (1) This task gives the procedures to do a detailed inspection of the main landing gear.

#### B. Special Tools

- (1) Airplane Jacks  
(2) Tail Stand

#### C. Access

- (1) None

**NOTE:** The main landing gear fairings are removed during the inspection.

#### D. Do a Main Landing Gear Detailed Inspection. Refer to Main Landing Gear - Maintenance Practices, Figure 201.

- (1) Examine the left and the right main landing gear fairings for cracks, wear, loose rivets, distortion and broken or missing attachment hardware.

**NOTE:** For the main-gear-spring upper fairing, the hard Line-X coating can be cracked or missing. The coating only serves a cosmetic function.

- (a) Make sure that no more than two plies are exposed on the main-gear-spring upper fairing. If two or more plies are exposed on the main-gear-spring upper fairing, it is recommended that you replace the fairing at or before the next scheduled maintenance interval.

- (2) Remove the left and the right main landing gear fairings. Refer to Main Landing Gear - Maintenance Practices, Main Gear Fairing Removal/Installation.

- (3) Use jacks to lift the airplane. Refer to Chapter 7, Jacking - Maintenance Practices.

- (4) Examine the main gear springs and trunnions for loose trunnion cap bolts, cracks, corrosion and chafing.

**NOTE:** Pay special attention to chafing that may occur on the lower inboard surface of the main landing gear trunnion, and the lower inner surface of the main landing gear fairing. Refer to CAB-05-17, and CAB-32-04.

- (5) Make sure that the main gear springs and attach trunnions are correctly attached to the center spring and fuselage attach fitting.

- (6) Examine the brake lines for leaks.

- (7) Make sure the brake lines are correctly attached to the main gear spring.

- (8) Examine the axle fittings for cracks, corrosion, pits, and any other obvious damage.

- (9) Make sure that the axle fittings are correctly attached to the main gear spring.

#### E. Do a Main Landing Gear Spring Inspection and Repair (Refer to Figure 601).

- (1) Examine the sealant at the main landing gear at the following locations for cuts, deterioration, dimensions and separation from the surfaces. Refer to Main Landing Gear Installation, Figure 201.

- (a) The main gear spring and the center spring interface area.

- (b) The center spring and trunnion interface area (inside and outside).

- (2) If no damage to the sealant is visible, continue with the inspection.

- (3) If there is damage to the sealant, do the Center Spring and Main Gear Spring Interface Area Special Detailed Inspection and Repair in this section.

- (4) Examine the left and the right main gear springs and the visible areas of the center spring for gouging, chafing, and corrosion.

- (5) Examine the visible areas of the center spring and main gear spring interface area for corrosion.

- (6) If no gouging, chafing, or corrosion is found on the left and the right main gear springs and the visible areas of the center spring, and no corrosion is found at the interface area, do the steps that follow.

- (a) Lower the airplane and remove the jacks. Refer to Chapter 7, Jacking - Maintenance Practices.
  - (b) Do the restoration at the end of this task.
  - (7) If corrosion is found at the visible interface area, do the Center Spring and Main Gear Spring Interface Area Special Detailed Inspection and Repair in this section.
  - (8) If gouging, chafing, or corrosion is found on the left and the right main gear springs and the visible areas of the center spring, continue with this inspection.
- F. Prepare the Damaged Area for a Measurement.
- (1) Use abrasive cloths and brushes to clean the damaged area.
 

**NOTE:** For normal cleaning procedures the abrasive cloths are 180 grit or finer. If it is necessary to remove heavy layers of scale or oxides, a steel brush or 150 grit abrasive cloth can be used.
  - (2) Remove the paint in the damaged area.
 

**CAUTION:** Make sure that you do not use a chemical stripper on the main gear spring.

    - (a) Remove only enough paint to get the correct measurement of the damaged area.
- G. Measure the damaged area.
- (1) Find if there is local or circumferential damage.
 

**NOTE:** Local damage is defined as damage that extends less than 0.50 inch wide in the circumferential direction. The length of the damage in the longitudinal direction is not limited. If more than one local damage area exists around a gear spring cross-section, the repair for circumferential damage is to be used. Circumferential damage is defined as damage that extends beyond a width of 0.50 inch in the circumferential direction. The length of the damage in the longitudinal direction is not limited.
  - (2) Use a pin-type depth micrometer to measure the difference between the undamaged spring surface and the deepest portion of the damage. Record the measurement of the difference. (Refer to Figure 601 and Table 601.)

**Table 601. Maximum Repair Depth Gear Assembled**

REPAIR LOCATION		MAXIMUM REPAIR DEPTH
Center Spring	Outer Surface	0.050 inch
Main Gear Spring	Outer Surface - Zone 1 Local Damage	0.050 inch
	Outer Surface - Zone 1 Circumferential Damage	0.025 inch
	Outer Surface - Zone 2 Local Damage	0.040 inch
	Outer Surface - Zone 2 Circumferential Damage	0.020 inch

**NOTE:** The depth micrometer must have a tolerance of +0.001 or -0.001 inch to make this measurement.

- (a) When the measurement is less than or equal to 0.005 inch, no repair is necessary.
- (b) When the measurement is more than 0.005 inch, but is less than or equal to the maximum repair depth, repair the damage.
  - 1 The permitted spring repair depths are related to the width of the damage in the circumferential direction.
    - a If there is local damage in Zone 2, then the maximum repair dimensions are 0.040 inches deep and 0.50 inches wide in the circumferential direction.
    - b If there is local damage in Zone 1, then the maximum repair dimensions are 0.050 inches deep and 0.50 inches wide in the circumferential direction.
    - c If there is circumferential damage in Zone 2, then the maximum repair depth is 0.020 inches.
    - d If there is circumferential damage in Zone 1, then the maximum repair depth is 0.025 inches.
  - 2 Repair the damaged area.

**CAUTION:** Make sure to remove only the necessary amount of material from the damaged area. Do not increase the depth of the damaged area when you remove the material. This will help prevent the replacement of springs that can be repaired.

**CAUTION:** Use small hand-held type tools to do the repair procedure. Do not blend in one area for a long time. This will prevent damage from too much heat in one area of the spring material.

- a Use a blending procedure to repair the damage and to get a smooth length-to-depth ratio between the damage and the adjacent area.
- b Make sure that only enough material is removed to get a lengthwise blending transition ratio of 20 to 1 in the longitudinal direction.
- c Make sure that only enough material is removed to get a blending transition of width-to-depth ratio of 5 to 1 in the circumferential direction.
- d Use a pin type depth micrometer to measure the depth of the repaired area. Refer to Table 601 for the permitted depths.

**NOTE:** A micrometer with a tolerance of +0.001 or -0.001 inch is necessary to make this measurement.

- (c) When the measurement is more than the maximum repair depth, replace the spring. Refer to Main Landing Gear - Maintenance Practices.
- H. Do a Magnetic Particle Inspection of the Repaired Area of the Main Gear Spring(s) and/or Center Spring for Cracks. Refer to the Model 208, Nondestructive Testing Manual, Part 8, Main Gear Spring.
- (1) When the magnetic particle inspection of the repaired area of the main gear spring(s) is complete, do the steps that follow.
    - (a) If cracks are found, replace the main gear spring(s). Refer to Main Landing Gear - Maintenance Practices.
    - (b) If no cracks are found, and only the top region of Zones 1 and/or 2 were repaired, apply touch up paint to the main gear spring as necessary. Refer to the Main Landing Gear - Cleaning/Painting.
    - (c) If no cracks are found, and the bottom region of Zones 1 and/or 2 were repaired, do a shot peening procedure.
      - 1 Use size 330, cast steel shot and do a shot peening procedure to a Almen intensity of 0.12 - 0.16A on the repaired area. Refer to Model 208 Structural Repair Manual Chapter 51, Shot Peening of Ferrous and Nonferrous Metals.
  - (2) When the magnetic particle inspection of the repaired area of the center spring is complete, do the steps that follow.
    - (a) If cracks are found, replace the center spring. Refer to Main Landing Gear - Maintenance Practices.
    - (b) If no cracks are found, and the center spring was repaired, do a shot peening procedure.
      - 1 Use size 330, cast steel shot and do a shot peening procedure to a Almen intensity of 0.12 - 0.16A on the repaired area. Refer to Model 208 Structural Repair Manual Chapter 51, Shot Peening of Ferrous and Nonferrous Metals.
  - (3) Use Type 1, Class B-1/2 sealant and apply a fillet seal around the main gear spring at the center spring. Refer to Main Landing Gear Installation, Figure 201.
  - (4) Lower the airplane and remove the jacks. Refer to Chapter 7, Jacking - Maintenance Practices.
- I. Do a Landing Gear Free Play Check.
- (1) Jack the airplane, refer to Chapter 7.
  - (2) Remove the wheel from the axle.
  - (3) Install a magnetic base dial indicator on the uppermost point of the center spring outboard of the trunnion fitting. Refer to Figure 604.
  - (4) Position dial indicator so that tip is 2.0 inches (50.8 mm) from outboard end of the center spring.
  - (5) Zero the dial indicator. While observing the dial indicator, lift the end of the axle by hand until dial indicator pointer does not increase any more.
  - (6) Make sure that the total dial indicator reading does not change by more than 0.0140 inch (0.3556 mm).
    - (a) If reading is acceptable, restore airplane.

- (7) If indicator reading exceeds 0.0140 inch (0.3556 mm), disassemble main gear spring from center spring.
- (8) Using a micrometer, make sure that the difference between the outer diameter of the main gear spring and the inner diameter of the center spring does not exceed 0.0133 inch (0.3378 mm).
- (9) If tolerance is exceeded, replace defective parts.
- (10) Restore the airplane.

J. Restore Access

- (1) Install the left and the right main landing gear fairings. Refer to Main Landing Gear - Maintenance Practices, Main Gear Fairing Removal/Installation.

**END OF TASK**

**TASK 32-10-00-221**

**3. Center-Spring and Main Gear-Spring Interface Area Special Detailed (Corrosion Inspection and Repair)**

A. General

- (1) This task gives the procedures to do a detailed inspection and repair of the center spring and main gear spring interface area.

B. Special Tools

- (1) Airplane Jacks
- (2) Tail Stand

C. Access

- (1) None

**NOTE:** The main landing gear fairings are removed during the inspection.

D. Do a Center Spring and Main Gear Spring Interface Area Detailed Inspection and Repair (Refer to Figure 602 and Figure 603).

- (1) Remove and disassemble the main landing gear assembly. Refer to Main Landing Gear - Maintenance Practices.

**NOTE:** The main landing gear fairings are removed during the landing gear removal procedure.

**NOTE:** The airplane is lifted on jacks during the landing gear removal procedure.

- (2) Examine the center spring and main gear spring interface area for gouging, chafing, or corrosion.

- (a) If no gouging, chafing, or corrosion is found, install the main landing gear assembly. Refer to Main Landing Gear - Maintenance Practices.

- (b) If gouging, chafing, or corrosion is found, prepare the damaged area for a measurement.

E. Prepare the Damaged Area of the Interface Area for a Measurement.

- (1) Use abrasive cloths and brushes to clean the damaged area.

**NOTE:** For normal cleaning procedures the abrasive cloths are 180 grit or finer. If it is necessary to remove heavy layers of scale or oxides, a steel brush or 150 grit abrasive cloth can be used.

- (2) Remove the paint in the damaged area.

**CAUTION:** Make sure that you do not use a chemical stripper on the main gear spring.

- (a) Remove only enough paint to get the correct measurement of the damaged area.

F. Measure the Damaged Area of the Interface Area. Refer to Figure 602 and Table 602.

**Table 602. Maximum Repair Depth Interface Area**

REPAIR LOCATION		MAXIMUM REPAIR DEPTH	DIAMETER
Center Spring	Inner Surface - Interface Area	0.050 inches	
	Model 208		2.703 inches (max)
	Model 208B		2.794 inches (max)
Main Spring	Outer Surface - Interface Area	0.050 inches	
	Model 208		2.696 inches (min)

	Model 208B		2.787 inches (min)
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- (1) Use a micrometer to measure the diameter of the interface area of the main gear spring externally (OD) and the center spring internally (ID) as follows. Refer to Figure 602.

**NOTE:** Each of the three locations on the spring will have three measurements taken at 120 degree intervals around the spring circumference. There will be a total of nine measurements on each spring end.

- (2) Record the aircraft and operator data on sheet 1 of the 208 Main Landing Gear Separation Data form and then record the spring measurements in the applicable areas of sheet 2. Refer to Figure 603.
  - (a) If more than 3 measurements on the center spring in the interface area are greater than the maximum diameter shown in Table 602, replace the center spring. Refer to Main Landing Gear - Maintenance Practices.
  - (b) If more than 3 measurements on the main gear spring in the interface area are less than the minimum diameter shown in table 602, replace the main gear spring. Refer to Main Landing Gear - Maintenance Practices.
- (3) Use a pin-type depth micrometer to measure the difference between the undamaged spring surface and the deepest portion of the damage. Record the measurements of the difference.

**NOTE:** A micrometer with a tolerance of +0.001 or -0.001 inch (+0.025 or -0.025 mm) is necessary to make this measurement.

- (a) If the depth of damage is greater than the permitted maximum repair depth, replace the center spring or main gear spring. Refer to Main Landing Gear - Maintenance Practices.
- (b) If the measurement is less than or equal to the maximum repair depth, repair the damage as follows:

**NOTE:** The permitted interface area spring repair depth is 0.050 inches (1.270 mm) or less.

**CAUTION:** Make sure to remove only the necessary amount of material from the damaged area. Do not increase the depth of the damaged area when you remove the material. This will help prevent the replacement of springs that can be repaired.

**CAUTION:** Use small hand-held tools to do the repair procedure, Make sure not to remove material from one spot for a long time. This will help prevent the removal of too much material from one area of the spring.

- 1 Use a blending procedure to repair the damage and to get a smooth length-to-depth ratio between the damage and the adjacent area.
- 2 Make sure that the minimum amount of material is removed to get a lengthwise blending transition ratio of 20 to 1 in the longitudinal direction.
- 3 Make sure that the minimum amount of material is removed to get a blending transition ratio 5 to 1 in the circumferential direction.
- 4 Use a pin-type depth micrometer to measure the depth of the repaired area. Refer to Table 602 for the permitted depths.

**NOTE:** A micrometer with a tolerance of +0.001 or -0.001 inch (+0.025 or -0.025 mm) is necessary to make this measurement.

- (c) When the measurement is more that the maximum repair depth, replace the spring. Refer to Main Landing Gear - Maintenance Practices.

G. Do a Magnetic Particle Inspection of the Repaired Area of the Interface Area of the Main Gear Spring(s) and/or Center Spring for Cracks. Refer to the Model 208, Nondestructive Testing Manual, Part 8, Chapter 32, Main Gear Spring.

- (1) When the magnetic particle inspection of the repaired area of the interface area of the main gear spring(s) is complete, do the steps that follow.
  - (a) If cracks are found, replace the main gear spring(s). Refer to Main Landing Gear - Maintenance Practices.
  - (b) If no cracks are found, and the main gear spring interface area was repaired, do a shot peening procedure.
    - 1 Use size 330, cast steel shot and do a shot peening procedure to a Almen intensity of 0.012 - 0.016A on the repaired area. Refer to Model 208 Structural Repair Manual Chapter 51, Shot Peening of Ferrous and Nonferrous Metals.
- (2) When the magnetic particle inspection of the repaired area of the interface area of the center spring is complete, do the steps that follow.

- (a) If cracks are found, replace the center spring. Refer to Main Landing Gear - Maintenance Practices.
- (b) If no cracks are found, and the center spring interface area was repaired, do a shot peening procedure.
  - 1 Use size 330, cast steel shot and do a shot peening procedure to a Almen intensity of 0.012 - 0.016A on the repaired area. Refer to Model 208 Structural Repair Manual Chapter 51, Shot Peening of Ferrous and Nonferrous Metals.

- (3) Install the main landing gear assembly. Refer to Main Landing Gear - Maintenance Practices.

**NOTE:** The airplane is lowered, and the jacks and tail stand are removed during the landing gear installation procedure.

- (4) Record the necessary airplane and inspection information on the Model 208 Main Landing Gear Separation Data Form and send it to the address or fax it to the number on the form.

#### H. Restore Access

- (1) None

**NOTE:** The main landing gear fairings are installed during the landing gear installation procedure.

#### END OF TASK

#### TASK 32-10-00-240

#### 4. Main Landing Gear Axle Special Detailed Inspection (SID)

##### A. General

- (1) This task includes the Supplemental Inspection Document (SID) requirements necessary to keep the main landing gear axle in a serviceable condition.

##### B. Special Tools

- (1) None

##### C. Access

- (1) None

##### D. Do a Special Detailed Inspection of the Main Landing Gear Axle.

**NOTE:** The main landing gear axle is replaced at 10,000 landings.

- (1) Examine the main landing gear axle for fatigue and cracks in the main landing gear axle radius. Refer to the Model 208 Nondestructive Testing Manual, Part 8, Magnetic Particle, Main Landing Gear Axle.

##### E. Restore Access

- (1) None

#### END OF TASK

Figure 601 : Sheet 1 : Main Gear Spring

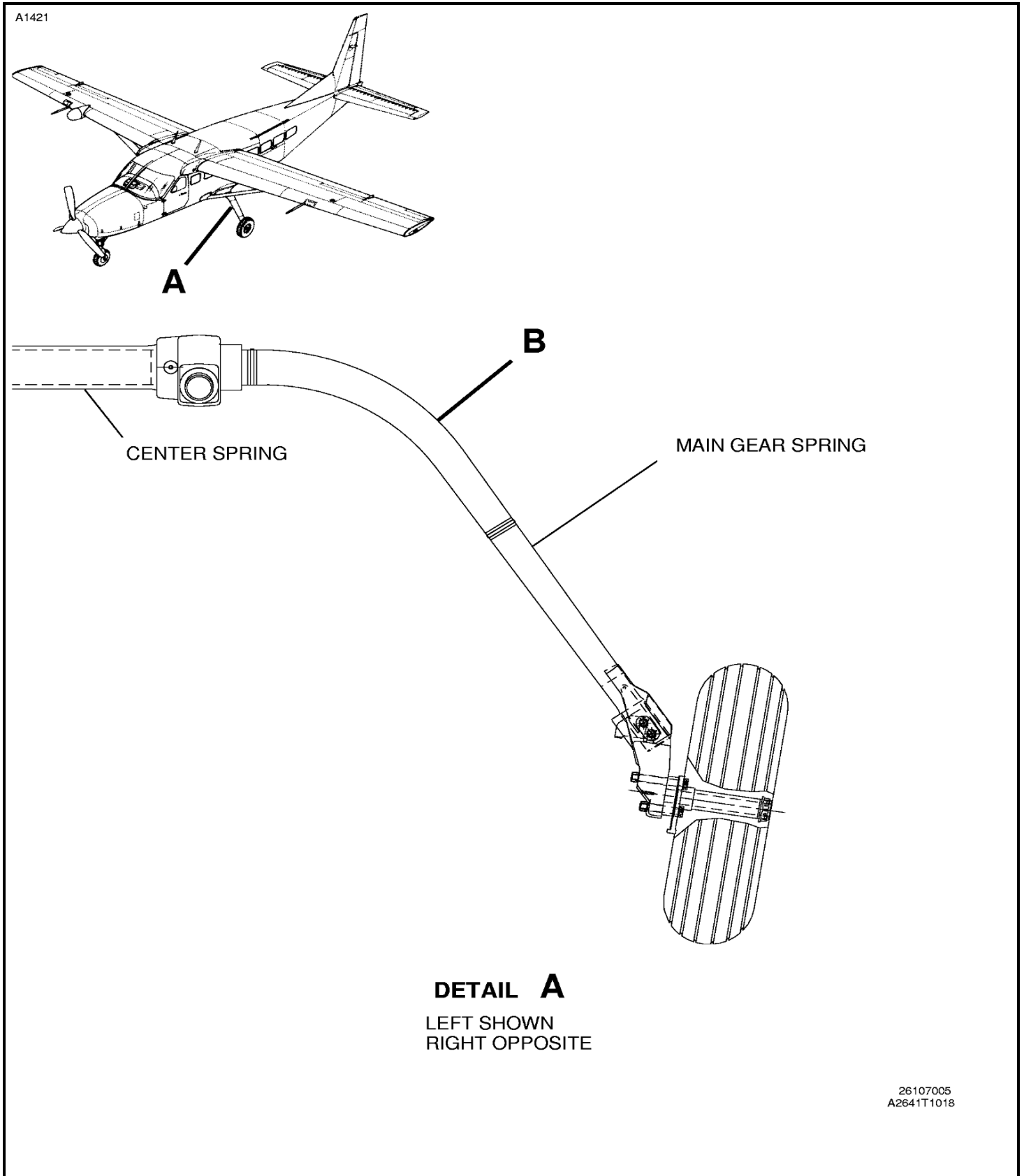
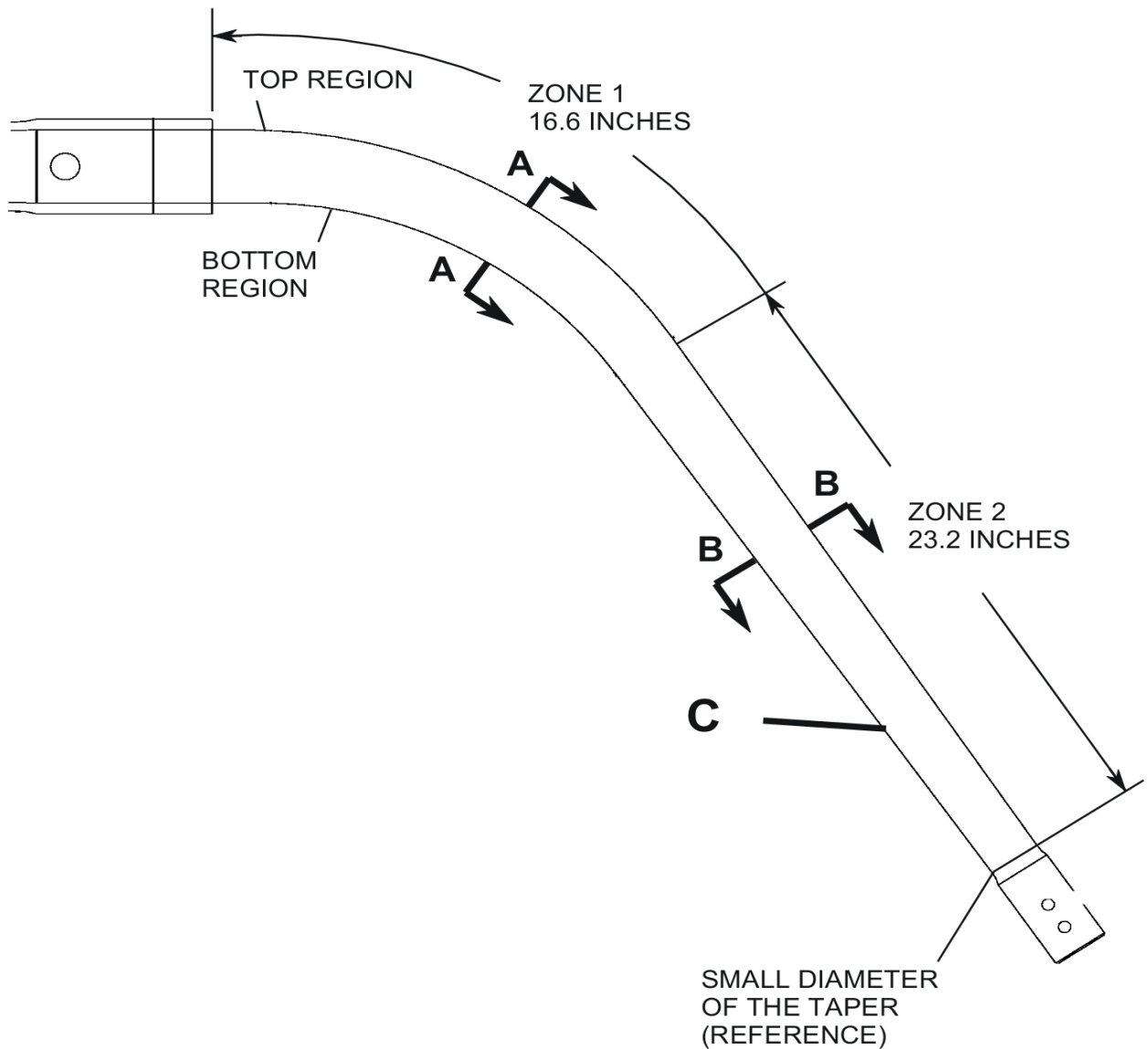


Figure 601 : Sheet 2 : Main Gear Spring

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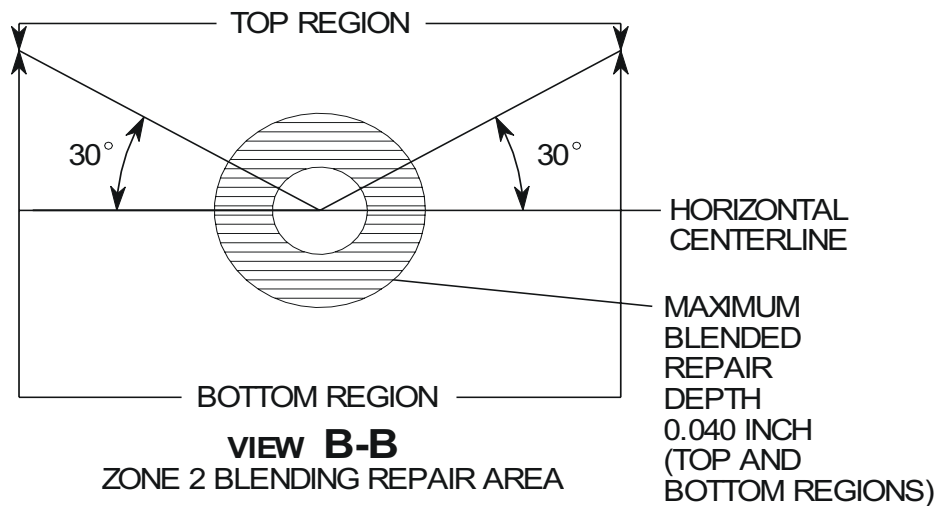
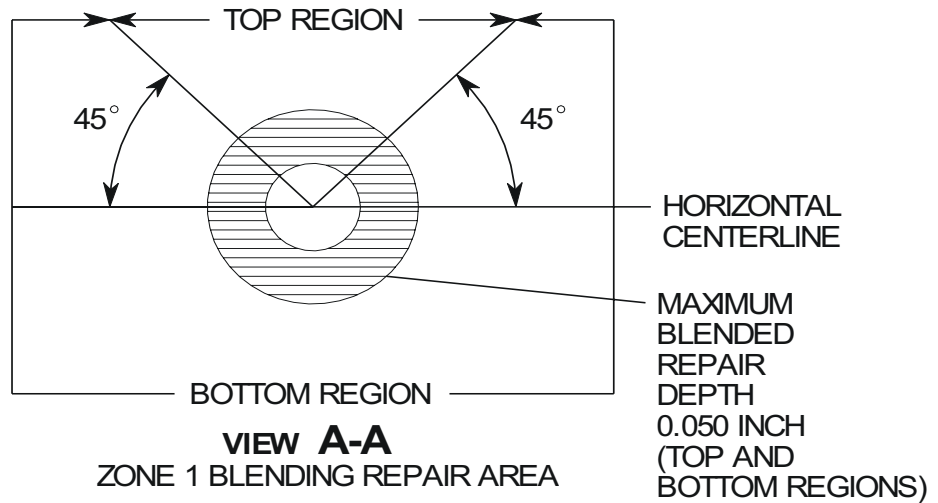
**DETAIL B**  
ZONES 1 AND 2

A2641T1022



Figure 601 : Sheet 3 : Main Gear Spring

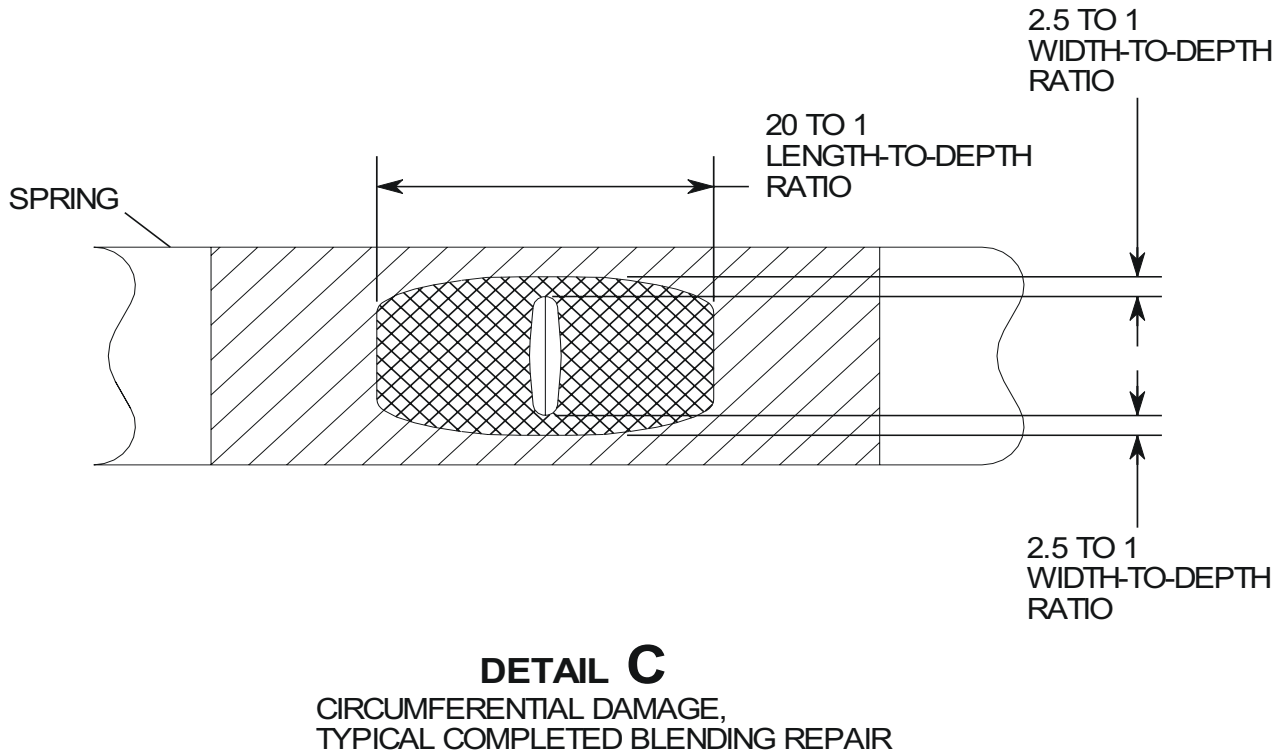
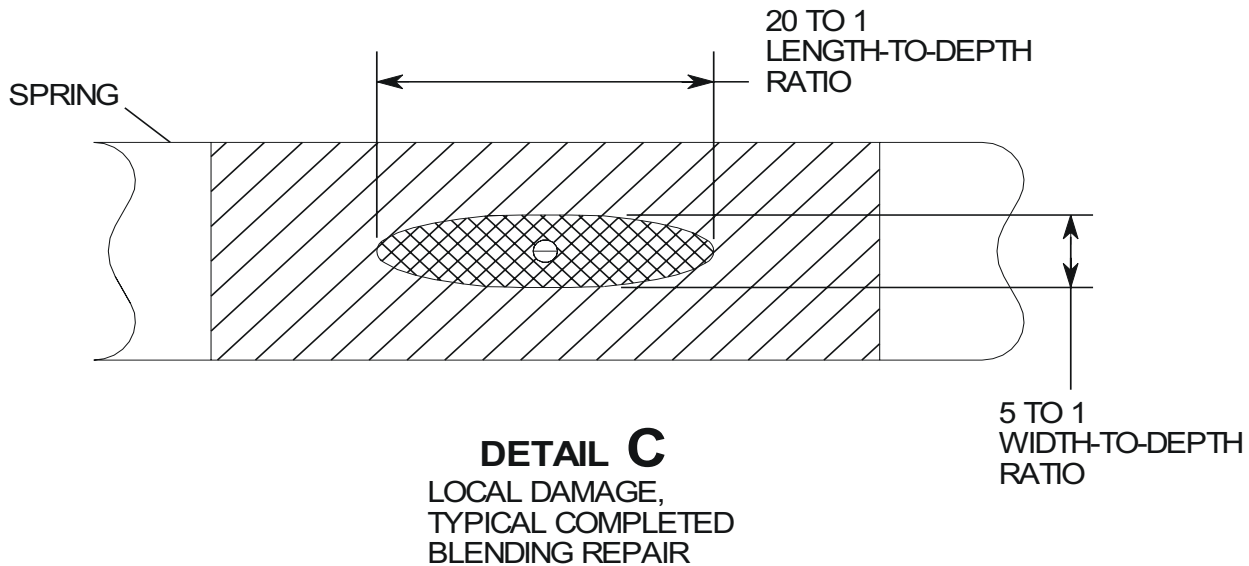
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BB2641T1022

Figure 601 : Sheet 4 : Main Gear Spring

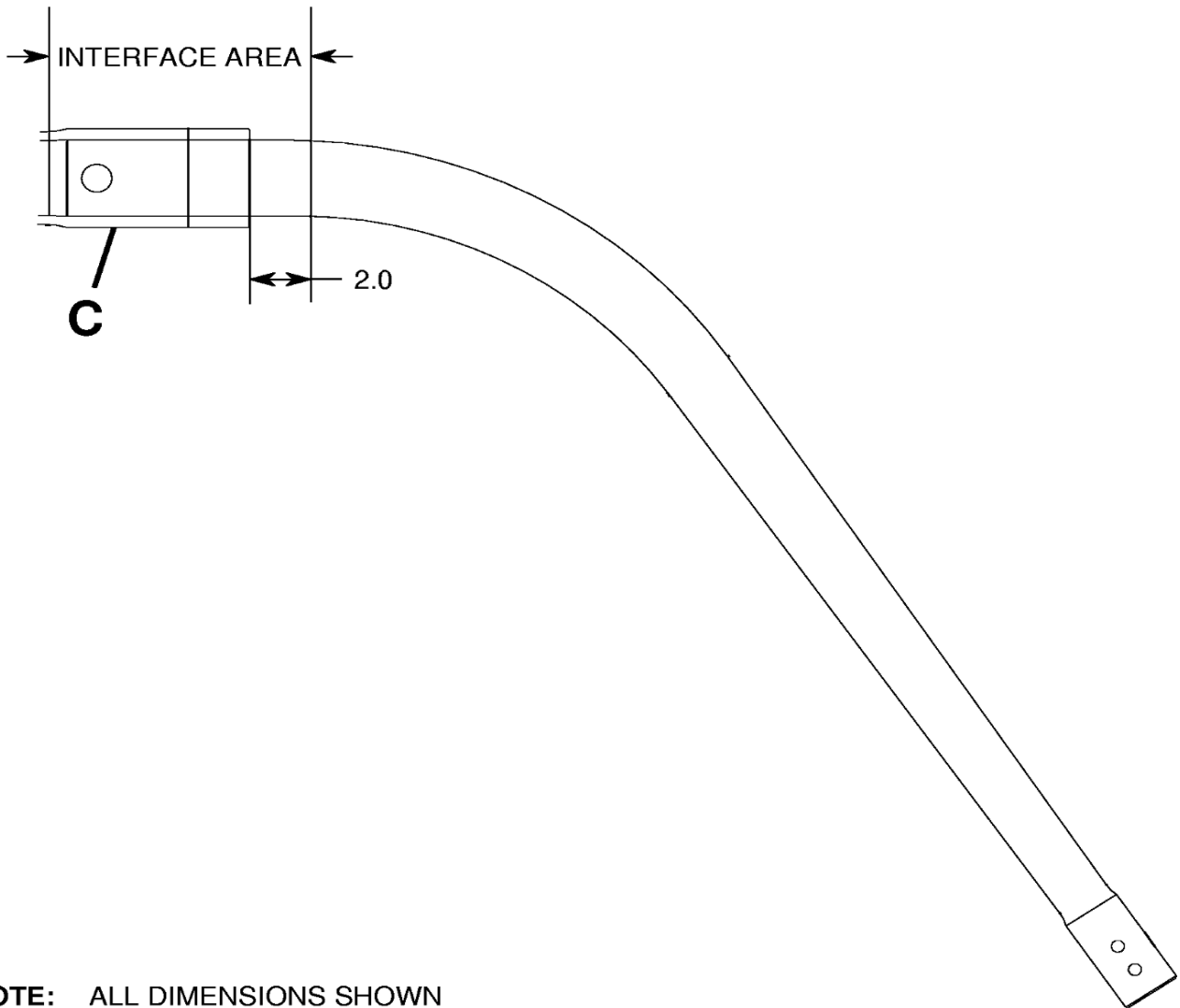
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Figure 602 : Sheet 2 : Main Gear Interface Area

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**NOTE:** ALL DIMENSIONS SHOWN  
ARE IN INCHES

**DETAIL B**

Figure 602 : Sheet 3 : Main Gear Interface Area

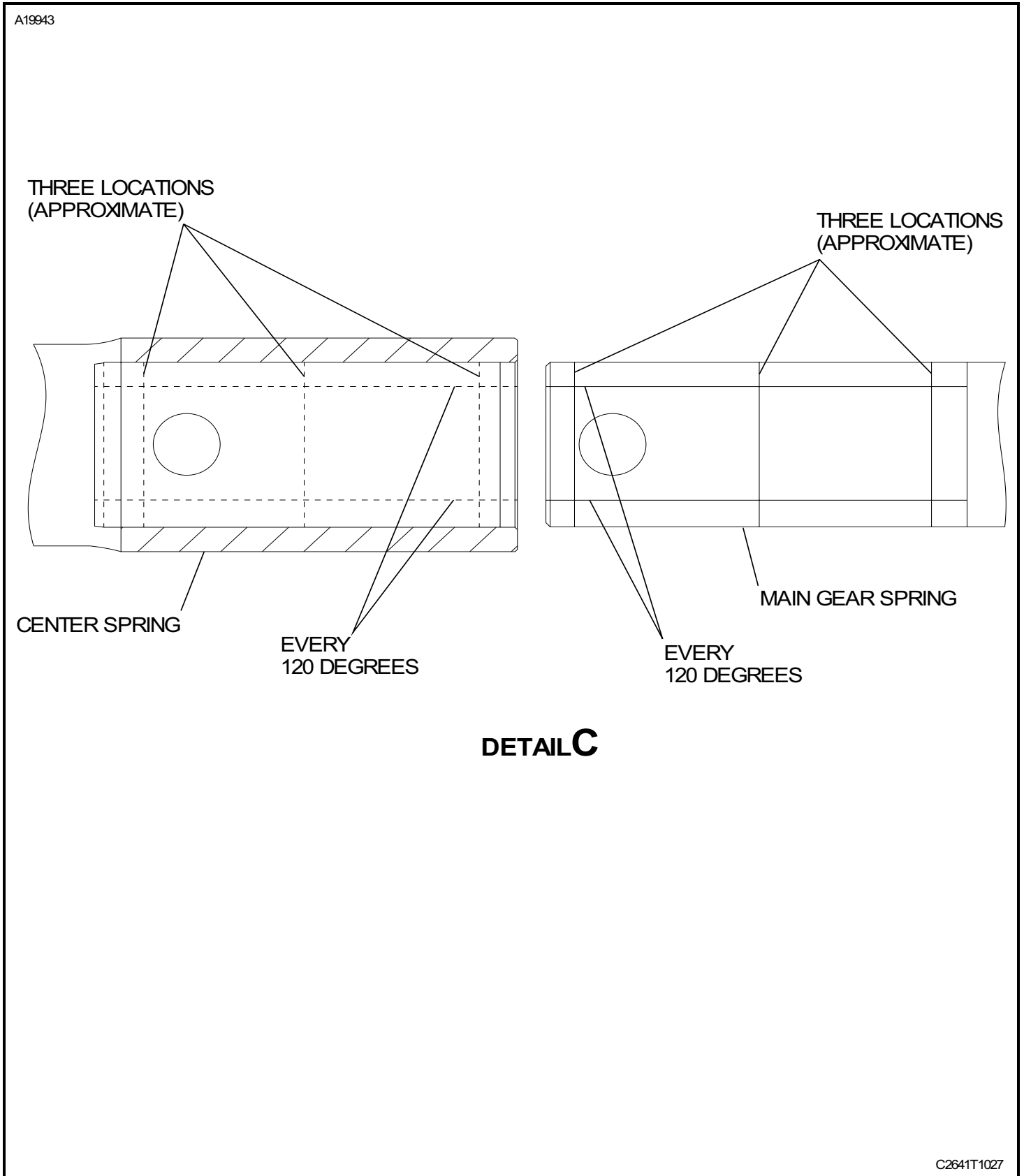


Figure 603 : Sheet 1 : Model 208 Main Landing Gear Separation Data Form

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## 208 MAIN LANDING GEAR SEPARATION DATA

**Model 208(B) MLG Separation Inspection**

Page: 1 of \_\_\_\_\_ Date: \_\_\_\_\_

**TO:**

Cessna Aircraft Company  
Dept. 764 Propeller Aircraft Customer Service  
2121 S. Hoover Rd. Wichita, KS 67209  
EMAIL: [customercare@cessna.textron.com](mailto:customercare@cessna.textron.com)  
Phone: 316-517-5800, FAX: 316-517-7271 ATTN: Dept. 764

Irrespective of the inspection results, the following information should be pulled out in its entirety and returned to Cessna in every instance where the Model 208 Maintenance Manual Task 32-10-00-221 is performed.

<b>Operator Information</b>				
Fax:		Maintenance Contact Name:		
ASF or Operator Address:				
E-mail:		Phone:		
<b>Aircraft Information</b>				
Aircraft Serial Number:		Registration Number:		
Aircraft Total Time in Service (hours):		Aircraft Total Landings / Cycles:		
Current Base of Operation and Duration:				
Previous Base of Operation:				
Normally Stored in Hangar?		Yes	No	Unknown
Exterior Clean:	Power Wash	Steam	Hand Wash	Other
Clean Frequency:	Daily / Weekly	Monthly	Infrequently	Unknown
<b>Inspection Data</b>				
MLG Corrosion Inspection Performed:		Task 32-10-00-221		Unscheduled
Gear Separation Event:	1 <sup>st</sup>	2 <sup>nd</sup>		Other
Hours, Cycles and Date of Last Separation:	Hours:	Cycles:		N/A
Labor Hours to Complete Inspection:				
Condition of MLG Interface Fillet Seal:		Good	Damaged, Disbonded, Cracked, or Dried Out	Visible Corrosion Before Disassembly
Gear Leg Interface Corrosion Found?		Yes	No	
If Yes, Please Classify the Corrosion*:		Repairable	Not Repairable	
Description of Corrosion and Corrective Action Taken: (attach photo or sketch)				
MLG Spring Measurement (if measured):		(Enter on tables on next page)		
What (if any) deviations from the MM were necessary on removal and installation?				
*For maximum repair depth criteria refer to Section 32-10-00, Table 602.				

Figure 603 : Sheet 2 : Model 208 Main Landing Gear Separation Data Form

A85474

Left Main Gear Measurements			
	Degrees:		
Location	0	120	240
1.			
2.			
3.			

Right Main Gear Measurements			
	Degrees:		
Location	0	120	240
1.			
2.			
3.			

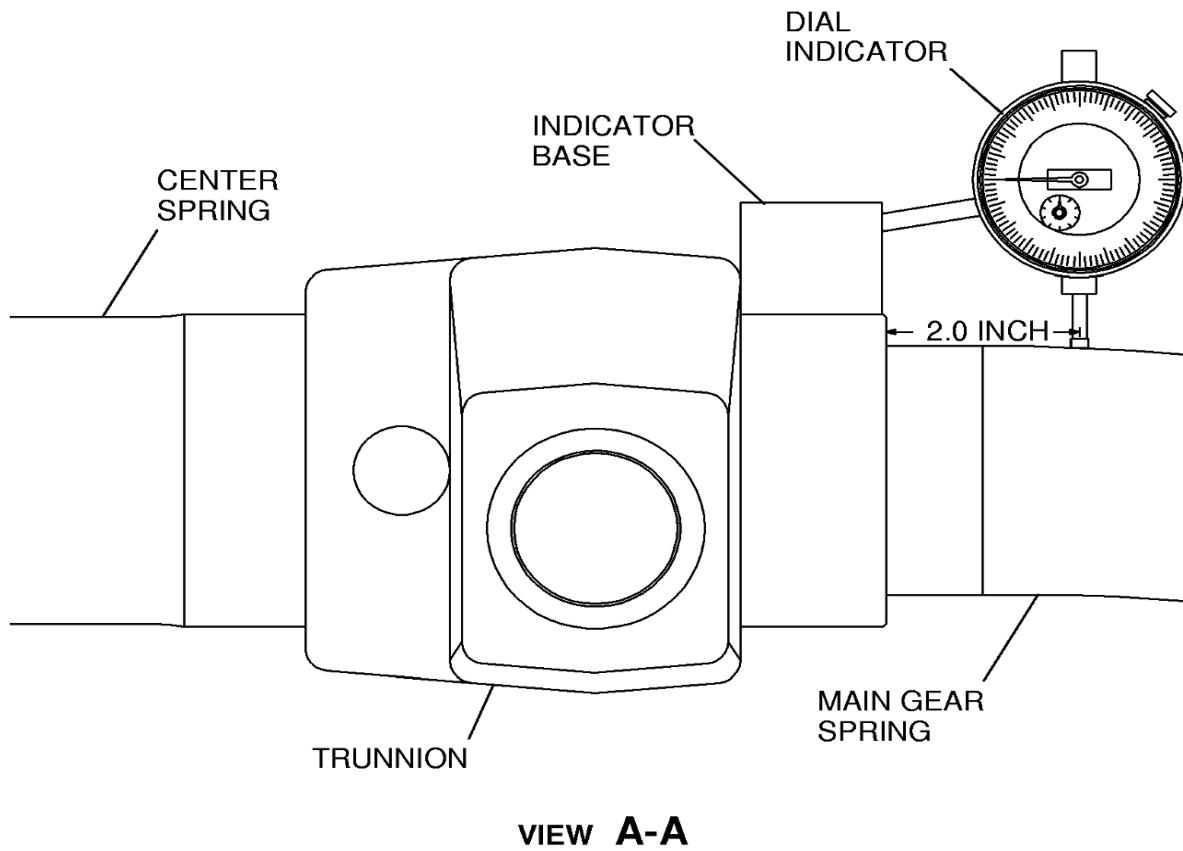
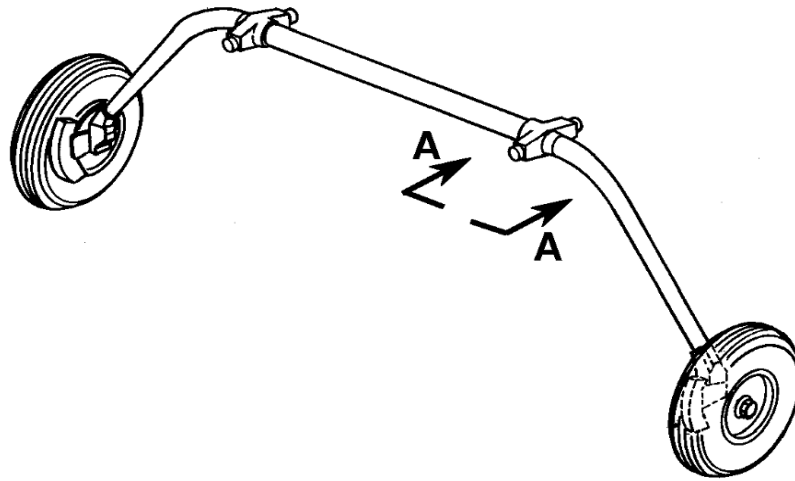
Left Center Gear Measurements			
	Degrees:		
Location	0	120	240
1.			
2.			
3.			

Right Center Gear Measurements			
	Degrees:		
Location	0	120	240
1.			
2.			
3.			

Additional Comments:

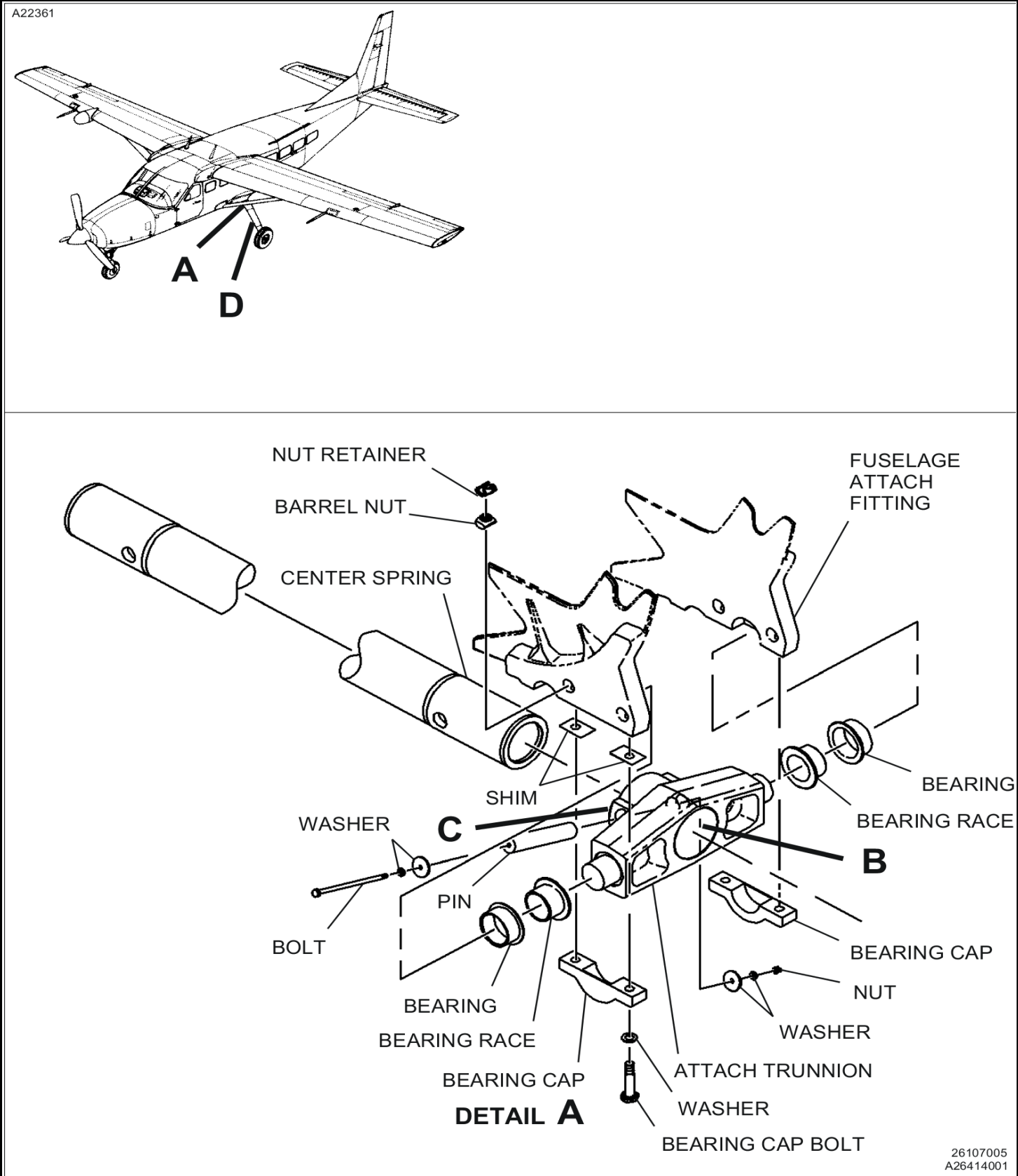
Figure 604 : Sheet 1 : Free Play Check

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AA2641C1001

Figure 201 : Sheet 1 : Main Landing Gear Installation

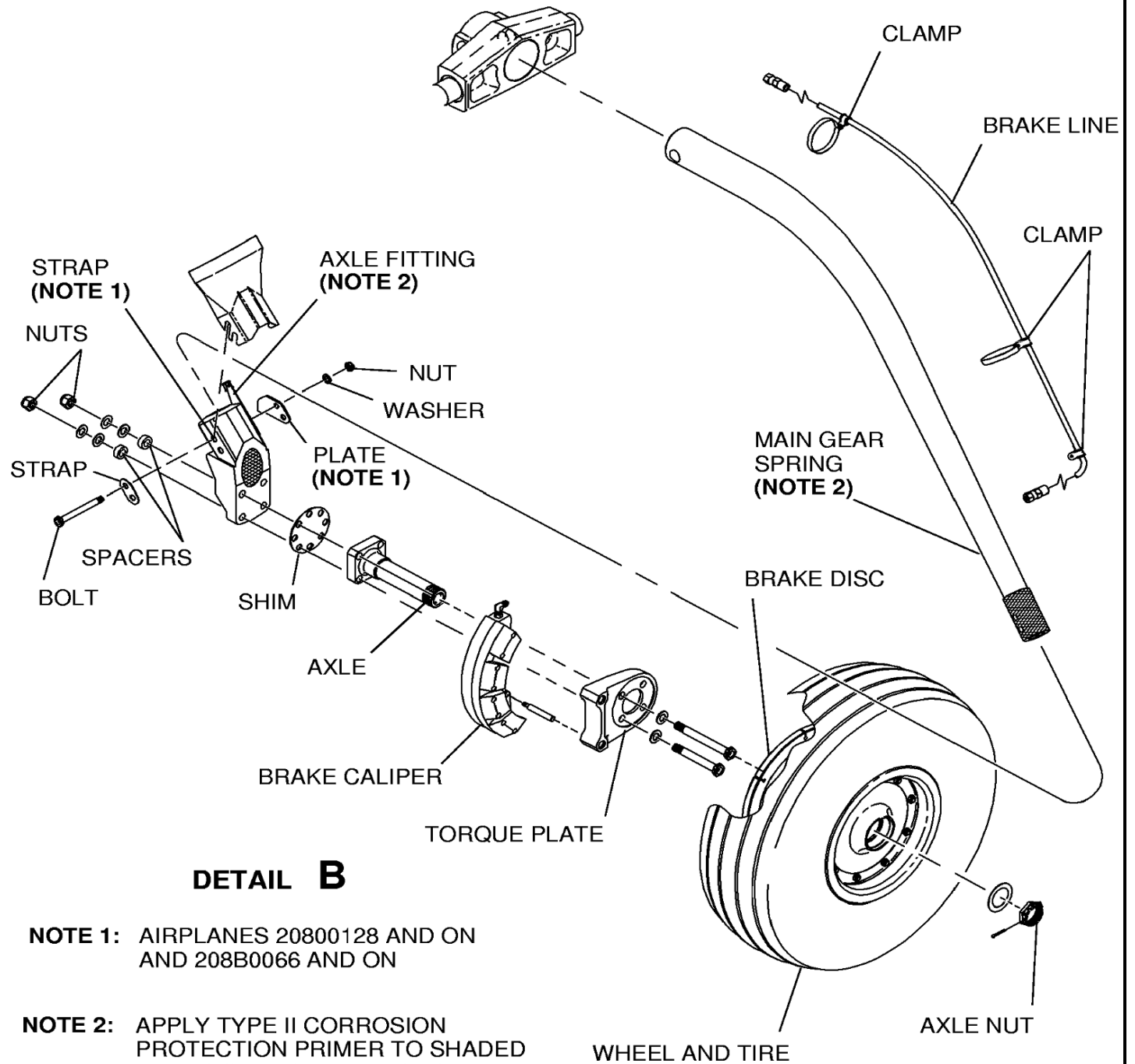


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A26414001



Figure 201 : Sheet 2 : Main Landing Gear Installation

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**DETAIL B**

**NOTE 1:** AIRPLANES 20800128 AND ON  
 AND 208B0066 AND ON

**NOTE 2:** APPLY TYPE II CORROSION  
 PROTECTION PRIMER TO SHADED  
 AREAS ON INSTALLATION OF  
 GEAR ASSEMBLY.

B26414001

Figure 201 : Sheet 3 : Main Landing Gear Installation

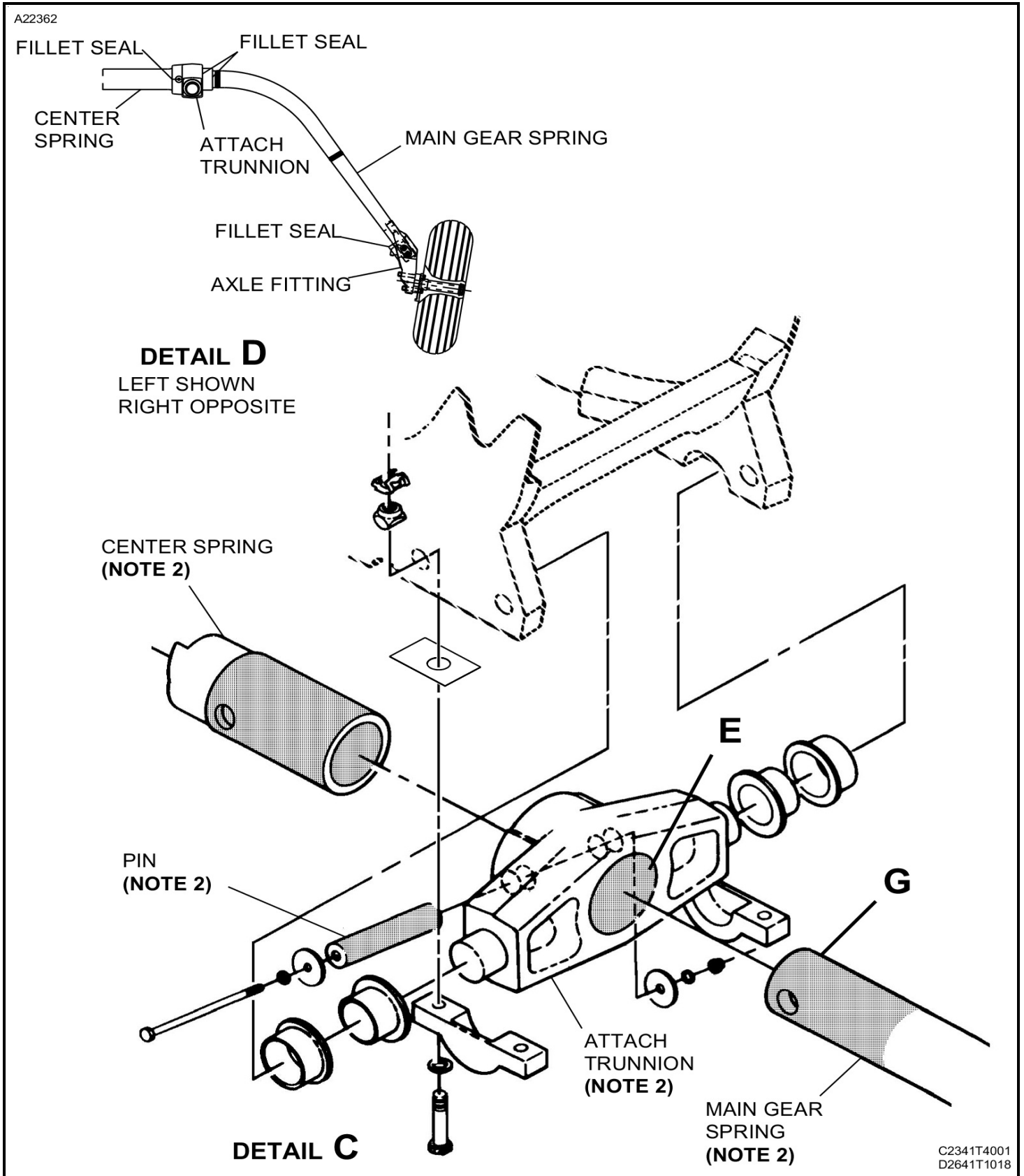


Figure 201 : Sheet 4 : Main Landing Gear Installation

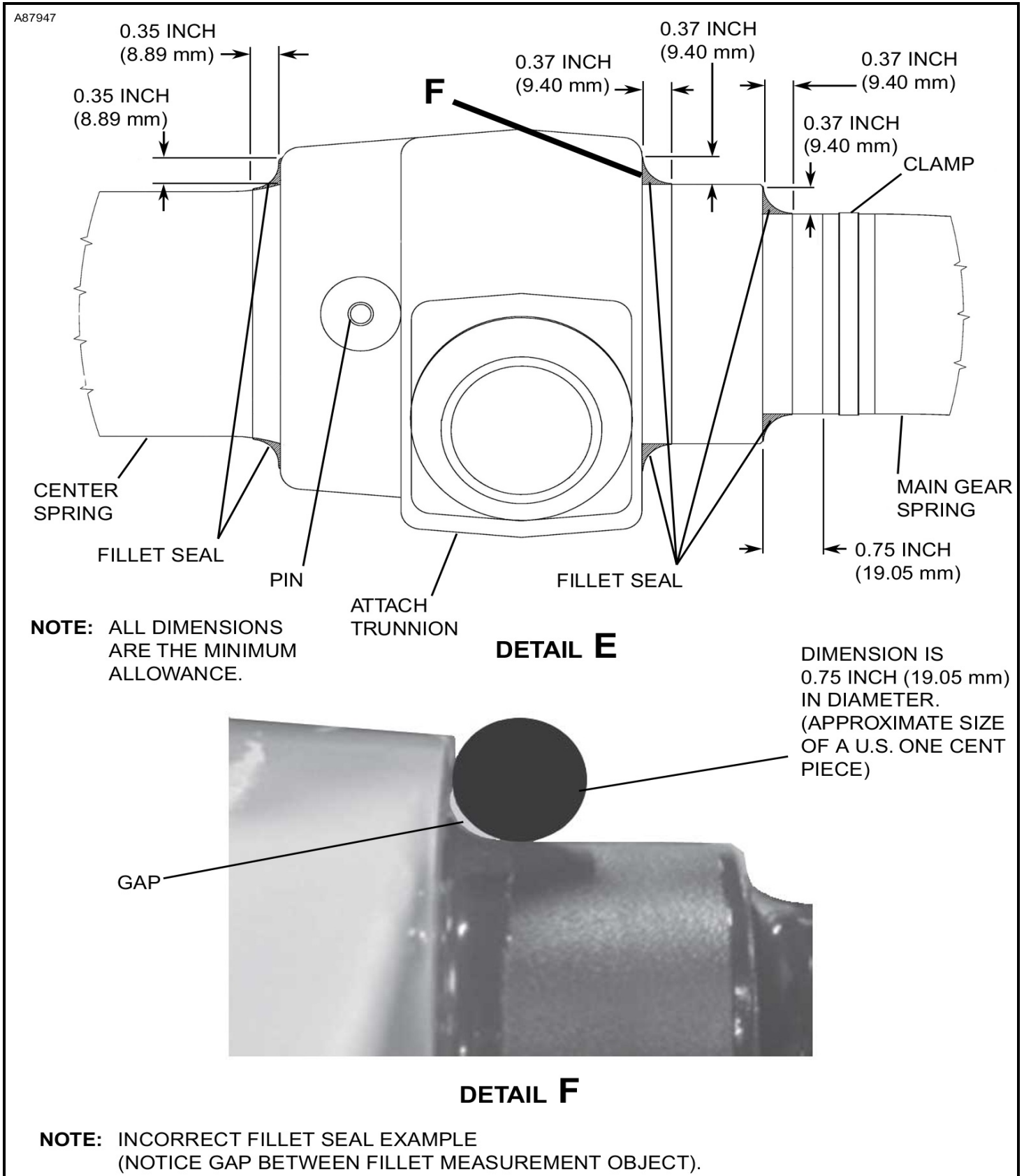
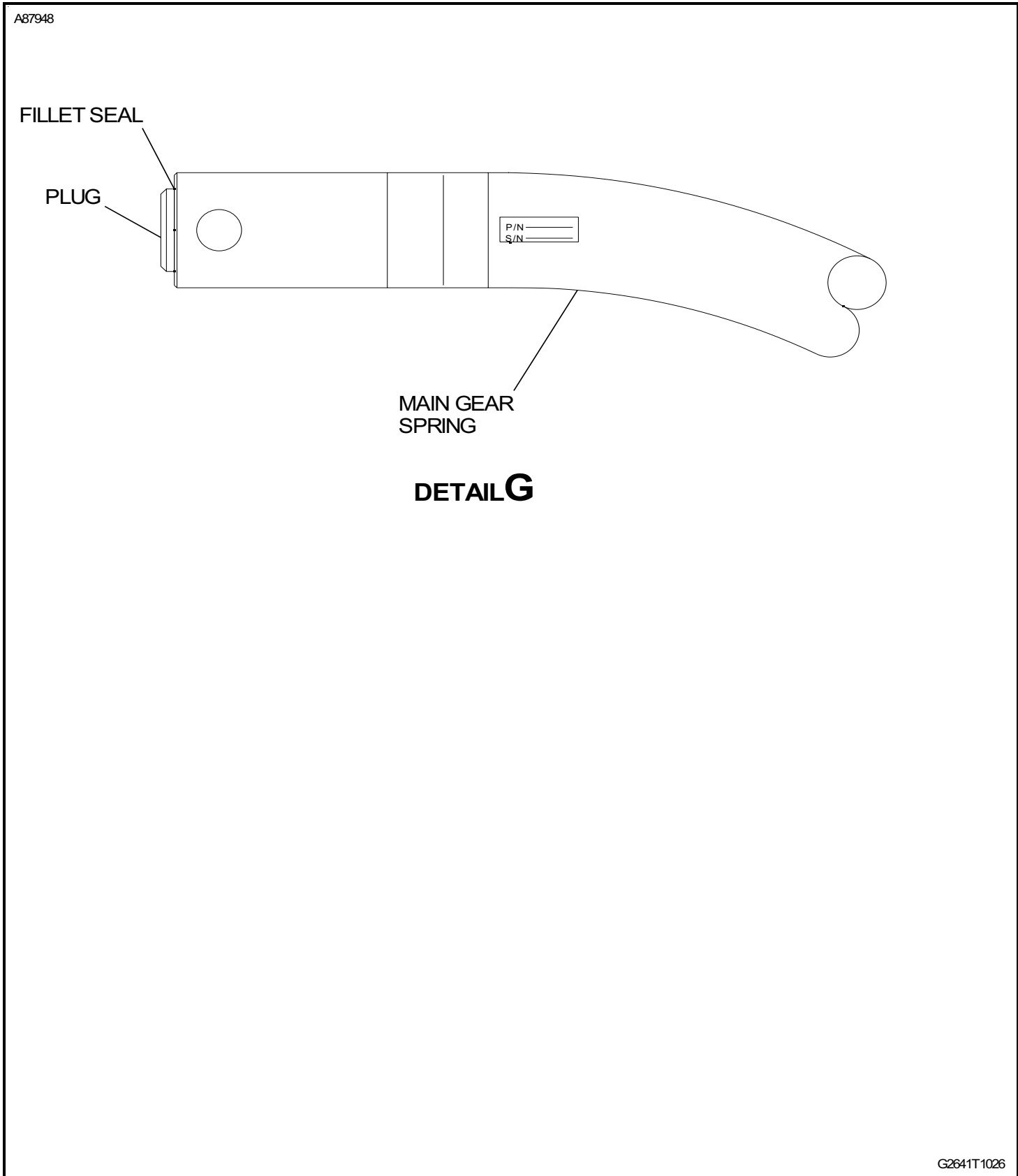


Figure 201 : Sheet 5 : Main Landing Gear Installation



A87948

FILLET SEAL

PLUG

P/N \_\_\_\_\_  
S/N \_\_\_\_\_

MAIN GEAR  
SPRING

**DETAIL G**

G2641T1026