

# **Bell Helicopter** **TEXTRON**

A Subsidiary of Textron, Inc.

September 22, 2003

**TO: All Owners/Operators of Bell 407 Helicopters**

**SUBJECT: REVISION "A" TO TECHNICAL BULLETIN 407-03-42:(ROD END ASSEMBLY P/N 407-001-404-101, INTRODUCTION OF)**

Revision "A" to this Technical Bulletin introduces the changes that follow:

- Change view **A-A** to the opposite direction to reflect correct angle of rod end assembly setting in figure 1.
- Add a proof load test to the rod end bearing.
- Add a note to clarify part numbers on the data plates for Lateral and Longitudinal Swashplate tube assemblies.
- Add a table to clarify the configuration of the Lateral and Longitudinal tube Assemblies.

**TECHNICAL BULLETIN**  
**Bell Helicopter** **TEXTRON**  
A Subsidiary of Textron Inc.

No. 407-03-42

Date August 28, 2003

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September 22, 2003

REV A

**MODEL AFFECTED:** 407

**SUBJECT:** ROD END ASSEMBLY P/N 407-001-404-101,  
INTRODUCTION OF

**HELICOPTERS AFFECTED:** Helicopters S/N53000 through 53514.

[Helicopter S/N 53515 and subsequent will have the intent of this bulletin accomplished prior to delivery.]

**COMPLIANCE:** At customer's option.

**DESCRIPTION:**

This Technical Bulletin introduces a new rod end assembly 407-001-404-101 to replace existing rod end assembly 406-310-404-101 as used **only** on the Collective link tube assembly 407-001-531-101, the Lateral Swashplate (L/H) tube assembly 407-001-025-109 and the Longitudinal Swashplate (R/H) tube assembly 407-001-025-113.

This new rod end assembly 407-001-404-101 has no Airworthiness Life Limitation.

**APPROVAL:**

The engineering design aspects of this bulletin are Transport Canada approved.

**MANPOWER:**

No additional man-hours are required to accomplish this bulletin when performed at normal scheduled replacement of the rod end assembly.

**MATERIALS:**

**Required Material:**

The material that follows is necessary to complete this Technical Bulletin and can be procured through your Bell Helicopter Textron Supply Center.

<u>PART NUMBER</u>	<u>NOMENCLATURE</u>	<u>QUANTITY</u>
407-001-404-101	ROD END BEARING ASSEMBLY	1

**Consumable Material:**

The following material is required to accomplish this bulletin, however this material is considered consumable (bench stock) material and may not require ordering depending on the operators consumable material stock levels. This material may be obtained through your Bell Helicopter Textron Supply Center.

<u>PART NUMBER</u>	<u>NOMENCLATURE</u>	<u>REFERENCE NO.</u>
299-947-100TY2CL2G50	ADHESIVE	C-317

**SPECIAL TOOLS:**

None required

**WEIGHT AND BALANCE:**

Not Affected

**ELECTRICAL LOAD DATA:**

Not affected

**REFERENCES:**

BHT-ALL-SPM, 23 MAY 2000.

Chapter 9-00-00, BEARINGS, SLEEVES, AND BUSHINGS.

**PUBLICATIONS AFFECTED:**

BHT-407-IPB Illustrated Parts Breakdown.

Chapter 67-99-00, FLIGHT CONTROLS.

BHT-407-MM-8, REV.16, 07 JUN 2002.

Chapter 67-00-00 FLIGHT CONTROLS.

BHT-ALL-SPM, 23 MAY 2000.

Chapter 9-00-00, BEARINGS, SLEEVES, AND BUSHINGS.

**ACCOMPLISHMENT INSTRUCTIONS:**

1. Replace rod end assembly 406-310-404-101 upon reaching 5000 hours total time since new or if rod end assembly is worn or damaged. Replace rod end assembly on the Collective link tube assembly P/N 407-001-531-101 and/or Lateral Swash plate tube assembly P/N 407-001-025-109 and/or Longitudinal Swashplate tube assembly P/N 407-001-025-113 with new rod end assembly 407-001-404-101. Refer to the BHT-ALL-SPM Standard Practice Manual.
2. Proof load test bonded rod end bearing 407-001-404-101 to 100 inch-pounds (4.52Nm) rotational, after curing time period refer to BHT-ALL-SPM Standard Practice Manual.
3. Set dimension of the control tube assemblies and the angle of rod end assemblies refer to Figure 1.

-NOTE-

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The part number mark on data plates of Lateral and Longitudinal Swashplate tubes identifies detail tube part number only. Refer to table 1 of this bulletin for parts breakdown.

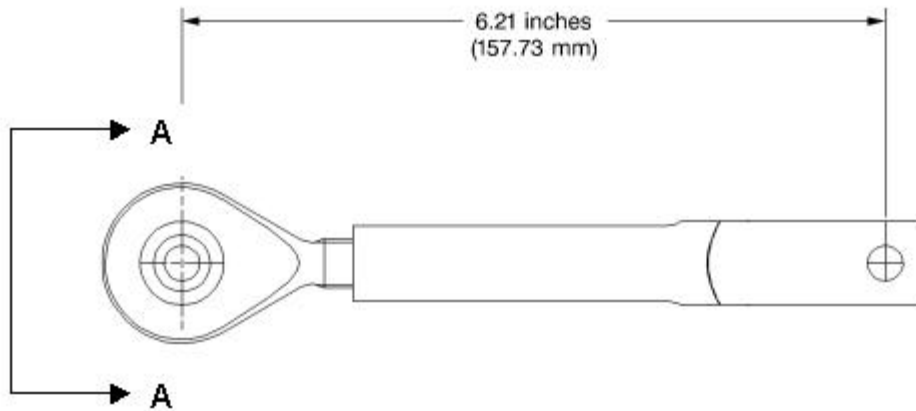
4. Use a permanent ink marker and mark modified tube assemblies as follow:

<u>NOMENCLATURE</u>	<u>PART NUMBER</u>
Lateral Swashplate tube assembly	407-001-025-409 -121FM
Longitudinal Swashplate tube assembly	407-001-025-443 -123FM

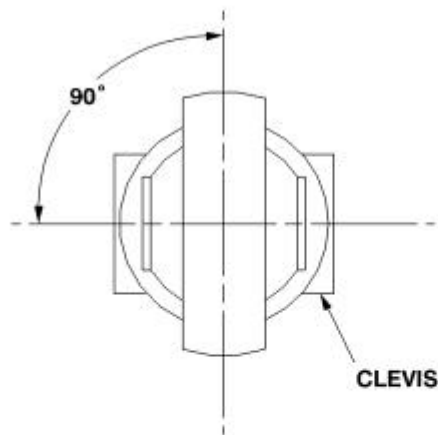
5. Use a vibrating stylus and mark modified tube data plate as follow:

<u>NOMENCLATURE</u>	<u>PART NUMBER</u>
Collective link tube assembly	407-001-531-404 -103FM

6. Inspect rod end assemblies 407-001-404-101 and 406-310-101-101 (refer to Figure 2).



**TUBE ASSEMBLY 407-001-531-103FM**



**TUBE ASSEMBLY 407-001-531-103FM**

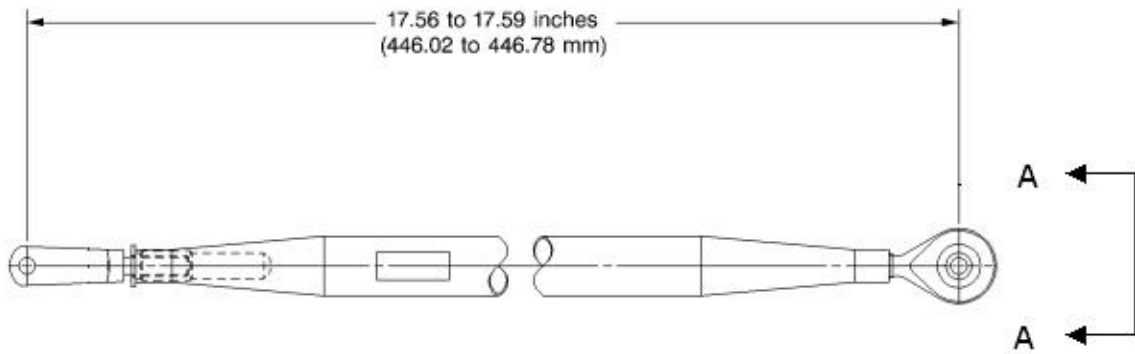
**SECTION A-A**

**View Looking Down**

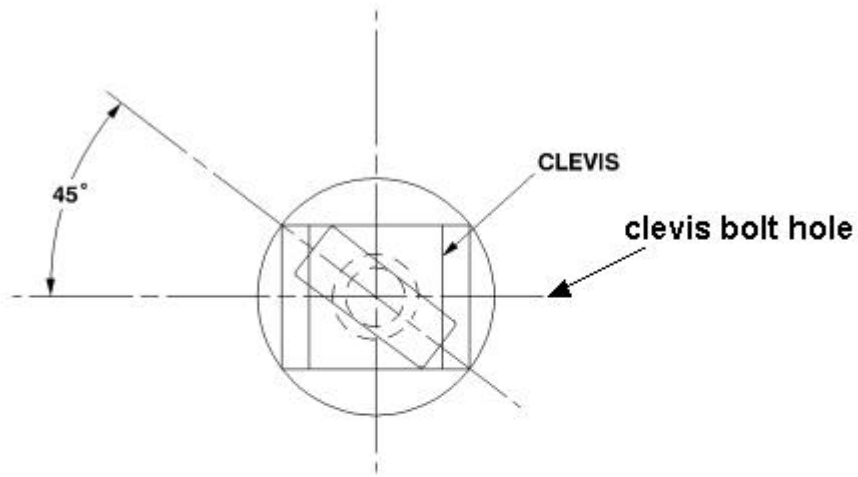
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**Figure 1. Rod End assembly installation (Sheet 1 of 3)**

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TUBE ASSEMBLY 407-001-025-121FM



TUBE ASSEMBLY 407-001-025-121FM

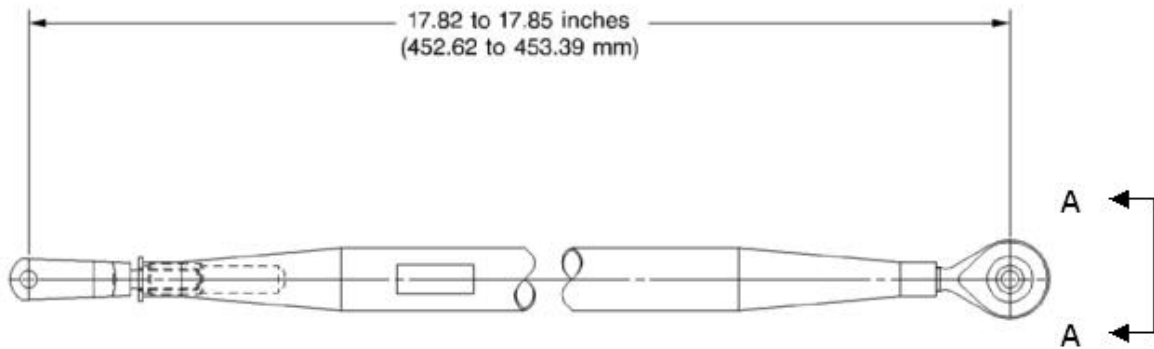
SECTION A-A

View Looking Down

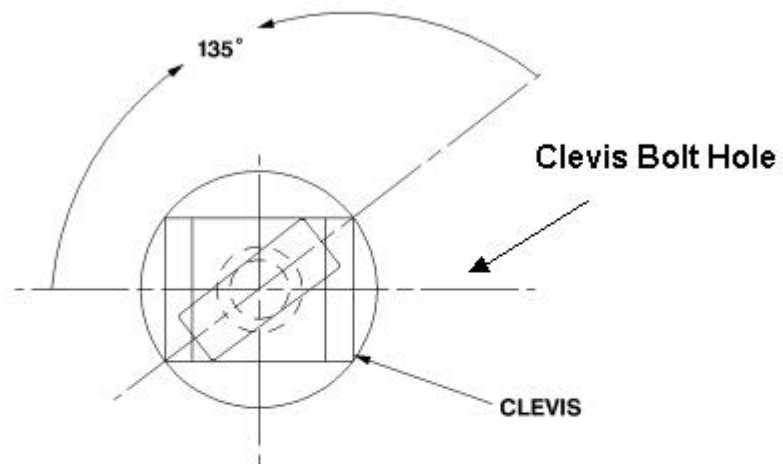
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Figure 1. Rod End assembly installation (Sheet 2)



**TUBE ASSEMBLY 407-001-025-123FM**



**TUBE ASSEMBLY 407-001-025-123FM**

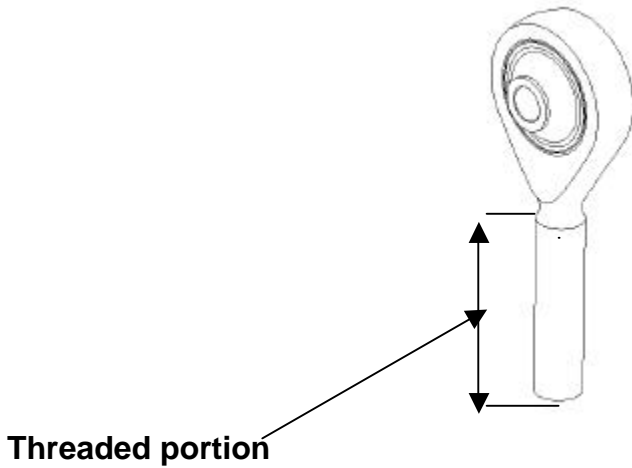
**SECTION A-A**

**View Looking Down**

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**Figure 1. Rod End assembly installation (Sheet 3)**

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**P/N: 407-001-404-101 and 406-310-404-101**

TYPE OF DAMAGE	MAXIMUM DAMAGE AND REPAIR DEPTH
<b>Mechanical and Corrosion after repair</b>	0.005 Inch ( 0.127 mm)
<b>Maximum area per full depth repair</b>	0.010 sq. Inch (6.452 sq. mm)
<b>Number of repair</b>	one
<b>Mechanical and Corrosion edge chamfer damage after repair</b>	0.020 inch (0.508 mm)
<b>Mechanical and Corrosion thread damage after repair</b>	
<b>Depth</b>	1/3 of thread
<b>Length</b>	1/4 of thread circumference
<b>Number</b>	One per thread Two threads

**Figure 2. Rod End Damage Limits (Sheet 1 of 2)**

<b>Bearing axial play</b>	0,015 Inch (0.390 mm)
<b>Bearing radial play</b>	0,015 Inch (0.390 mm)

**NOTES:**

1. No cracks permitted.
2. Edge chamfer damage repair should not affect bearing installation.
3. No damage permitted inside bearing housing.

**Figure 2. Rod End Damage Limits (Sheet 2)**

**TABLE 1.**

**LATERAL AND LONGITUDINAL TUBE ASSEMBLY CONFIGURATIONS**

<b>TUBE ASSEMBLY</b>	<b>PART NUMBER</b>	<b>NOTE</b>	<b>DIMENSION</b>	<b>407-001-025-121</b>	<b>407-001-025-123</b>
<b>TUBE</b>	<b>407-001-025-111</b>	<b>1</b>	<b>14.14 INCH (359.15 mm)</b>	<b>X</b>	
<b>TUBE</b>	<b>407-001-025-115</b>	<b>1</b>	<b>14.31 INCH (363.73 mm)</b>		<b>X</b>
<b>CLEVIS</b>	<b>206-001-198-103</b>			<b>X</b>	<b>X</b>
<b>ROD END</b>	<b>407-001-404-101</b>			<b>X</b>	<b>X</b>
<b>INSERT</b>	<b>407-001-030-101</b>			<b>X</b>	<b>X</b>

**NOTE:**

- 1. Dimension for tube length is taken without insert and to the top end of tube only.**

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