A Textron Company

ALERT SERVICE BULLETIN 429-15-21

19 May 2015
Revision A, 25 March 2016
Revision B, 11 May 2017
Revision C, 23 August 2021

MODEL AFFECTED: **429**

SUBJECT: **429-001-523-101/-103 AND 429-001-532-101/-103 BELLCRANK ASSEMBLY INSPECTION, INTRODUCTION OF.**

HELICOPTERS AFFECTED: **Serial numbers 57001 through 57296.**

[Serial number 57297 and subsequent will have the intent of this bulletin accomplished prior to delivery.]

COMPLIANCE:

Part I - Upon reaching 12 months since date of manufacture or no later than April 30, 2016 for helicopters that have exceeded 12 months since date of manufacture.

Part II - Every 6 months.

Part III – Within 24 months following the release date of revision C of this bulletin.

DESCRIPTION:

Bell has received reports concerning flight control systems that have intermittent restrictions. ASB 429-14-13 was published to address helicopters which did not have air conditioning drainage modifications incorporated. The latest report involved a helicopter which did not have the air conditioning kit installed. Further investigation has determined that static and in-flight precipitation can pool at the forward portion of the roof structure providing a source of contamination for the roof mounted collective and cyclic bellcrank pivot bearings. It should be noted that rough pivot bearings could also be the cause of some Automatic Flight Control System (AFCS) faults (e.g. AP1/AP2

DEGRADED, AUTOTRIM, COLL TRIM CAS messages and the AP1/AP2 MAINT advisories) or degraded flight performance while attempting to maintain an autopilot reference value, possibly manifesting in pitch or roll oscillations. If operators experience similar AFCS issues, an investigation of the roof mounted bellcranks per this ASB should be performed as part of the AFCS troubleshooting process. **Part I** of this bulletin introduces a freedom of rotation check of the roof mounted collective and cyclic bellcrank pivot bearings, and a freedom of rotation check for the collective and cyclic bellcrank arm end bearings. **Part II** of this bulletin repeats **Part I** every 6 months**.** Complying with TB 429-18-58 constitutes a terminating action for **Part II** of this bulletin. **Part III** of this bulletin makes compliance with TB 429-18-58 mandatory.

Revision C of this bulletin corrects the **HELICOPTERS AFFECTED** section, updates the **DESCRIPTION** section, and revises the **ACCOMPLISHMENT INSTRUCTIONS** in **Part II** of this bulletin. **Part III** was also added to make compliance with TB 429-18-58 mandatory.

Applicability of this bulletin to any spare part shall be determined prior to its installation on an affected helicopter.

APPROVAL:

The engineering design aspects of this bulletin are Transport Canada Civil Aviation (TCCA) approved.

CONTACT INFO:

For any questions regarding this bulletin, please contact:

Bell Product Support Engineering
Tel: 1-450-437-2862 / 1-800-363-8023 / productsupport@bellflight.com

MANPOWER:

Approximately 3 man-hours are required to complete **Part I** and **Part II** of this bulletin. Approximately 18 man-hours are required to complete **Part III** of this bulletin. This estimate is based on hands-on time and may vary with personnel and facilities available.

WARRANTY:

MATERIAL:

None required.

SPECIAL TOOLS:

None required.

WEIGHT AND BALANCE:

Not affected.

ELECTRICAL LOAD DATA:

Not affected.

REFERENCES:

BHT-429-MM Maintenance Manual
BHT-ALL-SPM Standard Practices Manual

PUBLICATIONS AFFECTED:

None affected.

ACCOMPLISHMENT INSTRUCTIONS:

Part I – Inspection Procedures

Perform a freedom of rotation check of the roof mounted cyclic and collective bellcrank bearings as follows:

1. Prepare the helicopter for maintenance.

2. Disconnect the forward ends of the collective control tube, longitudinal SCAS actuator, and lateral SCAS actuator (Figure 1) (BHT-429-MM-1, Chapter 67).

CAUTION

Make sure that the collective control tube and SCAS actuator are stowed to prevent binding during the following check.

3. Slowly move the cyclic stick fore/aft and laterally, and the collective stick up/down from stop to stop. If any roughness is detected in the flight control system, Perform TB 429-18-58.

4. Should discrepant pivot bearings be found that require replacement, contact Product Support Engineering to report findings.

5. Check that the MS27643-4 bearings (Item 2) in the 429-001-525-101 collective (Item 3), 429-001-527-101 lateral (Item 4), and 429-001-530-101 longitudinal (Item 5) arm assemblies rotate freely. If binding is detected in any MS27643-4 arm end bearings, perform TB 429-18-58.

6. Should discrepant arm bearings be found that require replacement, contact Product Support Engineering to report findings.;

7. Connect the forward ends of the collective control tube, longitudinal SCAS actuator, and lateral SCAS actuator (Figure 1) (BHT-429-MM-1, Chapter 67).

8. Make an entry in the helicopter logbook and historical service records indicating compliance with **Part I** or **Part II** of this Alert Service Bulletin, as applicable.

Part II – **Recurring Inspection**

-NOTE-

Complying with TB 429-18-58 by upgrading to the 429-001-523-101FM or -107FM and 429-001-532-101FM or -107FM bellcranks constitutes a terminating action to **Part II** of this bulletin.

1. Carry out Part I of this bulletin at 6 month intervals from the accomplishment date of **Part I**.

Part III – Bellcrank Upgrade

1. Upgrade bellcranks 429-001-523-101/-103 and 429-001-532-101/-103 in accordance with TB 429-18-58.

2. Make an entry in the helicopter logbook and historical service records indicating compliance with **Part III** of this Alert Service Bulletin, as applicable.

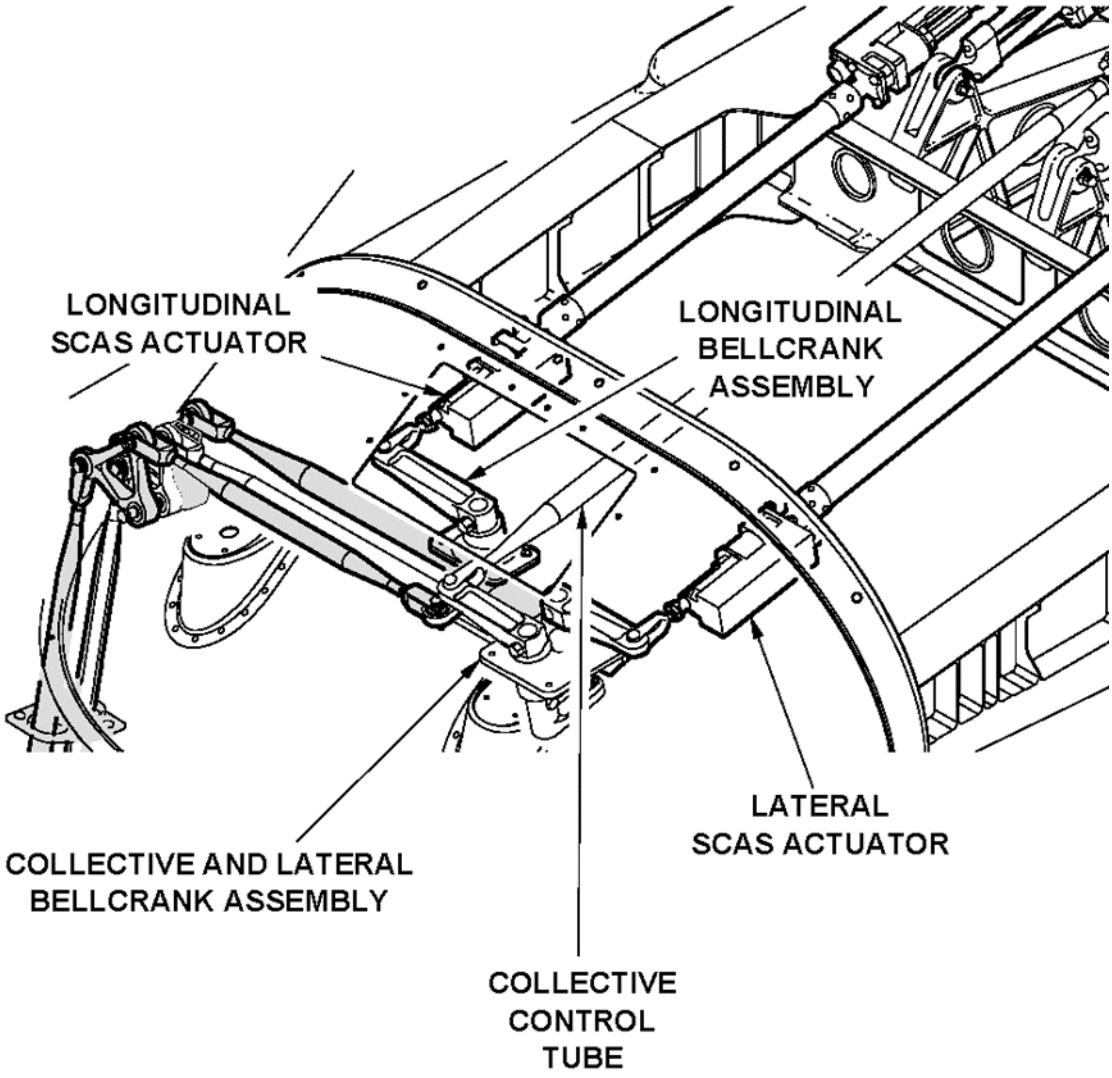
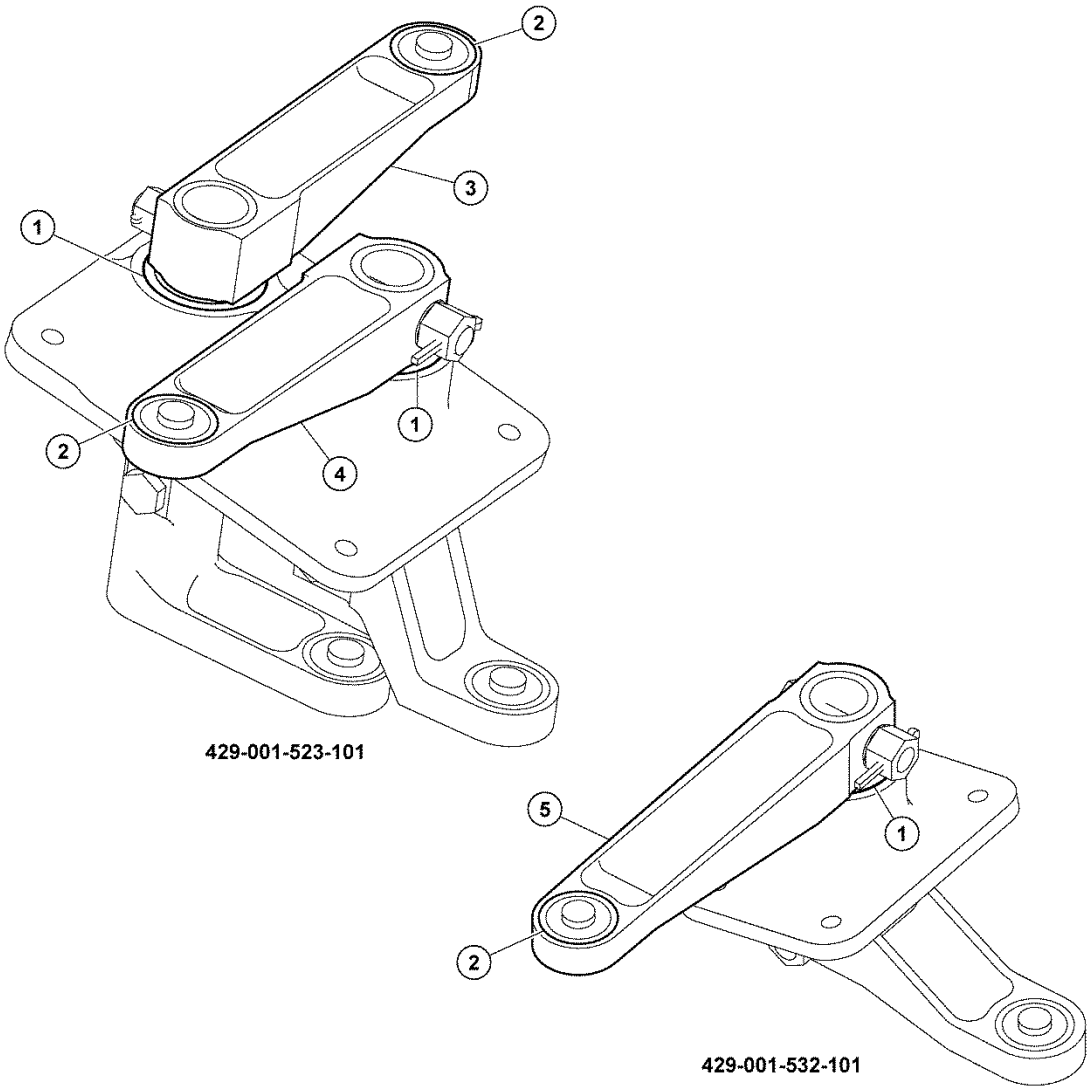


Figure 1 -Bellcrank Assemblies



1. Pivot bearing (MS27646-41) 6 Reqd
2. Bearing (MS27643-4) 3 Reqd
3. Collective arm assembly (429-001-525-101)
4. Lateral arm assembly (429-001-527-101)
5. Longitudinal arm assembly (429-001-530-101)

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Figure 2 Bellcrank Details