ENGINEERED ADVANTAGE.
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T-719: Inspection Limits and Repair

Service Information

Revision: IR
Issued: 11/21/2025

Subject:	Main Rotor Hubs altered by Supplemental Type Certificate (STC) SR12148LA.
Part Numbers:	4E2-010-100-[xxx]
Installation(s):	Bell rotorcraft models 412, 412EP
Revision History:	Revision IR: 11/21/2025 Initial Release
Reason:	Provide supplemental Instructions for Continued Airworthiness (ICA): The alteration installs a single self-lubricated bearing (Bearing) in place of an arrangement of four (4) individual greased bearings that comprise the type-certificated configuration of each pendulum bearing.
Description:	This document defines the instructions for continued airworthiness for the altered Main Rotor Hub. This document clarifies airworthiness limitations for components in the altered configuration.
Applicability:	All Rotorcraft altered by incorporation of STC SR12148LA.
Airworthiness Limitations:	• EXTEX parts/articles used in the alteration do not have airworthiness limitations. • The alteration does not affect the airworthiness limitations for any Bell components present in the altered Main Rotor Hub.
Accomplishment Instructions:	The Bell ICA are applicable to the altered Main Rotor Hub except as follows: 1) Refer to the Appendix: STC SR12148LA Installation Manual, 24-412100-IM, contains instructions on removing and installing the Bearing. 2) Every 300 hours visually inspect both ends of the installed Bearing for damage such as galling or metallic debris. a. Replace a damaged Bearing with a new or serviceable item. 3) Every 300 hours inspect the internal radial clearance of the installed Bearing as follows: a. Position the pendulum weight at the neutral 6 o'clock position. b. Inspect each Bearing by moving the pendulum weight in the vertical (6 o'clock to 12 o'clock) direction. Measure the vertical movement distance using a dial indicator or other appropriate method. (continued)

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Accomplishment Instructions (continued):	c. The Bearing is serviceable if the vertical movement is less than .010 inch. d. If vertical movement is .010 inch or more, replace the Bearing with a new or serviceable item. 4) The self-lubricated Bearing does not require periodic grease lubrication (reference Bell 412 Maintenance Manual, Chapter 12). When installed, the Bearing does not permit grease to flow through the grease fitting.
Notes:	Please contact your EXTEX representative with any questions. 480.606.1039
Enclosure:	Appendix: STC SR12148LA Installation Manual – Document Number 24-412100-IM

INSTALLATION MANUAL

STC SR12148LA

24-412100-IM | Revision: IR
Date: 11/21/2025

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This document does not contain data subject to the U.S. ITAR or U.S. EAR regulations.

EXTEX
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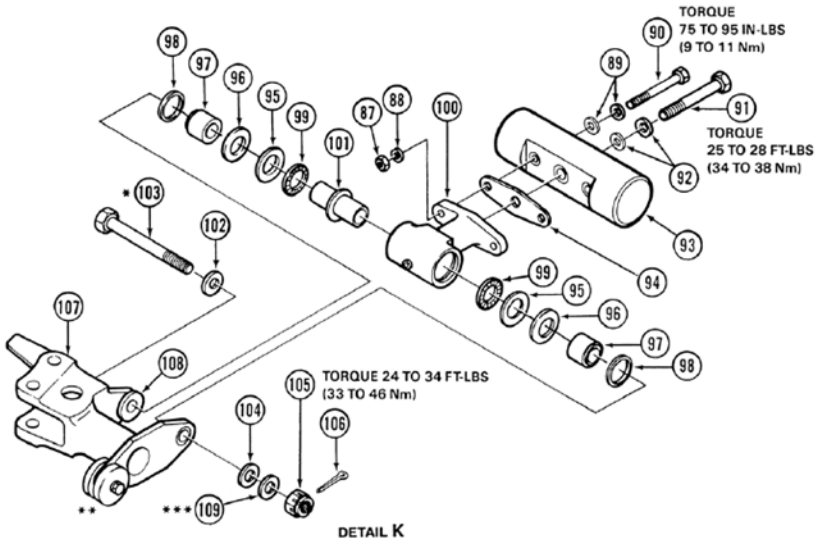
Table of Contents

1. SUMMARY:

The STC alters the Bell Helicopter Model 412/412EP Main Rotor Hub.

Figure 1 shows an exploded view of an exemplar type-certificated Arm and Bearing Assembly from the Bell 412 CR&O manual. The Arm and Bearing Assemblies are sub-assemblies of the Main Rotor Hub. This STC requires alteration of all eight (8) Arm and Bearing Assemblies on the Main Rotor Hub.

> *Note: The Arm and Bearing Assembly includes all components from the Main Rotor Hub attachment Bracket (#107) to the oscillating Weight (#93).*



Helicopter 33111 and subsequent and helicopter with 412-706-116-101 kit installed.

87. Nut	95. Washer	103. Bolt
88. Washer	96. Shim	104. Washer
89. Washer	97. Retainer	105. Nut
90. Bolt	98. Retaining ring	106. Cotter pin
91. Bolt	99. Bearing	107. Bracket
92. Washer	100. Arm	108. Bushing
93. Weight	101. Inner race	109. Washer (optional)
94. Shim	102. Washer	

Figure 1: Arm & Bearing Assembly (Exploded View)
(Item #100 Arm Assembly, PN 412-010-263-101)

For consistency with Figure 1, the nomenclature in this document for Item #100, PN 412-010-263-101 or later is “Arm.”

The integral self-lubricated Bearing (Item #201) is installed into the Arm (Item #100), which is a component of the Arm and Bearing Assembly. A single KRP376408V Bearing replaces several Bell components.

Figure 2 shows an exemplar exploded view of the altered Arm and Bearing Assembly.

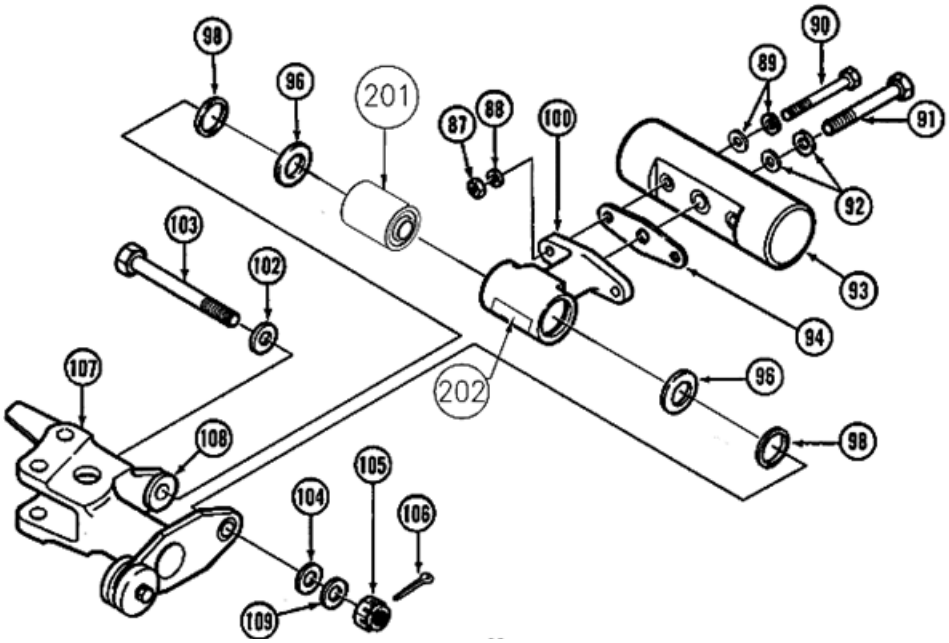


Figure 2: Altered Arm & Bearing Assembly (Exploded View)
(Item #201 is the Bearing and Item #202 is the Data Plate.)

2. WORK SCOPE OVERVIEW:

2.1 Remove all eight (8) Arm and Bearing Assemblies from the Main Rotor Hub per Bell 412 CR&O Manual.

2.2 Alter each Arm and Bearing Assembly per these Instructions and the Bell 412 CR&O Manual.

2.3 Install the eight (8) altered Arm and Bearing Assemblies onto the Main Rotor Hub per the Bell 412 CR&O.

2.4 Make appropriate Logbook entry recording the incorporation of the STC.

⚠ CAUTION:

This STC does NOT authorize flight operations with one (1) to seven (7) altered Arm and Bearing Assemblies.

3. KIT CONTENTS:

The STC Kit part number is 4E2-010-100. Table 1 lists the STC Kit contents.

Table 1: STC Kit Contents (4E2-010-100)

Item Number	Quantity	Part Number	Nomenclature
1	8	KRP376408V	Bearing- Counterweight, Airframe (Bell 412)
2	8	E376408V-1	Shim
3	8	E376408V-2	Data Plate- Foil Decal

4. BILL OF MATERIAL INFORMATION:

Table 2 lists the items to be installed and the items to be removed from the Arm and Bearing Assembly. Other items in the Arm and Bearing Assembly (reference Figure 1) are unchanged.

Table 2: Arm and Bearing Assembly Changes to Bill of Materials
(Quantity is for each Arm and Bearing Assembly)

Install			Remove		
Part Number	**Nomenclature**	**Qty**	**Part Number (Ref)**	**Nomenclature**	**Qty**
KRP376408V	Bearing-Counterweight, Airframe	1	412-010-220-101	Retainer Assembly	2
E376408V-1	Shim	AR	412-010-223-101	Washer	2
E376408V-2	Data Plate-Foil Decal	1	412-010-451-101	Bearing	2
[1]M2742630133B	Ring, Retainer	2	412-010-219-101	Race, Inner	1
			120-008C43-27	Shim	AR

[1]M2742630133B Retaining Rings may be reused if serviceable. Installer to replace with serviceable items as required.

5. INSTRUCTIONS FOR ALTERATION OF MAIN ROTOR HUB:

5.1 Remove each Arm and Bearing Assembly from the Main Rotor Hub. Remove the Arm (Item #100) from the Arm and Bearing Assembly.

5.2 Remove all internal components from the Arm. Optional to remove other attached external items, such as the Weight and associated hardware.

5.3 Remove all grease and dirt from the Arm. Ensure that the bore and retaining ring grooves are clean.

5.4 Inspect Arm for damages and verify it is serviceable. When necessary, repair per the Bell 412 CR&O Manual or obtain a replacement.

5.5 Insert the Bearing (Item #201) into the Arm.

⚠ CAUTION:

When inserting Bearing, use light pressure only – DO NOT HAMMER.

- Bearing may be pressed into housing using light pressure on the side face of the aluminum outer race only. Do not press on the inner race (steel) components. Reference Figure 3.

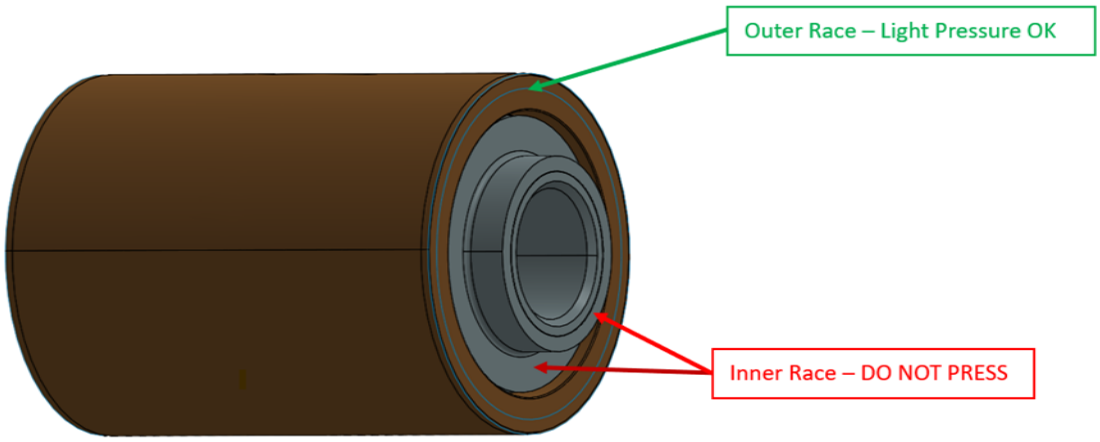


Figure 3: Bearing Components

- If Bearing does not readily fit into the Arm bore – it may readily fit starting from the opposite end of the Arm.
- If necessary, the Bearing may be cooled for assembly using dry ice, however, use of liquid nitrogen is not permitted.

⚠ CAUTION:

The Bearing is designed with internal radial and axial clearances.
There is more internal movement than the type-certificated configuration.

- The Bearing has a normal radial clearance up to .0035.
- The Bearing has a normal axial clearance up to .0150.

5.6 Insert both retaining rings.

5.7 Check the axial clearance between the Bearing outer race and the retaining rings.

- When measuring axial clearance, carefully check between the outer race and retaining ring only. The axial clearance measurement will be invalid if including the internal axial movement of the bearing.
- As applicable, install shim(s) to conform to the .005 max axial clearance requirement of the Bell 412 CR&O Manual.
- Use care to ensure that the shims are centered and do not ingress into the retaining ring grove.

5.8 Affix Data Plate onto the Arm in the longitudinal direction (reference Figure 4) covering the grease fitting. The data plate indicates that the Arm Assembly has been altered by this STC with a self-lubricated bearing.

Note: Optional to remove grease fitting prior to affixing Data Plate

Figure 4: Data Plate Location

5.9 Reassemble the altered Arm and Bearing Assembly per the Bell 412 CR&O Manual.

5.10 Install the eight (8) altered Arm and Bearing Assemblies onto the Main Rotor Hub per the Bell 412 CR&O Manual.

> **⚠ CAUTION:**
> Some Bell components in the Arm and Bearing Assembly may be service life limited per chapter 4 of the Bell 412 Maintenance Manual. This alteration does not change any of these existing service life limits.

5.11 Verify bearing function via ground runs. Appropriate testing protocol to be determined by the installer.

5.12 Complete the Bell 412 Maintenance Manual inspection applicable to the pendulum bearing ([100 hour/12-month Part A] or [25 hour/30 day Part B]).

5.13 Make appropriate Aircraft Logbook entry recording incorporation of the STC.

6. INSTRUCTIONS FOR REMOVING BEARING FROM MAIN ROTOR HUB:

Full access to the Bearing outer race is required to remove an unserviceable Bearing from the Arm (Item #100).

If not previously accomplished, remove the Arm and Bearing Assembly from the Main Rotor Hub. Remove the Arm from the Arm and Bearing Assembly.

6.1 Expose the bearing ends by removing both retaining rings and any shims.

6.2 Apply pressure on one end of the aluminum outer race. If unable to move the Bearing with light pressure, apply pressure from the opposite end of the Arm. It is acceptable to lightly tap or hammer the outer race using caution to not damage the Arm bore.

6.3 Once removed, clean any grease and dirt from the Arm. Ensure that the Arm bore and retaining ring grooves are clean.

7. INSTRUCTIONS FOR INSTALLING BEARING INTO MAIN ROTOR HUB:

A replacement Bearing must only be installed into a new or serviceable Arm (Item #100).

If not previously accomplished, remove the Arm and Bearing Assembly from the Main Rotor Hub. Remove the Arm from the Arm and Bearing Assembly.

7.1 Reference Section 5 “Instructions for Alteration of Main Rotor Hub”.

7.2 Complete Steps 5.4 through 5.7 to install the Bearing into the Arm.

7.3 If the Data Plate is damaged, remove and install a new Data Plate per Step 5.8.

7.4 Assemble the Arm and Bearing Assembly per Step 5.9.

7.5 Install the Arm and Bearing Assembly onto the Main Rotor Hub by completing Steps 5.10 through 5.12.

7.6 Make appropriate Aircraft Logbook entry.