

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

A Subsidiary of Textron, Inc.

April 18, 2006

**TO: All Owners/Operators of Bell 222/222B Helicopters**

**SUBJECT: REVISION "C" TO TECHNICAL BULLETIN 222-89-124:  
SWASHPLATE AND LEVERS ASSEMBLIES P/N 222-010-400,  
CONFIGURATION CHANGE AND UPGRADE.**

Revision C to this bulletin identifies a new swashplate configuration that incorporates support assembly P/N 222-010-418-107 with tungsten carbide coating.

# TECHNICAL BULLETIN

## Bell Helicopter **TEXTRON**

A Subsidiary of Textron Inc.

No. 222-89-124

Date 06-22-89

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DATE April 18, 2006

REV C

**MODEL AFFECTED:** 222 / 222B

**SUBJECT:** SWASHPLATE AND LEVERS ASSEMBLIES P/N 222-010-400, CONFIGURATION CHANGE AND UPGRADE

**HELICOPTERS AFFECTED:** Model 222 helicopters S/N 47006 through 47089 and 222B helicopters S/N 47131 through 47156

**COMPLIANCE:** At Customer's Option

### DESCRIPTION:

This bulletin provides information to operators that have a requirement to upgrade the swashplate and levers assembly to the latest configuration. Upgrading of swashplate and levers assemblies will require incorporation of Technical Bulletin 222-81-17, 222-81-22, 222-85-80, 222-85-84, 222-92-133 and 222-93-136. Table 1 lists the components, which comprise the swashplate and levers assembly dash number configuration differences.

This bulletin identifies a new configuration which incorporates rotating ring assembly P/N 222-010-403-117 including replacement pin P/N 230-010-402-101. This bulletin also provides information to replace the hardware securing the slider assemblies P/N 222-310-469-103 to the swashplate inner ring. The new hardware will allow higher torque application to prevent joint looseness and subsequent damage. Revision C to this bulletin identifies a new swashplate configuration that incorporates support assembly P/N 222-010-418-107 with tungsten carbide coating.

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The helicopter certified design configurations at time of delivery were as follows:

Model	Helicopter Serial Number	Swashplate and Levers Assembly Part Number
222	47006-47050	222-010-400-103
222	47051-47079	222-010-400-105
222	47080	222-010-400-115
222	47081-47086	222-010-400-109
222	47087-47089	222-010-400-117

Model	Helicopter Serial Number	Swashplate and Levers Assembly Part Number
222B	47131-47133 and 47135	222-010-400-111
222B	47134-47136	222-010-400-119
222B	47137-47146	222-010-400-121
222B	47147-47156	222-010-400-123

Swashplate and levers assembly P/N 222-010-400-135 is the current spare replacement.

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The use of a later dash numbered swashplate and levers assembly on an earlier serial number helicopter is approved. The use of an earlier dash numbered swashplate and levers assembly on a later serial number helicopter is not authorized and places the helicopter out of the certified configuration.

A dash number identification change on the swashplate and levers assembly data plate is required. Historical records must be annotated with the new part numbers and retirement lives, as applicable.

**APPROVAL:**

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

**MANPOWER:**

No man-hour requirements are stated, as the length of time for upgrade will vary with the upgrade required. Upgrades at time of overhaul should result in no addition to man-hour requirements normally incurred.

**MATERIAL:**

Reference ACCOMPLISHMENT INSTRUCTIONS. Material will be available through your Bell Helicopter Supply Center.

**SPECIAL TOOLS:**

230-210-101-107 tool set including -101 pressing plug to install drive pin in rotating ring, -103 support to support ring assembly during installation of drive pin into rotating ring and -105 support to support ring assembly during removal of drive pin from the rotating ring.

Reference Model 222 Component Repair and Overhaul Manual, Volume 2, Chapter 62.

**WEIGHT AND BALANCE:**

Not affected.

**ELECTRICAL LOAD DATA:**

Not affected.

**REFERENCES:**

ASB 222-81-10, Collective Lever Inspection  
ASB 222-82-13, Aluminum Swashplate Drive link Replacement  
ASB 222-83-22, Idler Link and Collective Lever Connecting Bolts Inspection and retorque  
ASB 222-87-40, Swashplate Pin Inspection  
TB 222-81-17, Swashplate Triplex Bearing Set  
TB 222-81-22, Swashplate Nylatron Washer  
TB 222-82-49, Swashplate Ball Sleeve Improvement  
TB 222-85-80, Swashplate Boot Replacement  
TB 222-85-84, Swashplate and Levers Assembly, Ball Sleeve Replacement  
TB 222-92-133, Collective and Cyclic Lever Modification  
TB 222-93-136, Swashplate Cyclic Link upgrade  
BHT 222/222B-MM-1, Chapter 5 and 65  
BHT 222-CR&O-2, Chapter 62  
BHT 222 IPB, Chapter 65  
BHT 222B IPB, Chapter 65  
Information Letter 222-98-13, Swashplate Inspection

**PUBLICATIONS AFFECTED:**

BHT-222-IPB, Chapter 65  
BHT-222B-IPB, Chapter 65  
BHT-222-CR&O-2, Chapter 62  
BHT-222/222B-MM-1, Chapter 65

**ACCOMPLISHMENT INSTRUCTIONS:**

Upgrading of swashplate and levers assemblies will require incorporation of Technical Bulletin 222-81-17, 222-81-22, 222-85-80, 222-85-84, 222-92-133 and 222-93-136, if not previously accomplished.

Table (1) lists the major components of dash numbered configurations, but does not contain parts and hardware common to all configurations. These items are contained in the Illustrated Parts Catalog.

Overhaul swashplate and levers in accordance with Chapter 62 of Model 222 Series Component Repair and Overhaul Manual.

The upgraded swashplate and levers assembly must have its data plate and Historical Record reidentified to new part number that the swashplate and levers assembly was upgraded to. The suffix "FM" will be added after the part dash number to indicate "field modified". The serial number of field modified part will not be altered or changed.

Example:

Upgrade the Model 222/222B swashplate and levers assembly P/N 222-010-400-103 to the -131 configuration. Re-identify swashplate and levers assembly data plate and Historical Service Record to new part number: 222-010-400-~~103~~-131FM. Retain existing serial number.

**TABLE I  
SWASHPLATE AND LEVERS ASSEMBLY**

PART NUMBER	NOMENCLATURE	DASH NUMBERS										NOTES
			-105	-109	-111							
222-010-400	Swashplate & Levers		-105	-109	-111							
		-103	-115	-117	-119	-121	-123	-127	-129	-131	-135	
		(2)	(4)	(5)	(6)						(11)	
20-057-6-17D		X	X	X	X							(9)(22)
20-057-6-16D	Bolt (2)					X	X	X	X			(21)(22)
MS17826-6	Nut (2)	X	X	X	X	X	X	X	X			(21)(22)
140-009C25S53	Washer (2)	X	X	X	X	X	X	X	X			(21)
MS24665-283	Cotter Pin (2)	X	X	X	X	X	X	X	X			(21)
20-057-10-42D	Bolt	X	X									(24)(25)
20-057-10-45D	Bolt			X	X	X	X	X	X	X	X	(26)
222-010-403-005	Ring Assembly	X	X	X	X	X	X					(12)
222-010-403-113	Ring Assembly							X	X			(16)(20)(29)
222-010-403-117	Ring Assembly									X	X	(29)
222-010-404-005	Ring Assembly	X	X	X								(9)(17)
222-010-404-109	Ring Assembly				X							(9)(17)
222-010-404-111	Ring Assembly					X	X					(13)(17)
222-010-404-115	Ring Assembly							X	X	X	X	
222-010-405-005	Ball Sleeve	X	X	X								(9)
222-010-405-113	Ball Sleeve				X							(9)
222-010-405-115	Ball Sleeve					X	X	X	X	X	X	
222-010-407-005	Collective Lever	X	X									(27)
222-010-409-005	Idler Link	X	X									(27)
222-010-409-105	Idler Link			X	X	X	X	X	X	X	X	
222-010-499-101	Washer			X	X	X	X	X	X	X	X	(8)
222-010-410-005	beam	X	X									(27)

AN APPROPRIATE ENTRY SHOULD BE MADE IN THE AIRCRAFT LOGBOOK UPON ACCOMPLISHMENT  
IF OWNERSHIP OF AIRCRAFT HAS CHANGED PLEASE FORWARD TO NEW OWNER

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TABLE I ( CONT'D )  
SWASHPLATE AND LEVERS ASSEMBLY

PART NUMBER	NOMENCLATURE	DASH NUMBERS										NOTES
			-105	-109	-111							
222-010-400	Swashplate & Levers		-105	-109	-111							
		-103	-115	-117	-119	-121	-123	-127	-129	-131	-135	
		(2)	(4)	(5)	(6)						(11)	
222-010-412-003	Cap	X										(2)
222-010-412-101	Cap		X	X	X	X						(3)
222-010-412-103	Cap						X	X	X	X	X	
222-010-414-001	Spacer Set	X										(2)
222-010-418-103	Support assembly	X	X	X	X	X	X	X	X	X		(30)
222-010-418-107	Support assembly										X	
222-010-419-101	Link Assembly	X	X	X	X	X	X					(14)(18)
222-010-419-106	Link Assembly	X	X	X	X	X	X					(15)(18)
222-010-419-109	Link Assembly							X	X	X	X	
222-010-419-110	Link Assembly							X	X	X	X	
222-010-487-101	Shield						X	X	X	X	X	(1)(3)
222-010-490-101	Cap Assembly	X										(2)
222-010-490-105	Cap Assembly		X	X	X	X						(3)(1)
222-010-490-109	Cap Assembly						X	X	X	X	X	
222-010-497-101	Collective Lever											(7)
222-010-497-105	Collective Lever			X	X	X	X		X			(10)
222-010-497-109	Collective Lever							X		X	X	
222-011-402-101	Beam			X	X	X	X	X	X	X	X	
222-310-469-001	Slider Assembly	X	X	X	X							(9)
222-310-469-103	Slider Assembly					X	X	X	X	X	X	
222-310-470-001	Bearing Set	X										(2)
222-310-476-101	Bearing Set		X	X	X	X	X	X	X	X	X	
222-010-408-109	Cyclic Lever	X	X	X	X	X	X		X			(10)
222-010-408-113	Cyclic Lever							X		X	X	

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**TABLE I ( CONT'D )  
SWASHPLATE AND LEVERS ASSEMBLY**

PART NUMBER	NOMENCLATURE	DASH NUMBERS										NOTES
			-105	-109	-111							
222-010-400	Swashplate & Levers		-105	-109	-111							
		-103	-115	-117	-119	-121	-123	-127	-129	-131	-135	
		(2)	(4)	(5)	(6)						(11)	
222-010-463-101	Washer	X	X									(28)
222-011-420-101	Safety Washer			X	X	X	X	X	X	X	X	
222-011-421-101	Thrust Washer			X	X	X	X	X	X	X	X	
222-310-465-001	Bearing	X	X	X	X	X	X	X				(19)
222-011-425-101	Bearing								X	X	X	
NAS1160-5-17D	Bolt (2)									X	X	(21)(23)
MS14144L5	Nut (2)									X	X	(21)(23)
140-009C21S53	Washer (2)									X	X	(21)
MS24665-136	Cotter Pin (2)									X	X	(21)

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1. When replacing P/N 222-010-494-101 boot, use P/N 222-010-487-101 shield, P/N 222-010-412-103 cap, and P/N 222-010-490-109 cap assembly as a unit. Refer to T.B. 222-85-80.
2. Compliance with T.B. 222-81-17, will change P/N 222-010-400-103 to -105.
3. Refer to T.B. 222-85-80.
4. Compliance with ASB 222-83-22 will change P/N 222-010-400-105 to -115.
5. Compliance with ASB 222-83-22 will change P/N 222-010-400-109 to -117.
6. Compliance with ASB 222-83-22 will change P/N 222-010-400-111 to -119.
7. Helicopters equipped with VNE kits P/N 222-704-001-101/-103/-105/-107 with collective lever assemblies, P/N 222-010-497-101 installed must comply with ASB 222-81-10
8. Refer to TB 222-81-22.
9. Refer to TB 222-85-84.
10. May be upgraded per T.B. 222-92-133.
11. The -135 contains the latest component configuration.
12. Superseded in spares by P/N 222-010-403-113
13. Superseded in Spares by P/N 222-010-404-115
14. Superseded in Spares by P/N 222-010-419-109
15. Superseded in Spares by P/N 222-010-419-110
16. Ring P/N 222-010-403-113 may be upgraded to -117 configuration by replacing pin P/N 222-010-455-003 with pin P/N 230-010-402-101.
17. Do not apply primer to the triplex bearing mating surface.
18. May be upgraded per T.B. 222-93-136.
19. Superseded in Spares by P/N 222-011-425-101.
20. Superseded in Spares by P/N 222-010-403-117.

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21. For spare replacement of (2) 20-057-6-16D bolt, (2) MS17826-6 nut, (2) MS 24665-283 Cotter pin and (2) 140-009C25S53 washer as a unit, Use 2) NAS1160-5-17D bolt, (2) MS14144L5 nut, (2) MS 24665-136 Cotter pin and (2) 140-009C21S53 washer as a unit.
22. Torque bolt/nut to 70 -110 inch-lb. One washer P/N AN960-616L is optional (under the nut) to install the cotter pin within the torque range specified.
23. Torque bolt/nut to 140 -160 inch-lb. One washer P/N NAS1149F0532P is optional (under the nut) to install the cotter pin within the torque range specified.
24. Torque bolt/nut to 25-65 FT-lbs.
25. Replaced by bolt P/N 20-057-10-45D (26)
26. Torque bolt/nut to 55-75 FT-lbs.
27. Replaced by Service Instruction 222-23
28. Replaced by ASB 222-82-13 and T.B. 222-81-41 rev. A
29. Rotating ring with oversize or elongated drive pin hole(s) may be reworked to an oversize stepped pin. However, the rework procedure can only be accomplished by Bell Helicopter. **Operators should not attempt this repair.**
30. Superseded in spares by support assembly 222-010-418-107 with tungsten carbide coating.

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