



A Textron Company

TECHNICAL BULLETIN

505-24-32

19 December 2024

Revision A, 13 January 2025

MODEL AFFECTED: 505

SUBJECT: LUBRICANT CONVERSION PROCEDURE FROM THIXO SYN (C-172) TO MOBILGREASE 28 (C-001), WITHOUT DISASSEMBLY, INTRODUCTION OF.

HELICOPTERS AFFECTED: Serial numbers 65011 and subsequent.

COMPLIANCE: At customer's option.

DESCRIPTION:

This bulletin is issued to notify operators about the introduction of a lubricant conversion procedure for components serviced with ThixO SYN (C-172). Disassembly of the components is not required.

Bell has performed testing which demonstrates that Mobilgrease 28 (C-001) can be used to purge ThixO Syn (C-172) at the following locations when adhering to the instructions contained in this bulletin.

- Main rotor grip assembly
- Main rotor trunnion assembly
- Main rotor pitch horn trunnion bearing assembly
- Tail rotor trunnion housing assembly
- Tail rotor pitch change mechanism
- Swashplate duplex bearing

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

Revision A of this bulletin corrects the grease lubrication calendar interval for the needle bearings of the tail rotor hub assembly.

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 6 man-hours are required to complete this bulletin, unless accomplished during normal scheduled overhaul. This estimate is based on hands-on time and may vary with personnel and facilities available.

WARRANTY:

There is no warranty credit applicable for parts or labor associated with this bulletin.

MATERIAL:

Required Material:

None Required.

Consumable Material:

The following material is required for the accomplishment of this bulletin, but may not require ordering, depending on the operator’s consumable material stock levels. This material may be obtained through your Bell Supply Center.

<u>Part Number</u>	<u>Nomenclature</u>	<u>Qty (Note)</u>	<u>Reference *</u>
1650-03297-00	CRES, SAFETY WIRE	1 LB (1)	C-405
2400-00030-00	GREASE-13.7OZ CARTRIDGE-MOBIL 28	A/R (2)	C-001
MS24665-136	COTTER PIN	4 (3)	

* C-XXX numbers refer to the consumables list in the BHT-ALL-SPM, Standard Practices Manual

NOTES:

1. Quantity indicated is the format that the product is delivered in. Actual quantity required to accomplish the instructions in this bulletin may be less.
2. The estimated total quantity of grease required to purge all the components listed in this Technical Bulletin is the equivalent of eight (8) 13.7oz cartridges. This quantity is for the initial purge sequence only. Additional grease will be required for the following purge sequences.
3. Quantity indicated is the quantity required for one purge sequence.

SPECIAL TOOLS:

None required.

WEIGHT AND BALANCE:

Not affected.

ELECTRICAL LOAD DATA:

Not affected.

REFERENCES:

BHT-ALL-SPM, Standard Practice Manual, Chapter 13
505-MPI, Maintenance Planning Information, Chapter 5
505-MM, Maintenance Manual, Chapter 12, 62 and 65
505-CMM, Component Maintenance Manual, Chapter 62, 63, 64 and 67

PUBLICATIONS AFFECTED:

505-MM, Maintenance Manual, Chapter 12

ACCOMPLISHMENT INSTRUCTIONS:

CAUTION

Mobilgrease 28 is the only brand of Grease (C-001) approved for the purging purposes of this Technical Bulletin.

1. Prepare the helicopter for maintenance.

CAUTION

505-MM, Chapter 12 Grease lubrication instructions and notes must be followed while complying with this Technical Bulletin, except as noted in the accomplishment instructions below.

-NOTE-

To prevent seal damage, the vent fitting on top of each main rotor pitch horn shall be removed while adding grease to the grips. Always use a hand grease gun and gently pump grease into main rotor grips.

-NOTE-

As an alternate to the purging procedure below, the main rotor hub assembly can be completely disassembled, cleaned and reassembled with Mobilgrease 28 using the instructions from 505-CMM. Electing to disassemble the main rotor hub assembly does not decrease the currently published grease lubrication intervals from the 505-MPI. The intervals are only decreased if the purging method is used (new intervals shown in Table 1).

2. Purge lubricate the main rotor grips (4, Figure 1) (DMC-505-A-12-20-01-00A-242A-A) with Mobilgrease 28 (C-001). Use a minimum quantity of three (3) 13.7oz cartridges per grip. If necessary, continue purge lubricating the grips until grease ThixO SYN (C-172) is no longer noticeable.
3. Purge lubricate the main rotor hub pillow blocks (3, Figure 1) (DMC-505-A-12-20-03-00A-242A) using Mobilgrease 28 (C-001). A minimum of 50 strokes must be used for each pillow block bearing. If necessary, continue purge lubricating the bearings until grease ThixO SYN (C-172) is no longer noticeable.
4. Remove both main rotor pitch links. (DMC-505-A-62-30-02-00A-520A-A)
5. Purge lubricate each pitch horn trunnion bearing (1 and 2, Figure 1) (DMC-505-A-12-20-02-00A-242A-A) with Mobilgrease 28 (C-001). Alternate between the 3 greasing points, 5 strokes at a time. To promote purging, rotate the trunnion bearing 180 degrees between each greasing. A minimum of 50 strokes must be used for each trunnion bearing. If necessary, continue purge lubricating the bearings until grease ThixO SYN (C-172) is no longer noticeable.

-NOTE-

As an alternate to the purging procedure below, the swashplate assembly can be completely disassembled, cleaned and reassembled with Mobilgrease 28 using instructions from the 505-CMM. Electing to disassemble the swashplate assembly does not decrease the currently published grease lubrication intervals from the 505-MPI. The intervals are only decreased if the purging method is selected (new intervals shown in Table 1).

-NOTE-

To prevent contamination of Teflon lined spherical bearings, frequently remove purged grease from duplex bearing. Wipe grease from all external surfaces. Lift lower lip of swashplate boot and wipe off all visible grease from upper surfaces of swashplate and collective sleeve.

6. Purge lubricate the swashplate duplex bearing (5, Figure 1) (DMC-505-A-12-20-04-00A-242A-A) with Mobilgrease 28 (C-001). After every 25 strokes, rotate swashplate outer ring 90 degrees and continue purge lubricating. Use a minimum quantity of one (1) 13.7oz cartridge. If necessary, continue purge lubricating until grease ThixO SYN (C-172) is no longer noticeable.
7. Install both pitch links (DMC-505-A-62-30-02-00A-720A-A).
8. Purge lubricate the tail rotor trunnion bearing housings (6, Figure 1) (DMC-505-A-12-20-10-00A-242A-A) with Mobilgrease 28 (C-001) until grease ThixO SYN (C-172) is no longer noticeable.
9. Purge lubricate the pitch change trunnion bearing (7, Figure 1) (DMC-505-A-12-20-05-00A-242A-A) with Mobilgrease 28 (C-001) until grease ThixO SYN (C-172) is no longer noticeable. Rotate the bearing during the purging process.
10. Purge lubricate the pitch change shaft bearing (8, Figure 1) (DMC-505-A-12-20-05-00A-242A-A) with Mobilgrease 28 (C-001) until grease ThixO SYN (C-172) is no longer noticeable. Rotate the bearing during the purging process.
11. After 1 to 10 hours of flight following the initial purging sequence, repeat steps 2 to 10. Use a minimum quantity of one and a half (1.5) 13.7oz cartridges per main rotor grip instead of three (3). Use the same quantity of grease for other components. If the purged grease shows any indication of ThixO SYN (C-172) grease, repeat steps 2 to 10 after another 1 to 10 hours of flight.

-NOTE-

The reduction in grease lubrication intervals is a temporary measure that will be adjusted once additional tests are completed and additional data is gathered. This Technical Bulletin (TB) will be revised with additional instructions on how to return to the currently published grease lubrication intervals and inspections.

12. Revise the aircraft maintenance schedule to reduce grease lubrication intervals as shown in Table 1 below.

Table 1 – Reduced Grease Lubrication Intervals

Task No.	Task description	Reference (DMC)	Currently published interval	New interval
62-20-00-010	Lubricate the main rotor grips.	DMC-505-A-12-20-01-00A-242A-A	50 flight hours	25 flight hours
62-20-00-011	Lubricate the trunnion bearings.	DMC-505-A-12-20-02-00A-242A-A	50 flight hours	25 flight hours
62-20-00-012	Lubricate the bearing of the pillow block assemblies.	DMC-505-A-12-20-03-00A-242A-A	50 flight hours	25 flight hours
62-30-00-011	Lubricate the swashplate and support assembly (duplex bearing).	DMC-505-A-12-20-04-00A-242A-A	50 flight hours	25 flight hours
64-10-00-002	Lubricate the needle bearings of the tail rotor hub assembly.	DMC-505-A-12-20-10-00A-242A-A	50 flight hours / 1 year	25 flight hours / 3 months
64-30-00-003	Lubricate the tail rotor pitch change mechanism.	DMC-505-A-12-20-05-00A-242A-A	100 flight hours	25 flight hours

13. At each grease lubrication event, visually inspect the purged grease for signs of component deterioration such as discoloration (darkening) or presence of metal particles. Inspect components shown in Table 2 below for smooth rotation, excessive looseness/play roughness and corrosion.

-NOTE-

Having a ratchety feel of the trunnion bearing inner race is acceptable. The bearing condition should be examined before lubrication.

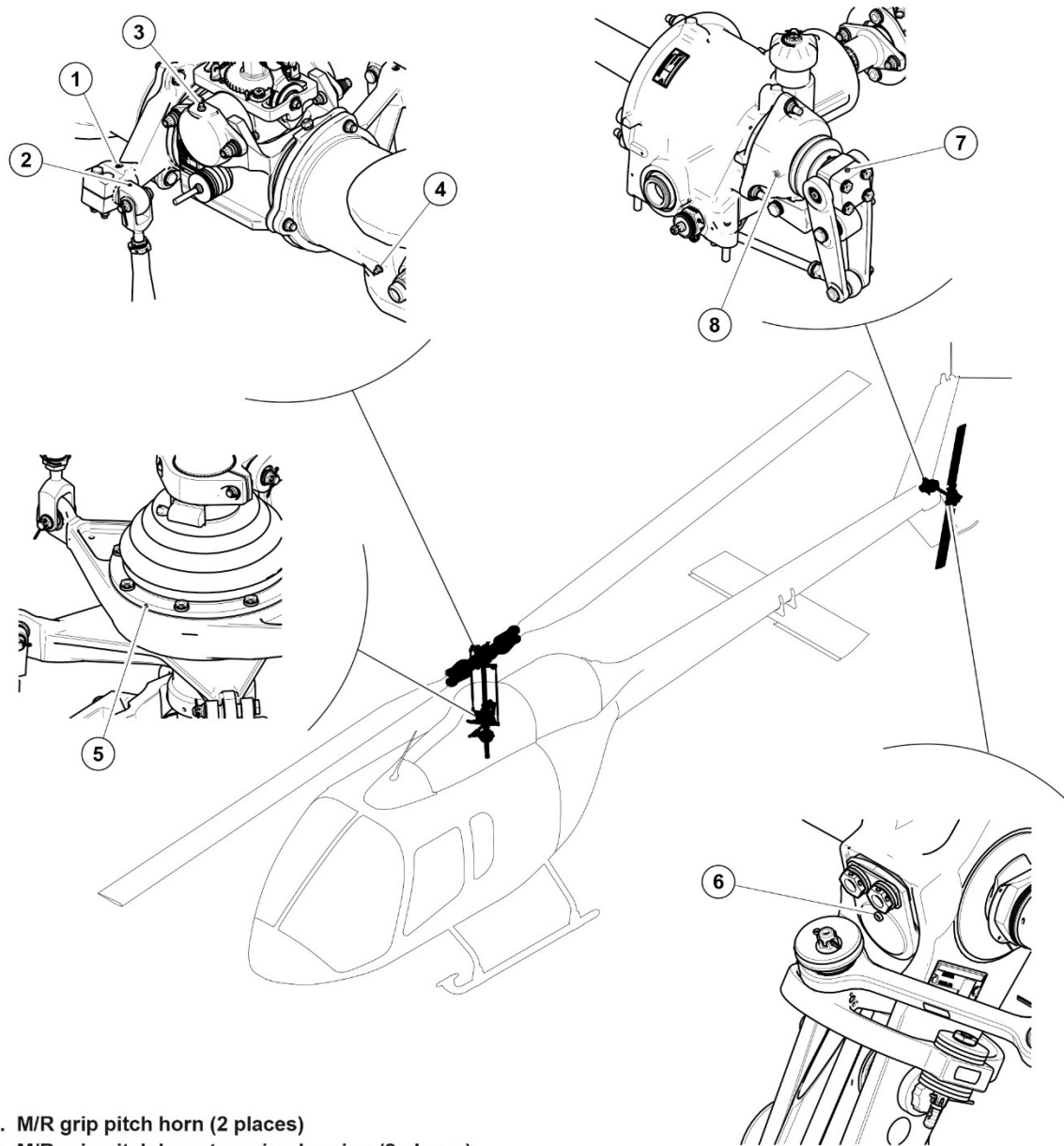
Table 2 – Components Inspection At Each Grease Lubrication Event

Task No.	Task description	Reference (DMC)	Inspection interval
62-20-00-024	Do a detailed inspection of the trunnion bearings.	DMC-505-A-62-20-01-01A-281A-A	25 flight hours
62-30-00-012	Do a detailed inspection of the duplex bearing of the swashplate and support assembly.	DMC-505-A-62-30-01-11A-281A-A	25 flight hours

14. Report any unusual findings (signs of worn components, bearings premature wear) to Product Support Engineering at productsupport@bellflight.com with the following information:

- Aircraft Serial Number
- Component Description
- Component Part Number
- Component Serial Number (if applicable)
- Component Time Since New
- Time Since Mobilgrease 28 was introduced

15. Make an entry in the helicopter logbook and historical service records indicating compliance with this Technical Bulletin.



- 1. M/R grip pitch horn (2 places)
- 2. M/R grip pitch horn trunnion bearing (2 places)
- 3. M/R hub pillow block (2 places)
- 4. M/R grip (2 places)
- 5. Swashplate grease fitting
- 6. T/R trunnion bearing housing (2 places)
- 7. T/R pitch change trunnion bearing
- 8. T/R pitch change shaft bearing

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Figure 1 – Authorized Mobilgrease 28 (C-001) purge Locations for Main and Tail Rotor Components.