



Helicopter Technology Company

Maintenance Manual

HTCM-002

**Part Numbers: 500P3100-101, -103, -105, -301, -303, and -305,
 500P3300-501, -503, and -505,
 500P3500-701, -703, and -705,
 369D21640-501, -503, -505, and -507,
 369D21641-501, -503, -505, and -507,
 369D21642-501, -503, -505, and -507, and
 369D21643-501, -503, -505, and -507**

TAIL ROTOR BLADES
(Installation and Maintenance)

Initial Release Date: 03/04/99

Revision

Change Letter:	C
Change Date:	11/22/04

A	Released	04/07/01	GHB
	(Adds 500P3100-301, 500P3300-501, and 500P3500-701 Configurations)		
B	Released	06/17/03	GHB
	(Adds 500P3100-103 and -303, 500P3300-503, and 500P3500-703 Configs)		
C	Released	11/22/04	GHB
	(Adds 500P3100-105 and -305, 500P3300-505, and 500P3500-705 Configs)		

Note

All references below are to be found in the MD Helicopters Inc. Customer Service Publications – Basic Handbook of Maintenance Instructions (CSP-HMI-2) and Basic Handbook of Maintenance Instructions (CSP-H-2 and CSP-H-4).

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PURPOSE

The purpose of this document is to both provide instructions for Maintenance and Use of Helicopter Technology Company (HTC) produced Tail Rotor Blades and to provide an index to the relevant Chapters or Sections of the Hughes/MD Helicopters, Inc. (MDHI) Basic Handbook of Maintenance Instructions. CSP-HMI-2 shall be referenced for 369D, 369E, and 369FF Models. CSP-H-2 shall be referenced for 369A, 369H, 369HE, 369HM, and 369HS Models. The referenced Chapters or Sections apply to the installation and maintenance of HTC Rotor Blade Part Numbers 500P3100-101, -103, -105, -301, -303, and -305, 500P3300-501, -503, and -505, 500P3500-701, -703, and -705, 369D21640-501, -503, -505, and -507, 369D21641-501, -503, -505, and -507, 369D21642-501, -503, -505, and -507, and 369D21643-501, -503, -505, and -507 Tail Rotor Blades.

It is extremely important that these relevant sections of the Hughes/MD Helicopters, Inc. Maintenance Instructions be followed precisely.

Note: All references below are to be found in the Hughes/MD Helicopters, Inc. Customer Service Publications – Basic Handbook of Maintenance Instructions (CSP-HMI-2) or Basic Handbook of Maintenance Instructions (CSP-H-2) as appropriate.

Note: HTC has used the best possible materials for the construction of its rotor blades.

Reference Documents

1. Service Notice – 3100-1 – Tail Rotor Blade Tip Weight Retention Bolt Inspection, Helicopter Technology Company, Los Angeles, California (or later FAA approved revision).
2. Service Notice – 3100-2 – Tail Rotor Blade Control Arm Bushing Sealing, Helicopter Technology Company, Los Angeles, California (or later FAA approved revision).
3. Service Notice – 3100-4 – Tail Rotor Blade Abrasion Strip Tap Test and Modification, Helicopter Technology Company, Los Angeles, California (or later FAA approved revision).
4. Emergency Airworthiness Directive (EAD) – #2003-08-51, Date: April 15, 2003, Federal Aviation Administration (FAA), Washington, DC.
5. Alternate Means of Compliance (AMOC) – For AD 2003-08-51, Date: June 13, 2003, Federal Aviation Administration (FAA), Lakewood, California.
6. Customer Service Publications – Basic Handbook of Maintenance Instructions (CSP-HMI-2), Hughes/MD Helicopters, Inc., Mesa, Arizona [for 369D, 369E, and 369FF Models] (or later FAA approved revision).
7. Customer Service Publications – Basic Handbook of Maintenance Instructions (CSP-H-2), Hughes/MD Helicopters, Inc., Mesa, Arizona [for 369A, 369H, 369HE, 369HM, and 369HS Models] (or later FAA approved revision).

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8. Customer Service Publications – Airworthiness Limitations, Overhaul and Replacement Schedules, Periodic Inspections, and Weight and Balance Procedures – Appendix B (CSP-H-4), Hughes/MD Helicopters, Inc., Mesa, Arizona [for 369A, 369H, 369HE, 369HM, and 369HS Models] (or later FAA approved revision).

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500P3100 ALL DASH NUMBERS, 500P3500 ALL DASH NUMBERS, 369D21640 ALL DASH NUMBERS, 369D21641 ALL DASH NUMBERS, AND 369D21642 ALL DASH NUMBERS: FOR 369D, 369E, AND 369FF MODELS (CSP-HMI-2)

Chapter 4 Airworthiness Limitations

Revision	Date	FAA Signature and Date
C	11/22/04	<i>John L Cecil</i> 12/13/06

Interchangeability and Life Limit

The Helicopter Technology Company (HTC) Part Number **500P3100 - 101 without the “M” or “I” designation** (Not Shot-Peened) Tail Rotor Blade replaces the Hughes/McDonnell Douglas Helicopter Systems Part Number 369D21613-61 Tail Rotor Blade. The HTC blade is **fully interchangeable in any combination** and carries a **life-limit of 400 hours** (Reference: Alternate Means of Compliance (AMOC) – For AD 2003-08-51, Date: June 13, 2003 and Emergency Airworthiness Directive (EAD) – #2003-08-51, Date: April 15, 2003). This blade is also known as Part Number **369D21640-501**.

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The Helicopter Technology Company (HTC) Part Number **500P3100 - 101M** (Shot-Peened) Tail Rotor Blade replaces the Hughes/McDonnell Douglas Helicopter Systems Part Number 369D21613-61 Tail Rotor Blade. The HTC blade is **fully interchangeable in any combination** and carries a **life-limit of 5,140 hours** (Reference: Alternate Means of Compliance (AMOC) – For AD 2003-08-51, Date: June 13, 2003 and Emergency Airworthiness Directive (EAD) – #2003-08-51, Date: April 15, 2003). This blade is also known as Part Number **369D21640-503**.

The Helicopter Technology Company (HTC) Part Number **500P3100 - 101MT** (Shot-Peened and Titanium Tip Rivet through Abrasion Strip) Tail Rotor Blade replaces the Hughes/McDonnell Douglas Helicopter Systems Part Number 369D21613-61 Tail Rotor Blade. The HTC blade is **fully interchangeable in any combination** and carries a **life-limit of 5,140 hours** (Reference: Alternate Means of Compliance (AMOC) – For AD 2003-08-51, Date: June 13, 2003 and Emergency Airworthiness Directive (EAD) – #2003-08-51, Date: April 15, 2003). This blade is also known as Part Number **369D21640-503T**.

The Helicopter Technology Company (HTC) Part Number **500P3100 - 101I** (Eddy Current Inspected, Machined Radius, and Shot-Peened) Tail Rotor Blade replaces the Hughes/McDonnell Douglas Helicopter Systems Part Number 369D21613-61 Tail Rotor Blade. The HTC blade is **fully interchangeable in any combination** and carries a **life-limit of 5,140 hours** (Reference: Alternate Means of Compliance (AMOC) – For AD 2003-08-51, Date: June 13, 2003 and Emergency Airworthiness Directive (EAD) – #2003-08-51, Date: April 15, 2003). This blade is also known as Part Number **369D21640-503**.

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The Helicopter Technology Company (HTC) Part Number **500P3100 - 101IT** (Eddy Current Inspected, Machined Radius, Shot-Peened, and Titanium Tip Rivet through Abrasion Strip) Tail Rotor Blade replaces the Hughes/McDonnell Douglas Helicopter Systems Part Number 369D21613-61 Tail Rotor Blade. The HTC blade is **fully interchangeable in any combination** and carries a **life-limit of 5,140 hours** (Reference: Alternate Means of Compliance (AMOC) – For AD 2003-08-51, Date: June 13, 2003 and Emergency Airworthiness Directive (EAD) – #2003-08-51, Date: April 15, 2003). This blade is also known as Part Number **369D21640-503T**.

The Helicopter Technology Company (HTC) Part Number **500P3100 - 103** (No Pocket and Shot-Peened) Tail Rotor Blade replaces the Hughes/McDonnell Douglas Helicopter Systems Part Number 369D21613-61 Tail Rotor Blade. The HTC blade is **fully interchangeable in any combination** and carries the **same life-limit of 5,140 hours**. This blade is also known as Part Number **369D21640-505**.

The Helicopter Technology Company (HTC) Part Number **500P3100 - 103T** (No Pocket, Shot-Peened, and Titanium Tip Rivet through Abrasion Strip) Tail Rotor Blade replaces the Hughes/McDonnell Douglas Helicopter Systems Part Number 369D21613-61 Tail Rotor Blade. The HTC blade is **fully interchangeable in any combination** and carries the **same life-limit of 5,140 hours**. This blade is also known as Part Number **369D21640-505T**.

The Helicopter Technology Company (HTC) Part Number **500P3100 - 105** (No Pocket, Shot-Peened, and Titanium Tip Rivet through Abrasion Strip) Tail Rotor Blade replaces the Hughes/McDonnell Douglas Helicopter Systems Part Number 369D21613-61 Tail Rotor Blade. The HTC blade is **fully interchangeable in any combination** and carries the **same life-limit of 5,140 hours**. This blade is also known as Part Number **369D21640-507**.

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The Helicopter Technology Company (HTC) Part Number **500P3100 - 301 without the “M” or “I” designation** (Not Shot-Peened) Tail Rotor Blade replaces the Hughes/McDonnell Douglas Helicopter Systems Part Number 369D21615-31 Tail Rotor Blade. The HTC blade is **fully interchangeable in any combination** and carries a **life-limit of 400 hours** (Reference: Alternate Means of Compliance (AMOC) – For AD 2003-08-51, Date: June 13, 2003 and Emergency Airworthiness Directive (EAD) – #2003-08-51, Date: April 15, 2003). This blade is also known as Part Number **369D21641-501**.

The Helicopter Technology Company (HTC) Part Number **500P3100 - 301M** (Shot-Peened) Tail Rotor Blade replaces the Hughes/McDonnell Douglas Helicopter Systems Part Number 369D21615-31 Tail Rotor Blade. The HTC blade is **fully interchangeable in any combination** and carries a **life-limit of 10,000 hours** (Reference: Alternate Means of Compliance (AMOC) – For AD 2003-08-51, Date: June 13, 2003 and Emergency Airworthiness Directive (EAD) – #2003-08-51, Date: April 15, 2003). This blade is also known as Part Number **369D21641-503**.

The Helicopter Technology Company (HTC) Part Number **500P3100 - 301MT** (Shot-Peened and Titanium Tip Rivet through Abrasion Strip) Tail Rotor Blade replaces the Hughes/McDonnell Douglas Helicopter Systems Part Number 369D21615-31 Tail Rotor Blade. The HTC blade is **fully interchangeable in any combination** and carries a **life-limit of 10,000 hours** (Reference: Alternate Means of Compliance (AMOC) – For AD 2003-08-51, Date: June 13, 2003 and Emergency Airworthiness Directive (EAD) – #2003-08-51, Date: April 15, 2003). This blade is also known as Part Number **369D21641-503T**.

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The Helicopter Technology Company (HTC) Part Number **500P3100 - 301I** (Eddy Current Inspected, Machined Radius, and Shot-Peened) Tail Rotor Blade replaces the Hughes/McDonnell Douglas Helicopter Systems Part Number 369D21615-31 Tail Rotor Blade. The HTC blade is **fully interchangeable in any combination** and carries a **life-limit of 10,000 hours** (Reference: Alternate Means of Compliance (AMOC) – For AD 2003-08-51, Date: June 13, 2003 and Emergency Airworthiness Directive (EAD) – #2003-08-51, Date: April 15, 2003). This blade is also known as Part Number **369D21641-503**.

The Helicopter Technology Company (HTC) Part Number **500P3100 - 301IT** (Eddy Current Inspected, Machined Radius, Shot-Peened, and Titanium Tip Rivet through Abrasion Strip) Tail Rotor Blade replaces the Hughes/McDonnell Douglas Helicopter Systems Part Number 369D21615-31 Tail Rotor Blade. The HTC blade is **fully interchangeable in any combination** and carries a **life-limit of 10,000 hours** (Reference: Alternate Means of Compliance (AMOC) – For AD 2003-08-51, Date: June 13, 2003 and Emergency Airworthiness Directive (EAD) – #2003-08-51, Date: April 15, 2003). This blade is also known as Part Number **369D21641-503T**.

The Helicopter Technology Company (HTC) Part Number **500P3100 - 303** (No Pocket and Shot-Peened) Tail Rotor Blade replaces the Hughes/McDonnell Douglas Helicopter Systems Part Number 369D21615-31 Tail Rotor Blade. The HTC blade is **fully interchangeable in any combination** and carries the **same life-limit of 10,000 hours**. This blade is also known as Part Number **369D21641-505**.

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The Helicopter Technology Company (HTC) Part Number **500P3100 - 303T** (No Pocket, Shot-Peened, and Titanium Tip Rivet through Abrasion Strip) Tail Rotor Blade replaces the Hughes/McDonnell Douglas Helicopter Systems Part Number 369D21615-31 Tail Rotor Blade. The HTC blade is **fully interchangeable in any combination** and carries the **same life-limit of 10,000 hours**. This blade is also known as Part Number **369D21641-505T**.

The Helicopter Technology Company (HTC) Part Number **500P3100 - 305** (No Pocket, Shot-Peened, and Titanium Tip Rivet through Abrasion Strip) Tail Rotor Blade replaces the Hughes/McDonnell Douglas Helicopter Systems Part Number 369D21615-31 Tail Rotor Blade. The HTC blade is **fully interchangeable in any combination** and carries the **same life-limit of 10,000 hours**. This blade is also known as Part Number **369D21641-507**.

The Helicopter Technology Company (HTC) Part Number **500P3500 - 701 without the “M” or “I” designation** (Not Shot-Peened) Tail Rotor Blade replaces the Hughes/McDonnell Douglas Helicopter Systems Part Number 369D21606-511 Tail Rotor Blade. The HTC blade is **fully interchangeable in any combination** and carries a **life-limit of 400 hours** (Reference: Alternate Means of Compliance (AMOC) – For AD 2003-08-51, Date: June 13, 2003 and Emergency Airworthiness Directive (EAD) – #2003-08-51, Date: April 15, 2003). This blade is also known as Part Number **369D21642-501**.

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The Helicopter Technology Company (HTC) Part Number **500P3500 - 701M** (Shot-Peened) Tail Rotor Blade replaces the Hughes/McDonnell Douglas Helicopter Systems Part Number 369D21606-511 Tail Rotor Blade. The HTC blade is **fully interchangeable in any combination** and carries a **life-limit of 5,140 hours** (Reference: Alternate Means of Compliance (AMOC) – For AD 2003-08-51, Date: June 13, 2003 and Emergency Airworthiness Directive (EAD) – #2003-08-51, Date: April 15, 2003). This blade is also known as Part Number **369D21642-503**.

The Helicopter Technology Company (HTC) Part Number **500P3500 - 701MT** (Shot-Peened and Titanium Tip Rivet through Abrasion Strip) Tail Rotor Blade replaces the Hughes/McDonnell Douglas Helicopter Systems Part Number 369D21606-511 Tail Rotor Blade. The HTC blade is **fully interchangeable in any combination** and carries a **life-limit of 5,140 hours** (Reference: Alternate Means of Compliance (AMOC) – For AD 2003-08-51, Date: June 13, 2003 and Emergency Airworthiness Directive (EAD) – #2003-08-51, Date: April 15, 2003). This blade is also known as Part Number **369D21642-503T**.

The Helicopter Technology Company (HTC) Part Number **500P3500 - 701I** (Eddy Current Inspected, Machined Radius, and Shot-Peened) Tail Rotor Blade replaces the Hughes/McDonnell Douglas Helicopter Systems Part Number 369D21606-511 Tail Rotor Blade. The HTC blade is **fully interchangeable in any combination** and carries a **life-limit of 5,140 hours** (Reference: Alternate Means of Compliance (AMOC) – For AD 2003-08-51, Date: June 13, 2003 and Emergency Airworthiness Directive (EAD) – #2003-08-51, Date: April 15, 2003). This blade is also known as Part Number **369D21642-503**.

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The Helicopter Technology Company (HTC) Part Number **500P3500 - 701IT** (Eddy Current Inspected, Machined Radius, Shot-Peened, and Titanium Tip Rivet through Abrasion Strip) Tail Rotor Blade replaces the Hughes/McDonnell Douglas Helicopter Systems Part Number 369D21606-511 Tail Rotor Blade. The HTC blade is **fully interchangeable in any combination** and carries a **life-limit of 5,140 hours** (Reference: Alternate Means of Compliance (AMOC) – For AD 2003-08-51, Date: June 13, 2003 and Emergency Airworthiness Directive (EAD) – #2003-08-51, Date: April 15, 2003). This blade is also known as Part Number **369D21642-503T**.

The Helicopter Technology Company (HTC) Part Number **500P3500 - 703** (No Pocket and Shot-Peened) Tail Rotor Blade replaces the Hughes/McDonnell Douglas Helicopter Systems Part Number 369D21606-511 Tail Rotor Blade. The HTC blade is **fully interchangeable in any combination** and carries the **same life-limit of 5,140 hours**. This blade is also known as Part Number **369D21642-505**.

The Helicopter Technology Company (HTC) Part Number **500P3500 - 703T** (No Pocket, Shot-Peened, and Titanium Tip Rivet through Abrasion Strip) Tail Rotor Blade replaces the Hughes/McDonnell Douglas Helicopter Systems Part Number 369D21606-511 Tail Rotor Blade. The HTC blade is **fully interchangeable in any combination** and carries the **same life-limit of 5,140 hours**. This blade is also known as Part Number **369D21642-505T**.

The Helicopter Technology Company (HTC) Part Number **500P3500 - 705** (No Pocket, Shot-Peened, and Titanium Tip Rivet through Abrasion Strip) Tail Rotor Blade replaces the Hughes/McDonnell Douglas Helicopter Systems Part Number 369D21606-511 Tail Rotor Blade. The HTC blade is **fully interchangeable in any combination** and carries the **same life-limit of 5,140 hours**. This blade is also known as Part Number **369D21642-507**.

04-00-00 Airworthiness Limitations

1. General

Airworthiness Limitations

2. Component Mandatory Replacement

Refer to Chapter 04-00-00.

3. Component Mandatory Inspections

Refer to Chapter 04-00-00.

5. Torque Event (TE)

Refer to Chapter 04-00-00.

6. External Lift and Torque Event (TE) Requirements

Refer to Chapter 04-00-00.

Table 1. Airworthiness Limitations Component Mandatory Replacement Schedule

Refer to Chapter 04-00-00 and Table 1.

CHAPTER 5 CONTINUED AIRWORTHINESS

05-00-00 CONTINUED AIRWORTHINESS

Checks/Inspections

1. General Description of Inspections

Refer to Chapter 05-00-00.

05-10-00 CONTINUED AIRWORTHINESS

Component Overhaul/Recommended Replacement

1. Component Overhaul or Recommended Replacement Schedule

Refer to Chapter 05-10-00.

05-20-00 CONTINUED AIRWORTHINESS

100-Hour or Annual Inspection Checklist

1. 100-Hour or Annual Inspection

Refer to Chapter 05-20-00.

05-20-10 CONTINUED AIRWORTHINESS

300-Hour Inspection Checklist

1. 300-Hour Inspection

Refer to Chapter 05-20-10.

05-20-15 CONTINUED AIRWORTHINESS

Yearly Inspection Checklist

1. Yearly Inspection

Note: Not Applicable to Helicopter Technology Company Rotor Blades.

05-20-20 CONTINUED AIRWORTHINESS

Special Inspections

1. Special Inspections Hourly and Calendar

Note: Not Applicable to Helicopter Technology Company Rotor Blades.

05-50-00 CONTINUED AIRWORTHINESS

Conditional Inspections

1. Conditional Inspections

After a Hard Landing

Refer to Chapter 05-50-00.

After a Main Rotor Overspeed

Refer to Chapter 05-50-00.

After Airspeed 10% Beyond V_{NE} Limit

Refer to Chapter 05-50-00.

After Main Rotor Blade/Drive System Sudden Stoppage

Refer to Chapter 05-50-00.

After Tail Rotor Blade Strike

Refer to Chapter 05-50-00.

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After Tail Boom Strike

Refer to Chapter 05-50-00.

After Lightning Strike

Refer to Chapter 05-50-00.

Chapter 18 Vibration and Noise Analysis

18-20-00 TAIL ROTOR BALANCE

Maintenance Practices

1. Tail Rotor Blade Balancing

Refer to Chapter 18-20-00.

2. Balance at Blade Tip

Refer to Chapter 18-20-00.

3. Balance at Blade Pitch Arm

Refer to Chapter 18-20-00.

4. Short Method Balance Check

Refer to Chapter 18-20-00.

5. Long Method Balance Check

Refer to Chapter 18-20-00.

Chapter 64 Tail Rotor

64-00-00 ANTI-TORQUE ASSEMBLY

Fault Isolation

1. Tail Rotor Assembly

Refer to Chapter 64-00-00.

64-10-00 TAIL ROTOR BLADE

Maintenance Practices

1. Tail Rotor Blades

Refer to Chapter 64-10-00.

2. Tail Rotor Blade Inspection

Refer to Chapter 64-10-00.

3. Abrasion Strip Dye Penetrant and Tap Test Inspection

Refer to Chapter 64-10-00.

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4. Tail Rotor Blade Tip Cap Repair

Note: FOD removal not applicable to Helicopter Technology Company Rotor Blades

Refer to Chapter 64-10-00.

5. Tail Rotor Blade Replacement Procedure

Refer to Chapter 64-10-00.

6. Tail Rotor Abrasion Strip Riveting

Note: Not Applicable to Helicopter Technology Company Rotor Blades

Refer to Chapter 64-10-00.

7. Tail Rotor Blade Abrasion Strip Modification

Note: Not Applicable to Helicopter Technology Company Rotor Blades

Refer to Chapter 64-10-00.

8. Tail Rotor Blade Protective Tape Installation

Note: Not Applicable to Helicopter Technology Company Rotor Blades

Refer to Chapter 64-10-00.

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9. Tail Rotor Blade Leading Edge Crack Inspection

Note: Not Applicable to Helicopter Technology Company Rotor Blades

Refer to Chapter 64-10-00.

64-30-00 TAIL ROTOR PITCH CONTROL ASSEMBLY

Maintenance Practices

9. Tail Rotor Pitch Bearing Inspection

Refer to Chapter 64-30-00.

500P3300 ALL DASH NUMBERS AND 369D21643 ALL DASH NUMBERS: FOR 369A, 369H, 369HE, 369HM, AND 369HS MODELS (CSP-H-2 AND CSP-H-4)

SECTION 2 Servicing and General Maintenance

14. TORQUE DATA

A. Torque Wrenches

Refer to Paragraph A.

15. TORQUE WRENCH LOAD APPLICATION

Refer to Chapter 15. and Table 2-9. Special Torques (Tail Rotor and Control System).

SECTION 8 Tail Rotor and Control System

1. TAIL ROTOR AND CONTROL SYSTEM

Refer to Chapter 1.

2. TAIL ROTOR AND CONTROL SYSTEM TROUBLESHOOTING

Refer to Chapter 2. Please see Figure 8-1. Tail Rotor and Control System, Table 8-1. Troubleshooting Tail Rotor/Vibrations, and Figure 8-2. Isolating Control System Troubles.

4. TAIL ROTOR AND PITCH CONTROL ASSEMBLY

Refer to Chapter 4.

5. TAIL ROTOR AND PITCH CONTROL ASSEMBLY REPLACEMENT

A. Tail Rotor and Pitch Control Assembly Removal

Refer to Paragraph A. Please see Figure 8-3. Tail Rotor Control System Rigging, Figure 8-4. Replacement of Tail Rotor and Pitch Control Assemblies (Sheets 1 of 2 and 2 of 2), Figure 8-5. Tail Rotor and Pitch Control Assemblies – Inspection of and Handling Limits (Sheets 1 of 4, 2 of 4, 3 of 4, and 4 of 4), and Figure 8-9. Tail Rotor Balancing.

B. Tail Rotor and Pitch Control Assembly Installation

Refer to Paragraph B. Please see Figure 8-4. Replacement of Tail Rotor and Pitch Control Assemblies (Sheets 1 of 2 and 2 of 2).

6. TAIL ROTOR AND PITCH CONTROL ASSEMBLY INSPECTION

A. Pitch Control Assembly Inspection

Refer to Paragraph A.

B. Metal Blade Inspection

Refer to Paragraph B.

C. Fiberglass Blade Inspection

Note: Not Applicable to Helicopter Technology Company Rotor Blades.

Refer to Paragraph C.

D. Tail Rotor Bearing Inspection

Refer to Paragraph D. Please see Figure 8-10. Assembled Tail Rotor Hub and Blades – Cross Section View.

E. Remaining Components Inspection

Refer to Paragraph E.

9. TAIL ROTOR AND PITCH CONTROL ASSEMBLY REPAIR

Refer to Chapter 9.

10. PITCH CONTROL LINK REPLACEMENT

Refer to Chapter 10. Please see Figure 8-4. Replacement of Tail Rotor and Pitch Control Assemblies (Sheets 1 of 2 and 2 of 2), Figure 8-5. Tail Rotor and Pitch Control Assemblies – Inspection of and Handling Limits (Sheets 1 of 4, 2 of 4, 3 of 4, and 4 of 4), and Figure 8-10. Assembled Tail Rotor Hub and Blades – Cross Section View.

11. LEADING EDGE TAPE REPLACEMENT (FIBERGLASS BLADE)

Note: Not Applicable to Helicopter Technology Company Rotor Blades.

Refer to Chapter 11. Figure 8-5. Tail Rotor and Pitch Control Assemblies – Inspection of and Handling Limits (Sheets 1 of 4, 2 of 4, 3 of 4, and 4 of 4).

12. TAIL ROTOR ASSEMBLY BUNGEE INITIAL INSTALLATION (FIBERGLASS-TO-METAL TAIL ROTOR BLADE CONVERSION)

Refer to Chapter 12. Please see Table 8-7. Tail Rotor Assembly Bungee Installation (Metal Blade).

13. TAIL ROTOR BALANCE ADJUSTMENT (WITHOUT BALANCING KIT)

Refer to Chapter 13.

14. TAIL ROTOR BALANCE ADJUSTMENT (WITH BALANCING KIT)

Refer to Chapter 14. Please see Figure 8-8. Tail Rotor Vibration Analysis Equipment.

A. Tail Rotor Balance Preliminary Adjustment

Refer to Paragraph A.

B. Tail Rotor Vibration Analysis Kit Installation

Refer to Paragraph B. Please see Figure 8-8. Tail Rotor Vibration Analysis Equipment.

C. Preparation for Balancing

Refer to Paragraph C. Please see Figure 8-8. Tail Rotor Vibration Analysis Equipment.

D. Vibration Analysis

Refer to Paragraph D. Please see Figure 8-8. Tail Rotor Vibration Analysis Equipment, Table 8-2. Rotor Balance Weight Location Chart, and Table 8-3. Tail Rotor Balance Weight Value Chart.

E. Balance at Fiberglass Blade Tip

Note: Not Applicable to Helicopter Technology Company Rotor Blades.

Refer to Paragraph E. Please see Figure 8-9. Tail Rotor Balancing, Table 8-2. Rotor Balance Weight Location Chart, and Table 8-3. Tail Rotor Balance Weight Value Chart.

F. Balance at Metal Blade Tip

Refer to Paragraph F. Please see Figure 8-9. Tail Rotor Balancing, Table 8-2. Rotor Balance Weight Location Chart, and Table 8-3. Tail Rotor Balance Weight Value Chart.

15. TAIL ROTOR BLADE TRACK VERIFICATION

Refer to Chapter 15.

16. TAIL ROTOR BLADES

A. Fiberglass Blades

Note: Not Applicable to Helicopter Technology Company Rotor Blades.

Refer to Paragraph A. Please see Figure 8-5. Tail Rotor and Pitch Control Assemblies – Inspection of and Handling Limits (Sheets 1 of 4, 2 of 4, 3 of 4, and 4 of 4).

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B. Metal Blades

Refer to Paragraph A. Please see Figure 8-5. Tail Rotor and Pitch Control Assemblies – Inspection of and Handling Limits (Sheets 1 of 4, 2 of 4, 3 of 4, and 4 of 4).

C. Fiberglass Tail Rotor Blade Replacement

Note: Not Applicable to Helicopter Technology Company Rotor Blades.

Refer to Paragraph C.

D. Metal Tail Rotor Blade Replacement

Refer to Paragraph D.

17. TAIL ROTOR BLADE REPLACEMENT

Refer to Refer to Chapter 17. Please see Figure 8-4. Replacement of Tail Rotor and Pitch Control Assemblies (Sheets 1 of 2 and 2 of 2), Figure 8-5. Tail Rotor and Pitch Control Assemblies – Inspection of and Handling Limits (Sheets 1 of 4, 2 of 4, 3 of 4, and 4 of 4), and Figure 8-10. Assembled Tail Rotor Hub and Blades – Cross Section View.

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Chapter 4 Airworthiness Limitations

Revision	Date	FAA Signature and Date
C	11/22/04	<i>John L Cecil</i> 12/13/06

Interchangeability and Life Limit

The Helicopter Technology Company (HTC) Part Number **500P3300 - 501 without the “M” or “I” designation** (Not Shot-Peened) Tail Rotor Blade replaces the Hughes/McDonnell Douglas Helicopter Systems Part Number 369A1613-507 Tail Rotor Blade. The HTC blade is **fully interchangeable in any combination** and carries a **life-limit of 400 hours** (Reference: Alternate Means of Compliance (AMOC) – For AD 2003-08-51, Date: June 13, 2003 and Emergency Airworthiness Directive (EAD) – #2003-08-51, Date: April 15, 2003). This blade is also known as Part Number **369D21643-501**.

The Helicopter Technology Company (HTC) Part Number **500P3300 - 501M** (Shot-Peened) Tail Rotor Blade replaces the Hughes/McDonnell Douglas Helicopter Systems Part Number 369A1613-507 Tail Rotor Blade. The HTC blade is **fully interchangeable in any combination** and carries a **life-limit of 5,600 hours** (Reference: Alternate Means of Compliance (AMOC) – For AD 2003-08-51, Date: June 13, 2003 and Emergency Airworthiness Directive (EAD) – #2003-08-51, Date: April 15, 2003). This blade is also known as Part Number **369D21643-503**.

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The Helicopter Technology Company (HTC) Part Number **500P3300 - 501MT** (Shot-Peened and Titanium Tip Rivet through Abrasion Strip) Tail Rotor Blade replaces the Hughes/McDonnell Douglas Helicopter Systems Part Number 369A1613-507 Tail Rotor Blade. The HTC blade is **fully interchangeable in any combination** and carries a **life-limit of 5,600 hours** (Reference: Alternate Means of Compliance (AMOC) – For AD 2003-08-51, Date: June 13, 2003 and Emergency Airworthiness Directive (EAD) – #2003-08-51, Date: April 15, 2003). This blade is also known as Part Number **369D21643-503T**.

The Helicopter Technology Company (HTC) Part Number **500P3300 - 501I** (Eddy Current Inspected, Machined Radius, and Shot-Peened) Tail Rotor Blade replaces the Hughes/McDonnell Douglas Helicopter Systems Part Number 369A1613-507 Tail Rotor Blade. The HTC blade is **fully interchangeable in any combination** and carries a **life-limit of 5,600 hours** (Reference: Alternate Means of Compliance (AMOC) – For AD 2003-08-51, Date: June 13, 2003 and Emergency Airworthiness Directive (EAD) – #2003-08-51, Date: April 15, 2003). This blade is also known as Part Number **369D21643-503**.

The Helicopter Technology Company (HTC) Part Number **500P3300 - 501IT** (Eddy Current Inspected, Machined Radius, Shot-Peened, and Titanium Tip Rivet through Abrasion Strip) Tail Rotor Blade replaces the Hughes/McDonnell Douglas Helicopter Systems Part Number 369A1613-507 Tail Rotor Blade. The HTC blade is **fully interchangeable in any combination** and carries a **life-limit of 5,600 hours** (Reference: Alternate Means of Compliance (AMOC) – For AD 2003-08-51, Date: June 13, 2003 and Emergency Airworthiness Directive (EAD) – #2003-08-51, Date: April 15, 2003). This blade is also known as Part Number **369D21643-503T**.

HELICOPTER TECHNOLOGY COMPANY MAINTENANCE MANUAL

HTCM-002 - 500P3100, 500P3300, 500P3500, 369D21640, 369D21641, 369D21642, and 369D21643 T/R Blades

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The Helicopter Technology Company (HTC) Part Number **500P3300 - 503** (No Pocket and Shot-Peened) Tail Rotor Blade replaces the Hughes/McDonnell Douglas Helicopter Systems Part Number 369A1613-507 Tail Rotor Blade. The HTC blade is **fully interchangeable in any combination** and carries the **same life-limit of 5,600 hours**. This blade is also known as Part Number **369D21643-505**.

The Helicopter Technology Company (HTC) Part Number **500P3300 - 503T** (No Pocket, Shot-Peened, and Titanium Tip Rivet through Abrasion Strip) Tail Rotor Blade replaces the Hughes/McDonnell Douglas Helicopter Systems Part Number 369A1613-507 Tail Rotor Blade. The HTC blade is **fully interchangeable in any combination** and carries the **same life-limit of 5,600 hours**. This blade is also known as Part Number **369D21643-505T**.

The Helicopter Technology Company (HTC) Part Number **500P3300 - 505** (No Pocket, Shot-Peened, and Titanium Tip Rivet through Abrasion Strip) Tail Rotor Blade replaces the Hughes/McDonnell Douglas Helicopter Systems Part Number 369A1613-507 Tail Rotor Blade. The HTC blade is **fully interchangeable in any combination** and carries the **same life-limit of 5,600 hours**. This blade is also known as Part Number **369D21643-507**.

04-00-00 Airworthiness Limitations

1. General

Refer to Paragraph 1.

AIRWORTHINESS LIMITATIONS

Note: This Chapter is also applicable to Helicopter Technology Company Rotor Blades.

Refer to Chapter 4. Please see Table 1. Airworthiness Limitations Component Mandatory Replacement Schedule.

2. Component Mandatory Replacement

Refer to Paragraph 2.

3. Component Mandatory Inspections

Refer to Paragraph 3.

4. Torque Events (TE)

Refer to Paragraph 4.

5. External Lift and Torque Event (TE) Requirements

Refer to Paragraph 5.

05-00-00 Continued Airworthiness

Checks/Inspections

1. General Description of Inspections

Refer to Paragraph 1.

05-20-00 CONTINUED AIRWORTHINESS

100-Hour or Annual Inspection Checklist

1. 100-Hour or Annual Inspection

Refer to Section 1. Please see Table 1. 100-Hour or Annual Inspection.

2. Torque Event Attachment

Refer to Section 2. Please see Table 2. Permanent Record of Torque Events.

05-20-10 CONTINUED AIRWORTHINESS

300-Hour Inspection Checklist

1. 300-Hour Inspection

Refer to Section 1. Please see Table 1. 300-Hour Inspection.

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05-20-20 CONTINUED AIRWORTHINESS

Special Inspections

1. Special Inspection Hourly and Calendar

Refer to Section 1. Please see Table 1. Special Inspections Hourly and Table 2. Special Inspections Calendar.

05-50-00 CONTINUED AIRWORTHINESS

Conditional Inspections

1. Conditional Inspections

Refer to Section 1. Please see Table 1. Conditional Inspections.

HTC SPECIFIC INSPECTIONS

For 500P3100 All Dash Numbers, 500P3300 All Dash Numbers, 500P3500 All Dash Numbers, 369D21640 All Dash Numbers, 369D21641 All Dash Numbers, 369D21642 All Dash Numbers, and 369D21643 All Dash Numbers: Tail Rotor Blade Tip Weight Retention Bolt Inspection

REQUIRED MATERIALS

- 1) NAS1352-08-12P Screw, Quantity two (2)
- 2) Calibrated Torque Wrench with Allen Head (inch-pound scale)
- 3) 10x Magnifying Glass

INSPECTION INSTRUCTIONS

- 1) Remove Tail Rotor Blade Balance Weight Retention Bolts.
- 2) Observe torque required to remove bolts. If value exceeds 24 inch-pounds, bolts are scrap.
- 3) Using a 10x Magnifying Glass, visually inspect threads of bolts for cracking. If none is observed, re-install bolts and torque to between 21 inch-pounds and 24 inch-pounds total torque (15 inch-pounds to 18 inch-pounds + 6 inch-pounds Run-On Torque).

For 500P3100 All Dash Numbers, 500P3300 All Dash Numbers, 500P3500 All Dash Numbers, 369D21640 All Dash Numbers, 369D21641 All Dash Numbers, 369D21642 All Dash Numbers, and 369D21643 All Dash Numbers: Tail Rotor Blade Control Arm Bushing Sealing

REQUIRED MATERIALS

- 1) Sealant, Two-Part Epoxy, DP-190, 3M Corporation.

INSPECTION INSTRUCTIONS

- 1) Clean area with Solvent.
- 2) Inspect area for Active Corrosion.
- 3) If the area does not have Sealant in place, apply small bead of Sealant to base of Control Arm Bushing as shown in Figure 1 below.

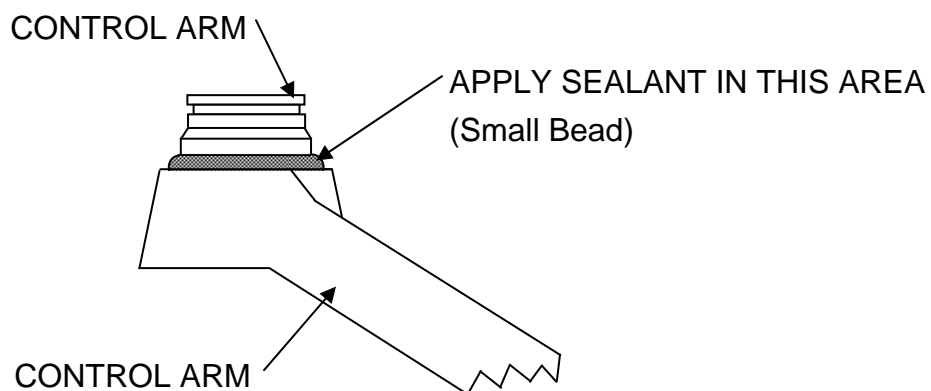


Figure 1 – Control Arm Area of Tail Rotor Blade Root Fitting

For 500P3100 All Dash Numbers except -105 and -305, 500P3300 All Dash Numbers except -505, 500P3500 All Dash Numbers except -705, 369D21640 All Dash Numbers except -507, 369D21641 All Dash Numbers except -507, 369D21642 All Dash Numbers except -507, and 369D21643 All Dash Numbers except -507: Tail Rotor Blade Abrasion Strip Tap Test and Modification

PART 1 - INSPECTION

Physically perform a tap test on both the upper and lower surfaces of the abrasion strip surfaces on each tail rotor blade. Inspect the abrasion strip to skin bond from the inboard end of the blade to the blade tip in the spanwise direction and from the leading edge to the aft edge of the abrasion strip in the chordwise direction. The allowable void size in the abrasion strip area is 0.2 square inches. There shall be a minimum of 1.0 inches between voids in this area. 75% of the abrasion strip bonded area shall be free from voids except that no voids shall break out to the edges of the abrasion strip. The upper and lower surfaces shall be considered separately.

The tap inspection may be conducted using a coin (U.S. 25 cent piece or equivalent) or a small brass, steel, or aluminum hammer. Lightly tap the abrasion strip area as shown in the sketch below. A void will produce a tone change. The tone will be lower over the void. A method of “tuning” your ear is to tap from the leading edge of the blade towards the trailing edge. As you move pass the aft edge of the abrasion strip and over the unsupported skin, you will notice a distinctive lowering of the tone produced. Tap in a pattern with no more than 0.13 inches between taps in any direction.

Any blade that is outside of the above specification shall be replaced with an airworthy blade.



PART 2 - MODIFICATION

Fielded Tail Rotor Blades are to be returned to the HTC Factory or an HTC Authorized Repair Station qualified to perform this modification. This modification consists of the installation of a 500P3124-13 Titanium Rivet installed in the tip of the blade in accordance with the following Engineering Drawing as applicable (or later FAA Approved revisions):

500P3100, Revision F, dated 11/22/04,

500P3300, Revision B, dated 11/22/04, or

500P3500, Revision B, dated 10/22/04

or Standard Repair Instruction:

SRI #3100-006 as described in HTCQ-012, Revision B, dated 05/10/06

The Identification "T" shall signify that the aforementioned procedure has been accomplished. Installation of the -13 Rivet and the Re-Identification shall constitute compliance and repeating **PART 1** is no longer required. Newly built blades shall already comply.