Manual: CSP–HMI–2, Handbook of Maintenance Instructions
Models: 369D/E/FF – 500/600N Helicopters
Issued: 31 October 1990
Revision 39: 10 April 2007

FILING INSTRUCTIONS:

1. Before inserting this change, ensure the manual is current.
   Check the existing List of Effective Pages in the manual to ensure all prior revisions are inserted. **(Do not insert this revision if prior revisions are not inserted)**.
2. Incorporate this change by removing old pages and inserting new pages as indicated below.

Remove Pages	Insert Pages
	Cover/Title
Cover/Title	Cover/Title
	TR
1 and 2	1 and 2
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	71–10–10
601 and 602	601 and 602

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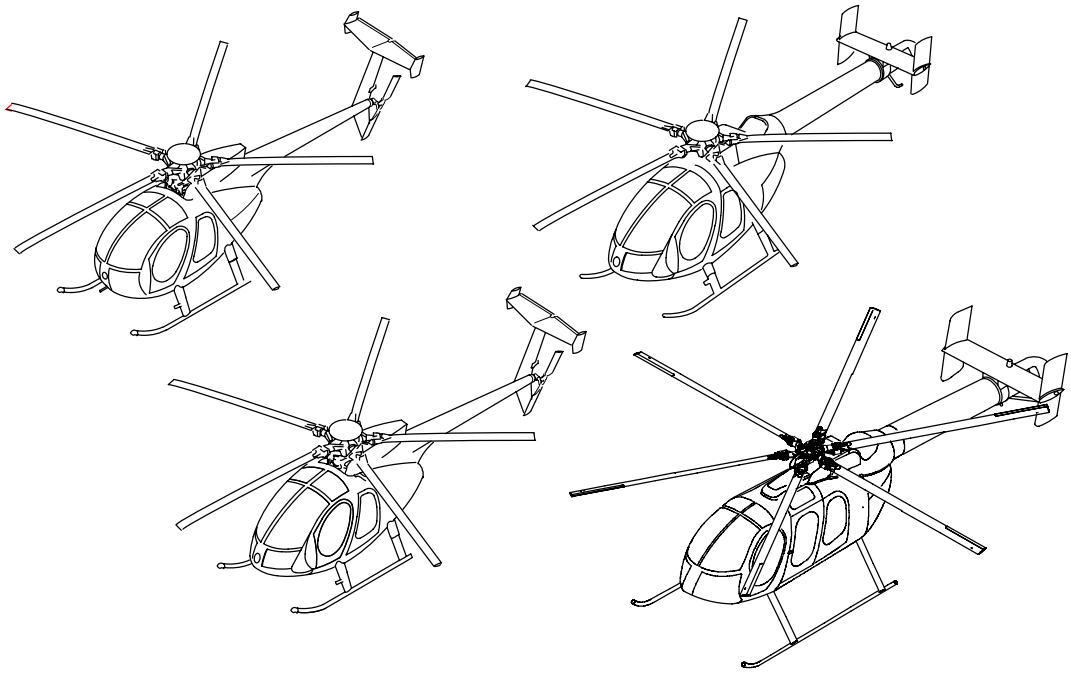
MDHI MODEL HELICOPTERS

MODELS 369D/E/FF – 500/600N

Basic Handbook of Maintenance Instructions

(CSP–HMI–2)

SERVICING AND MAINTENANCE



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MD Helicopters, Inc.
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Mesa, Arizona 85215–9734

MD HELICOPTERS INC.

RECORD OF TEMPORARY REVISIONS

MANUAL TITLE: CSP-HMI-2 MAINTENANCE MANUAL

REV. NO.	DATE INSERTED	BY	REMOVED BY INCORPORATING
91–001	08–12–91		Revision 3
91–002	11–05–91		Revision 4
92–001	02–20–92		Revision 5
92–002	03–16–92		
92–003	03–23–92		
92–004	05–20–92		
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93–006			
94–001	01–21–94		
94–002	10–24–94		Revision 11
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96–002	04–24–96		
97–001	07–02–97		Revision 18
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98–003	08–03–98		
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99–001	02–17–99		
01–001	08–10–01		Revision 31
02–001	01–23–02		Revision 32
02–002	01–30–02		

REV. NO.	DATE INSERTED	BY	REMOVED BY INCORPORATING
03–001	06–18–03		Revision 34
03–002	06–25–03		
03–003	12–18–03		Revision 35
03–004	01–09–04		
04–001	05–28–04		Revision 36
05–001	03–18–05		Revision 37
05–002	12–16–05		Revision 38
06–001	07–05–06		Revision 39

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LIST OF EFFECTIVE PAGES

INSERT LATEST CHANGE PAGES, DESTROY SUPERSEDED PAGES

The highest revision number indicates pages changed, added or removed by the current change.

Date of original and revision pages are:

Original . . . . . 31 October 1990
Revision 1 . . . . . 29 March 1991
Revision 2 . . . . . 10 May 1991
Revision 3 . . . . . 09 September 1991
Revision 4 . . . . . 20 January 1992
Revision 5 . . . . . 24 August 1992
Revision 6 . . . . . 21 December 1992
Revision 7 . . . . . 01 June 1993
Revision 8 . . . . . 23 July 1993
Revision 9 . . . . . 22 April 1994
Revision 10 . . . . . 26 September 1994
Revision 11 . . . . . 18 January 1995
Revision 12 . . . . . 06 October 1995
Revision 13 . . . . . 31 May 1996
Revision 14 . . . . . 13 September 1996
Revision 15 . . . . . 15 November 1996
Revision 16 . . . . . 06 January 1997
Revision 17 . . . . . 24 February 1997
Revision 18 . . . . . 17 October 1997
Revision 19 . . . . . 16 December 1997
Revision 20 . . . . . 01 June 1998
Revision 21 . . . . . 24 August 1998
Revision 22 . . . . . 10 March 1998
Revision 23 . . . . . 01 June 1999
Revision 24 . . . . . 07 December 1999
Revision 25 . . . . . 28 April 2000
Revision 26 . . . . . 17 August 2000
Revision 27 . . . . . 09 October 2000
Revision 28 . . . . . 30 November 2000
Revision 29 . . . . . 11 May 2001
Revision 30 . . . . . 11 July 2001
Revision 31 . . . . . 05 November 2001
Revision 32 . . . . . 18 March 2002
Revision 33 . . . . . 24 June 2002
Revision 34 . . . . . 21 August 2003
Revision 35 . . . . . 20 May 2004
Revision 36 . . . . . 11 November 2004
Revision 37 . . . . . 13 December 2005
Revision 38 . . . . . 25 May 2006
Revision 39 . . . . . 10 April 2007

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Table 1. ACTIVE SERVICE BULLETINS (Cont.)

369D	369E	369F	500N	600N	SUBJECT	DATE
				013R1	Low Fuel Level Warning Light	4–15–98
	090R1	077R1	017R1	014R1	Socket Contact Assembly Inspection	9–25–98
				015	Engine Fuel Control Box Replacement	4–23–99
				016R1	Audio Warning System Replacement	9–19–00
				017	FADEC Manual Switch Guard Modification	10–6–98
				018R1	Torque Pressure Transducer High Intensity Radiated Fields (HIRF) Protection Modification	2–7–00
				019	FADEC Wire Harness Standoff Installation/Inspection	4–23–99
				020R2	Electromagnetic Compatability Test (EMC) for Optional Equipment Effects on the FADEC Control	4–14–03
				021R1	Inspection/Reidentification/Serialization of Cyclic Control Stick Sockets and Left Hand Command (Co–Pilot) Cyclic Tube	3–11–99
197	091		018		Engine Fuel Pressure Switch Replacement	2–23–99
198	092				Tail Rotor Fork Inspection, Four–Bladed	5–10–99
				022	Torque Transducer Replacement	4–23–99
				023R1	Cyclic Stick Replacement	7–30–99
				024R1	Link Assembly Replacement	4–6–99
				025	Fuel System Inspection	7–2–99
199	093		019		Turbine Outlet Temperature (TOT) Indicating System, One Time Inspection	1–11–00
				026	Turbine Outlet Temperature (TOT) Indicating System, One Time Inspection	1–11–00
			020R2	027R2	Forward and Center Thruster Control Cables, Conduit Cap Relief Area, Inspection	4–24–00
			021	028	Forward and Center Thruster Cables, Conduit Cap at Telescopic Swivel End, Inspection	11–19–99
200	094	078	022		Landing Gear Strut Inspection and Fairing Modification	4–7–00
				029	Motive Flow Restrictor Removal	1–10–01
				030R1	Inspection of Vertical Stabilizer and Torque Tube and Replacement of Attaching Hardware	5–25–01
201R2	095R2	079R2	023R2	031R2	Main Rotor Blade Torque Event Inspection	2–04–04
				032	Turbine Outlet Temperature (TOT) Indicator Replacement	12–13–01
				033	Main Rotor Drive Shaft Life Reduction	12–13–01
				034	Torque Transducer Electrical Connector One Time Inspection	12–13–01
			024	035	Fan Pitch Control Aft Tube Assembly One Time Inspection	10–23–01
				036	Tailboom Assembly Attach Fitting One Time Inspection and Repair	11–2–01
202	096	080	025	037	Main Transmission Bonding Jumper Inspection and Rework	8–14–02
				038	Exhaust Duct Inspection	5–6–03
		081			Minimum N1 Starting Speed Decal/Placard Installation	7–22–03
				039	Tailboom Attach Fittings and Upper Longerons Inspection	12–9–03
				040	Control Support Bracket Assembly Life Reduction with YSAS Installed	12–19–03
			026	041	Tailboom Assembly Overlap Inspection and Rework	11–26–03
			027	042	Forward and Center Thruster Cable Assemblies Connector One–Time Inspection	5–03–04
203R1	097R1	082R1			Tail Rotor Blade Abrasion Strip Tap Test and Modification	1–23–06
				043	Tailboom Assembly Attach Fitting One Time Inspection, Attach Fitting and Nutplate Replacement	4–13–06
				044	Lateral Mixer Oputput Link Assembly, One Time Inspection	2–16–07

4. Cancelled or Superceded Service Information Notices

(1). Table 2 a list of Service Information Notices that have been cancelled or superceded.

(2). Updated information, pertinent to the Notice, has been incorporated into the appropriate manuals.

(3). If the Notice is superceded by another Notice, it will be noted in the Subject column after the description.

5. Scope

The following is an explanation of how to read Table 2.

(1). **DN**-369D Model Helicopters
EN-369E Model Helicopters
FN-369F and 369FF Model Helicopters
NN-500N Model Helicopters.

(2). **Subject** - A brief description of the Notice.

(3). **Date** - Date the Notice was cancelled or superceded.

Table 2. CANCELLED OR SUPERCEDED SERVICE INFORMATION NOTICES

369D	369E	369F	500N	600N	SUBJECT	DATE
2.3					Main Rotor Strap Pack Lamination Inspection (Superceded by DN–154)	1–15–88
4.1					Main Rotor Blade Phasing, Tracking and Balancing	8–2–93
5					600–Hour Periodic Inspection – Model 369D Cyclic Control System	8–2–93
7					Installation of 369D21008 Main Rotor Pitch Control Rod Assembly, Upper and Lower Rod End Bearings	8–2–93
15					Periodic Inspection of 369D26300 and 369D26301 Landing Gear Damper Assemblies	8–2–93
28					Field Modification of 369D29919 Main Rotor Blade Phasing Kit to new 369D29919–501 Configuration	8–2–93
29.3					Periodic Replacement of 369H5655–3 and –5 Oil Cooler Blower Fan Bearings; Inspection of Pulley Attach Hardware and Driveshaft Couplings; Inspection and Adjustment of Fan Drive Belt; Driveshaft Compression Check	8–2–93
32					New Periodic Inspection Intervals – Battery Overtemperature Warning System	8–2–93
33.1					Replacement of 369A1602 Tail Rotor Drive Fork Hinge Bolt and 369A1603 Nut; New Assembly Procedure for Tail Rotor Hub and Drive Fork Unit; Periodic Check of Flapping Hinge Bolt Preload	8–2–93
38					Daily Inspection of 369H5307 Tail Rotor Stop and 369D21724–3 Support	8–2–93
41.1					Operational Check of Engine Fuel Pump Filter Pressure (Bypass) Switch Assembly	8–2–93
	2				Inspection of Spare Main Rotor Blade Root Fitting Assemblies; Inspection of Main Rotor Hub Lead–Lag Link Assemblies (Superceded by EN–42)	11–13–87
		2			Inspection of Main Rotor Hub Lead–Lag Link Assemblies (Superceded by FN–31)	11–13–87
53.1					100–Hour Periodic Inspection of Fuel Tank Sending Unit and Fuel Low Warning Light Indicating System	8–2–93
57					Field Repair of 369D21300 Pitch Housing Assembly, Main Rotor Hub	8–2–93
61.2					Periodic Check of 369D21400–502 and M50452 Main Rotor Elastomeric Damper Assemblies	8–2–93
64					Pilot/Operator Check of 369D21210–501 Main Rotor Hub Strap Pack Assembly (Superseded by DN–154)	1–15–88
74					Un–Assigned	
75.1					Procedure for Installation of Tail Rotor Drive Shaft (Superceded by DN–95)	9–27–82

AIRWORTHINESS LIMITATIONS

Type Certificate No. H3WE

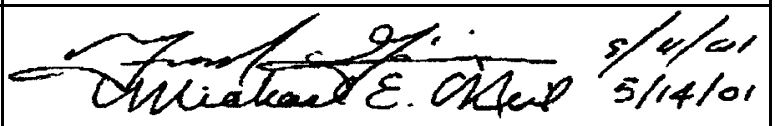
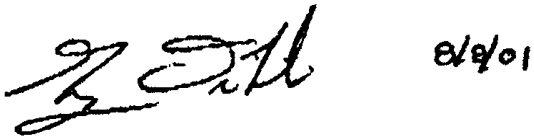
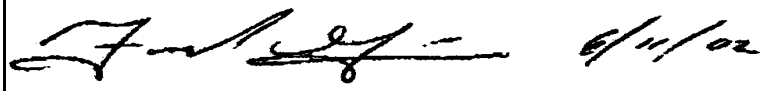
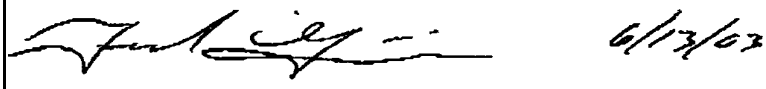
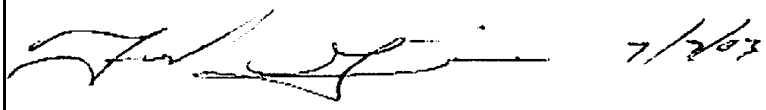
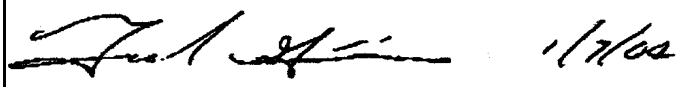
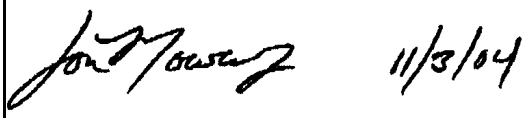
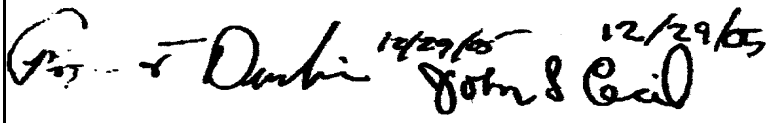
FAA Approved Airworthiness Limitations for MD Helicopters, Inc., Models 369D/E/F/FF and 500/600N.

1. General

The Airworthiness Limitations section is FAA approved and specifies maintenance required under Code of Federal Regulations (CFR), Title 14, Federal Aviation Regulation (FAR), Part 43.16 and 91.403 unless an alternative program has been FAA approved.

REVISION:	DATE	FAA SIGNATURE AND DATE
Original Issue:	October 31, 1990	Not FAA approved
Revision 1:	March 29, 1991	Not FAA approved this revision
Revision 2:	May 10, 1991	6/20/91
TR 91–001	August 12, 1991	8/14/91
Revision 3:	September 9, 1991	9/12/91
TR 91–002	November 5, 1991	11/7/91
Revision 4:	January 20, 1992	01/16/92
TR 92–004	May 20, 1992	05/27/92
Revision 5:	August 24, 1992	08/19/92
TR 92–005	November 20, 1992	11/12/92
Revision 6:	December 21, 1992	12/4/92
Revision 7:	June 1, 1993	Section 04–00–00 Not Affected This Revision
TR 93–002	May 27, 1993	5/27/93
Revision 8:	July 23, 1993	7/13/93
TR 94–001	January 21, 1994	02/09/94
Revision 9:	April 22, 1994	3-29-94 ACTING
Revision 10:	September 26, 1994	Section 04–00–00 Not Affected This Revision
TR 94–002	October 24, 1994	10/24/94

REVISION:	DATE	FAA SIGNATURE AND DATE
Revision 11:	January 18, 1995	01/23/95
Revision 12:	October 6, 1995	Section 04–00–00 Not Affected This Revision
TR 96–002:	April 24, 1996	04/24/96
Revision 13:	May 31, 1996	6/12/96
Revision 14:	September 13, 1996	09/09/96
Revision 15:	November 15, 1996	Section 04–00–00 Not Affected This Revision
Revision 16:	January 6, 1997	Section 04–00–00 Not Affected This Revision
Revision 17:	February 24, 1997	02/20/97
TR 97–001:	July 2, 1997	07/02/97
TR 97–002:	August 19, 1997	08/19/97
Revision 18:	October 17, 1997	Section 04–00–00 Not Affected This Revision T/R 97–001 and 97–002 Previously Signed
Revision 19:	December 16, 1997	12/19/97
TR 98–001:	March 25, 1998	03/25/98
Revision 20:	June 1, 1998	Section 04–00–00 Not Affected This Revision T/R 98–001 Previously Signed
TR 98–002:	June 22, 1998	7/10/98
TR 98–003:	3 August 1998	8/3/98
Revision 21:	24 August 1998	Section 04–00–00 Not Affected This Revision T/R 98–002 and 98–003 Previously Signed
Revision 22:	10 March 1999	Section 04–00–00 Not Affected This Revision
Revision 23:	1 June 1999	Section 04–00–00 Not Affected This Revision
Revision 24:	7 December 1999	12/30/99
Revision 25:	28 April 2000	Section 04–00–00 Not Affected This Revision
Revision 26:	17 August 2000	8/11/00
Revision 27:	9 October 2000	Section 04–00–00 Not Affected This Revision
Revision 28:	30 November 2000	Section 04–00–00 Not Affected This Revision

REVISION:	DATE	FAA SIGNATURE AND DATE
Revision 29:	11 May 2001	 5/4/01 5/14/01
Revision 30:	11 July 2001	Section 04–00–00 Not Affected This Revision
TR 01–001:	10 August 2001	 8/9/01
Revision 31:	5 November 2001	Section 04–00–00 Not Affected This Revision T/R 01–001 Previously Signed
TR 02–002:	30 January 2002	 1/23/02
Revision 32:	18 March 2002	 3/15/02
Revision 33:	24 June 2002	 6/11/02
TR 03–001:	18 June 2003	 6/13/03
TR 03–002:	25 June 2003	 7/2/03
Revision 34:	21 August 2003	Section 04–00–00 Not Affected This Revision T/R 03–001 and 03–002 Previously Signed
TR 03–003:	30 September 2003	 12/3/03
TR 03–004:	17 December 2003	 1/7/04
Revision 35:	20 May 2004	Section 04–00–00 Not Affected This Revision T/R 03–003 and 03–004 Previously Signed
TR 04–001:	28 May 2004	 6/7/04
Revision 36:	11 November 2004	 11/3/04
Revision 37:	13 December 2005	Section 04–00–00 Not Affected This Revision
TR 05–002:	16 December 2005	 12/29/05 12/29/05
Revision 38:	25 April 2006	Section 04–00–00 Not Affected This Revision T/R 05–002 Previously Signed

REVISION:	DATE	FAA SIGNATURE AND DATE
TR 06-001:	05 July 2006	7/17/06

AIRWORTHINESS LIMITATIONS

2. Component Mandatory Replacement

The Airworthiness Limitation Replacement Schedule specifies the mandatory replacement time, structural inspection interval and related structural inspection procedures approved per the certificate basis of the Type Certificate Data Sheet No. H3WE and CAR 6 (6.250, 6.251) and CFR 27.571 for models 500/600N unique components only. At the listed finite-life, components or assemblies must be removed from the helicopter and permanently retired from service. At the listed inspection interval, the components or assemblies must be inspected in accordance with the Handbook of Maintenance Instructions (HMI). The title of the task and section of the HMI are referred to which provide the inspection procedures and criteria.

NOTE: Refer to CFR Part 43.10 for latest requirements for the removal, installation, storage and disposition of life-limited parts.

(1). A "life-limited" part is a physical component of the helicopter to which a maximum number of allowable operating hours or cycles are assigned. Certain assemblies and components on the helicopter have a limited life established by MDHI and approved by FAA Engineering. For example, a part with an assigned limit of 1000 hours, may accumulate 1000 hours of operation in service. Upon completion of the 1000 hours of operation, useful life of the part is ended. The finite-life assigned to different parts varies according to engineering fatigue tests, part experience, etc. The parts listed in this section must be removed from the helicopter at the finite-life indicated and identified as to it's expired life (Ref, Table 1, Note (1)).

(2). All parts not having an assigned life or stated to be of unlimited life, have a life of not less than 20,000 hours.

(3). When a life-limited part or an assembly that incorporates a life-limited part is installed on a new or used helicopter, the nomenclature, part number, serial number, component time and current helicopter hours are recorded in the Log Book and component log for the helicopter. Whether the life-limited part is new or used, the remaining number of useful life hours and previous inspection time, if applicable, for the part is added to the existing helicopter time. The total helicopter hours obtained then denotes the subsequent time at which the part must be removed from the helicopter or inspected.

(4). If a life-limited part, is part of an assembly, the assembly must be removed from the helicopter when the time expires. The assembly may be overhauled and restored to maximum number of hours of useful life by installing new life-limited parts plus all other parts specified in the overhaul instructions (Refer to Component Overhaul Manual).

(5). If interchanged between different model helicopters (for instance, Model 369D to 369FF or vice versa), any component having a limited life or overhaul schedule must be restricted to the lowest service life or TBO schedule indicated for the helicopter models and serial numbers affected.

(6). Refer to the appropriate Allison Operation and Maintenance Manual for engine component replacement requirements.

3. Component Mandatory Inspections

Some components with mandatory inspection intervals require inspections to be completed in accordance with procedures detailed in other sections of this maintenance manual. The appropriate inspection procedures are referenced in the **Notes** flagged to each component to be inspected. All maintenance manual procedures which are referenced in the FAA Approved Airworthiness Limitations Component Mandatory Replacement Schedule are FAA approved procedures which cannot be changed without FAA review and approval of the proposed changes.

4. Retirement Index Number (RIN)

(1). A Retirement Index Number (RIN) is a number that accounts for different usage spectra in assigning the retirement time for a component.

The RIN is calculated as the sum of an adjustment factor times flight hours plus another adjustment factor times Torque Events.

When a component reaches 1,000,000 RIN's, it has reached it's maximum life and is to be scrapped.

5. Torque Event (TE)

A Torque Event (TE) is defined as:

The transition to a hover from forward flight.

Any external lift operation.

NOTE: An external lift can either be on the cargo hook, external hoist or in external baskets.

For external lift operators, an external load is recorded as two (2) TE's (pick-up and drop-off).

Hover taxi with no external load will typically result in no TEs.

6. External Lift and Torque Event (TE) Requirements

The 369D/E/F/FF - 500/600N helicopters are multi-use helicopters. If the helicopter is used primarily for external lifts or training flights (high TE flights), there may be a reduction in inspection intervals of some components.

CAUTION For safe operation of the helicopter, TE's must be recorded in the Rotorcraft Log Book. Each external lift will be recorded as two (2) TE's.

(1). Determine the number of TE's and external lifts the helicopter accumulates per hour of flight time.

(2). Record all TE's in Rotorcraft Log Book and continue to record all TE's.

(3). Perform required TE inspections.

Table 1. Airworthiness Limitations Schedule

Component (1)	Model	Part Number (2)	Finite Life Hours (1)	Mandatory Inspection Hours
Main Rotor System				
Blade assembly, main rotor	369D/E (5)(6)	369D21100	3530 (37)	25 (11)(20)
		369D21100–516	3530 (37)	100 (20)
		369D21100–517	2500 (31)	25 (22)
		369D21100–517	3530 (37)	100 (20)
		369D21100–523	4000 (37)	100 (20)
		369D21120–501	3530 (37)	100 (20)
		369D21120–503	3530 (37)	100 (20)
	369F/FF (6)	369D21102	3430 (37)	25 (11)(20)
		369D21102–503	3430 (37)	100 (20)
		369D21102–517	2500 (31)	25 (22)
		369D21102–517	3430 (37)	100 (20)
		369D21102–523	4000 (37)	100 (20)
		369D21121–501	3430 (37)	100 (20)
		369D21121–503	3430 (37)	100 (20)
	500N (6)	369D21102–503	3430 (37)	100 (20)
		369D21102–517	2500 (31)	25 (22)
		369D21102–517	3430 (37)	100 (20)
		369D21102–523	4000 (37)	100 (20)
		369D21121–501	3430 (37)	100 (20)
		369D21121–503	3430 (37)	100 (20)
	600N (6)	369D21102–517 (21)	1900 (32)(37)	100 (20)
		369D21102–523	3200 (33)(37)	100 (20)
		369D21121–501	3200 (33)(37)	100 (20)
		369D21121–503	3200 (33)(37)	100 (20)
Folding pin, main rotor blade attach	369D/E/F/FF	369A1004	2850	
		369A1004–3	2850	
		369A1004–5	7600	
	500/600N	369A1004–5	7600	
Hub subassembly, main rotor	369D/E/F/FF 500N	369D21201	8900	
Pitch housing assembly, main rotor hub	369D	369D21300	9100	
		369D21300–501	9100	
	369E/F/FF 500N	369D21300–501	9100	

Table 1. Airworthiness Limitations Schedule (Cont.)

Component (1)	Model	Part Number (2)	Finite Life Hours (1)	Mandatory Inspection Hours
Retention strap assembly, main rotor hub	369D	369D21210	2770	100 (4)
		369D21210–501	2770	100 (4)
	369E/F/FF	369D21210–501	2770	100 (4)
	500/600N	369D21210–501	2770	100 (4)
Bolt – lead–lag hub, main rotor	369D	369A1220	6120	
	369D/E/F/FF 500N	369D21220	6120	
	600N	369D21220	5400 (34)	
Link assembly – lead lag hub, main rotor	369D/E	369H1203–BSC (39)	5762	25 (23)
		369H1203–21 (39)	5762	25 (23)
		369H1203–31 (39)	5762	25 (11)
		369H1203–51 (39)	11080	
		369H1203–53 (40)	11080	
		369H1203–61 (39)	11080	
	369F/FF	369H1203–21 (39)	5762	25 (23)
		369H1203–31 (39)	5762	25 (11)
		369H1203–51 (39)	11080	
		369H1203–53 (40)	11080	
		369H1203–61 (39)	11080	
	500N	369H1203–51 (39)	11080	
		369H1203–53 (40)	11080	
		369H1203–61 (39)	11080	
	600N	369H1203–51 (39)	11080	
		369H1203–53 (40)	11080	
Lead lag damper – main rotor	369D	369D21400–501	6060	
		M50452	On Cond.	(16)
	369D/E/F/FF 500/600N	369D21400–503	On Cond.	(16)
Drive shaft, main rotor	369D/E	369D25510	5020	300 (8)
	369F/FF	369D25510	3675	300 (8)
	500N	369D25510–21	3260	300 (15)
	369D/E	369F5510	(42)	
	369F/FF	369F5510	(42)	
	500N	369F5510	(42)	
	600N	600N5510	14000 (35)	
Mast assembly, main rotor	369D/E/F/FF 500N	369D22014	10450	
	600N	369D22014	3500	

Table 1. Airworthiness Limitations Schedule (Cont.)

Component (1)	Model	Part Number (2)	Finite Life Hours (1)	Mandatory Inspection Hours
Drive Shafts, Couplings and Clutches				
Drive shaft, main rotor transmission	369D/E/F	369A5510	3790	
Coupling, main transmission drive shaft	369D/E/F/FF	369H5660	4300	
	500N	369H5660	3200	
Overrunning clutch assembly	369D/E/F/FF 500/600N	369F5450–501	On Cond.	100 (24)
Sprag assembly, overrunning clutch	369D/E/F/FF	369A5364	(3)	300 (10)
		369D25351		
	500N	369D25351	(3)	300 (10)
	369D/E/F/FF 500/600N	369F5456	(3)	300 (17)
Drive shaft, fan	500N	500N5200	2620	
	600N	500N5200	1200 (36)	
Drive shaft, tail rotor	369D/E	369D25518	13900	
	369F/FF	369DSK152–11	13900	
		369D25518–503	14610	
Coupling – tail rotor drive shaft (Bendix) (**NOTE**: Not certified on 369FF Model) (9)	369D/E/F	369A5501	4980	
		369H92564 (7)	4980	
Anti–Torque System				
Gearshaft assembly, tail rotor input	369D/E	369D25434	12000	
	369F/FF	369D25434	3365	
Gearshaft, tail rotor output pinion	369D/E/F/FF	369D25430	7290	
Blade assembly, tail rotor	369D/E	369D21613	5200	
		369D21613–11	5140	
		369D21613–31	5140	
		369D21613–41	5140	
		369D21613–51	5140	
		369D21613–61	5140	
		369D21613–71	5140	
		369D21640–501 (38)	400	
		369D21640–503 (38)	5140	
		369D21640–505 (38)	5140	
		369D21640–507 (38)	5140	
	369F/FF	369D21606	5140	
		369D21642–501 (38)	400	
		369D21642–503 (38)	5140	
		369D21642–505 (38)	5140	
		369D21642–507 (38)	5140	

Table 1. Airworthiness Limitations Schedule (Cont.)

Component (1)	Model	Part Number (2)	Finite Life Hours (1)	Mandatory Inspection Hours
Blade assembly, tail rotor (optional 4–blade)	369D/E	369D21615	10000	
		369D21641–501 (38)	400	
		369D21641–503 (38)	10000	
		369D21641–505 (38)	10000	
		369D21641–507 (38)	10000	
Hub, tail rotor	369D/E/F/FF	369A1725	3450	
Retention strap assembly, tail rotor	369D/E/F	369A1706	5100	
	369FF	369A1706–507	5100	
		369A1706–509	5100	
Blade assembly, NOTAR fan	500N	500N5310–15	7500	
		500N5310–19	7500	
	600N	500N5310–19	12500	
Hub, fan	500N	500N5352–7	7500	
		500N5352–9	7500	
	600N	500N5352–9	7500	
Shaft, NOTAR fan support	600N	500N5357–13	4000	
Pitch plate assembly	500/600N	500N5363–7	7500	
Tube assembly, fan pitch	500N	500N7113–3	600 (18)	
Rotating cone assembly	500N	500N3740–1	10000	
		500N3740–41	10000	
	600N	500N3740–61	10000	
Tailboom				
Bolts, tailboom attach	369D/E/F/FF	MS21250–06014	21950	
Tailboom assembly	369D/E	369D23500	10300	
	369F/FF	369D23500–507	10300	
	500N	500N3500–19	10000	100 (14)
		500N3500–29	10000	
		500N3500–501	10000	
		500N3600–501	10000	100 (14)
	600N	600N3500–503	2500 (25)	
		600N3500–505	5900	
		600N3500–507	1000	
		600N3500–509	6000 (19)	
		600N3500–511	6000 (19)	
		600N3500–513	2500 (25)	
		600N3500–515	5900	
		600N3500–517	1000	
Empennage fittings	600N	500N3530–7/8	On Cond.	100 (26)
		500N3530–9/10	On Cond.	100 (26)
Vertical stabilizer assembly	369D/E	369D23600	12700	
	369F/FF	369D23600–505	3388	

Table 1. Airworthiness Limitations Schedule (Cont.)

Component (1)	Model	Part Number (2)	Finite Life Hours (1)	Mandatory Inspection Hours
Torque tube, horizontal stabilizer	500N	500N3950–5	5000	
	600N	500N3950–7	3000	
		600N3950	1000 (19)	
Horizontal stabilizer assembly	369D (12)	369D23601	7700	
	369E (12)	421–087–505	7700	
		421–087–905 (13)	7700	
	369F/FF (12)	421–087–503	7700	
		421–087–903	7700	
	600N	500N3910–25	10000 (19)	
		500N3910–27	10000 (19)	
Controls				
Longitudinal idler bellcrank assembly	369D	369A7301	6500	
		369A7301–501	6500	
	369E/F/FF	369A7301–501	6500	
	500N	369A7301–501	2870	
Idler assembly, longitudinal pitch mixer	369D/E/F/FF	369A7603	13600	
	500N	369A7603	6050	
Longitudinal control rod	500N	369A7011–13	7740	
		369A7011–15	7740	
Socket, cyclic stick	600N	369A7141	1000	8 (27)
Cyclic tube assembly	600N	369D27132–503	1200	8 (27)
Housing, collective stick	600N	369A7347	450	
Tube, collective pitch control	600N	369A7348	400	
Tube assembly, collective pitch (pilot)	600N	369H7354–3	600	
Socket, cyclic stick	600N	369A7802	1000	8 (27)
Tube, collective pitch (co–pilot)	600N	369A7809	1800	
Housing, collective stick	600N	369A7820	450	
Housing, collective stick	600N	369H7837	450	
Tube assembly, collective pitch (co–pilot)	600N	369H7838–3	1000	
Fuselage Sta. 75 controls support bracket	600N	369N2608–11	6000 (41)	
		600N2608–9	Unlimited	
Airframe				
Landing gear brace	600N	600N6010–17/19	5900 (28)	
Landing gear strut	600N	600N6022–7/8	696 (29)	
Landing gear foot	600N	600N6043–3	3900 (30)	

Table 1. Airworthiness Limitations Schedule (Cont.)

Component (1)	Model	Part Number (2)	Finite Life Hours (1)	Mandatory Inspection Hours
Floats				
Squib cartridge, used on Emergency float kit 369D292473−5, −6, −9, −10, −11, −12 **NOTE:** Life is based from original date of manufacture.	369D/E/F/FF 500N	12552−1 (Holex, Inc.) 281993 (Walter Kidde) 12754−1 (Holex, Inc.) 5003527 (Tavco)	5 years 5 years 5 years 5 years	
Stabilizer support, utility float	369D/E	369D292036 369DSK66	3190 3190	

NOTES:

(1) Life−limited components interchanged between models or configurations must be restricted to the lowest service life indicated for the models or configurations affected. Life−limited components removed at retirement are to be mutilated/destroyed or conspicuously marked to prevent inadvertent return to service. Parts are applicable only on models under which a service life is listed.
Life−limited components cannot be altered or permanently marked in any manner without compromising the part integrity. Part tagging or other record keeping system is required.
Related component records must be updated each time component is removed from service.

(2) Service life shown for the basic (no dash number) part numbers apply to all dash numbered versions unless otherwise indicated.

(3) With no cargo hook attached: − No retirement life assigned (Ref. Sec. 05−10−00, Component Overhaul or Recommended Replacement Schedule).
With cargo hook attached and no separate log: − 1800 hours.
With cargo hook attached and with separate log: − 1800 hours of external load operating time when logged separately.
(For 369D/E/F/FF helicopters with 369A5364 or 369D25351 sprag assembly, Refer to AD 90−19−02.)

(4) Inspect in accordance with Main Rotor Strap Pack Lamination Inspection at 100−hour intervals, or 25−hour intervals if 2 laminates (369D/E/F/FF − 500N) or 1 laminate (600N) have failed in any one leg or tongue area of any strap assembly. A single cracked laminate between the shoes at the outboard end of a strap pack is cause for rejection of the hub assembly
369D/E/F/FF − 500N: (Ref. Sec. 62−20−00, Main Rotor Strap Pack Lamination Inspection).
600N: (Ref. Sec. 62−20−60, Main Rotor Strap Pack Lamination Inspection).
(For 369D/E/F/FF helicopters, refer to AD 89−02−01.)

(5) The 369D21100−513, −515, 516, 517 and −523 main rotor blades are not interchangeable with any earlier configuration blades (Basic, −505 or −509); however, the −505 and −509 blades are interchangeable and the −513 and −515 blades are interchangeable. The −505 and −509 configuration blades may be modified to the −513M configuration, which is fully compatible with the −513 blade. (For information concerning modification, contact MDHI Customer Service Department.)

(6) For the 369D/E helicopters, the 369D21120−501, −503 main rotor blade has all the same inspections and interchangeability as the 369D21100−517 main rotor blade.
For the 369F/FF − 500N helicopters, the 369D21121−501, −503 main rotor blade has all the same inspections and interchangeability as the 369D21102−517 main rotor blade.
For the 600N helicopters, the 369D21121−501, −503 main rotor blade has all the same inspections and interchangeability as the 369D21102−523 main rotor blade.

(7) Used with 369H90123 Rotor Brake Kit.

(8) Inspect main rotor drive shaft every 300 hours (Ref. Sec. 63–10–00, Main Rotor Drive Shaft Inspection (300 Hour)) (Reference AD 81–26–01).

(9) Failsafe device, P/N 369D25530 bolt and 369D25531 socket, must be used at both ends of tail rotor driveshaft in accordance with Tail Rotor Drive Shaft Installation with Bendix Couplings (Reference AD 86–20–07).

(10) For helicopters equipped with a cargo hook, inspect overrunning clutch sprag assembly P/N 369D25351, clutch inner race P/N 369A5353 and outer race 369A5352 every 300 hours (Ref. C.O.M., Sec. 63–10–10, Overrunning Clutch Sprag Inspection (300 Hour)). To establish time in service, either clutch total time with hook attached or a separate and permanent log of external load operating time per CFR 91.417, may be used.
(For 369D/E/F/FF helicopters with 369A5364 or 369D25351 sprag assembly, Refer to AD 90–19–02.)

(11) Inspect main rotor blade root fittings and main rotor lead–lag link assemblies every 25 hours in accordance with Main Rotor Blade Upper and Lower Root Fitting Attach Lug and Lead–Lag Link Attach Lug Inspection (25 Hour) and every 100 hours in accordance with Main Rotor Blade Upper and Lower Root, Fitting Attach Lug and Lead–Lag Link Attach Lug Inspection (100 Hour) (Ref. Sec. 62–10–00) (Reference AD 95–03–13).

(12) Tip plates, tip weights (where applicable) and attaching hardware have no retirement life and may be reused on replacement horizontal stabilizers.

(13) 421–087–903 and –905 require addition of tip plates, tip weights and attaching hardware before installation.

(14) Inspect the three upper slot bridges for cracks (Ref. Sec. 05–20–00).

(15) Inspect main rotor drive shaft every 300 hours (Ref. Sec. 63–10–00, Main Rotor Drive Shaft Inspection (300 Hour)).

(16) Inspect for deterioration every 600 hours up to a total time of 4200 hours and every 300 hours thereafter until deterioration is sufficient to retire assembly
369D/E/FF – 500N: (Ref. Sec. 62–20–00, Main Rotor Damper and Attachments Inspection)
600N: (Ref. Sec. 62–20–60, Main Rotor Damper and Attachments Inspection).

(17) For helicopters equipped with a cargo hook, inspect overrunning clutch sprag assembly P/N 369F5456, clutch inner race P/N 369F5455 and outer race 369F5453 every 300 hours. To establish time in service, either clutch total time with hook attached or a separate and permanent log of external load operating time may be used.

(18) 500N7113–11 tube assembly, fan pitch is an On–Condition part and replaces the 500N7113–3 tube assembly.

(19) Interim hours: life extension testing in progress.

(20) Inspect upper and lower blade root fittings every 100 hours in accordance with Main Rotor Blade Upper and Lower Root, Fitting Attach Lug and Lead–Lag Link Attach Lug Inspection (100 Hour) (Ref. Sec. 62–10–00)
(For 369D/E/F/FF – 500N helicopters, Reference AD 96–10–09).

(21) Main rotor blades, P/N 369D21102–517 with S/N 1976 thru 2100, 2106 thru 2115 are not to be installed on 600N helicopter (Reference Service Bulletin SB600N–007R2) (Reference AD 98–15–26).

(22) Inspect main rotor blades with 600 or more hours of operation every 25 hours of helicopter operation with a 10X magnifying glass for cracking of the lower surface of the blade emanating from the root fitting and doubler at the inboard end of the blade and to detect debonding between the blade root end fitting and doubler if missing or cracked adhesive or paint is observed. (Reference Service Bulletins SB369D–195R3, SB369E–088R3, SB369F–075R3, SB500N–015R3) (Reference AD 98–15–26).

(23) Perform Main Rotor Blade Upper and Lower Root, Fitting Attach Lug and Lead–Lag Link Attach Lug Inspection (25 Hour) up to a total time of 500 hours and every 15 hours thereafter and every 100 hours in accordance with Main Rotor Blade Upper and Lower Root Fitting, Attach Lug and Lead–Lag Link Attach Lug Inspection (100 Hour) (Ref. Sec. 62–10–00) until retirement of 369H1203–BSC and –21 Lead–Lag Link Assembly. (Reference AD 95–03–13).

(24) Inspect clutch retainer and bearing carrier for evidence of spinning and/or wear (Ref. Sec. 05–20–20).

(25) The 600N3500−503 tailboom may be reworked to a 600N3500−505 tailboom, and the 600N3500−513 tailboom may be reworked to a 600N3500−515 tailboom by modifying the attachment fittings to all−steel fittings.

(26) (Ref. Sec. 05−20−00) Using a flashlight and 10X magnifying glass, inspect horizontal stabilizer mounting brackets for cracks (pay particular attention to the forward inboard legs) (Ref. Tailboom Inspection).

(27) Sockets must be inspected for cracks every eight hours after the initial 100 hour inspection.

(28) Log all landings: Brace life is limited to 35400 logged landings or 5900 hours flight time if landing are not logged (assumed six landings per one hour of flight time).

(29) Log all landings: Strut life is limited to 4170 logged landings or 696 hours flight time if landing are not logged (assumed six landings per one hour of flight time).

(30) Log all landings: Foot life is limited to 23780 logged landings or 3900 hours flight time if landing are not logged (assumed six landings per one hour of flight time).

(31) The following main rotor blades have a finite life of 2,500 hours or 15,000 torque events*, whichever occurs first;
P/N 369D21100−517 with S/N H664, H665, H667, H669, H671, H672, H674, H676, H679, H680, H683 thru H724, H726 thru H999 and J000 thru J039, J041 thru J055 and
P/N 369D21102−517 with S/N 1976 thru 2100, 2106 thru 2115.
* TORQUE EVENT (TE) − A TE is recorded for every transition from forward flight to a hover (Reference Service Bulletins SB369D−195R3, SB369E−088R3, SB369F−075R3, SB500N−015R3).

(32) RIN = (200 x Hrs.) + (52 x TE).

(33) RIN = (160 x Hrs.) + (24 x TE).

(34) RIN = (153 x Hrs.) + (3 x TE).

(35) RIN = (50 x Hrs.) + (3 x TE).

(36) RIN = (768 x Hrs.) + (11 x TE).

(37) After accumulation of 750 flight hours and 13,720 TE, perform Main Rotor Blade Torque Event Inspection (Ref. Sec. 62−10−00) every 35 flight hours or 200 TE's (whichever occurs first).

(38) The 369D21640−501, −503, −505, −507 tail rotor blades are two−way interchangeable with the 369D21613 tail rotor blades in sets of two only.
The 369D21641−501, −503, −505, −507 tail rotor blades are two−way interchangeable with the 369D21615 tail rotor blades in sets of two only (installed on the same inboard or outboard hub).
The 369D21642−501, −503, −505, −507 tail rotor blades are two−way interchangeable with the 369D21606 tail rotor blades in sets of two only.

(39) The 369H1203−BSC, −11, −21, −31, −51 and −61 lead lag link assemblies can only be installed using the 369H1235−BSC bearing.

(40) The 369H1203−53 lead lag link assembly can only be installed using the 369H1235−1 bearing.

(41) The 369N2608−11 Control Support Bracket must be removed from 600N helicopters equipped with YSAS (Ref. SB600N−040).

(42) RIN = (29 x Hrs.) + (1 x TE).

CONTINUED AIRWORTHINESS
100–HOUR OR ANNUAL INSPECTION CHECKLIST

1. 100–Hour or Annual Inspection

This check sheet is designed to be used when performing 100–Hour or Annual inspections as defined under FAR, Part 43, Appendix D. This checklist, when completed, should be kept as a permanent part of the helicopter's records. Adherence to Maintenance Manual information is required, and the manual should be consulted when using the checklist.

NOTE:

- The Chap/Sect column of the following table is for reference unless a specific inspection requirement is called out. If there is only two numbers in the column, it refers to the Chapter. If there is three numbers, it refers to the Section the inspection is found.
- Refer to applicable Rolls–Royce engine inspection check list for required engine maintenance.

Table 1. 100–Hour or Annual Inspection

Registration No._____ **Serial No.**_____
Helicopter Hours_____ **Torque Events**_____

Model	Requirement	Chap/Sect	Initial
	GENERAL		
ALL	Thoroughly clean helicopter and engine prior to start of inspection.	20	
ALL	Remove trim panels, covers and access panels as necessary.	52–50–00	
ALL	Ensure all placards and markings are installed.	11–00–00	
ALL	Ensure compliance with component mandatory retirement schedule.	04–00–00	
ALL	Calculate and record TE's or RIN's, of all affected components, in Table 2.	04–00–00	
ALL	Ensure compliance with component overhaul schedule.	05–10–00	
ALL	Ensure compliance with all applicable airworthiness directives, service bulletins and special inspections.	N/A	
ALL	Review aircraft maintenance records for recorded discrepancies and correct discrepancies as applicable.	N/A	
ALL	Refer to related manufacturer's publications for detailed requirements on inspection of engine, starter/generator, battery and all installed STC equipment.	01–00–00	
	EXTERIOR		
ALL	* Air intake for cleanliness and foreign matter. * Visible portion of engine compressor inlet for foreign object damage.	71	
CAUTION:	Ensure that compressor cover is installed to prevent FOD.		
ALL	Engine air plenum chamber for: * Damage and cleanliness. * Wear and security of internal components. * Particle separator mounting structure for cracks or damage.	71 53	

Table 1. 100–Hour or Annual Inspection (Cont.)

Registration No._____ **Serial No.**_____
Helicopter Hours_____ **Torque Events**_____

Model	Requirement	Chap/Sect	Initial
ALL	Fuselage upper surfaces for: * Damage and condition. * Mast base drain holes clean and free of debris (blow air thru holes to ensure no clogging). * Engine air inlet fairing free from damage. No delamination noted. Bypass door operationally checked. Seals free from damage. * Engine air bypass door operationally checked. Seals free from damage. Cable system checked for smooth operation. * Engine access doors for proper operation of latches and closure, distortion, damage, cracks and security.	52 53 71 52	
ALL	Fuselage for: * Damage and condition. * Compartment fresh air vents in doors and front of canopy for easy of operation and security. * Fuel cell vent fairings free of obstructions and obvious damage. * Pilot's and passenger/cargo compartment doors for condition of door glass, vents and proper operation of latching and locking mechanisms. * Door hinges and pins for play or wear. Ensure door pin locking tab is engaged with slot in frame. * No evidence of oil leakage around fuselage drain holes.	52 53	
369D/E/FF	Sta. 142.0 tail rotor control bellcrank support for cracking or damage, use bright light and mirror (Ref. Upper Fuselage and Tailboom Control Linkage Inspection).	67–20–10	
500/600N	Anti–torque fan inlet for: * Screen for cleanliness and damage. * Attaching hardware for security. * Interior of fan inlet for cleanliness and damage. * Driveshaft cover for damage.	53	
ALL	* Check for no gap between tailboom and fuselage at attach points. * Check tailboom skin around stabilizer fittings for cracks. * Tailboom attachment–to–fuselage for security, evidence of corrosion or cracks, loose rivets or buckling.	53	

Table 1. 100–Hour or Annual Inspection (Cont.)

Registration No. _____ **Serial No.** _____
Helicopter Hours _____ **Torque Events** _____

Model	Requirement	Chap/Sect	Initial
ALL	Overrunning clutch for: * Evidence of oil leakage. * Proper operation: turn rotor in forward direction by hand – engine must decouple; turn rotor in reverse direction – engine must rotate (listen for turbine noise during reverse rotation). Rotor brake disc should not drag.	63	
NOTE: Normal seal drag may be sufficient to rotate engine at low rpm.			
369D/E/FF 500N	For aircraft equipped with 369A5350 overrunning clutch, regrease clutch splines.	63	
ALL	Engine–to–main transmission drive shaft couplings and shaft for condition and security of attachment. Bendix couplings only: inspect shaft coupling diaphragms for scratches, nicks or cracks (Ref. Main Transmission Drive Shaft Inspection (Bendix)).	63–10–00	
500/600N	* Main transmission–to–fan transmission drive shaft for dents, bulkhead chafing and obvious damage. * Inter–Connect drive shaft for dents and obvious damage. * Free movement of control rod thru interconnect drive shaft.	63	
369D/E	Bendix couplings only: Check tail rotor blade tip movement in excess of 0.75 inch, without main rotor blade movement, when tail rotor blades are rocked back and forth in plane of rotation.	63	
369D/E/FF	Tail rotor drive shaft for: * Evidence of buckling, dents, bulkhead chafing and obvious damage. * Align aft coupling index stripe with corresponding tail rotor transmission stripe and verify that bulkhead–to–drive shaft index stripes align (Ref. Tail Rotor Drive Shaft Twist Inspection).	63–15–10	
ANTI–TORQUE			
Tail Rotor System			
369D/E/FF	Tail rotor transmission for: * Corrosion, excessive oil leakage, cracks and other damage. * Check torque of mounting nuts (also tailboom extension hardware on 369FF helicopters) (Ref. Tail Rotor Transmission Installation).	63–25–10	
369D/E/FF	Tail rotor and pitch control assembly for: * Binding and unusual sounds (teeter blades to check for binding). * Control rod, pitch control links, hub and drive fork for play or damage. * Boots for installation and deterioration. * Retaining nut and lockwasher secure (no broken tangs noted and nut has not rotated, visual inspection of torque stripe). * Pitch control for evidence of seal rotation or loss of grease.	64	

Table 1. 100–Hour or Annual Inspection (Cont.)

Registration No. _____ **Serial No.** _____			
Helicopter Hours _____ **Torque Events** _____			
Model	**Requirement**	**Chap/Sect**	**Initial**
369D/E/FF	Drive fork for; * Elastomeric bearing elements for bond failure. * Apply teetering force by hand (stop–to–stop) to rotor blades and inspect elastomers for radial–molded ridges on each bearing face. Discontinuity in molded ridges indicates bearing failure. There should by no apparent motion between the cage and fork, observed motion indicates bond failure.	64	
NOTE: Light swelling, pock marks and crumbs are surface conditions and do not indicate bearing failure.			
369D/E	If equipped with conical–type teetering bearings, torque check teeter bolt. * Conical bearings for axial or radial play (no play allowed).	64	
369D/E/FF	Tail rotor blades for: * Evidence of damage, including leading edges, trailing edges, skin. * Open vent and drain holes. * Loose or damaged tip caps. * Rivets securing tip cap for installation and condition. * Abrasion strips free of damage, no excessive erosion noted and no separation in bond around edges or at tip end of blade (Ref. Tail Rotor Blade Inspection). * While holding hub stationary, check tail rotor blade pitch bearings for lead–lag play in excess of 0.250 inch (6.35 mm) at blade tip. If excess play is found, remove blades, replace pitch bearings and inspect hub–to–pitch bearing contact surface of hub (Ref. COM).	64–10–00	
369D/E/FF	Perform Tail Rotor Balance.	18	
NOTAR® Anti–Torque System			
500/600N	* Rotate rotor system and check for unusual noises. * Fan assembly for cleanliness and damage. * Fan blades for excessive play. * Fan seal for cleanliness, cracks, damage and corrosion. * Check gap between fan blades and tip seal. * Check gap between fan blades and hub.	64	
NOTE: If any of these gaps for any blade exceeds the average gap of the other blades by more than 0.10 inch (2.54 mm), remove and inspect the tension–torsion strap for that blade.			
500/600N	Perform Fan Blade Inspection (100–Hour).	64–25–30	
500/600N	Fan Transmission for corrosion, excessive oil leakage, cracks, damage and security on mounting frame. Drain line for cracks and security.	63	

Table 1. 100–Hour or Annual Inspection (Cont.)

Registration No. _____ **Serial No.** _____			
Helicopter Hours _____ **Torque Events** _____			
Model	**Requirement**	**Chap/Sect**	**Initial**
500/600N	Remove rotating cone and tip cap (500N) and inspect: * Cables, cable ends and pulleys for condition and security. Perform Forward and Center Cable Assembly Inspection and Sector Assembly and Control Cable Inspection. * Aft cable ends and turnbuckles for condition and security. Evidence of corrosion pitting requires replacement. * Rotating cone control tubes and cables for freedom of movement and unusual sounds. Reinstall rotating cone and tip cap (500N).	67	
	ELECTRICAL		
NOTE: When possible, use auxiliary power source, not battery, during **POWER ON** inspection.			
ALL	**XMSN OIL TEMP, FUEL FILTER** and **CHIPS** warning lights; electrical circuits for continuity to lamps by connecting jumper wire from each sender or chip detector terminal stud to an unpainted grounding surface; check each light for illumination (Ref. Caution/Warning System Operational Check).	95–00–00	
ALL	Push **PRESS TO TEST** switch: all caution and warning lights **ON**; depress instrument light rheostat knob; verify **CAUTION** lights dim.	95	
369D/E/FF 500N	Conduct operational check of automatic reignition system; igniter noise heard and reignition indicator light functions. Reset as required.	PFM	
CAUTION: Do not leave landing light **ON** for more that one minute during next check; lamp will overheat and lamp life will be shortened.			
ALL	Exterior lighting (landing, position and anti–collision lights) for proper operation; all switches **OFF** after check.	96	
WARNING: Do not leave pitot heater ON for more than one minute during next check; severe burns to personnel may result.			
ALL	**PITOT HTR** switch **ON** for a few seconds. Heated pitot tube will feel warm to the touch; turn switch to **OFF** after check.	95	
600N	Apply power to aircraft and disconnect CIT sensor (Ref. CIT (Compressor Inlet Temperature) Sensor Replacement); Verify ECU FAIL light illuminates. Re–connect CIT sensor.	76–00–00	
ALL	Clean battery and inspect for: * Connector pins for evidence of corrosion. * Leakage (if battery is leaking (wet), remove and replace battery). * Battery case for cracks in support flanges. * Dc wiring for chafing caused by wiring rubbing against battery case. * Deep cycle charge (recondition) battery every 100 hours or on conditional basis at operator's discretion.	96	
ALL	Functionally check and inspect all installed avionics, auxiliary or optional systems and equipment. Do not actuate hoist guillotine or emergency floats.	97	

Table 1. 100–Hour or Annual Inspection (Cont.)

Registration No. _____ **Serial No.** _____			
Helicopter Hours _____ **Torque Events** _____			
Model	**Requirement**	**Chap/Sect**	**Initial**
	ENGINE COMPARTMENT		
ALL	Exhaust stack(s) and exhaust supports for cracks, defects and improper attachment.	78	
ALL	Engine compartment plumbing and electrical relay installation on left or right side oleo (landing gear damper) support fitting for good condition and security of mounting. Diodes for broken terminals and wires. Diode bracket for security and corrosion.	96	
ALL	Entire engine for: * Loose bolts; loose or broken connections. * Accessories for security and broken or missing lockwire. * Fuel and oil lines for chafing and kinking. * Fuel drain line valve for leakage. * Oil cooler and cooler deflector for security and obvious damage. * Accessible areas for obvious damage; evidence of fuel and oil leaks. * Engine mounts for cracks and play in mounting hardware at engine and airframe (retorque any loose mounting bolts). * Fuel control and compressor exterior for condition and security.	71 75 76	
369D/E/FF 500N	RPM governor lever control rod (replace if aluminum).	76–10–00	
369D/E/FF 500N	Clean and lubricate drive splines of starter–generator drive shaft, and female splines in engine accessory gear case on dry spline installations.	96	
369D/E/FF 500N	Anti–ice air tubes and compressor scroll for cracks or breaks at the anti–ice air valve and bleed port. If cracks exist, check engine for possible vibration causes (Ref. Engine Anti–icing System and applicable Allison Engine Operation and Maintenance Manual).	75–10–00	
	AFTER INSPECTION		
ALL	Touch–up all damaged paint and exterior markings, as necessary.	20	
ALL	Ensure all fluid levels are correct; service as required.	12	
ALL	Perform operational check of particle separator filter (Ref. Scavenge Air Operational Check).	71–10–10	

Table 1. 100–Hour or Annual Inspection (Cont.)

Registration No. _____ **Serial No.** _____

Helicopter Hours _____ **Torque Events** _____

Model	Requirement	Chap/Sect	Initial
ALL	Install or close all stressed panels, covers and trim panels removed or opened for inspection. Check closure, fit and security. All loose equipment for proper stowage.	52–50–00	

CAUTION: Helicopter must not be flown unless controls access panel and fuel cell access panels in cargo compartment are securely installed. These are stressed panels.

POST INSPECTION RUN UP

See applicable Pilot's Flight Manual for cockpit check and engine starting procedures. For troubleshooting procedures, refer to applicable section of this manual.

100–HOUR OR ANNUAL INSPECTION CERTIFICATION

It is certified that this helicopter has been thoroughly inspected as required by FAR, found to be airworthy, and appropriate entries made in the helicopter log book. It is further certified that the helicopter conforms to FAA specifications, that all FAA Airworthiness Directives and Manufacturer's Service Notices and Maintenance Manual data have been complied with, and the helicopter records are in proper order

Signature _____

Rating Type or Certificate No. _____

Date _____

2. Retirement Index Numbers Attachment

Table 2 is to be used for calculating and recording the Retirement Index Number (RIN) or Torque Events (TE) of components that are affected by Torque Events (TE).

This record of RINs/TE's should be kept as a permanent record.

Refer to Section 04–00–00 for components requiring calculation of RIN's/TE's and information pertaining to calculation of RIN's/TE's.

Component must be scrapped when it reaches 1,000,000 RIN's or maximum TE's (Ref. Sec. 04–00–00).

Table 2. Permanent Record of Retirement Index Numbers/Torque Events

Component	Part No.	Serial No.	Hours	TE's	RIN's	Signature

Table 2. Permanent Record of Retirement Index Numbers/Torque Events

Component	Part No.	Serial No.	Hours	TE's	RIN's	Signature

CONTINUED AIRWORTHINESS
300–HOUR INSPECTION CHECKLIST

1. 300–Hour Inspection

This check sheet is designed to be used when performing scheduled inspections as defined under FAR Part 91. This checklist, when completed, should be kept as a permanent part of the helicopter's records. Adherence to Maintenance Manual information is required, and the manual should be consulted when using the checklist.

NOTE:

- The Chap/Sect column of the following table is for reference unless a specific inspection requirement is called out. If there is only two numbers in the column, it refers to the Chapter. If there is three numbers, it refers to the Section the inspection is found.
- Refer to applicable Rolls–Royce engine inspection check list for required engine maintenance.

Table 1. 300–Hour Inspection

Registration No._____ Serial No._____ Helicopter Hours_____			
Model	**Requirement**	**Chap/Sect**	**Initial**
	EXTERIOR		
ALL	Retorque tailboom attachment bolts.	53	
500/600N	Remove rotating cone and tip cap (500N) and inspect: * Cone rollers for condition and security. * Four fasteners that attach 500N3760–1 upper input shaft to the stationary thruster for play (replace pins and collars if any play is found). * Three fasteners that attach 500N3759 support shaft assembly for play (if play is found in top bolt, retorque to **10 – 15 inch–pounds (1.13 – 1.69 Nm)**. Replace pins and collars if any play is found in bottom fasteners). Reinstall rotating cone and tip cap (500N).	53	
369D/E/FF	Remove engine inlet bypass door and inspect: * .Latches, hinges and hardware for condition, wear and security. * .Cables, cable ends and pulleys for condition, corrosion and wear. * Remove and replace the latch retention cotter pin (located inside the attach "U" clamp) (Ref. Engine Air Inlet Bypass Door 300–Hour Inspection).	71–10–10	
369D/E/FF	Check horizontal and vertical stabilizer attach bolts for proper torque (Ref. Horizontal Stabilizer Tip Plate Installation and Vertical Stabilizer Installation).	53–50–10	
369D/E/FF	Check lower surface of horizontal stabilizer for drain holes. Also check for gaps between upper and lower doublers and stabilizer skin (Ref. Horizontal Stabilizer and Tip Plates Inspection).	53–50–10	
500/600N	Control tubes and bellcranks in horizontal stabilizer for condition and security.	53	

Table 1. 300–Hour Inspection (Cont.)

Registration No._____ Serial No._____ Helicopter Hours_____			
Model	**Requirement**	**Chap/Sect**	**Initial**
500/600N	Inspect S.A.S. system for: * Actuator for security and damage (no damage allowed). * Wiring for condition and security (no wire chaffing, fraying or insulation cracking allowed). * Actuator mounting bracket for cracks, pay particular attention to area around four rivet attach holes (no cracks allowed). * Rate gyro and control box for security in mount and electrical connector secure. Inspect mount for security and condition (no corrosion or cracks allowed).	67	
LANDING GEAR			
ALL	Perform Landing Gear Inspection.	32–10–00	
ALL	Perform Cabin Entry Step Inspection.	32–10–00	
CABIN			
ALL	Remove instrument console base covers and inspect anti–torque pedal crossover torque tube and bellcrank for cracks, damage and security.	67	
ALL	Push–pull rods for excessive bearing play, wear and security.	67	
ALL	Perform Tunnel–Routed Control Rod Inspection.	67–10–00	
ALL	Check oil tank for security and evidence of leakage and damage.	79	
MAIN ROTOR			
ALL	Perform Swashplate Inspection.	62	
ALL	Perform Lead–Lag Bolt Inspection.	62	
ALL	Perform Main Rotor Hub Droop Angle Check.	62	
ALL	Perform Main Rotor Blade Inspection.	62	
ALL	Inspect main rotor mast, mast base and mast base support structure for evidence of cracks. Check with bright light and 5X magnifying glass. Visually check mast support bolts for security and condition. Inspect internal bore for chipping, orange peeling or flaking paint (Ref. Main Rotor Static Mast Inspection and Repair).	63–30–00	
ALL	Inspect hoisting eye–bolts for cracks or corrosion.	63	
369D/E/FF 500N	369D25510 drive shaft only, perform Main Rotor Drive Shaft Inspection (300–Hour).	63–10–00	
DRIVE TRAIN			
ALL	Remove, inspect and clean main transmission chip detectors.	63	
369D/E/FF 500N	369A5350 Overrunning Clutch: Perform Ball Bearing Inspection and Grease Repack (300 Hour).	COM	
ALL	369F5450 Overrunning Clutch: Perform Ball Bearing Grease Repack (300 Hour).	COM	
369D/E/FF	Remove tail rotor drive shaft and check boom fairing and tailboom for buckles, dents, bulkhead chafing and obvious damage.	53	

Table 1. 300–Hour Inspection (Cont.)

Registration No._____ Serial No._____ Helicopter Hours_____			
Model	**Requirement**	**Chap/Sect**	**Initial**
369D/E/FF	Remove tailboom control rod and inspect for wear though hard anodized surface (Ref. Tailboom Control Rod Replacement); inspect grommets for wear and deterioration.	67–20–10	
369D/E/FF	Check shaft damper for proper friction drag. Inspect damper for damage and security (Ref. Tail Rotor Drive Shaft Damper Inspection).	63–15–10	
369D/E	Check forward and aft coupling bolt and socket for indication of contact, Bendix couplings only (Ref. Tail Rotor Drive Shaft Inspection).	63–15–10	
ANTI–TORQUE			
Tail Rotor System			
369D/E/FF	Remove, inspect and clean chip detectors.	63	
369D/E/FF	Check for contact between tail rotor bellcrank and tail rotor transmission housing at extreme right pedal travel.	67	
369D/E/FF	Tail rotor assembly: Elastomeric teeter bearings for wear; bond between concentric metal cones and elastomer rings of bearing assembly (Ref. Elastomeric Bearing Inspection).	64–20–00	
369D/E/FF	Remove blade stop for thorough inspection; in particular, check for cracks or splits in stem area (Ref. Tail Rotor Blade Stop Inspection).	64–30–00	
NOTAR® Anti–Torque System			
500/600N	Check balance weights for security. If any balance weight stud is found to be loose, perform Fan Balance Stud Replacement.	64	
500/600N	Remove, inspect and clean fan transmission chip detector.	63	
500/600N	Remove tailboom: Perform visual inspection of fan assembly for: * Cracks, nicks or corrosion. * Blades for cracks, nicks or impact damage. * Check pitch horn counterweights for security. If counterweight(s) are found loose, perform Pitch Horn Counterweight Set Screw Replacement (Ref. Sec. 64–25–30). **NOTE:** Access the forward counterweights through the fan inlet (fan hub fairing must be removed). * Gap between fan blade and tip seal and gap between fan blade and hub (inboard end of the blade). If any of these gaps for any blade exceeds the average gap of the other blades by more than 0.10 inch (2.54 mm)., remove and inspect the tension–torsion strap for that blade. * Fan liner for cracks, debonding or corrosion of liner material. * P–seal for tears, deterioration and debonding. Reinstall tailboom (on 600N only, install new tailboom mounting bolts).	53 64	
ELECTRICAL			
NOTE: When possible, use auxiliary power source during **POWER ON** inspection, not battery.			
ALL	Perform Battery Temperature Sensing Switches Testing.	96	
369D/E/FF 500N	Check TOT indicating system for proper calibration (Ref. TOT Indicating System Calibration).	95–30–00	

Table 1. 300–Hour Inspection (Cont.)

Registration No._____ Serial No._____ Helicopter Hours_____			
Model	**Requirement**	**Chap/Sect**	**Initial**
	ENGINE COMPARTMENT		
ALL	Inspect starter/generator for: * Condition of brushes, electrical connections and commutator. * Screens for clogging. * Condition of O–ring on drive spline. * Damper backplate and clutch for condition.	96	
ALL	Perform Fuel Filter (Bypass) Caution Light Pressure Switch Test.	28–00–00 28–00–60	
NOTE: Also, perform this operational check whenever low pressure fuel pump filter element is replaced for any reason, or if contaminated.			

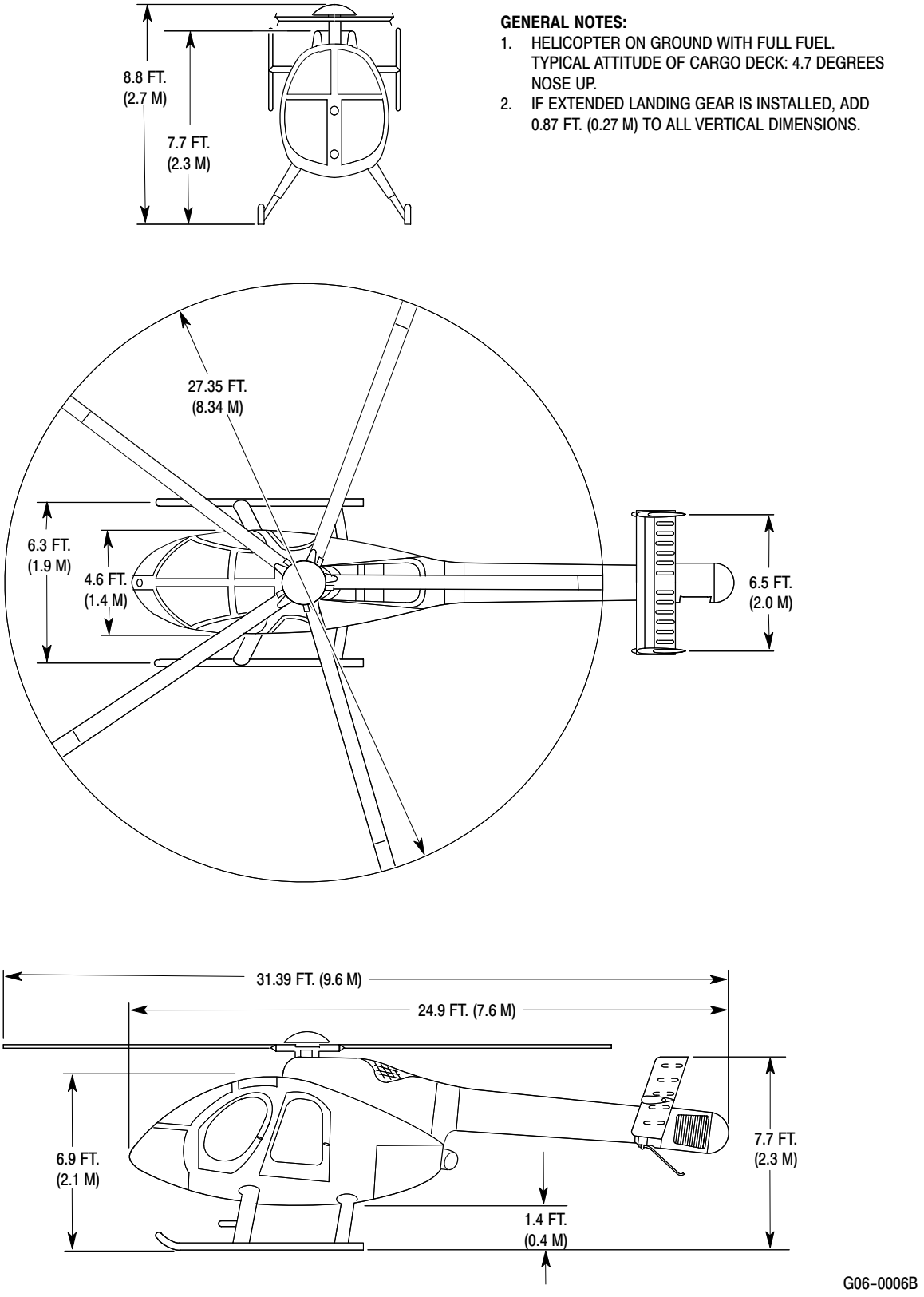
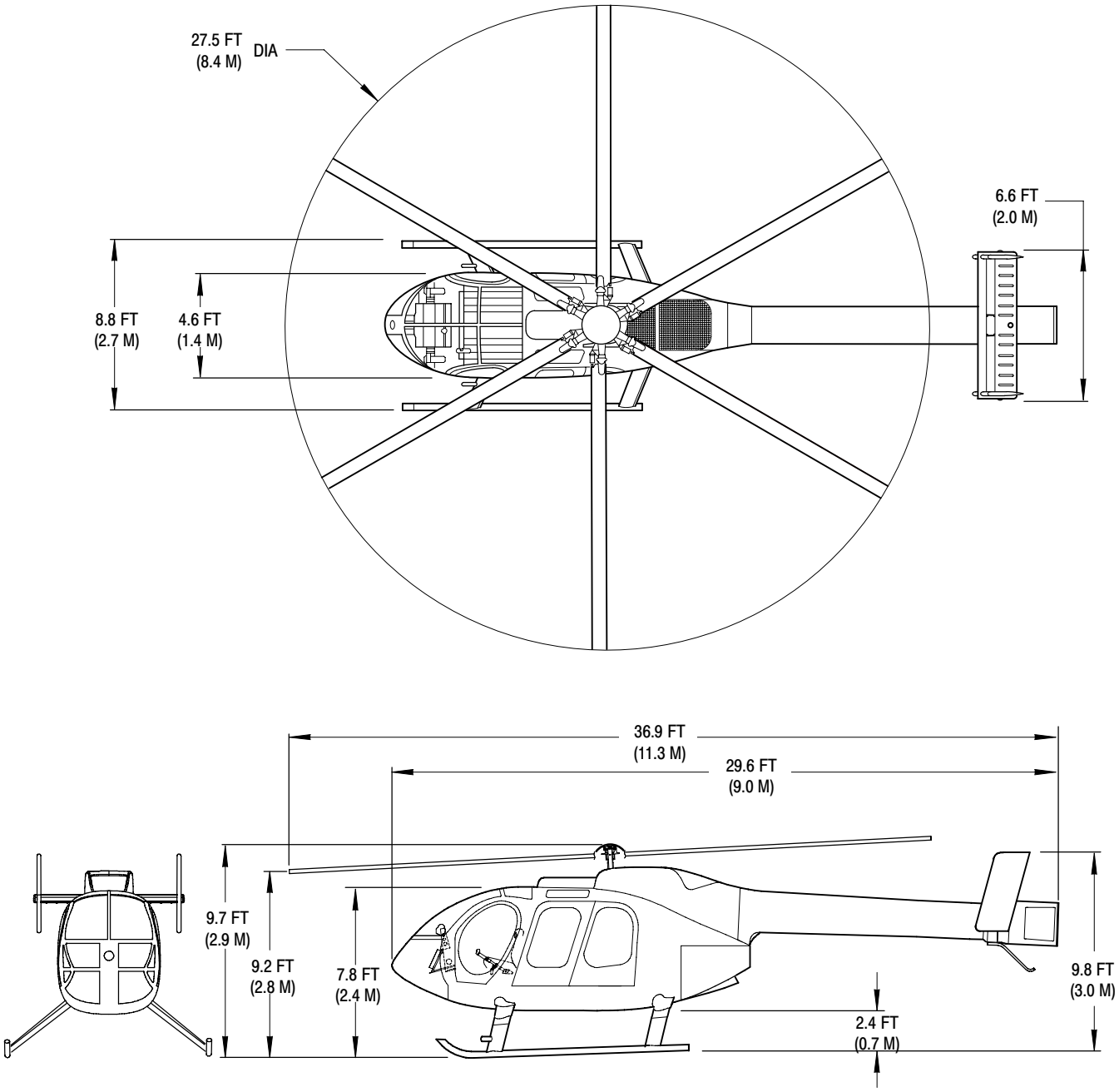


Figure 204. Principal Dimensions – Model 500N



GENERAL NOTES:

1. HELICOPTER ON GROUND WITH FULL FUEL.
   TYPICAL ATTITUDE OF CARGO DECK 5.3 DEGREES NOSE UP.
2. HEIGHT ABOVE GROUND DIMENSIONS VARY WITH INSTALLED EQUIPMENT, CENTER OF GRAVITY AND TERRAIN FEATURES.
3. ALL DIMENSIONS SHOWN DEPICT EXTENDED LANDING GEAR.

6G06-043D

Figure 205. Principal Dimensions – Model 600N (Sheet 1 of 2)

WEIGHT AND BALANCE
MAINTENANCE PRACTICES

1. General Weight and Balance Information

(1). Removal or addition of fuel or equipment results in changes to weight and balance of a helicopter, and the permissible useful load is affected accordingly. These changes must be investigated to eliminate possible adverse effects on the helicopter's flight characteristics.

(2). Basic weight and corresponding center of gravity is determined by weighing the helicopter without crew and payload; however, basic weight does include trapped and unusable fuel, full operating fluids, lubricants, etc., and installed equipment.

(3). 369D/E/FF - 500N - The longitudinal reference datum is located 100 inches (254 cm) forward of the main rotor centerline. The lateral reference datum is located along the longitudinal centerline of the helicopter. The vertical reference datum is located at a point 100 inches (254 cm) below the center of the main rotor blades.

(4). 600N - The Weight and Balance longitudinal reference datum is located 100 inches (254 cm) forward of the main rotor centerline or 15 inches (38.1 cm) aft of the aircraft nose. The Weight and Balance (longitudinal) Reference Datum is different from the Fuselage/ Engineering Reference Datum (Ref. Section 06-00-00). The lateral reference datum is located along the longitudinal centerline of the helicopter. The vertical reference datum is located at a point 83 inches (210.8 cm) below the center of the main rotor blades.

(5). Refer to the following for balance diagrams
Figure 201 for Model 369D
Figure 202 for Model 369E
Figure 203 for Model 369FF
Figure 204 for Model 500N
Figure 205 for Model 600N.

NOTE: Weight and balance information for optional equipment is found in the Initial Installation section for the optional equipment.

Parameter	Wt lb/kg
Certified Gross Weight (369D/E)	3000/1362
Certified Gross Weight (369FF)	3100/1407
Certified Gross Weight (500N)	3350/1521
Certified Gross Weight (600N)	4100/1860
Cargo Deck Capacity (369D/E/FF – 500N)	1300/590
Cargo Deck Capacity (600N)	1350/613
Cargo Deck Capacity not to exceed 115 pounds per square foot.	
Certified Gross Weights are for weight–on–skids.	

A. Approved Center of Gravity Limits

(Ref. PFM)

B. Terminology

Following are terms with definitions, used when determining helicopter weight and balance:

(1). Arm: The distance in inches from the longitudinal (longitudinal arm) and lateral (lateral arm) reference datum of a part to the center of gravity (CG) of the part.

NOTE: When viewing helicopter from rear, items to left of lateral reference datum (center line of helicopter) will be expressed as having negative (-) lateral arm, and those items to right of reference datum, a positive (+) lateral arm.

(2). Center of gravity (CG): A point on a part where the part will be perfectly balanced. Center of gravity is measured in inches from a known reference. It can be determined using the following formula:

$$CG(in) = \frac{\text{Moment (in-lb)}}{\text{Weight (lb)}}$$

(3). Moment: Product of weight of a part and its arm, either longitudinal or lateral, and is expressed in inch-pounds (in-lb).
Longitudinal moment = weight x longitudinal arm;
Lateral moment = weight x lateral arm.

(4). Reaction point: A fixed point on helicopter where weight of helicopter counteracts on a weighing device. The main reaction points are;

(a). ALL: Long. Sta. 96.9.

(b). 369D/E/FF - 500N: Lat. Sta. ±25.6.

(c). 600N: Lat. Sta. ±26.0.

(d). 369D/E/FF: Tail reaction point is at Long. Sta. 197.2, Lat. Sta. 0.0.

(e). 500N: Tail reaction point is at Long. Sta. 275.4, Lat. Sta. 0.0.

(f). 600N: Tail reaction point is at Long. Sta. 303.3, Lat. Sta. 0.0.

2. Helicopter Weighing

Forms

Nomenclature	Form No.	Figure No.
Weight and Balance Report	765B	206
Surplus and Missing Items	1702	207
Basic Weight and Balance Record	885	208

CAUTION

- The controls access panel (aft side of Sta. 78.5 bulkhead) and the fuel cell access panels must be installed before jacking helicopter.
- 369D/E/FF - 500N: There are two methods approved for weighing the helicopter. The preferred method is by using electronic weighing equipment. If equipment for electronic weighing is unavailable, the second approved method, mechanical scales, may be used.
- 600N: There is one method approved for weighing the helicopter. The method is by using electronic weighing equipment.

A. Helicopter Weighing Preparation

The following items are required and should be readily available prior to preparing and weighing the helicopter, using the electronic weighing method.

Special Tools
(Ref. Section 91-00-00)

Item	Nomenclature
ST202	Jack fittings

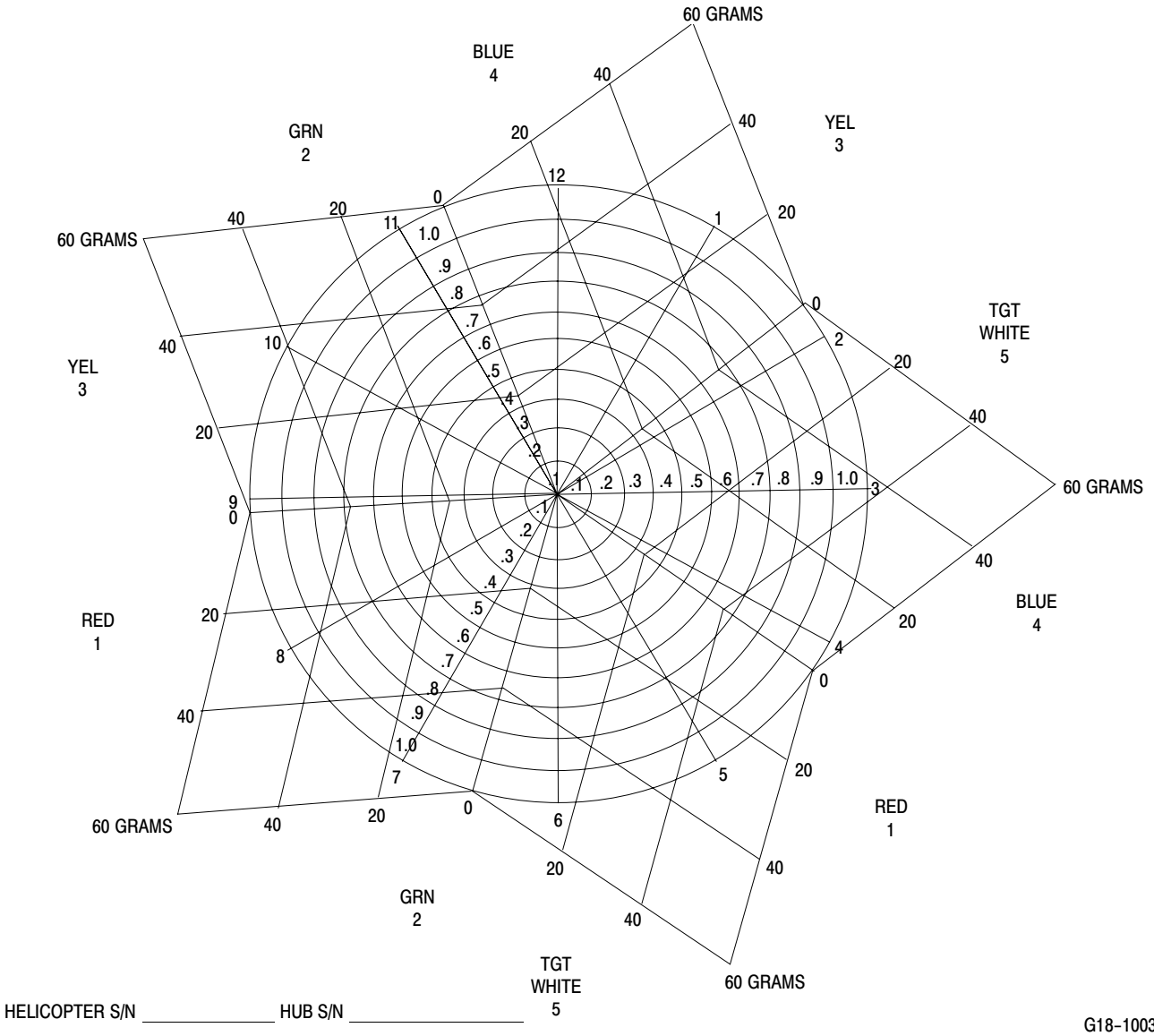
NOTE:

- Weigh helicopter without fuel if possible.
- 369D/E/FF - 500N: If fuel is drained from low point in cell, 1.4 pounds (0.64 kg) of trapped fuel at 93.5 inch (237.5 cm) arm will remain. If fuel is pumped out using start pump, 3.7 pounds (1.68 kg) of trapped (unusable) fuel at 93.5 inch (237.5 cm) arm will remain.
- 600N: If fuel is drained from low point in cell, 1.6 pounds (0.73 kg) of trapped (unusable) fuel at 93.5 inch (237.5 cm) arm will remain. If fuel is pumped out using start pump, 9.5 pounds (4.31 kg) of trapped (unusable) fuel at 93.5 inch (237.5 cm) arm will remain.

(1). If defueling is not possible, ensure that fuel cell is full.

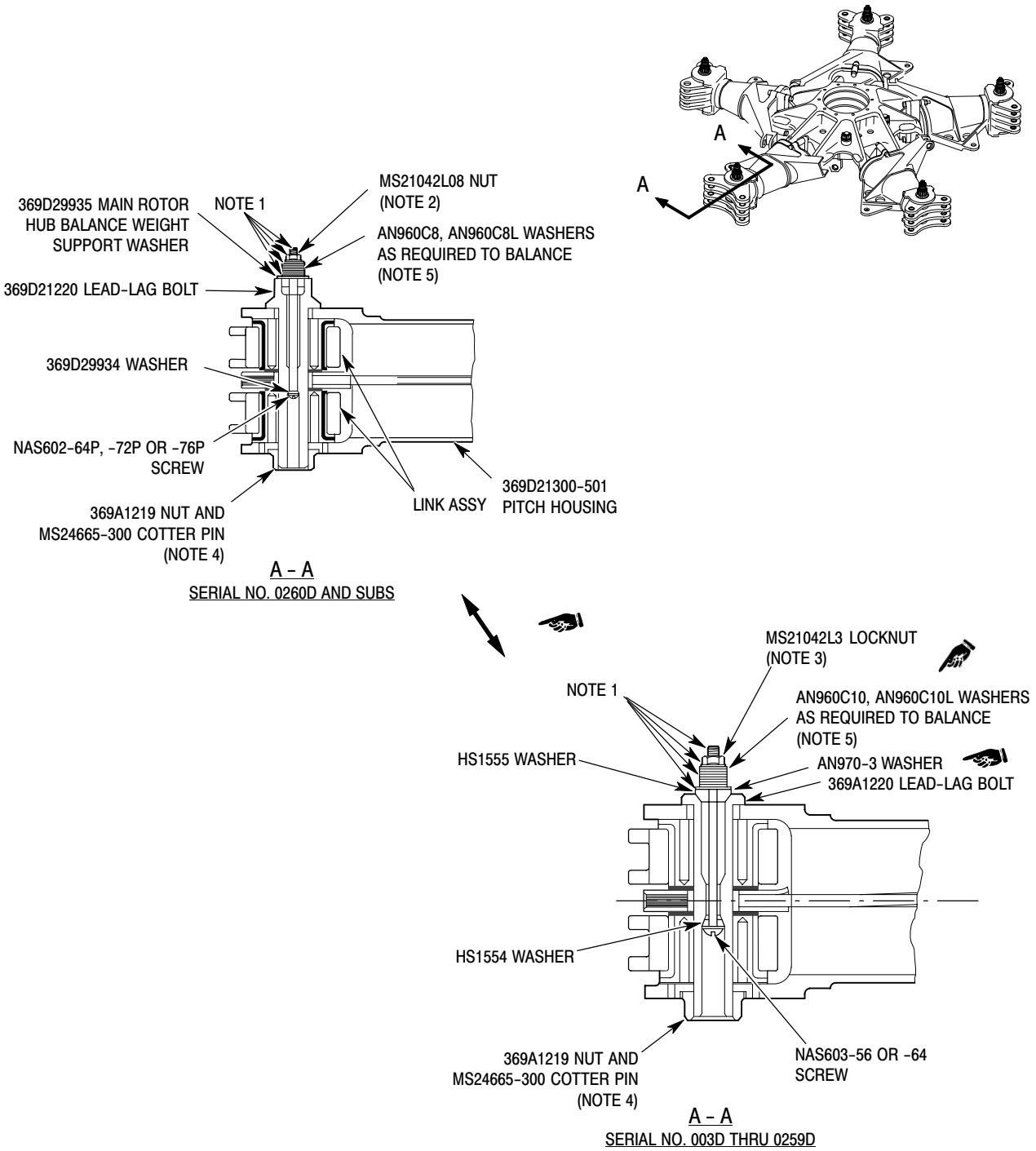
(a). Fluid weights at 70° ambient are:

Fuel (Jet A)
6.75 Lb (3.06 kg) per U.S. gallon



RUN NO.	IPS	CLOCK ANGLE	BALANCE WEIGHT AND LOCATION				
			(1) RED	(2) GREEN	(3) YELLOW	(4) BLUE	(5) WHITE

Figure 503. Main Rotor Hub Balancing Chart



NOTES:

1. COAT SCREW THREADS, NUTS AND WASHERS WITH PR-1436-G, CLASS B-2 SEALANT.
2. TORQUE MS21042L08 NUT TO 20 - 35 INCH-POUNDS (2.26 - 3.95 NM).
3. TORQUE MS21042L3 NUT TO 30 - 60 INCH-POUNDS (3.39 - 6.78 NM).
4. DO NOT REMOVE OR DISTURB TORQUE ON 369A1219 NUT.
5. THE MAXIMUM ALLOWABLE BALANCE WEIGHT PER LEAD-LAG BOLT ON THE MAIN ROTOR HUB ASSEMBLY IS 150 GRAMS.

G18-1004B

Figure 504. Main Rotor Hub Balancing

Table 201. Tail Rotor Balance Weight – Value Chart

At Blade Tip (4)			At Blade Pitch Arm (3)			
Screw (5)			**Washer (1)(2)**			
Part Number	**Length (in./mm)**	**Weight (Grams)**	**Part Number**	**Thickness (in./mm)**	**Weight (Grams)**	**OD (in./mm)**
NAS1352–08–12P	0.75/19.05	2.22	HS306–227L	0.016/0.4064	1.17	0.800/20.32
NAS1352–08–14P	0.875/22.23	2.44				
Weight						
	Thickness (In./mm)	**Weight (Grams)**				
369A1622–3	0.016/0.4064	0.29				
369A1622–5	0.036/0.9144	1.76				

NOTES:

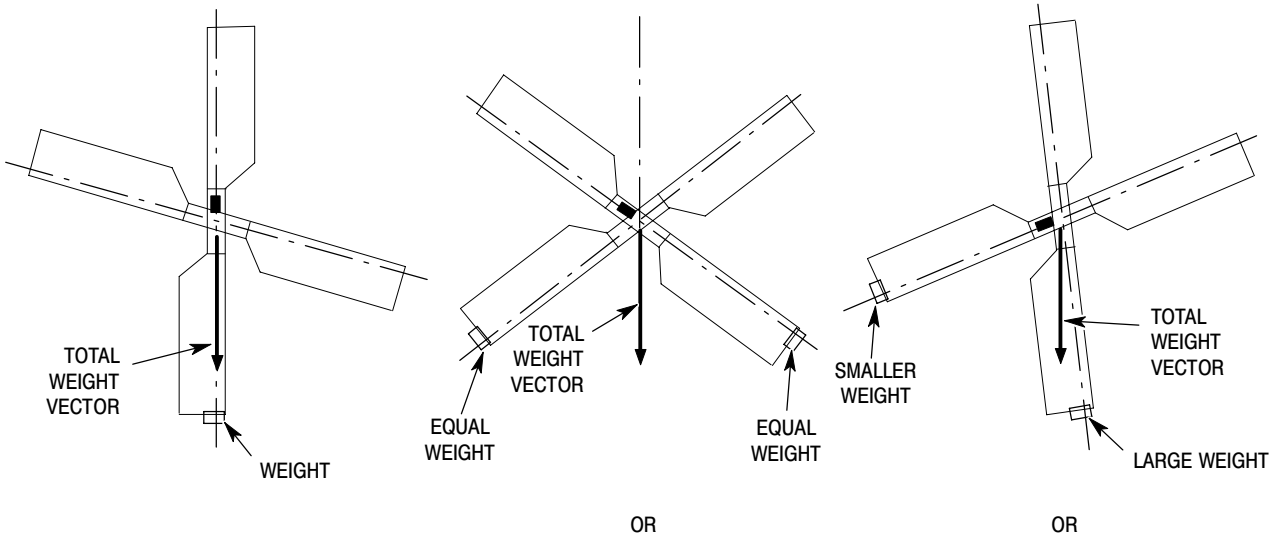
(1) Used on balance bolt.

(2) Maximum of 23 washers is permitted on each balance bolt.

(3) Minimum of two threads must extend past nut securing balance washers on balance bolt.

(4) Maximum weight, including screws, is 34 grams.

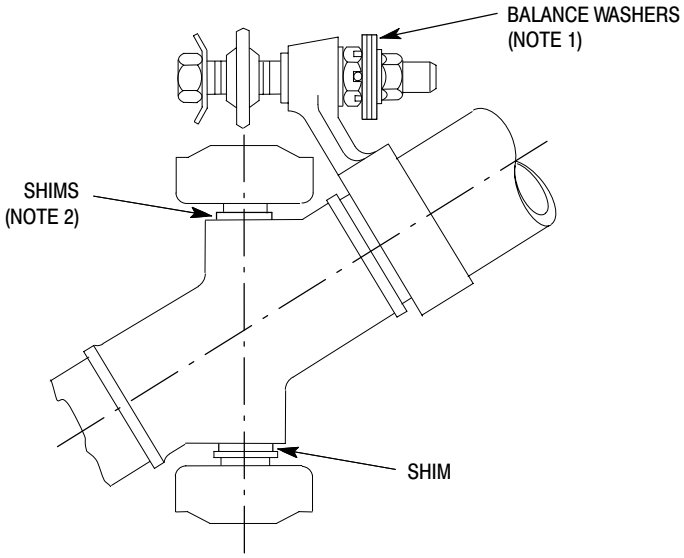
(5) Minimum screw thread engagement is 5/16 inch (7.9375 mm).



NOTE:
IF, WHEN ADDING WEIGHTS, OUT-OF-BALANCE VIBRATION LEVEL INCREASES, ADD WEIGHTS TO THE TOP BLADE(S).

G18-2001

Figure 202. Short Method Tail Rotor Balancing (Four–Bladed Tail Rotor)



NOTES:

1. MAXIMUM ALLOWABLE NUMBER OF WASHERS AT PITCH ARM BOLT IS 23. WHENEVER THIS LIMIT IS REACHED AND REQUIRED BALANCE CANNOT BE MET, SHIFT THE CENTER OF THE HUB BY TRANSFERRING SHIMS, THICKNESS OF 0.010 IN. (0.254 MM), FROM WEIGHTED PITCH ARM SIDE TO THE OPPOSITE SIDE AS SHOWN AND RE-CHECK BALANCE, STARTING FROM ZERO WASHERS.
2. REMOVE 0.010 IN. (0.254 MM) THICK SHIM FROM PITCH ARM SIDES AND TRANSFER THE SHIM TO THE OPPOSITE SIDE.

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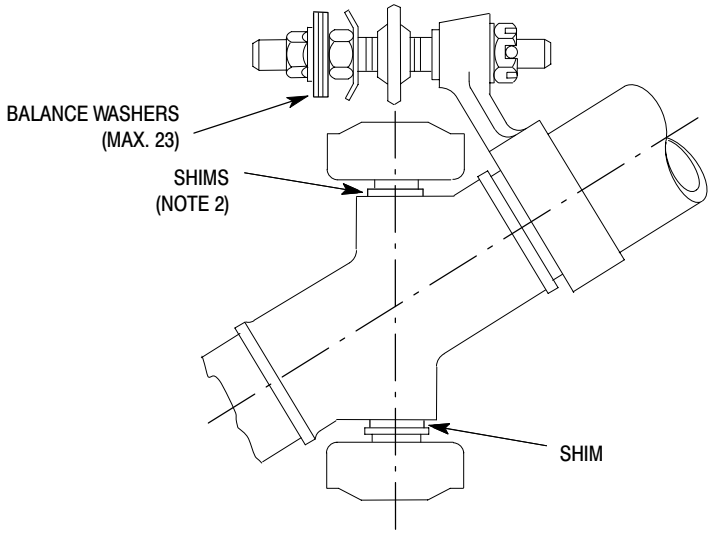
Figure 203. Long Method Tail Rotor Balancing (Inboard Blade)



NOTES:

1. REMOVE 0.010 IN. (0.254 MM) THICK SHIM FROM WEIGHTED PITCH ARM SIDE AND TRANSFER THE SHIM TO THE OPPOSITE SIDE.
2. DURING BALANCE OF OUTBOARD BLADES, WEIGHTS ON INBOARD BLADES MUST NOT BE CHANGED.

G18-2003A

Figure 204. Long Method Tail Rotor Balancing (Outboard Blade)

FUEL SYSTEM
MAINTENANCE PRACTICES

1. Fuel Cell Cleaning – General

(1). Fuel cells are susceptible to fungus growth after contact with contaminated fuel. Fungus trapped in the fuel filters indicates fuel tank contamination. Remove, inspect, clean or replace filter elements per applicable Allison Engine Operation and Maintenance Manual. Where installed, service anti-ice (airframe) filter (Ref. Sec. 28-25-00).

(2). Periodic incorporation of an FAA approved anti-fungal fuel additive will kill and prevent new fungus growth.

2. Engineered Fabrics Corp. Fuel Cell Cleaning

CAUTION Do not steam clean Engineered Fabrics Corp. fuel cells. Steam cleaning may cause irreparable damage.

(1). Clean cell exterior and interior surfaces with warm soapy water and clean lint free cloth. Rinse away all soap residue and wipe dry.

3. Fuel Cell Handling, Storage and Shipping

CAUTION Do not use cell fittings as hand holds. Do not store fuel cells uncrated or exposed to direct sunlight, ozone, dirt, moisture, solvents, chemicals, or extremes of heat and humidity.

(1). Store and ship cells in a suitable protective container.

(a). Apply protective tape over all cell machined fittings.

(b). Use packing material to keep the cell from shifting in transit.

(c). Suspended self-sealing cells to maintain cell shape.

4. Fuel Cell Preservation and Storage (Engineered Fabrics Corp. Cells)

(1). Thoroughly clean cell with warm soapy water. Wipe completely dry.

(2). If a fuel cell that has previously contained fuel is to be stored for longer than three days, coat inside of cell with a light coating of #10 weight, non-synthetic engine oil.

CAUTION

- Engineered Fabrics Corp. cells removed from service must not be left dry for more than 3 days without the application of oil as a plasticizing agent. The cell liner will loose pliability if left dry for extended periods and subsequent flexing may cause the material to crack.
- Do not work on fuel cell in ambient temperatures below 70°F (21°C).

(a). Fold cell over protective wadding as loosely as possible and with a minimum number of folds.

(b). Wrap the cell in a protective cover.

(c). Put cell in a suitable storage/shipping container. Use wadding as required to prevent movement. Do not stuff cell into an undersized container.

(d). Store cell at 70°F (21°C) away from sunlight and moisture.

5. Fuel System Air Bleed (Model 250-C47 Engine Installation)

WARNING **Fuel/air vapor discharged during bleeding is a fire hazard. Prevent fuel vapor accumulation, ignition and fire. Perform work in an open, well ventilated area away from all potential ignition sources. Attach helicopter to an approved electrical ground. Wear approved eye protection.**

(1). Helicopters with C47 engines and standard fuel supply systems are not equipped with a start pump.

(2). Helicopters equipped with an airframe mounted fuel filter are equipped with an airframe mounted fuel pump inside the left fuel cell and can be primed using the same procedure as helicopters with the 250-C20 Series engines.

(3). The standard helicopter fuel system only has an engine driven self priming pump that will fill the fuel system when the engine is motored with the starter. Motor engine per the appropriate Pilot's Flight Manual.

(4). Bleed air out of helicopter engine fuel controls per Rolls-Royce Engine Operation and Maintenance Manual.

(5). If fuel system fails to bleed properly, proceed as follows:

(a). Field fabricate a primer bulb assembly (Ref. Figure 201).

(b). Disconnect fuel line between CEFA and HMU at HMU side.

(c). Disconnect fuel line from fuel nozzle.

(d). Install primer bulb assembly in line between HMU GEAR INLET and the CEFA.

(e). Open fuel shutoff valve.

(f). Open throttle to ground idle position.

(g). Squeeze primer bulb until fuel comes out of fuel line.

NOTE: When reinstalling fuel lines, refer to appropriate Rolls-Royce Operation and Maintenance Manual for proper torques.

(h). Remove primer bulb assembly from fuel line and reconnect fuel line to HMU.

(i). Crank engine for approximately 15 seconds to verify fuel to fuel nozzle is free of air in the system.

(j). Repeat above procedure as required.

(k). Reinstall fuel line to fuel nozzle.

(l). Close throttle.

(m). Close fuel shutoff valve.

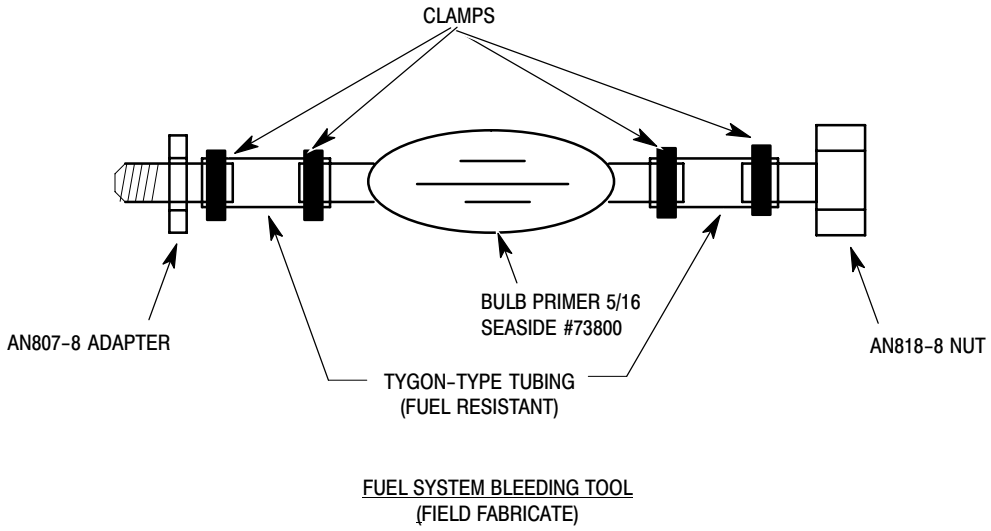


Figure 201. Field Fabricated Fuel System Bleeding Tool

ANTI–ICE/AIRFRAME FUEL FILTER DESCRIPTION AND OPERATION

Table 1. Anti–Ice/Airframe Fuel Filter Effectivity

Installation	Model & Production Number	Features
369H90022–BSC	369D, 003 and subsequent	Helicopters equipped with slimline instrument panel.
369H90022–503	369E, 001 and subsequent	Helicopters equipped with T–instrument panel.
369H90022–503	500N, 001 and subsequent	Helicopters equipped with T–instrument panel.
600N98110–501	600N, 003 and subsequent	Helicopters equipped with T–instrument panel.

NOTE: Anti–ice / airframe fuel filter is not certified for installation on C30 engine installation.

NOTE: On the 600N helicopter, the airframe fuel filter is not certified as an anti–ice fuel filter. Throughout this section, the airframe fuel filter will be refered to as an anti–ice fuel filter.

1. Description

(1). The airframe mounted anti–ice fuel filter is installed on the aft face of the firewall upstream of the engine fuel pump filter. The 10 micron, 500 square inch disposable filter element strips ice and other solids from the fuel before it enters the engine fuel system.

2. Operation

(1). A flow pressure sensing switch in the filter body furnished with all installations closes when flow differential pressure across the filter drops to a preset level.

(2). On the 369H90022–BSC installation, pressure switch contact closure directs 28Vdc current across the S2 contacts of the **FUEL FILTER** relay K254 to activate the RT170–277 time delay relay (TDR). The TDR energizes relay K254 after a two to five second delay, closing switches S1, S2, and S3; energizing the **FUEL FILTER** caution light, start pump and **START PUMP ON** light.

(3). On 369H90022–503, –505 and 600N98110–501 fuel filter installations, pressure switch closure only advises the pilot of an impending or total fuel filter blockage by lighting the **AIRFRAME FILTER** caution lamp in the caution/ warning panel. The pilot must manually set the **START PUMP** switch **ON** to pressurize the fuel system.

(4). On all installations, total filter blockage forces a filter bypass valve in the filter body open to second supply unfiltered fuel to the engine.

(5). Pressing the **FUEL FILTER** caution light/switch supplied with 369H90022–BSC installations resets relay K254 and the time delay relay, shuts down the start pump and **START PUMP ON** light and switches off the **FUEL FILTER** caution light.

(6). The caution light dimmer switch on the lower left control panel of –BSC installations controls only **FUEL FILTER** caution light intensity with **DIM** or **BRT** positions. **FUEL FILTER** caution lamp test is executed with the **PRESS TO TST WARN LT** switch on the caution/warning light panel.

(7). On –503, –505 and –501 installations, caution light intensities, including the **AIRFRAME FILTER** light are controlled through the **WARN LT DIM** potentiometer on the pedestal switch panel.

(8). Circuit protection is provided by the 7.5 ampere anti–ice **FUEL FILTER** circuit breaker on the anti–ice fuel filter panel.

CAUTION Determine why a circuit breaker popped before pushing the reset button (Ref. Table 101).

(9). A press-to-test button located on top of the filter body is featured in all installations. Pressing the button simulates a blocked filter condition for power-on ground test.

(10). On all installations, a filter bowl drain valve plumbed into the drain manifold provides for filter draining and fuel sampling.

WARNING **Air in the fuel system will cause a power reduction or flameout. Do a fuel system vacuum leak check and system air bleed after opening fuel system to atmosphere and prior to releasing helicopter for flight. Ensure start/boost pump is operating before taking fuel samples from system drain valves.**

(11). Refer to Table 101 for anti-ice fuel filter fault isolation information.

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B. Tailboom Installation

CAUTION Before tailboom installation, inspect radius blocks for brinneling, corrosion, cracks and indication of indent on face; none allowed.

NOTE: If installing a new tailboom, the 500N3500-5 cover will have to be installed after internal tailboom components are installed (Ref. 500N3500-5 Cover Installation).

(1). Support tailboom so that the mating bulkhead surfaces are flush.

(2). Slide countersunk/chamfered washers on external wrenching bolts with countersunk side facing bolt head.

CAUTION If washers are installed backwards, structural failure may result due to insufficient surface in load bearing area that can cause spreading or cracking of washers and result in loss of clamp-up torque.

(3). 600N:

Install washer on bolt after the countersunk washer.

(a). Install either an AN960C516 or NAS1149C0563R washer on -5 bolts.

(b). Install either an AN960C616 or NAS1149C0663R washer on -6 bolts.

CAUTION Do not lubricate tailboom attach bolts or nutplates, this will cause a false torque reading and lead to bolt loosening.

(4). With the tailboom supported in place, install four bolts with washers.

(a). 500N:

Torque bolts to **130 - 150 inch-pounds (14.69 - 16.95 Nm) plus drag torque**. Verify minimum run on torque of 6.5 inch-pounds (0.73 Nm).

(b). 600N:

RN003 - RN059 without TB600N-007 complied with; torque the two smaller diameter bolts to **130 - 150 inch-pounds (14.68 - 16.94 Nm) plus drag torque** and the two larger diameter bolts to **180 - 220 inch-pounds (20.33 - 24.85 Nm) plus drag torque**. Safety bolts.

RN003 - RN059 with TB600N-007 complied with and RN060 & subs; torque bolts to **180 - 220 inch-pounds (20.33 - 24.85 Nm) plus drag torque**. Safety bolts.

(5). Check for a minimum of two threads protruding from nutplates.

(6). Using a 0.002 inch (0.051 mm) feeler gauge, check for gap between tailboom and fuselage flange within 0.60 inch (15.3 mm) of centerline of each of the four attach bolts; no gap allowed.

(7). Re-connect electrical connectors.

(8). Re-connect control cable assembly.

(9). Install tailboom fairing.

3. Tailboom Inspection

(Ref. Figure 201)

(1). Inspect tailboom exterior as follows:

(a). Inspect tailboom fairing for cracks and delaminations.

(b). Inspect tailboom flange and mounting bolt holes attachment area for cracks at Sta. 168.20.

(c). Inspect radius blocks for brinneling, corrosion and indication of indent on face; none allowed. If found, scrap radius block and install new radius block.

(d). Inspect strake for cracks, delaminations, debonding, dents, nicks and separation.

NOTE: Damage to slots can cause significant degradation of aircraft performance in a hover.

(e). Inspect tailboom surface area and tailboom circulation control slots surface area for cracks, voids, dents, holes, scratches, separation, delaminations at tailboom and security.

1). Using a bright light, inspect fore and aft radii of the lower portion of the three upper slot bridges for cracks, illuminate area under the flap.

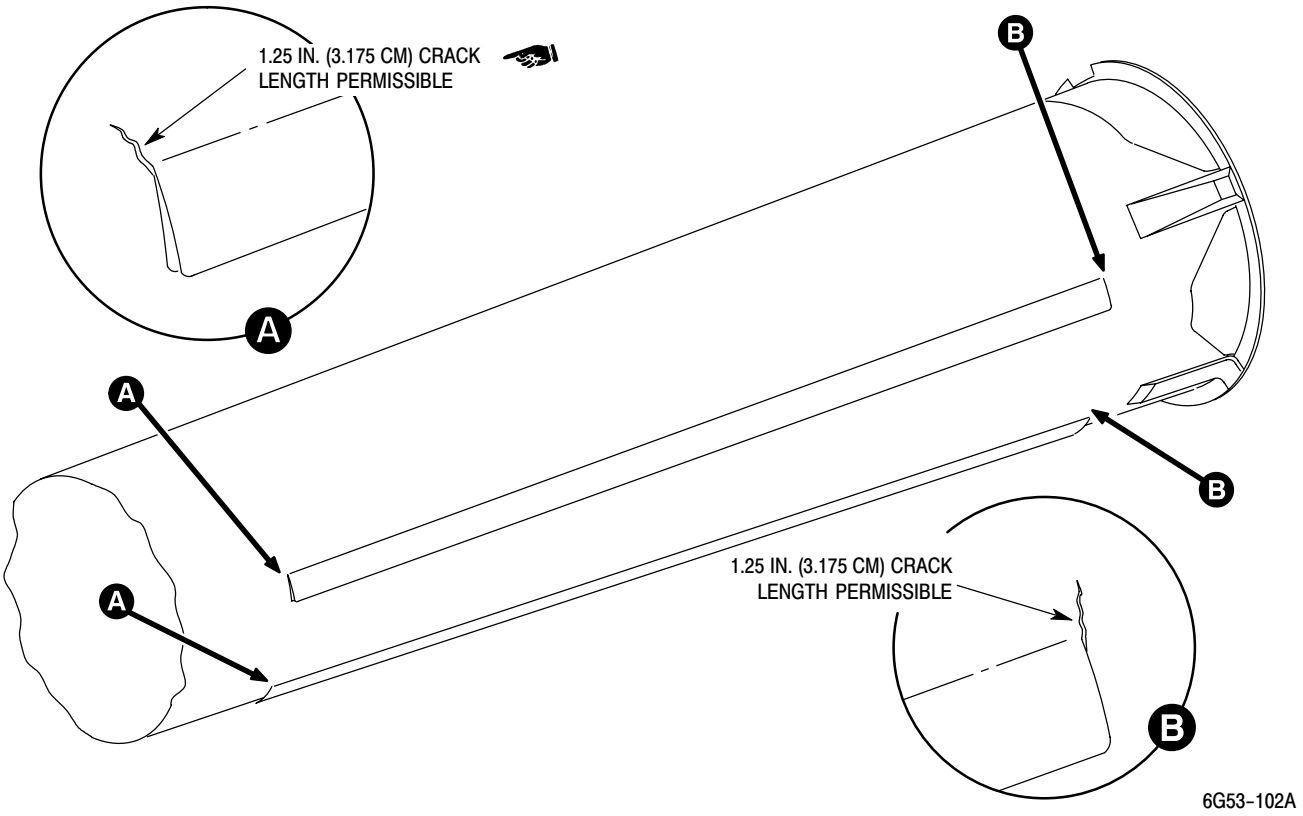

Figure 202. Tailboom Flap Inspection

NOTE: The flap may be raised slightly, using finger pressure only, to aid in checking this area.

(f). Inspect flaps for cracking and debonding (Ref. Figure 202):

1). A crack of any length, in line with aft edge of flap, is permissible at interface between flap and tailboom.

2). A crack of 1.25 inch (3.175 cm) maximum length, in line with the forward edge of flap, is permissible at interface between flap and tailboom.

NOTE: If crack in forward edge of flap is longer than 1.25 inch (3.175 cm), contact your local MDHI Field Service Representative for disposition.

(g). Inspect horizontal stabilizer mounting brackets (pay particular attention to the forward inboard legs) and attachment fittings for cracks, voids, separation and delamination.

(h). Inspect stabilizers (Ref. Sec. 53-50-30).

(i). Inspect (tail-skid) for cracks, dents, holes and delamination.

(j). Inspect rotating thruster cone for freedom of operation, cracks, holes, separation and delamination.

(k). Inspect tailboom grommets (2) places for cracks and proper fit.

(2). Inspect tailboom interior as follows:

(a). Check stator vanes and stator diffuser cone for cracks, delaminations and separation.

1). Maximum allowable cracks found emanating from stator vane inserts should not exceed 0.10 inch (2.54 mm) span-wise.

2). No cracks allowed running cord-wise towards leading or trailing edge

(b). Inspect slot air foils for cracks, delamination and separation from boom.

(c). Inspect control cable assembly attachment points for looseness, cracks and condition.

(d). Inspect cable conduit for cracks, separation and delamination.

(e). Inspect air circulation area for FOD and cleanliness. If necessary, clean with mild soap and water.

(3). Inspect rotating thruster cone collar strap ring rivets for looseness, strap for cracks and condition.

4. Tailboom Repair

There are no repair procedures for the tailboom at this time. Refer to MDHI Field Service Representative.

5. Stator Replacement

(Ref. Figure 201, View D)

A. Stator Removal

(1). Remove tailboom.

(2). Note or index top of stator for reassemble. Support stator and remove seven exterior screws and washers mounted around the forward part of the tailboom.

B. Stator Installation

(1). Support stator and align stator vanes in tailboom, install seven screws and washers, torque screws to **3 - 6 inch-pounds (0.34 - 0.68 Nm) plus drag torque**. Total torque should not exceed **15 inch-pounds (1069 Nm)** total torque.

(2). Install tailboom.

(3). Verify that stator does not rub against the fan and for clearance of 0.020–0.080 inch (0.508–2.032 mm) between stator and fan.

6. Stator Blade Replacement

(Ref. Figure 201, View E)

(1). Stator Blade Removal: Remove two self-locking screws and two surface washers.

(2). Stator Blade Installation: Install two surface washers and two self-locking screws. Torque screws to **3 - 6 inch-pounds (0.34 - 0.68 Nm) plus drag torque**. Total torque should not exceed **15 inch-pounds (1069 Nm)** total torque.

7. Rotating Thruster Cone Replacement

(Ref. Figure 201, View H)

A. Rotating Thruster Cone Removal

(1). Remove cone tip cap by removing eight screws and washers.

(2). Support rotating thruster cone and remove three bolts and washers that attach the rotating thruster cone, carefully slide rotating cone aft to clear stationary cone, bearings and followers and the cable and drum assembly.

B. Rotating Thruster Cone Installation

(1). Carefully slide rotating thruster cone over stationary cone, bearings, rollers and followers.

(2). With the thruster supported in place, install three bolts with washers attaching the rotating thruster to thruster gear box. Torque bolts **70 - 90 inch-pounds (7.91 - 10.17 Nm).** Safety wire bolts.

(3). Install cone tip cap with eight screws and washers, torque screws per general aircraft practices.

8. Rotating Thruster Cone Inspection

(1). Inspect for cracks and separation of composite laminates.

(2). Check for freedom of rotational movement within the control range of thruster.

(3). When the thruster is removed from helicopter, check roller surface area (strap) for cracks and condition.

NOTE: Refer to MD Helicopters Inc. Representative for structural repairs, cracks, etc.

9. Stationary Thruster Cone Replacement

(Ref. Figure 201)

A. Stationary Thruster Cone Removal

(1). Remove rotating thruster cone (Ref. Rotating Thruster Cone Removal).

(2). Remove eight off wing screws from pan cover, remove cotter pin, nut and washer from sector input shaft and remove pan cover. Remove washer and bushing from sector bellcrank input shaft.

(3). Remove bolt, washer and bushing from thruster input sector bellcrank clevis (Ref. View J).

(4). Remove thruster cone fairings.

(5). Support stationary thruster cone and remove eight bolts and washers, with cable assembly attached to cone, carefully lift cone off tailboom so that the control rod passes through the thruster cone cutout.

B. Stationary Thruster Cone Installation

(1). Support stationary thruster cone to tailboom so that the control rod passes through the cutout of the stationary cone, and that the mating surfaces are flush to the tailboom. Slide countersunk/chamber washers on external wrenching bolts with countersunk side facing bolt head.

CAUTION If washers are installed backwards, structural failure may result due to insufficient surface clamp-up in load bearing areas that can cause spreading or cracking, resulting in loss of clamp-up torque.

(2). With the stationary thruster cone support in place, install eight bolts and washers. Torque bolts **30 - 40 inch-pounds (3.39 - 4.52 Nm) plus drag torque.**

(3). Connect control rod to input sector bellcrank clevis and install bushing, washer and bolt, torque bolt per standard aircraft torque values and safety wire.

(4). Install thruster cone fairings.

(5). Install rotating thruster (Ref. Rotating Thruster Cone Installation).

10. Stationary Thruster Cone Inspection

(1). Inspect for cracks and delamination of composites structure for the following: Internal ducts, air foil supports, pan cover and pan (hat section).

(2). Inspect rollers and bearings for condition and freedom of rotation. Inspect for cleanliness.

(3). Inspect sector bellcrank, cable assemblies, pulleys and support brackets for condition, inspect of cleanliness.

(4). Inspect upper input shaft for damage and wear. Check for play in mounting pins. If mounting pins are found to have play, replace with new pins and collars.

(5). Inspect thruster aft support shaft for damage and wear. Check for play in mounting hardware. If top bolt is found to be loose, retorque to **10 - 15 inch-pounds (1.13 - 1.69 Nm)**. If bottom mounting pins are found to be loose, replace with new pins and collars.

11. Conduit and Support Strap Rebonding

(Ref. Figure 203) The following procedure is for rebonding of the conduit supports.

Consumable Materials
(Ref. Section 91-00-00)

Item	Nomenclature
CM217	Isopropyl alcohol
CM402	Adhesive

(1). Lightly abrade faying surfaces with Scotchbrite until surface gloss of the laminate is gone.

(2). Solvent-wipe parts using a clean lint-free cloth dampened with isopropyl alcohol (CM217).

(3). Wipe dry using a clean, lint-free, dry cloth and allow to air dry for 15 minutes at ambient temperature.

CAUTION Do not heat conduit to more than 170°F (77°C). Conduit and tailboom can be damaged from too much heat.

(4). If conduit is bent away from tailboom, heat conduit to make more flexible for re-bonding.

NOTE: Adhesive must be applied within 2 hours of preparation. If more than 2 hours elapse before adhesive application, re-prepare surfaces.

(5). Mix adhesive (CM402) according to manufacturer's instructions and apply to faying surfaces.

(6). Secure parts together with light pressure and allow to cure for 24 hours at ambient temperature.

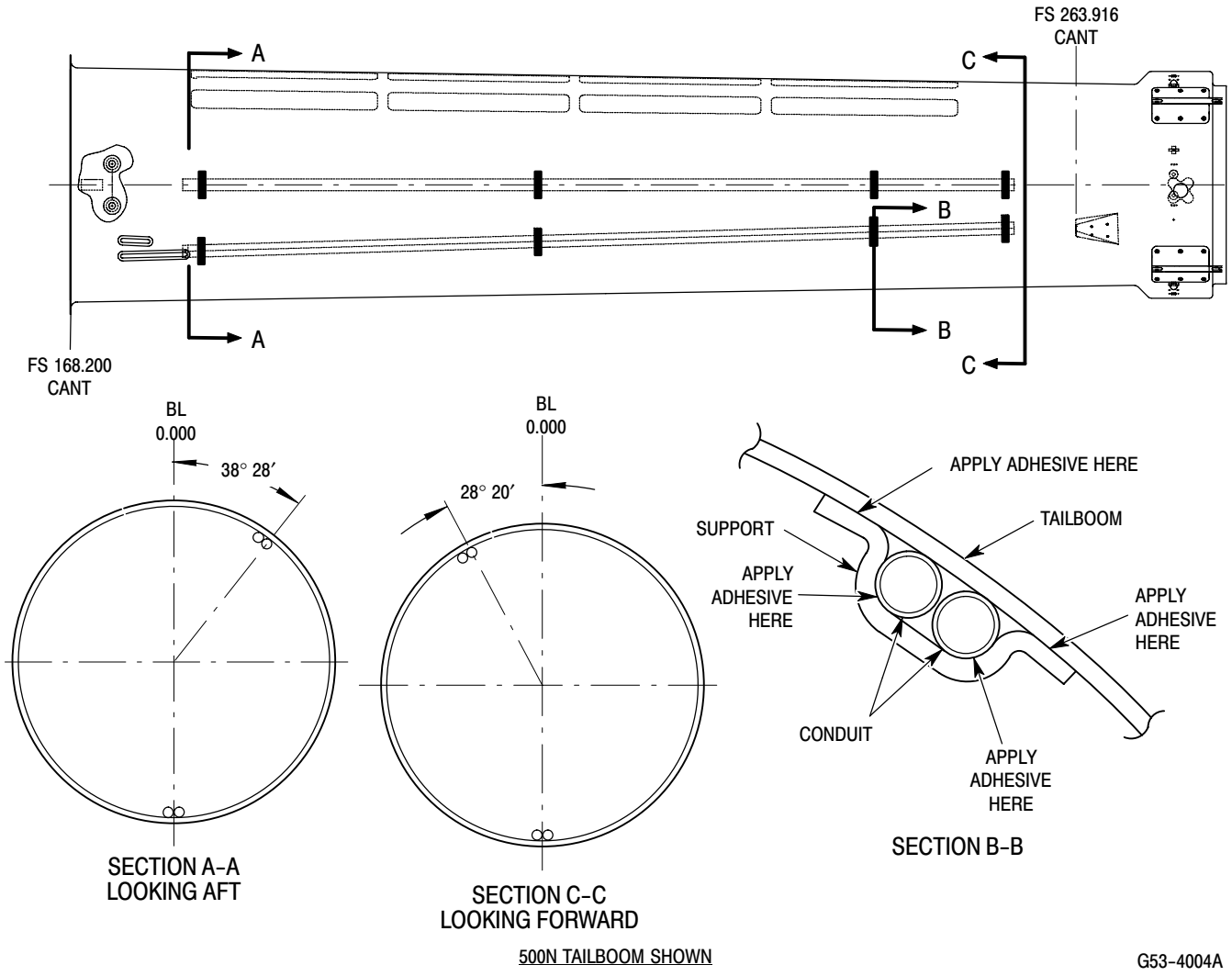

Figure 203. Conduit and Support Strap Rebonding

12. Horizontal Stabilizer Mount Fitting Replacement

(Ref. Figure 201)

Empennage Fitting	Part No.
L/H, Aluminum	500N3530–3, –7
R/H, Aluminum	500N3530–4, –8
L/H, CRES	500N3530–9
R/H, CRES	500N3530–10

Consumable Materials (Ref. Section 91–00–00)

Item	Nomenclature
CM101	Solid film lubricant
CM206	Chemical coating
CM222	1,1,1-Trichloroethane
CM304	Enamel, epoxy
CM315	Adhesive primer
CM318	Primer
CM418	Cement, epoxy
CM425	Sealing compound
CM801	Abrasive paper, silicon carbide

(1). Remove horizontal stabilizer (Ref. Sec. 53–50–30, Horizontal Stabilizer Replacement).

(2). Remove rotating thruster cone (Ref. Rotating Thruster Cone Replacement).

(3). Remove stationary thruster cone (Ref. Stationary Thruster Cone Replacement).

(4). Remove collars from pins in mount fittings.

(5). Drive pins out of fittings.

CAUTION Do not allow fittings to reach 200°F (94°C), damage to tailboom composite material will occur.

NOTE: Heating the fitting to 150°F (66°C) may assist in removing them from tailboom.

(6). Carefully pop fittings loose from tailboom while not damaging fiberglass sheets under fitting.

(7). Clean area with 1,1,1-Trichloroethane (CM222).

(8). Locate new fitting on tailboom.

(9). Back-drill fittings to 0.186–0.188 inch (4.724–4.775 mm).

(10). Remove fitting and deburr rivet holes.

(11). Touch up rivet holes with solid film lubricant (CM101) for steel fittings or chemical coating (CM206) for aluminum fittings.

(12). Steel fittings only:

(a). Using abrasive paper (CM801), lightly abrade tailboom where fitting is to be mounted.

(b). Clean fitting and tailboom abraded area with 1,1,1-Trichloroethane (CM222).

(c). Prime fitting with adhesive primer (CM315).

(d). Apply a thin layer of cement (CM418) between fitting and tailboom.

NOTE:

- Use HTS12-6-4/-5 pin rivets with HTS1176DU-6AWU collars or alternate HTS48-6-4/-5 pin rivets with HST2000-6AW collars.
- Gage rivet holes to ensure proper length pin rivets.

(13). Relocate fitting on tailboom and install with pin rivets wet with primer (CM318).

(14). Seal edges around fittings with sealing compound (CM425).

(15). If installing steel fittings, prime with adhesive primer (CM315).

(16). Touch up with paint (CM304).

(17). Reinstall stationary thruster cone (Ref. Stationary Thruster Cone Replacement).

(18). Reinstall rotating thruster cone (Ref. Rotating Thruster Cone Replacement).

(19). Reinstall horizontal stabilizer (Ref. Sec. 53–50–30, Horizontal Stabilizer Replacement).

(20). Check rigging of thruster (Ref. Sec. 67–20–30).

(21). Check rigging of vertical stabilizers (Ref. Sec. 67-20-30).

13. 500N3500-5 Cover Installation

(Ref. Figure 204) New tailbooms come with the 500N3500-5 cover separate. This cover must be bonded in place after the wiring and cables are installed.

Consumable Materials (Ref. Section 91-00-00)

Item	Nomenclature
CM222	1,1,1-Trichloroethane
CM410	Adhesive, epoxy (parts A & B)
CM802	Abrasive cloth, aluminum oxide
CM819	Kimwipe

(1). With cutout facing down and forward, gently role cover to shape of tailboom and position inside aft end of tailboom. Slide cover in until aft end is flush with tailboom.

NOTE: Right edge of cover should be just to the right of the torque tube housing (8° to the right of centerline). Left edge should be under the left horizontal stabilizer empennage fitting.

(2). Check holes in cover to ensure they line up with electrical connectors on tailboom.

(3). If holes do not line up with electrical connectors, remove cover, role 180° and reposition in tailboom.

NOTE: Tailboom is manufactured with 1.0 x 1.0 inch (25.4 x 25.4 mm) spots marked for abrasion.

(a). If tailboom is not previously marked, place a mark every 2.0 inches (50.8 mm) around cover and tailboom.

(b). Do not bond the bottom 8.0 inches (203.2 mm) on aft end of cover.

(4). Abrade around the cover mating surface with 240 grit abrasive cloth (CM802) to remove gloss.

NOTE:

- Use care to avoid damage to the fiber reinforcement.
- Metallic faying surfaces do not require abrading.

(5). Using 240 grit abrasive cloth (CM802), lightly abrade spots, where marked, around the tailboom until the surface gloss is removed.

(6). Wipe abraded surfaces with kimwipes (CM819) dampened with 1,1,1-Trichloroethane (CM222). Allow to air dry for 15 minutes.

(7). Mix adhesive according to manufacturer's instructions.

NOTE: Adhesive must be applied within two hours of cleaning. Repeat solvent prep if more than two hours elapses before bonding.

(8). Apply adhesive to abraded areas and position cover in tailboom. Clean up excessive adhesive.

(9). Allow to cure per manufacturer's instructions.

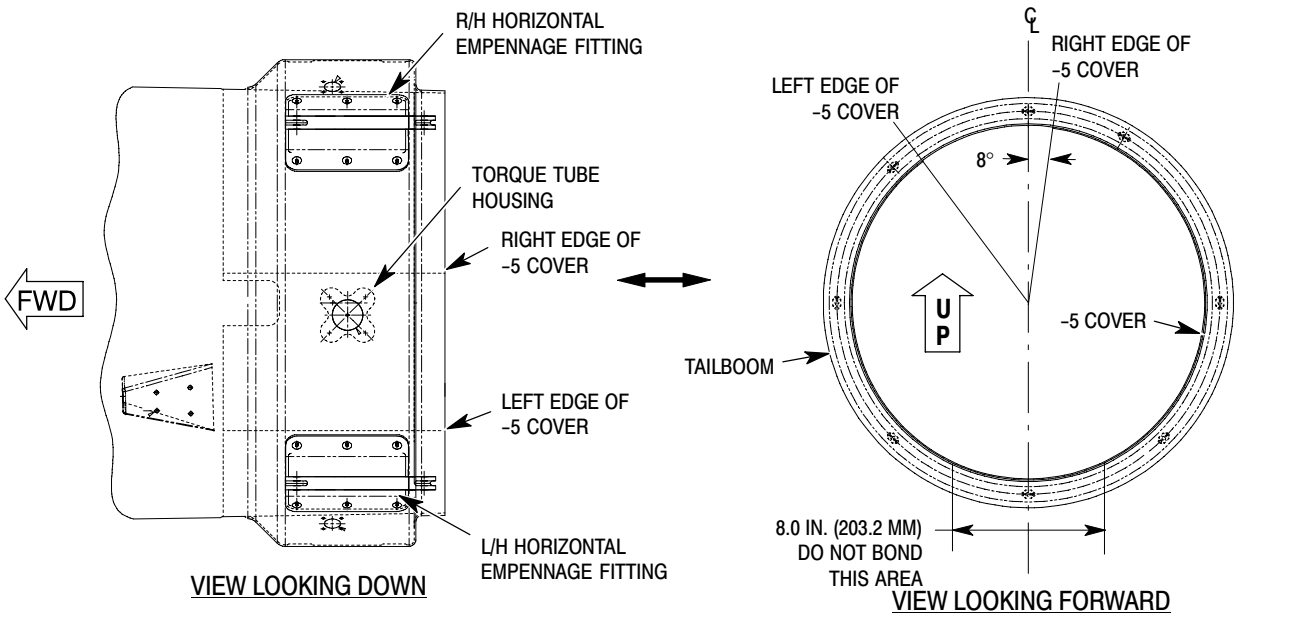

Figure 204. 500N3500–5 Cover Installation

14. Tail Skid Replacement

(Ref. Figure 205)

A. Tail Skid Removal

(1). Remove two bolts with washers from aft tail skid brace.

(2). Retain shims between base and brace if same tail skid is to be reinstalled.

(3). Slide tail skid from forward bracket assembly.

B. Tail Skid Installation

(1). Slide tail skid into forward bracket assembly.

(2). Install aft brace onto aft base.

(3). If reinstalling the same tail skid:

(a). Insert removed shims and install two bolts and washers.

(b). Torque bolts to **36 - 40 Inch-pounds (3.95 - 4.52 Nm) plus drag torque**.

(4). If installing a new tail skid:

(a). Install bolts finger tight, ensure gap is even on both sides.

(b). Measure gap between brace and base.

(c). Subtract 0.010 in. (0.254 mm) and peel shims to that thickness.

(d). Insert shims between brace and base and torque bolts to **36 - 40 Inch-pounds (3.95 - 4.52 Nm) plus drag torque**.

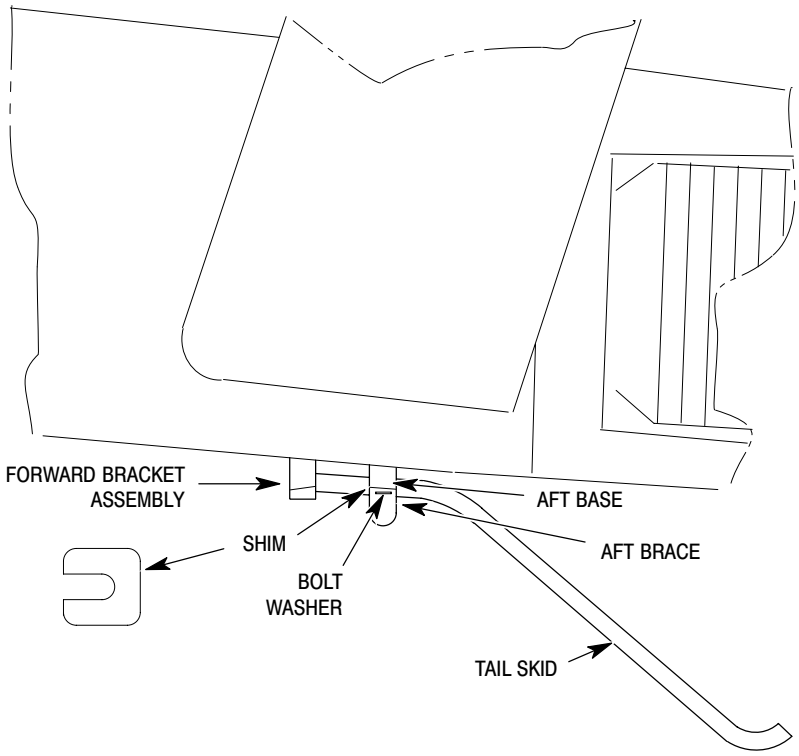

Figure 205. Tail Skid Installation

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(3). For 369F5450 clutch installation:

(a). Remove power output shaft cover plate from back of engine (Ref. Sec. 01-00-00, Allison Engine Operation and Maintenance Manual).

(b). Install O-rings on 369F5469 (C30/C47 engine) or 369F5468 (C20 series engines) bolt (Ref. Figure 404).

NOTE: Fill all voids and gaps between the outside of bolt and inside of engine shaft with grease.

(c). Lubricate internal spline area of engine output shaft with grease (CM111).

(d). Lubricate bolt threads with anti-seize compound (CM112) and insert through engine into overrunning clutch assembly.

(e). Using bolt removal tool (Ref. Figure 405) either hold output coupling to prevent overrunning clutch from turning or insert hex wrench through bolt to engage and hold clutch.

(f). Torque bolt to **250 - 300 inch-pounds (28.25 - 33.90 Nm) plus drag torque**.

(g). Using existing hardware, reinstall power output shaft cover plate on back of engine (Ref. Sec. 01-00-00, Allison Engine Operation and Maintenance Manual).

(4). Shim coupling on 369F5450 clutch assembly as follows:

(a). Remove output coupling bolt and coupling.

(b). Shim coupling to achieve 0.010-0.030 inch (0.254-0.762 mm) step above clutch output shaft.

(5). Shim coupling on 369A5350 clutch assembly as follows:

(a). Remove output coupling bolt and coupling.

(b). Shim coupling to achieve 0.035-0.055 inch (0.889-1.397 mm) step above clutch output shaft.

CAUTION When installing clutch coupling bolt, installation torque on the bolt must be **250 - 300 inch-pounds (28.25 - 33.90 Nm)** for the 369A5350 clutch or **315 - 365 inch-pounds (35.59 - 41.24 Nm)** for the 369F5450 clutch. Torquing to lower value reduces clutch bearing clamp-up and can result in bearing race spinning.

(6). Coat clutch-to-coupling splines with grease (CM111); install shim(s) and clutch coupling. Coat coupling bolt threads with anti-seize compound (CM112); install bolt with new O-ring. Check for bolt self-locking drag torque of **25 inch-pounds (2.82 Nm) minimum to 200 inch-pounds (22.60 Nm) maximum**. Replace bolt if torque values are exceeded.

(a). For 369A5350 clutch, torque coupling bolt to **actual drag torque plus 250 - 300 inch-pounds (28.25 - 33.90 Nm)**.

(b). For 36F5450 clutch, torque coupling bolt to **actual drag torque plus 315 - 365 inch-pounds (35.59 - 41.24 Nm)**.

(7). Install engine shaft firewall seal, bolts, washers, and nuts.

(8). Reinstall engine.

7. Overrunning Clutch Subassembly Replacement

(Ref. Figure 403 or Figure 404)

A. Overrunning Clutch Subassembly Removal

(1). Remove main transmission drive shaft.

(2). For 369F5450 clutch installation:

(a). Remove power output shaft cover plate from back of engine (Ref. Sec. 01-00-00, Allison Engine Operation and Maintenance Manual).

(b). Insert tool (Ref. Figure 405) to engage bolt in back of clutch.

(c). Insert a long 3/8 inch (9.525 mm) hex wrench, approximately 10 inches (25.4 cm) long, through tool and into back of clutch assembly.

(d). While holding internal hex wrench [3/8 inch (9.525 mm)], turn external hex wrench [1.00 inch (2.54 cm)] counter-clockwise to remove bolt from back of clutch.

(3). Remove coupling bolt, clutch coupling and shims.

(4). Remove retaining ring from clutch housing. Then pull complete clutch subassembly out of housing.

B. Overrunning Clutch Subassembly Installation

Consumable Materials (Ref. Section 91-00-00)

Item	Nomenclature
CM111	Grease, aircraft
CM125	Oil
CM126	Oil, turbine

(1). Remove shipping plug and O-ring from end of shaft in replacement clutch subassembly.

(2). Drain preservative oil from clutch subassembly by inverting it several times. Add lubricating oil (CM125 or CM126) (Ref. Sec. 12-00-00).

(3). Coat clutch splines with grease (CM111).

(4). Using care to avoid oil spillage, insert clutch subassembly into clutch housing and install retaining ring with beveled side outward.

(5). Check fluid level of clutch assembly before installing clutch coupling (Ref. Sec. 12-00-00).

(6). For 369F5450 clutch installation:

(a). Remove power output shaft cover plate from back of engine (Ref. Sec. 01-00-00, Allison Engine Operation and Maintenance Manual).

(b). Install O-rings on 369F5469 (C30/C47 engine) or 369F5468 (C20 series engines) bolt (Ref. Figure 404).

NOTE: Fill all voids and gaps between the outside of bolt and inside of engine shaft with grease.

(c). Lubricate internal spline area of engine output shaft with grease (CM111).

(d). Lubricate bolt threads with anti-seize compound (CM112) and insert through engine into overrunning clutch assembly.

(e). Using bolt removal tool (Ref. Figure 405) either hold output coupling to prevent overrunning clutch from turning or insert hex wrench through bolt to engage and hold clutch.

(f). Torque bolt to **250 - 300 inch-pounds (28.25 - 33.90 Nm) plus drag torque**.

(g). Using existing hardware, reinstall power output shaft cover plate on back of engine (Ref. Sec. 01-00-00, Allison Engine Operation and Maintenance Manual).

(h). Lubricate coupling bolt threads with anti-seize compound (CM112).

(7). Install clutch coupling, shims and coupling bolt.

(8). Install main transmission drive shaft.

8. Overrunning Clutch-to-Firewall Seal

The overrunning clutch-to-firewall seal consists of a stamped steel backing and a seal bonded to the cupped diameter of the backing.

9. Overrunning Clutch-to-Firewall Seal Replacement

(Ref. Figure 403)

(1). Remove engine.

(2). Remove three bolts, six washers and three nuts that attach firewall seal to overrunning clutch.

(3). Position replacement clutch-to-firewall seal assembly on flange of clutch with

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ANTI-TORQUE FAN INSPECTION/CHECK

1. Anti-Torque Fan Inspection

Inspect the anti-torque fan for the following conditions:

(1). All components for cracks, nicks, corrosion or excessive wear.

(2). Tension-torsion straps for nicks or cuts in polyurethane coating. No exposed kevlar fibers allowed. Spools for cracks.

(3). Hub-to-blade bushings for cracks.

(4). Pitch horn for excessive wear (out-of-round condition).

(5). Counterweights on pitch horn for security. If loose, perform Pitch Horn Counterweight Set Screw Replacement.

NOTE: Access the forward counterweights through the fan inlet. Fan hub fairing must be removed for access (Ref. Sec. 53-30-30).

(6). Pitch plate bushing for excessive wear, grooves or cracking.

(7). Blades for cracks, nicks or impact damage.

(8). Inspect gap between fan blade and tip seal. Inspect gap between fan blade and hub (inboard end of the blade). If any of these gaps for any blade exceeds the average gap of the other blades by more than 0.10 inch (2.54 mm), removed and inspected the tension-torsion strap for that blade.

2. Support Shaft Inspection

Inspect the support shaft and its associated components as follows:

NOTE: Ensure proper pitch plate and/or support shaft bearings are installed. 900R bearings are not to be used in the 500/600N helicopters.

(1). Support shaft for:

(a). Cracks; none allowed.

(b). Wear.

(c). Scoring; axial marks from bearing installation or removal.

(d). Damaged spines; none allowed.

(e). Corrosion and pitting.

(2). Fan support bearing for free movement of set.

(3). Fan support bearing retainer and housing for:

(a). Cracks; none allowed.

(b). Wear.

(c). Scoring; axial marks from bearing installation or removal.

(4). Bearing seals for condition.

(5). Hub spacer for cracks and wear.

3. Anti-Torque Fan Liner (Felt Metal Seal) Inspection

(1). Inspect for cracks and debonding of liner material.

(2). Inspect for cracks around the radius cutouts of fan support.

(3). If cracks are found, stop drill and inspect every 50 hours (Ref. Sec. 05-20-20).

NOTE: Cracks protruding into the Felt Metal Seal are unacceptable, replace seal (Ref. Anti-Torque Fan Liner (Felt Metal Seal) Replacement).

(4). Inspect aft P-seal for tears, deterioration and debonding.

4. Fan Blade Inspection (100-Hour)

Consumable Materials (Ref. Section 91-00-00)

Item	Nomenclature
CM437	Sealing compound

(1). Inspect polypropylene portion of fan blade for nicks, scratches, abrasions and bulges; pay particular attention to

leading edge and area around the pin near the outboard edge of blade.

(a). Nicks and abrasion pits that are less than 0.040 inch (1.016 mm) deep and 0.25 inch (6.35 mm) in diameter may be blended out. (No more than two such repairs can be made per blade.)

(b). Nicks, scratches and abrasion pits less than 0.020 inch (0.508 mm) and 1.5 inch (3.81 cm) long may be blended out. (Total length of all repairs not to exceed 2.0 inch (5.08 cm).)

(2). Any bulges or blisters over 0.10 inch (2.54 mm) long in area of pin near outboard end of blade are reason for blade rejection.

(3). Seal cracks up to 0.10 inch (2.54 mm), coming from area of pin with sealing compound (CM437).

(4). If any cracks larger than 0.10 inch (2.54 mm) are found, replace blade.

5. Fan Pitch Slider Inspection

(1). Inspect slider for dents, scratches, nicks, gouges and corrosion, none allowed.

(2). Inspect Karon coating on slider for condition.

(3). Measure across slider, minimum diameter is 0.805 in. (20.447 mm).

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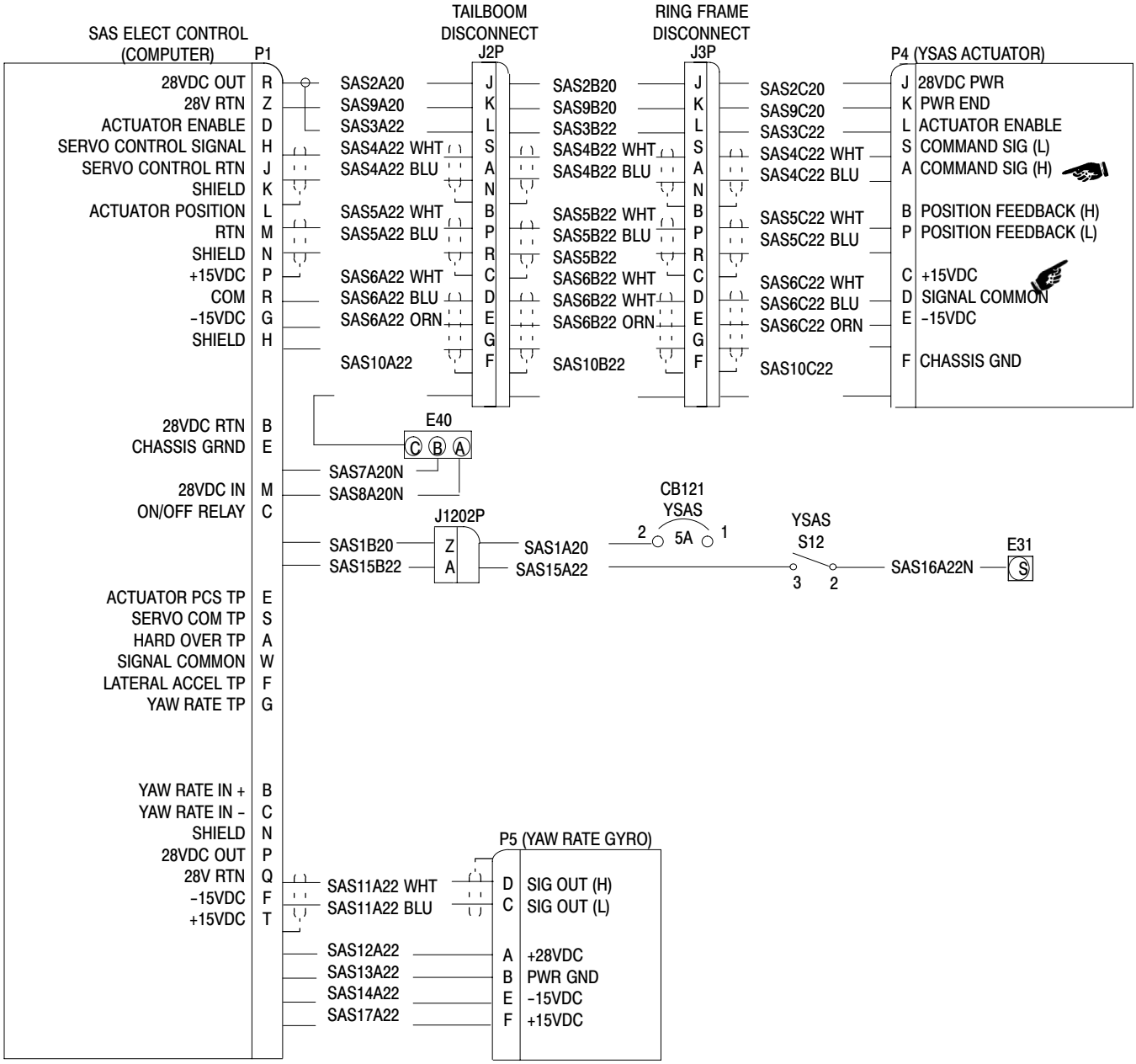

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Figure 101. YSAS Electrical Diagram (Sheet 1 of 2)

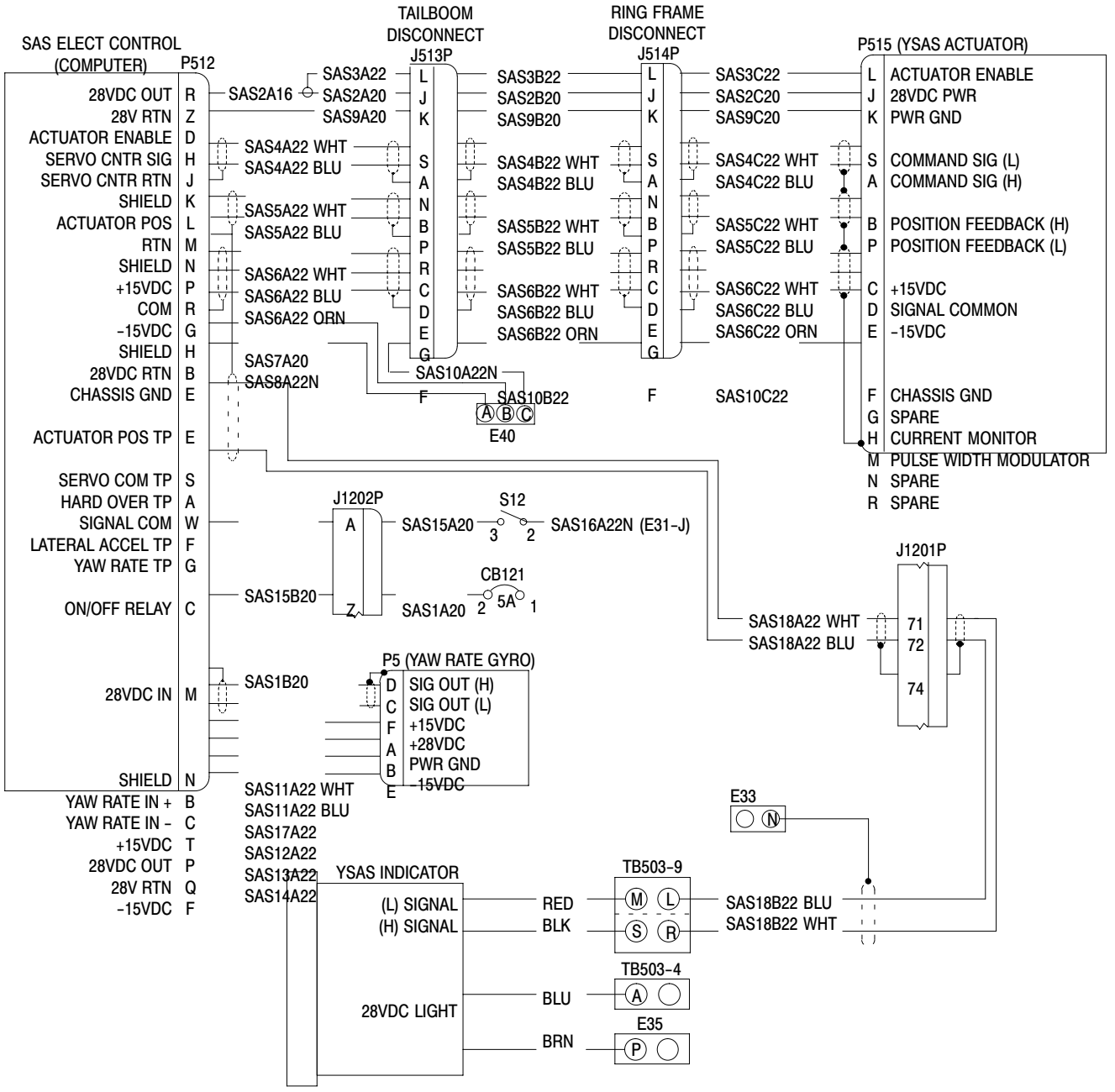

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Figure 101. YSAS Electrical Diagram (Sheet 2 of 2)

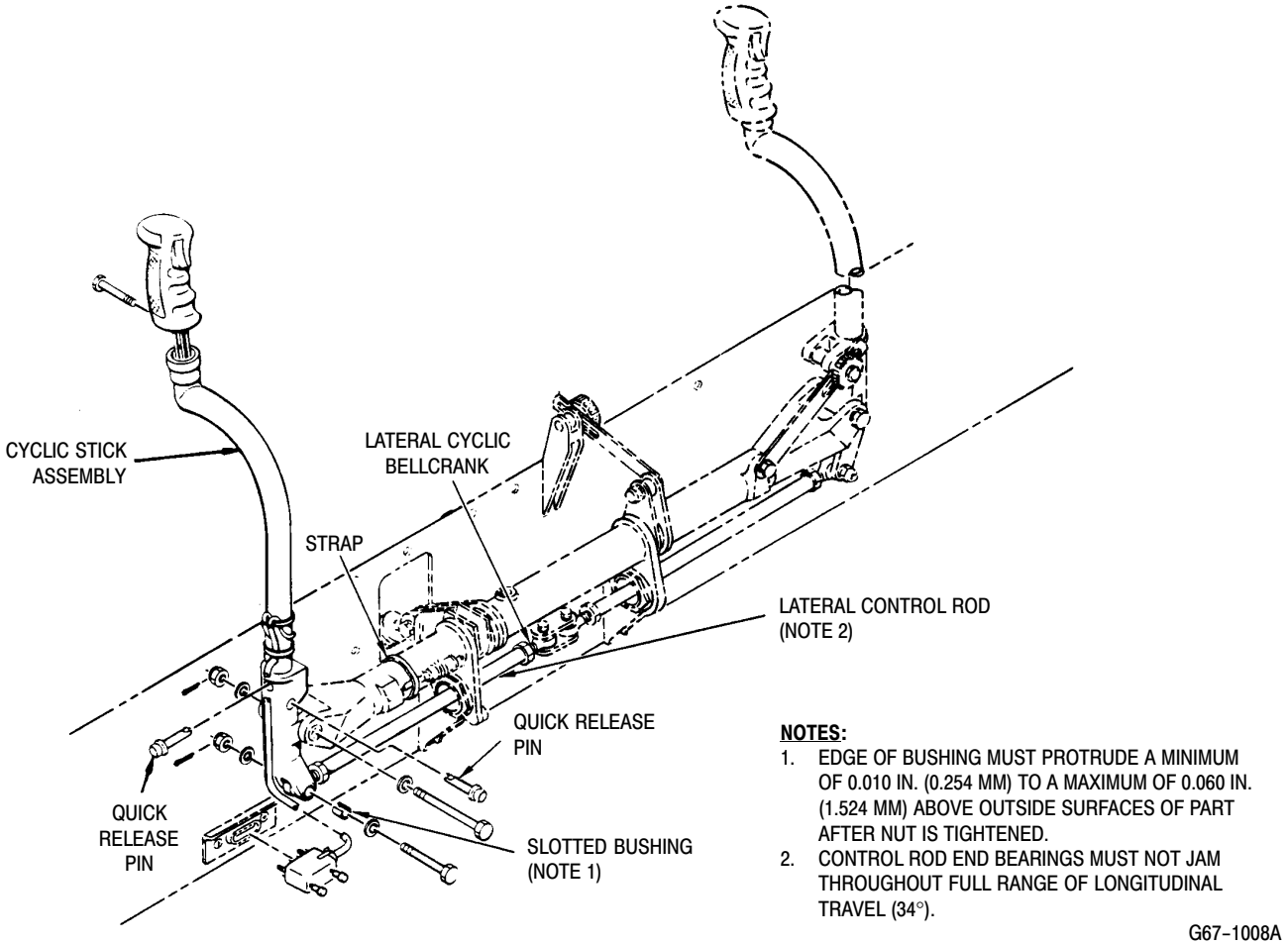


Figure 409. Cyclic Stick Assembly Installation (Inboard)

14. Cyclic Control Stick Replacement (Outboard)

(Ref. Figure 410)

A. Cyclic Control Stick Removal (Outboard)

(1). Disconnect control stick electrical plug.

NOTE: Omit steps (2). and (3). below to remove stick without removing stick socket.

(2). Remove cotter pin, nut, washers and bolt securing copilot's lateral control rod to stick socket.

(3). Remove cotter pin, nut, washers and bolt attaching stick socket to end of cyclic torque tube. Remove stick tube with stick socket attached.

(4). Remove two quick-release pins attaching stick tube to stick socket.

(5). Remove stick tube from socket.

B. Cyclic Control Stick Installation (Outboard)

(1). Insert stick tube into stick socket and install two quick-release pins.

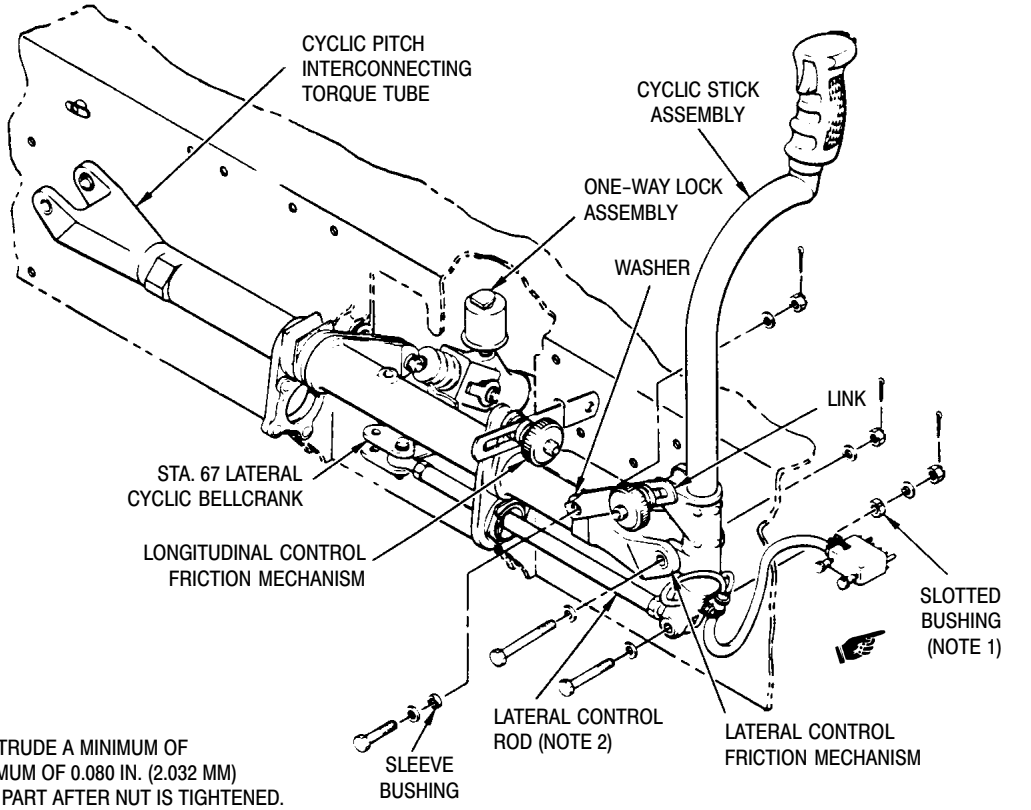
NOTE: Omit steps (2). thru (4). when installing stick without socket.

(2). Position cyclic stick to align holes in socket with mating holes in torque tube.

(3). Install bolt, two washers, nut and new cotter pin.

(4). Check that slotted bushing is in place; then align copilot' s lateral control rod with stick socket. Install bolt, two washers, nut and new cotter pin.

(5). Connect electrical plug.



NOTES:
1. EDGE OF BUSHING MUST PROTRUDE A MINIMUM OF 0.010 IN. (0.254 MM) TO A MAXIMUM OF 0.080 IN. (2.032 MM) ABOVE OUTSIDE SURFACE OF PART AFTER NUT IS TIGHTENED.
2. CONTROL ROD END BEARINGS MUST NOT JAM THROUGHOUT FULL RANGE OF LONGITUDINAL TRAVEL (34°).

Figure 410. Cyclic Stick Assembly Installation (Outboard)

15. Lateral Control Rods and Sta. 67 Lateral Cyclic Bellcrank Replacement (L/H Command)

(Ref. Figure 411)

A. Lateral Control Rods and Sta. 67 Lateral Cyclic Bellcrank Removal (L/H Command)

(1). Remove large (central) cyclic stick guard.

(2). Remove pilot's seat cover, and controls access door from Sta. 78.50 canted bulkhead.

(3). Remove pilot's lateral control rod, or Sta. 70 lateral control rod, as applicable.

(4). Remove Sta. 67 lateral cyclic bellcrank from seat structure fitting.

(5). If rod or rod ends require replacement, accurately measure and record distance between rod end bearing centers for use at replacement.

B. Lateral Control Rods and Sta. 67 Lateral Cyclic Bellcrank Installation (L/H Command)

(1). Check that slotted bushing is in upper web of seat structure fitting. Align Sta. 67 lateral cyclic bellcrank and install attaching hardware.

(2). Check that slotted bushings are in place and install Sta. 70 lateral control rod and pilot's lateral control rod.

(3). Move cyclic stick full forward, then full aft and set pilot's lateral control rod end bearing angularity so that bearings do not jam at full travel positions.

(4). If control rod or rod ends are replaced, perform a cyclic control rigging check.

(b). Back off jam nut sufficiently enough to inspect insert.

(c). Inspect insert for proper installation, flush to a maximum of 0.010 inch (0.254 mm) below the surface of the rod.

(d). Check that insert is tight inside of rod.

1). If insert is loose or protrudes above surface of rod, rod assembly is unserviceable and must be replaced.

2). If insert is tight and swaged flush to 0.010 inch (0.254 mm) below the surface of the rod, rod is serviceable.

(e). Reconnect rod to control system and tighten jam nut.

(8). Check rigging of re-connected control system.

2. Controls Support Bracket and Bellcrank Inspection

(Ref. Figure 403)

(1). Inspect bearings in bellcranks for binding.

(2). Perform fluorescent dye penetrant inspection on any suspected part.

NOTE: Parts identified with double asterisk (**) (Ref. Figure 403) may be either magnesium or aluminum alloy. (For corrosion control and identification of magnesium and aluminum alloys, Ref. Sec. 20-40-00.)

3. Pilot's Collective Pitch Stick Inspection

(Ref. Figure 602)

(1). Inspect bearings for binding or play.

(2). Inspect all gears for cracks, and chipped or broken teeth.

(3). Inspect stick tube and gas producer control tube for corrosion, deformation and loose rivets.

NOTE: Pitch stick housing and cap may be either magnesium or alloy casting. (For corrosion control and identification of magnesium or aluminum alloys, Ref. Sec. 20-40-00.)

4. Copilot's Collective Pitch Stick Inspection

(Ref. Figure 603)

(1). Inspect bearings for binding or play.

(2). Inspect all gears for cracks, and chipped or broken teeth.

(3). Inspect stick tube and gas producer control tube for corrosion, deformation and loose rivets.

5. Collective Stick Friction Mechanism Operational Check

(Ref. Figure 602)

(1). Remove guard from collective stick.

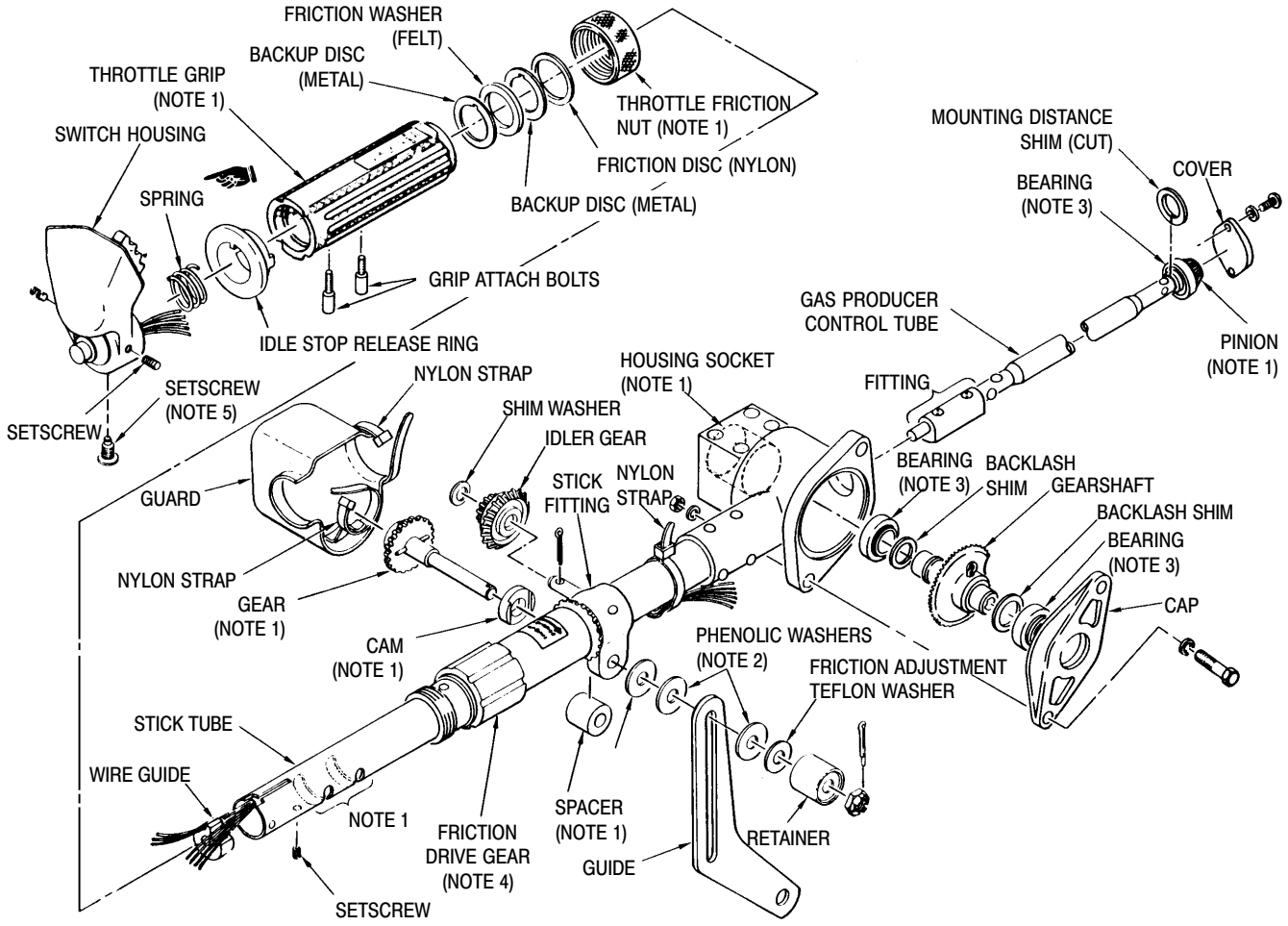
(2). Check that teeth of friction drive gear, idler gear, and driven gear are not stripped or otherwise damaged.

(3). Rotate friction drive gear grip counterclockwise to maximum friction stop; gear train must rotate freely. Check position of shaft assembly pin. Pin should be at highest point of cam.

(4). If pin is not at approximate peak of cam or has overridden peak, friction mechanism must be readjusted. If pin is in correct position, continue with step (5). below.

(5). Rotate drive gear grip clockwise to minimum friction position and release grip; gear train must rotate freely. Pin should be at approximate low point of cam.

(6). With pin on low point of cam, hand rotate spring release housing. If there is drag on retainer, there is friction on guide and collective friction must be readjusted. If retainer rotates freely, without obvious play, low point friction setting is correct.



NOTES:

1. SURFACES IN CONTACT DURING ROTATION, OR OTHERWISE NOTED, TO BE LUBRICATED WITH GREASE.
2. NEW PHENOLIC WASHERS ABRADED TO REMOVE GLAZE.
3. BEARINGS INSTALLED WITH GRADE A LOCKING COMPOUND AFTER SHIMMING.
4. DRIVE GEAR END PLAY 0.002–0.010 IN. (0.0508–0.254 MM).
5. USED ONLY WITH OPTIONAL EQUIPMENT.

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Figure 602. Outboard Collective Stick Inspection (L/H Command)

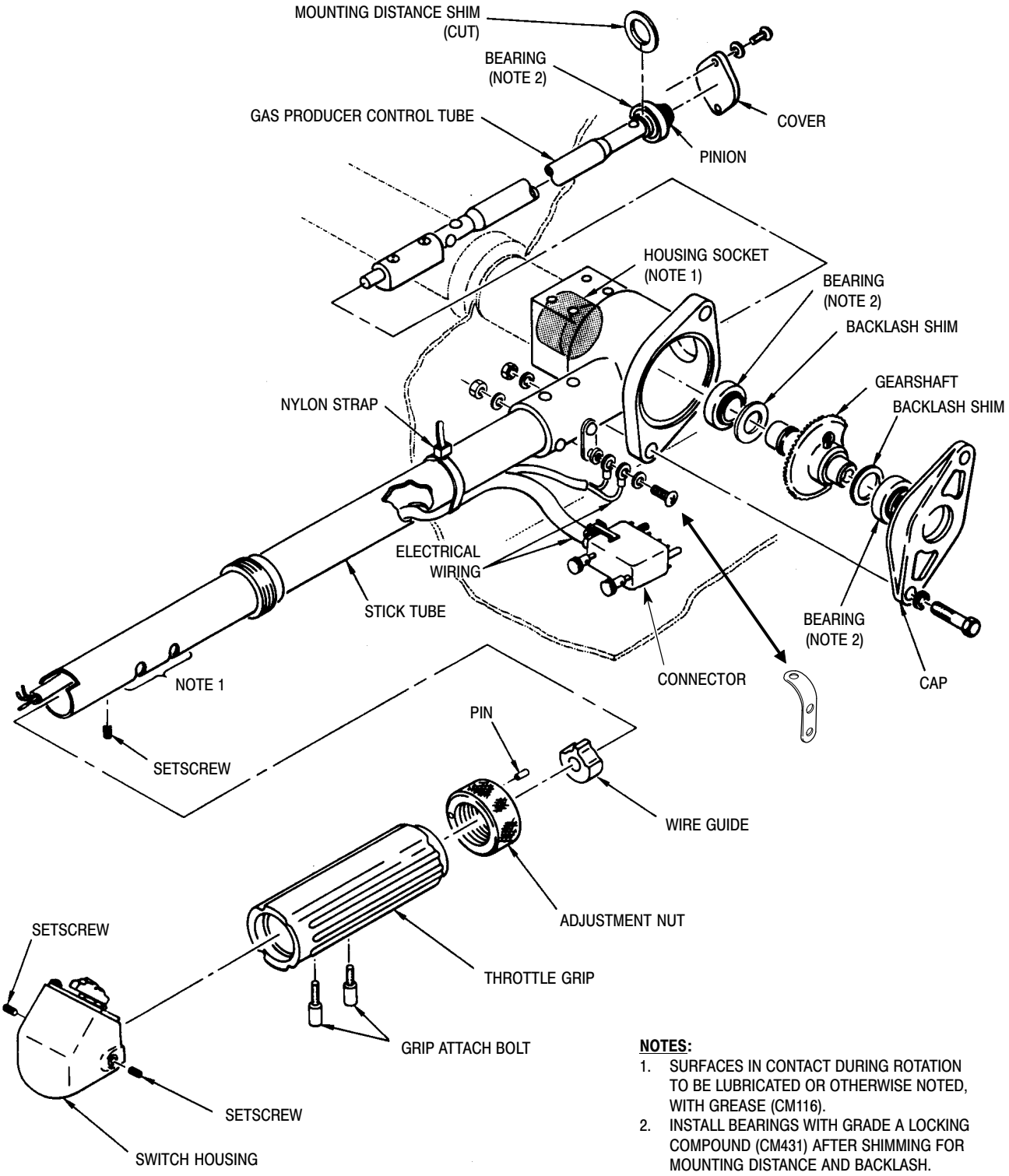


Figure 603. Outboard Collective Stick Inspection (R/H Command)

6. Collective Control Interconnecting Torque Tube Inspection

(Ref. Figure 404)

(1). Remove pilot's seat cover, control access door, and left side foot support fairing.

(2). Inspect collective interconnecting torque tube for cracks, bends or distortions.

(3). Inspect bungee bracket and bungee fitting for security and condition. Ensure cotter pin in over-center adjustment bolt is not sheared.

(4). Inspect all accessible rivets for play. inspect support bearings for security and evidence of binding.

(5). Reinstall pilot's seat cover, controls access door and foot support fairing.

7. Collective Bungee Inspection

(Ref. Figure 407)

NOTE: Replace any bungee parts in questionable condition.

(1). Inspect bearings in male and female bearing assemblies for evidence of binding, corrosion and galling.

(2). Inspect female bearing assembly threads for damage.

(3). Inspect spring for evidence of deformation. Free length of spring must be;

(a). Effectivity: 369D/E/FF-500N, 3.64 ± 0.06 inches (92.456 ±1.524 mm)

(b). Effectivity: 600N, 4.50 ±0.025 inches (114.30 +0.635 mm)

(4). Inspect male bearing rod for cracks, evidence of binding, corrosion and deformation.

NOTE: Bungee support bracket may be either an aluminum or magnesium casting. (For corrosion control and identification of magnesium and aluminum alloys, Ref. Sec. 20-40-00.)

8. Inboard Collective Stick Socket Assembly Inspection

(Ref. Figure 408)

(1). Inspect all bearings for binding or play.

(2). Inspect gears for cracks, and chipped or broken teeth.

(3). Inspect all components for cracks, corrosion and deformation.

NOTE: Bellcrank and idler may be either an aluminum or magnesium casting. (For corrosion control and identification of magnesium and aluminum alloy parts, Ref. Sec. 20-40-00.)

9. Pilot's Cyclic Control Stick Inspection

(Ref. Figure 604)

NOTE:

- For this inspection, friction stop nut must be loosened.
- Socket may be either an aluminum or magnesium casting. (For corrosion control and identification of magnesium and aluminum alloys, Ref. Sec. 20-40-00.)

(1). Inspect stick tube attachment to socket for evidence of loose rivets, distortion and corrosion.

(2). Inspect parts of friction mechanism for physical damage. Free length of friction spring should be approximately 0.580 inch (14.732 mm).

(3). To check installation, loosen lateral and longitudinal friction knobs, move cyclic control stick and check for binding or unusual noises. Check that rod end bearings of pilot's lateral control rod do not jam when stick is full forward and full aft.

NOTE: Set minimum friction so that phenolic washers can be slightly turned by hand. If minimum friction is set too low, stick shake will occur.

10. Copilot's Cyclic Control Stick Inspection

(Ref. Figure 604)

Consumable Materials (Ref. Section 91-00-00)	
Item	Nomenclature
CM114	Petrolatum

(1). Inspect quick-release pins for secure fit, also stick tube and socket for security, distortion and corrosion. Check for presence of a light coating of grease in socket and on stick tube end. Apply thin coating of petrolatum (CM114), on contact surfaces.

(2). To check controls installation, loosen lateral and longitudinal friction knobs, move stick and check for binding or unusual noises. Check that rod end bearings of copilot's lateral control rod do not jam throughout full range of stick travel.

NOTE: Set minimum friction so that phenolic washers can be slightly turned by hand. If minimum friction is set too low, stick shake will occur.

11. One-Way Lock Inspection

(1). Replace reservoir if cracked, leaking or has loose or damaged filler cap (Ref. COM).

NOTE: It is normal for a thin hydraulic oil film to remain on piston as a result of wiping contact with the piston seal. This should not be considered leakage or cause for rejection.

(2). Replace forward input rod end bearing if bearing binds.

CAUTION Do not attempt to adjust larger (aft) of two rod ends and do not remove cotter pin; malfunction of lock will likely result. (For overhaul and replacement instructions, Ref. COM).

(3). Replace one-way lock if aft (output) end bearing binds.

(4). Replace protective boot if it is cracked, torn or deteriorated.

(5). Replace one-way lock if exposed portion of piston has nicks, scratches or wear penetrates chrome plating.

(6). Replace external mounting bushing if outside diameter is less than 0.4979 inch (12.64666 mm).

(7). One-way lock must be replaced if nicks, dents and scratches to body exceed 0.040 inch (1.016 mm) depth after repair.

(8). One-way lock must be replaced if end play between rod ends exceeds 0.010 inch (0.254 mm) measured at input (forward) end.

(9). One-way lock must be replaced if leaking, except as noted for reservoir in step (1). above.

12. Cyclic Trim Actuator Inspection

(Ref. Figure 508)

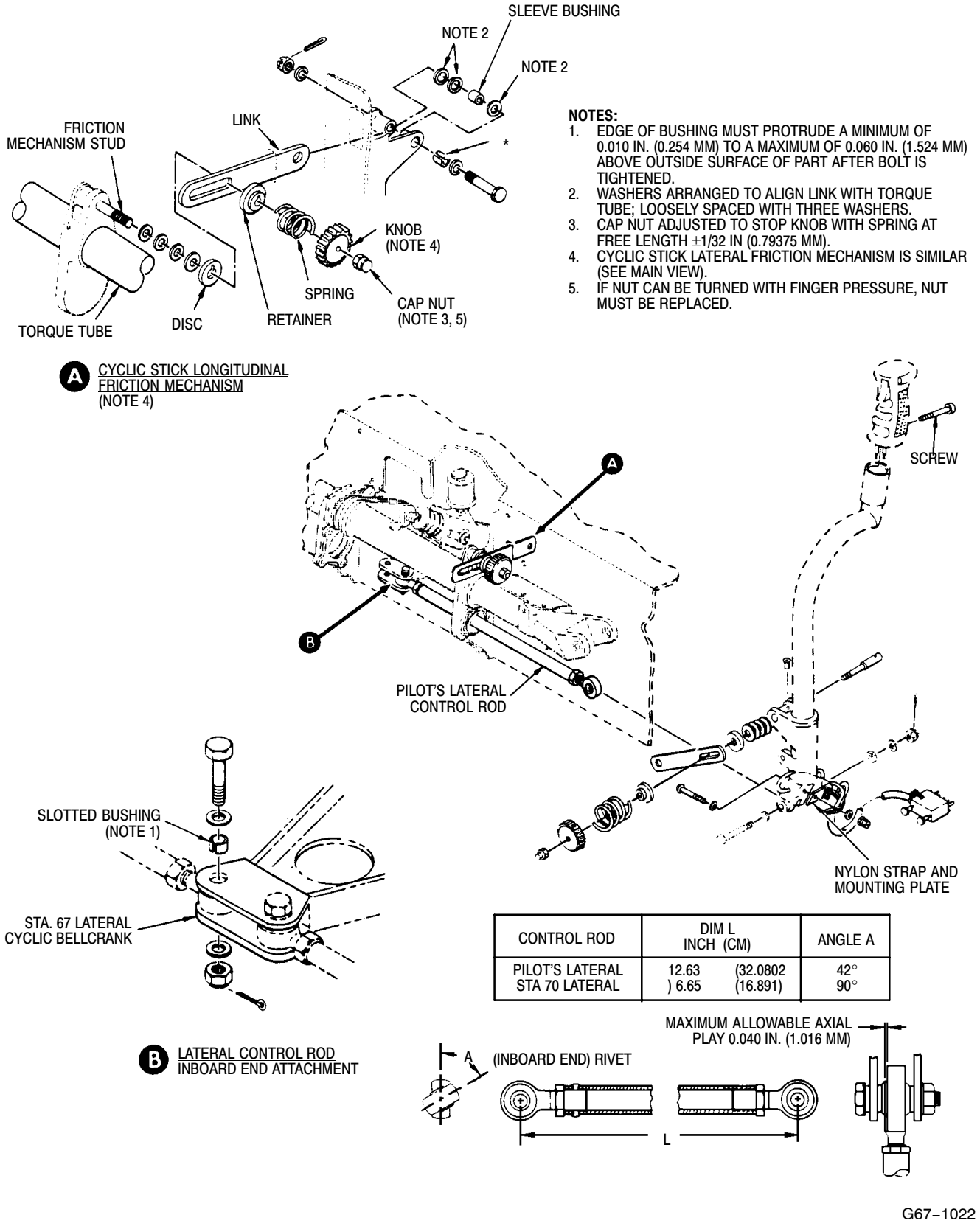
(1). Inspect electrical connector for evidence of damage, and broken or missing contacts.

(2). Inspect exterior of trim actuator for evidence of damage and deformation.

(3). When actuator speed (response and/or travel time) is questionable, perform bench test (Ref. Cyclic Trim Actuator Bench Test).

13. Cyclic Control System Operational Check

Excessive slack or free play in the cyclic control system may result in premature control stop contact or roughness of the helicopter and fanning out (out of track) of the main rotor tip path plane (Ref. Sec. 18-10-00/60). Areas to be checked include mixer linkages (Ref. Sec. 62-30-00/60) at the base of the main rotor mast, rotating controls above the swashplate, trim actuators, and cyclic control stick in the pilot's compartment. If total free play at the top of the cyclic grip exceeds 3/8 inch (9.525 mm) in either longitudinal or lateral direction, perform the following:



CONTROL ROD	DIM L INCH (CM)	ANGLE A
PILOT'S LATERAL	12.63 (32.0802	42°
STA 70 LATERAL	) 6.65 (16.891)	90°

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Figure 604. Cyclic Stick and Friction Inspection

CAUTION When replacing control rod ends, measure length accurately to ensure that replacement rod is exactly the same length as the original. Control rods are factory adjusted at installation to provide necessary clearances.

(1). With the rotor stopped, check for free play at the cyclic stick grip. While moving cyclic stick through free play range, have assistant check controls mixer area for any free play motion.

(a). Check pivot bolt areas where mixer bellcranks attach to control rod bellcranks. If free play is noted, remove pivot bolts and inspect for wear and/or play between bolts, bushings, and bellcranks. Replace parts as required.

(b). Check control rod assemblies by Pressing sidewards near the rod end bearing. Replace rod end as required.

(2). Check for free play in blade pitch links which connect rotating swashplate to blade pitch housings. Replace rod ends having free play in excess of 0.040 inch (1.016 mm) side motion.

NOTE: Rod ends on pitch links should be checked under a no-load condition which is best achieved by removing blades.

(3). While moving cyclic stick through free play range, check lower controls for free play motion; Remove controls tunnel access door.

(a). Check control rod assemblies by pressing sidewards near the rod end bearings. Looseness indicates axial play in rod end bearing. Replace rod end as required.

(b). Check pivot bolt areas of lateral and longitudinal bellcranks. If free play is noted, remove pivot bolts and inspect for wear and/or play between bolts, bushings, and bellcranks. Replace parts as required.

(c). Check lower end of cyclic stick and play at attachment of cyclic interconnecting torque tube. Replace bearings and bushings as required.

(4). Check for axial play in cyclic trim actuators.

(a). Disconnect lower end of cyclic control rods from aft ends of trim actuators and check for free play. Remove free play by adjusting spring adjustment screw located in center recess at aft end of actuator. If end play exceeds 0.0075 inch (0.1905 mm), replace actuator. Reconnect control rod.

(b). Check for free play in attachments and linkages between trim actuators and cyclic pitch interconnecting torque tube. Replace parts as required; Install controls tunnel access door.

14. Main Rotor Flight Control System 600-Hour Inspection

(Ref. Figure 508)

(1). With the rotor stopped, check for free play at the cyclic stick grip.

NOTE: If total free play at the top of the cyclic grip is 3/8 inch (9.525 mm) or less in either longitudinal or lateral direction inspection is not required. If total free play at the top of the cyclic grip exceeds 3/8 inch (9.525 mm) in either longitudinal or lateral direction, perform the following:

(2). While moving cyclic stick through free play range, have assistant check controls mixer area for any free play motion.

(a). Check each pivot bolt area where lateral mixer bellcranks attach to collective bellcranks. If free play is noted at the lateral bellcranks, remove pivot bolts and inspect for wear and/or looseness between bolt, bushings and bellcrank. Replace parts as required.

(b). Check control rod assemblies by pressing sidewards near the rod end bearings; motion here indicates axial play in rod end bearing. Replace rod end as required.

(3). Check for free play in blade pitch links which connect rotating swashplate to blade pitch housings.

NOTE: Both rod ends on each pitch link should be checked under a no load condition which is best achieved by removing blades. Replace rod ends having free play in excess of 0.040 inch (1.016 mm) side motion.

(4). Inspect lower controls for slack between cyclic stick and attachment of the longitudinal and lateral control rods to the mixer mechanisms, located just forward of the main rotor mast.

(5). Check lower end of cyclic stick for looseness at the attachment point to cyclic pitch interconnecting torque tube. Replace bearings and/or bushings as required.

(6). Check interconnecting torque tube bearings for free play; replace bearings if excessive free play is noted.

(7). Check for axial play in cyclic trim actuators (remove access door at lower end of pilot's bulkhead center tunnel in the cargo compartment).

(a). Disconnect lower end of longitudinal cyclic control rod from aft end of trim actuator and check for axial play. Remove free play by adjusting spring adapter screw located in center recess at aft end of actuator assembly.

(b). Check for looseness in longitudinal and lateral cyclic control rod ends, located in tunnel. Replace rod ends as required.

(c). Check for free play in attachments and linkages between trim actuators and cyclic pitch interconnecting torque tube. Replace parts as required. Reinstall access door.

CAUTION When replacing adjustable rod ends, measure length accurately to ensure that replacement rod is exactly same length as original. Mixer control rods are factory adjusted at original installation to provide necessary clearances.

(8). Recheck for free play at the top of the cyclic stick grip; as required, repeat steps (1). thru (3). until total free play at top of grip is 3/8 inch (9.525 mm) or less in either longitudinal or lateral direction.

(9). If replacement of parts is required perform rigging of main rotor controls (Ref. Collective Controls Rigging and Cyclic Controls Rigging).

(2). Inspect for visible step in splined area.

(3). If step is evident:

(a). Measure across splines using 0.096 in. (2.4384 mm) diameter pins.

(b). Minimum measurement across pins is 0.640 in. (16.256 mm).

Table 601. Isolating Control System Troubles

Symptom	Isolating Step	Corrective Action
Binding, locking–up and erratic action of foot pedals (Do not force controls).	Disconnect fwd control tube from Sta. 113.00 splitter assembly.	If symptom is gone, check from splitter assembly aft.

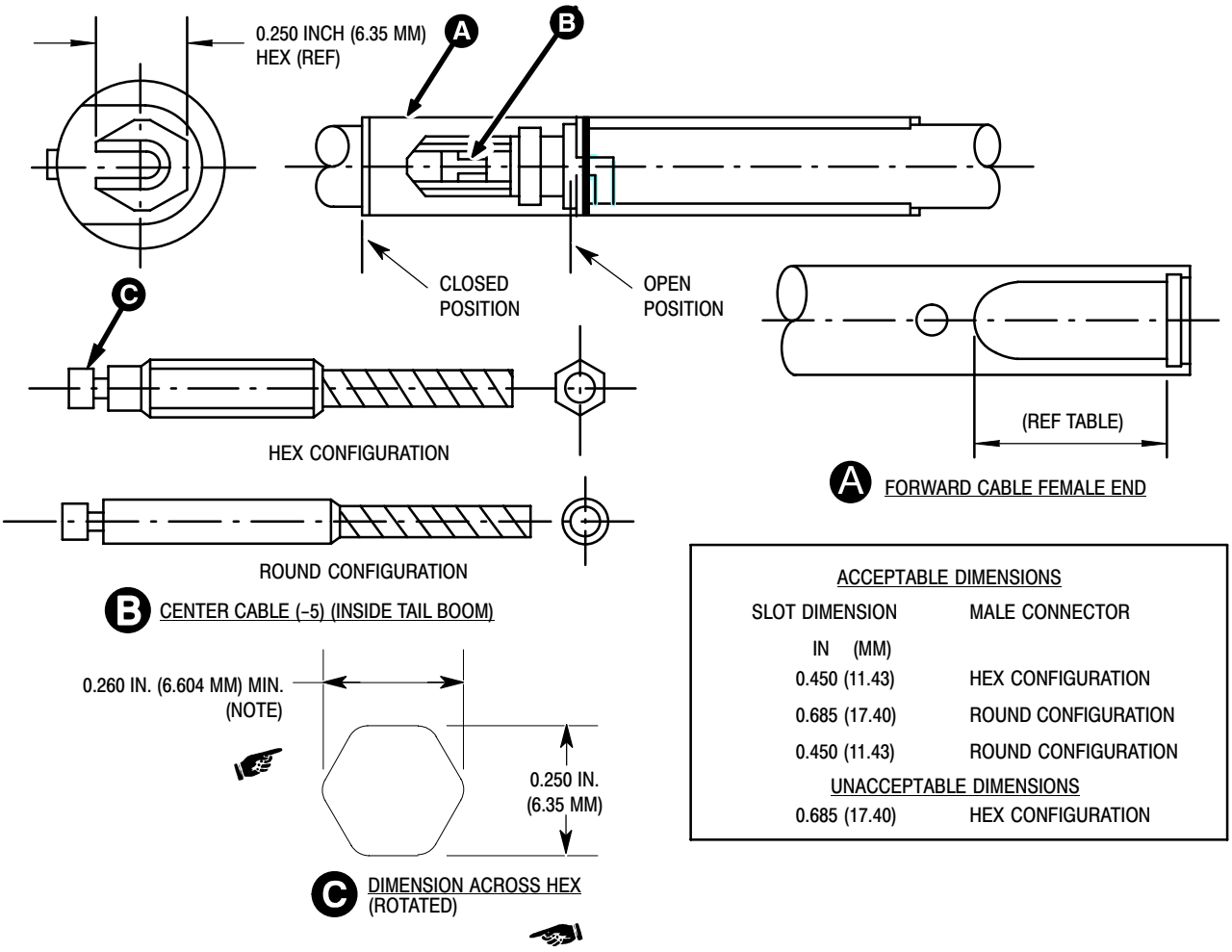

Figure 601. Control Cable Coupling Inspection

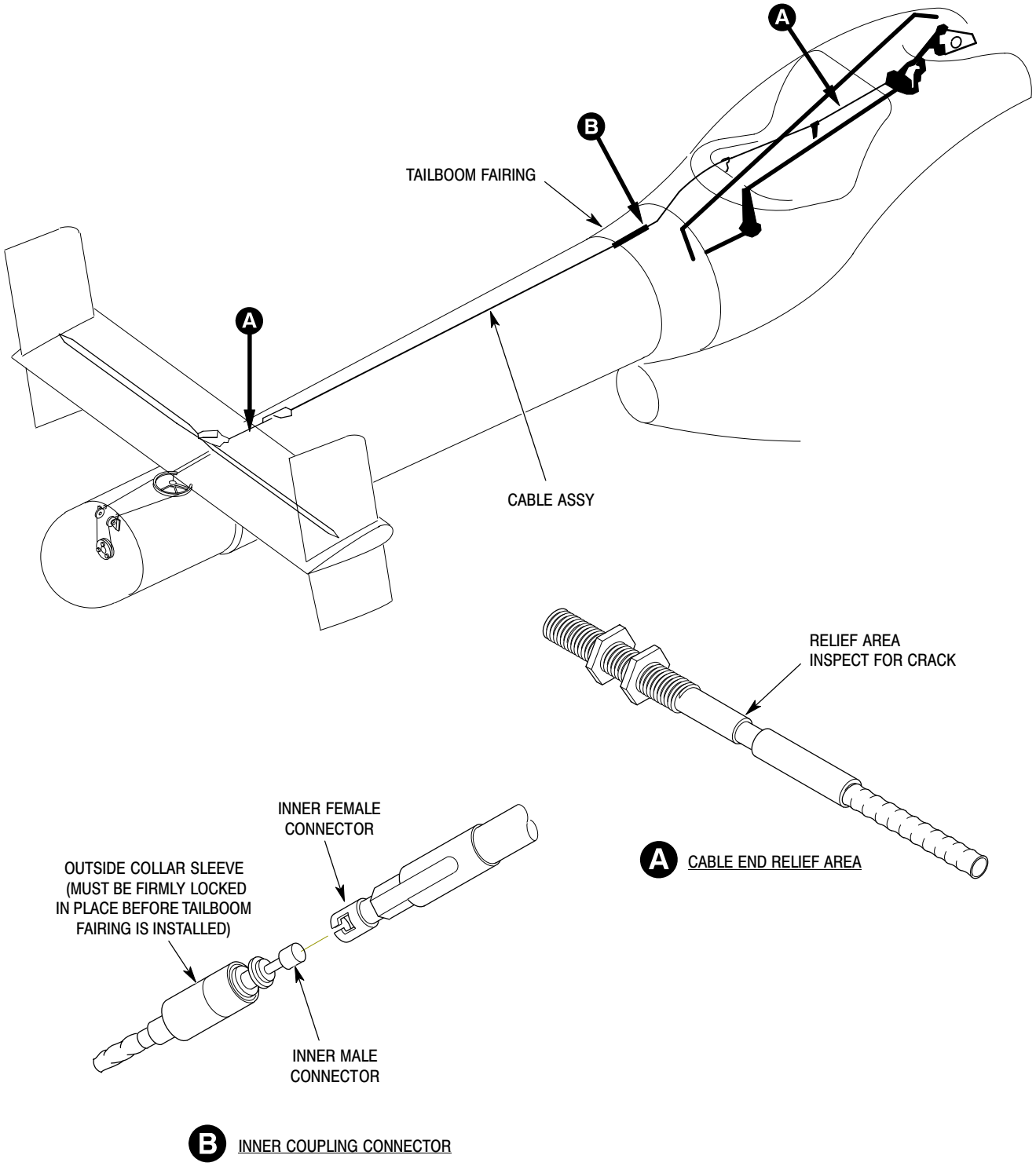

Figure 602. Forward and Center Cable Relief Area Inspection

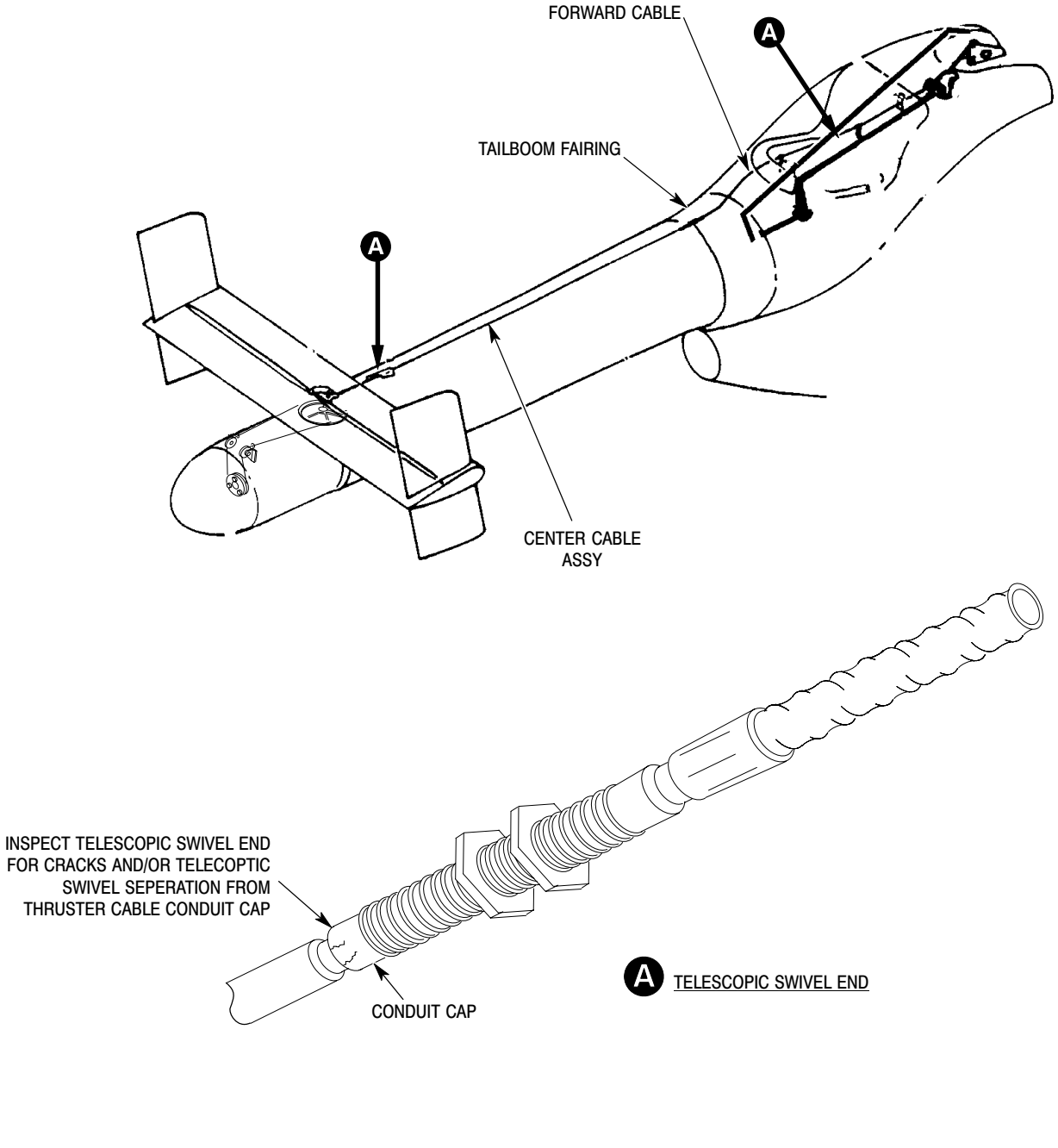

Figure 603. Control Cable Telescopic Swivel End Inspection

10. Sector Assembly, Control Cables and Drum Assembly Inspection

(Ref. Figure 402)

(1). Inspect sector assembly for:

(a). Proper installation of mounting hardware.

(b). Remove access cover from pan assembly.

(c). Center cable mounting bolt for security and proper installation of safety wire.

WARNING **In the following step, ensure the anti-torque pedals are not moved, personal injury can occur.**

(d). Check sector assembly for excess up-and-down play.

(e). Damage, cracks or corrosion; no damage, cracks or corrosion allowed.

(f). Reinstall access cover on pan assembly.

(2). Remove tip cap (500N).

(3). Remove rotating cone assembly.

(4). Remove access cover from top of stationary thruster assembly (600N).

(5). Inspect control cables for:

(a). Fraying or corrosion; no fraying or corrosion allowed.

(b). Proper installation of turnbuckle safety clips.

(c). Corrosion or cracking on turnbuckles; no corrosion or cracking allowed.

(d). Proper cable tension.

(6). Reinstall access cover on top of stationary thruster assembly (600N).

(7). Inspect control cable pulleys for:

(a). Proper installation of mounting hardware.

(b). Guard pins installed.

(c). Excessive groove in pulleys; evident in out-of-round pulley.

(8). Inspect drum assembly for:

(a). Proper installation of mounting hardware.

(b). Damage, cracks or corrosion; no damage, cracks or corrosion allowed.

(c). Guard pins installed.

(9). Reinstall rotating cone assembly.

(10). Reinstall tip cap (500N).

ENGINE AIR PARTICLE SEPARATOR INSPECTION/CHECK

1. Engine Air Inlet Bypass Door 300–Hour Inspection

(Ref. Figure 201)

Consumable Materials (Ref. Section 91–00–00)	
Item	Nomenclature
CM425	Sealing compound

CAUTION Prevent engine FOD. Secure a cover over the engine intake prior to working inside plenum chamber. Use extreme care when working around engine inlet to prevent any foreign object from entering engine. Remove cover after completing work.

NOTE: Inspect Engine Air Inlet Bypass Door per FAA publication, EA-AC43.13-1B.

(1). Remove engine inlet bypass door and inspect air bypass door gasket seal for condition and secure attachment. No gasket seal deterioration or debonding allowed. Replace door gasket as required.

(2). Inspect door surfaces for cracking, chaffing or damage. Repair door per Structural Repair Manual (CSP-SRM-6).

(3). Remove and replace the latch retention cotter pin (located inside the attach cable "U" clamp). Seal cotter pin with sealant (CM425).

(4). Replace latch assembly if:

(a). The cotter pin hole in the latch stem is elongated more than 0.080 inch (2.032 mm).

(b). The cotter pin has worn into the surface of the cable attach "U" clip, more than 1/2 the thickness of the clip, 0.025 inch (0.635 mm) deep.

(c). The latch engagement faying surface, where it contacts the plenum, is worn more than 0.050 inch (1.270 mm) below the original surface.

(5). Inspect door hinges for wear and hinge fastening hardware for security. Repair or replace hinges as required.

(6). Inspect door for worn or damaged latching and attachment hardware.

(7). Check insert assembly and latch linkages for wear and lost motion. Repair or replace latch hardware as required.

(8). Inspect door system cable and cable ends for corrosion, fraying, chaffing and freedom of movement.

(9). Inspect door system cable pulleys, pulley bushings and brackets for wear, damage, freedom of movement and security.

(10). Reinstall engine inlet bypass door. Seal all cotter pins with sealant (CM425).

(11). Inspect door for proper alignment when closed. Door must fit snug against seal with obvious seal compression.

(12). Inspect latches for positive latching.

(13). Pull FILTER BYPASS CONTROL handle. Action to be a smooth, positive door opening with no binding. Release handle. Handle should snap back to stowed position.

2. PLM Particle Separator Inspection

(1). Inspect vortex generator tubes for broken, loose or missing vanes and center pins.

(2). Inspect outlet tube for security and damage.

(3). Inspect inlet plate for dents punctures and cracks.

(4). Inspect vortex tube particle discharge openings for clogging.

(5). Inspect separator and mist eliminator mounting seals for secure attachment and damage. Replace damaged seals.

CAUTION Left fairing inspection and rework or replacement is mandatory for particle separator installations, part numbers 369H90148-507, and -509. Early installations were fitted with left forward fairings, PN 369D290128-11 equipped with a single screw and nutplate securing a removable fairing section, PN 369D290128-31 over the tail rotor control rod.

(6). Inspect tail rotor control rod for abrasion or gouging caused by contact with particle separator fairing or fairing hardware. Modify, repair or replace fairing (Ref Fairing Modification (369D Only)). Inspect, repair or replace control rod if damaged beyond limits (Ref. Sec. 67-20-10).

(7). Inspect ejector flapper valve and hinge for wear and corrosion. Repair or replace valve parts as required.

(8). Inspect ejector tubes for cuts, breaks and distortion. Inspect flange condition.

(9). Inspect tube nuts and fittings for crossed or stripped threads.

(10). Inspect scavenge air discharge duct for damage.

(11). Inspect entire assembly for cracks, holes and distortion. Cracks may indicate that assembly is subject to distortion loads when installed.

3. Donaldson Particle Separator Inspection

(1). Inspect filter inlet screens for damage and secure attachment. Remove damaged inlet screens.

NOTE: Particle separator may be operated without inlet screens.

(2). Inspect vortex tubes for for security and broken or missing vanes.

NOTE: Up to five damaged vortex tubes may be blocked off with patches.

(3). Inspect vortex tube particle separator openings for clogging.

(4). Inspect gasket tapes for deterioration and security. Replace damaged gasket tapes.

(5). Inspect entire particle separator assembly for cracks, holes and distortion. Cracks may indicate filter preload, misalignment or distortion when installed. Align filter (Ref. Particle Separator Alignment and Joint Surface Repair).

(6). Inspect rubber sleeves for cuts, holes or deterioration.

(7). Inspect O-rings for nicks, cuts, wear or deterioration.

(8). Inspect ejector tube for cuts, breaks or distortion.

(9). Inspect flapper valve for condition and free movement.

NOTE: Ejectors with a missing flapper valve may be continued in operation until a replacement is installed.

(10). Inspect nozzle manifold for cracks and distortion.

(11). Inspect fitting for crossed or stripped threads. See that the seven nozzle air passages are open, clean and undamaged.

(12). Inspect ejector exhaust duct screen for damage or clogging.

4. Scavenge Air Operational Check

WARNING **Engine operation or helicopter flight must be accomplished in accordance with requirements and limitations specified in the Pilot's Flight Manual and applicable supplements.**

(1). Ensure air bypass door is closed.

(2). Ground run engine per Pilot's Flight Manual.

(3). Switch SCAV AIR circuit breaker ON.

NOTE: A slight increase in turbine outlet temperature (TOT) is normal when SCAV AIR circuit breaker is switched ON.

(4). Have an assistant check for scavenge air exhaust from outlet duct. Airflow