



SERVICE BULLETIN

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FORWARD AND CENTER THRUSTER CONTROL CABLES, CONDUIT CAP RELIEF AREA, INSPECTION

* Supersedes SB500N-020R1, SB600N-027R1 dated 24 November 1999.
Revision 2 corrects typographical errors Aircraft which have complied with SB500N-020R1, SB600N-027R1 meet the intent of this revision.

1. PLANNING INFORMATION

A. Aircraft Affected:

500N helicopters, LN001 thru LN099 and 600N helicopters, RN003 thru RN074.

B. Assembly/Components Affected By This Bulletin:

All 500N7201-5, -7, -37, -45 and -51 thruster control cables installed in the helicopters listed above and in spares inventory.

C. Reason:

Operators have experienced stress corrosion cracks in the relieved area of the thruster control cable conduit cap. Cracks have been found between the swage and threads of both the forward cable at Sta. 123.30 (500N/600N) and the center thruster cable at Sta. 264.00 (500N) or Sta. 292.00 (600N).

Failure to comply with this Service Bulletin may result in a slightly lagged thruster response to sharp right pedal input.

D. Description:

Procedures in this Bulletin provide owners and operators with information pertaining to inspecting the thruster control cable conduit cap and cable coupling connector.

E. FAA Approval:

The design engineering aspects of this bulletin have been shown to comply with the applicable Federal Aviation Regulations and are FAA approved.

F. Time of Compliance:

Shall be accomplished within the next 100 hours of flight or before 19 February 2000, whichever occurs first.

Continue to inspect per this Bulletin every one hundred (100) flight hours or three (3) months, whichever occurs first, until the new cables (500N7201-55 and -57 or -59) are installed.

The forward and center thruster cables must be replaced with the new configuration cable no later than 1 December 2000.

G. Weight and Balance Data:

Weight and balance not affected.

H. Reference:

369D/E/FF - 500N/600N HMI (CSP-HMI-2) Revised 1 June 1999, or latest revision

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I. Manpower:

Three (3) man-hours for inspection requirements and maximum of eight (8) man-hours for replacement.

J. Material/Part Availability:

Contact MDHI Warranty and Repair Dept.

PARTS				
Nomenclature	Part No.	500N Qty.	600N Qty.	Source
Forward cable (500N/600N)	500N7201-37 or -55	A/R	A/R	MDHI
Center cable (500N)	500N7201-45 or -57	A/R	N/A	MDHI
Center cable (600N)	500N7201-51 or -59	N/A	A/R	MDHI
Click Bond Adhesive (600N)	HMS-16-1068 CL12 Alternate EA.9321 Alternate CB200	N/A	1	MDHI DEXTER Adhesive & Coating 2850 Willow Pass Rd. Bay Point, CA 94565 CLICK BOND 2151 Lockheed Way Carson City, NV 89706
Stud (600N)	HS5806CR-3CR8 Alternate CS125-1032-8CR (NS001250)	N/A	1	MDHI CLICK BOND 2151 Lockheed Way Carson City, NV 89706
Clamp (600N)	MS21919WDG6 or MS21919WDF6	N/A	1	MDHI Commercial
Clamp (500N/600N)	AN742D6	4	4	MDHI Commercial
Nut (500N/600N)	MS21042L3	4	5	MDHI Commercial
Bolt (500N/600N)	NAS6603H2 or NAS1303-2H	4	4	MDHI Commercial
Washer (500N/600N)	AN960KD10 or AN960JD10 or NAS1149D0363J	8	10	MDHI Commercial
Safety Wire, Stainless Steel 0.032 inch		A/R	A/R	Commercial
Isopropyl Alcohol		N/A	A/R	Commercial

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K. Warranty:

MDHI Warranty Department will provide acceptable replacement components at no cost to the operator if parts are replaced prior to 1 December 2000. The replacement parts will be covered by the MDHI new part warranty. MDHI will also credit those affected operators with three (3) hours of labor warranty (spares credit) for the inspection requirements and maximum of eight (8) hours of labor warranty (spares credit) for replacement. Operators must return affected components to MDHI Warranty Department within five (5) days of removal in order to receive credit for replacement and labor allowance credit.

2. ACCOMPLISHMENT INSTRUCTIONS

A. Cable Inner Coupling Connector Inspection

(Ref. Figure 1, View C)

- (1). Remove tailboom fairing.
- (2). Turn cable outside collar counter-clockwise and back to expose the inner cable.
- (3). Apply sufficient right pedal to expose inner cables.
- (4). Without bending cable, slide male connector out of female connector.
- (5). Inspect for indications of obvious damage.
- (6). Ensure forward cable opening is correct for center cable male fitting (Ref. CSP-HMI-2, Forward and Center Cable Assembly Inspection).
- (7). Reconnect forward and center control cable couplings.

WARNING

Failure to properly connect thruster cables could result in uncoupling during flight and loss of anti-torque authority.

- (a). Apply sufficient right pedal to expose inner cables.
 - (b). Without bending cable, insert inner male connector into inner female connector and ensure they are properly engaged together.
 - (c). Slide outside cable collar over forward cable to engage locking device and turn clockwise until fully locked.
- (8). Reinstall tailboom fairing.

B. Forward Cable Inspection:

(Ref. Figure 1, View A)

CAUTION

Any time maintenance work is to be performed near engine air inlet, use care to prevent entry of foreign objects that might later be sucked into the compressor. Cover engine inlet with suitable material.

- (1). 600N - Remove the engine air particle separator.
500N - Open the engine air particle separator bypass door.
- (2). Locate forward thruster cable on left side of plenum area.
- (3). Using a bright light, locate thruster control cable on left side of plenum area. Inspect relief area of cable conduit cap, just aft of mount bracket, between threads and swage for cracks or evidence of corrosion.

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If the cable conduit cap has separated at the relief area, cable must be removed from service and a serviceable cable installed ***before further flight***.

- (4). If corrosion is found, clean corrosion area and inspect relieved area for crack.
- (5). Damage criteria requiring cable removal:
 - (a). Cable conduit cap which has separated at the relief area is not allowed.
 - (b). Any total crack length that exceeds more than 180 degrees around the conduit cap is not allowed.
- (6). If separation or an unacceptable crack is found, remove the cable and mark as scrap for return to MDHI. Replace with a serviceable cable which has been inspected per the requirements of this Bulletin.
- (7). Install two secondary safety clamps (AN742D6) as follows:
(Ref. Figure 1, View D and F)

NOTE: The two clamps are positioned 180° from each other. Do not allow the clamps to chaff against the airframe. The single safety clamp alternate installation can be installed if airframe structure interferes with the second clamp.

- (a). Install first clamp pointing up on the cable next to the swage.
 - (b). Install the second clamp pointing down on the cable next to the first clamp.
 - (c). Safety wire the bolt on the first clamp to the top of the jamnut that secures the cable to the airframe.
 - (d). Safety wire the bolt on the second clamp to the bottom of the jamnut that secures the cable to the bracket. If second clamp is not installed, alternate safety wire installation starts at the bottom of the jamnut, goes past the first clamp and is tightly wrapped around the cable a minimum of 3 times and a maximum of 5 times.
- (8). 600N - Install the engine air particle separator.
500N - Close the engine air particle separator bypass door.

C. Center Cable Inspection:

(Ref. Figure 1, View B)

- (1). Remove stationary and rotating thruster cones (Ref. CSP-HMI-2).
- (2). Using a bright light and a mirror, locate thruster control cable inside tailboom. Inspect conduit cap relief area, just forward of mount bracket, between threads and swage for evidence of corrosion.



If the cable conduit cap has separated at the relief area, cable must be removed from service and a serviceable cable installed ***before further flight***.

- (3). If corrosion is found, clean corrosion area and inspect conduit cap relief area for cracks.
- (4). Damage criteria requiring cable removal:
 - (a). Cable conduit cap which has separated at the relief area is not allowed.
 - (b). Any total crack length that exceeds more than 180 degrees around the conduit cap is not allowed.

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- (5). If separation or an unacceptable crack is found, remove the cable and mark as scrap for return to MDHI. Replace with a serviceable cable which has been inspected per the requirements of this Bulletin.
- (6). Install two clamps (AN742D6) as follows:
(Ref. Figure 1, View E and F)

NOTE: The two clamps are positioned inside the tailboom approximately 180° from each other. Do not allow the clamps to chaff against the tailboom.

- (a). Install the first clamp on the cable next to the swage pointing up along the top portion of the tailboom.
- (b). Install the second clamp on the cable next to the first clamp pointing down along the bottom portion of the tailboom approximately 180° from the first clamp.
- (c). Safety wire the bolt on the first clamp to the top of the jamnut that secures the cable to the airframe.
- (d). Safety wire the bolt on the second clamp to the bottom of the jamnut that secures the cable to the airframe.

NOTE: The following procedure is only for the 600N.

- (7). Install one Click Bond and clamp (MS21919WD6) as follows:
(Ref. Figure 1, View G)

WARNING

During scuff sand operation of 600N tailboom surface , DO NOT sand into graphite material of tailboom surface.

NOTE: If surface is primed, then it is only necessary to wipe with isopropyl alcohol and air dry for 15 minutes (no sanding required).

- (a). If necessary, scuff sand a 2 inch (5 cm) diameter area approximately one inch from the end of the conduit cap metal swage on the unprimed surface of the tailboom to remove loose resin or surface gloss.
 - (b). Wipe with isopropyl alcohol and air dry for 15 minutes.
 - (c). Mix Click Bond per manufacturers instructions.
 - (d). Install adhesive per manufacturers instructions.
 - (e). Insert the cable into clamp (MS21919WD6) and position clamp approximately 1.12 to 1.20 inches (2.85 to 3.0 cm) from the end of metal swage.
 - (f). Install two (AN960KD10) washers (HS 5806CR-3CR8) on the stud, one (MS21919WDG6) clamp, and nut (MS21042L3)).
- (8). Reinstall stationary and rotating thruster cones (Ref. CSP-HMI-2).
 - (9). Rig the rotating thruster cone (Ref. CSP-HMI-2).

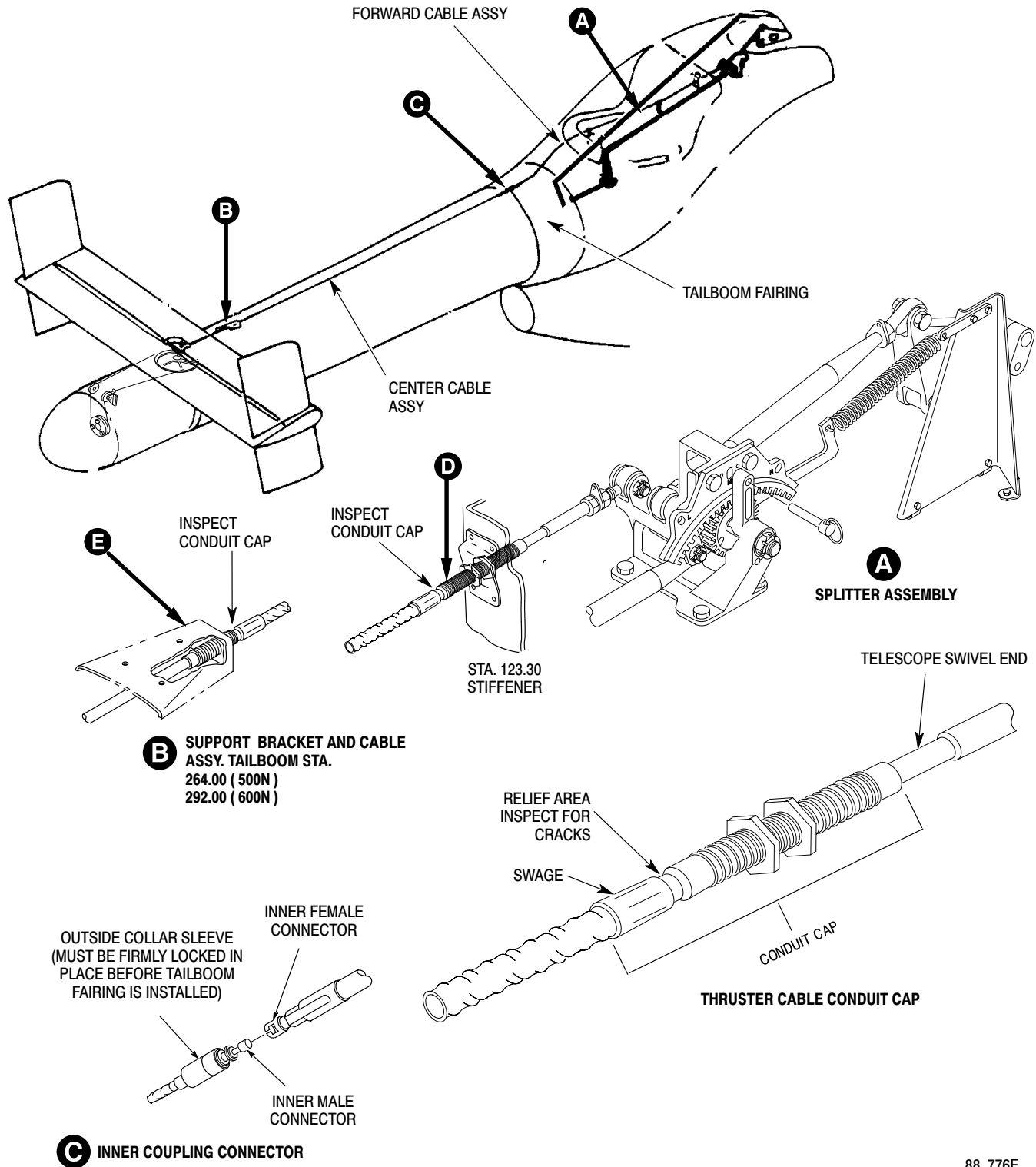
3. POINTS OF CONTACT

For further information, contact your local MDHI Field Service Representative (refer to the latest revision of the Product Support handbook for address and telephone numbers) or contact the Field Service Department at MDHI, Mesa, Arizona. Telephone: 1-800-388-6342 or (480) 891-6342.

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Figure 1. Forward and Center Cable Relief Area Inspection (Sheet 1 of 2)

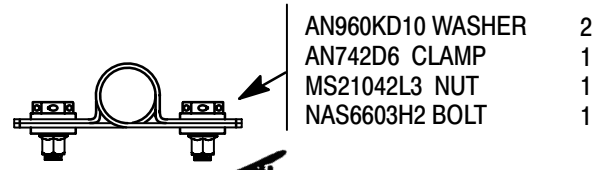
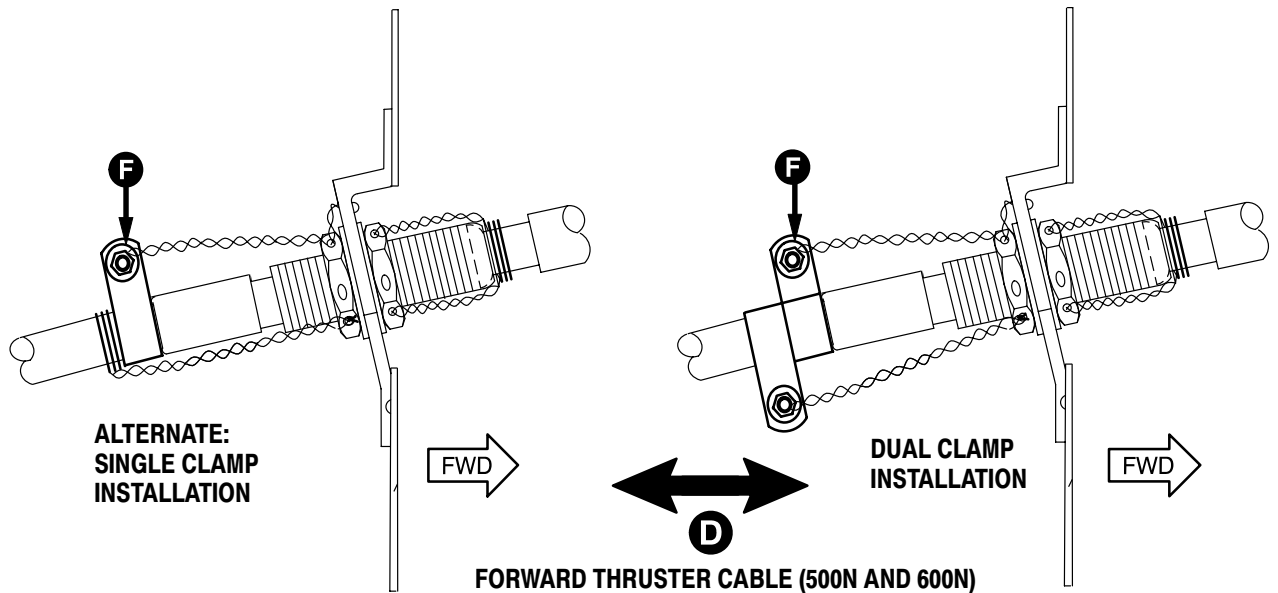
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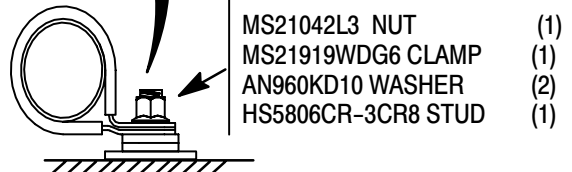
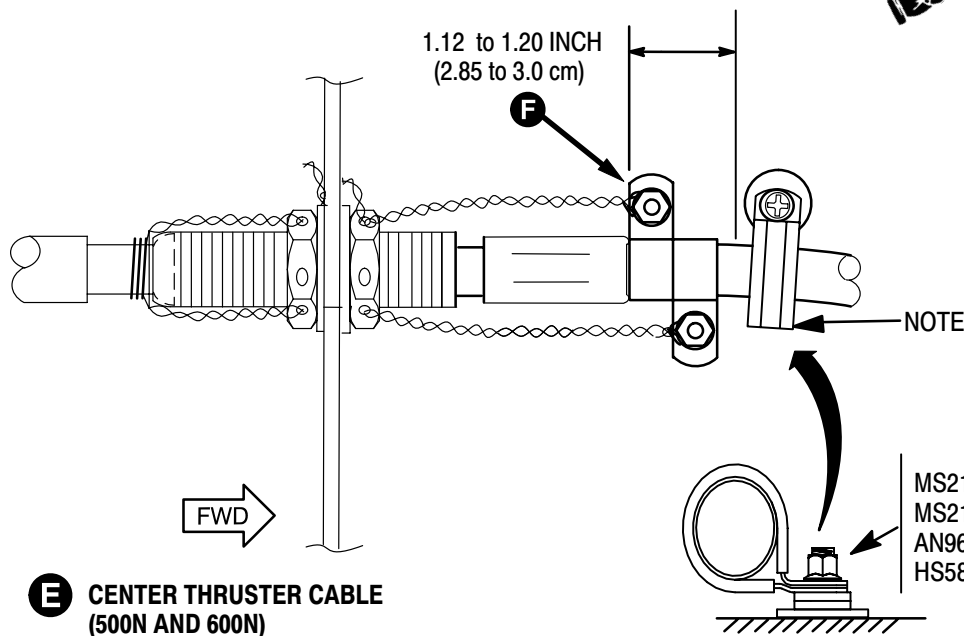
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SECONDARY SAFETY CLAMP
TYPICAL x3 or 4 PLACES



G CLAMP INSTALLATION TO TAILBOOM WITH CLICK BOND
(600N HELICOPTERS ONLY)

NOTE: CLICK BOND INSTALLATION (600N ONLY)

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Figure 1. Forward and Center Cable Relief Area Inspection (Sheet 2 of 2)



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Compliance Recording Form Forward and Center Thruster Control Cables, CONDUIT CAP RELIEF AREA, Inspection

Customer/Operator Name:

Aircraft Serial No. :

Helicopter Total Time:

Center Thruster Cable Total Time:

Forward Thruster Cable Total Time:

Date of Compliance for Inspection:

Results of Inspection: _____ Cracks _____ No Cracks

Signature of Person Confirming Compliance:

**Please Return to MDHI Field Service Immediately
Following Inspection**

FAX this form to MDHI (480) 891-6782