



DN-166.1*
EN-57.1*
FN-45.1*

SERVICE BULLETIN

DATE: 14 MARCH 1990
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MANDATORY  **MANDATORY**  **MANDATORY**

* Supersedes Service Information Notices DN-166, EN-57 and FN-45, dated 12 December 1989.

SUBJECT: One-time Inspection and Replacement of **Air Industries** MS21250-04036 Bolts **AND** Verification of Proper Installation of All MS21250-04036 Bolts in Main Transmission.

MODELS AFFECTED: All McDonnell Douglas Helicopter Company (MDHC) 369D, 369E (Serial No. 0001E thru 0352E) and 369F/FF (Serial No. 0001F thru 0067FF) Series helicopters.

SPARES INVENTORIES AFFECTED: All spare MS21250-04036 Bolts delivered from MDHC or purchased direct from Air Industries since August 1988. All spare main transmissions delivered prior to September 1989 shall be inspected per the requirements of this Notice.



If it cannot be determined when the MS21250-04036 **Air Industries** bolts were purchased, those Air Industries bolts shall be replaced.

NOTE

To identify a -04038 bolt, the length is 2.887 +/- .010 inch. (See Figure 1.)

TIME OF COMPLIANCE: The requirements of this Notice shall be accomplished within the next 300 hours of helicopter operation, the next annual inspection, or the next time the transmission is removed, whichever occurs first.

PREFACE: MDHC has determined that some bolts manufactured by **Air Industries** and delivered since August 1988 may not meet industry standards. Therefore, MDHC is requiring operators to perform the following one-time inspection and/or replacement of these suspect bolts.

In addition to replacing bolts manufactured by **Air Industries**, all 369D, 369E and 369F/FF operators are required to inspect main rotor output drive-shaft bearing assembly bolt installations for proper thread protrusion through the nut end of the bolt.

Failure to comply with the requirements of this Notice could result in severe damage to the main transmission.

NOTE

- After installation, bolts shall protrude through the nut for a length equivalent to two full threads (0.071 inch minimum), including the
- If necessary, replace bolts with MS21250-04038 bolts. The maximum bolt protrusion from the nut end is four (4) threads.
- Bolts manufactured by Air Industries that have drilled (safety-wire holes) heads are acceptable.

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REFERENCE PUBLICATIONS:

- 369D/E HMI Vol. I (CSP-D-2) Revised 01 August 1989
- 369F/FF HMI Vol. I (CSP-F-2) Revised 01 June 1989
- Component Overhaul Manual, (CSP-DEF-5) Revised 29 September 1989

SPECIAL WARRANTY POLICY: The following listed aircraft and transmissions are eligible for these special warranty considerations:

- a. MDHC will provide, free of charge, replacement o-rings, bolts and nuts.
- b. MDHC will provide 15 hours of labor credit to remove, disassemble, inspect, reassemble and reinstall the main transmission. This work must be performed at an MDHC Approved Service Center or International Distributor.

NOTE

For further warranty information contact the MDHC Warranty and Repair Department Administrator.

AIRCRAFT ELIGIBLE FOR SPECIAL WARRANTY CONSIDERATION

Xmsn Ser. #	A/C Ser. #	Xmsn Ser. #	A/C Ser. #	Xmsn Ser. #	A/C Ser. #
1744	0237E	1087	0319E	1329	0341E
1714	0281E	2104	0320E	2222-0011	0343E
2094	0282E	1811	0321E	2222-0036	0344E
1759	0293E	1802	0322E	2222-0035	0346E
1628	0298E	1686	0323E	2222-0016	0347E
2113	0301E	1818	0324E	1607	0349E
1814	0303E	1663	0325E	1667	0350E
1676	0304E	1671	0326E	2222-0015	0351E
3659	0305E	1813	0326E	2222-0028	0352E
1797	0306E	1826	0328E	1809	0057FF
2109	0307E	2222-0009	0329E	1807	0058FF
1657E	0308E	1328	0330E	1812	0059FF
1661	0309E	1820	0331E	1658	0060FF
1787	0310E	2222-0029	0332E	1804	0061FF
2117	0311E	2222-0012	0333E	1794	0062FF
1819	0312E	2222-0013	0334E	2222-0022	0063FF
1646	0313E	2222-0019	0335E	2222-0027	0064FF
1709	0314E	1704	0336E	1716	0065FF
2132	0315E	2222-0010	0337E	1652	0066FF
1810	0316E	2222-0026	0338E	1709	0067FF
1776	0317E	2222-0025	0339E		
1815	0318E	2222-0014	0340E		

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PROCEDURE

- a. Remove main rotor transmission per HMI - Vol I.
- b. Disassemble tail rotor drive assembly, two nozzles and main rotor drive assembly (Ref. CSP-DEF-5).
- c. Inspect MS21250-04036 bolt head inscriptions for unacceptable bolt head markings (refer to Figure 2). Replace unacceptable bolts with MS21250-04038. Deform and scrap unacceptable bolts to prevent bolts from re-entering service.

NOTE

To identify a -04038 bolt, the length is 2.887 +/- .010 inch. (Refer to Figure 1.)

WARNING

The following bolt protrusion inspection must be accomplished on all main transmissions.

- d. Inspect bolts for proper thread protrusion through the H14-4 nuts. If proper thread protrusion cannot be obtained, replace bolts with MS21250-04038 bolts.

NOTE

- Bolts must protrude through the nut for a length equivalent to two full threads (0.071 inch minimum), including the chamfer. Thread protrusion must not exceed four (4) threads. The H14-4 nut may be installed without a washer.
- To prevent possible dislocation of clamp-up shims on main rotor output drive assembly, remove unacceptable bolts individually.

- e. Install acceptable MS21250-04038 bolts, washers and nuts (Ref. CSP-DEF-5). Torque bolts **50-70 inch-pounds**. Verify that bolts protrude through the nut for a length equivalent to two full threads (0.071 inch minimum), including the chamfer. If more than 4 threads protrude through the nut, add NAS620C416L or NAS620C416 (or acceptable alternate per Parts List) washer(s) under the nut as required.

NOTE

If any washers other than those called out in Step E have been installed, replace those washers at the next disassembly of the main transmission.

- f. Reassemble main rotor drive assembly, two nozzles and tail rotor drive assembly (Ref. CSP-DEF-5).
- g. Apply a white dot to the main transmission data plate to indicate the transmission has been inspected and reworked per the requirements of this Notice.
- h. Install main rotor transmission (Ref. applicable HMI).
- i. Record compliance to this Notice in the Compliance Record Section of the helicopter Log Book.

The resultant alteration to affected models as described by procedures in this Notice has been shown to comply with Federal Aviation Regulations and is FAA Approved.

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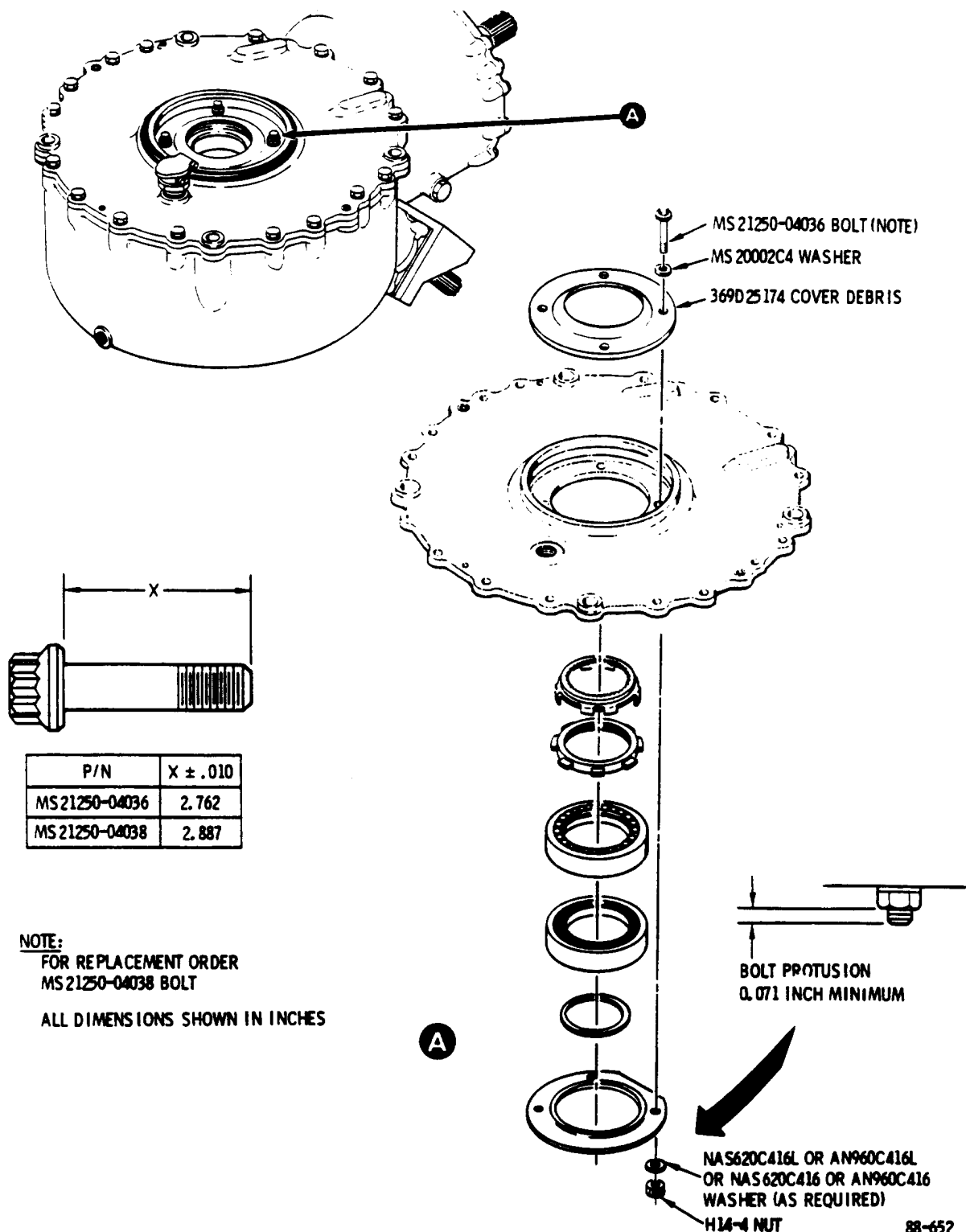
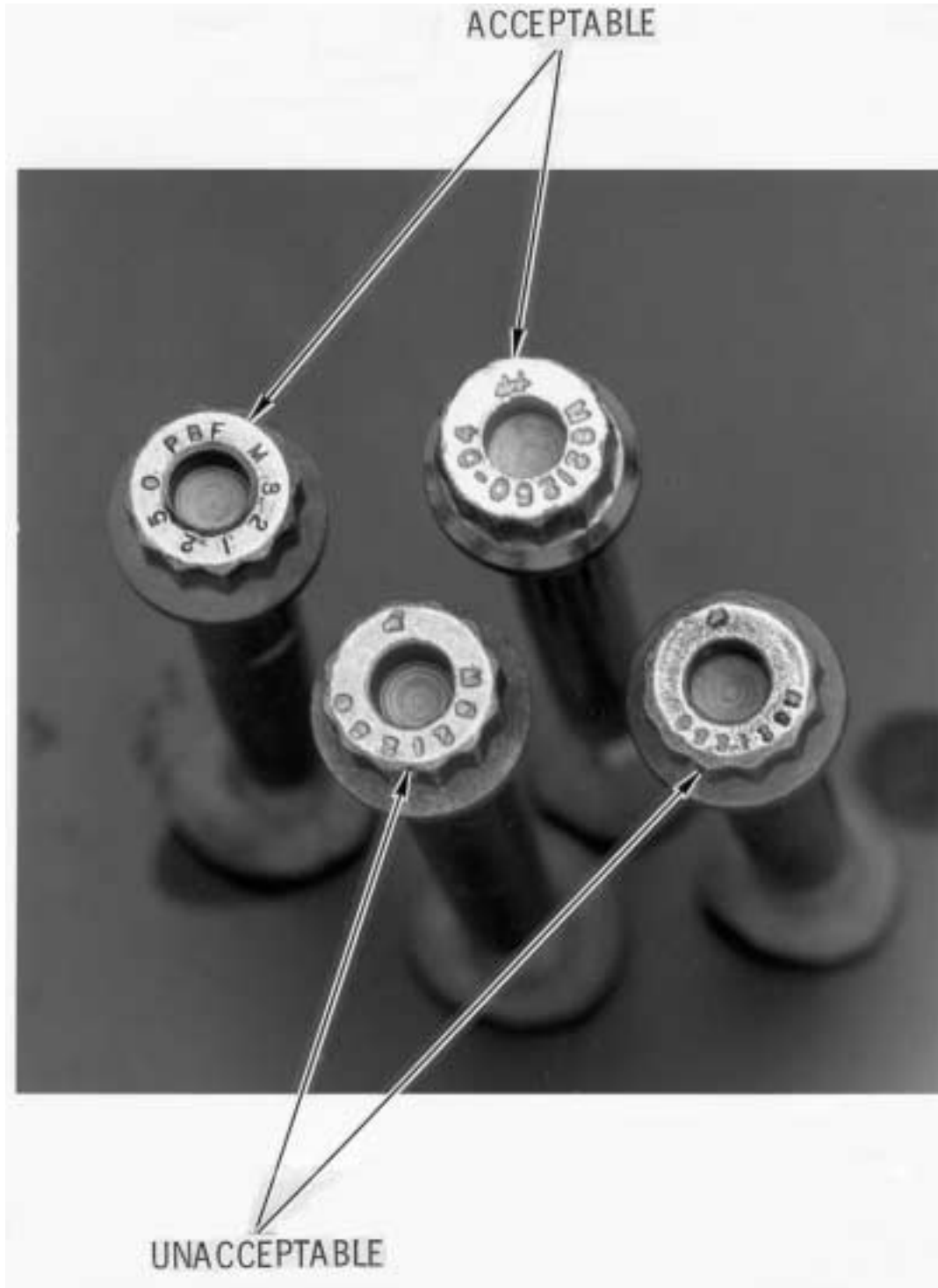


Figure 1. Inspection/Replacement of Main Transmission Output Driveshaft Bearing Assembly Bolts

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Figure 2. Inspection/Definition of Bolt Heads

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