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* Supersedes Service Information Notice DN-110, dated 24 September 1982.

INSPECTION AND MODIFICATION OF PN 369D292028, AFT PASSENGER STEP ASSEMBLIES, ON EXTENDED LANDING GEAR ASSEMBLIES; AND INSPECTION AND MODIFICATION OF AFT LANDING GEAR FOOT ASSEMBLIES

1. PLANNING INFORMATION

A. Models Affected:

All McDonnell Douglas Helicopter Company (MDHC) 369D, 369E (Serial No. 0001E thru 0374E) and 369F/FF (Serial No. 0001F thru 0069F) Series helicopters equipped with PN 369D290006 extended landing gear assemblies.

NOTE: Helicopters equipped with 369D292028-5 step assemblies which are installed with Hi-Shear BNB1100-12-3-5 hardware are not affected by the requirements of this Notice.

B. Preface:

Part I of this Service Information Notice lists a procedure for a pilot preflight check of passenger step assemblies for proper stability and security of attachment. The pilot check includes a visual examination of the step for obvious cracking, drooping or deformation, plus a load test by stepping on the step to check for deflection, sponginess or noise when weight is applied. The landing gear step assemblies are to be inspected per Part II of this Notice or modified per Part III, if any foot or step discrepancies are noted.

Part II of this Notice provides instructions for a visual or dye penetrant inspection of the step assembly weld area and foot assembly to ensure proper security of attachment of the step assembly to the foot assembly. Part II of this Notice does not have to be performed if the landing gear feet and step assemblies have been modified per the requirements of Part III.

Part III of this Notice provides a procedure to modify the aft landing gear feet and step assemblies.

C. Time of Compliance:

Part I - Shall be accomplished at each Pilot's Preflight Check until Part III has been accomplished.

Part II - Shall be accomplished at the next 100-hour inspection unless Part III has been accomplished.

Part III - Shall be accomplished anytime discrepancies are noted while performing Parts I and II or at the next 300-hour/annual inspection, whichever occurs first.

NOTE:

- Compliance to Part III of this Notice releases the requirement to further perform Part I and II of this Notice.
- 369D292028-5 passenger step assemblies along with Hi-Shear BNB1100-12-3-5 attaching hardware do not have to be modified per the requirements of this Notice.

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D. Reference:

- 369D/E HMI Vol. I (CSP-D-2) Revised 01 August 1989
- 369F/FF HMI Vol. I (CSP-F-2) Revised 01 June 1989

E. Weight and Balance Data:

Weight and balance data not affected.

F. FAA Approval:

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

2. PART I – PILOT PREFLIGHT CHECK OF PASSENGER STEP ASSEMBLY

NOTE: Part I of this Notice is only required to be performed if Part III has not been accomplished.

WARNING Extreme care shall be taken when applying weight to the subject step assembly while performing the following.

- (1). Visually check passenger step assemblies, on aft extended landing gear assemblies for obvious deformation, droop or deflection. Also apply weight with foot on step assembly to check for any downward deflection, sponginess or noise when weight is applied.

NOTE: If any of the above step discrepancies are noted, perform modification of step assembly per Part III below.

3. PART II – 100-HOUR INSPECTION OF AFT PASSENGER STEP ASSEMBLY AND AFT FOOT ASSEMBLY

A. Tools and Equipment:

TOOLS AND EQUIPMENT	
Nomenclature	Source
Magnifying Glass, 10x minimum	Commercial
Dye penetrant inspection kit	Commercial

NOTE: The 100-hour inspection is not required if modification of the passenger step and foot assembly has been accomplished per Part III of this Notice or if 369D292028-5 step assemblies along with Hi-Shear BNB1100-12-3-5 attaching hardware are installed.

- (1). Remove screws and washers securing cover assembly to lower fairing on aft extended landing gear assemblies; remove cover. (See Figure 1.)
- (2). Apply a 400 pound proof load on step, approximately one inch from outboard end during inspection.
- (3). Using 10X magnifying glass or dye penetrant inspection, inspect top area of weld where step is attached to mounting plate for possible cracking or damage (View A-A). Removal of paint is not required.

NOTE: If cracking is noted, modify step, inspect foot and install per Part III of this Notice or procure a new (369D292028-5) passenger step assembly, inspect foot and install per Part III of this Notice.

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- (4). Remove aft passenger step assemblies and landing gear fairings to perform the following steps.
- (5). Remove all Scotchweld adhesive (green in color) from the landing gear foot assembly and the passenger step assembly per Vol. I of the applicable HMI.
- (6). Using a 10X magnifying glass and bright light, inspect passenger step bolt holes, hole inside diameters and step mounting area for cracks. Inspect remainder of foot for cracks. Replace parts which are cracked.
- (7). If light surface corrosion is found, remove, clean and paint/retreat the affected area per Vol. I of applicable HMI.
- (8). If no cracking is found, reinstall step assembly. Torque the step assembly mounting bolts 60 - 85 in. lbs.



DO NOT over torque the mounting bolts as damage can occur to the strut assembly.

- (9). Reinstall cover assembly.
- (10). Record compliance with Part II of this Notice in the Compliance Record section of the helicopter Log Book.

4. PART III – MODIFICATION OF AFT PASSENGER STEP AND FOOT ASSEMBLIES

A. Parts/Supplies:

REPLACEMENT PARTS/SUPPLIES			
Nomenclature	Part No.	Qty.	Source
Bushing, plain*	Field fabricate	4	Field fabricate
Bolt, HI-Shear**	BNB 1100-12-3-5	4	Commercial or MDHC
Washer**	AN960KD416	4	Commercial or MDHC
Cap	369H6538-7	A/R	MDHC

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B. Tools and Equipment:

TOOLS AND EQUIPMENT	
Nomenclature	Source
Welding equipment	Commercial
Welding Rod, (aluminum 4043)	Commercial
Aluminum Alloy, 6061-0 (0.090 thickness)	Commercial
Aluminum Alloy Stock, 2024-T4 or T-3 (0.4500/0.4600 diameter) (12 in. raw stock)	Commercial
Primer, zinc chromate, TT-P-1757	Commercial, MDHC RM#009222
Top coat, HMS 15-1100, type 2 (flat black)	Commercial, MDHC RM#009136
**Hi-Shear Tool (BH220-428-M2)	MDHC or Commercial
Safety tape, Pressure sensitive (Type B, black) (16 in. in length req'd.)	3M Co. or Commercial
Adhesive, scotch weld, EC 1838 (MIL-A-52194)	Commercial, MDHC RM#002214
Chemical film (MIL-C-5541)	Commercial, Iridite 14-2
Sealant (PR-1436)	Commercial
* Method A only	
** Method B only	

- (1). Remove hardware securing cover assembly to affected landing gear fairing assembly. (See Figure 1.) Remove cover assembly.
- (2). Remove hardware securing passenger step to landing gear; remove step assembly.
- (3). Inspect landing gear foot assemblies per steps (6). & (7). of PART II of this Notice. Replace cracked foot assemblies.
- (4). Remove paint, primer, non-slip safety walk tape and chemical surface treatment (Iridite) from step assembly area to be welded. (Refer to HMI Vol. I.)
- (5). Heat step assembly to 200 degrees F to break bond on end cap. Remove end cap from step assembly.
- (6). Fabricate two gussets (per step assembly) to dimensions shown in Figure 2. Weld gussets to step and mounting plate as shown. Re-heat treat step assembly to T-62 condition per MIL-H-6088.
- (7). Reinstall end cap by bonding with scotch weld EC 1838 or equivalent.
- (8). Apply exterior surface treatment (iridite) to step assembly; apply primer and paint finish. Apply non-slip safety tape to step assembly. (Refer to applicable HMI.)

NOTE: Operators have a choice of two different methods to modify the landing gear foot assemblies.

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C. METHOD A- INSTALLATION OF PLAIN BUSHING

- (1). Ream 0.322/0.329 inch diameter hole through foot assembly at step attachment bolt hole locations to 0.4062/0.4082 inch diameter.
- (2). Fabricate bushing (two per step assembly) per the following instructions and Figure 3:
 - (a). Machine stock material to a dimension that will provide 0.0000/0.0005 interference with 0.4062/0.4082 inch diameter holes
 - (b). Ream inside stock material. Inside diameter to be 0.322/0.329 inches in diameter concentric to O.D. (± 0.002).
 - (c). Cut material to a length equal to the outside diameter of foot assembly at the bolt holes.
 - (d). Contour outer face of bushing to match the contour of the foot assembly (fwd side only, $+0.000/-0.001$).
 - (e). Surface finish of bushing and holes to be 125 RMS or better. Deburr bushing a maximum of 0.015 inches.
 - (f). Chemical treat bushing and hole inside diameters per MIL-C-5541.
- (3). Install bushing with wet zinc-chromate primer.
- (4). Install step assemblies, bolts, washers and nuts. Torque bolts 60 - 85 in. lbs.
- (5). Proceed to step D.(5).

D. METHOD B- INSTALLATION OF HI-SHEAR BLIND NUT

- (1). Ream 0.322/0.329 inch diameter holes through foot assembly (2 places) to 0.391/0.397. inch diameter (forward side only).
- (2). Countersink hole 100 degrees and minimum depth for flush installation of Hi-Shear blind nut BNB1100-12-3-5. Apply chemical. film per MIL-C-5541 to inside diameter of holes.
- (3). Ream 0.322/0.329 inch diameter hole (2 places) in step assembly to 0.375/0.377 inch diameter. Apply chemical film to hole per MIL-C-5541. Install NAS75-4-003 bushing with wet zinc chromate primer (TT-P-1757).
- (4). Install step assembly using (2) each, NB1100 bolts and AN960KD416 washers (Hi-Shear BNB1100-12-3-5 includes NB1100 bolt) as shown in Figure 3. Torque bolts 60 - 85 inch lbs.



DO NOT over torque the step assembly mounting bolts as damage can occur to the strut assembly.

- (5). Seal the nut head on forward side and bolt on aft side of foot assembly. Completely seal faying surfaces of step assemblies with PR 1436 sealant.
- (6). Reinstall cover assembly on affected fairing assembly with existing hardware. Trim cover assembly, as required, to clear gussets.
- (7). Record compliance with Part III of this Notice in the Compliance Record section of the helicopter Log Book.

NOTE: Modification and repair of the passenger step and foot assemblies per Part III lifts the requirements to further perform the Part II inspection requirements of this Notice.

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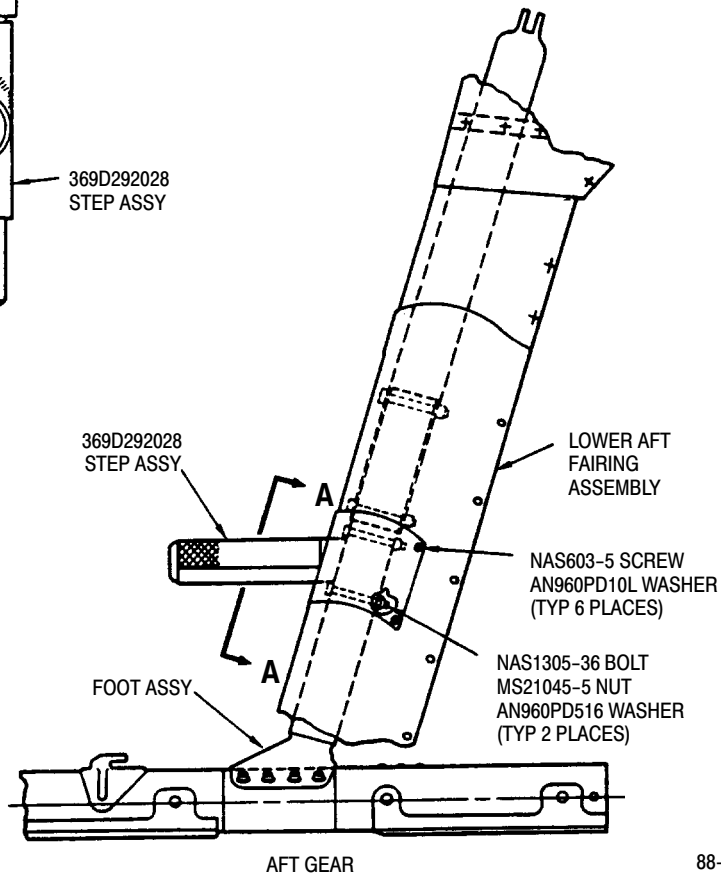
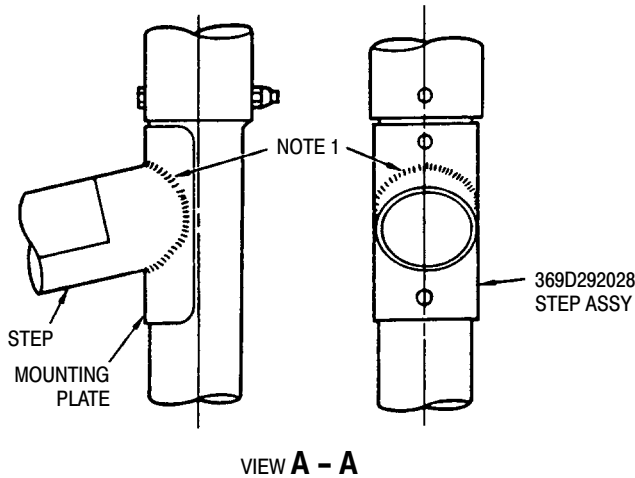
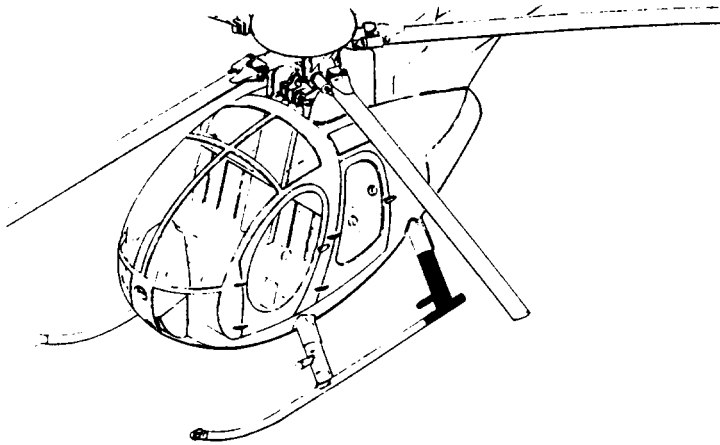
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NOTES:

1. CHECK TOP AREA OF WELD WHERE STEP ATTACHES TO MOUNTING PLATE. USE 10X MAGNIFYING GLASS.
2. TO OBTAIN ACCESS TO INSPECT WELD AREA, REMOVE (6) SCREWS AND WASHERS SECURING COVER TO LOWER FAIRING.

Figure 1. Inspection of Aft Extended Landing Gear Step and Strut Assemblies

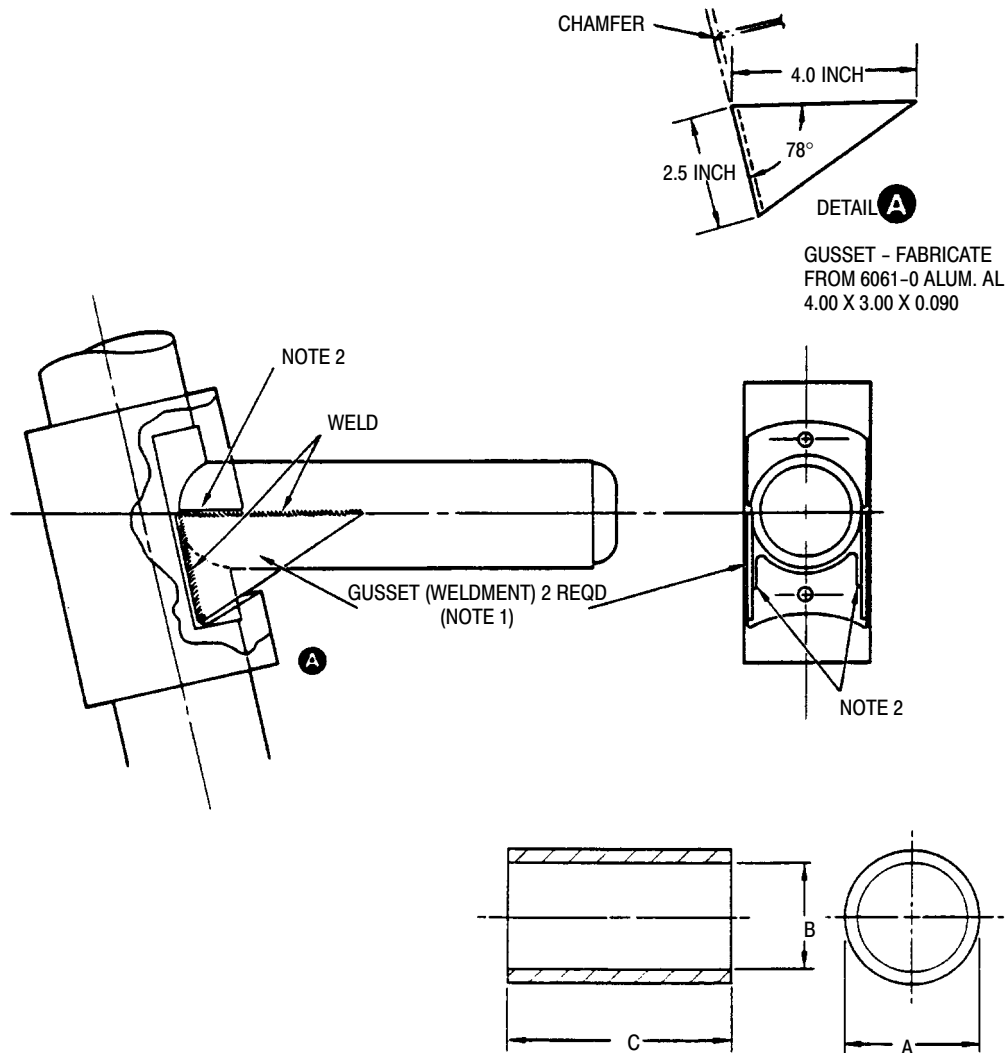
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GUSSET - FABRICATE FROM 6061-0 ALUM. AL 4.00 X 3.00 X 0.090

NOTES:

1. FABRICATE GUSSETS FROM 6061-0 ALUM AL PER DIMENSION SHOWN.
2. TRIM FAIRING COVER AS REQUIRED TO CLEAR GUSSETS.
3. FABRICATE WITH 2024-T4 ALUMINUM ALLOY.
4. CONTOUR OUTER FACE OF BUSHING TO MATCH STRUT ASSEMBLY FWD SIDE ONLY (+0.000/-0.001).
5. SURFACE FINISH OF BUSHING AND HOLES TO BE 125 RPM.
6. CHEMICAL FILM TREAT BUSHING AND HOLE I.D.'S PER MIL-C-5541.

SEE NOTES 3 THRU 6

DIMENSIONS: (SEE NOTES 3 THRU 6)

- A. OUTSIDE DIAMETER TO PROVIDE 0.0000/0.0005 INTERFERENCE WITH 0.4062/0.4082 DIAMETER HOLES IN LANDING GEAR STRUTS.
- B. INSIDE DIAMETER TO BE 0.322/0.329 DIAMETER CONCENTRIC TO O.D. WITHIN 0.002.
- C. LENGTH TO BE EQUAL TO STRUT ASSEMBLY OUTSIDE DIAMETER.

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Figure 2. Rework of Aft Landing Gear Assemblies

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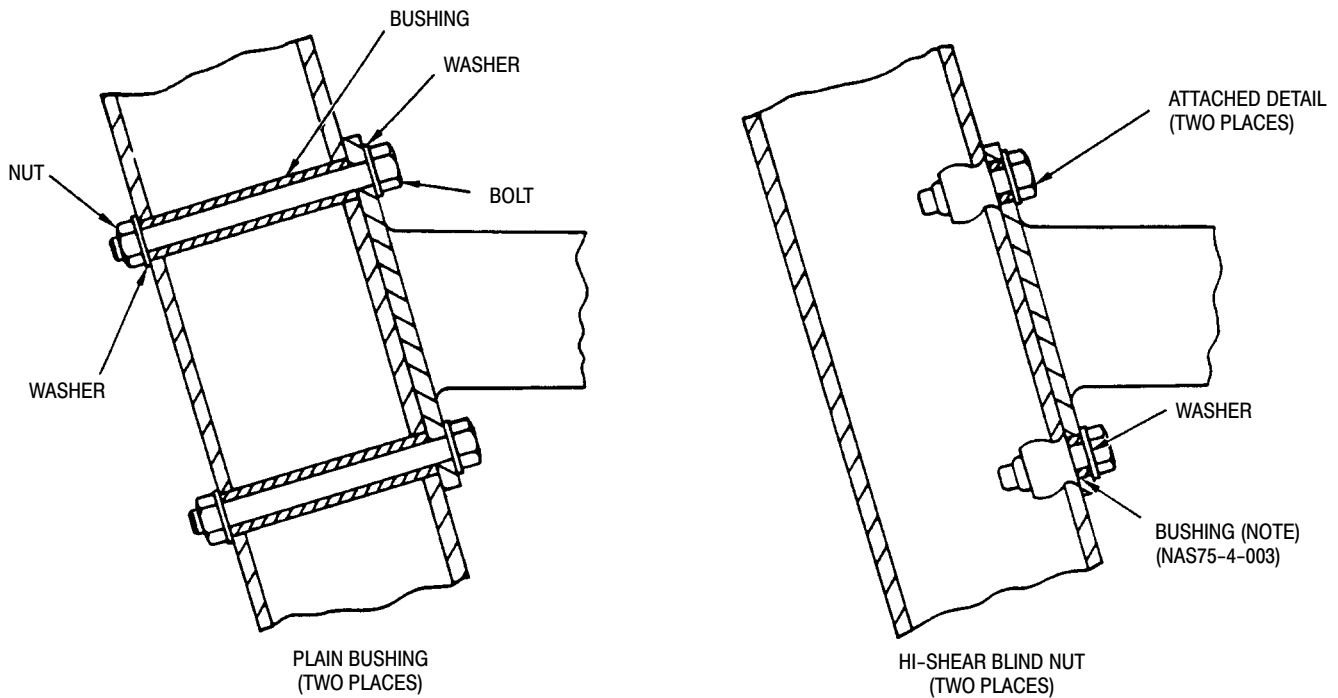
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NOTE:
NOT REQUIRED IF 369D292028-5
STEP IS BEING INSTALLED.

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Figure 3. Plain Bushing/Hi-Shear Blind Nut Rework

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