



**HUGHES
SERVICE INFORMATION
NOTICE**

NOTICE NO. N-94

DATE July 26, 1971

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FAA / DOA WE-1-APPROVED

SUBJECT: RUNOUT (TIR) INSPECTION - MAIN ROTOR THRUST BEARING,
P/N 269A5050-73

MODELS AFFECTED: All 269A, 269A-1, and 269B Helicopters with Notice N-76.2
Main Rotor Thrust Bearing Kit No. M10044 Installed

TIME OF COMPLIANCE: Shall be accomplished within next 200 hours of helicopter
operation, unless previously accomplished during or
following installation of thrust bearing installation
kit No. M10044

PREFACE: The information given in this Service Information Notice lists a procedure
for a one-time inspection of the 269A5050-73 main rotor thrust bearing,
to ensure that the bearing is properly seated and aligned in the bearing
housing. Excessive misalignment will considerably shorten bearing
service life and/or require realignment of bearing housing in the main
rotor mast.

Reference

- 269 Series - Basic Handbook of Maintenance Instructions, Issued 1 September 1970
- 269 Series - HMI Configuration Supplement A/A-1, Issued 1 September 1970
- 269 Series - HMI Configuration Supplement B, Issued 1 September 1970
- 269 Series - HMI Configuration Supplement TH-55A, Issued 1 September 1970

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PARTS LIST

<u>Nomenclature</u>	<u>Part No.</u>	<u>Qty.</u>	<u>Source</u>
Pin (Oversize)	HL63PB-6-8	16	Hi-Shear Corp.
	or		
Lockwasher	HL63PB-6-7 269A1308	1	HTC-AD

MATERIALS

Grease	AeroShell No. 7 (MIL-G-23827A)
Thread Lube	Alcoa or equivalent
Primer, Zinc Chromate	W. P. Fuller Co. or equivalent
Rags, Cloth-Clean	Commercial
Cup, Paper	Commercial
Tape	3M or equivalent

TOOLS & EQUIPMENT

Wrench - P/N 269A9228
Dial Indicator
Stub Reamer - #13/64 (0.2031 in. dia.) with
right angle extension
Wrench, Torque - 0 to 1500 in. lb. range
C-Clamps
Hi-Lok Removal Tool - Pneumatic or equivalent

PROCEDURE

- a. Remove main rotor blades, pitch bearing assemblies, main rotor hub, and swashplate assembly (Section 8 of Basic HMI).
- b. Remove thrust bearing lockwasher, thrust bearing nut and seal, and thrust bearing spacer tube. (See Figure 1)
- c. Wipe all grease from top of bearing.
- d. Check for proper bearing alignment of thrust bearing, by attaching dial indicator to main rotor shaft with indicator plunger contacting upper surface of thrust bearing outer race at dimension shown in Figure 2.

NOTE

1. If bearing runout is less than 0.008 in. TIR, bearing service life of 1800 hours is applicable; perform steps q. thru x.
2. If bearing runout is 0.008 in. TIR to 0.011 in. TIR, bearing must be replaced at each 300 hours of operation, until bearing alignment is corrected. If 300-hour service life is acceptable, perform steps q. thru x.; otherwise perform steps e. thru x.
3. If bearing runout is more than 0.011 in. TIR, bearing alignment must be corrected prior to reassembly; perform steps e. thru x. and replace bearing.

e. Remove main rotor drive shaft and thrust bearing from mast (Section 10 of Basic HMI).

f. Stuff clean rags inside mast below flange of thrust bearing housing, then tape cardboard cup or equivalent container flush with ID of mast over rags to prevent entry of foreign objects or metal particles into mast and main transmission.

g. Remove sixteen (16) Hi-Shear collars and pins securing bearing housing to main rotor mast. Use pneumatic or hand removal tool or equivalent.

h. Remove housing from mast; clean OD of housing and ID of mast of residue zinc chromate primer.

i. Coat OD of housing with zinc chromate primer; install housing in place in mast.

CAUTION

1. Proper seating of bearing housing in mast is extremely important. Ensure that shoulder of housing is seated ABSOLUTELY FLUSH with top of mast.
2. Carefully align holes in mast with holes in housing; clamp housing securely in place.

3. As required, hand ream holes in line through bearing housing and mast to ensure proper hole alignment and close fit of pins. Use #13/64 stub reamer to accommodate oversize pins. Ensure that housing remains seated flush with top of mast.

j. Insert first Hi-Shear pin from inside mast; install with wet zinc chromate primer. Press or tap pin until firmly seated and a flush fit or better is obtained in countersink.

CAUTION

1. Do not turn pin during installation or torquing.
2. Do not mar or damage head of pin, if tapping is required.
3. Pin must be seated flush fit or better in countersink, to prevent interference with thrust bearing or threads of thrust bearing nut.

k. Install second pin approximately 180° from first pin, per step j. above. Repeat for remaining pins.

l. Position thrust bearing and shaft in place in mast; make sure splined end is properly seated. Check that all pins clear the OD of bearing.

m. Install thrust bearing nut in place; check that all pins clear threads of nut; remove nut and thrust bearing and shaft.

n. Install locking collars and NAS620-10L washers under collars, if required. Torque each collar until nut portion shears.

NOTE

A minimum of two pin threads should be engaged by the collar before wrenching.

o. Vacuum chips or foreign matter from top of cup or container; remove rags and cup with tape from inside of mast; remove any metal particles and foreign matter.

CAUTION

Use extra caution to prevent metal chips or other foreign objects from dropping into transmission.

p. Coat outside diameter of bearing with zinc chromate primer; install shaft and bearing in main rotor mast. Make sure spline end is properly seated.

CAUTION

1. Do not apply sharp forces (tapping or hammering) to shaft or bearing during installation.
2. Install and tighten down on bearing nut to ensure that bearing is fully seated in housing.
3. Remove nut and visually inspect that bearing is properly seated.
4. Check for proper alignment of bearing by attaching dial indicator to main rotor shaft, with indicator plunger contacting upper surface of thrust bearing outer race at dimension shown in Figure 1.

NOTE

- (a) If bearing runout is less than 0.008 in. TIR, bearing service life of 1800 hours is applicable.
- (b) If bearing runout is 0.008 in. TIR to 0.011 in. TIR, bearing must be replaced at each 300 hours of operation, until bearing alignment is corrected.
- (c) If bearing runout is more than 0.011 in. TIR, bearing must be replaced.

q. Position spacer tube in place; make sure that chamfered end of tube is down.

r. Pack cavity between spacer tube and bearing housing 75% full with AeroShell No. 7 or equivalent; do not apply grease to threads of housing (See Figure 2).

- s. If required, install seal in thrust bearing nut.

NOTE

1. Seal is a light press fit. Use small round 3-inch diameter block of wood or equivalent tool to seat seal in place against the shoulder in the thrust nut.
2. Prelubricate seal at rotating surface.

t. Coat threads of thrust bearing nut with Alcoa thread lube or equivalent; install new thrust bearing nut lockwasher under nut; install nut in mast over spacer tube.

NOTE

Thrust bearing nut lockwasher must be replaced with new lockwasher each time it is removed.

u. Using special wrench, P/N 269A9228, in conjunction with torque wrench, torque thrust bearing nut to 900 to 1200 inch-pounds.

NOTE

Torque wrench must be at right angle to special wrench to obtain correct torque value.

v. Bend alternate four tangs of thrust bearing lockwasher down into mast castellations and remaining four tangs up into thrust bearing nut castellations.

w. Install remaining components of main rotor installation (swashplate assembly, rotor hub, pitch bearing assemblies and main rotor blades) per Section 8 of Basic HMI.

x. Inspect thrust bearing installation for discrepancies.

y. Record compliance with this Service Information Notice in Compliance Record of helicopter Log Book.

WEIGHT & BALANCE DATA

Weight and balance not affected.

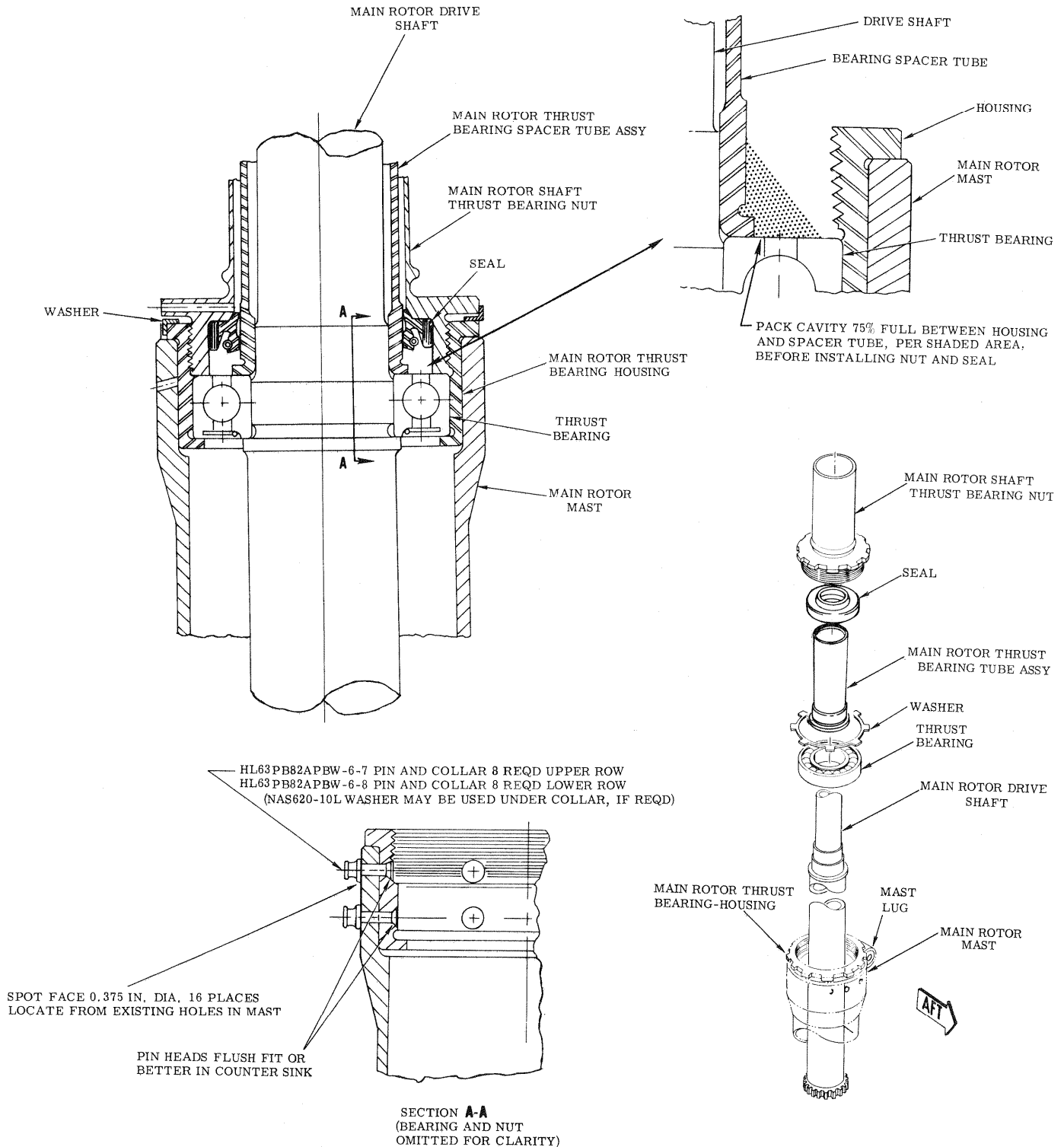


FIGURE 1. BEARING INSTALLATION-MAIN ROTOR THRUST

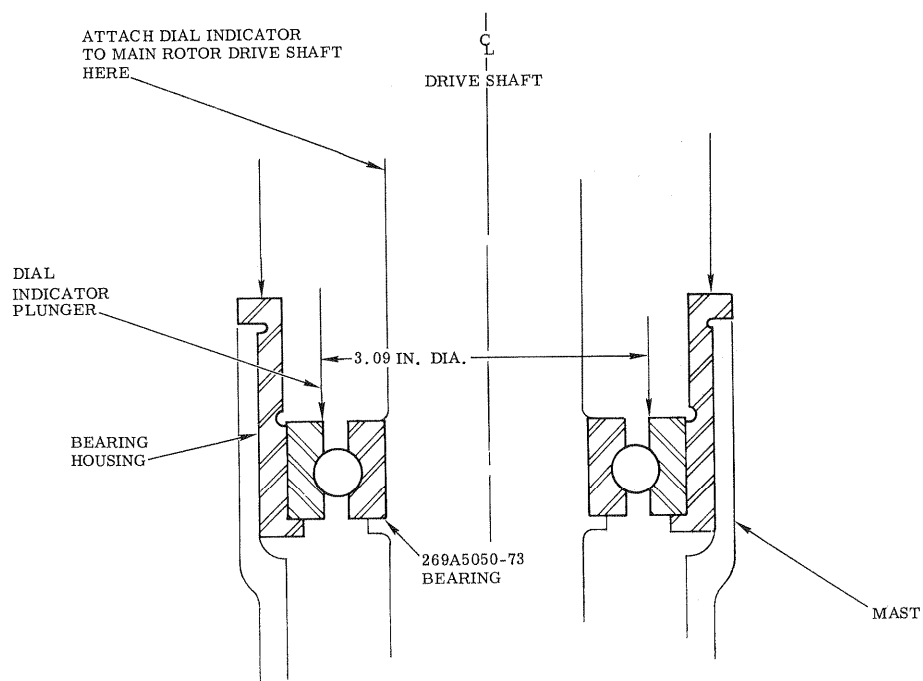


FIGURE 2. TIR CHECK - MAIN ROTOR THRUST BEARING