



SCHWEIZER SERVICE NOTICE

NOTICE NO N-90.1*

DATE Sept. 7, 1971

PAGE 1 OF 10

Supersedes Service Information
Notice No. N-90,
Dated May 10, 1971

MANDATORY

FAA APPROVED

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MANDATORY

SUBJECT: REPLACEMENT - IDLER PULLEY BEARINGS, P/N 269A5050-62

MODELS AFFECTED: 269C Helicopter Serial Nos. 0004 thru 0092

TIME OF COMPLIANCE: Shall be accomplished at next 50-hour periodic inspection after receipt of parts, on helicopters having 150 or more hours time in service; at first 200-hour periodic inspection after receipt of parts, on helicopters having less than 150 hours time in service.

PREFACE: The information given in this Service Information Notice lists a procedure for a one-time replacement of existing 269A5050-62 idler pulley bearings on the above affected helicopters. Instructions for field replacement of the subject bearings include inspection criteria to ensure that the bearings are not preloaded or misaligned during installation.

Parts required should be ordered from Hughes Tool Company Parts Department.

Reference

269 Series - Basic Handbook of Maintenance Instruction, Revised 1 Aug. 1971

269 Series - HMI Configuration Supplement C, Revised 1 August 1971

(||) Denotes portion of text added or revised

NOTICE NO. N-90.1
DATE Sept. 7, 1971
PAGE 2 of 10

PARTS LIST

<u>Nomenclature</u>	<u>Part No.</u>	<u>Qty</u>	<u>Source</u>
Bearings	269A5050-62	2	HTC-AD
Washer	269A5444-11	4	HTC-AD
Washer	269A5444-13	4	HTC-AD
Washer	AN960PD716 or	3	Commercial
	AN960PD716L	3	Commercial

TOOLS & EQUIPMENT

Installation Sleeve - aluminum, steel or phenolic tube,
1-5/8" O. D. x 0.38/0.50" I. D. x 2.00 in. Lgth
Arbor press, flat bed
Drift - 0.5905 to 0.5901 in. dia.
Fiber mallet
Spring scale - 10 lbs. minimum
Caliper - 10 in. inside and outside
Scale - 12 inches
Torque wrench - 500 in. lbs. minimum
Dial indicator
C-Clamp
Vise
Ball, steel - 5/8" dia. approximately

MATERIALS

Wood Blocks
Solvent - Aliphatic Naptha or equivalent
Primer, Zinc Chromate

PART 1 - REMOVAL OF IDLER PULLEY ASSEMBLY

- a. Remove upper belt drive cover (Refer to Section 10 of Basic HMI).
- b. Disconnect clutch spring assembly from belt drive transmission; remove clutch spring assembly through cutout on lower belt drive cover.
- c. Remove frame strut assembly and lower belt drive cover.
- d. Measure distance between inner faces of idler pulley arms adjacent to idler pulley clutch shaft.

NOTE

Dimension taken in step d. should be approximately 5.125 inches. Upon reassembly, new 269A5444-11 and 269A5444-13 shimming washers will be added to the idler pulley shaft to meet the measured dimension.

- e. Remove cotter pin, nut, washers, tube, spacers and clutch spring assembly attachment bolt from idler pulley arms.
- f. Remove cotter pin, nut and washers securing forward end of idler pulley shaft to pulley arm; retain washers and nut. (Figure 1)
- g. Remove nut, washers and bolt securing aft arm to idler pulley clutch shaft.
- h. Rotate idler pulley assembly on clutch shaft toward engaged position far enough for pulley to clear "H" frame; insert wooden block between forward pulley arm and stop on "H" frame.
- i. Disengage belts from idler pulley grooves; withdraw aft idler pulley arm complete with pulley and retaining bolt. Use a fiber mallet to gently tap threaded end of bolt and withdraw bolt from forward arm.
- j. Withdraw bolt from pulley and aft arm; discard shimming washers.

CAUTION

Clutch shaft is loaded to approximately 50 pounds tension.

- k. Insert a punch or other appropriate tool in open aft bolt hole in clutch shaft. Rotate shaft CW (clockwise) (viewed from aft end) far enough to release spring tension from forward idler arm. Remove wood block from between forward arm and frame assembly.

NOTE

Clutch shaft must be held in this position when performing steps l. and m. below.

- l. Remove nut, washer and bolt securing forward arm to clutch shaft.
- m. Remove forward arm from clutch shaft.
- n. Ease clutch shaft CCW to relaxed position to release spring tension. Remove end spacers, nut, washers, spacer, and bolt securing spring to clutch shaft.
- o. Disconnect spring from spacer on attachment pin.
- p. Remove clutch shaft, two end plugs, and spring from frame assembly.

PART II - REPLACEMENT OF IDLER PULLEY BEARINGS

- a. Position idler pulley on arbor press to provide clearance between press and bearing; using drift (0.5905/0.5901 in. dia.), press spacer from opposite pulley bearing.

NOTE

As the spacer is pressed out, it will extract the opposite bearing from the pulley.

- b. Remove bearing from spacer, using drift and arbor press; mutilate and discard bearing.
- c. Remove opposite bearing from pulley, using drift and arbor press; mutilate and discard bearing.
- d. Using solvent, thoroughly clean spacer, bearing seats in pulley, and bolt holes in pulley arms.

CAUTION

Improper seating of bearing will result if contaminants remain on bearing mating surfaces, resulting in shortened bearing life. Determine that mating surfaces are clean.

- e. Visually inspect idler pulley, idler pulley bolt, spacer and arms; pay particular attention to bearing seats and journals for evidence of galling, grease leakage, excessive heat build-up and cracks. Inspect further for other physical damage to idler pulley assembly component parts. Replace any parts, as required.

f. Install new 269A5050-62 bearing on one end of spacer; use arbor press and installation sleeve (Figure 2, Step 1).

NOTE

If spacer is not a press fit with inner race of first bearing installed in step f., it may be installed with the second bearing in step i.

g. Lightly coat bearing bores with wet zinc chromate primer. Ensure that no zinc chromate primer enters bearings during installation in steps h. and j. below.

h. Install new assembly of bearing and spacer (if spacer is press fit) in pulley bearing seat. Use installation sleeve (ball bearing also recommended) to provide equal support to both inner and outer races of bearing during installation (Figure 2, Step II).

CAUTION

Bearing may cock during installation causing pre-load. Exercise care to determine that bearing is properly aligned and seated. If bearing installs with noticeable difficulty, remove bearing, realign and reinstall.

i. Position pulley on flat bed arbor press for second bearing installation; do not use a plug to support races of bearing seated in pulley.

j. Install second new 269A5050-62 bearing (if spacer was not a press fit with first bearing, it may be installed at this point); use installation sleeve (ball bearing also recommended) to provide equal support to both inner and outer races of bearing being installed (Figure 2, Step III).

k. Check pulley for smooth, non-binding rotation after installation of both bearings.

PART III - BEARING END PLAY AND TIR CHECK

a. Measure and record dimension between outer surface of inner races of the two newly installed bearings.

b. Subtract dimension obtained in step a. above from dimension obtained in Step d. of Part I - Removal of Idler Pulley Assembly; record the result.

c. Combine 269A5444-13 (0.063 in. thick) and 269A5444-11 (0.016 in. thick) washers to provide a thickness equal (+ 0.015 in.) to result obtained in step b. above.

d. Assemble idler pulley on bench as follows (See Figure 3): Install bolt, 269A5444-11 washer, aft pulley arm, and 269A5444-13 washer into pulley. Pass bolt through pulley. Insert -13/-11 washer combination (with a -13 washer against bearing), forward pulley arm, AN960PD716(L) washer and nut. Torque nut to 260/340 inch-pounds. Add additional AN960PD716(L) washers as required to attain torque value and allow insertion of cotter pin.

NOTE

Coat bore of forward and aft arms with wet zinc chromate primer.

e. Position pulley assembly in vise, clamping on head of bolt.

f. Using dial indicator, check for 0.0012 inch maximum TIR runout at outer race of both bearings.

NOTE

If tolerance is exceeded in either step f. or step g., reseal and recheck bearing. It may be necessary to invert one or both bearings to obtain minimum end play. If TIR is exceeded, press bearing halfway out and reseal. Replace bearings as required.

g. With pulley in vise and dial indicator plunger on outer race of bearing, apply a 10-pound axial load to pulley. Check that a minimum of 0.002 inch end play exists.

h. Remove idler pulley from vise; do not disassemble idler pulley.

PART IV - INSTALLATION OF IDLER PULLEY

a. Position idler pulley assembly on belt drive frame and install clutch shaft, end spacers and spring.

b. Install two end plugs with wet zinc chromate primer. Install bolts (heads outboard), washers and nuts to secure arms to clutch shaft. Torque nuts to 20 to 30 inch-pounds.

c. Install bolt, two washers, spacer and nut in center of clutch shaft. Place aft hook of spring on spacer.

- d. Spread belts as necessary for access to forward end of spring. Hold pulley arms against frame stops and compress spring so that forward hook is in alignment with hole for frame pin. Install pin, washer and spacer into belt drive frame so that hook is around spacer and release spring tension. Install washer and cotter pin to retain frame pin.
- e. Measure the dimension between inner faces of idler pulley arms on clutch shaft. Be sure that dimension equals 5.125 ± 0.015 inches.
- f. Install clutch control spring assembly. Measure between outer face of washers at end of assembled clutch spring assembly spacers. Be sure that the dimension is within 0.010 inch of final measurement in e. above.
- g. Engage belts in idler pulley grooves.
- h. Check that idler pulley still has noticeable end play after final installation.
- i. Reinstall lower belt drive cover, frame strut and clutch spring assembly.
- j. Inspect bearing and idler pulley installation for discrepancies.
- k. Perform operational check of belt drive transmission assembly.
- l. Reinstall upper belt drive cover.
- m. Record compliance with this Service Information Notice in Compliance Record of helicopter Log Book.

WEIGHT & BALANCE DATA

Weight and balance not affected.

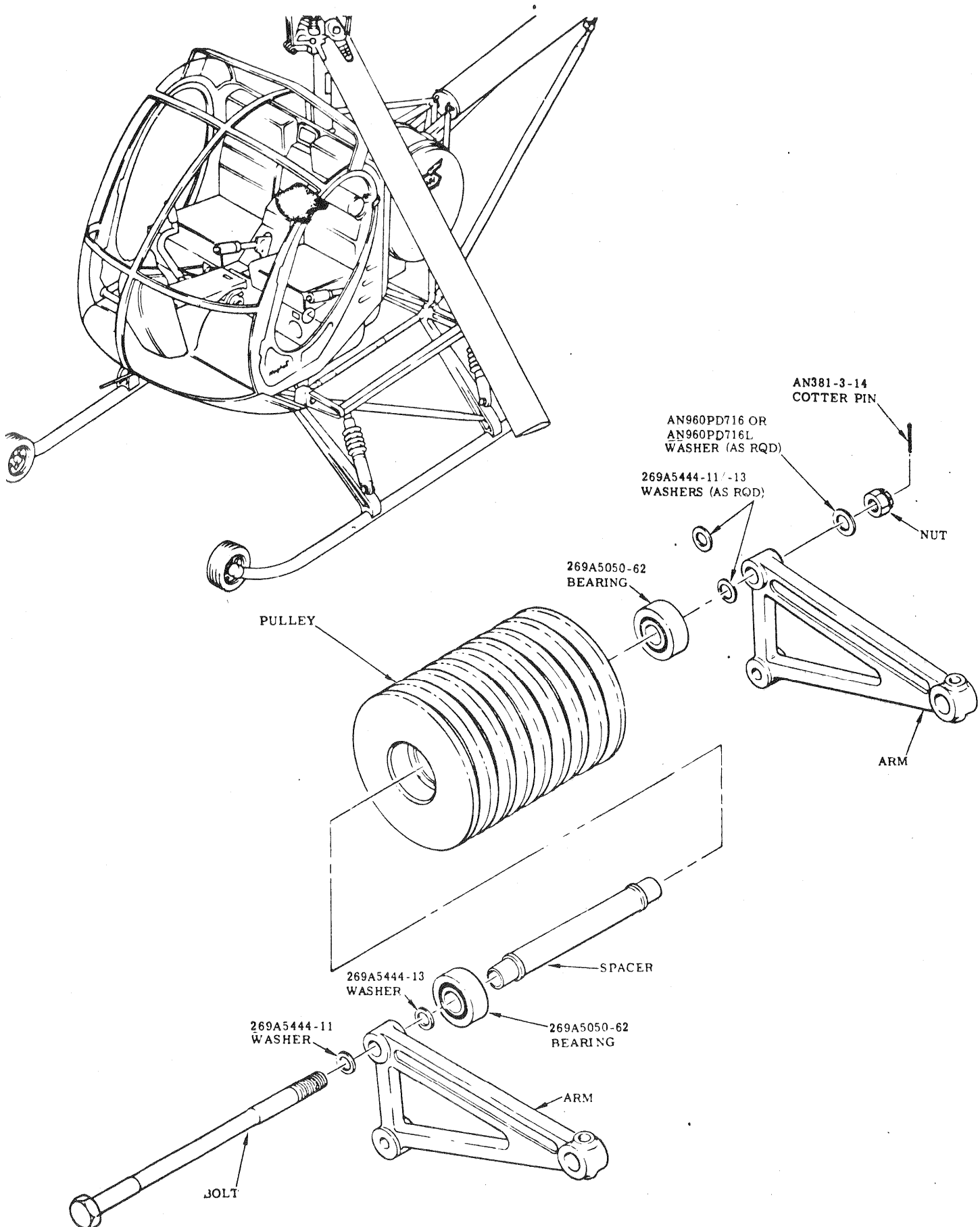


FIGURE 1. BELT DRIVE IDLER PULLEY ASSEMBLY

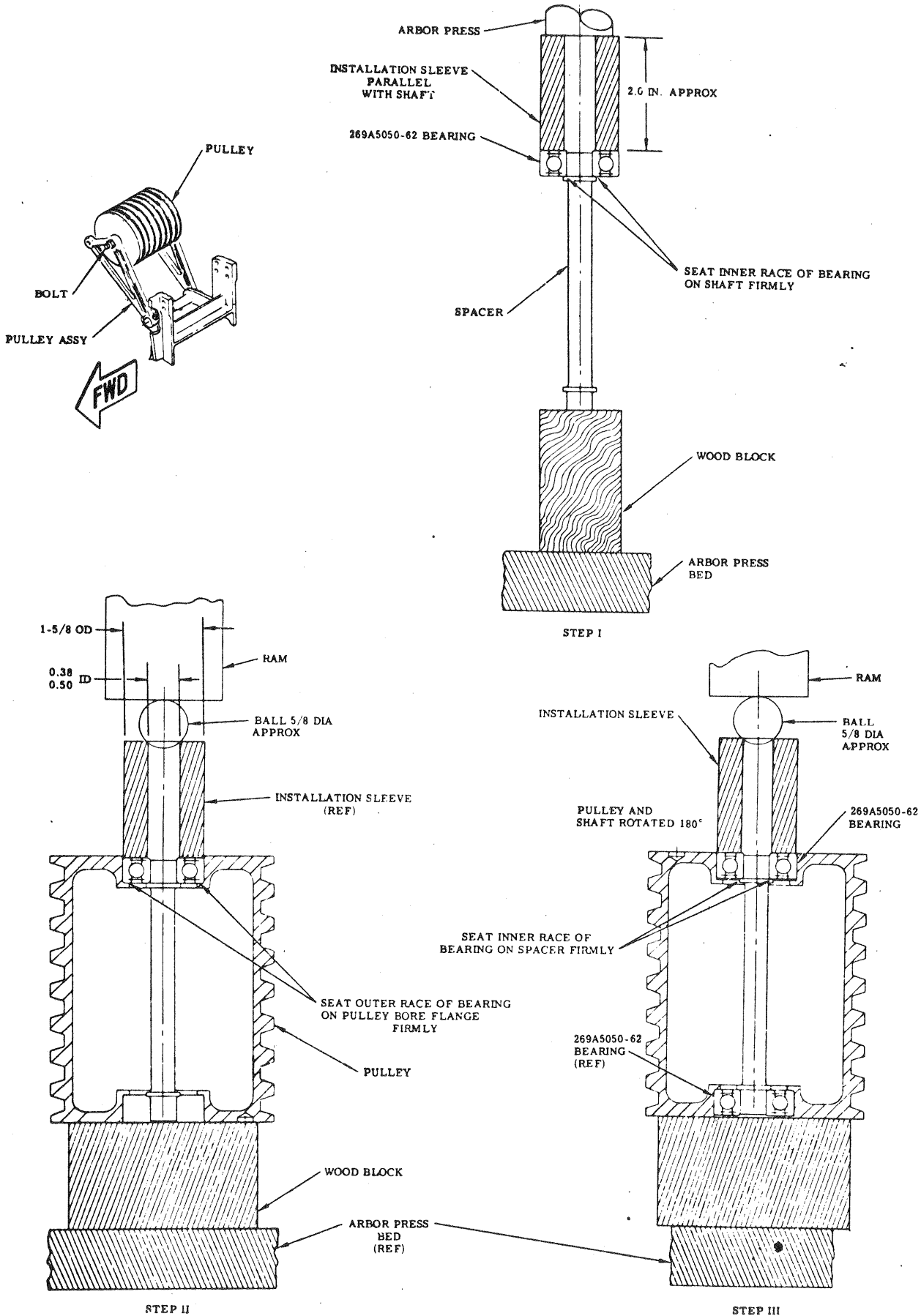
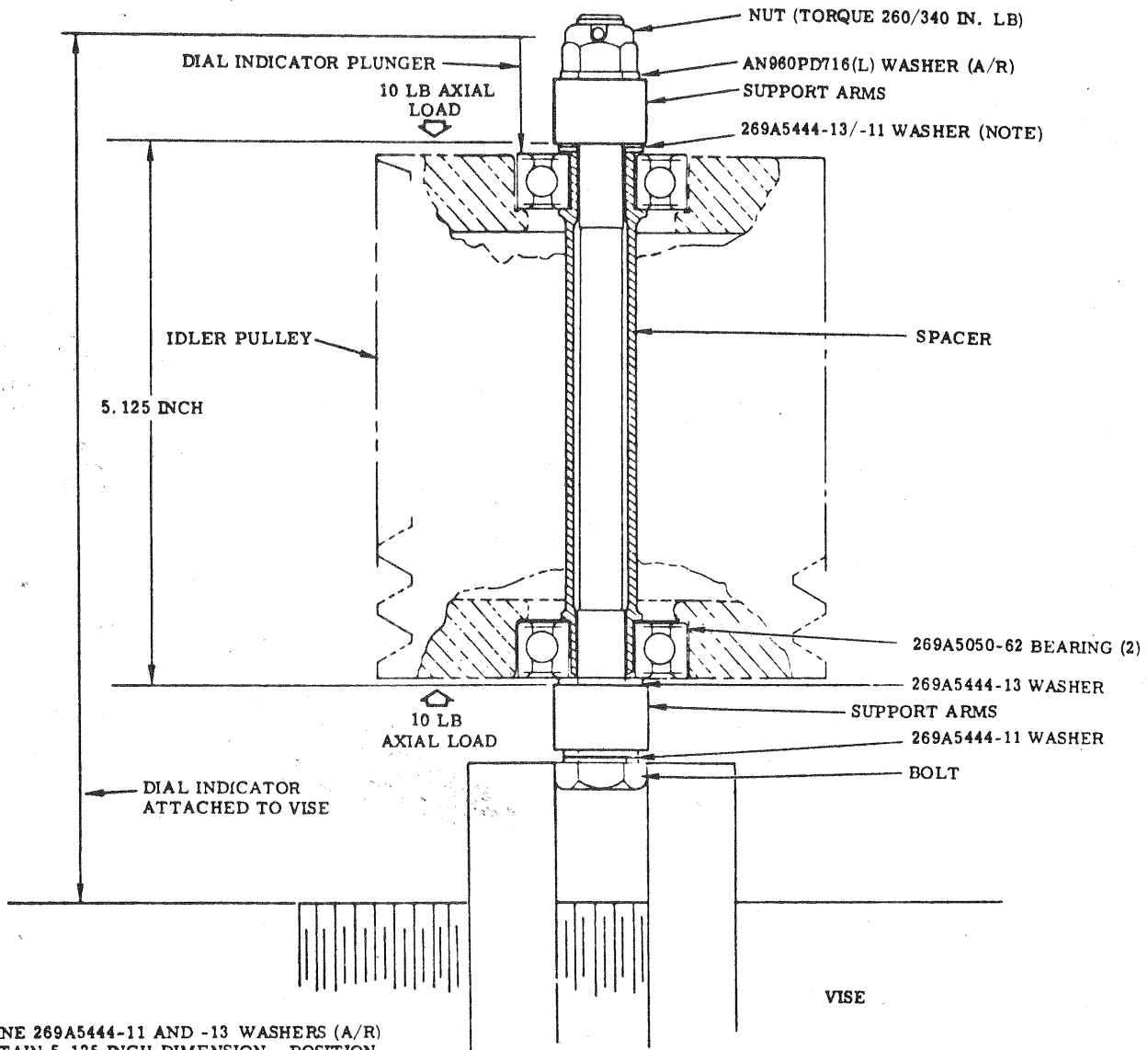


FIGURE 2. INSTALLATION-IDLER PULLEY SHAFT AND BEARINGS



NOTE: COMBINE 269A5444-11 AND -13 WASHERS (A/R) TO OBTAIN 5.125 INCH DIMENSION. POSITION -13 WASHER NEXT TO BEARING.

FIGURE 3. CHECK - BEARING RUN OUT AND PULLEY END PLAY