



# SERVICE BULLETIN

DATE: 10 MAY 1983

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**MANDATORY**

\* Supersedes Service Information Notice HN-164, dated 13 March 1981

## INSPECTION OF OVERRUNNING CLUTCH SPRAG ASSEMBLY

### 1. PLANNING INFORMATION

#### A. MODELS AFFECTED:

All Model 369HE, 369HM and 369H5 Series helicopters equipped with any Cargo Hook

#### B. PREFACE:

This Service Information Notice lists a procedure for inspection of PN 369A5364 Sprag Assembly, 369A5352 Outer Race and 369A5353 Inner Race of PN 369A5350-601 or -603 Overrunning Clutch Assembly for wear in the cages and sprags of the sprag assembly, inner race and outer race. Excessive wear can lead to breakage and malfunction of the sprag assembly. The sprag assembly must be replaced where specified limits are exceeded.

\*\* To establish TIME OF COMPLIANCE, either clutch total time with hook attached may be used, or a separate and permanent log of external load operating mission time (take-off to landing on a flight which involves external load operations) may be used. The log must meet requirements of FAR 91.173.

#### C. TIME OF COMPLIANCE:

\*\*Shall be accomplished for helicopters with sprag assembly exceeding 600 hours in service, within next 50 hours and thereafter each 300 hours; for helicopters with less than 600 hours in service, at next 300-hour inspection and thereafter each 300 hours. The sprag assembly shall be replaced at 1800 hours total service time.

#### D. FAA APPROVAL:

The resultant alteration to the affected helicopters described by the inspection procedure in this Notice has been shown to comply with Federal Aviation Regulations and is FAA Approved.

#### E. WEIGHT AND BALANCE:

Weight and balance are not affected

#### F. REFERENCE:

- 500 Series - Basic HMI (CSP-H-2), Reissued 15 September 1981.
- 500 Series - HMI Appendix C (CSP-H-5), Issued I April 1976.
- FAA Airworthiness Directive No. 81-07-10R1, Dated 30 November 1981.

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**G. PARTS LIST:**

PARTS LIST			
Nomenclature	Part No.	Qty.	Source
Sprag Assembly	369A5364	1	HHI
Outer Race	369A5352	1	HHI
Inner Race	369A5353	1	HHI

**H. TOOLS AND EQUIPMENT:**

TOOLS AND EQUIPMENT	
Nomenclature	Source
Magnifying Lens, 4x	
Outside Micrometer, 1.0000 to 1.5000 inches	
Inside Micrometer, 2.0000 to 2.2500 inches	
Calipers	

**2. INSPECTION PROCEDURE**

- a. Remove overrunning clutch assembly from helicopter in accordance with Section 9 of Basic HMI.
- b. Disassemble overrunning clutch in accordance with Section 9 of Basic HMI and Part II of HMI Appendix C.
- c. Visually inspect sprag assembly for broken drag clips, broken drag strips, cracked cages, broken or distorted ribbon spring, or cracked, broken or missing sprags. Disclosure of any of these discrepancies requires replacement of the sprag assembly.

**CAUTION** Do not remove sprags and clips from sprag assembly. Removal requires replacement of sprag assembly.

- d. Inspect cages for peening or wear; maximum permissible width across inner cage and outer cage windows is 0.208 inch. (See Figure 1 and Figure 2. ) If maximum is exceeded, replacement of sprag assembly is required. Note in Figure 2 that the most pronounced inner and outer cage wear occurs in the outside diameter comers of the crossbars. Wear should be measured at the worst point. Inspect for any wear on inner cage face opposite the flange end.
- e. Using 4x magnifying lens, inspect sprag load surface. If any flats, scoring, heavy pitting or heavy scratches are found on sprag inner or outer surfaces, the sprag assembly must be replaced. (See Figure 3.)

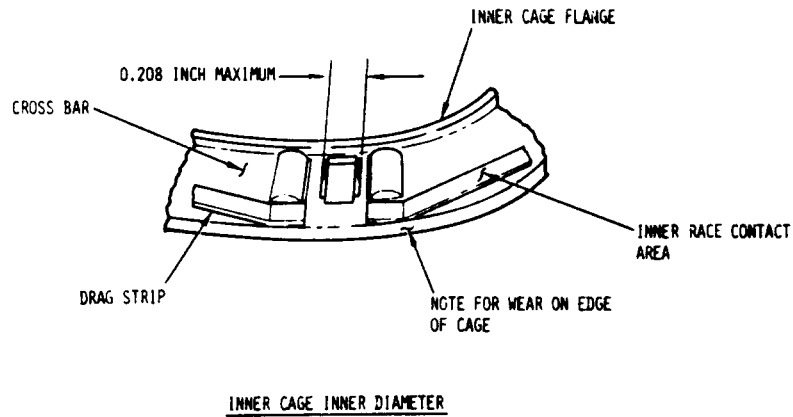
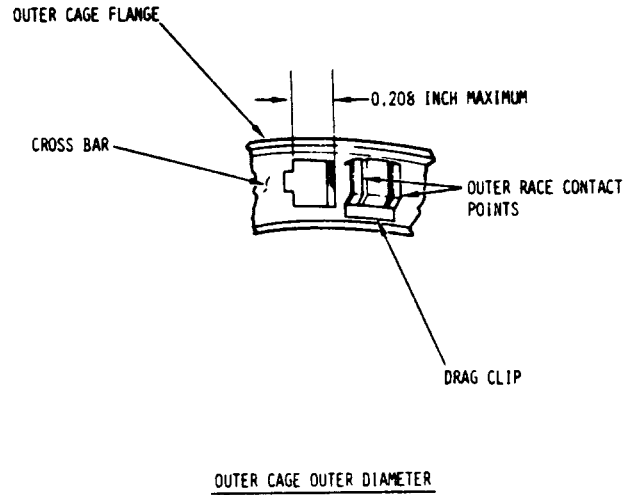
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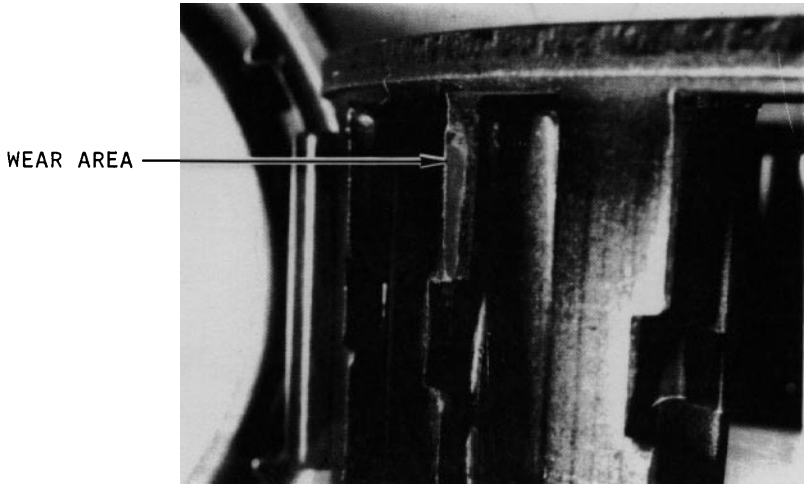
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**Figure 1. Cage Wear Limits**

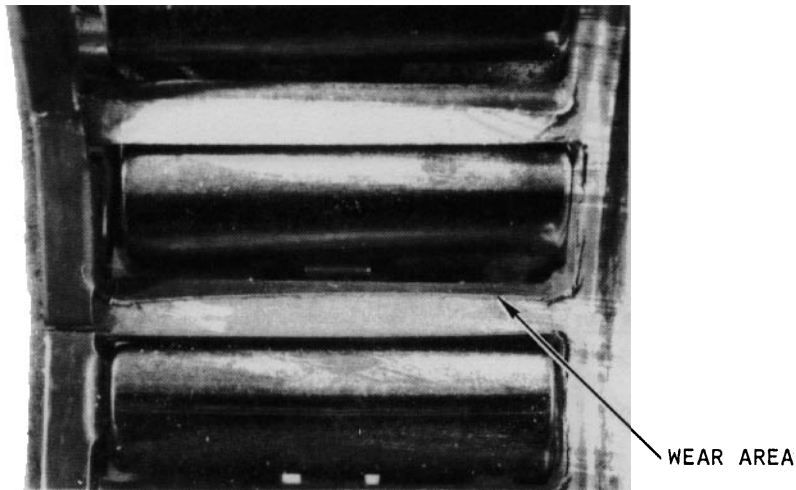
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OUTER CAGE WEAR AREA



INNER CAGE WEAR AREA

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**Figure 2. Excessive Cage Wear**

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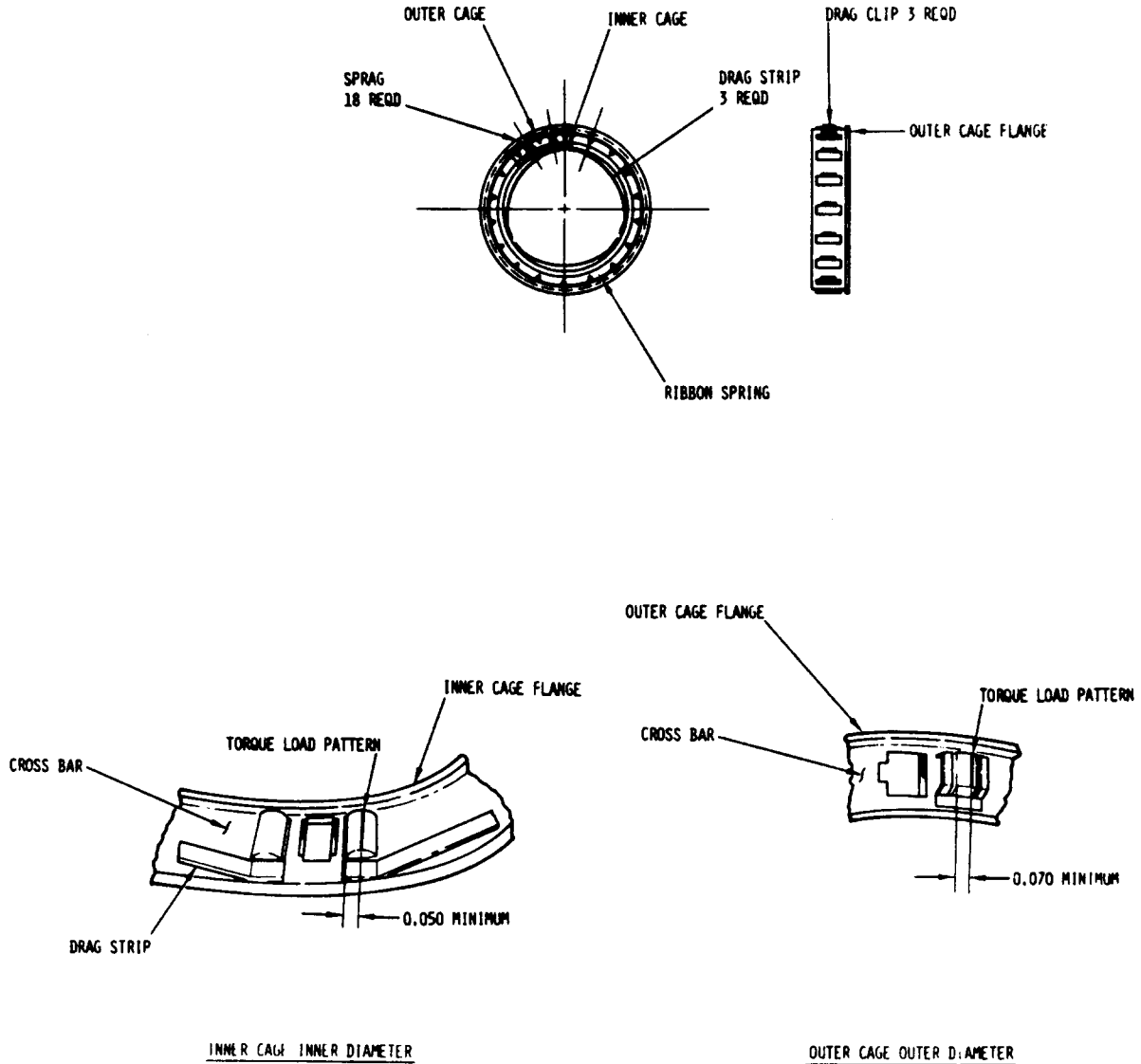
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**Figure 3. Sprag Torque Load Pattern**

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- f. Measure distance from edge of sprags to load pattern. Should the inner surface measurement be less than 0.050 inch minimum or the outer surface measurement be less than 0.070 inch minimum, the sprag assembly must be replaced. (See Figure 3.) On the sprag inner contact surface of all the sprags in a sprag assembly the variation in distance from edge of sprag to load pattern should not exceed 0.030 inch. If this figure is exceeded, replace sprag assembly.
- g. Check dimensions of inner race (369A5353) spragway outer diameter using outside micrometer and outer race (369A5352) spragway inner diameter using inside micrometer. Dimensional minimum limit for the inner race spragway is 1.4990 inch. Dimensional maximum limit for the outer race spragway is 2.1565 inch. (Refer to Part II, Section 2 of HMI Appendix C.)
- h. Using 4x magnifying lens visually inspect inner race and outer race for brinelling, scoring or pitting. On the inner race pay particular attention to area around oil drain holes for cracks. No defects are allowed. If any are found, replace inner race or outer race as applicable. (Refer to Part II, Section 2 of HMI Appendix C .)
- i. If the 369A5364 sprag assembly is replaced for any reason other than broken drag clips or drag strips or distorted ribbon springs, magnaflux inner race and outer cage per Part II, Table 3-2 of HMI Appendix C. Disclosure of any defect requires replacement of inner race or outer race as applicable.
- j. Reassemble overrunning clutch assembly in accordance with Section 9 Basic HMI.
- k. Reinstall clutch assembly into helicopter in accordance with Section 9 of Basic HMI.
- l. Record compliance with this Service Information Notice in Compliance Record of helicopter log book.

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