

SERVICE BULLETIN SB-77

DATE: 25 April 1995

TO: All R22 Owners, Operators, and Service Centers

SUBJECT: Replacement of V-Belt Upper Sheave

ROTORCRAFT AFFECTED: R22 helicopters with A170-1 or -2 revision I or J sheaves installed. (These sheaves were originally installed on R22 helicopter S/N 1441 thru 2096 and on overhauled R22s completed from May 1990 thru May 1992.)

TIME OF COMPLIANCE: Prior to 31 October 1995 or within next 200 flight hours, whichever occurs first. Inspect affected sheaves per R22 Service Bulletin SB-71 until sheave is replaced.

BACKGROUND: Since Service Bulletin SB-71 was issued, additional cracked sheaves have been reported. To avoid the possibility of a catastrophic failure, this Service Bulletin requires that all affected sheaves be removed from service within a reasonable period of time. Figures 1 and 2 clarify identification of affected sheaves.

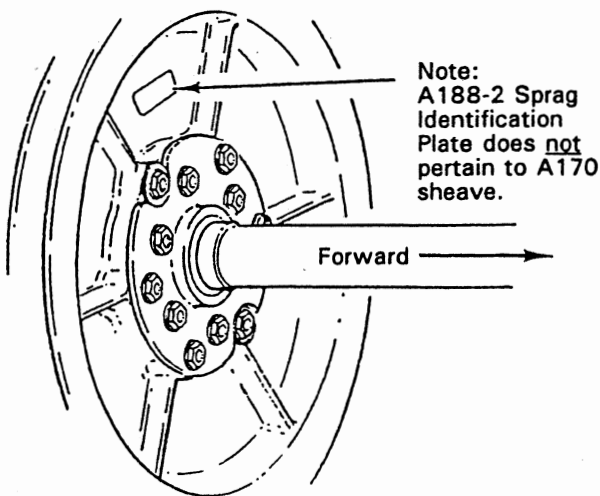


FIGURE 1

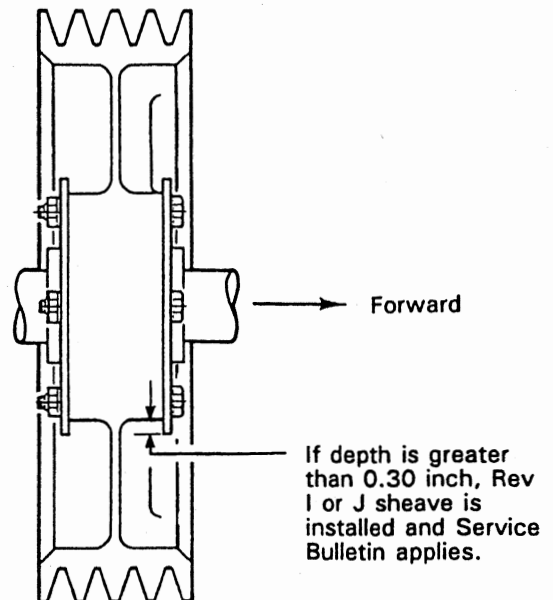


FIGURE 2

(OVER)

COMPLIANCE PROCEDURE:

- 1) For each clutch assembly to be modified, reference helicopter serial number and order following parts:

<u>Part</u>	<u>Qty</u>
A170-1 or A170-2 sheave	1
A966-1 seal	2
A215-035 O-ring	2

Also required:

Hydraulic Press
MT229-1 Tool Set (includes MT229-2, MT229-3, and hardware)
MT303-1 Bearing Removal and Installation tools
A257-4 Oil

- 2) Remove clutch assembly from helicopter per section 7.210 steps (a) thru (g) of R22 MM. Note position of A907 yoke on clutch shaft for reassembly and remove both yokes per Sections 7.260 and 7.270 of R22 MM.
- 3) Remove aft A168-1 retainer per steps (a) thru (d) of aft clutch seal replacement procedure in section 7.215 of R22 MM.

Note: remove paint ridge from clutch shaft as shown in Figure 3 using Scotch-Brite or 400 grit or finer sandpaper before removing retainer to prevent damage to new seal during installation.

- 4) Install MT229-2 retainer using supplied hardware as shown in Figure 3. Torque cap screws to 30 in.-lb. Remove remaining two NAS1304-27 bolts.
- 5) Remove sheave from clutch assembly per Figure 4. Support sheave and press on MT229-3 tube. To prevent damage to clutch bearings, DO NOT press against end of shaft. Take care to ensure shaft does not fall to floor as it is pressed from sheave. Scrap old sheave; it is not necessary to salvage A188-2 sprag identification plate.
- 6) Clean and remove any loose primer from flanges of A167-1 housing per Figure 5 using Scotch-Brite or 400 grit or finer sandpaper. Touch up with light coat of epoxy primer per Section 1.410 of R22 MM or with zinc-chromate primer and allow primer to dry.
- 7) Heat new sheave to $200 \pm 25^{\circ}\text{F}$ in oven or in boiling water.
- 8) Install four NAS1304-27 bolts and AN960-416L washers in outer row of forward retainer for alignment of sheave holes. Install dry sheave, ensuring sheave ribs are forward on aircraft (toward long end of shaft). Install A141-14 large diameter washers and NAS679A4 nuts on two opposite NAS1304-27 bolts and remove remaining two NAS1304-27 bolts. Torque to 120 in.-lb (includes nut self-locking torque).
- 9) Remove MT229-2 retainer.
- 10) Perform steps (e) thru (k) of aft clutch seal replacement procedure in section 7.215 of R22 MM.

- 11) Install two NAS1304-27 bolts and A141-14 large diameter washers at cut-outs in forward retainer to hold inner clutch assembly together while replacing forward seal. Install one AN960-416L washer and NAS679A4 nut on each bolt and torque to 120 in.-lb (includes nut self-locking torque).
- 12) Perform forward clutch seal replacement per section 7.215 of R22 MM. Remove any paint ridges from clutch shaft which may cause seal damage during retainer installation.
- 13) Torque all nuts to 120 in.-lb (includes nut self-locking torque) and torque stripe nuts to aft retainer. Install A184 clutch bearing per R22 MM section 7.214. Install yokes per Sections 7.260 step (a) and 7.270 steps 1 and 2 of R22 MM. Touch up areas where paint was removed with epoxy primer per Section 1.410 of R22 MM or with zinc-chromate primer.
- 14) Install clutch assembly per section 7.220 of the R22 MM.
- 15) Check sheave alignment per R22 MM section 7.230.

Approximate Cost:

Labor: 4 manhours

Parts: List prices are as follows:

A170-1 sheave (standard)	\$ 1216.00
A170-2 sheave (steel-sprayed)	2298.00
MT229-1 tool set	36.00

A 50% discount will be applied to sheaves and MT229-1 tool set if ordered before 31 August 1995 (order must include helicopter serial number).

(OVER)

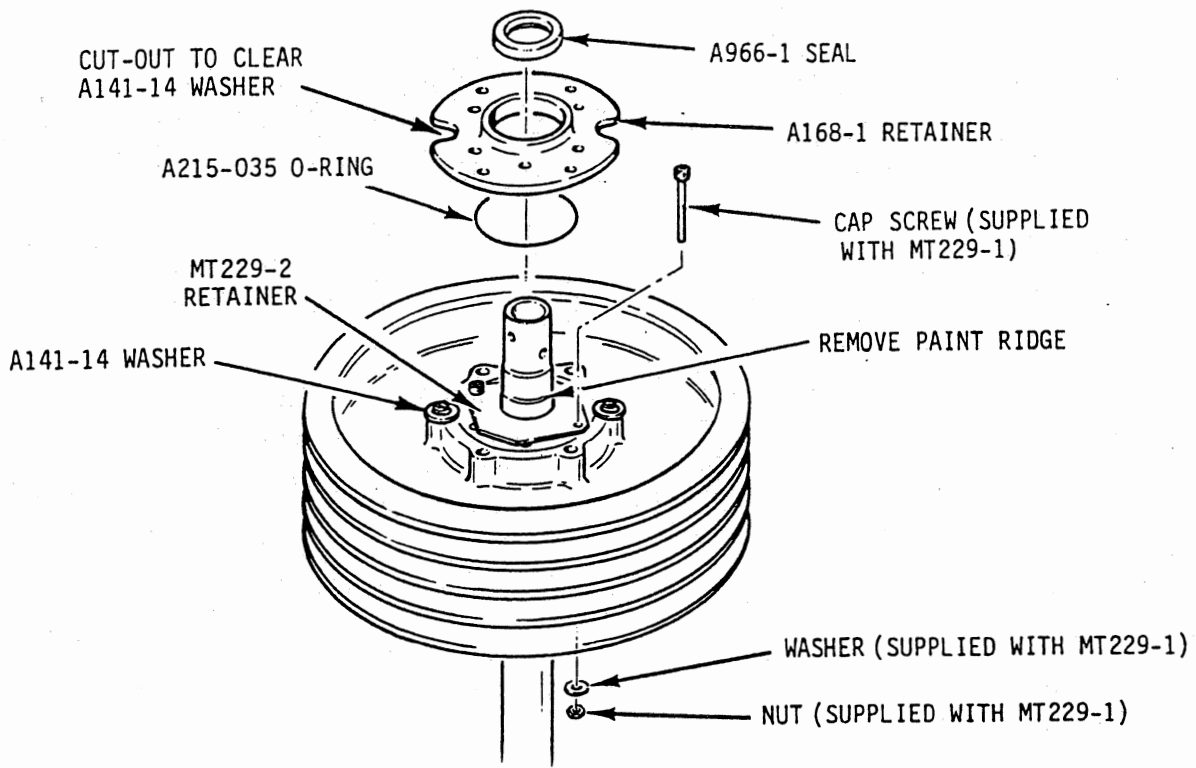


FIGURE 3

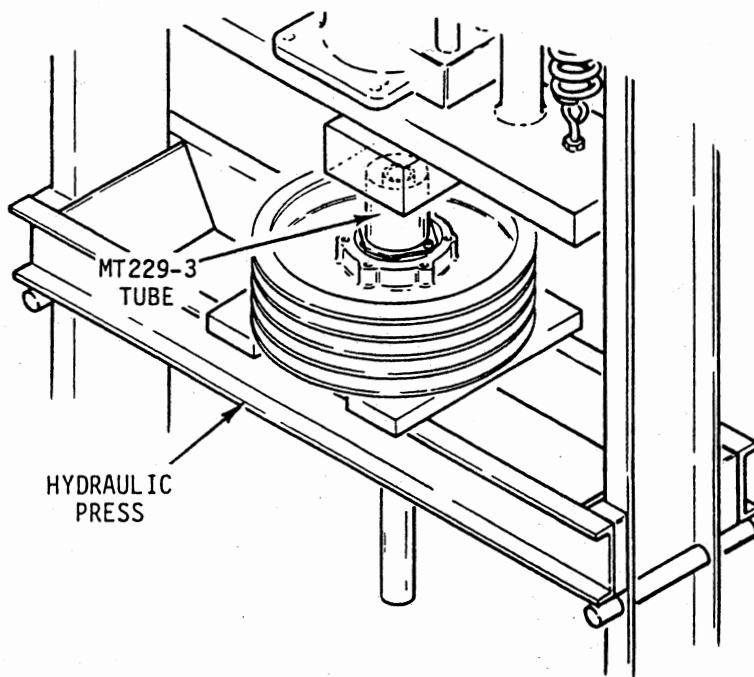


FIGURE 4

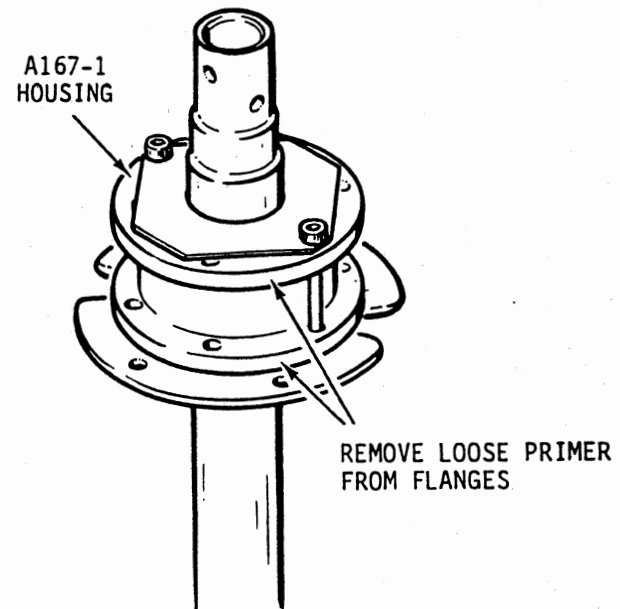


FIGURE 5