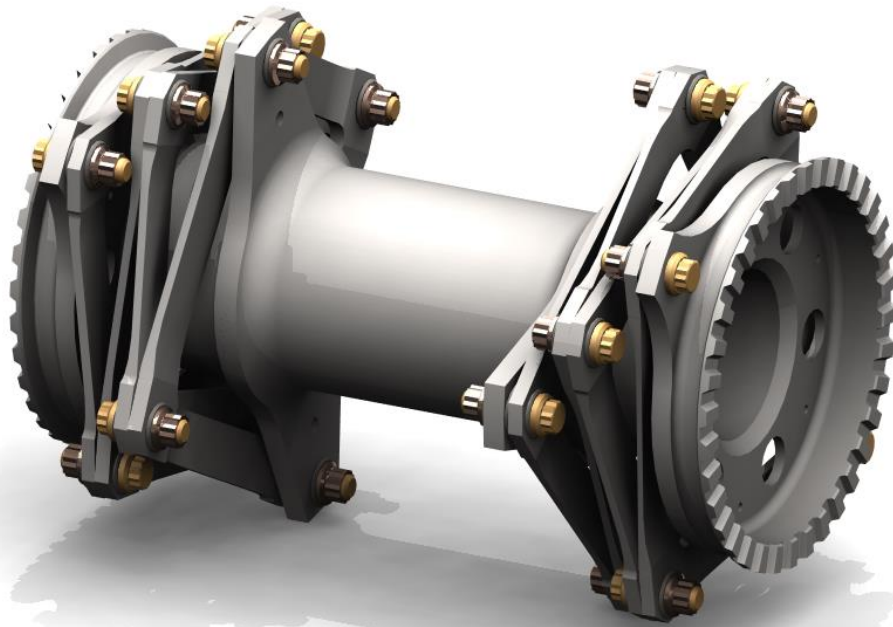


Maintenance and Repair of the KAflex[®] Driveshaft for the Bell UH-1H Helicopter.



KAMATICS CORPORATION
INSTRUCTIONS FOR CONTINUED AIRWORTHINESS 3303

This Instruction for Continued Airworthiness consists of the following sections:

1. KAflex Driveshaft Inspection
2. KAflex Driveshaft Maintenance
3. KAflex Driveshaft Repair

LOG OF REVISIONS TO KAMATICS CORPORATION
INSTRUCTIONS FOR CONTINUED AIRWORTHINESS 3303

Revision	Reason	Prepared By
NC		AJZ
A	Removed all references to overhaul operations in accord with FAA Policy Statement PS-AIR-21.50-01	ML

SECTION 1
INSPECTION OF KAflex DRIVESHAFT

1. Scheduled Inspections

DAILY INSPECTION
BEFORE FIRST FLIGHT OF THE DAY

1. Check general condition of KAflex Driveshaft.
 - a. Check for loose and missing hardware (bolts, nuts, washers). If loose or missing hardware is found, replace with a serviceable unit.
 - b. Inspect flex frame and mount bolt torque stripes for evidence of slippage.

WARNING

DO NOT disturb or tighten flex frame nuts or bolts. Evidence of turning fasteners by wrench or other means is cause for rejection.

100 HOUR INSPECTION

1. Check general condition of KAflex Driveshaft.
 - a. Check for loose and missing hardware (bolts, nuts, washers). If loose or missing hardware is found, replace with a serviceable unit.
 - b. Inspect flex frame and mount bolt torque stripes (yellow) for evidence of slippage. If the torque stripes have faded, touch up using Loctite E-20HP Hysol Epoxy Adhesive, Fast Setting or equivalent available from Henkel North America at <http://www.henkelna.com>.

WARNING

DO NOT disturb or tighten flex frame nuts or bolts. Evidence of turning fasteners by wrench or other means is cause for rejection.

100 HOUR INSPECTION (continued)

- c. Inspect KAflex Driveshaft for damage and corrosion. Refer to Figure 1 for damage and repair limits.

- d. Inspect KAflex Driveshaft flex frame joints for fretting dust which would show up as red metallic residue or debris. If grease, oil or dirt is covering suspected area, or any doubt exists as to whether actual fretting has occurred, clean suspected areas thoroughly and recheck in conjunction with next daily inspection.
If fretting is apparent, replace with a serviceable unit.
- e. Inspect KAflex Driveshaft for any signs of contact, rubbing, or abrasion. Refer to Figure 1 for damage and repair limits.

OUT OF AIRCRAFT INSPECTION

Note

This inspection is to be done at 1200 hour intervals (or 12 months of component operation, whichever occurs first). This inspection reads like the 100 hour inspection, but will be more comprehensive with the driveshaft out of the aircraft.

1. Check general condition of KAflex Driveshaft.
 - a. Check for broken, loose, or missing hardware (bolts, nuts, washers). If loose or missing hardware is found, replace with a serviceable unit.
 - b. Inspect flex frame and mount bolt torque stripes (yellow) for evidence of slippage. If the torque stripes have faded, touch up using Loctite E-20HP Hysol Epoxy Adhesive, Fast Setting or equivalent available from Henkel North America at <http://www.henkelna.com>.

WARNING

DO NOT disturb or tighten flex frame nuts or bolts. Evidence of turning fasteners by wrench or other means is cause for rejection.

OUT OF AIRCRAFT INSPECTION (continued)

- c. Inspect KAflex Driveshaft for damage and corrosion. Refer to Figure 1 for damage and repair limits.
- d. Inspect KAflex Driveshaft flex frame joints for fretting dust. This would show up as red metallic residue or debris. If grease, oil or dirt is covering a suspected area, or any doubt exists as to whether actual fretting has

occurred, clean suspected areas thoroughly and recheck.

If fretting is apparent, replace with a serviceable unit.

- e. Inspect KAflex Driveshaft for any signs of contact, rubbing, or abrasion. Refer to Figure 1 for damage and repair limits.
- f. Enter the 1200 hour inspection record in the historical data card enclosed with this service manual.

5,000 HOUR REMOVAL

1. After 5,000 hours of operation, the driveshaft should be removed from the aircraft and replaced with a serviceable unit.

2. Conditional Inspections

Note

The following inspections detail special inspection instructions applicable to KAflex Driveshaft. Refer to appropriate Bell and Textron-Lycoming maintenance manuals for airframe and engine special inspection instructions.

1. Overtorque

- a. 110-120% overtorque, perform a daily inspection on KAflex Driveshaft.
- b. 120+% overtorque, replace with a serviceable unit.

2. Overspeed

- a. <114% overspeed, no KAflex Driveshaft inspection necessary.
- b. >114% overspeed, replace with a serviceable unit.

3. Sudden Stoppage

- a. Perform a 100 hour inspection on the KAflex Driveshaft. Inspect freewheeling clutch assembly for evidence of overtorque. If clutch sprags are chipped or broken, if there is evidence of static brinelling of clutch races or other evidence of torsional overload, replace with a serviceable unit.

4. Hard Landing

- a. If any of the following components do not pass their respective inspection criteria, the KAflex Driveshaft must be replaced with a serviceable unit:
 - i. Main Rotor Hub
 - ii. Main Rotor Mast
 - iii. Main Transmission, Main Transmission Mounts, Drag Pin, Drag Plate
 - iv. Freewheeling Clutch Assembly
 - v. Engine or Engine Mounts
- b. Even if none of the items in Item 'a' above show the effects of the hard landing, perform a 100 hour inspection on the KAflex Driveshaft.

5. After Lightning Strike

- a. Lightning damage can show as burn marks, heat discoloration, arc marks, or as small weld marks (where the metal has melted and became solid again).
- b. If any evidence of lightning damage is found on the driveshaft or adjacent components as described in Item 'a' above, remove driveshaft and replace with a serviceable unit.

6. Compressor Stall/Surge

- a. Remove and examine the condition of the driveshaft.
- b. If any damage suspected to be related to the compressor stall or surge is found, remove the driveshaft and replace with a serviceable unit.
- c. If no defects were detected, return the driveshaft to service.

7. Pylon Whirl

- a. Pylon Whirl is an elliptical motion of the pylon which occurs after blade flapping and mast bumping. Pylon Whirl inspection will be performed if any of the following conditional events has occurred:
 - i. An abnormal landing
 - ii. Excessive slope landing
 - iii. Helicopter was operated in severe turbulence
 - iv. Low rotor RPM during flight

- v. Application of extreme and rapid cyclic control input
 - vi. Main Driveshaft Coupling has contacted the Isolation Mount
-
- b. Examine Isolation Mount for damage caused by contact from Main Driveshaft.
 - c. If the Isolation Mount shows signs of damage, remove driveshaft and replace with a serviceable unit.

SECTION 2
MAINTENANCE OF KAflex DRIVESHAFT

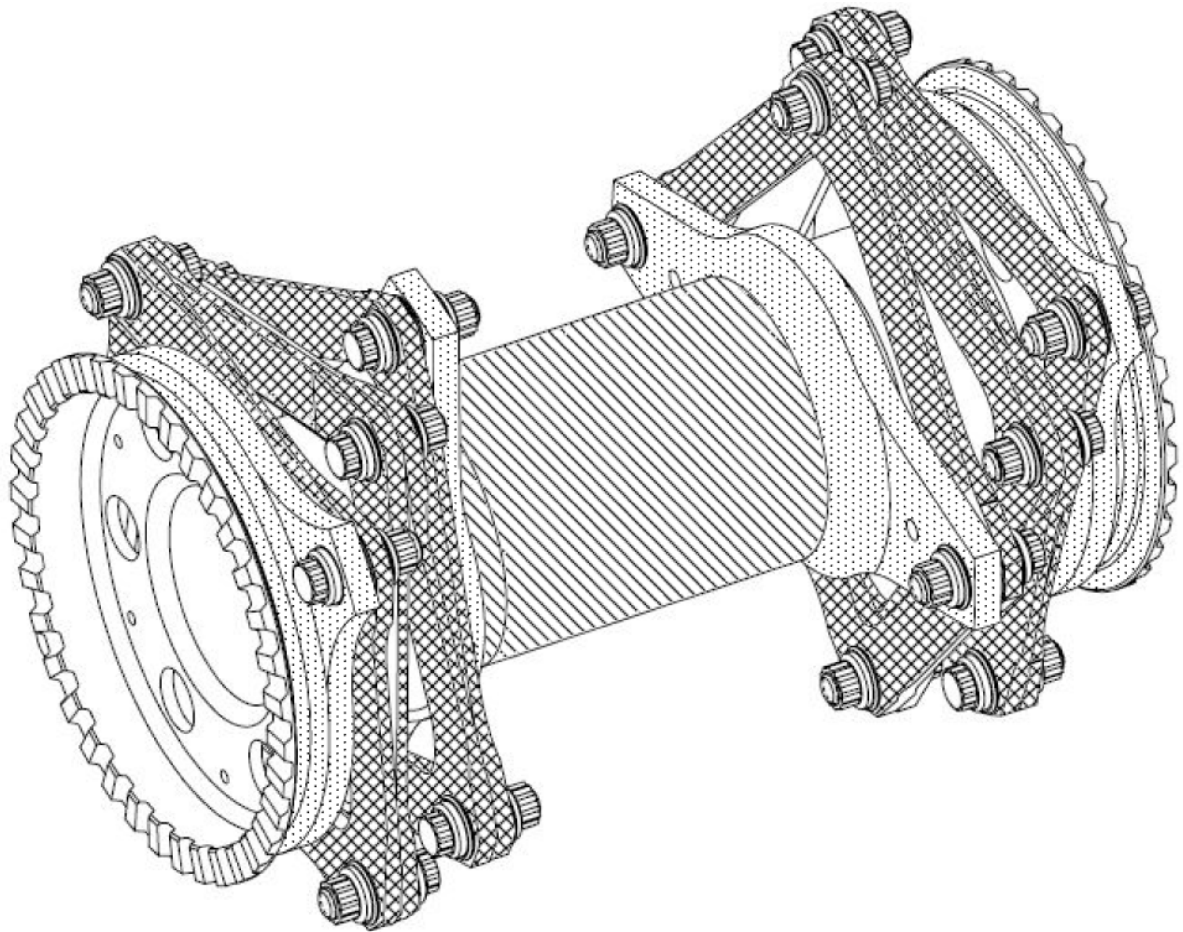
1. There is no periodic maintenance requirement for the KAflex Driveshaft.
2. The following maintenance practices will be incorporated as follows:

The KAflex Driveshaft is not field-overhauled. DO NOT disturb or tighten flex frame nuts or bolts during inspections. Evidence of turning fasteners by wrench or other means is cause for rejection.

- a. Any time the KAflex Driveshaft is transferred from one aircraft to another, a 100 hour inspection should be performed at this time. Subsequent 100 hour inspections should be performed at aircraft 100 hour intervals.
- b. The KAflex Driveshaft is to be removed at 5,000 hours and replaced with a serviceable unit.

SECTION 3
REPAIR OF KAflex DRIVESHAFT

1. Refer to Figure 1 for repair criteria. All blends shall be smooth at maximum depth and smoothly blended with surrounding surfaces.
2. The KAflex Driveshaft is not field overhauled. DO NOT disturb or tighten flex frame nuts or bolts during inspections or repairs. Evidence of turning fasteners by wrench or other means is cause for rejection.
3. The KAflex Driveshaft is to be removed at 5,000 hours replaced with a serviceable unit.



DAMAGE LOCATION SYMBOLS

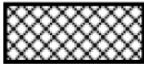

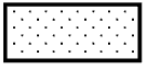


Type of Damage	Maximum Damage and Repair Depth			
				
MECHANICAL	0.001" before and after repair	0.005" before and after repair	0.005" before and after repair	0.015" before and after repair
CORROSION	Surface, no pits	0.005" before and after repair	0.005" before and after repair	0.010" before and after repair
MAXIMUM AREA PER FULL DEPTH REPAIR	0.05 in ²	0.10 in ²	0.25 in ²	0.25 in ²
NUMBER OF REPAIRS	One per leg			
EDGE DENTS, NICKS	0.001 in	0.010 in	0.010 in	0.025 in

FIGURE 1: Damage Limits – KAFlex Driveshaft

NOTES:

1. No cracks are permitted
2. Repairs must be no less than 1.000 inch apart.
3. Repairs not to be within 0.500 inches of bolt hole.
4. Faying surfaces must be free of any raised metal areas.
5. All repairs to be smooth at maximum depth and smoothly blended with surrounding surface.
6. Exposed bare metal may be touched up with Sermetel Product 1122 or 196 available from Praxair Surface Technologies. Zinc Chromate, primer color T, even though it does not blend cosmetically with Sermetel coating, can be used if Sermetel touch-up products are unavailable.
7. Sides and corners of flex frames are to be treated as  areas.
8. If damage exceeds limit specified in this section, replace with a serviceable unit.