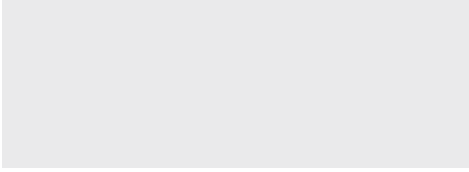
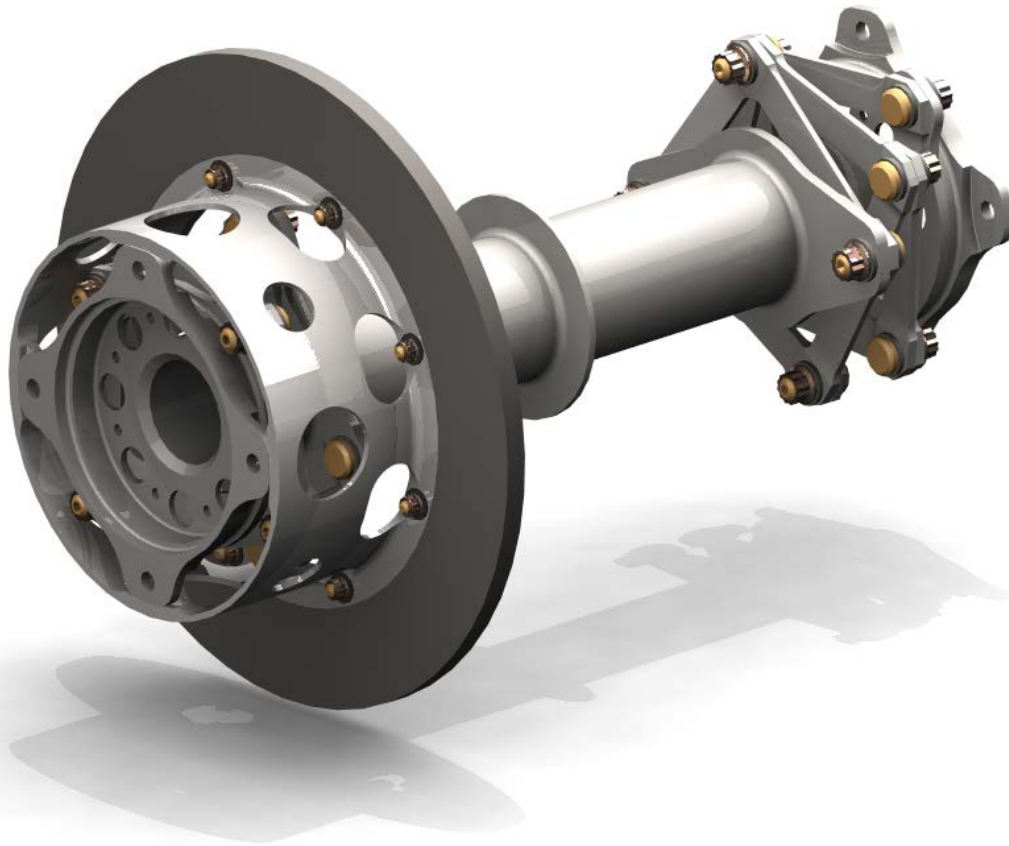


Service Instruction Number SIN2975 Revision C



Installation, Maintenance, and Repair of the KAflex® Rotor
Brake Kit for the Bell 206 A/B and 206B3 Helicopter.



KAMATICS CORPORATION SERVICE INSTRUCTION NUMBER 2975

This Service Instruction consists of the following sections:

1. KAflex® Rotor Brake Retrofit to existing KAflex Driveshaft installation. This applies to an aircraft with a KAflex Driveshaft previously installed per Kamatics Corporation Service Instruction Number 2348
2. KAflex Rotor Brake Components Inspection
3. KAflex Rotor Brake Components Maintenance and Repair
4. KAflex Federal Aviation Administration Supplemental Type Certificate Number SH7951SW
5. Installation Drawing, KAflex Rotor Brake Modification, SKCP2975
6. Flight Manual Supplement, Bell 206 A/B and Bell 206 B3 KAflex Rotor Brake Modification

The kit for use with this Service Instruction is in accordance with Installation Drawing SKCP2975 and consists of the items listed on SKCP2975 Sheet 1 (Bill of Material) in Section 5 of this Instruction. In addition, the kit includes an Historical Service Record (hard card), a Certificate of Conformance for the parts and a Flight Manual Supplement. The Historical Service Record and the Flight Manual Supplement are in a pocket in the rear cover of this Service Instruction. Please check parts before continuing.

The following special tool will be needed to complete Section 1 of this Service Instruction:

Workaid, KAflex Frame Compressor P/N SKSP1321, SKSP1375 or SKSP1404.

LOG OF REVISIONS TO KAMATICS CORPORATION
SERVICE INSTRUCTION NUMBER 2975

Revision	Reason	Prepared By
Basic	Preparation of basic manual	J. Miller
A	Updated formatting, added SKSP1404 installation tool illustration and associated references	J. Parekh
B	Revised to account for possible change in OEM hardware due to EASA SIB No: 2012-06R2.	A. Zink
C	Additional revisions related to EASA SIB No: 2012-06R2. Kamatics-supplied MS21042 nuts removed from locations connecting the Kaflex driveshaft to the helicopter.	A. Zink

LOG OF REVISIONS TO KAMATICS CORPORATION

SERVICE INSTRUCTION NUMBER 2975

[illegible]

*Note: Only Sections 1 and 3 require DER approval.

KAMATICS CORPORATION SERVICE INSTRUCTIONS

Subject: KAflex Rotor Brake Retrofit

Installation Note: Installation of the KAflex Rotor Brake Retrofit cannot be accomplished unless the KAflex driveshaft has been installed in accordance with Federal Aviation Administration Supplemental Type Certificate Number SH7767SW as shown in Kamatics Corporation Service Instruction Number 2348. This Supplemental Type Certificate applies only to those aircraft with dual caliper rotor brakes installed in accordance with BHT Service Instruction 206-105, Dual Rotor Brake.

This installation is incompatible with BHT Service Instruction 206-30 or 206-63, both titled Rotor Brake and both currently inactive.

SECTION 1

KAflex ROTOR BREAK RETROFIT

1. Preparation and General Notes

- a. This Service Instruction applies to the KAflex Rotor Brake only and must follow or be performed concurrently with installation of the KAflex Driveshaft in accordance with Federal Aviation Administration Supplemental Type Certificate Number SH7767SW for installation drawing SKCP2348.
- b. If the aircraft already has the KAflex Driveshaft installed, remove the driveshaft in accordance with Kamatics Service Instruction 2348. If the aircraft has the gear coupling installed, it will be necessary to first proceed with the installation of the KAflex Driveshaft in accordance with Kamatics Service Instruction 2348. If the KAflex Driveshaft is being installed, complete Part 3 of Section 1, KAflex Driveshaft Retrofit of Kamatics Service Instruction 2348, before continuing with the installation of the KAflex Rotor Brake as described herein.

Note

From this point, this Instruction assumes that the aircraft has been modified to incorporate the KAflex Driveshaft in accordance with Federal Aviation Administration Supplemental Type Certificate Number SH7767SW for installation of the KAflex Driveshaft in accordance with Installation Drawing SKCP2348.

2. Removal of Bell Rotor Brake

- a. Unbolt two 4000371(-1) or 4000397(-2) brake assemblies and move them back out of the way. It is not necessary to bleed the hydraulic system at this point. It will be easier to refill the system later if the hydraulic system remains closed. Because it will be desirable to move the caliper assemblies as far out of the way as line slack allows, protect any painted surfaces of the aircraft on which the caliper assemblies will rest. The most likely place for damage to the paint is the left side of the aircraft.
- b. Inspect caliper assemblies to make sure that Bell Part Number 206-040-426-1 laminated washers are removed from the aft surface of the feet of the caliper assemblies. If the washers are stuck in place, remove them with a plastic scraper and remove any residue from this surface to produce a flat surface on both calipers.

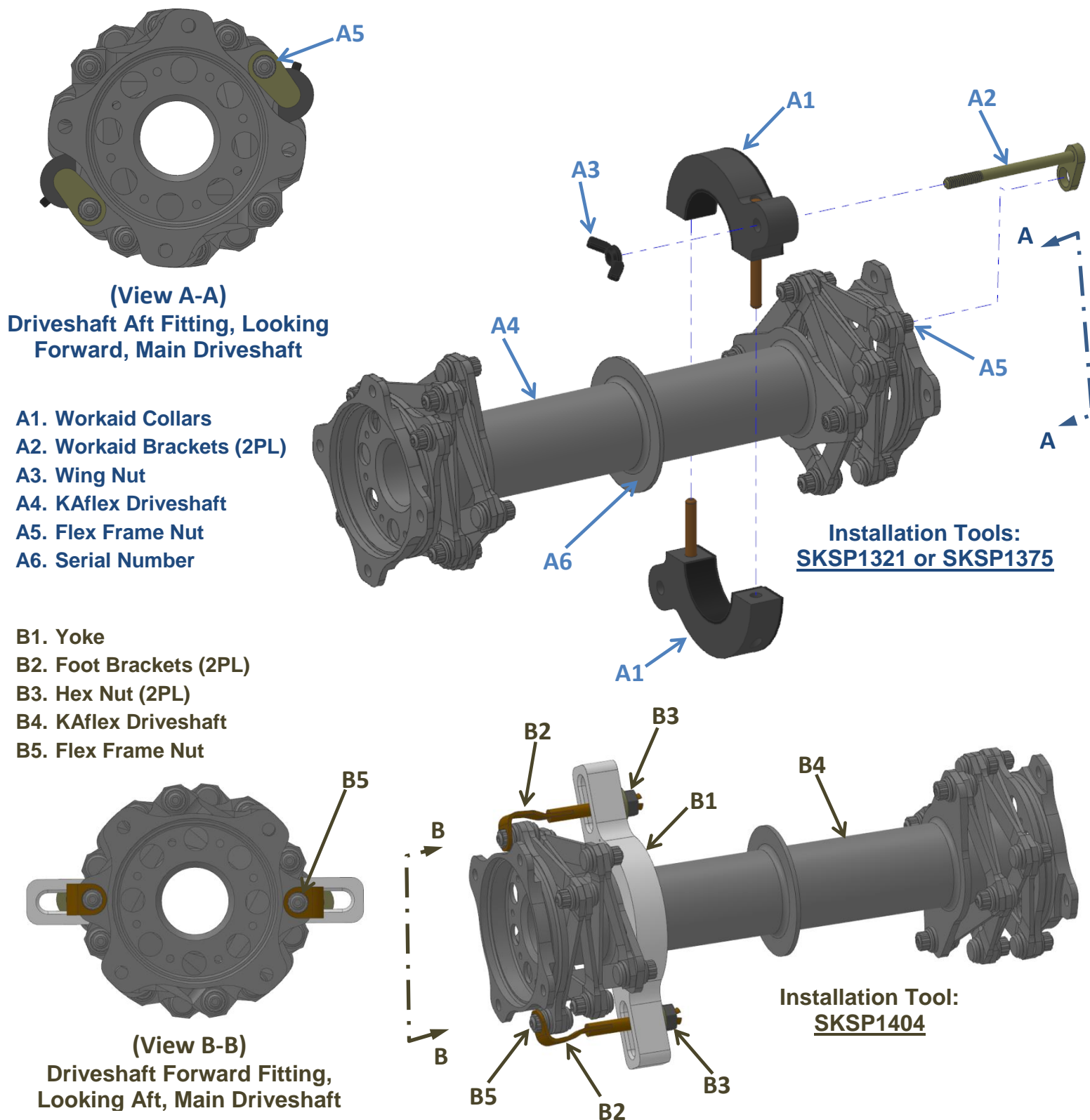
2. Removal of Bell Rotor Brake (continued)

- c. If the caliper assemblies have not been brought in accordance with BHT Service Instruction Number 207-87-120, Dual Caliper Rotor Brake Assembly, Modification of, for removal of asbestos caliper pads, remove the calipers and make them compliant to the technical bulletin at this time.
- d. Install Workaid on driveshaft as shown in Figure 1 and compress forward frames.
- e. Remove clear rust inhibiting coating from SKCP2962 Rotor Brake Disk with acetone.

CAUTION

Be certain to observe Manufacturer's Recommended Safety Procedures when using acetone.

- f. Install SKCP2962 Rotor Brake Disk on SKCP2967 Cup using 8 AN3-5A bolts and associated hardware as shown on View C Sheet 2 of SKCP2975 in Section 5.
- g. Refer to Figure 2. Loosen the wire clamp holding the engine control wire bundle to the left-hand anti-icing tube assembly shown in Figure 2. Slide the clamp aft as far as necessary to ensure that wires will not contact the rim of the KAFlex Rotor Brake Disk. Verify that adequate wire slack still exists, and tighten clamp in the new position.



**FIGURE 1: Installation of Workaid
(Installation Tool SKSP1321, SKSP1375 or SKSP1404)**

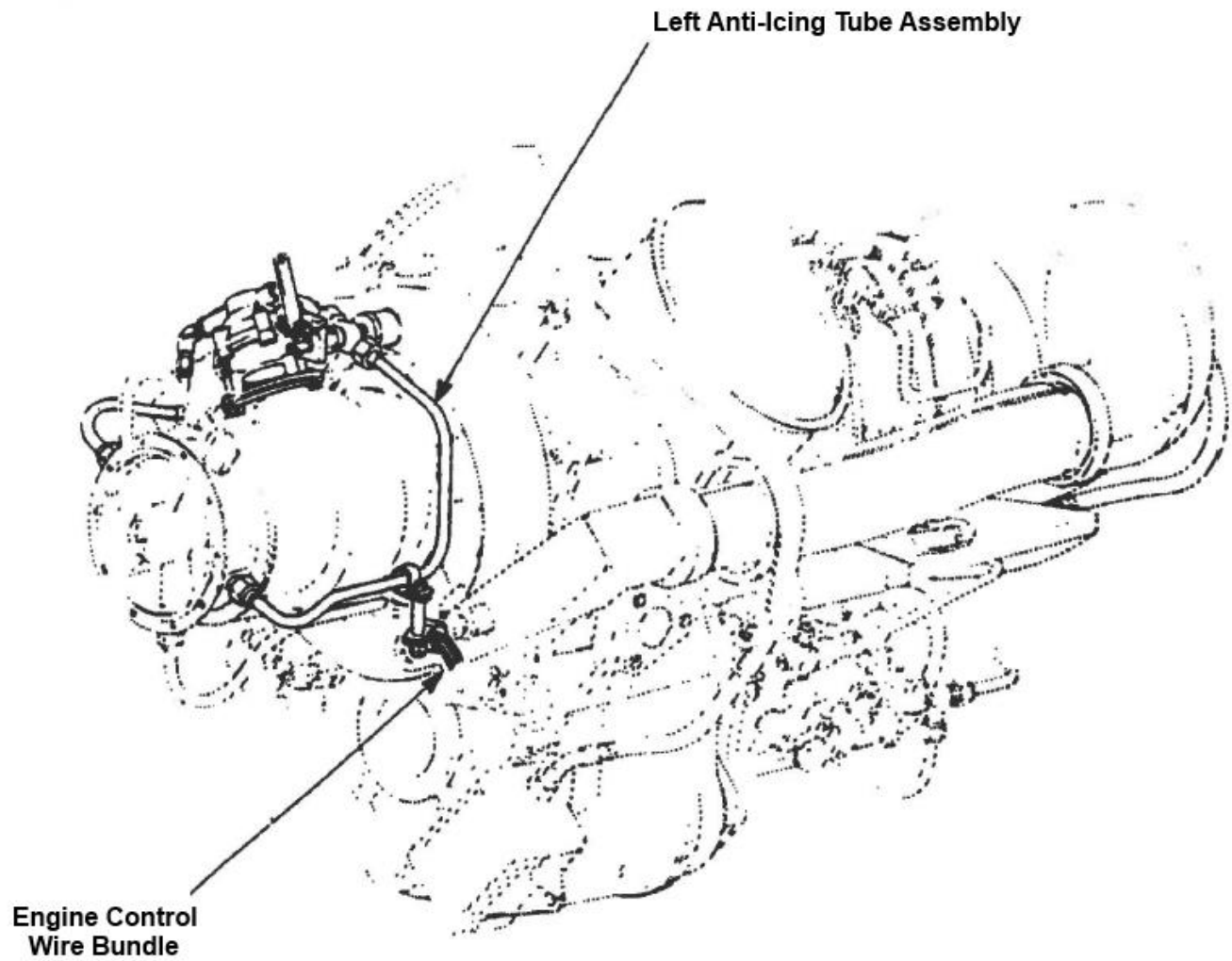


FIGURE 2: Optimum Location of Engine Control Wire Bundle on Left Anti-Icing Tube Assembly

2. Removal of Bell Rotor Brake (continued)

Suggestion: Review the assembly procedure given in Section j below on the bench prior to assembling the parts on the aircraft. Seeing the relationship of the parts during the assembly process on the bench first will simplify this process on the aircraft.

CAUTION

Rotation of the driveshaft during these procedures will cause Main and Tail Rotor Blades to rotate. Verify that adequate clearance exists around the blades prior to rotating the driveshaft.

- i. Insert driveshaft, with Workaid installed, through front of hole in firewall.
- j. Maneuver assembly of cup and brake disk into position on driveshaft, and then maneuver these parts into position between the engine output shaft and the main gearbox input shaft. Refer to View C Sheet 2 of SKCP2975 in Section 5. The four cup/disk assembly internal lugs are first moved forward on the driveshaft between the four lugs on the aft mount flange of the driveshaft, and then the cup assembly is rotated through a small angle until the holes on the four internal lugs on the cup line up with the holes in the four external lugs on the driveshaft. The cup and disk assembly is then moved aft until the internal lug faces contact the driveshaft lug faces.
- k. Install forward four bolts (driveshaft to transmission) and their hardware in accordance with SKCP2975 Sheet 1 in Section 5 to join the KAflex Driveshaft to the transmission input shaft. Note the number of washers and their placement per the drawing. Do not tighten these bolts at this point.
- l. Install aft four AN4-7A bolts with their hardware in accordance with SKCP2975 Sheet 2 View C to join the KAflex Driveshaft to the engine output shaft. Note the number of washers and their placement. Do not tighten these bolts at this point.
- m. Since the KAflex Rotor Brake Disk is somewhat larger in diameter than the Bell Rotor Brake Disk, verify clearance all around the newly-installed components.
- n. Remove Workaid from forward flex frames of driveshaft.
- o. Tighten four forward bolts and four aft bolts per BHT installation instructions.

3. Installation of Calipers

- a. Certain items must have their positions adjusted to allow clearance of the caliper assemblies upon reinstallation. Refer to Figures 3 and 4. Figure 3 shows the optimum position of the AN804-4 Tee. Verify that the tee is in this position, or loosen it just enough to allow slight rotation without permitting air to enter the hydraulic system at this fitting. If the aircraft does not have a particle separator installed, proceed to Step b at this point. Figure 4 shows the AN834-6 Tee which connects the compressor bleed air line to 206-061-222-1 Tube Assembly across the firewall to allow this fitting to be installed in its most forward position. Reconnect the lines.
- b. Using a plastic scraper, remove all debris from 206-040-267-1 Cap Assembly and mating surface of 400371(-1) of 400397(-2) Brake Assembly to produce clean flat surfaces on each part.
- c. Install SKCP2970 Spacer on the right and left 400371(-1) of 400397(-2) Brake Assemblies as shown on SKCP2975 Sheet 2 Sections Y-Y and W-W.
- d. Install shims as shown on SKCP2975 Sheet 1 on each side. Verify that differential shim thickness on each side and puck to disk clearances are in accordance with SKCP2975 Sheet 1.

CAUTION

Note the forward extent of the hydraulic line supplying the right caliper assembly and the potential for interference with the firewall Driveshaft Door Bell Part Number 206-062-901-085. If necessary, screw the angle bulkhead fitting deeper into the caliper to obtain proper clearance.

- e. Inspect area for interferences. Note especially clearance around the repositioned caliper assemblies and the rotor brake disk. Clearance should be .030" minimum around static parts and .080" minimum around rotating parts.

TOP VIEW

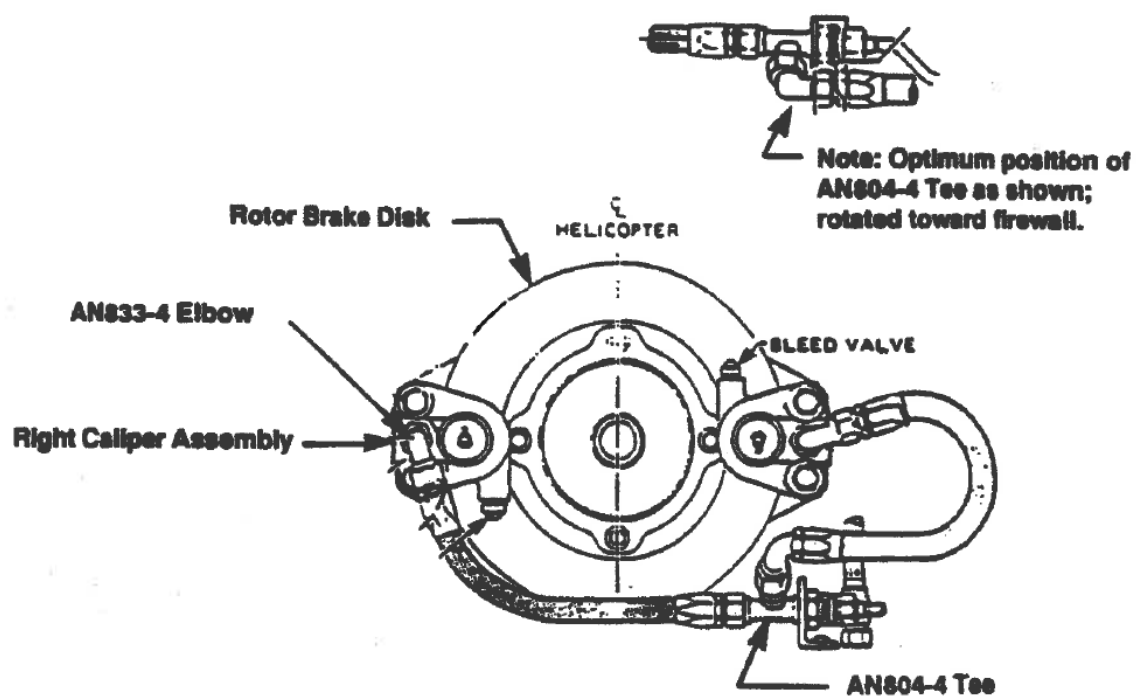


FIGURE 3: View Looking Aft at Rotor Brake

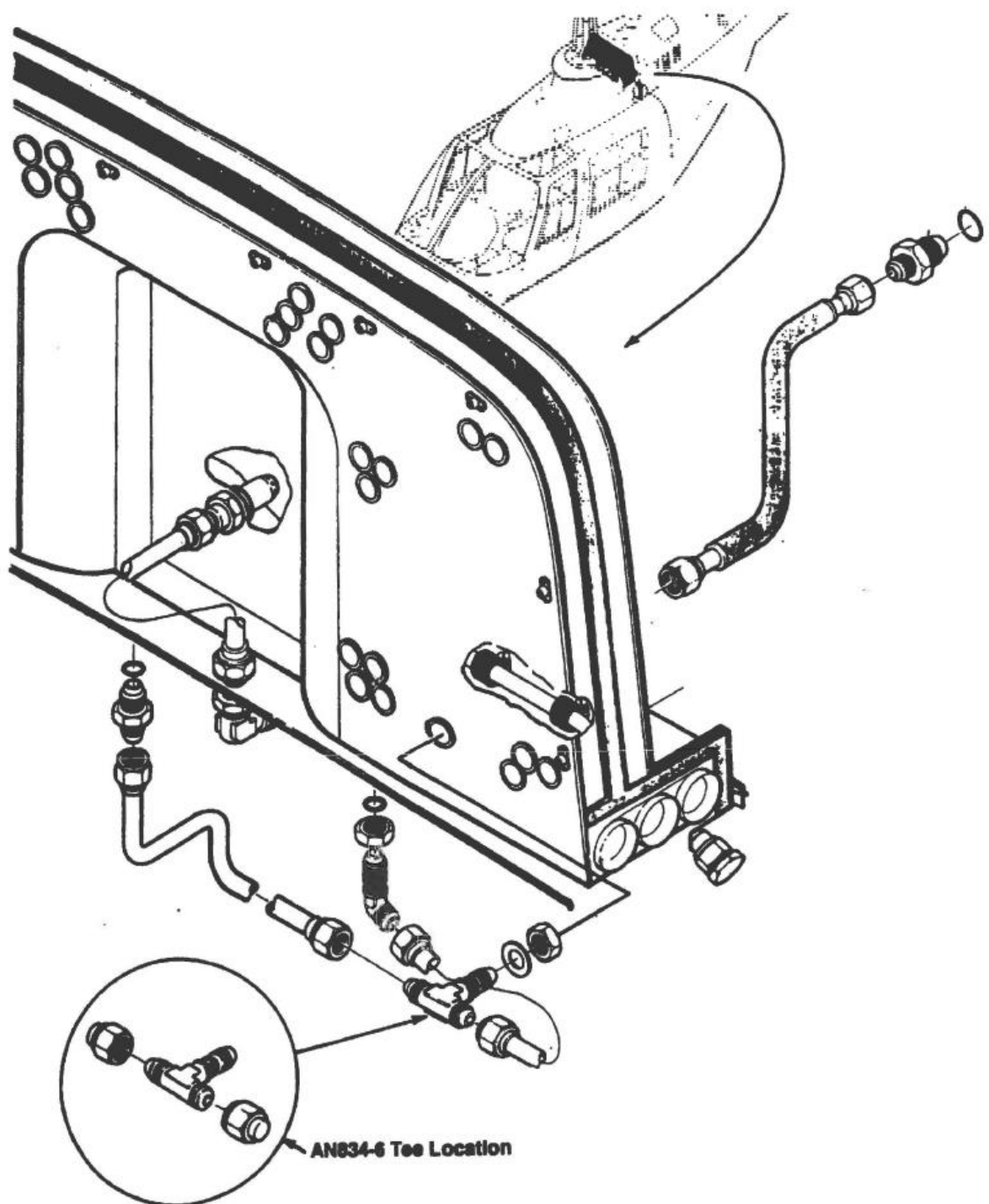


FIGURE 4

4. Modification of Master Cylinder

- a. Remove Master Cylinder Assembly 206-076-047-3 or 206-076-047-101 from aircraft.

CAUTION

Inspect Master Cylinder assembly for condition. Repair or rework Master Cylinder as necessary to ensure proper operation.

- b. Adjust the output output pressure to 119 ± 8 psi in accordance with BHT Service Instruction 206-105 Section III Paragraph 4 "Overhaul-Rotor Brake Master Cylinder".
- c. Reinstall the master cylinder upon completion of the pressure adjustment.
- d. Fill and bleed rotor brake hydraulic system using MIL-H-5606 fluid. Maintain fluid in master cylinder during bleeding process.

CAUTION

Carefully check all electrical lines, fuel lines, hydraulic lines, bleed air lines, and other nearby components for damage, interference, looseness or leakage. Route and secure all lines in accordance with AC43.13-1A Chapters 10 and 11.

At the completion of the above, report the alteration of the aircraft by executing FAA Form 337 included with this Service Instruction and review the appropriate Flight Manual Supplement (included) and place it in the Aircraft Flight Manual.

SECTION 2

KAflex ROTOR BRAKE INSPECTION

The following inspections are in addition to inspections of the Rotor Brake System in accordance with Bell Service Instruction Number 206-105.

1. Inspection of KAflex Driveshaft

Inspection of the driveshaft should proceed in accordance with Kamatics Corporation Service Instruction Number 2348 Section 3. The driveshaft in the rotor brake area is inspected through the holes in the SKCP2967-13 Cup. Torque stripes on the bolts in the driveshaft have been placed tangentially so that they may be viewed through the aforementioned holes. In addition to the inspections listed in Service Instruction Number 2348, the tips of the various bolted joints of the coupling should be inspected for evidence of excessive angular travel that may result in contact with the cup and subsequent polishing of the areas in contact. In the event this is observed, it indicates that excessive deflections have been imposed on the system, and the driveshaft should be removed and returned to Kamatics Corporation for a 6000-hour inspection with a full description of the history of the part and the reason for removal.

2. Inspection of KAflex SKCP2967-13 Rotor Brake Cup

The Rotor Brake Cup should be visually inspected at the same intervals as the driveshaft. The inspection should include looking for loose or missing hardware, evidence of contact with the driveshaft on the bore of the cup, evidence of contact with nearby lines, fittings, etc., and presence of cracks, dents or other distress. The part is made from 17-4 stainless steel, and has no coating.

3. Inspection of KAflex SKCP2962-13 Rotor Brake Disk

The Rotor Brake Disk should be visually inspected at the same intervals as the driveshaft. Inspect for loose or missing hardware, evidence of improper contact with the caliper pucks, evidence of overheating or distortion, or evidence of excessive wear of the disk or caliper pucks. Check the rotor disk for excessive runout and play. The gap between the rotor brake disk and the caliper pucks should be consistent on all four pucks within .020" (refer to SKCP2975 Sheet 1). Additionally, twice a year the rotor brake disk should be checked for thickness and parallelism of the faces. Replace the disk if its thickness is below .260" or if its faces are not parallel within .002".

Additional Inspections (continued)

4. Inspection of KAflex SKCP2970-13 Spacer

The Spacer should be visually inspected at the same intervals as the driveshaft. Inspect for loose or missing hardware. Verify the integrity of the spacer installation by using hand pressure to try to move the caliper assembly. If excessive movement is observed, check the mounting hardware for looseness.

SECTION 3

KAflex ROTOR BRAKE MAINTENANCE AND REPAIR

1. **Maintenance and Repair of KAflex Driveshaft**

Maintenance and repair of the driveshaft should proceed in accordance with Kamatics Corporation Service Instruction Number 2348 Sections 4 and 5.

2. **Maintenance and Repair of KAflex SKCP2967-13 Rotor Brake Cup**

Only repair to superficial damage is permitted. Cracks or smooth dents in excess of .010" deep are cause for removal and replacement. Surface distress up to .010" deep is to be blended smoothly with surrounding surface to a finish of 32 micro inches. Rework of this nature that covers any more than 50% of any contiguous two square inch area is cause for removal and replacement of the part.

3. **Maintenance and Repair of KAflex SKCP2962-13 Rotor Brake Disk**

Repair of the rotor brake disk is limited to blending of surface damage on the rim or mounting bolt circle. Damage that can be removed by blending to a maximum depth of .020" is acceptable. Damage requiring more than this is cause for removal and replacement.

4. **Maintenance and Repair of KAflex SKCP2970-13 Spacer**

Smoothly blend any damage to a maximum depth of .030".

SECTION 4
TYPE CERTIFICATE

Following is a copy of:

1. FAA Supplemental Type Certificate Number SH79518W
2. EASA Supplemental Type Certificate 10053025

United States of America
Department of Transportation — Federal Aviation Administration
Supplemental Type Certificate

Number SH7951SW

This certificate, issued to Kamatics Corporation
1330 Blue Hills Ave.
Bloomfield, CT 06002

certifies that the change in the type design for the following product with the limitations and conditions therefor as specified hereon meets the airworthiness requirements of Part 6 of the Civil Air Regulations.

Original Product — Type Certificate Number: H2SW
Make: Bell Helicopter Textron, Inc.
Model: 206A, 206B

Description of Type Design Change:

Installation of the Kaflex rotor brake modification in accordance with GHTI/Kamatics Corporation Drawing No. SKCP2975, Rev. N/C, dated December 3, 1990 or later FAA approved revision.

Limitations and Conditions:

FAA approved Rotorcraft Flight Manual Supplement dated January 8, 1991, or later FAA approved revision is required. Compatibility of this modification with previously installed equipment must be determined by installer.

This certificate and the supporting data which is the basis for approval shall remain in effect until surrendered, suspended, revoked, or a termination date is otherwise established by the Administrator of the Federal Aviation Administration.

Date of application: October 15, 1990

Date issued: February 5, 1991

Date of issuance: January 15, 1991

Date amended:



By direction of the Administrator

[Signature]
for Larry M. Kelly, Manager
Rotorcraft Certification Office

(Title)

Any alteration of this certificate is punishable by a fine of not exceeding \$1,000, or imprisonment not exceeding 3 years, or both.

This certificate may be transferred in accordance with FAR 21.47.

SUPPLEMENTAL TYPE CERTIFICATE

10053025

This Supplemental Type Certificate is issued by EASA, acting in accordance with Regulation (EC) No. 216/2008 on behalf of the European Community, its Member States and of the European third countries that participate in the activities of EASA under Article 66 of that Regulation and in accordance with Commission Regulation (EU) No. 748/2012 to

KAMATICS CORPORATION

**1330 BLUE HILLS AVENUE
BLOOMFIELD 06002
USA**

and certifies that the change in the type design for the product listed below with the limitations and conditions specified meets the applicable Type Certification Basis and environmental protection requirements when operated within the conditions and limitations specified below:

Original Type Certificate Number : EASA.IM.R.512
Type Certificate Holder : BELL HELICOPTER TEXTRON CANADA
Type Design - Model : BELL 206A, 206 B
Original STC Number : FAA STC SH7951SW

Description of Design Change:

Installation of KAMATICS Rotor Brake kit in accordance with drawing SKCP2975

EASA Certification Basis:

The Certification Basis (CB) for the original product remains applicable to this certificate/ approval. The requirements for environmental protection and the associated certified noise and/ or emissions levels of the original product are unchanged and remain applicable to this certificate/ approval

See Continuation Sheet(s)

For the European Aviation Safety Agency,

Date of issue: 21 April 2015


Massimo MAZZOLETTI
Head of Rotorcraft Department

Associated Technical Documentation:

Flight Manual Supplement for Bell 206A/206B KAflex rotor brake modification Revision 2, dated September 30, 1994

or later revisions of the above listed documents approved by EASA in accordance with EASA ED Decision 2004/04/CF (or subsequent revisions of this decision)"and/ or the Technical Implementation Procedures of EU/ USA Bilateral Agreement.

Service Instruction Number SIN2975 Revision C
Installation Drawing SKCP2975 Revision E

Limitations/Conditions:

Prior to installation of this design change it must be determined that the interrelationship between this design change and any other previously installed design change and/ or repair will introduce no adverse effect upon the airworthiness of the product.

- end -

SECTION 5
INSTALLATION DRAWING

Following are copies of the Installation Drawing for STC SH7951SW.

SKCP2975 SH 1,2

FLIGHT MANUAL SUPPLEMENT FOR BELL 206A / 206B KAFLEX ROTOR BRAKE MODIFICATION

This supplement shall be attached to the flight manual for the Bell 206A/206B with KAFLEX Rotor Brake modification installed in accordance with S.T.C. No. SH7951SW.

The information contained herein supplements the information of the basic flight manual. For limitations, procedures and performance data not contained in this supplement, consult the basic flight manual.

Approved: _____

Paul B. Balle

for Manager, Rotorcraft Certification Office
Federal Aviation Administration
Department of Transportation
Northeast Region,
Burlington, MA

ROTORCRAFT FLIGHT MANUAL SUPPLEMENT FOR BELL 206A/206B/206A-1/206B-1 KAFLEX ROTOR BRAKE MODIFICATION

LOG OF REVISIONS

REVISION NO.	PAGES REVISED	REMARKS	DATE	FAA APPROVED
1	1,2	Pages	09/29/92	
3,4	Reformatted			

2 All Added 07/15/94

206A1/206B1

Paul B. Balle
for Manager, Boston
Aircraft Certification
Office, ANE-150

ROTORCRAFT FLIGHT MANUAL SUPPLEMENT FOR BELL 206A/206B/206A-1/206B-1 KAFLEX ROTOR BRAKE MODIFICATION

DESCRIPTION:

The Kaflex Rotor Brake Modification modifies an existing Bell Rotor Brake Installation to allow for the use of Kaflex Driveshaft with the Rotor Brake.

SECTION 1 - Operating Limitations

Rotor brake Limitations: Engine starts with rotor brake engaged are prohibited.

Weight/CG Limitations: Actual weight change shall be determined after kit is installed and ballast readjusted, if necessary, to return empty weight CG to within allowable limits.

Placard: ENGAGE ROTOR BRAKE BETWEEN
38% & 30% ROTOR RPM
(Located on the R/H side of
Rotor Brake Master Cylinder Housing)

SECTION 2 - Operating Procedures

Normal Procedures:

- Interior and Prestart Check
- Rotor Brake Handle - Up and Latched

Engine Shutdown Procedure:

CAUTION: AVOID RAPID ENGAGEMENT OF
ROTOR BRAKE IF HELICOPTER IS ON ICE OR
OTHER SLIPPERY OR LOOSE SURFACE TO
PREVENT ROTATION OF HELICOPTER.

ROTORCRAFT FLIGHT MANUAL SUPPLEMENT FOR BELL 206A/206B/206A-1/206B-1 KAFLEX ROTOR BRAKE MODIFICATION

SECTION 2 - Operating Procedures (continued)

Engine Shutdown Procedure:

Rotor Brake: As desired, apply rotor brake between 38% and 30% rotor RPM. Return to stowed position after main rotor stops.

Emergency Procedures:
No change.

SECTION 3 - Performance Data

No change.