

FLAP AILERON FLAP / FUSE SEAL KIT

APPLICABLE MODELS
BEECHCRAFT MODELS 33/35/36

INSTALLATION MANUAL
ISSUE DATE 06/06/84

**KNOTS 2U, LTD.
709 AIRPORT ROAD
BURLINGTON, WI 53105
262 763-5100**

REVISIONS

REV.	DATE	PAGE	EFFECT
A	08/04/98	ALL	COMPLETE MANUAL CLEANUP. CHANGED FLAP SEALS TO BOTTOM MOUNTING. CHANGED AILERON SEAL TO (2) PIECE OPTION

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NOTE #1:

THIS MANUAL DESCRIBES THE INSTALLATION OF THE KNOTS 2U FLAP, AILERON & FLAP / FUSE GAP SEAL KIT. THE APPROPRIATE BEECH SERVICE MANUAL FOR THE AIRCRAFT SHOULD BE USED IN CONJUNCTION WITH THIS MANUAL. THE BEST TIME TO PAINT THE PARTS IS BEFORE INSTALLATION OR AFTER *INITIAL* INSTALLATION IS COMPLETE. PRIMING IS NOT NECESSARY ON ALUMINUM PARTS. SURFACES SHOULD BE "SCUFFED" WITH A SCOTCHBRITE AND PAINTED.

SECTION 1.0 =LEFT AND RIGHT AILERON GAP SEALS=**1.1 -BAS LOCATING AND MARKING SEAL LOCATION-**

NOTE: for ease of installation the aileron seals are approved to be in (2) pieces per wing instead of (1) per wing. If the (1) piece seal is desired, it can be ordered from K2U. (DETAIL #1) Place gap Seal P/N BAS under left wing against aileron so that the Chafe strip on the trailing edge rides against the aileron. Position so that at full down aileron the trailing edge of the seal comes within 1/32" of the row of rivets along the aileron, but does not touch any rivets. Mark the position of the seal onto the aircraft wing. Mark the area of the aileron hinge rivets onto the seal **(DO NOT DRILL IN THE AREAS OF THE AILERON HINGES)**. Remove the aileron per the appropriate Beech service manual. If aileron seal P/N BAS is in (4) parts, locate and mark both parts. Seals should butt against each other in the center with minimum clearance.

1.2 -FLUSH RIVETING SEAL AREA-

(DETAIL # 1) Remove the roundhead rivets on the aileron which come in contact with the aileron gap seal trailing edge. These are typically found around the ends of the hinge openings. Reinstall P/N AN426AD-3-3 to replace rivets just removed.

1.3 -LOCATING AND MARKING HOLES ON WING-

(DETAIL # 1) Mark P/N BAS with rivet locations and place seal under wing. Confirm that none of the hole locations fall on existing rivets or ribs. If a hole does fall on a rivet or rib, the hole may be moved up to .625" to clear. Using a #40 bit drill holes in the seal and the wing, cleco as you go.

1.4 -FINAL FITTING AND RIVETING OF SEAL-

(DETAIL #1) Temporarily install aileron, using at least one screw in each bracket, upper and lower. Verify flush fit of seal against aileron. Check for binding of seal through the ailerons full travel. When proper fit is confirmed remove aileron. Remove seal, de-burr all holes and clean shavings from aircraft. Corrosion proof all holes with Alodine or equivalent. Rivet seal in place using AN470AD-3-3 Rivets. Install aileron and tighten per Beech service manual. Check aileron through full travel for binding and proper fit.

1.5 -INSTALLING RIGHT SIDE AILERON SEAL -

Repeat steps 1.1 thru 1.4 on right side

SECTION 2.0 =LEFT AND RIGHT FLAP GAP SEALS=**2.1 -BLFFS INSTALLING LOWER LEFT FLAP/FUSE SEAL ON LEFT WING -**

(DETAIL #2) Drill out the existing row of rivets on the lower inboard side of the flap (9 typ). Position P/N BLFFS on the inboard end of the flap so that the chaff strip is resting on the lower fuselage surface, and the trailing edge of seal is even with the trailing edge of the flap. Using holes just drilled as a template, with flaps lowered, mark hole locations on properly positioned P/N BLFFS (observe 2D edge distance). Drill holes in P/N BLFFS, cleco as you go. Remove seal, deburr all holes, and corrosion proof with Alodine or equivalent. Rivet seal in place using (9) AN470AD 3-4 rivets.

2.2 -LOCATING AND DRILLING P/N BOFS -

(DETAIL #2) Place P/N BOFS flush with outboard end of flap. The trailing edge of the seal should be 1.0" behind the wing skin. Trim the inboard end of the seal so that it does not cover the flap attachment opening. Mark and drill holes per DETAIL #2 in lower wing skin and part to a #27 hole size. Cleco seal in place and operate flaps to confirm proper contact and no binding.

2.3 -LOCATING AND DRILLING P/N BCFS -

(DETAIL #2) Place P/N BCFS inboard of seal just installed. The trailing edge of the seal should be 1.0" behind the wing skin. Trim the inboard and/or outboard end of the seal so that it does not cover the flap attachment opening. Mark and drill holes per DETAIL #2 in lower wing skin and part to a #27 hole size. Cleco seal in place and operate flaps to confirm proper contact and no binding.

2.4 -LOCATING AND DRILLING P/N BIFS -

(DETAIL #2) Place P/N BIFS inboard of seal just installed. The trailing edge of the seal should be 1.0" behind the wing skin. Trim the inboard and/or outboard end of the seal so that it does not cover the flap attachment opening. Mark and drill holes per DETAIL #2 in lower wing skin and part to a #27 hole size. Cleco seal in place and operate flaps to confirm proper contact and no binding.

2.5 -RIVETING FLAP SEALS IN PLACE -

(DETAIL #2) Remove seals, deburr all holes, and corrosion proof with Alodine or equivalent. Rivet seals in place using CR3243-4-2 rivets.

2.6 -BFFS INSTALLING UPPER FLAP/FUSE SEAL -

(DETAIL #2) With flaps in the full up position, place P/N BFFS on top of flap with chafe strip resting on flap, and other surface resting against fuselage. Locate so that the trailing edge of seal is even with the trailing edge of flap. Ends may be trimmed as necessary to fit. Locate (6) evenly spaced #27 holes in part and fuselage. Deburr all holes, and corrosion proof with Alodine or equivalent. Rivet seals in place using CR3243-4-2 rivets.

2.7 -RIGHT SIDE INSTALLATION OF GAP SEALS -

Repeat steps 2.1 thru 2.6 on right side of aircraft.

SECTION 3.0 =INSTALLING SPAR ACCESS COVER SEAL =**3.1 -LEFT SIDE INSTALLATION -**

(DETAIL # 2) Remove left rear spar attach cover. Place P/N BSACS above trailing edge of cover with 3/8" overlap. Drill (3) #40 holes in overlap area through seal and cover, (1) at each end and (1) in the center. Deburr all holes, and corrosion proof with Alodine or equivalent. Rivet seal in place using AN470AD 3-3 rivets. Position cover in place and run flaps through their full travel and check for any binding against flaps. Trim as necessary to prevent binding.

3.2 -RIGHT SIDE INSTALLATION -

Repeat step 3.1 on right side of aircraft.

SECTION 4.0 =PAPERWORK=

Perform paperwork (337 and log book entries). Place appropriate Supplemental Type Certificate and KNOTS 2U, LTD. Maintenance Manual with log books.

Gap Seal kit and hardware weight = 2.2 lbs.

Arm = 118 inches.

SECTION 5.0 =PARTS LIST=

PART NUMBER	NO. REQ.	DESCRIPTION
BAS (80.75)*	2	AILERON SEAL
OR		
BAS (40.375)*	4	AILERON SEAL
BLFFS	2	LOWER FLAP/FUSE SEAL
BOFS	2	OUTBOARD FLAP SEAL
BCFS	2	CENTER FLAP SEAL
BIFS	2	INBOARD FLAP SEAL
BSACS	2	SPAR ACCESS COVER SEAL
AN426AD-3-3	26	COUNTERSUNK RIVET
AN470AD-3-3	68	ROUND-HEAD RIVET
CR3243-4-2	90	ROUND-HEAD CHERRYMAX RIVET
AN470AD-3-4	18	ROUND-HEAD RIVET

* Length of Aileron Seal is optional. For ease of installation the shorter seals are preferred.

BEECH AILERON GAP SEAL INSTALLATION DETAIL #1

FAA
APPROVED

DEC 01 1998

CHICAGO AIRCRAFT
CENTRAL REGION

WING
SIDE VIEW

AFT →

SIDE VIEW OF AILERON
IN DOWN POSITION

CHAFFE STRIP

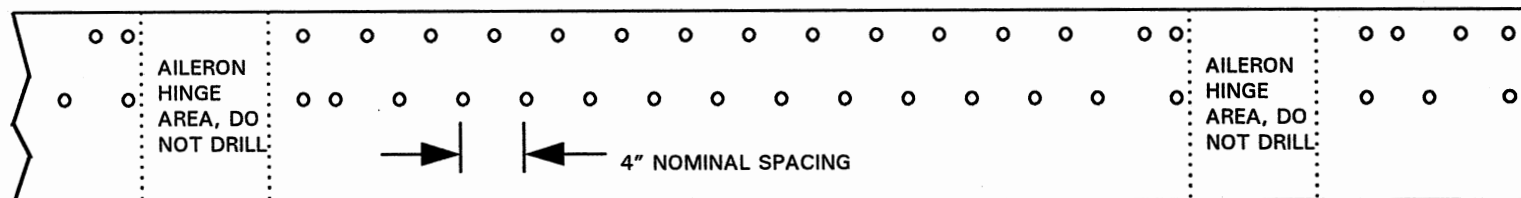
LOWER
WING SKIN

AN470AD-3-3

AILERON SEAL P/N BAS

1/32"

.75 1.0



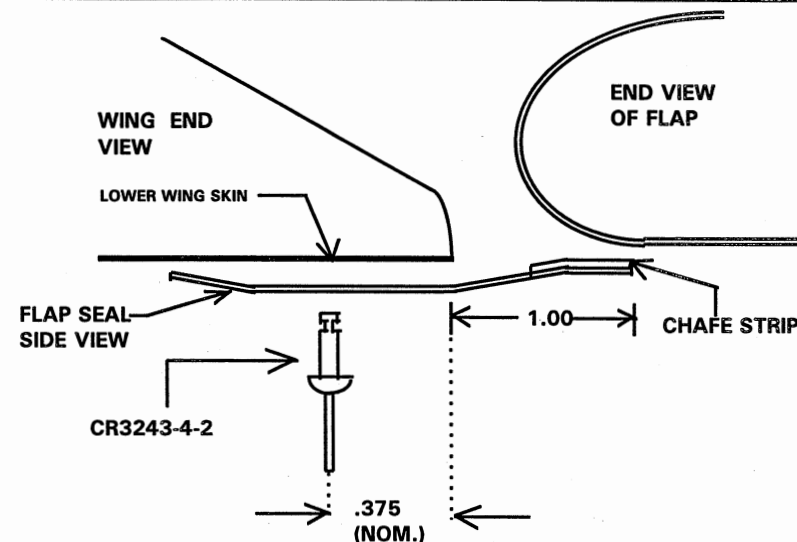
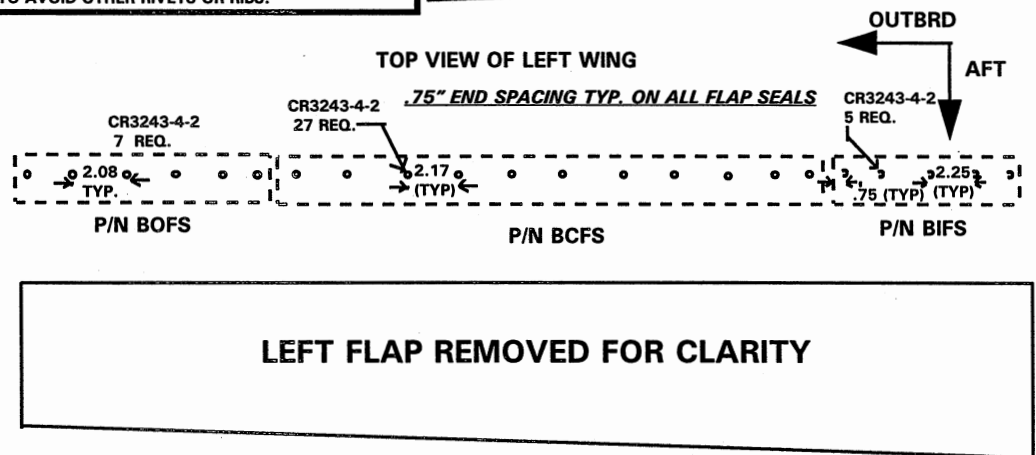
DETAIL #1 PAGE 4

DATE	REVISION	DETAIL 1	BEECH AILERON GAP SEALS
		KNOTS 2U, LTD.	08/04/98
		DRAWN BY JMB	NOT TO SCALE

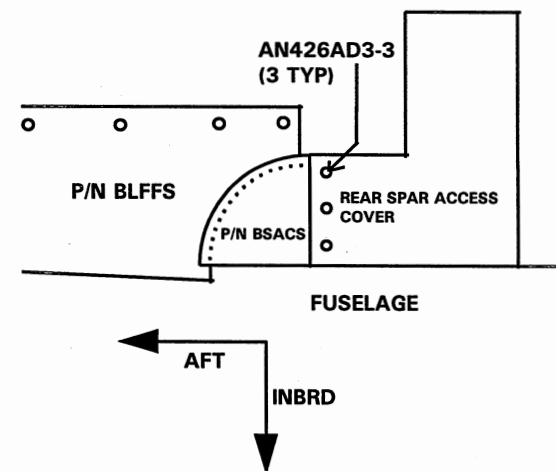
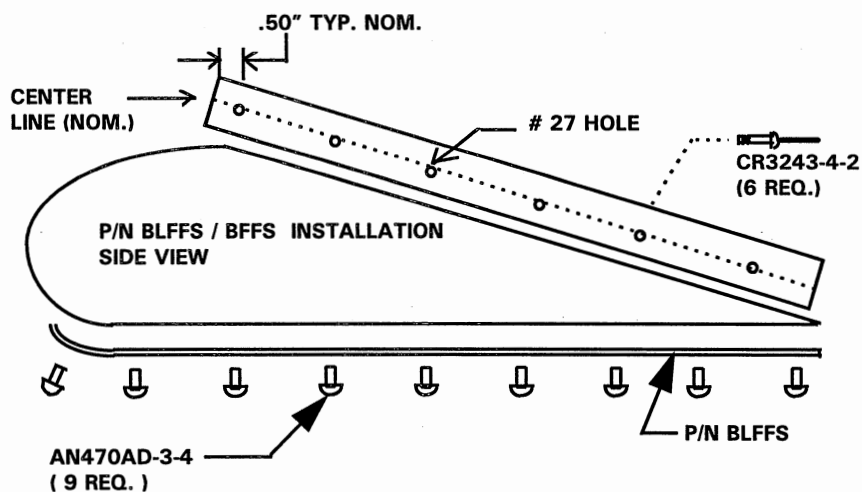
BEECH FLAP GAP SEAL INSTALLATION

DETAIL #2

NOTE: RIVET LOCATIONS MAY BE MOVED UP TO .625" WHILE MAINTAINING PROPER EDGE DISTANCE TO AVOID OTHER RIVETS OR RIBS.



BLFFS AND BFFS INSTALL DETAIL



DETAIL 2 PAGE 5

DATE	REVISION	DETAIL 2	BEECH FLAP SEALS
03/17/99	REVERSED HOLE LOCATIONS ON P/N BIFS AND BOFS	KNOTS 2U, LTD.	08/04/98
		DRAWN BY JMB	NOT TO SCALE

=SECTION 8.0 MAINTENANCE MANUAL=**KNOTS 2U, LTD.****BEECHCRAFT MODELS 33/35/36****FLAP AILERON FLAP/FUSELAGE GAP SEALS****PART A. INSPECTION**

1. Daily inspection at preflight to ensure there is no binding of controls, bent gap seals, abrading of rivets or control surfaces, or broken parts.
2. When aircraft has been stored outside during snow or freezing conditions, a careful inspection should be made of the areas behind and under the seals for ice accumulations. If ice is found, which cannot be removed by careful brushing, the aircraft should be de-iced.
3. 100 hour inspections are suggested to check for abrading of rivets, control surfaces, and seals. Chafe tape should be inspected for peeling or excessive wear. Check all hardware and attachment of all seals.

PART B. MAINTENANCE

1. There are no special tools required to maintain the seals. Any tools needed are basic hand tools.
2. Maintenance of the Gap Seals is to keep the seal surface clean of oil and dirt, and the edge of the seal touching the control surface smoothly. If the Gap Seal appears to be abrading the control surface, **3M 5490 Teflon Tape**, or equivalent, may be applied to the Gap Seal to act as a wear surface. The tape should be applied before further flight to prevent control wear.
3. If upon installation, or through wear, there is a warp in the seal or it lies unevenly, you may drill a #40 hole and cut the seal in a direction 90 degrees from the trailing edge. Drill the hole in the center of the warp, 1/2 inch from the trailing edge of the surface that the seal is attached to. The cut in the seal should be trimmed to give a slot 1/16th" wide, with parallel edges. The slots should be no closer than 6 inches from each other or the end of the seal.
4. When aircraft is painted, care should be taken to prevent paint, paint remover, or solvents from contacting the Chafe Strip. If Chafe Strip is damaged, refer to PART B Paragraph 2 of this manual for replacement specifications.

PART C. CRACKING, DEFECTS, LOOSE RIVETS.

1. If cracks are found in a Gap Seal, stop drill the crack. If there are more than 3 cracks in a Gap Seal, the seal must be replaced.
2. If the Chafe Strip peels, **3M 5490 Teflon Tape**, or equivalent, may be applied
3. If there are excessive bends or kinks in the seal, and the airflow over the control surface is disturbed, the seal must be replaced.
4. If seal rivets become loose you may drill the rivets and replace with the next size rivet.