

# CESSNA 100/200 SERIES FLAP GAP SEALS

## APPLICABLE MODELS

CESSNA 170B, 172,  
175, 180, 182, 185, 205, 206, 207, 210

ISSUE DATE: 01/04/2000

### ***KNOTS 2U, LTD.***

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REV #	DATE	EFFECT
A	08/22/00	Replaced Fiber-Lok nuts with Rivnuts. Added leading edge attachment.
B	12/26/01	General Cleanup. Added Section 2 for 206 Models and Section 3 for 207 Models.
C	04/22/14	ECO 0423

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This manual describes the installation of flap gap seals on Cessna 100 & 200 series aircraft. All aluminum parts are treated with a Zinc Chromate primer and ready to paint. To finish simply scuff the surface lightly, clean, and paint with desired color. The parts may be painted before or after installation. For optimum performance of this modification it is desirable to check the flap rigging per the appropriate Cessna Manual before the installation of the gap seals.

## Section 1.0      Installing Flap Gap Seal Kit on 170B, 172, 175, 180, 182, 185, 205, 210 Models.

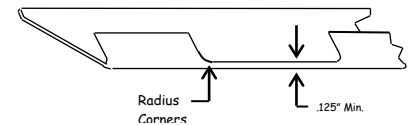
### 1.1 Locating and Trimming Inboard Flap Seal P/N C-IFS. (Left Wing)

The Inboard flap gap seal P/N C-IFS must be trimmed to match the contour of the fuselage for the particular aircraft. Per Figure 1 Page 3, place the inboard end of P/N C-IFS 1/16" from fuselage. Mark the location of the two screws holding the existing fairing around the wing to fuselage junction. Seal P/N C-IFS should be notched so it can be slid between fairings and around screws. Also notch the flange on the trailing edge of the seal where it interferes with the flap track (see Sketch A). Make sure to radius the corners of the notches to prevent cracking. *On some models the flap access panels may need to be trimmed slightly at the bottom to prevent interference with the gap seals. On models with a screw at the bottom of the access panel, the bottom screw may be removed.*

### 1.2 Locating and Trimming Outboard Flap Seal P/N C-OFS (Left Wing)

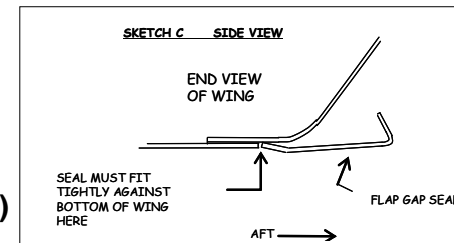
With the inboard flap seal P/N C-IFS properly located, mark a line on the bottom of the wing at the most outboard point of the seal. This line will represent the location for the inboard edge of seal P/N C-OFS. With outboard seal P/N C-OFS properly located, notch the flange on the trailing edge of the seal where it interferes with the flap track (see Sketch A). Make sure to radius all corners of notches to prevent cracking. Due to variations in airframes the Outboard Seal P/N C-OFS is supplied longer than may be needed on your particular aircraft. It may be trimmed at this time.

SKETCH-A NOTCHING DETAIL



### 1.3 Locating and Attaching Outboard Attach Tab P/N C-TAB (Left Wing)

Per Figure 1 page 3 drill at least 2 (3 on some models) rivets from end of flap well area. (some models may have screws instead of rivets) Install P/N C-TAB between the two skins. Locate so at least 1" is exposed into flap well. Mark rivet locations and drill. Re-rivet using CR3243-4-3 rivets. (or existing screws)



### 1.4 Locating and Riveting Attach Brackets P/N C-BRACK (Left Wing)

(To aid in the placement of attach brackets, 2 sided tape may be used to temporarily hold them in position.) Referring to Figure 1 Page 3, mark attach bracket locations on wing. These marks represent the center of each bracket. The attach bracket locations shown are recommended locations, **however they may be moved if interference is found with existing rivet heads, flap tracks, or inspection panels.** If it is required to move attach brackets, confirm they are located no further than 24" from each other or the end of the flaps. You may use the trimmed section of the flap gap seal as a guide to locate the proper height of the attach brackets. Due to variations in airframes, shims P/N C-SHIM may be used to achieve correct angle along bottom of brackets (figure 1 detail 1). With all brackets temporarily held in place check for proper fit of gap seals. Drill #27 holes through brackets, flap well skin and shims if necessary. De-burr holes and corrosion proof with Alodine or equivalent. Rivet the brackets in place using (4) CR3243-4-2 rivets per bracket.

### 1.5 Attaching Gap Seals P/N C-IFS And C-OFS (Left Wing)

Hold the seals in their proper location and drill two holes (#40 hole size) through the seal and attach brackets per figure 1 detail 2. Cleco the seals to the attach brackets as you go. With the seals temporarily attached to the brackets locate 7 or 8 points along the leading edge of the seal inboard seal, 4 along the leading edge of the outboard seal, and drill #40 holes through seal into trailing edge of wing skin per sketch B page 1. Look for areas in the seal that are not tight to the bottom of wing skin, more locations can be used if appropriate. Cleco seals as you go. Remove seals and enlarge the holes in the attach brackets and bottom of wing skin to a #12 holes size, de-burr holes and corrosion proof with Alodine or equivalent. Install P/N A6K-75 rivnuts in each location. Enlarge the holes in the seals to a #20 hole size and install seals using AN526C-632R8 screws and AN960C-6L washers. Check to make sure air cannot get between the leading edge of the seal and the bottom wing skin. If areas are found that can allow air to get between the seal and the bottom wing skin the seal can be bent further upward or extra rivnuts and screws added to the leading edge.

**After gap seals are secured, apply 3M Tape P/N 8672 to the joint where the leading edge of the seal meets the bottom of the wing per 3M directions. The joint between the seal and the bottom of the wing must be completely sealed to prevent airflow between the seal and wing.**

### 1.6 Installing Seals On The Right Wing.

Repeat Steps 1.1 thru 1.5 on right wing.

### 1.7 Paperwork

Complete form 337, logbook entry, and weight & balance. Place copy of Supplemental Type Certificate and Maintenance manual with aircraft logs.

- Flap Seals with hardware ..... 3.15 lbs.
- Arm..... Per appropriate Cessna Service Manual

### 1.8 Parts List

<u>Part No.</u>	<u>Qty.</u>	<u>Description</u>
C-IFS	2	Inboard Flap Gap Seal
C-OFS	2	Outboard Flap Gap Seal
C-BRACK	8	Attach Bracket
C-SHIM	8	Shim
C-TAB	2	End Attach Tab
CR3243-4-2	32	Roundhead Cherry-max Rivet
CR3243-4-3	6	Roundhead Cherry-max Rivet
AN526C-632R8	56	Stainless Steel # 6 Screw
AN960C-6L	56	Stainless Steel # 6 Washer (Thin Profile)
A6K-75	56	# 6 Keyed Rivnut
3M 8672 X 1" Wide	162"	3M Polyurethane Protective Tape

# CESSNA 100/200 SERIES FLAP GAP SEAL INSTALLATION

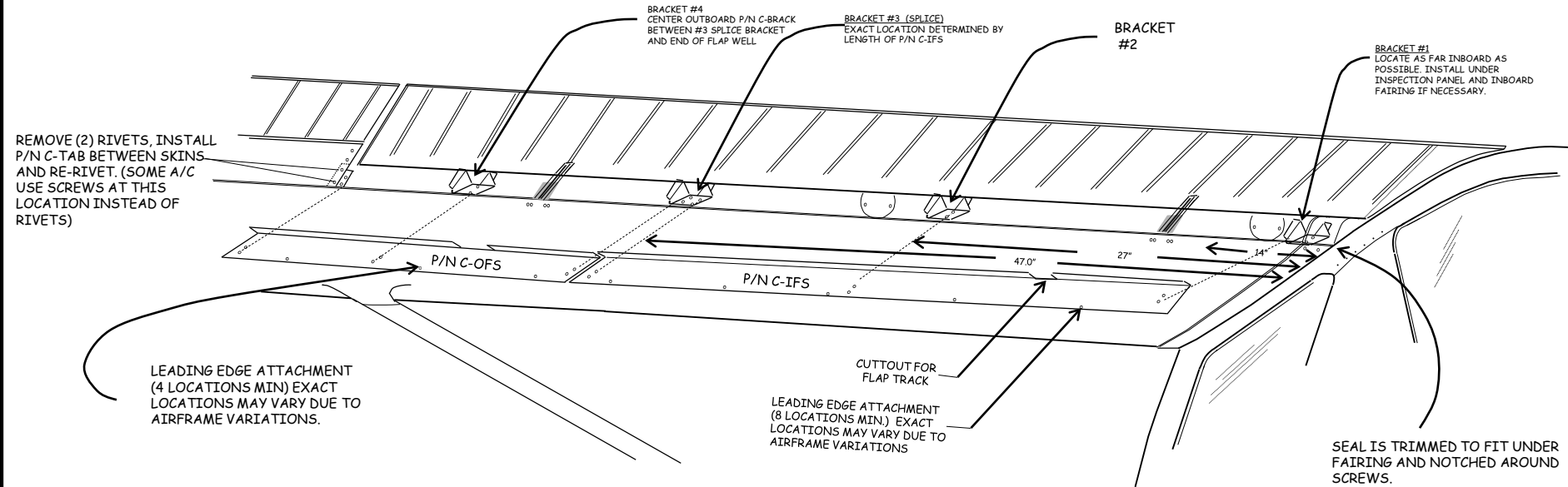
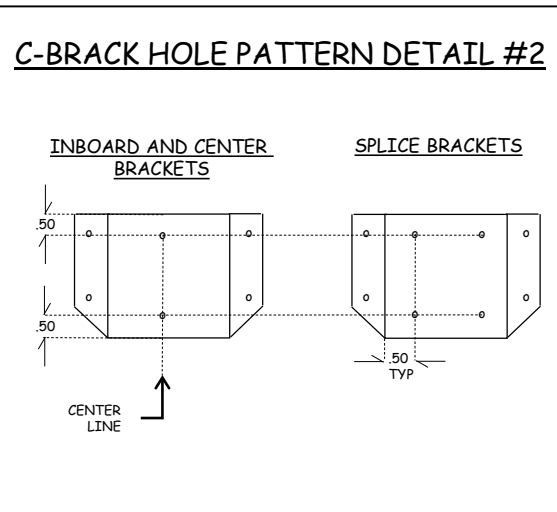
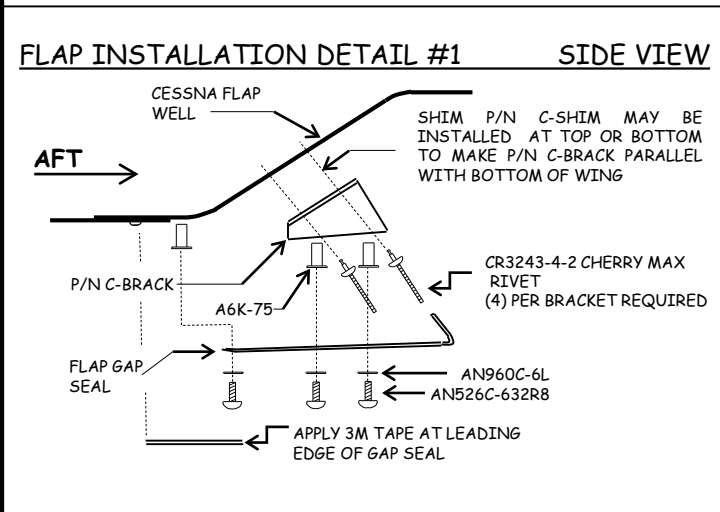


FIGURE #1 PAGE 3



REV #	DATE	EFFECT
A	08/22/00	Replaced fiberlock nut with rivnuts. Added attachment to leading edge of flap seal.
B	12-26-01	Moved location of inboard attach bracket
C	04-18-14	Added 3M tape to leading edge of gap seal.

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**DRAWING # C100/200FGS**

CESSNA 100/200 SERIES CESSNA MODELS  
(EXCLUDES MODELS 150/152)

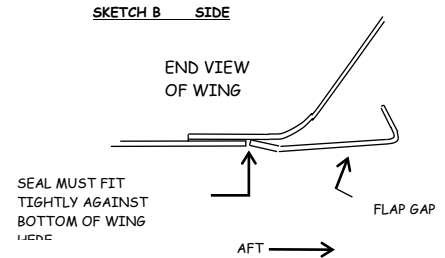
01/04/2000 NOT TO SCALE DRAWN BY: JMB

This manual describes the installation of flap gap seals on Cessna 100 & 200 series aircraft. All aluminum parts are treated with a Zinc Chromate primer and ready to paint. To finish simply scuff the surface lightly, clean, and paint with desired color. The parts may be painted before or after installation. For optimum performance of this modification it is desirable to check the flap rigging per the appropriate Cessna Manual before the installation of the gap seals.

## Section 2.0 Installing Flap Gap Seal Kit on 206 Models.

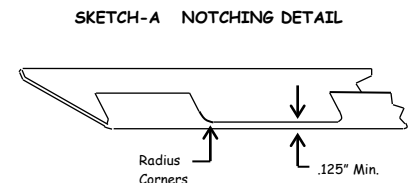
### 2.1 Locating Outboard Flap Seal P/N C-206-LOF (Left Wing)

Locate the outboard seal P/N C-206-LOF flush with the end of the flap well area, notch the flange on the trailing edge of the seal where it interferes with the flap track (see Sketch A). Make sure to radius all corners of notches to prevent cracking. **On some models the flap access panels may need to be trimmed slightly at the bottom to prevent interference with the gap seals. On models with a screw at the bottom of the access panel, the bottom screw may be removed.**



### 2.2 Locating Center Flap Seal P/N C-206-CFS (Left Wing)

With the outboard flap seal P/N C-206-LOF properly located, mark a line on the bottom of the wing at the most inboard point of the seal. This line will represent the location for the outboard edge of the center seal P/N C-206-CFS. With the center seal P/N C-206-CFS properly located, notch the flange on the trailing edge of the seal where it interferes with the flap track (see Sketch A). Make sure to radius all corners of notches to prevent cracking.



### 2.3 Locating and Trimming Inboard Flap Seal P/N C-206-IFS. (Left Wing)

With the center flap seal P/N C-206-CFS properly located, mark a line on the bottom of the wing at the most inboard point of the seal. This line will represent the location for the outboard edge of the center seal P/N C-206-IFS. Trim the Inboard flap gap seal P/N C-206-IFS to length, also trim the seal to match the contour of the fuselage for the particular aircraft. Per Figure 2 Page 6, place the inboard end of P/N C-206-IFS 1/16" from fuselage. Mark the location of the two screws holding the existing fairing around the wing to fuselage junction. Seal P/N C-206-IFS should be notched so it can be slid between fairings and around screws. Also notch the flange on the trailing edge of the seal where it interferes with the flap track (see Sketch A). Make sure to radius the corners of the notches to prevent cracking.

### 2.4 Locating and Riveting Attach Brackets P/N C-BRACK (Left Wing)

(To aid in the placement of the attach brackets, 2 sided tape may be used to temporarily hold them in position.) Referring to Figure 2 Page 6, mark the attach bracket locations on wing. These marks represent the center of each bracket. The bracket locations shown are recommended locations, **however they may be moved if interference is found with existing rivet heads, flap tracks, or inspection panels.** If it is required to move attach brackets, confirm they are located no further than 24" from each other or the end of the flaps. Due to variations in airframes, shims P/N C-SHIM may be used to achieve correct angle along bottom of brackets (figure 2 detail 1). With all brackets temporarily held in place check for proper fit of gap seals. Drill #27 holes through brackets, flap well skin and shims if necessary. De-burr holes and corrosion proof with Alodine or equivalent. Rivet the brackets in place using (4) CR3243-4-2 rivets per bracket.

## 2.5 Attaching Gap Seals P/N C-206-IFS, C-206-CFS and C-206-LOF (Left Wing)

Hold the seals in their proper location and drill two holes (#40 hole size) through the seal and attach brackets per figure 2 detail 2. Cleco the seals to the attach brackets as you go. With the seals temporarily attached to the brackets locate 5 or 6 points along the leading edge of each seal and drill #40 holes through seal into trailing edge of wing skin per sketch B page 4. Look for areas in the seal that are not tight to the bottom of wing skin, more locations can be used if appropriate. Cleco seals as you go. Remove seals and enlarge the holes in the attach brackets and bottom of wing skin to a #12 holes size, de-burr holes and corrosion proof with Alodine or equivalent. Install P/N A6K-75 rivnuts in each location. Enlarge the holes in the seals to a #20 hole size and attach the seals using AN526C-632R8 screws and AN960C-6L washers. Check to make sure air cannot get between the leading edge of the seal and the bottom wing skin. If areas are found that can allow air to get between the seal and the bottom wing skin the seal can be bent further upward or extra rivnuts and screws added to the leading edge.

**After gap seals are secured, apply 3M Tape P/N 8672 to the joint where the leading edge of the seal meets the bottom of the wing per 3M directions. The joint between the seal and the bottom of the wing must be completely sealed to prevent airflow between the seal and wing.**

## 2.6 Installing Seals On The Right Wing.

Repeat Steps 2.1 thru 2.5 on right wing.

## 2.7 Paperwork

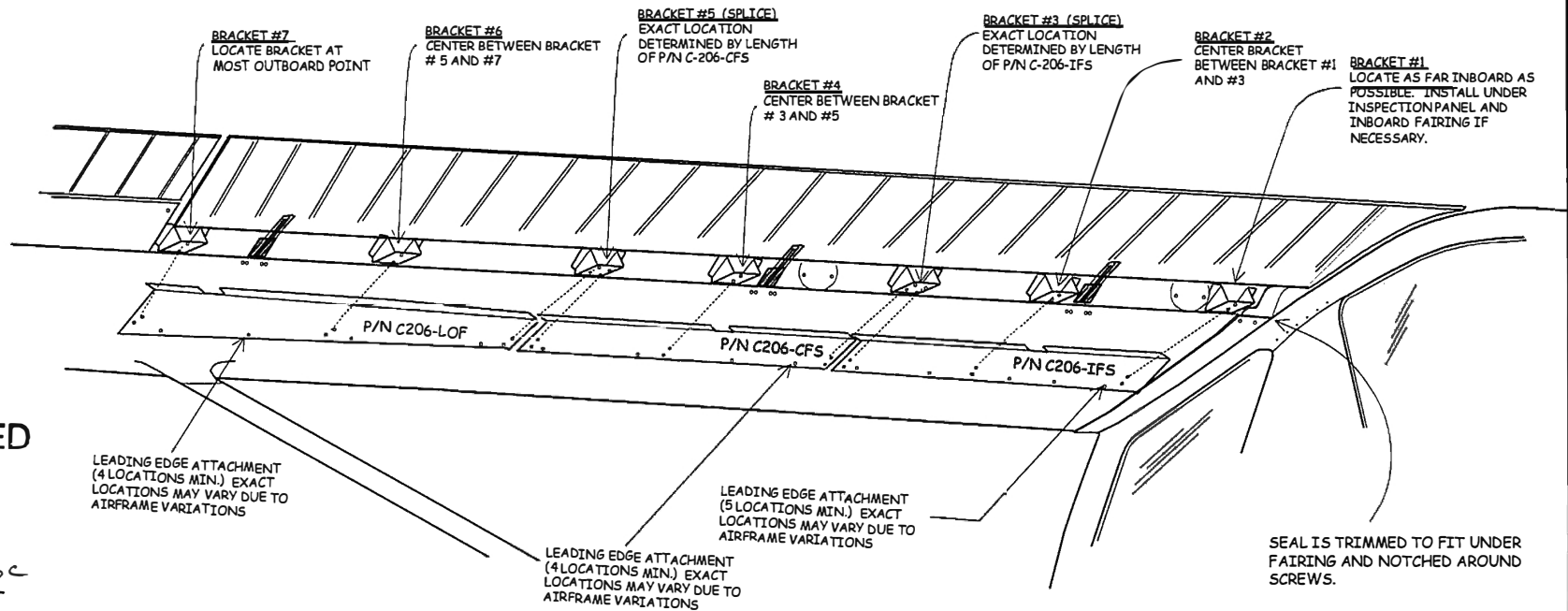
Complete form 337, logbook entry, and weight & balance. Place copy of Supplemental Type Certificate and Maintenance manual with aircraft logs.

Flap Seals with hardware ..... 3.95 lbs.  
Arm.....Per appropriate Cessna Service Manual

## 2.8 Parts List

<b><u>Part No.</u></b>	<b><u>Qty.</u></b>	<b><u>Description</u></b>
C-206-IFS	2	Inboard Flap Gap Seal
C-206-CFS	2	Outboard Flap Gap Seal
C-206-LOF	1	Left Outboard Flap Gap Seal
C-206-ROF	1	Right Outboard Flap Gap Seal
C-BRACK	14	Attach Bracket
C-SHIM	14	Shim
CR3243-4-2	56	Roundhead Cherry-max Rivet
AN526C-632R8	72	Stainless Steel # 6 Screw
AN960C-6L	72	Stainless Steel # 6 Washer (Thin Profile)
A6K-75	72	# 6 Keyed Rivnut
3M 8672 X 1" Wide	238"	3M Polyurethane Protective Tape

# CESSNA 206 SERIES FLAP GAP SEAL INSTALLATION

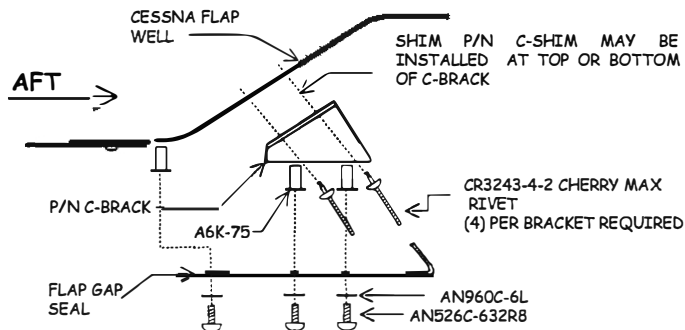


FAA APPROVED

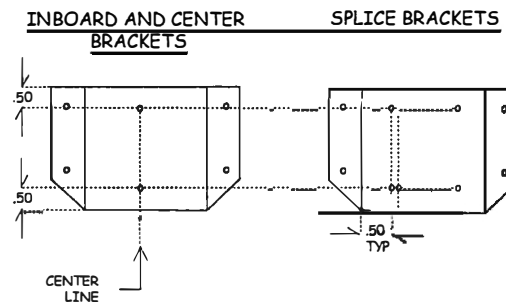
JAN 22 2002  
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 CERTIFICATION OFFICE  
 CENTRAL REGION

FIGURE #2 PAGE 6

**FLAP INSTALLATION DETAIL #1 SIDE VIEW**



**C-BRACK HOLE PATTERN DETAIL #2**



REV #	DATE	EFFECT

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 703 AIRPORT DRIVE, BURLINGTON, WI 53105

DRAWING # **C-206FGS**

CESSNA 206 MODELS

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**Section 3.0**      **Installing Flap Gap Seal Kit on 207 Models.**

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For the current copy of this manual please contact Knots 2U, Ltd. at 262 763-5100 or via email at technical@knots2u.com.

The Airworthiness Limitations section is FAA approved and specifies maintenance required under Secs. 43.16 and 91.403 of the Federal Aviation Regulations unless an alternative program has been FAA approved.

## **Section 4.0 Instructions for Continued Airworthiness.**

### **PART A. INSPECTION**

1. Daily inspection at preflight to ensure there is no bent, cracked or broken seals and that all attachment hardware is tight.
2. Daily inspection at preflight to ensure that the polyurethane protective tape at the leading edge of the flap gap seals is in proper condition and is not coming loose or missing.
3. When aircraft has been stored outside during snow or freezing conditions, a careful inspection should be made of the areas between the seals and flaps for ice accumulations. If ice is found, which cannot be removed by careful brushing, the aircraft should be de-iced.
4. 100 hour inspections are suggested to check for any bent or cracked seals and that all attachment hardware is in good condition.

### **PART B. CRACKING, DEFECTS, LOOSE RIVETS, LOOSE TAPE.**

1. If cracks are found in a Gap Seal, stop drill the crack. If there is more than 1 crack in a gap seal, the seal must be replaced.
2. If polyurethane protective tape is found loose or missing from the leading edge of the gap seal it should be replaced. The product may be purchased from various aviation sources or from Knots 2U, Ltd. The tape is 3M part number 8672 and is 1" wide.
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 or replace the appropriate screws as required.
5. If a flap seal is replaced, the 3M tape must be replaced on that seal.