Air Research Technology Inc.

WING-X STOL Installation Guide NO: 205-210

for kit(s) #R-1582,1582-1,1582-1CS,1582-SS

For installation on Cessna models 205 and 210 series airplanes as per Transport Canada Supplemental Type Certificate #SA01-33 and or Federal Aviation Administration Supplemental Type Certificate #SA _____

Important Notice

The installation must be carried out by qualified personnel in an FAA or MOT approved aircraft maintenance shop. Work practices must be accomplished as per AC43-13-1B or other acceptable methods.

It is MANDATORY to complete all of the steps in this guide.

PART I

Installing the wing tip extension ; (Steps 1 thru 15)

There is no specific drawing supplied for the installation of the "Wing Extension" tip. The following installation instruction guide and supplied drawings contain all the necessary details. The guide is revised on a regular basis and reflects the most current information . When in doubt refer to this guide. Should you require more information please contact your dealer or the manufacturer.

PART II

Installing the wing spar reinforcements; (Steps 16 thru 22)

Use drawing number #R-1582-205-210 and dwg. # SR100-205 -210 both dated 03-31-2000 or latest approved revision. These drawings reflect the current installation procedure on how to install the following the following spar reinforcements;

- Doubler Straps 2024 T3 (18" X 1.1875" X 0.125") positioned at Upper Main spar Cap Wing Station 127.00 to 145.00
- Packers 2024 T3 (24" X 1.50" X 0.125") positioned at Upper Main spar Cap Wing Station 136.00 to 160.00
- Stainless Steel Straps #SS-12-1-077 (16" x 1" x O.077") positioned at Wing Station 92.00 to 108.00

PART III

VNE Placards, Documentation Forms and reports

PART IV

W & B Information

TOOLS REQUIRED ;

◊ 2 metal straight edges approx.72" or 50' feet of fine string.

◊ Hole finder or transfer tool (optional)

◊ Standard sheet metal tooling including clecos.

◊ Countersink bit (100 ^{o}) and drill bits.

◊ Standard riveting equipment.

◊ Metal clamping tools (2 or 3)

◊ All materials and documents required for a complete installation are included with your kit.

◊ Complete install kit incl. all parts listed on shipping checklist are supplied with your Wing Extensions .

IMPORTANT NOTE ABOUT THE JIG SET RIVET

Your Wing Extensions have been assembled by the manufacturer in an assembly jig with one (1) jig set rivet 3/32'' situated inboard which holds the trailing edge skins in place. It is not normally required to remove the JIG SET Rivet until step #10 , however on some aircraft it is necessary to remove this rivet in the early stages of the installation procedure in order to adjust more accurately the airfoil alignment and washout.

1) Wing Tip lighting and other electrical connections

◊ Remove the plastic wing tip and disconnect the wires to the navigation and strobe lights.

◊ If applicable, remove strobe light power supply and attachment bracket from rib.

◊ Extend existing wiring, use supplied wire #M22759/ 16-18-9 and connectors #320559

2) Preparing the wing for fitting

◊ Remove the plastic wing tip and check the existing wing to make sure there is no top or bottom skin overlapping past the wing rib at wing station 208.00. If necessary cut away or file away all excess aluminum until top and bottom wing skins are flush with the outboard edge of the existing center rib at wing station 208.00 .

◊ The supplied anchor nuts P/N#MS21061L08 are used to secure your Wing Extension onto the wing. It is important that they be installed at strong points and positioned through the spar and or stringers as indicated in figure 6 in this guide or in Detail " A" of Drawing # R1582-205-210

◊ For future positioning of the anchor nut plates (step #9), drill out existing rivets at end of each stringer or spar.

◊ On most aircraft, the stringers of the existing wing butt up against or overlap the rib cap, however, this is not always the case, therefore if required,splice the stringer to make it longer as indicated in Detail "A" refer to splicing methods and technique as depicted in the Cessna Service Manual for series 100 aircraft.

◊ A clean, flush surface is required to allow for a tight fitting of the wing extension skirt onto the wing. Therefore, remove all "brazier or universal head rivets" found along the outboard two(2) inches of the wing extremity, replace these fasteners with flush head rivets.

3) Preparing the wing extension *" WING-X STOL "*

◊ On all early model Cessnas built prior to 1973 , LEFT AND RIGHT wing extensions look identical but they should not be interchanged. A serial numbered decal is affixed to the center rib section of each wing extension and identifies LEFT (LH) or RIGHT (RH).

◊ Remove plastic wing tip and place it on work bench. Fit the plastic wing tip over the wing- extension. In order to fit the wing- extension into the plastic wing tip, trim away excess metal at the outboard trailing edge corner of the Wing Extension**.** A tight fit is desirable. Do not trim to much.

◊ With the wing tip fitted firmly in position, mark a small line at top and bottom of Wing Extension skin to coincide with the inboard trailing edge of the plastic wing tip. This line will be used later in step #11 when trimming the trailing edge.

◊ Remove the plastic wing tip from the wing extension. Final installation of the plastic tip will be in step 14.

4) Preliminary fitting and alignment

CAUTION : Every wing is slightly different and will require some on sight adjustment in order to ensure correct alignment in all geometric planes. So as not to permanently damage your new kit ,we suggest the use of speed tape to temporarily fix each extension in position then step back a certain distance and take time to view the results from the front, back and side. Make all adjustments at this time before beginning to cut, drill and fasten .

Fit the Wing Extension over the existing wing extremity. Seat the leading edge of the extension firmly against the wing leading edge contour and apply pressure in order to push the assembly inboard as much as possible.You may have to repeat parts of step #2 again in order to assure a flush fitting. The inboard trailing edge of the Wing Extension assembly will temporarily envelope the outboard section of the ailerons, this is normal , the overlap will be marked for cut-out at a later time (see "cut out" step#10).

5) Dihedral alignment along the FWD and AFT spar. (Use 2 or 4 straight edges or 50' string if desired)

Using the rivet rows of the main spar on the top and bottom of the wing as a guide take a straight edge (min.72") and firmly set it or using duct tape, tape it in line along the top/bottom spar rivets, extended it from station 154.00 all the way out to the extremity of the Wing Extension. It is preferable to use 2 straight edges or to alternate by positioning the straight edge over and under the wing as required. Hold the Extension firmly in place, then raise and lower it so as to achieve an even gap along the straight edge on the top & bottom side of the wing. An even gap should insure proper dihedral alignment.

Repeat step #5 along secondary / auxiliary "aft. spar" to insure alignment of the aft portion of the wing extension airfoil. The secondary spar or aft. spar is sometimes called the false spar.

6) Leading edge alignment (sweep back)

Camber lift airfoil NACA 2412 (post 1973)
The leading edge of this airfoil design sweeps back in a straight line from wing station 100.00 all the way out to the tip. Use a straight edge (min. 72" long) to align the leading edge of the extension with the the leading edge of the wing . Optionally you can tape a string along the L/E extending from just past the strut at wing station 101.00 to the end of the extension at wing station 226.00. Use spacers to clear the thickness of the skirt strap, and align the wing extension leading edge accordingly.

6) Leading edge alignment (sweep back) continued

Symmetrical airfoil NACA 0012 (pre 1973)
On all wings built before 1973 , the leading edge sweeps back a discernible amount at wing station 190 to 208 . DO NOT USE this section for alignment of the wing extension L/E. We suggest to extend a straight edge or string from wing station 101.00 to 226.00 , measure the gap between the leading edge and the straight edge at 208.00 and maintain this approx. 1/2 inch gap along the entire leading edge of the wing extension. (see fig.7 page 16)

7) Marking position of the skirt

With Wing Extension perfectly aligned and held in position, draw a line around the wing surface, this will indicate the position of the wing extension skirt around the wing .

8) Transfer drill holes onto the skirt strap

CAUTION When positioning the holes for the securing screws be sure to maintain 3/8" minimum edge distance along the skirt strap at all times.

◊ Before drilling the skirt strap, fix the Wing Extension in place at the leading edge. You should pull it back tightly and use speed tape to secure the extension temporarily in place, or, if you wish, use the original wing tip screw holes found in the wing at this position, there should be one on the top L/E and one on the bottom L/E. Use these screws to secure the Wing Extension in place. This will assure a tight fit around the contour of the leading edge cuff prior to positioning of the anchoring holes.

◊ With Wing Extension held firmly in place at the leading edge, use a straight edge or ruler lined up along the existing row of rivets of each stringer, front spar and rear auxiliary spar. Using these rows of rivets as a guide draw a series of lines onto the skirt strap, and mark the skirt strap for drilling. You can also use a hole finder or any other suitable method to accurately position the anchoring holes onto the skirt strap.

◊ Start drilling your anchor nut holes while moving from the front (leading edge) then bottom leading edge and alternate from Top to Bottom of the skirt , going towards the trailing edge and making sure that the skirt is fit tight around the wing. Use a #40 drill bit and drill through the skirt at the marked locations, remember to install a cleeco into each drill hole to insure no movement or misalignment of the Wing Extension.

◊ Verify final alignment of the Wing Extension for dihedral, sweep back and wash out. Minor adjustments can be made by removing the appropriate clecos and redrilling with a #30 drill bit while holding the Wing Extension in the correct position. Removal of the JIG SET RIVET may be required at this time in order to avoid possible warping of the top and bottom skins.

◊ Finish with a #20 drill bit and enlarge the drill holes for anchor nuts.

◊ Remove the Wing Extension before proceeding to the next step.

9) Positioning and installation of the Anchor nut plates P/N #MS21061L08

NOTE: Every wing is different and will require some on site adjustment to insure that the anchor nuts are positioned accurately.The anchor nuts are used to hold your Wing Extension in place and must be installed at strong points such as through the spar and stringers. Maintain a minimum edge distance of 3/8 inches along the wing extension skirt.

In some cases stringers are not always butted against the center rib at wing station 208.00 . If necessary extend the stringer(s) by adding a 6" inch splice use a minimum of (4) AD3 rivets to fasten the splice. The stringer extension can be positioned in such a way as to butt up against or overlap the center rib cap, both methods are approved (Refer to Detail " A" of Drawing # R-1582-205-210 or figure 6 page 15 of this guide).

◊ Insure anchor nut rivets are in line as much as possible and do not interfere with existing rivets along the spar or stringers.

◊ Use of following rivets is approved to fasten the nut plates along the top and bottom of the wing: Solid rivet P/N # MS20426AD3-3 & AD3-5 , Pull-Thru rivet P/N# MS20605AD3W4 or P/N #CR9116-3-4. Because the nut plate rivet is non-structural use of pop rivet 3/32" P/N #A34A is also approved.

◊ Install the Wing Extension to the wing using supplied machine screws (P/N # AN525-832- R8).

10) The aileron Cutout

◊ Gradually cut-out the metal overlapping the aileron. BEWARE not to trim off to much material. The final result should give you a clearance of approximately 1/2"in. between the aileron and Wing Extension inner edge this should coincide with the edge of the rib web.

◊ Carefully file or dress out the area to attain a smooth edge, if require remove the JIG SET RIVET.

11) Trimming the trailing edge

◊ Temporarily install the plastic wing tip. It may be necessary to trim the trailing edge outboard corner of the Wing Extension with a file to permit a proper tight fit into the plastic wing tip.

◊ With the plastic wing tip fitted firmly in position, use a straight edge and mark a line on the top and bottom skins extending from the outboard trailing edge of the aileron to the trailing edge of the plastic wing tip. Refer to line scribed in step #3.

◊ Following the scribed line along the top and bottom skins of the Wing Extension trailing edge, carefully cut off all the excess material.

◊ Remove the plastic wing tip.

12) The trailing edge stiffener (P/N # 1582-7)

Two trailing edge stiffeners are provided in every kit. Insert the stiffener in between the Wing- Extension trailing edge skins. Adjust the stiffener by cutting to proper length then clamp the newly reinforced trailing edge skins together with the stiffener sandwiched in the middle.

Watch for induced warping of the airfoil on the top and bottom skins of the Wing Extension. This could be caused by misalignment of the trailing edge airfoil. FIX THIS PROBLEM BEFORE RIVETING THE STIFFENER INTO PLACE.

◊ When airfoil symmetry is assured, use clamps to tighten firmly along the trailing edge then drill & install 3/32'' rivets through the skins and stiffener at one(1" in.) intervals along the trailing edge.

◊ The skin is thicker along the reinforced skirt strap, if necessary , install (3 to 5) additional rivets in the area of the skirt strap trailing edge.

◊ To attain a smooth finish along the trailing edge of the Wing Extension, file clean all metal edges.

13) Completing the installation

◊ If required, reinstall the strobe light power supply and bracket to the new end rib then connect the wires and test for proper function.

14) Positioning of the forward anchor nut plates in the Nose Rib

Your Wing Extensions do not have pre-drilled holes or anchor nuts installed in the top section of the leading edge nose rib. Securing your plastic wing tip in place will require on site fitting of the forward anchor nut(s) which are positioned along the top and bottom of each nose rib as required.

◊ Using your existing plastic wing tip as a guide, mark the top most forward screw holes onto your new Wing Extension, then drill out and install the anchor or "Tinnerman*" nut(s) as required. Some aircraft equipped with leading edge STOL kits may require 2 or more screws top and bottom in order to fasten the plastic wing tip securely in place.

◊ Once the hole(s) are positioned, fasten the anchor nuts with either Pull-Thru , pop-rivets or solid rivets, as this is non structural all methods are approved. Use fasteners of the type and number supplied or use "Tinnerman" nut(s).

◊ When using "Tinnerman" nut(s), pre-drill the hole then remove the rivet binding the top leading edge skin to the nose rib and insert a "Tinnerman" as required.

◊ You can now install the original plastic wing tip onto the Wing Extension.

15) Various STOL kit leading edge devices require optional " BUSHTON CUFF" P/N# 1582A-10

As an option , you can order an enhancement cuff P/N# 1582A-10 to fit over your new Wing Extension leading edge and skirt strap. The optional " BUSHTON CUFF" is STC approved and manufactured to closely match the existing leading edge airfoil design of the most popular STOL kits, this optional cuff is longer and wider than required therefore some refitting and trimming may be necessary.

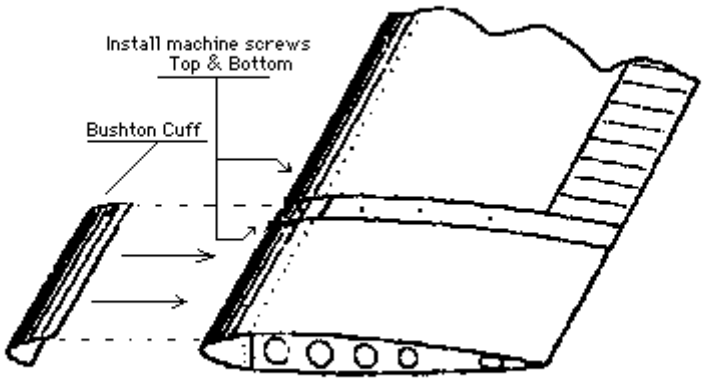
◊ Insert the optional Bushton cuff under the existing leading edge device and it should take the shape of the existing STOL leading edge cuff .

◊ Some plastic wing tips are designed to have the L/E cuff inserted into the the wing tip, if this is the case you can reinstall your plastic wingtip and use it as guide. Position the optional cuff enhancement into the tip thereby assuring a nice fit and the required shape should fall into place.

◊ If this method is not available to you. Follow the existing lines of contour and sweep back to match as much as possible the existing leading cuff shape.

◊ Trim the optional cuff to the desired size, paint and install using approved fasteners and in order to keep your wing extensions removable, remember to use machine screws where indicated.

The BUSHTON CUFF P/N #1582A-10



1) To install, follow contour of existing STOL kit leading edge and rivet along the same lines.

2) To allow for easy removal of WingExtension, install machine screws where indicated.

Part II

INSTALLING THE WING SPAR REINFORCEMENTS

16) Wing spar reinforcement Installation

The latest revised drawings are supplied with each kit , always install the wing reinforcements using the most current drawings or contact the manufacturer for the latest issue. Refer to drawing# R1582-205-210 dated 03-31-2000 and drawing # SR100-205-210 dated 03-31-2000. These rivets are supplied with your kit.

◊ Remove existing rivets along the upper spar cap extending approximately from wing station 125.00 to 160.00. You will be doubling the amount of rivets along this section of the upper spar cap. By adding one rivet between each existing rivet in order to obtain an approximate 1" inch pitch. These 5/32" rivets are supplied with your kit. Be sure to use correct fastener length , refer to the P/N # and dash number appropriate to the thickness of the wing station area to be riveted.

17) Inspection Cover Assy. P/N #1582A-11

Installation of additional inspection holes may be required on the underside of the wing in order to provide access for the bucking bar while riveting the doubler and packer straps into place. Four (4) Inspection cover assy's are supplied in each kit. Refer to applicable aircraft service manuals to position and install additional access holes and inspection covers. Example: Cessna 180-185 Serv. manual 1969 to 1978 Chap.17 pg. 32 Fig.17-12.

18) WHAT TO DO when cracks are discovered in the wing assembly

Metal fatigue cracks may occur on hi-time Cessna aircraft. These cracks are normally found along the center rib ,channel and top skin situated along the upper spar cap extending from wing station 124.00 to 196.00. During the initial installation procedure, all deficiencies can be readily spotted when viewed through the newly installed inspection holes. In order to maintain the structural integrity of the wing assembly. Any defects or cracks found in the wing assembly must be repaired immediately. Suitable repair procedures can be found by referencing Section 17 of the appropriate Cessna Service Manual.

19) Preparing the area for the reinforcement straps

The packer and doubler straps are each 0.125 " thick, their combined thickness at the splice point near the center rib at wing station 136.00 is 0.250" In order to allow passage and positioning of the straps along the upper spar cap , cut out a small portion of the top forward center rib at station 136.00 and station 154.00. The center rib at wing station 154.00 requires the passage of one strap only (0.125") and will not require as much notching as the inboard rib. See drawing for detailed view.

◊ Use a Dremmel tool or other type high speed rotary cutter to provide a minimum cut-away through the center ribs at wing station 136.00 and 154.00 just below the spar angle then file all surfaces to a smooth finish.

20) Installing the PACKER P/N #2024T3 (24 X 1.5 X 0.125)

Once the cut outs of the center ribs are complete, the packer should be placed along the upper spar cap. and butted up against the bulb plate at wing station 136.00.This is the splice point selected for reinforcement. Place the tapered end of the packer outboard and extend it through the newly completed center rib cut-out at 154.00. The packer should extend all the way out to wing station 160.00. Caution, do not place packer tightly against the bulb plate at the splice point (sta.136.00) , a minimum end gap of 0.032" is recommended .

21) Installing the DOUBLER P/N #2024T3 (18 X 1.1875 X 0.125)

The shorter reinforcement strap called the Doubler (18" X 1.1875"X 0.125") is tapered at both ends and should be placed behind the bulb plate and over the splice at wing station (136.00) as depicted in the drawing. Center the 18" doubler strap at the splice area at wing station 136.00 . When both straps are in place fasten all using 5/32" rivets P/N #MS20426AD5-11 at 1" pitch from wing station 127.00 to 145.00 approx. Then use 5/32" rivets #MS20426AD5-9 at 1" pitch from wing station 145.00 approx. to the end of the reinforcing straps at approx. wing station 160.00.

Inspection and installation of stainless steel strap reinforcement if required :
Ref. Drwg #SR100-205-210 This installation consists of two parts. Part 22A and Part 22B,

PART 22A - Inspection; steps 22A-1 thru 22A-4

NOTE: In order to obtain higher gross weight capability and maintain structural integrity, Cessna (circa 1966) incorporated an angle stiffener along the lower main spar at in the area of the strut attachment known as wing station 100.00 . It is expected that very few aircraft of the Cessna 205 and 210 series have the angle stiffener present. However any history of major wing repairs and or wing substitution would warrant a close visual inspection as per part 22 A below in order to determine if If the "angle stiffener " is present.

22A-1) Both wings, left and right must be inspected individually.

22A-2) Open the inspection hole situated on the underside of the wing, aft of the spar, closest to where the strut connects to the wing. Using a flashlight and a mirror, by visual inspection, ascertain if the subject wing has the *"angle stiffener"* installed along the lower spar cap between Wing Station 90 and 110 (approximately). Refer below to Figures 1 and 2 and 5) to assist identification of the *" angle stiffener"* .
If the "*angle stiffener* " is present, no further action is required.

22A-3) **CAUTION :** DO NOT INSTALL the S/S straps if the "angle stiffener" is present in each individual wing. DO NOT COMPLETE 22B below and move immediately to step#23.

22A-4) The installation of the Stainless Steel Strap 0.077" in accordance with Part 22B is MANDATORY on all wings which do not incorporate the factory installed*"angle stiffener"*.

PART B - Stainless Steel Strap Installation; steps 22B-1 thru 22B-16

WARNING If the angle stiffener is present the stainless steel strap must not be installed because the cherry max rivets supplied would not meet the grip range requirements and structural integrity would be compromised.

If the "*angle stiffener* " is not present the following steps listed in 22B must be accomplished.

22B-1) Installation may only be carried out in an approved sheet metal shop using recognized procedures and techniques. Workmanship must comply with AC43.13-1B.

22B-2) On the underside of the wing, along the spar identify and mark the center of the rib at Wing Station 100.50 using a felt marker. **NOTE: Wing Station 100.50 is established by the outboard Web of the center rib at Wing Station 100.00**

22B-3) To provide room for installing the strap the strut must be removed at the wing junction. Cradle the wing securely and remove the strut fork connection bolt where it attaches to the main spar.

22B-4) Carefully drill out and remove all existing rivets approximately. 8" inboard and 8" outboard of Wing Station 100.50. **CAUTION: Do not to enlarge drill holes beyond tolerance or severe spar damage may occur.**

22B-5) Take the 16" Stainless Steel Strap 0.077" and precisely mark the center using a felt marker.

22B-6) Slide the "s/s strap"under the leading edge wing skins and up against the underwing skin along the spar channel and then center the "s/s strap" at Wing Station 100.50. Note that both extremities of the 16" S/S strap have been tapered for your convenience, if the strap is set up to tightly against an existing rivet on the underside of the spar cap, the strap is to long and must be shortened. Shorten the strap by grinding it down (a maximum of 0.50 ") in order to relieve stress load on the lower leading edge skin. On occasion, due to the proximity of other rivets, the extremities of the s/s strap may cause undesirable stress on the underside wing leading edge skins. If this occurs, remove rivet(s) in affected area and reinstall using locally fabricated aluminum shims in order to create a more gentle taper at the extremity of the s/s strap. (Refer to figure #4 for more details on positioning of the S/S strap.)

22B-7) The "s/s strap" , when centered on Wing Station 100.50 at the spar channel splice will be completely hidden, because it is covered by the leading edge wing skins. When the correct position is established, accurately mark the drill hole positions on the "s/s strap", the existing L/E wing skin holes can be used as a guide. Then remove the "s/s strap and proceed to step 8 .

IMPORTANT NOTE

A) The number of holes to be drilled may vary with different aircraft however (**7**) rivets on each side of the spar splice at Wing Station 100.50 or a total of 14 CR rivets is the minimum required in order to obtain the desired structural strength at the spar splice.

B) The hole positions, as marked may not align perfectly down the center of your "s/s strap". This is normal; however, a rivet edge distance of 2 X diam. or .375" must be maintained along the length of the strap.

CAUTION

- Care must be taken while drilling in order to avoid contact with the strut attach fitting inside the wing.
- DO NOT SUBSTITUTE the universal head CherryMAX rivets or the Stainless Steel Strap. These parts are shear strength specific and critical to maintaining adequate strength at the wing spar splice. USE ONLY fasteners and materials supplied or referenced herein.
- If a stainless steel strap is damaged during installation, obtain a new one from the manufacturer.

22B-8) Use a drill press and a 3/32" bit, precisely drill out the holes as required. Measure accurately along the lower spar cap, to insure a proper positioning of the strap.

22B-9) Verifying that the holes align precisely along the spar and return to the drill press and enlarge the holes in the "s/s strap" to #10.

22B-10) Deburr the S/S Strap and position it over the leading edge wing skins and up against the underwing skin along the spar channel and center the strap at Wing Station 100.50 as in Step 5.

22B-11) Through the entire thickness of the spar channel including all the skins, use (2) clecos of the correct size and secure the "s/s strap" tightly into position. Using the holes at each extremity of the"s/s strap".

22B-12) Using the "s/s strap" as a guide, drill through the combined thickness along the spa**r** using #10 drill**.** Repeat this until all of the holes have been enlarged. **CAUTION: Do not enlarge the drill holes beyond tolerance or severe spar damage may occur.**

22B-13) When all the holes have been drilled to the correct size, remove and Deburr the strap. Do not chamfer the rivet holes. Clean out all the metal filings in and around the spar for preparation of final installation.

22B-14) Permanently install the S/S strap using CR3213-6-6 universal head CherryMAX rivets. At Wing Station 100.25 "the leading edge lap joint", install (1) rivet No: CR3213-6-7 universal head CherryMAX rivet " DO NOT SUBSTITUTE " . This longer rivet will allow for the additional thickness at the joint due to leading edge skins overlapping at this point as well as the additional thickness of the center rib at this position. DO NOT SUBSTITUTE Rivets for any other type.

22B-15) Reinstall the strut to the wing, on occasion the tubular structure of the strut main touch one of the heads of the newly installed cherry max rivets preventing the strut fork to seat correctly. When this occurs it is permissible to smoothly file out that portion of the tubular strut to clear the rivet head.

22B-16) Repeat instruction steps (22B-1 thru 22B-15) for both wings.

IMPORTANT NOTE CONCERNING DISSIMILAR METAL CORROSION : Reference MIL-STD-171
Stainless Steel 301 1/2 hard = (-0.50V stnd. galvanic potential)
2024 T3 aluminum alloy a =(-0.60V stnd. galvanic potential)
Conclusion, the difference in galvanic potential is negligible, there is no risk of dissimilar metal corrosion

PART III

23) VNE Placards, Documentation Forms and reports

- Install limitation placards in full view of pilot, refer to FOM Supplement for applicable placards of each A/C model .
- The incorporation of this modification requires completion of Transport Canada form #24-0045
- In the U.S.A. Federal Aviation Administration form #337 must be completed.
- You may be required to carry out a test flight.
- When completing the necessary documentation refer to drawing numbers: #R1582-205210
- Make the necessary installation and certification entries in the aircraft logs.
- Revise the Weight and Balance and aircraft equipment list in accordance with the information listed below.

PART IV

24) W & B Information for Cessna 205-210

- Wing Extensions Left and Right @ 8.0 lbs. each (incl. paint) Weight : 16 lbs. ARM: 52.0 in.
- Two (2) Doubler Straps 2024 T3 (18" X 1.1875" X 0.125") positioned at Wing Station 127.00 to 145.00
- Two (2) Packers 2024 T3 (24" X 1.50" X 0.125") positioned at Wing Station 136.00 to 160.00
- Total Weight of all reinforcement straps is 2.00 lbs. ARM : 36.0 in.
- **Total Weight complete kit is 18 lbs. average ARM: 51.3 in.**

END

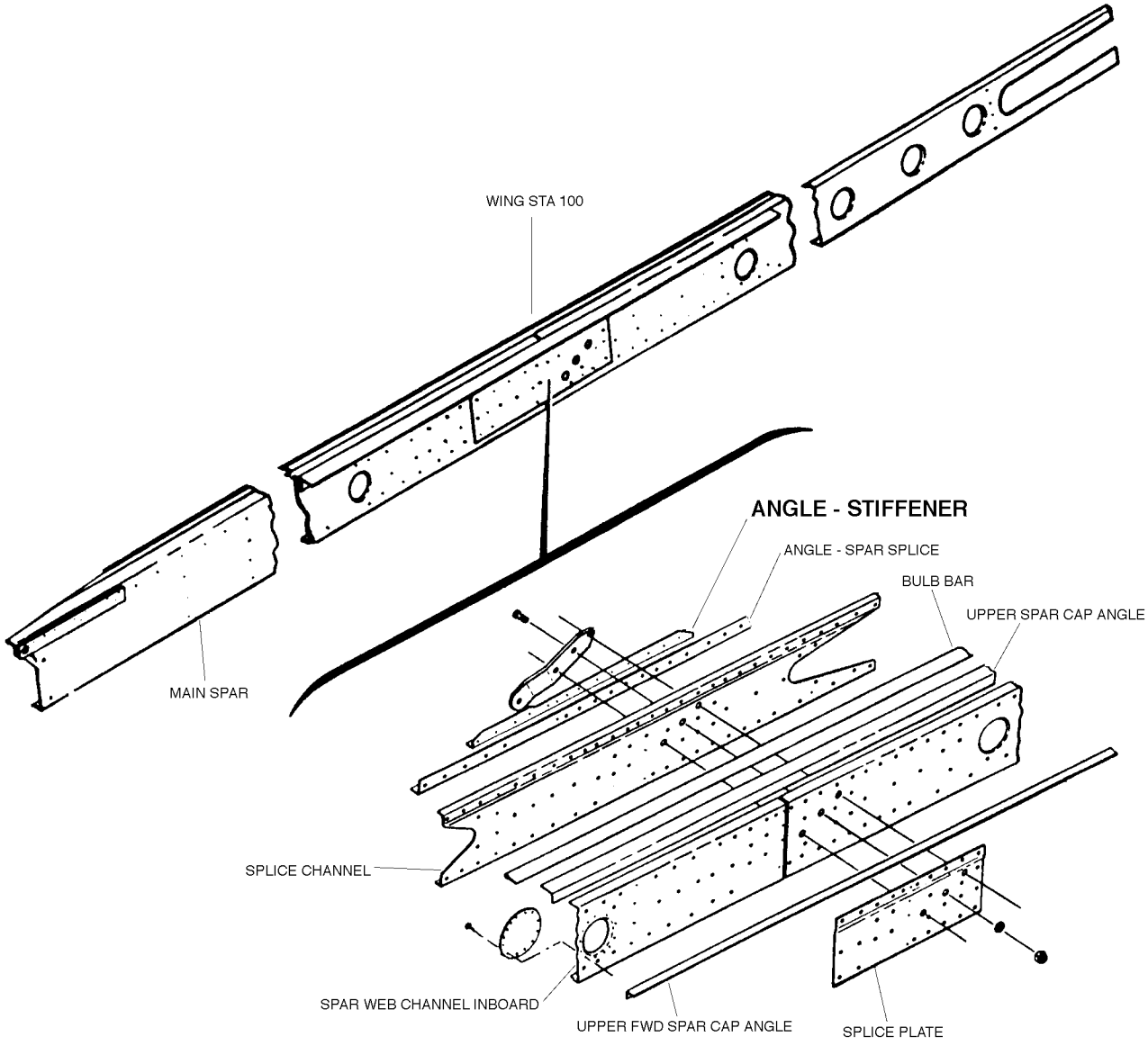


FIGURE 1 - Spar Construction Detail

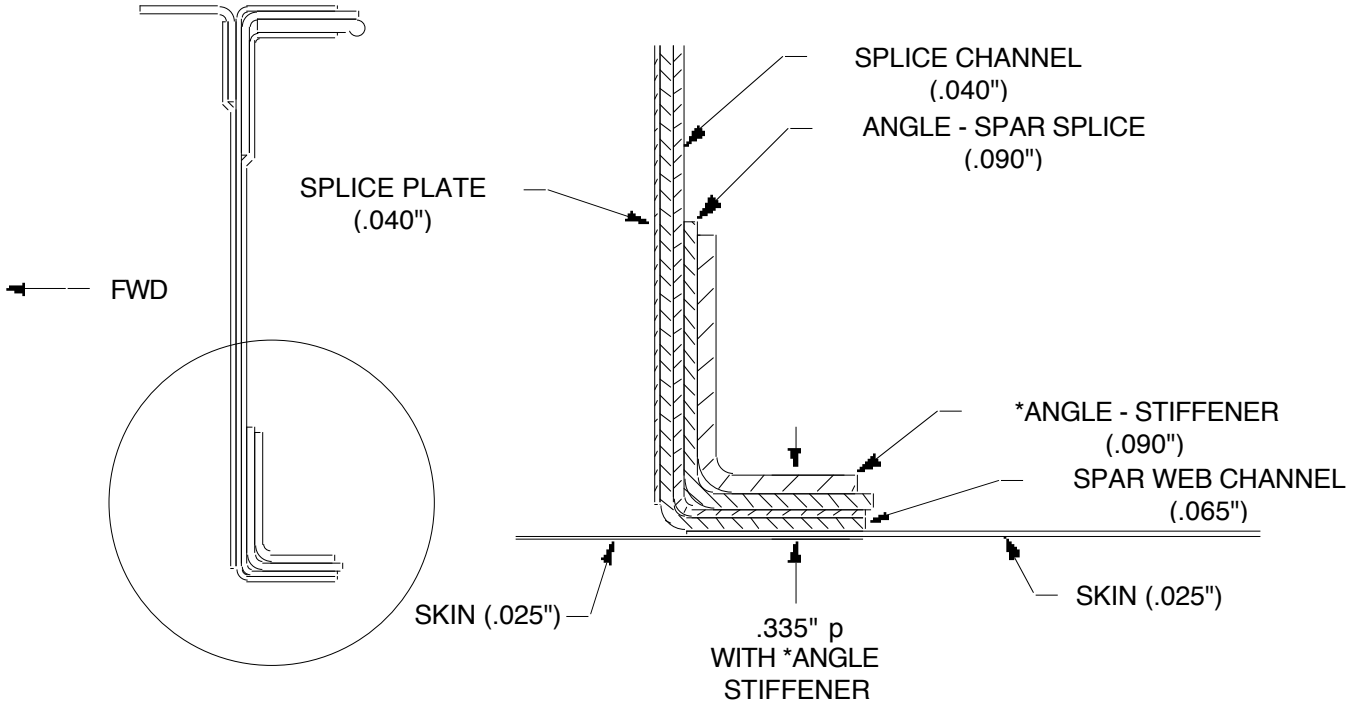


FIGURE 2 - Spar Section Detail
WING STATION 100
Wing with Angle Stiffener Installed

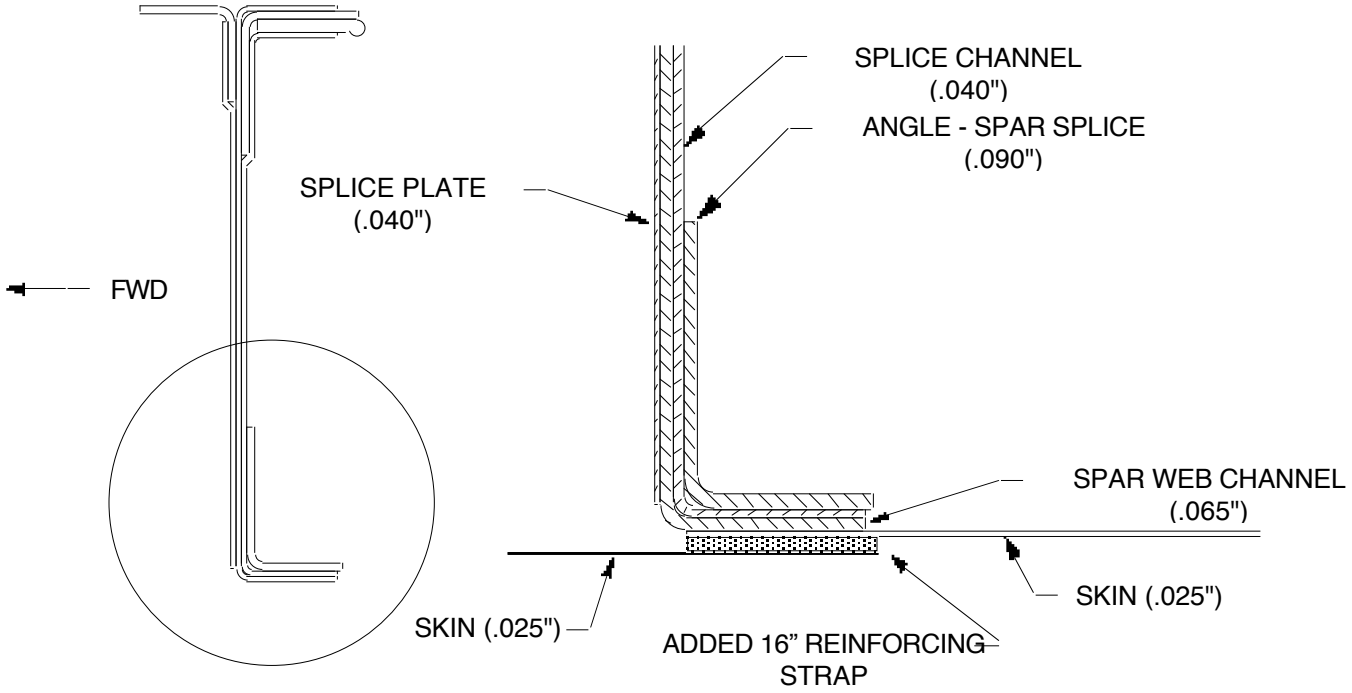


FIGURE 3 - Spar Section Detail
Wing without Angle Stiffener Installed after Part B Modification

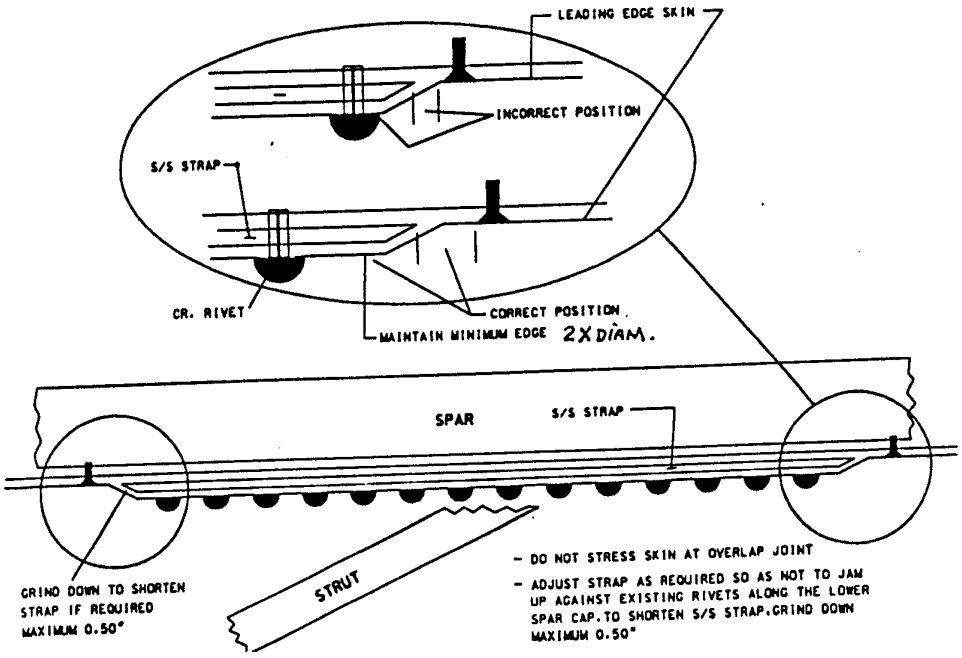


FIGURE 4- Positioning of Stainless Steel strap between rivets

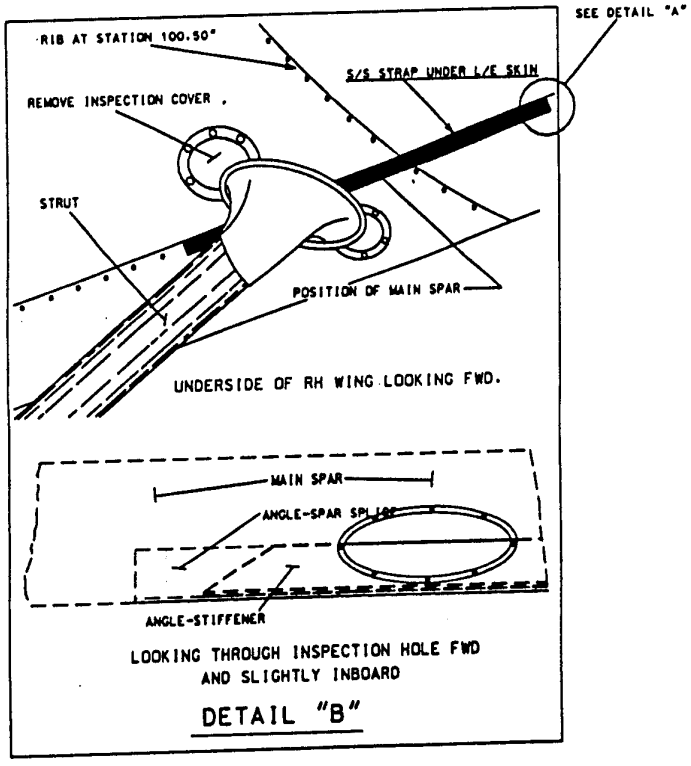


FIGURE 5- Inspecting to see if stiffener is present

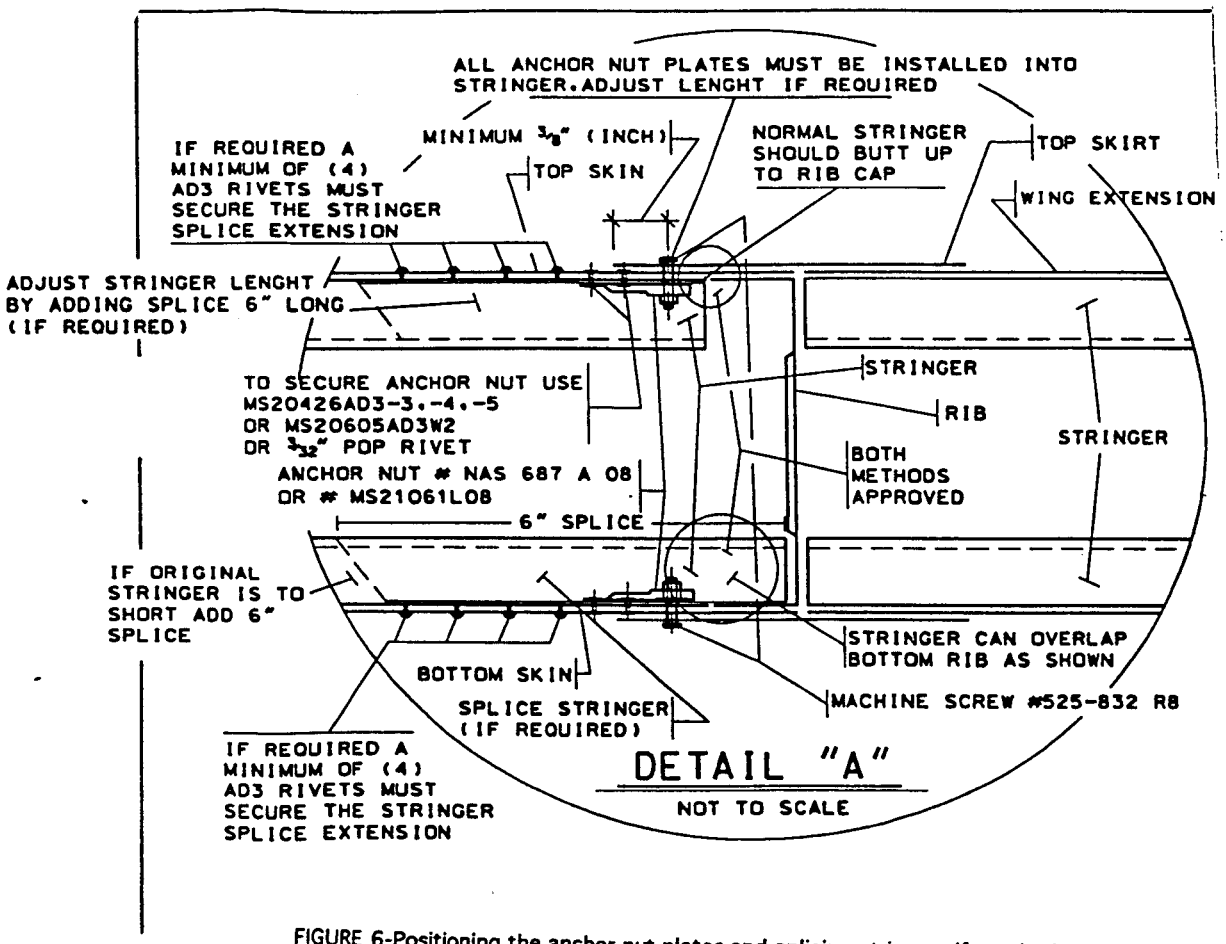


FIGURE 6-Positioning the anchor nut plates and splicing stringers if required

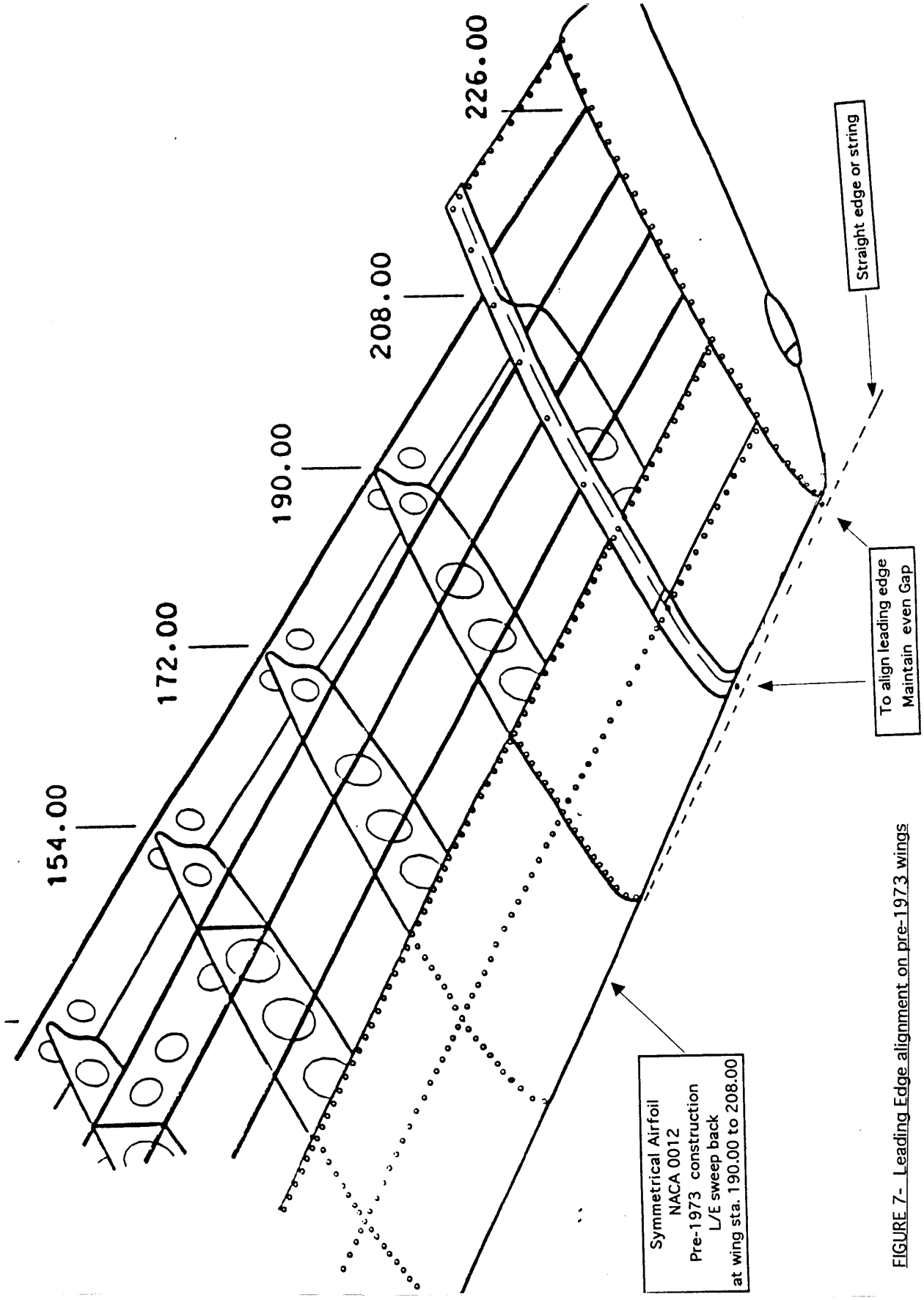
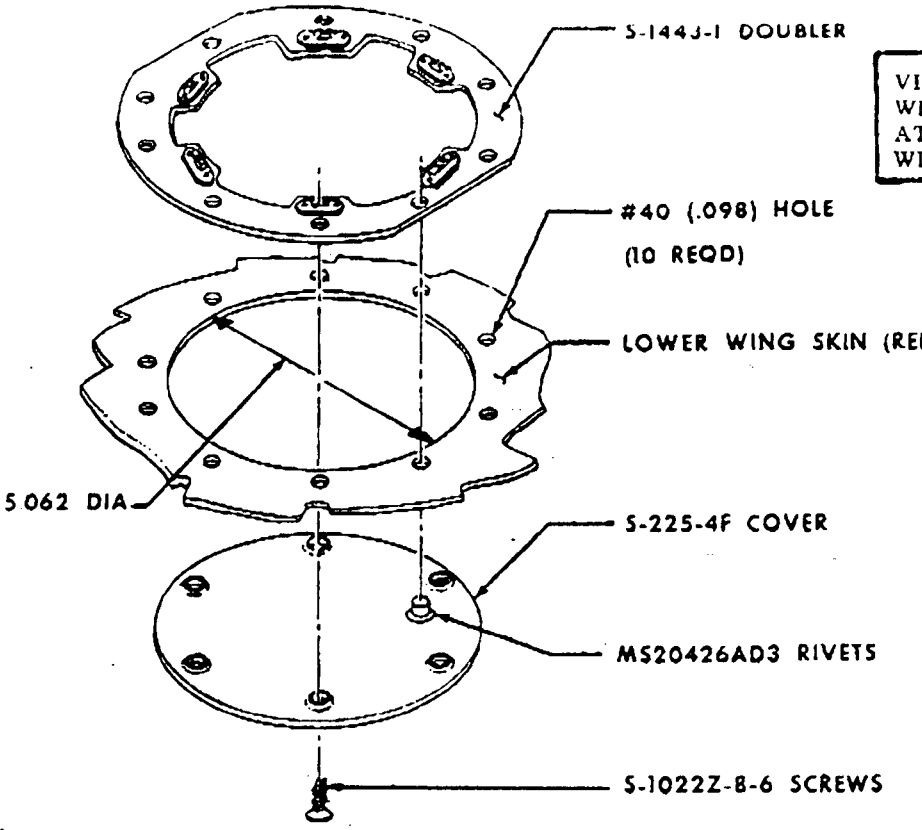


FIGURE 7- Leading Edge alignment on pre-1973 wings



PRECAUTIONS

1. Add the minimum number of access holes necessary.
2. Any circular or rectangular access hole which is used with approved optional equipment installations may be added in lieu of the access hole illustrated.
3. Use landing light installations instead of adding access holes where possible. Do not add access holes at outboard end of wing; remove wing tip instead.
4. Do not add an access hole in the same bay where one is already located.
5. Locate new access holes near the center of a bay (spanwise).
6. Locate new access holes forward of the front spars as close to the front spar as practicable.
7. Locate new access holes aft of the front spar between the first and second stringers aft of the spar. When installing the doubler, rotate it so the two straight edges are closest to the stringers.
8. Alternate bays, with new access holes staggered forward and aft of the front spar, are preferable.
9. A maximum of five new access holes in each wing is permissible; if more are required, contact the Cessna Service Department.
10. When a complete leading edge skin is being replaced, the wing should be supported in such a manner so that wing alignment is maintained.

a. Establish exact location for inspection cover and inscribe centerlines.

b. Determine position of doubler on wing skin and center over centerlines. Mark the ten rivet hole locations and drill to size shown.

c. Cutout access hole, using dimension shown.

d. Flex doubler and insert through access hole, and rivet in place.

e. Position cover and secure, using screws as shown.

Figure 17-12. Access Hole Installation