

## INSTALLATION INSTRUCTIONS OF SPORTSMAN MODIFICATION

The following sequence of installation instructions for the “Sportsman” modification for the Cessna wing is for your convenience and time savings. The primary reference documents are the installation blueprints and Process Specification 732. Read these carefully before you start the job.

Item

No. Description

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1. Remove all inspection panels, wing root fairings, landing light lens assembly, and wingtips.
2. Cut-out the contour templates using the templates provided from the masonite lid utilized for the shipping crate.

### *Placement of Transition Blocks*

3. Clean the wing per Process Specification 732.
4. Fit and position nose filler blocks, <A>500-36 thru 30, Drawing SPI400-1, using the top surface contour templates. Use masking tape over the blocks to hold them in place while fitting. Note: Wing stations are for guidance, final nose block location is directly on top of original Cessna nose rib, variation from guidance maybe required.
  - a. TIP: For placing the inboard nose block fit the inboard fiberglass fairing, <A>524, flush with the inboard skin of the wing (picture). For aircraft with an inboard cabin air vent it may be required to position the inboard nose block so it encroaches on the cabin air vent as shown in picture.
  - b. TIP: The outboard face of the nose filler block at STA 100 should be flush with the Cessna skin seam at that location.



- c. TIP: Utilize the leading edge skins or a straight-edge to verify the fit/positioning of the foam blocks in addition to the supplied templates.



5. Mark the outline of the blocks and remove the blocks from the wing. Scuff the marked locations for the blocks on the leading edge to provide a rough surface for the adhesion of the silastic RTV. Clean surface again per process specification 732 if required.
6. Apply the RTV adhesive and place the blocks back onto the leading edge once again using tape to hold them tight against the wing. **Allow the blocks to set for 24 hours.** Verify positioning again with templates and straight-edge.
7. At the cabin air inlet locations in the wing leading edge install the spanwise plenum blocks, <A>529, Drawing SPI400-3 View F-F, between nose blocks with RTV adhesive. Seal the inside on the spanwise blocks and sides of nose blocks with silastic to weather proof.

#### *Installation of Aileron Gap Seals*

8. While the nose blocks are drying install the aileron gap seals, Drawing SPI400-2 View A-A.
9. Remove the existing AD3-4 rivets and filler strip between the aileron hinges on the wing trailing edge. Cut the aileron gap seal material to length and fit into the back seam of the wing, set gap/spacing, drill and cleco into position. **Spacing is .020 with the aileron in the up position.**
10. Secure new rivets in place. Hint: Most people remove aileron and squeeze rivets.

*Installation of Wing Skins, Inspection Doublers, Cabin Air Vent, Stall Switch, and Landing Light Lens*

11. *Applicable Only For Models Using Non <A> suffix Nose Filler Blocks, i.e. early Sportsman STOL kit, 1972 and earlier for Cessna 172, 180, 185, and 1971 and earlier for Cessna 182 and 206..* Fit the outboard 522 skin, LH & RH, by aligning the inboard leading edge flush with the inboard face of the 31 nose filler block. Mark and trim the excess on the outboard side.
12. Fit the <A>521 skin, LH & RH, by aligning the inboard leading edge flush with the inboard face of the <A>36 at wing station 100 (wing station 84 for Cessna 150). Mark and trim the excess on the outboard side.
13. For aircraft models with the landing light integrated into the wing mark the 521 skins as shown in the photo below and cut out material for the landing light opening.



14. For Cessna 150 models trim the inboard 520 skin to length. For all other aircraft models NO trimming is required for the 520 skin. Correct length is dictated by having the proper overlap on the 524 inboard fairing, 5/8in. minimum, and aligning the outboard edge with the seam at wing station 84 for Cessna 150 models.
15. Roll all outboard lap joint edges to a .12min radius to seal the seam, Drawing SP400-2 View C-C & Drawing SPI400-3 View F-F. This pertains to both the inboard and outboard edges of the 520 skin and outboard edge of the 521 skin.
16. Tape the fiberglass 524 inboard leading edge fairing in place to begin the fitting and installation of the 520 skin.
17. Fit and align the 520 skins by aligning the outboard edge of the 520 skin with the original skin seam located at station 100 on the wing. Mark and cut out for the

heated style pitot tube on left skin (if applicable), Drawing SPI400-2 View D-D. Insure the 520 skin properly overlaps both the inboard 524 fairing and 521 skin.

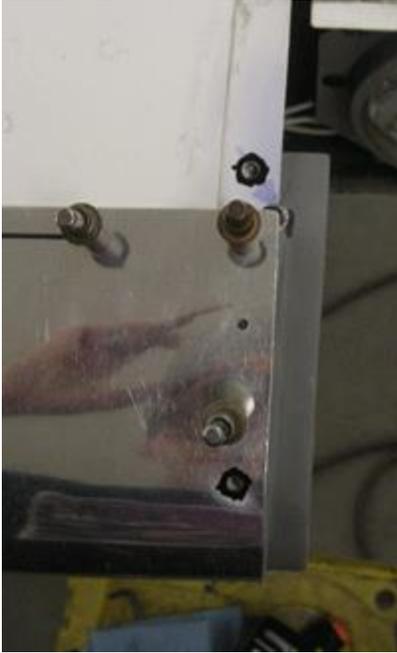
18. Locate the spanwise locations for the air inlets and stall warning aperture for skin 520, Drawing SPI400-3 View E-E & View F-F. With the skin removed mark a line from the center of the cabin air inlet and stall switch far enough aft on the wing to clear the top edge of the Sportsman skins. Reinstall Sportsman skins and transfer marks. Use the appropriate templates to mark openings and proceed to cut them out.
  - a. NOTE(Stall Switch): Both a pneumatic(template T-2) and electronic(template T-1) stall horn templates are provided. Use the appropriate stall horn template for your applicable application.
  - b. NOTE(Cabin air inlet): The inboard cabin air inlet may require being offset due to encroachment of the inboard leading edge nose filler block.
19. With the 520 and 521 skins in position mark the edges of the inspection panel cut-outs as shown in photo.



20. With the location of the inspection panel edges marked, mark a line 5/16" along all edges, then lay out the 2" rivet pitch on top and bottom edges. **DO NOT DRILL** any holes at any of the skin corner edges, overlap seams, or next to the inspection panel edge locations. Proceed to drill pilot holes with no. 40 drill bit.
  - a. TIP: As shown in pictures below use a machinist square to mark 5/16" line and use a 1x4 with markings every 2" for locating rivet holes.



21. With the pilot holes drilled and the 524 inboard fiberglass fairings taped into position begin securing the skins to the aircraft. Begin with the furthest outboard skin 522(early kit) or A521(late kit), position onto the airplane and once the fit is verified begin to drill out the holes with a #30 drill bit and cleco to the aircraft. Repeat operation for securing the remaining inboard skins remembering to maintain your proper overlaps and verifying fit prior to drilling. Locate the rivet locations for the lap joints, Drawing SPI400-2 View C-C & Drawing SPI400-3 View F-F and proceed to drill out.
22. Once all skins are secured in place mark the location of the inspection panels in the new leading edge skins. Install all inspection access covers with two P.K. screws to original doubler plate so the access cover lies over the new leading edge skin. Scribe around the panels to mark the area to cut-out. Remove the leading edge skins from the aircraft and cut-out the inspection panel locations following the scribes just marked. Reinstall leading edge skins
23. Install the new doublers(P/N 530), Drawing SPI400-2 View B-B, provided with the kit by securing the doublers to the inspection access covers. Proceed to install the inspection access covers to the aircraft again with the 530 doubler placed under the new leading edge skin. Use a #40 drill bit to drill and secure the 530 doublers to the new leading edge skin. Once all locations are completed remove inspection access covers and skins from the aircraft. Countersink holes and secure with MS20426AD3 rivets also supplied.
24. Install the stall warning doubler plate over original leading edge and mark the lines to cut-out the center of the original location, Drawing SPI-400-3 View E-E.
25. With the L/H 521 skin cleco'd in place install the landing light lens assembly. Fit the fiberglass 514 & 515 landing light lens supports into the new leading edge assembly and rivet into position, Drawing SPI400-4 View H-H.
26. Remove the bottom and top lens supports from the original landing light lens retainer(when applicable). Fit and trim the new landing light lens and retainer into the wing and identify the location for the original lens supports along with screw holes for the new retainer. Once everything is in position drill holes and rivet the original lens supports onto the new retainer as to keep the landing light lens secure. Screw new landing light lens assembly into place.
  - a. TIP: In the photo's shown below the holes highlighted with black ink are the locations of the tinnermans for the screws to secure the landing light lense retainer. In the instance the screw location is located in the landing light lense supports, 514 or 515, attach the tinnerman directly to the fiberglass 514 or 515 prior to final installation of the 514 or 515.



27. Upon completion of installing and trimming for the landing light lense place the skins into position and countersink all holes with a **120°** countersink bit.
28. Once complete with countersinking remove skins and clean surface. Now you are ready for final installation of skins however prior to final installation of skins attach the stall switch to the 520 skin prior to final installation. Coat the top rivet row with RTV adhesive and also coat around each transition block. **DO NOT** place any adhesive on the bottom row of rivets. Once skins are secured in place begin to rivet into place.
29. Install wing tip fairings as per instruction on appropriate installation drawings and reinstall inspection panels and wing root fairing. Direct replacement of wingtips can be done by installing wingtips, part number SA-0523565-SPR,-SPL in accordance with appropriate manufacturers service manual. Continued airworthiness of wingtips should be in accordance with FAR 43 appendix D, checking for cracks, attach points and clearances from any moving parts.

*Paperwork*

30. Weight & Balance = 15lbs @ 22"
31. Complete form 337