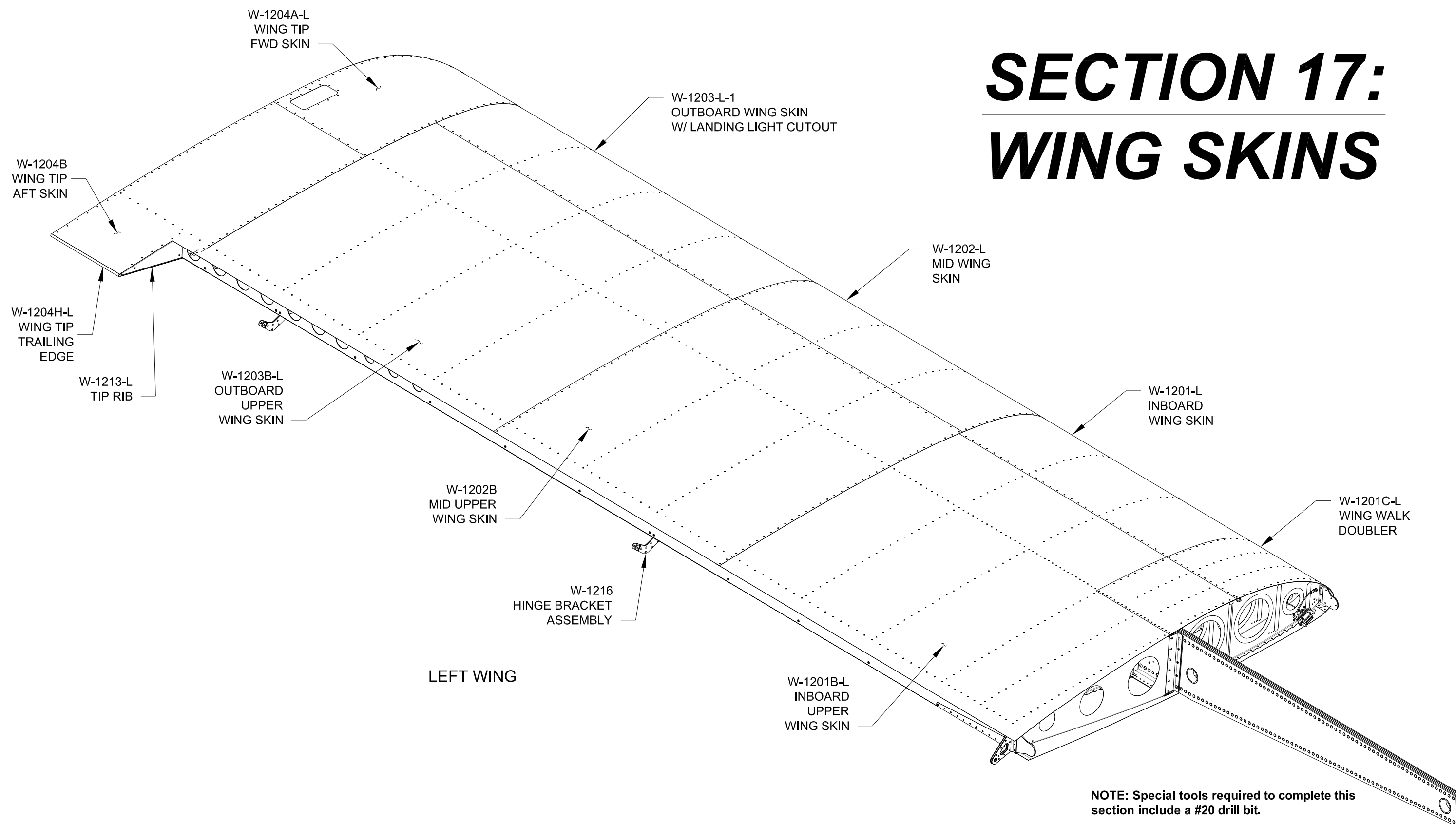


SECTION 17: WING SKINS



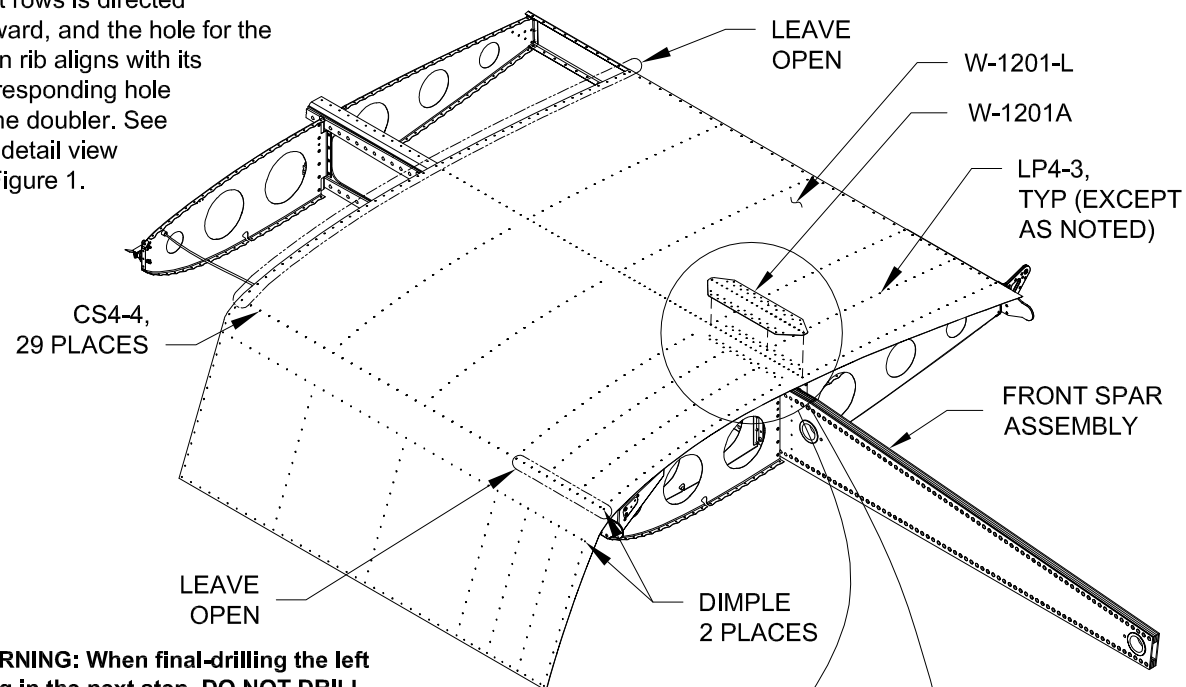
NOTE: Special tools required to complete this section include a #20 drill bit.



Step 1: Place a layer of carpet or an old blanket on the work table. Place the wing skeleton upside-down on the table with the leading edge overhanging the edge by two to four inches.

Step 2: Dimple the W-1201-L Inbd Wing Skin in two places as shown in Figure 1.

Step 3: Cleco the W-1201A Doubler to the inbd wing skin and to the bottom flange of the Front Spar Assembly. The doubler is almost symmetrical; proper orientation is achieved when the larger gap between rivet rows is directed forward, and the hole for the main rib aligns with its corresponding hole in the doubler. See the detail view of Figure 1.



WARNING: When final-drilling the left wing in the next step, DO NOT DRILL THE SPAR CAPS of the spar assembly. Protect the spar caps from being inadvertently drilled by temporarily inserting a thin strip (.040 max. thickness) of steel between the skin and the spar caps.

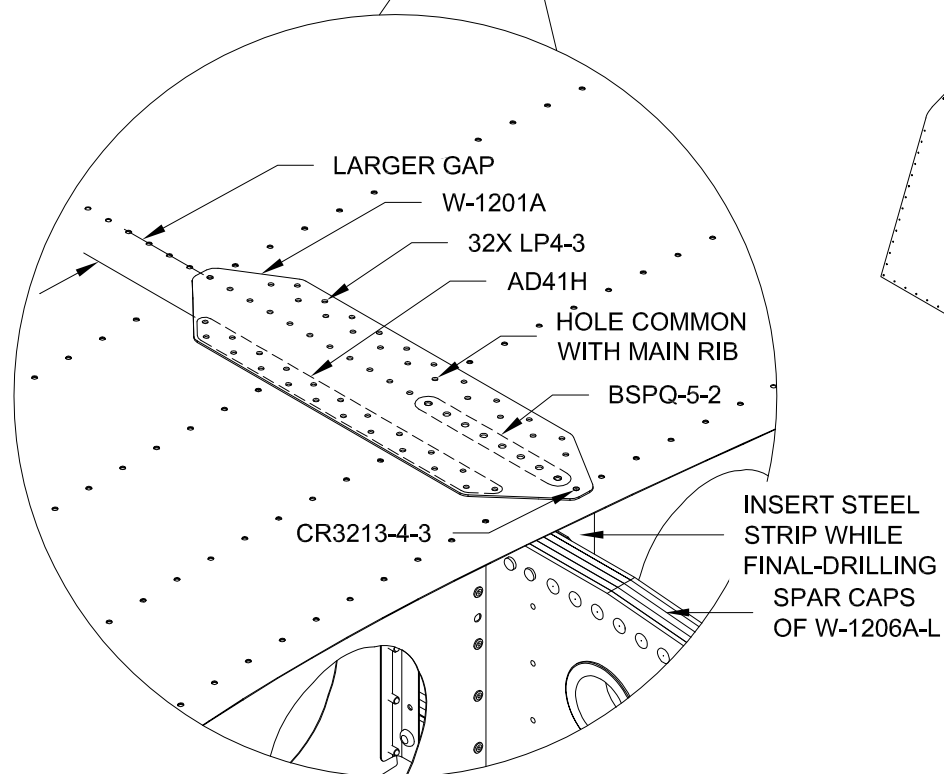
Step 4: Final-Drill #20 the holes in the doubler, inbd wing skin, and flange of the Front Spar Assembly for the eight BSPQ rivets. Be sure not to final-drill the inboard most hole for the CR3213 rivet. See the detail view of Figure 1.

Step 5: Disassemble, then deburr the holes that were final-drilled in the previous step.

Step 6: Cleco the inbd wing skin to the entire bottom of the wing and cleco the doubler back in place.

Step 7: Rivet the inbd wing skin and the doubler to the bottom of the wing. Leave all holes on the outboard edge open as well as the holes called out in Figure 1.

FIGURE 1: ATTACHING INBD WING SKIN
(LEFT WING SHOWN)



Step 8: Final-Drill 3/8 the #30 hole in the W-1203-L-1 Outbd Wing Skin for the tie down ring. See Figure 2.

Step 9: Cleco the W-1203-L-1 Outbd Wing Skin to the wing skeleton as shown in Figure 2. Rivet the outbd wing skin to the skeleton leaving open all holes on the inboard and outboard edges, the leading edge holes, and the holes for the W-1216B-L Hinge Rib (Page 17-03 Figure 2) as shown in Figure 2.

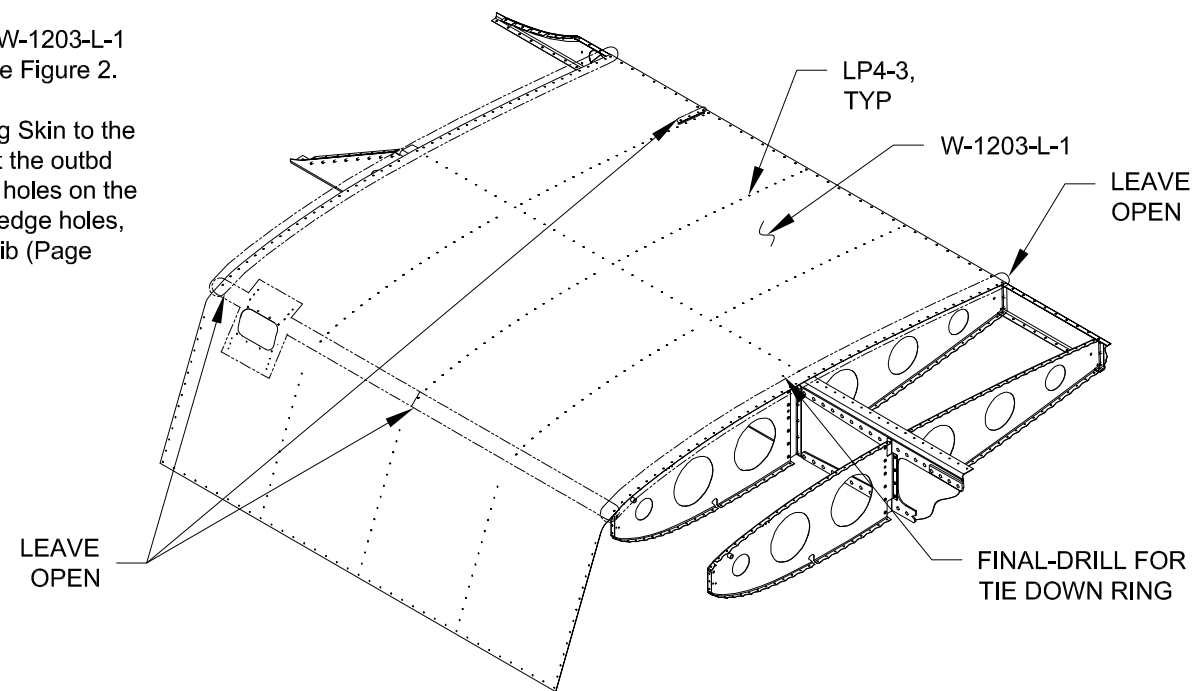


FIGURE 2: ATTACHING OUTBD WING SKIN
(LEFT WING SHOWN)

Step 10: Cleco the W-1202-L Mid Wing Skin to the wing skeleton as shown in Figure 3. Rivet the mid wing skin to the wing skeleton leaving open the 1st holes aft of the leading edge and the holes for the W-1216B-L (Page 17-03 Figure 2) as shown in Figure 3.

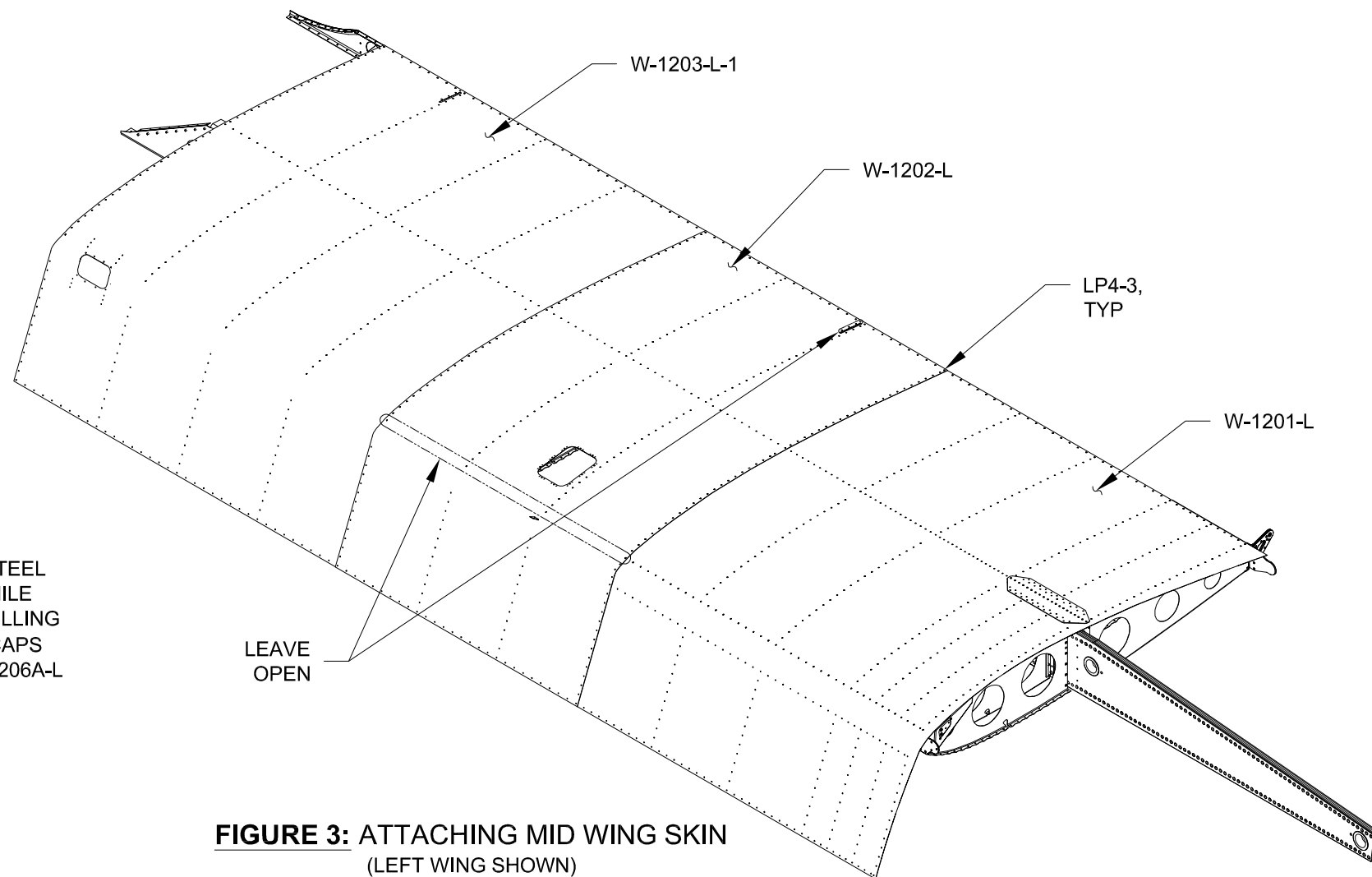
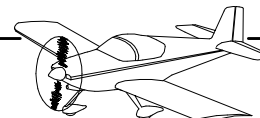


FIGURE 3: ATTACHING MID WING SKIN
(LEFT WING SHOWN)



Step 1: Flip-over the wing placing it right-side-up on the table with the leading edge overhanging the edge by four inches. A helper will definitely be required to flip the wing over and a second helper might be useful to stabilize the overhanging portion of the skins and prevent them from becoming creased across the most forward row of rivets as the wing is being re-positioned.

Step 2: Cleco the W-1201-L, W-1202-L, & W-1203-L-1 Inbd, Mid, & Outbd Wing Skins to the skeleton using the open holes on the bottom and the top of the wing. Rivet the inbd, mid, & outbd wing skins to the skeleton as called-out in Figure 1. Remove any remaining clecos.

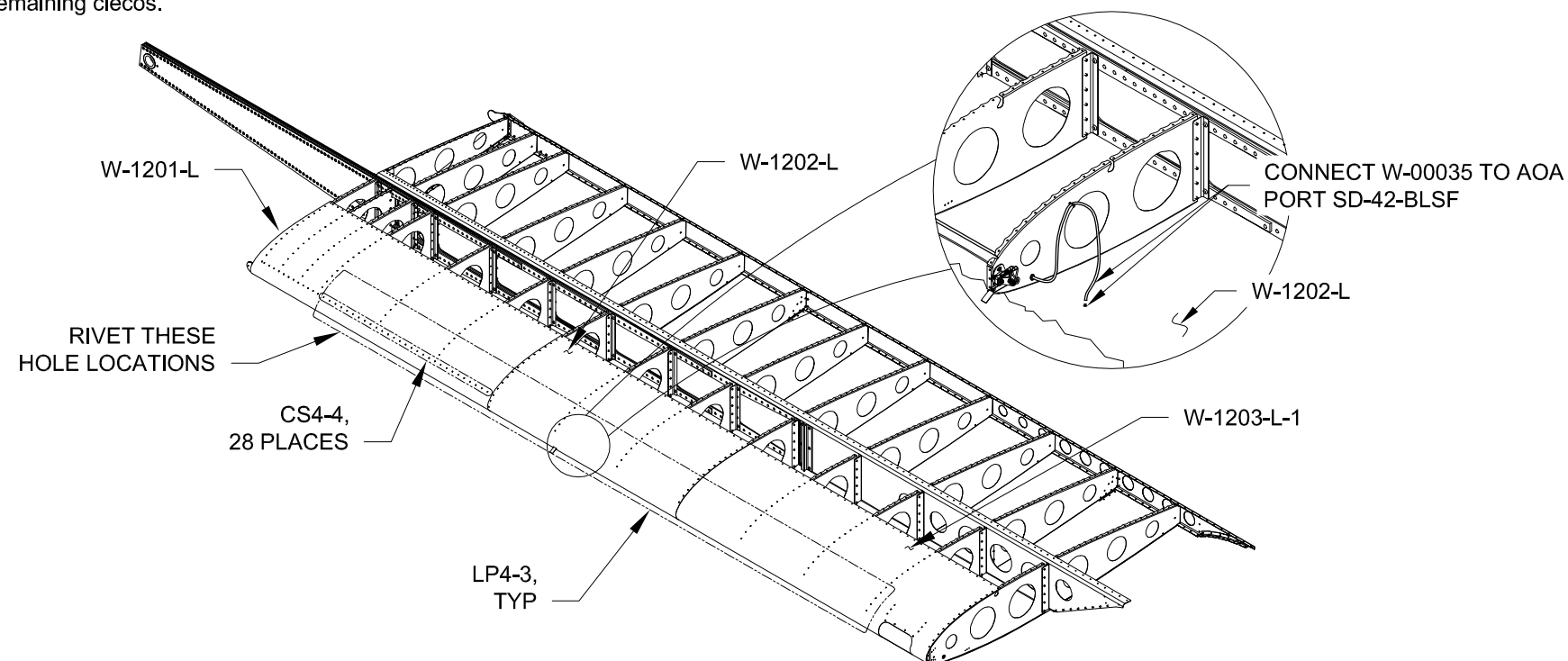


FIGURE 1: RIVETING THE LEADING EDGE

Step 3: Connect the W-00035 line to the AOA Port SD-42-BLSF as shown in the Detail View of Figure 1. Once connected, seal the W-00035 to the AOA Port and W-1202-L INBD Wing Skin with a bead of RTV, ensuring not to get any RTV inside the line or port.

Step 4: Cleco the bottom flange of the two W-1216B-L Hinge Ribs to the W-1202-L & W-1203-L-1 Mid & Outbd Wing Skins. Rivet the bottom flange of the hinge ribs to the mid & outbd wing skins. See Figure 2. Insert two W-1216 Hinge Bracket Assemblies through the openings in the W-1202-L & W-1203-L-1 Mid & Outbd Wing Skins. Flex the hinge ribs out of the way as required to allow insertion of the Hinge Bracket Assemblies. Insert clecos through the hinge ribs and Hinge Bracket Assemblies into the W-1210-R Main Ribs. Cleco the hinge ribs to the Rear Spar Assembly. Rivet the hinge ribs to the Hinge Bracket Assemblies, main ribs, and Rear Spar Assembly as shown in Figure 2.

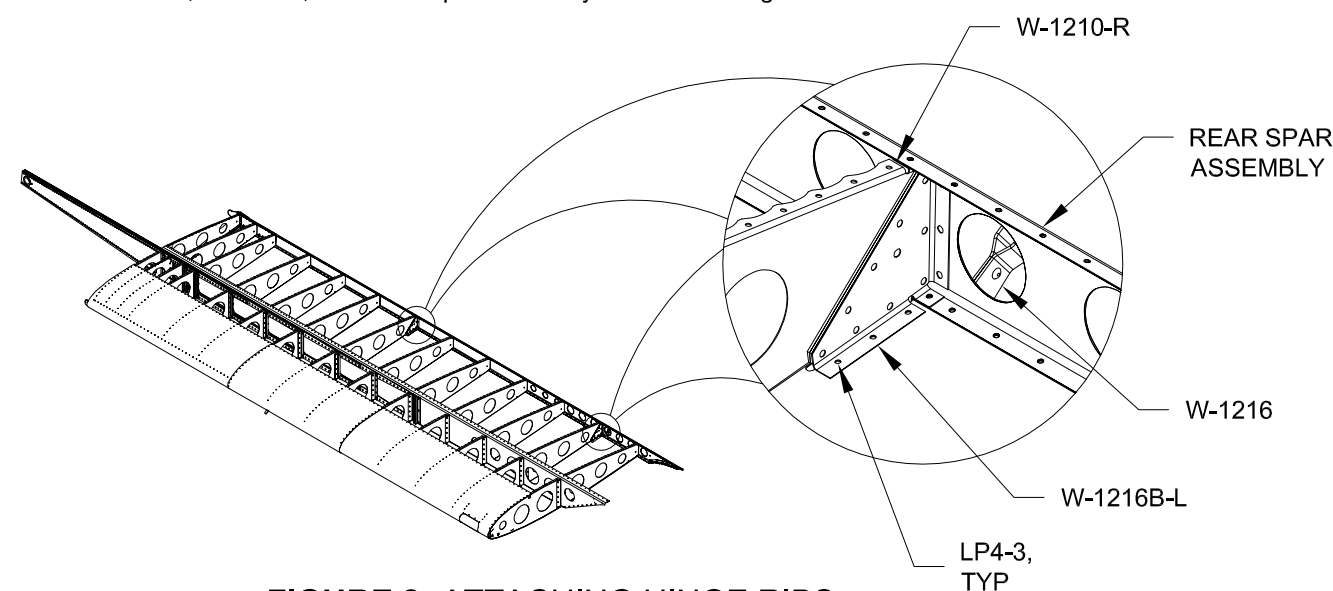


FIGURE 2: ATTACHING HINGE RIBS

Step 5: Position the W-1201B-L Inbd Upper Wing Skin on the wing skeleton as shown in Figure 3. The stiffening flange along the leading edge of the inbd upper wing skin should drop into the cut-outs in the W-1208 Nose Ribs when you lift the trailing edge of the inbd upper wing skin. Cleco then rivet the inbd upper wing skin to the skeleton leaving holes open as shown in Figure 3.

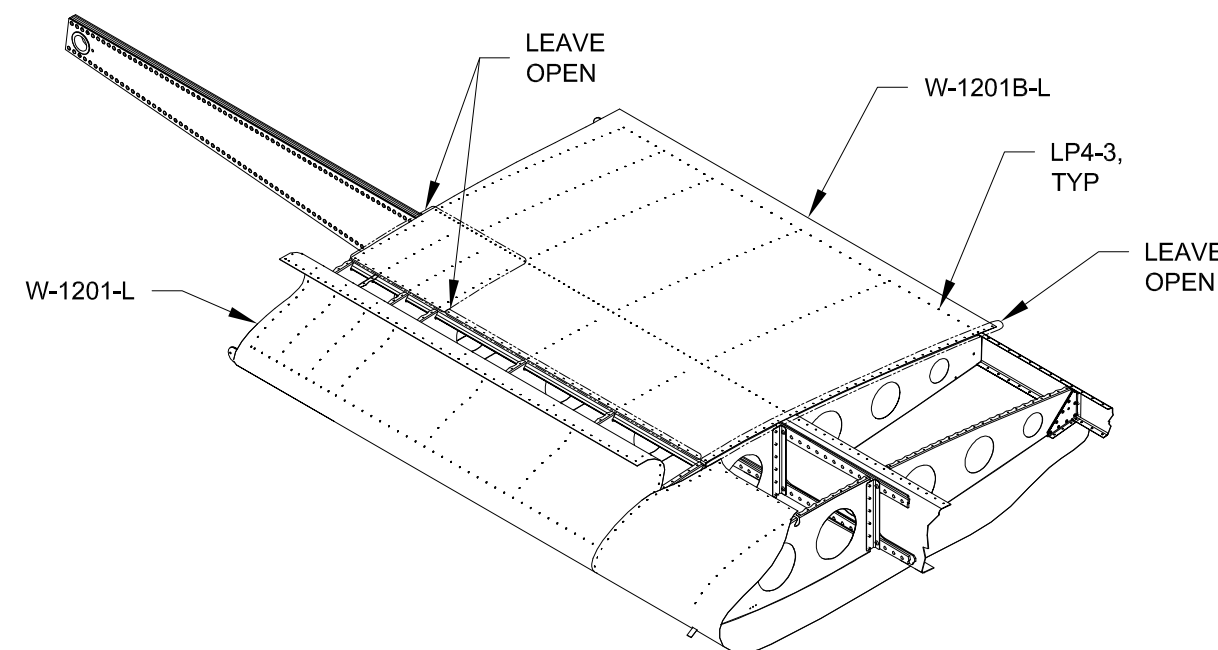


FIGURE 3: INBD UPPER WING SKIN INSTALLATION

Step 6: Cleco the W-1203B-L Outbd Upper Wing Skin to the wing skeleton as shown in Figure 4. Rivet the outbd upper wing skin to the skeleton leaving holes open as shown in Figure 4.

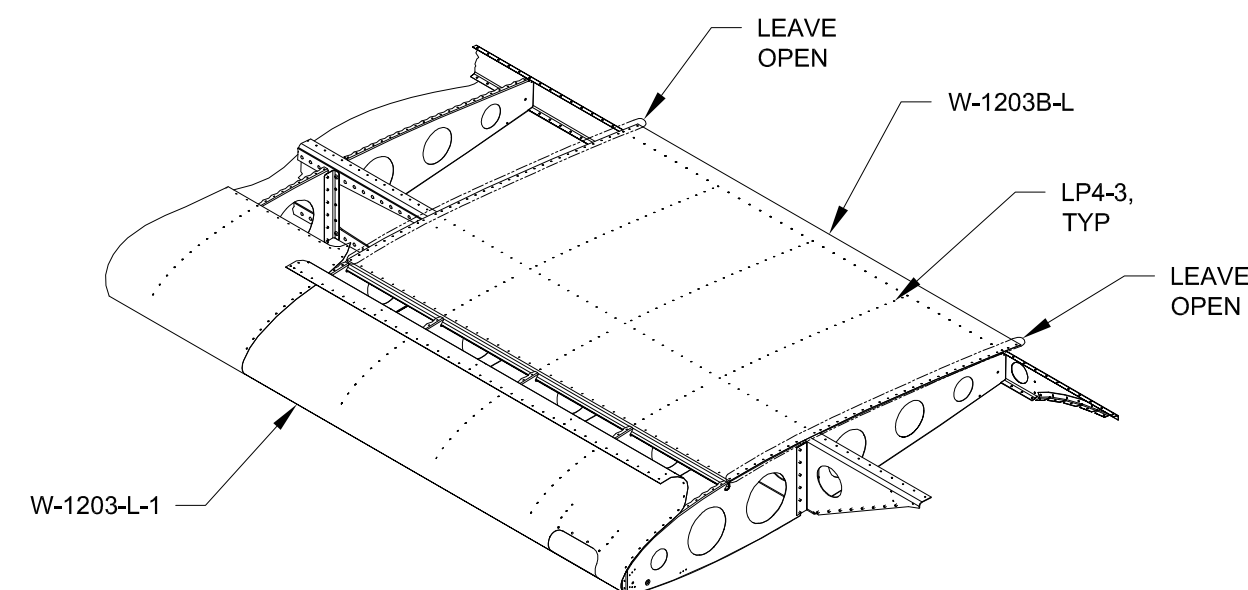


FIGURE 4: OUTBD UPPER WING SKIN INSTALLATION



Step 1: Cleco one of the W-1202B Mid Upper Wing Skins to the wing skeleton as shown in Figure 1. Rivet the mid upper wing skin to the skeleton leaving holes open as shown in Figure 1.

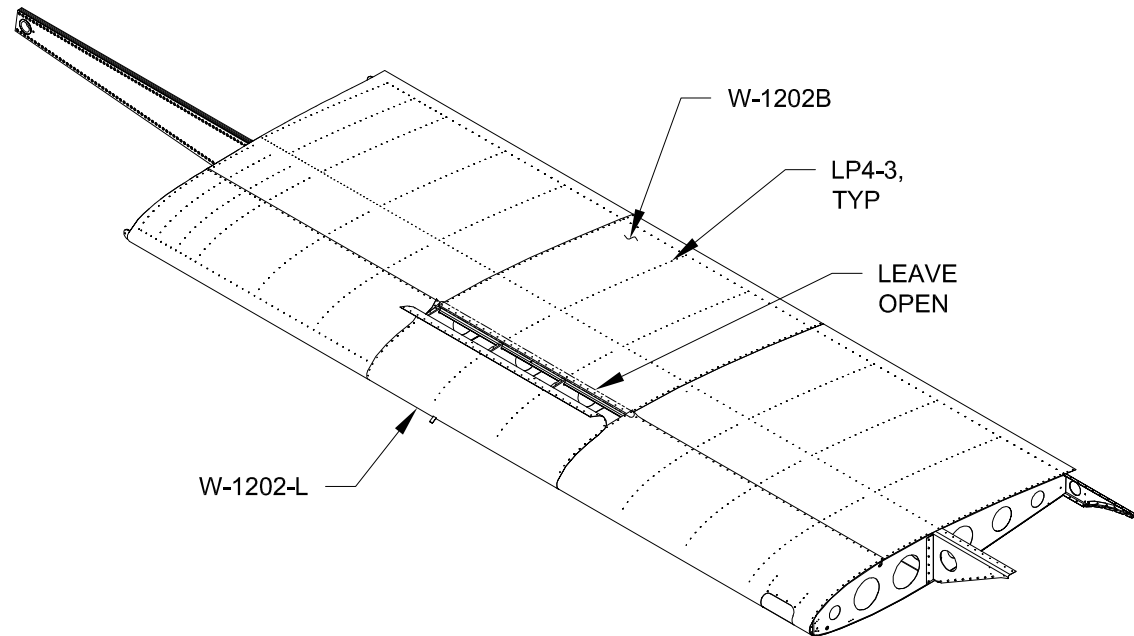


FIGURE 1: ATTACHING MID UPPER WING SKIN

Step 2: Dimple the three inboard holes in the W-1201C-L Wing Walk Doubler which are in line with the two rows of holes in the leading edge which are already dimpled.

Step 3: Prime the mating surfaces between the W-1201C-L Wing Walk Doubler and W-1201-L Inbd Wing Skin to prevent corrosion.

NOTE: It may be necessary to make a slight edge bend to the forward edge of the W-1201C-L Wing Walk Doubler. See Section 5K for details on how to make the bend.

Step 4: Cleco the W-1201C-L Wing Walk Doubler to the wing as shown in Figure 2. Begin clecoing at the forward/lower edge of the wing walk doubler and progress up and aft. Cleco the remaining portion of the W-1201-L Inbd Wing Skin to the wing skeleton. Rivet the wing walk doubler and inbd wing skin to the wing. Be sure to use flush-head rivets in the dimpled holes as called-out in Figure 2.

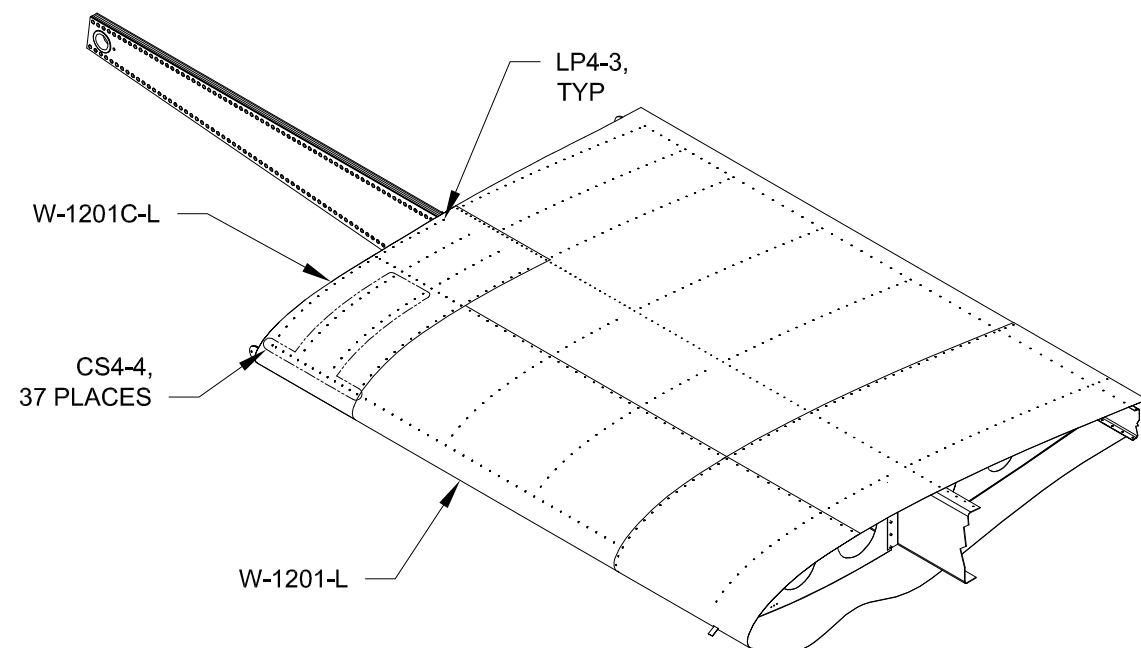


FIGURE 2: ATTACHING WING WALK DOUBLER

Step 5: Cleco the remaining portion of the W-1203-L-1 Outbd Wing Skin and W-1202-L Mid Wing Skin to the wing. Rivet the outbd and mid wing skins to the wing leaving open holes as shown in Figure 3.

Step 6: Add fuel tank sealant to close the gap formed by the W-1201C-L overlapping the W-1201-L. See the detail view in Figure 3.

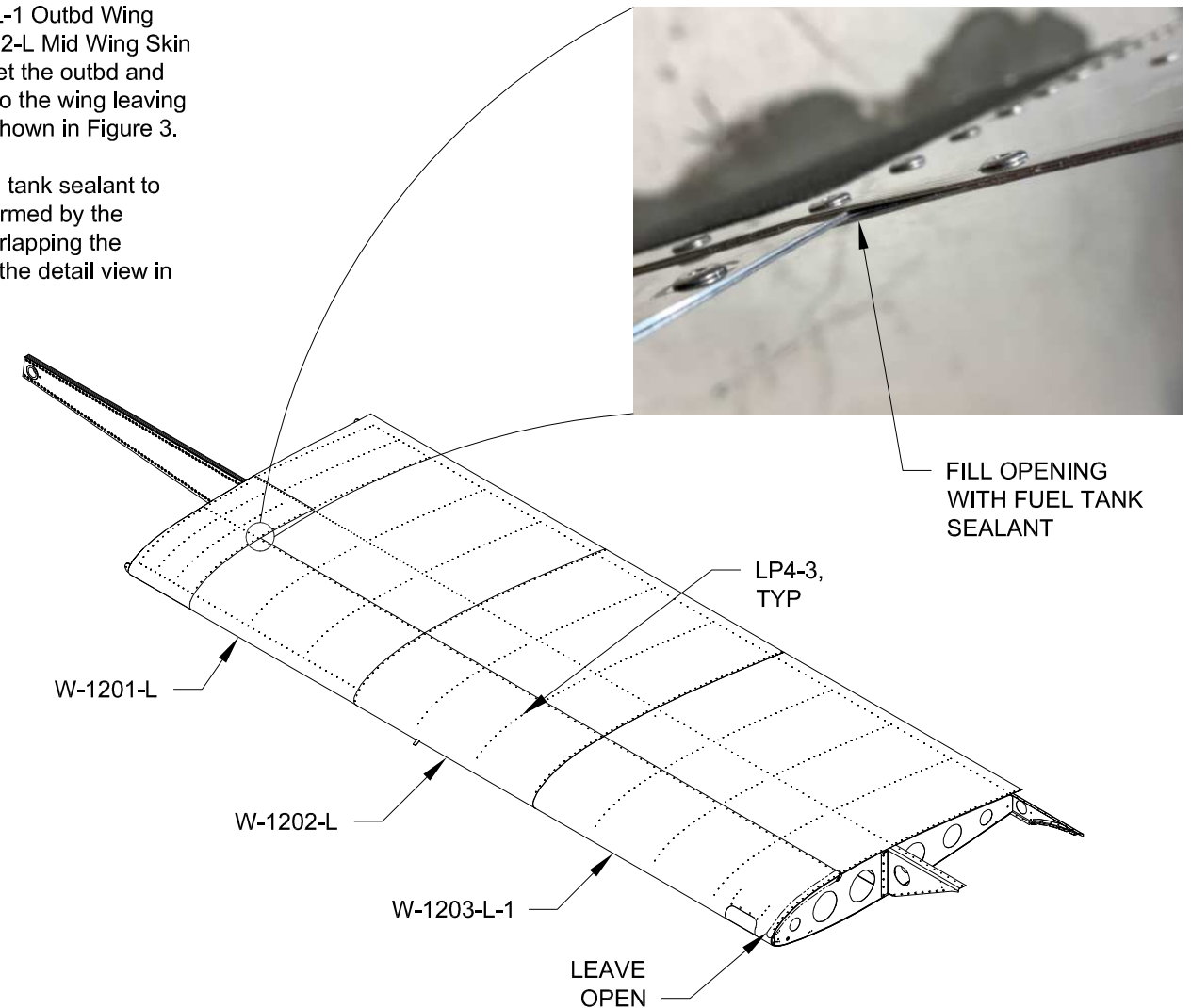


FIGURE 3: RIVETING MID AND OUTBOARD WING SKINS

Step 7: Flip-over the wing placing it upside-down on the table. Dimple the screw holes in the W-1202-L Mid Wing Skin and in the VA-195H Access Hatch as shown in Figure 4. Dimple the rivet holes in both the nutplates and in the mid wing skin for the access hatch as shown in Figure 4. Install nutplates on the mid wing skin as shown in Figure 4. Install the access hatch.

Step 8: Repeat all steps from page 17-02 Step 2 through Step 6 on this page for the right wing.

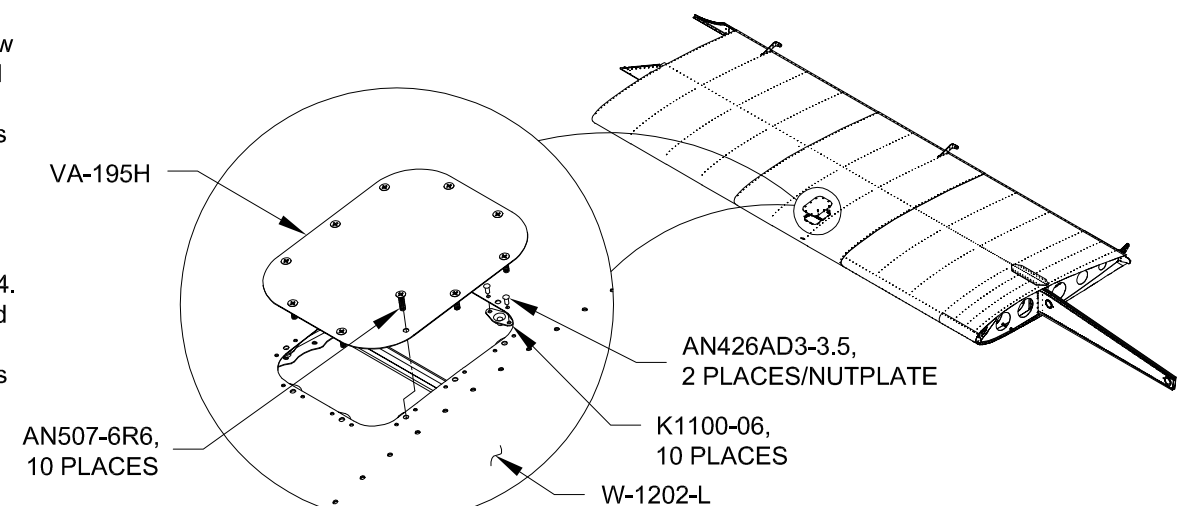
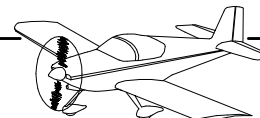


FIGURE 4: INSTALLING ACCESS HATCH



Step 1: Take the W-1204G-L Hand Hold and bend where the part is notched as shown in Figure 1.

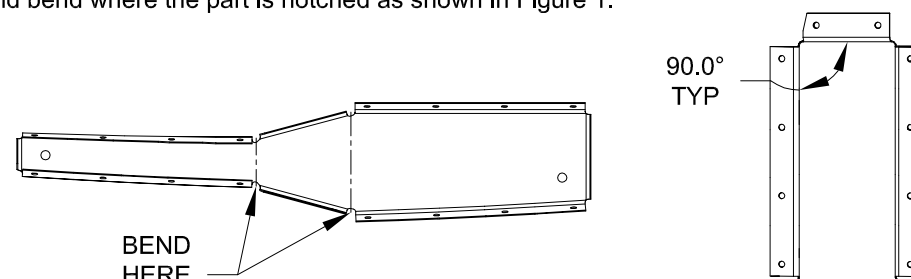


FIGURE 1: BENDING HAND HOLD

Step 2: Rivet the W-1213-L Tip Rib to the rear spar as shown in Figure 2. Rivet the W-1204G-L Hand Hold and W-1204C Wing Tip Bottom Skin to the wing as shown in Figure 2.

Step 3: If not installing dual landing lights per Section 40iS/U, fabricate and install the W-00033 Landing Light Closeout from AS3-025X7X7. Alternatively, the W-00014 Lens(es) may be installed to close out the landing light cutout. See Section 40iS/U.

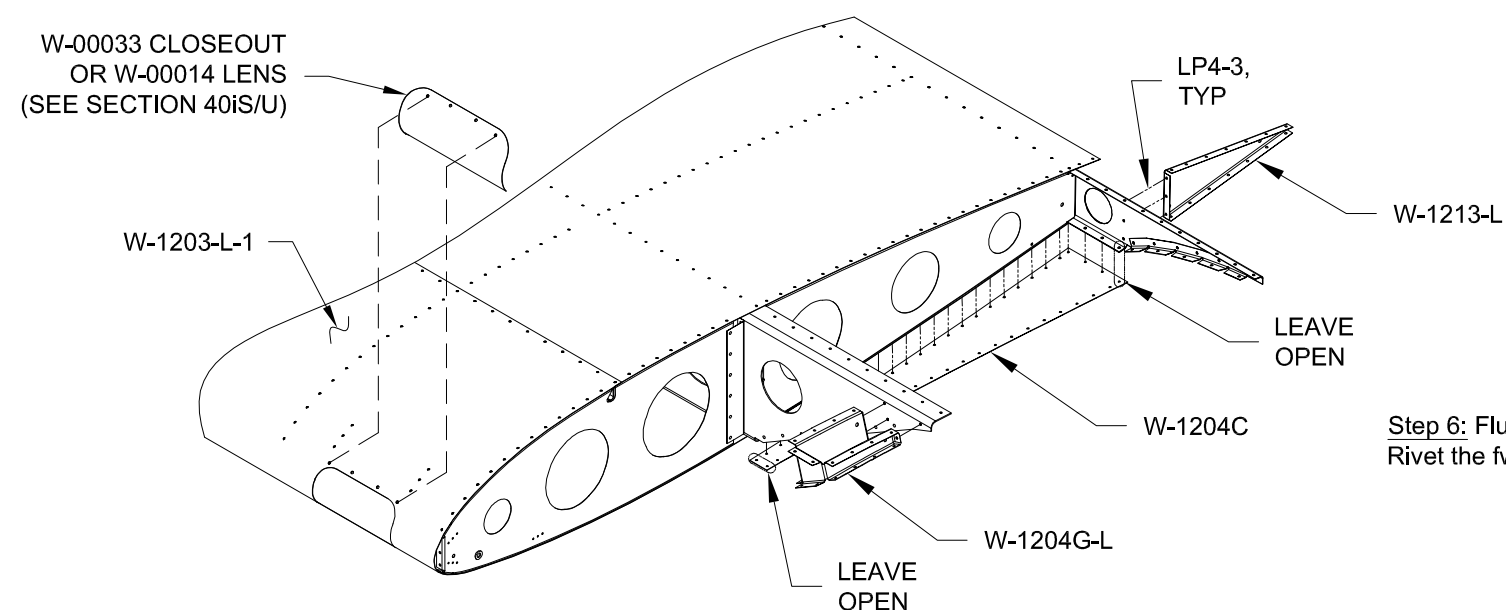


FIGURE 2: ATTACHING THE TIP RIB, HAND HOLD AND WING TIP BOTTOM SKIN

Step 4: Rivet the W-1204B Wing Tip Aft Skin and the W-1204A-L Wing Tip Fwd Skin to the wing as shown in Figure 3.

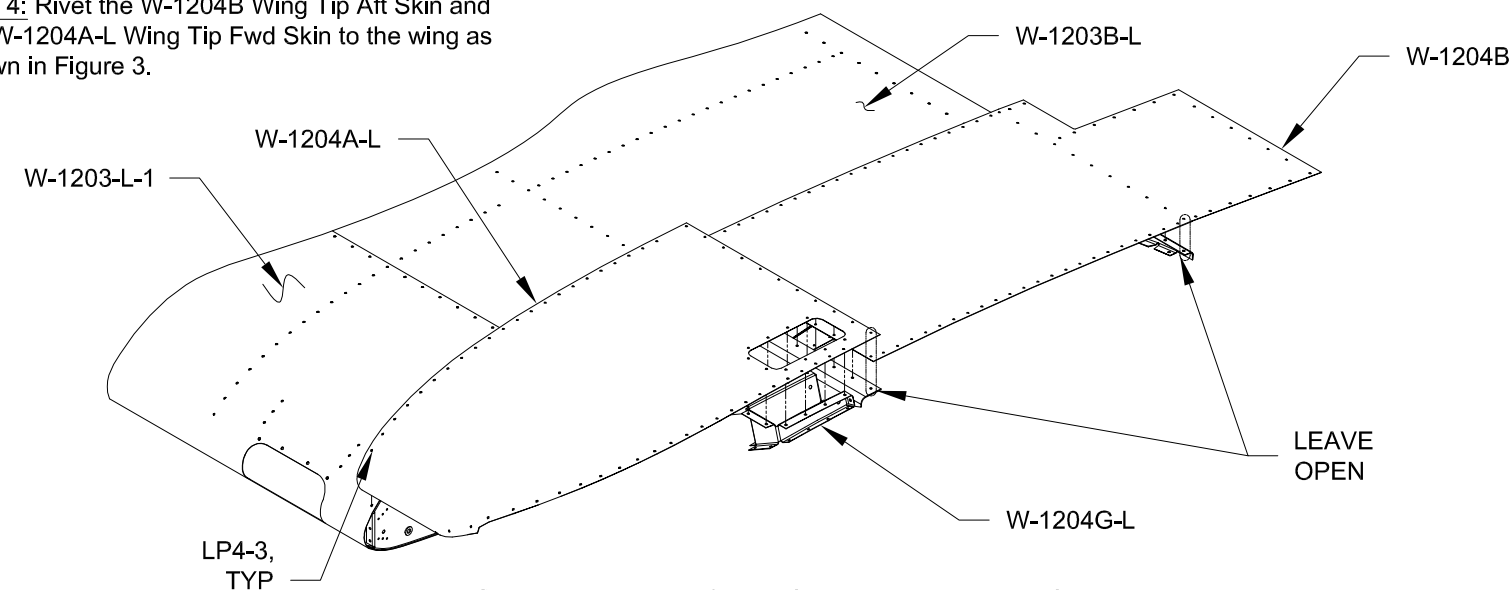


FIGURE 3: ATTACHING THE FWD WING TIP RIB

Step 5: Rivet the W-1204F-L Aft Wing Tip Rib to the W-1204A-L Wing Tip Fwd Skin and W-1204B Wing Tip Aft Skin as shown in Figure 4. The tip of the Rear Spar Assembly may be trimmed to ease fitting between the flanges of the Aft Wing Tip Rib.

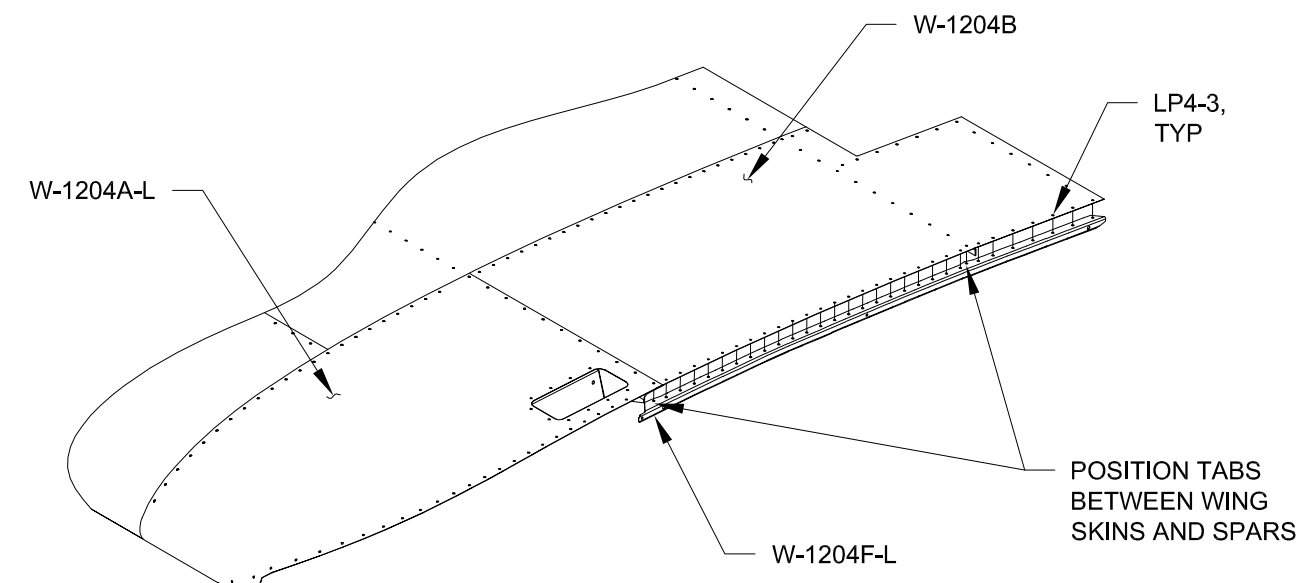


FIGURE 4: ATTACHING THE AFT WING TIP RIB

Step 6: Flute the W-1204E-L Fwd Wing Tip Rib so that it matches the outboard edge of the W-1204A-L Wing Tip Fwd Skin. Rivet the fwd wing tip rib to the wing tip fwd skin and W-1204F-L Aft Wing Tip Rib as shown in Figure 5.

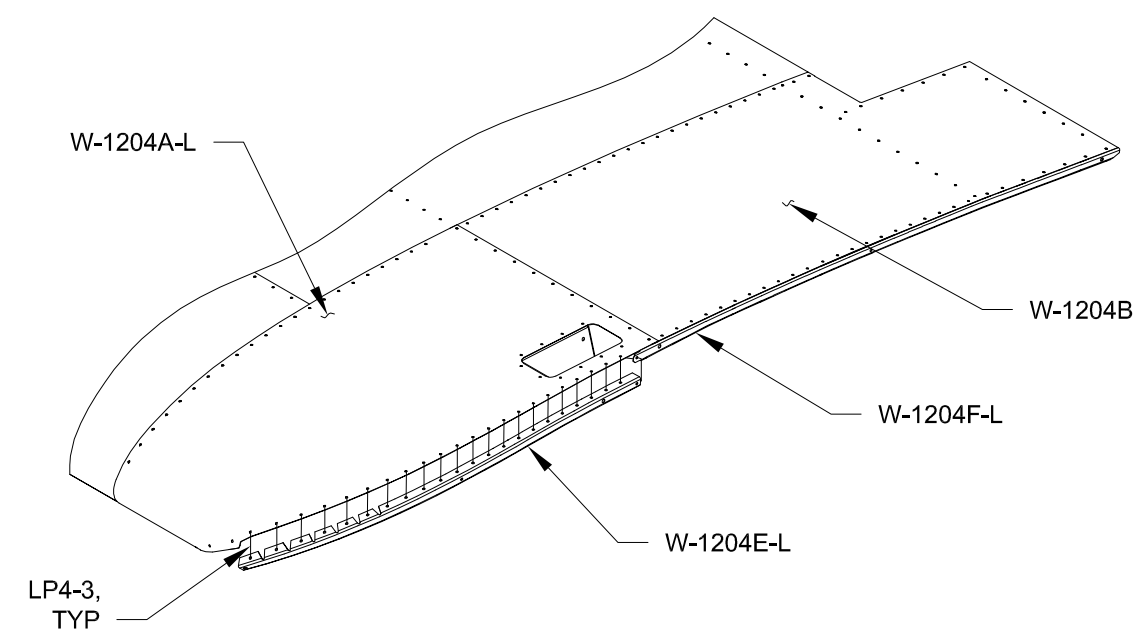


FIGURE 5: ATTACHING THE FWD WING TIP RIB



NOTE: The W-1204D Wing Tip Close-Out for the right wing should be bent to mirror the left.

Step 1: Fabricate a bending tool from a piece of wood 1/2-3/4 inches thick. See Figure 1. To use the bending tool, slide the slot in the bending block over the tab so that the edge of the tab hits the back of the slot and bend the tab. This will give the proper flange height. Bend the tabs of one of the W-1204D Wing Tip Close-Outs as shown in Figure 2. Set the bending tool aside for future use (Page 25-02, Step 1).

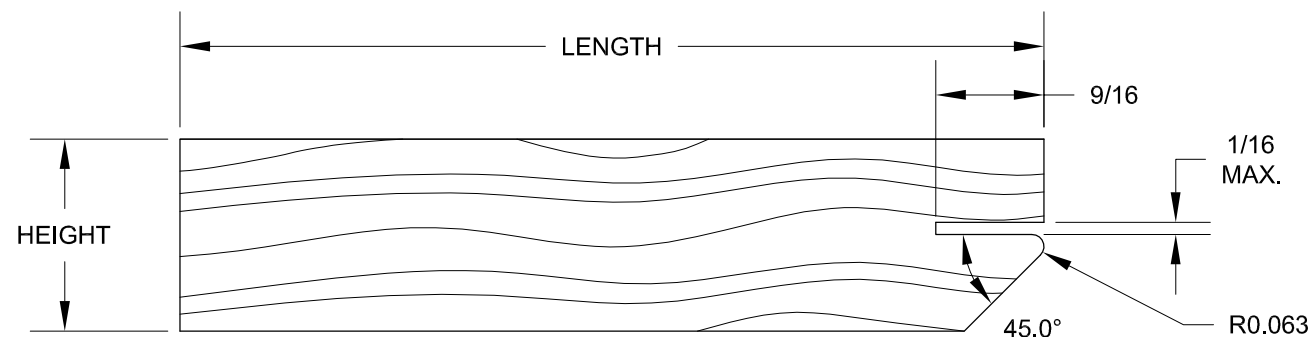


FIGURE 1: BENDING TOOL FABRICATION

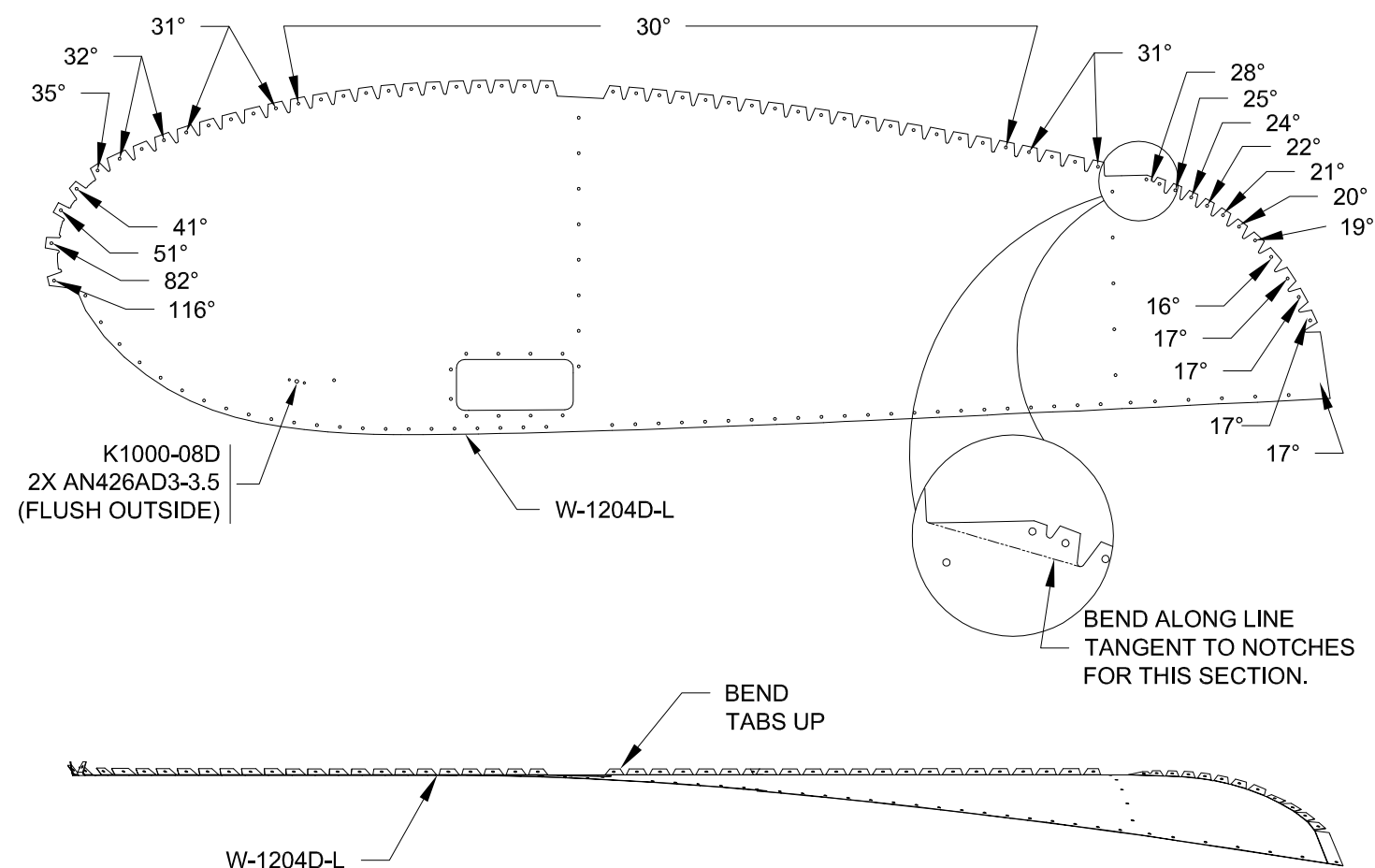


FIGURE 2: MODIFYING THE WING TIP CLOSE-OUT (LEFT SHOWN)

Step 2: Dimple the two rivet holes (flush outside) in the W-1204D-L for the nutplate shown in Figure 2. Install the nutplate on the inside of the W-1204D-L.

NOTE: Builders planning to install the RV-12 Light Kit-SV per section 40iS/U can complete the wing portions before installing the W-1204D-L to allow for easier access. Now is the best time to complete Pages 40iS/U-01 through 40iS/U-07, although Section 40iS/U can also be easily completed after closeout of the wings.

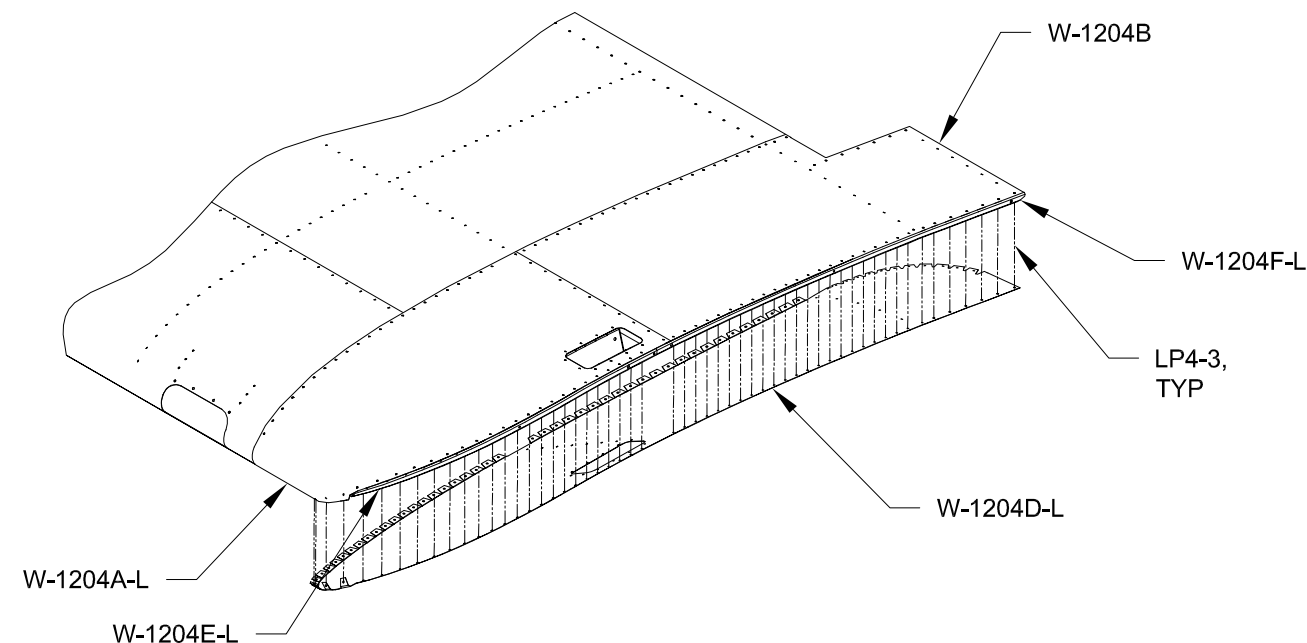


FIGURE 3: ATTACHING THE WING TIP CLOSE-OUT

Step 3: Cleco the W-1204D-L Wing Tip Close-Out to the wing as shown in Figure 3. Check to be sure that the fit is good and adjust the bend angles of the wing tip close-out tabs if/as required. When satisfied with the fit of the wing tip close-out, rivet to the wing.

Step 4: Cleco the W-1204H-L Wing Tip Trailing Edge to the W-1204D-L Wing Tip Close Out and to the W-1213-L Tip Rib. Clamp a straight edge on top of the W-1204B Wing Tip Aft Skin as shown in Figure 4 and confirm that the wing tip trailing edge is parallel to the trailing edge of the wing as shown in Figure 4. When satisfied with the placement, match-drill #30 the wing tip trailing edge to the wing tip aft skin. Rivet the wing tip trailing edge to the wing tip aft skin, wing tip rib, and wing tip close out.

Step 5: Repeat Steps Pg 17-05 Step 1 through Step 4 on this page for the right wing.

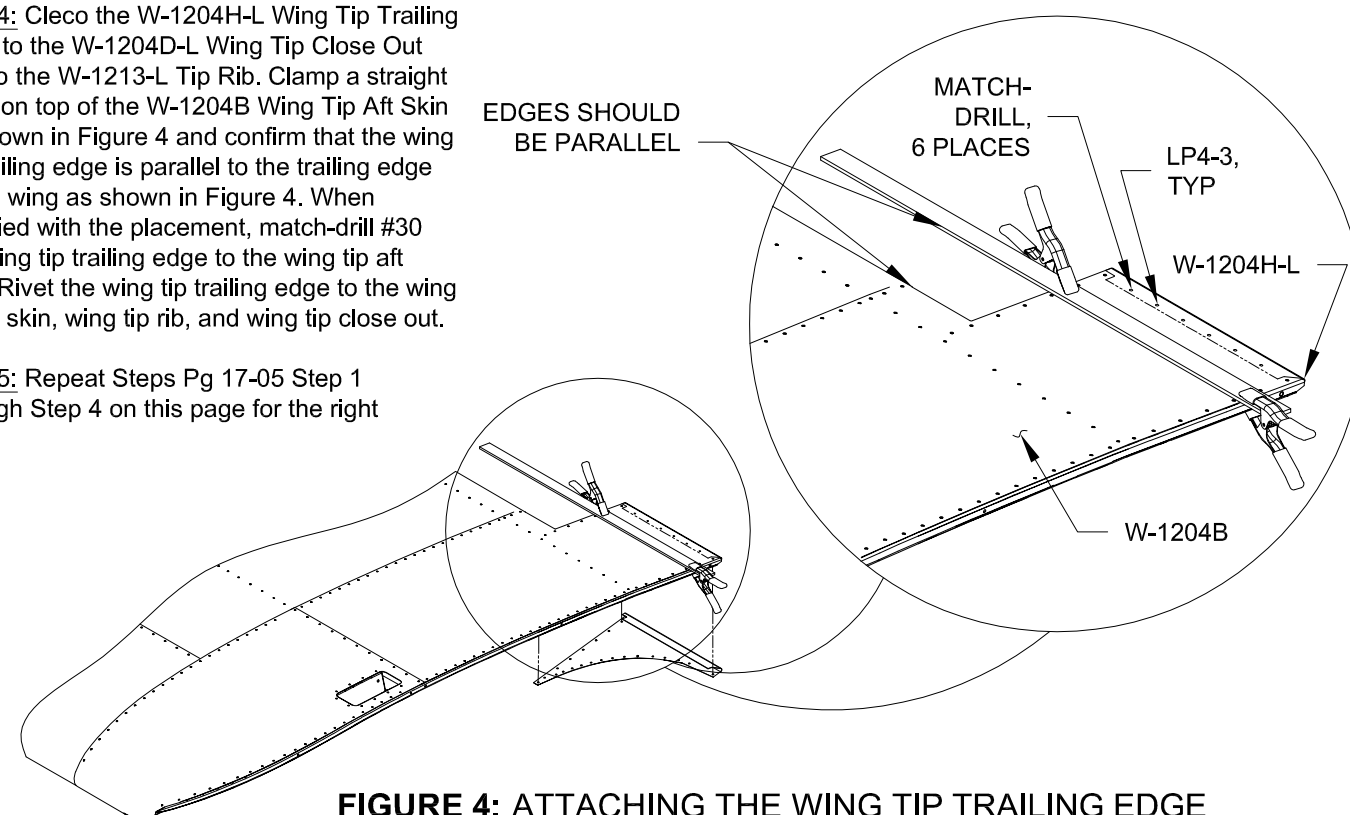


FIGURE 4: ATTACHING THE WING TIP TRAILING EDGE