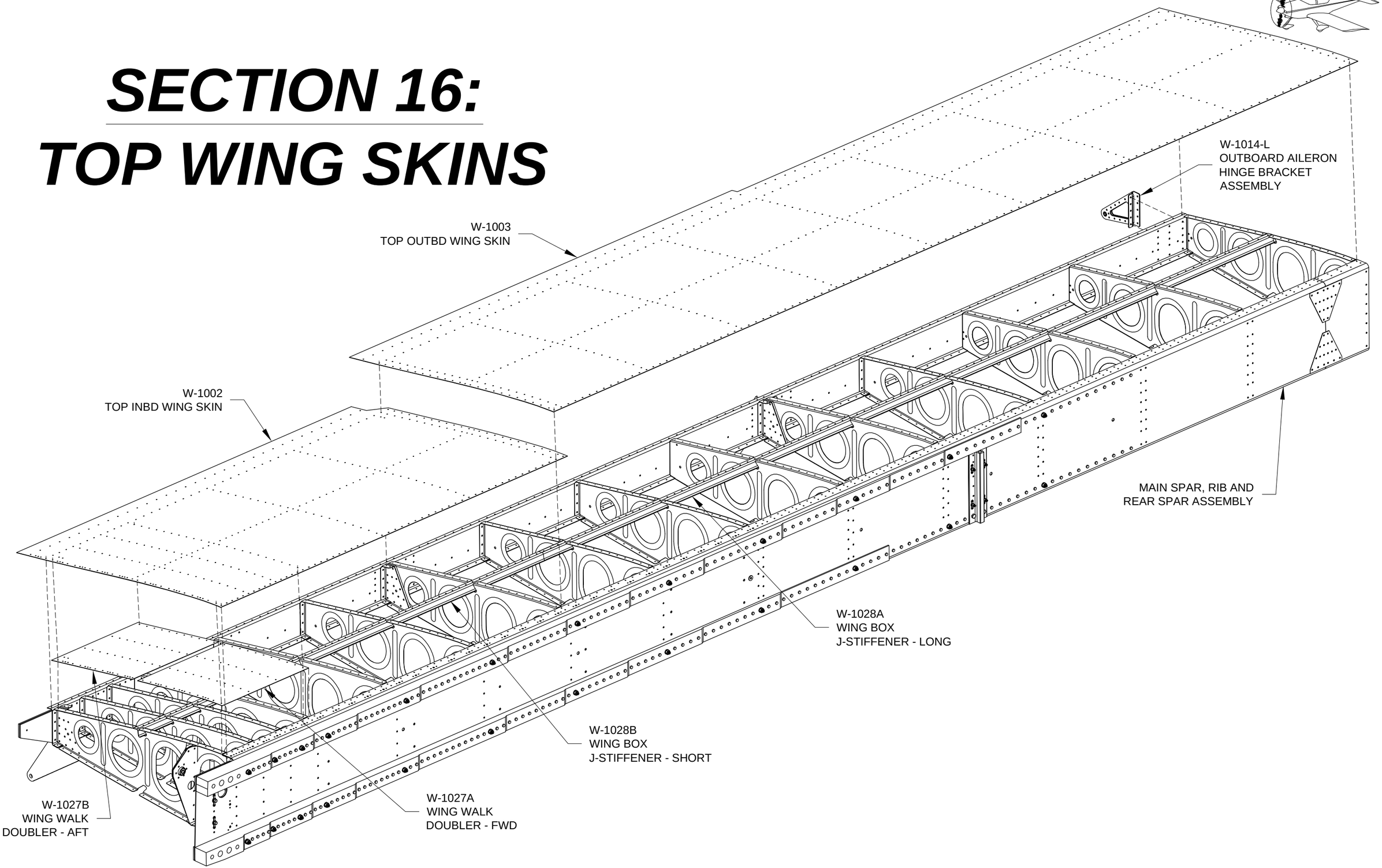
SECTION 16:
TOP WING SKINS



NOTE: This section only covers the steps required for the left wing. The right wing is a mirror of the left.

Step 1: Lay the W-1028A Wing Box J-Stiffener - Long and W-1028B Wing Box J-Stiffener - Short into the J-stiffener cutout in the cutout in the wing ribs. See the isometric view on Page 16-1. Cleco the W-1002 Top Inbd Wing Skin, W-1003 Top Outbd Wing Skin, and the W-1027A and W-1027B Wing Walk Doublers to the main spar, rear spar and wing ribs. (Note that the outboard wing skin overlaps the inboard skin.) Cleco the J-stiffeners to the wing skins.

NOTE: Do not drill the aft most row of holes in each top skin. These holes will attach the gap fairings in Section 20.

Step 2: Final-Drill #40 all the holes common to the top wing skins and the spars, J-stiffeners, wing walk doublers and ribs.

Final-Drill #40 the two holes that will be used to attach the aft most inboard nutplate to the W-1002 Top Inbd Wing Skin (holes are called out in Figure 1).

Step 3: Final-Drill #19 the screw holes for the nutplates that will be installed along the inboard edge of the W-1002 Top Inbd Wing Skin as shown in, Figure 1.

Dimple the aft most screw hole for a #8 flush head screw (see Figure 1), then machine countersink the rest of the screw holes for a #8 flush head screw dimple. Machine countersink all the rivet holes of the top inbd wing skin that correspond to the W-1027A and W-1027B Wing Walk Doublers for the head of an AN426AD3 rivet.

Step 4: Disassemble the parts cleco'ed on in Step 1 from the wing assembly.

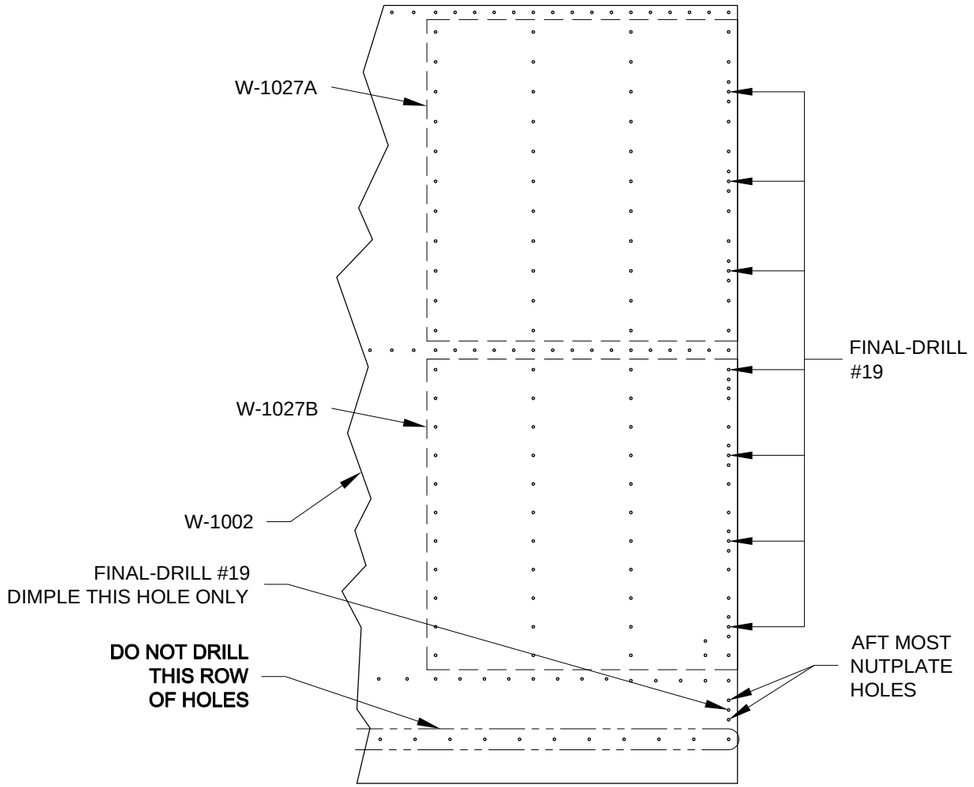


FIGURE 1: FINAL-DRILLING THE WING WALK DOUBLERS

Step 5: To make a more aesthetically pleasing joint between the top wing skins it is permissible to remove material from the edges of the skins as shown in Figure 2. Remove material as shown in Figure 2, Section A-A from the top outboard side of W-1002 Top Inbd Wing Skin and the lower inboard side of the W-1003 Top Outbd Wing Skin to create a smooth transition from one skin to another along the chord wise portion of the skin joint. Remove material from the top outboard forward edge of the top inbd wing skin to allow the top surface of the top outbd wing skin to be flush with the top surface of the tank skin (use a scrap piece of AS3-032 to simulate the tank skin) as shown in Figure 2, Section B-B.

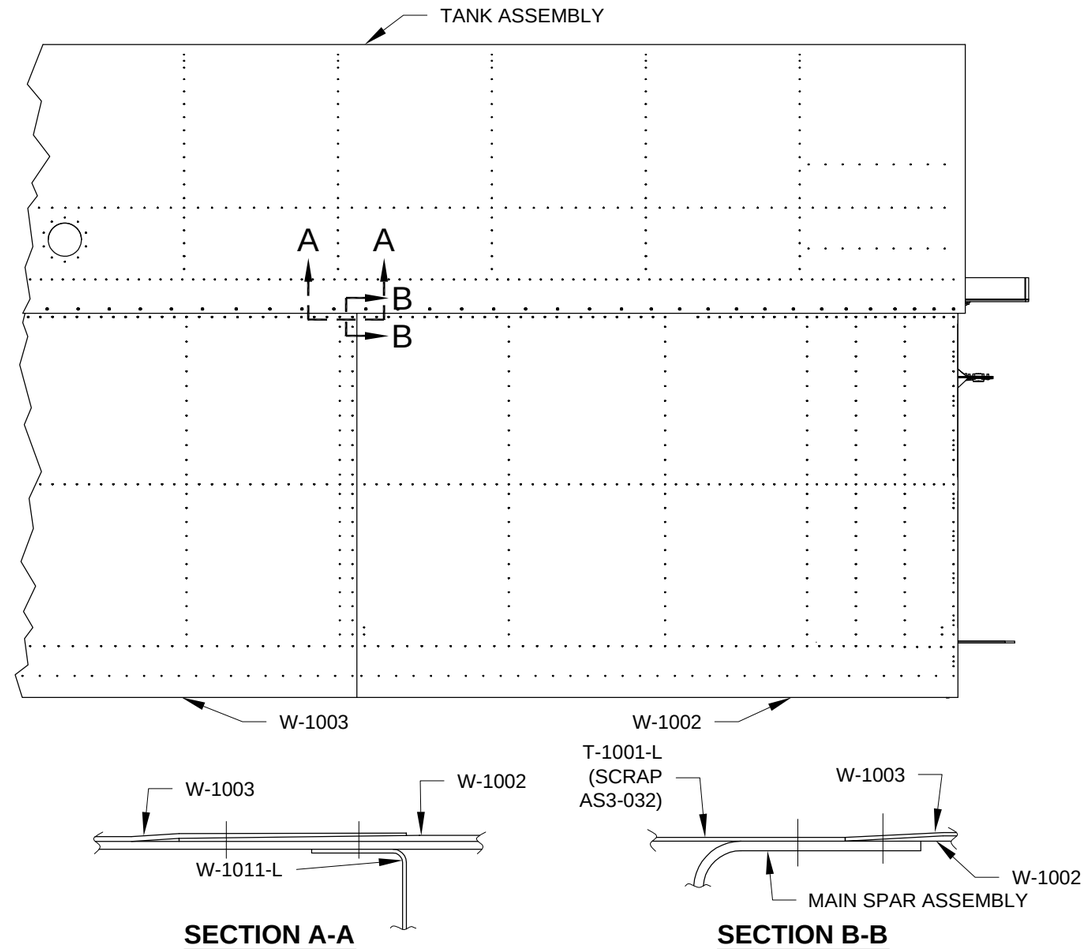


FIGURE 2: WING SKIN JOINT DETAIL
(TANK SHOWN INSTALLED
SECTION B-B SHOWN ROTATED 90° CCW)

Step 6: Deburr the edges and holes of all parts. Dimple the W-1002 and W-1003 Top Wing Skins and W-1028A and W-1028B Wing Box J-Stiffeners (note the screw holes on the inboard edge of the top inbd wing skin have already been machine countersunk or dimpled in Step 3). Dimple the holes on the upper flange of the rear spar and the upper flange of all but the four inboard most wing ribs.

Prime all parts if/as desired.

Step 1: Place the wing with the forward face of the wing spar assembly flat against the table. Block up the spar as required. Clamp the spar firmly to the table at both ends. Protect the spar from the clamp face with wood blocks as shown in Figure 1. Do not distort (bow or twist) the spar with the clamps.

Step 2: Lay the W-1028A and W-1028B Wing Box J-Stiffeners into the J-stiffener notches in the wing ribs. Cleco the W-1002 Top Inbd Wing Skin, W-1003 Top Outbd Wing Skin, W-1027A and W-1027B Wing Walk Doublers to the spars and ribs. Cleco the stiffeners to the top wing skins. Cleco the nutplates that attach along the inboard edge of the top inbd wing skin to the wing assembly (see Figure 1). Check that the top outbd wing skin is **on top** of the top inbd wing skin.

Step 3: Rivet the W-1002 Top Inbd Wing Skin and W-1003 Top Outbd Wing Skin to the W-1028A and W-1028B J-Stiffeners, ribs, rear spar and main spar. See Figure 2 and Figure 3 for the rivet callouts. When riveting the inboard most row of rivets, install the nutplates as indicated in Figure 1 to the W-1010-R Inbd Wing Rib, W-1027A and W-1027B Wing Walk Doublers and top inbd wing skin. To assure maximum skin tightness, rivet from the center of each skin outwards towards the root and tip. Do this on both skins saving the double row of rivets at the lap joint until last. For a higher quality skin finish, back rivet the skins in place. This will require a large bucking bar, covered with plastic packaging tape, laid over the manufactured head of the rivet on the outside face of the skin and an extended back rivet set.

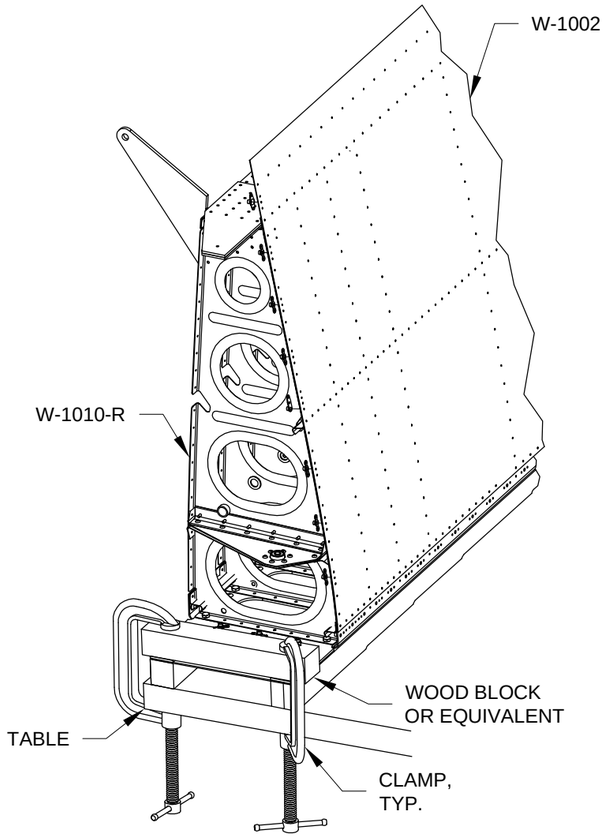


FIGURE 1: NUTPLATE INSTALL

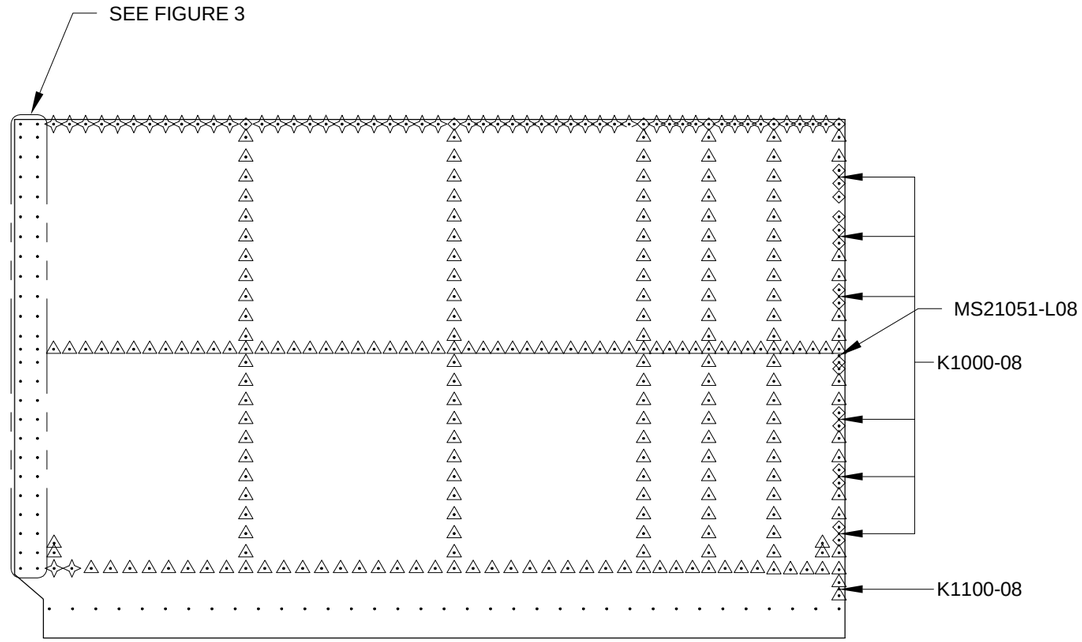


FIGURE 2: TOP INBD WING SKIN RIVET CALLOUT

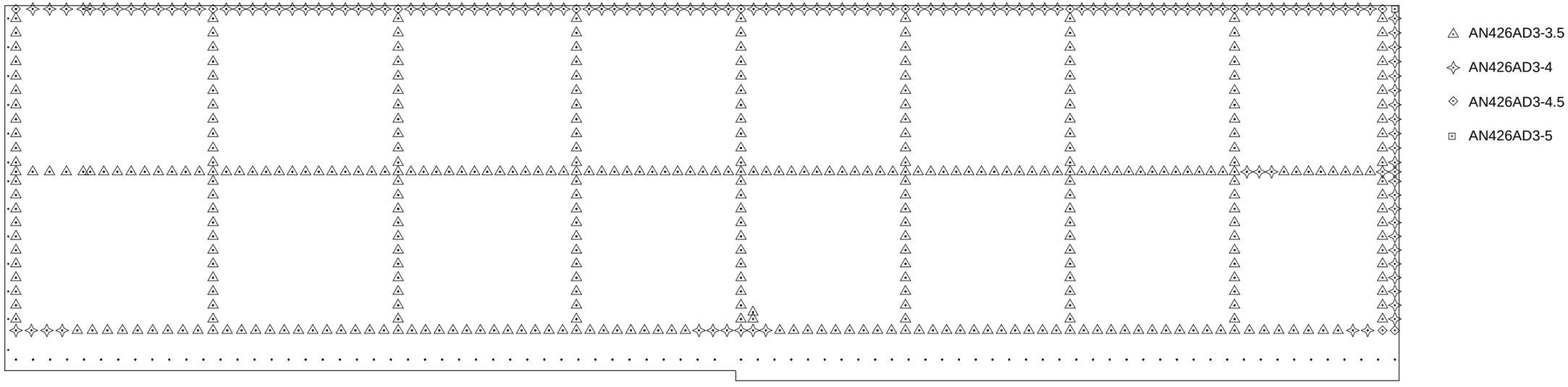


FIGURE 3: TOP OUTBD WING SKIN RIVET CALLOUT

Note: Do not complete any steps from this page until the top skins are completely riveted on! Riveting the W-1014-L Outboard Aileron Hinge Bracket Assembly on prematurely will remove access to the outboard most rivet attaching the W-1003 Top Outboard Wing Skin to the W-1007A-L Rear Spar Web.

Step 1: Cleco the W-1014-L Outboard Aileron Hinge Bracket Assembly to the W-1012-R TRIMMED Outboard Wing Rib, two places as shown in Figure 1. Cleco the outboard aileron hinge bracket assembly to the W-1007A-L Rear Spar Web and W-1007E-L Rear Spar Doubler Plate as shown in Figure 1.

Step 2: Final-Dill #30 the W-1014-L Outboard Aileron Hinge Bracket Assembly to the W-1007-L Rear Spar Assembly. Match-Drill #30 and cleco the outboard aileron hinge bracket assembly to the W-1012-R TRIMMED Outboard Wing Rib using the hinge bracket as a drill guide. Remove the two clecoes holding the hinge bracket to the outboard wing rib and final-drill #30 the holes in the hinge bracket and outboard wing rib.

Step 3: Un-cleco the W-1014-L Outboard Aileron Hinge Bracket from the wing assembly.

Deburr all parts.

Step 4: Cleco the W-1014-L Outboard Aileron Hinge Bracket Assembly to the wing assembly per Step 1. Rivet the outboard hinge bracket assembly to the wing assembly as indicated in Figure 1.

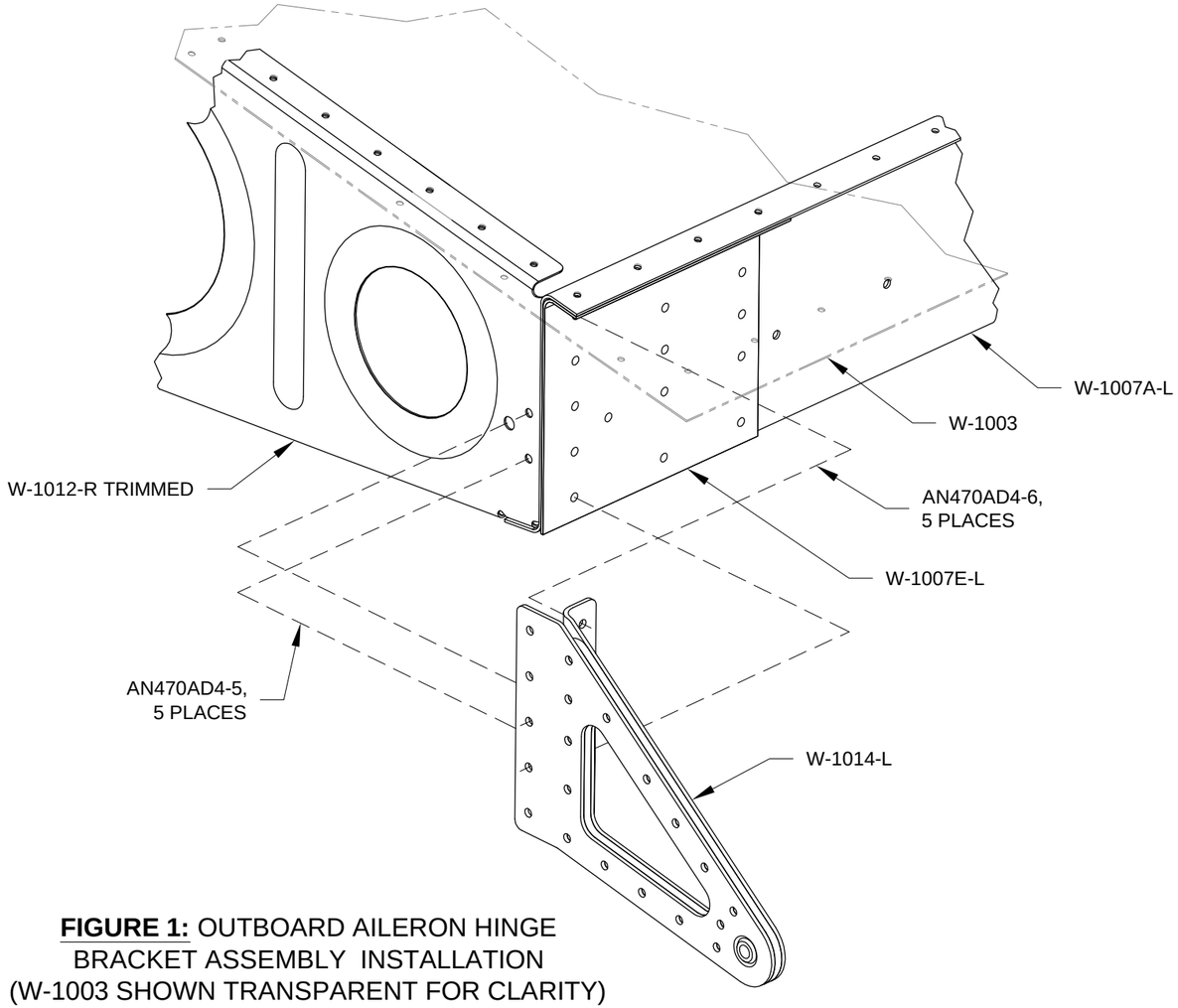


FIGURE 1: OUTBOARD AILERON HINGE BRACKET ASSEMBLY INSTALLATION (W-1003 SHOWN TRANSPARENT FOR CLARITY)