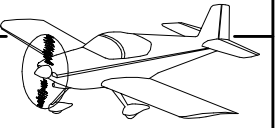
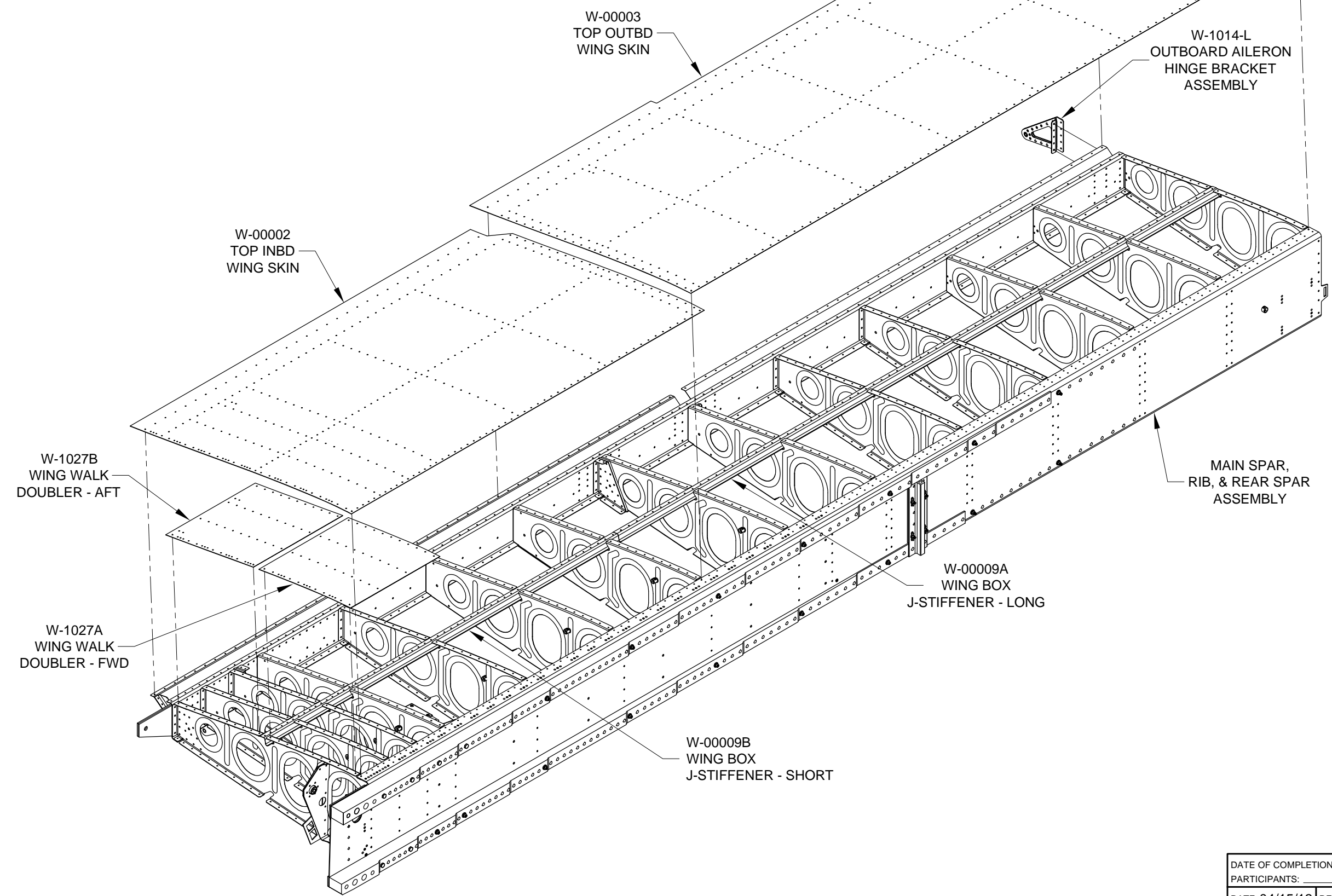


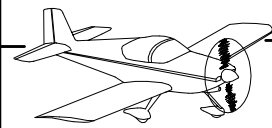
REVISION DESCRIPTION:

16-04 REV 2: Updated step Step 4 to clarify match-drilling process.



SECTION 16: TOP WING SKINS





NOTE: Except where separate instructions and/or figures exist for both left and right sides of the aircraft, only the left side parts, assemblies, or installations will be shown.

It is the builder's choice as to whether to complete all steps for the left side before repeating those steps for the right side or to complete each step for both left and right sides before moving to the next step.

Step 1: Cleco the W-00002 Top Inbd Wing Skin and the W-1027A and W-1027B Wing Walk Doublers to the main spar, rear spar and wing ribs.

NOTE: Ignore the two holes in the W-1027B Wing Walk Doubler shown in Figure 1. These holes remain unused in the RV-14

Step 2: Match-Drill #40 the rivet holes for the nutplates that will be installed along the inboard edge of the W-00002 Top Inbd Wing Skin, W-1027A Wing Walk Doubler - Fwd and W-1027B Wing Walk Doubler - Aft to the W-1010-R Inbd Wing Rib. See Figure 1, also see Page 16-03, Figure 1.

Final-Drill #40 all holes common to the top inbd wing skin, wing walk doubler - fwd and wing walk doubler - aft.

Step 3: Final-Drill #19 the screw holes for the nutplates that will be installed along the inboard edge of the W-00002 Top Inbd Wing Skin as shown in Figure 1. Use caution when enlarging the hole for the middle nutplate. Be sure you drill the correct hole for later installation of a single leg nutplate.

CAUTION!: Holes dimpled for a #8 screw have a tendency to crack if not deburred carefully! First check that the hole has been drilled to final size. Before dimpling, thoroughly deburr the holes.

Step 4: Deburr then dimple the aft most screw hole for a #8 flush head screw (see Figure 1).

Machine countersink all the rivet holes that correspond to the W-1027A Wing Walk Doubler - Fwd and W-1027B Wing Walk Doubler - Aft for the head of an AN426AD3 rivet. Machine countersinks that are up to .005 too shallow are acceptable and are preferred to countersinks that are too deep.

Step 5: Disassemble the parts clecoed on in Step 1 from the Wing Assembly.

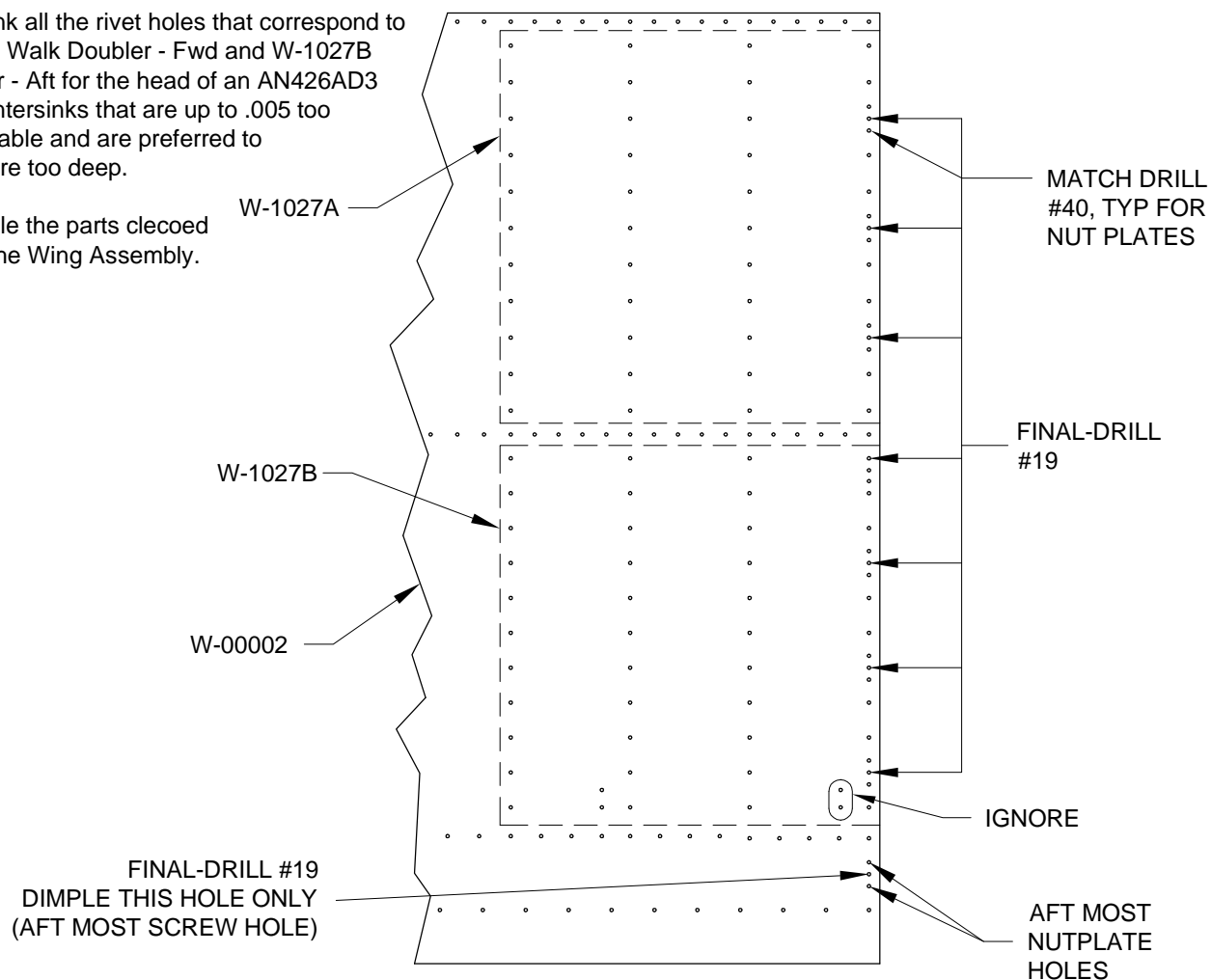


FIGURE 1: FINAL-DRILLING THE WING WALK DOUBLERS

Step 6: Remove material thickness from the top outboard forward edge of the W-00002 Top Inbd Wing Skin and the bottom inboard forward edge of the W-00003 Top Outbd Wing Skin as shown in Figure 2. When finished, the joined edges of the top inbd and top outbd wing skins should be of equal thickness with the T-00001 Fuel Tank Skin upon installation. Use a scrap piece of AS3-032 to simulate the tank skin thickness for reference.

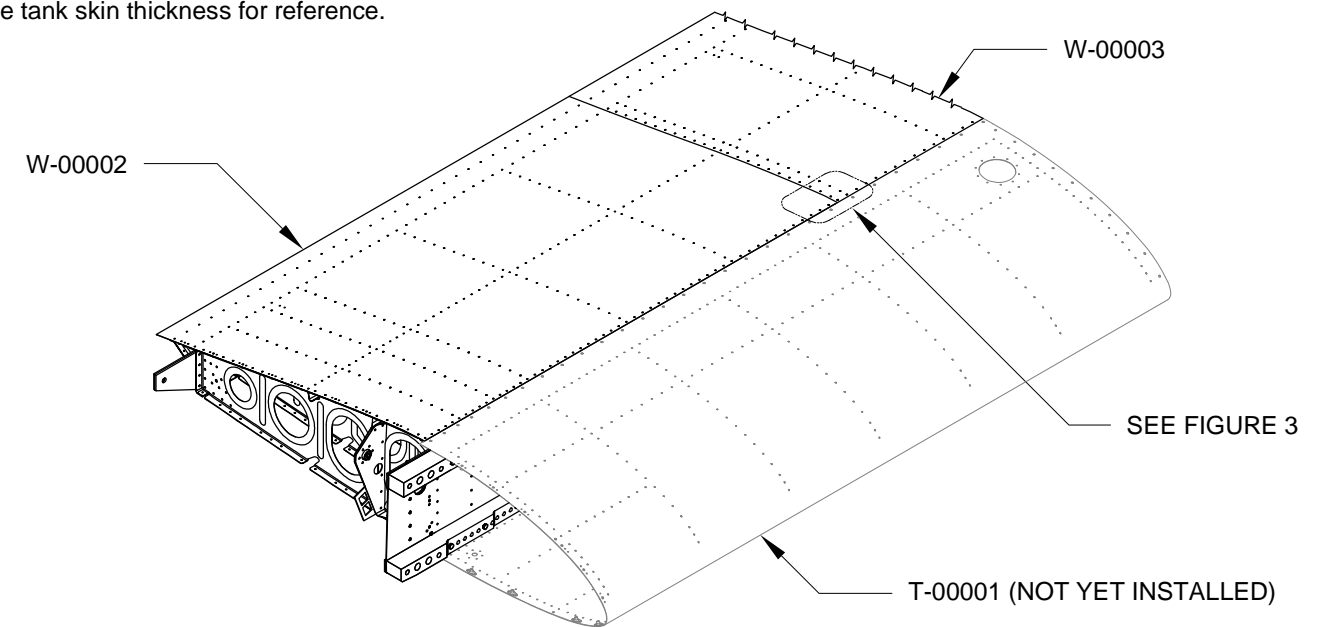


FIGURE 2: WING SKIN MATING OVERVIEW

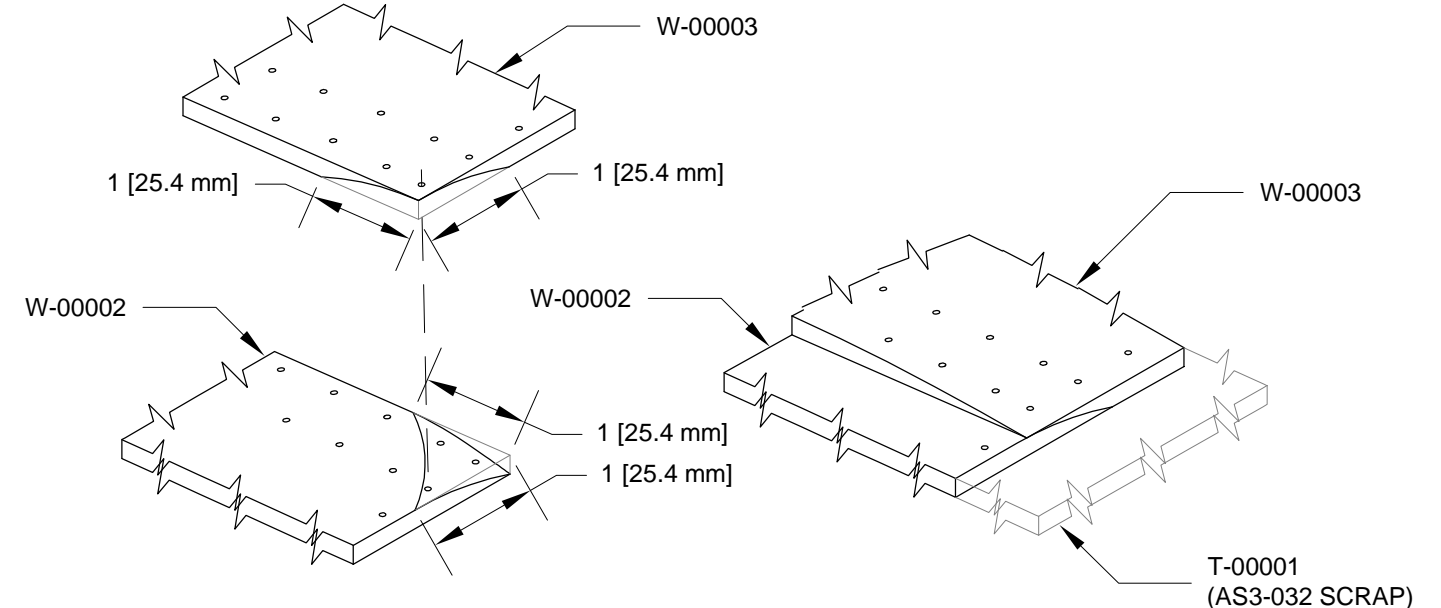


FIGURE 3: DESIRED WING SKIN THICKNESS DETAIL (SKIN THICKNESS EXAGGERATED FOR CLARITY)

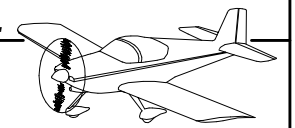
Step 7: Deburr edges and holes per Section 5.2. Put a slight bend on the forward edge of the W-00002 Top Inbd Wing Skin and the forward and inboard edges of the W-00003 Top Outbd Wing Skin as described in Section 5.10.

Dimple the top wing skins at all .098 [2.49 mm] diameter hole locations not previously machine countersunk EXCEPT do not dimple the wing tip attach points on the outboard edge of the top outbd wing skin as called out on Page 16-03, Figure 3.

Dimple the top flanges of the wing ribs EXCEPT do not dimple the rib flanges that lie under the W-1027A and W-1027B Wing Walk Doublers.

Dimple the holes in the W-00009A Wing Box J-Stiffener - Long and W-00009B Wing Box J-Stiffener - Short.

Prime the areas on the wing skins where material was removed in Step 6. Prime all other areas if/as desired.



Step 1: Place the wing with the forward face of the Wing Spar Assembly flat against a 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: Cleco the W-00002 Top Inbd Wing Skin, W-00003 Top Outbd Wing Skin, W-1027A and W-1027B Wing Walk Doublers to the spars and ribs.

Step 3: Check that the W-00003 Top Outbd Wing Skin is **on top** of the W-00002 Top Inbd Wing Skin. Rivet the top inbd wing skin and top outbd wing skin to the ribs, rear spar and main spar. See Figure 2 and Figure 3 for the rivet call-outs.

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.

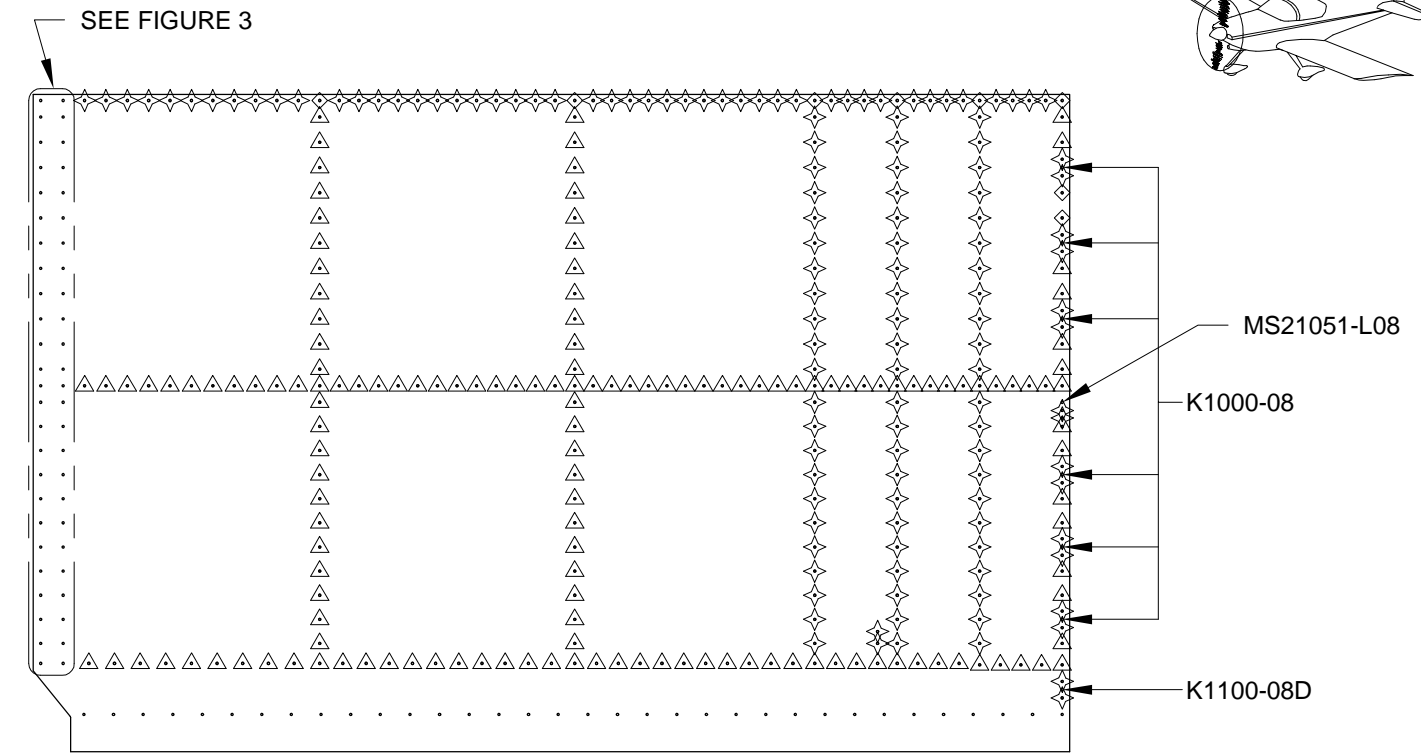


FIGURE 2: W-00002 TOP INBD WING SKIN RIVET CALL-OUT

- △ AN426AD3-3.5
- ◇ AN426AD3-4
- ◇ AN426AD3-4.5
- AN426AD3-5
- ☆ WING TIP ATTACH POINTS (DO NOT DIMPLE)

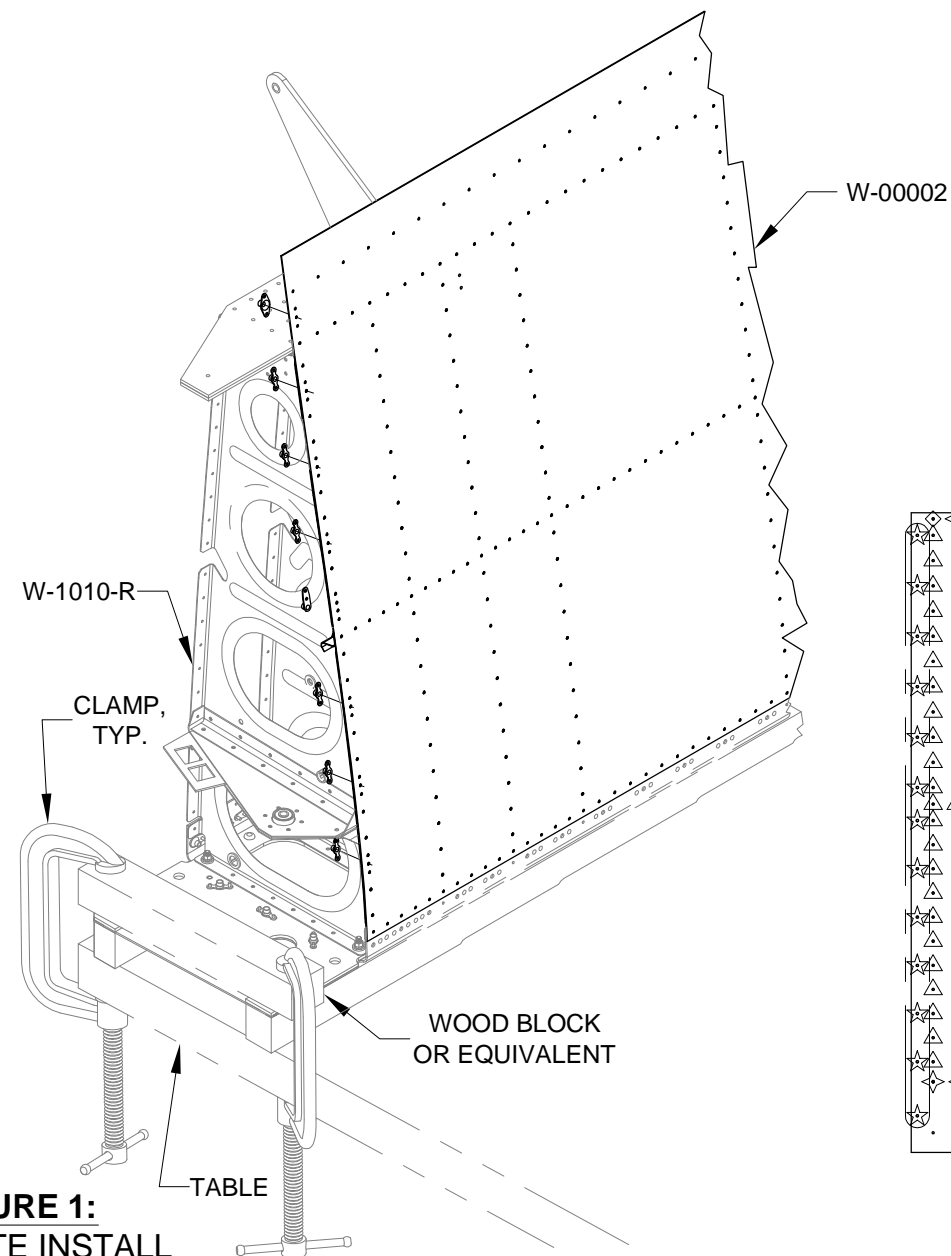


FIGURE 1:
NUTPLATE INSTALL

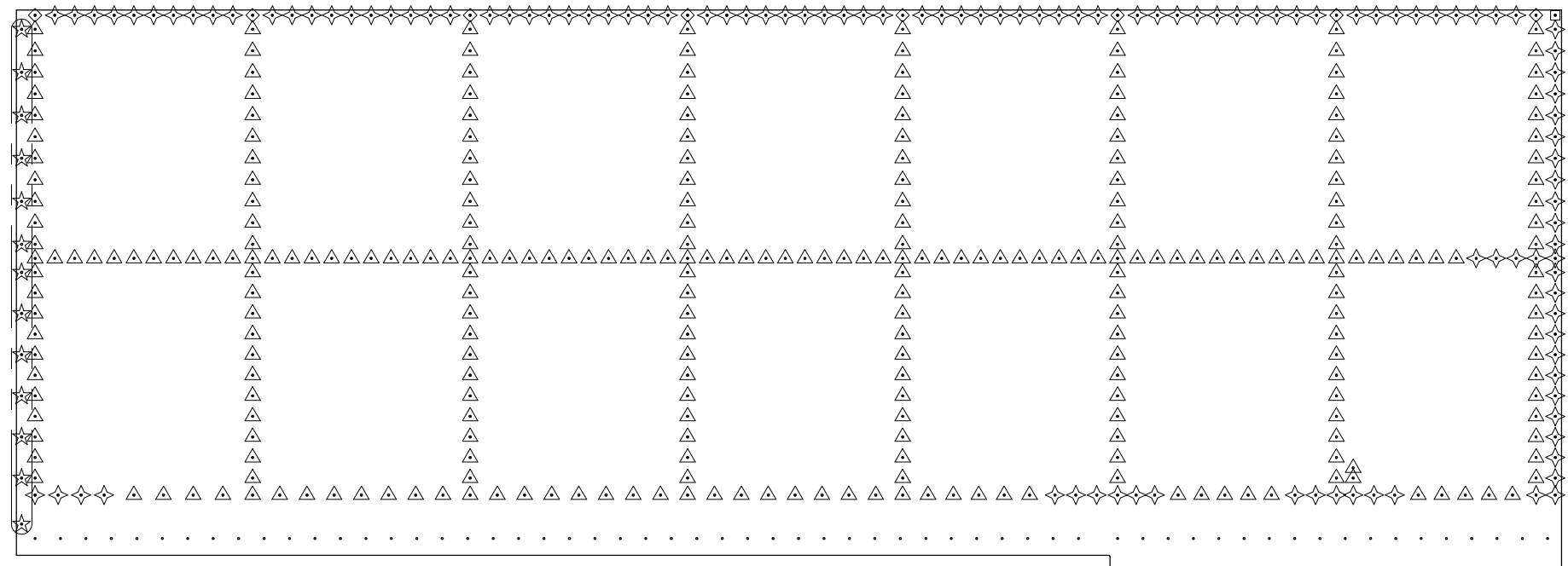
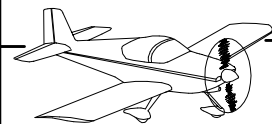


FIGURE 3: W-00003 TOP OUTBD WING SKIN RIVET CALL-OUT



Step 1: Lay the W-00009A Wing Box J-Stiffener - Long into the J-stiffener notches in the wing ribs and cleco to the W-00003 Top Outbd Wing Skin. Rivet the wing box J-stiffener - long to the top outbd wing skin leaving the three inboard rivet holes open. See Page 16-03, Figure 3 for rivet call-outs.

Lay the W-00009B Wing Box J-Stiffener - Short into the J-stiffener notches in the wing ribs and cleco to the W-00002 Top Inbd Wing Skin. Place the wing box J-stiffener - long on top of the J-stiffener - short. Rivet the wing box J-stiffener - short to the top wing skins and wing box J-stiffener - long. See Page 16-03, Figures 2 and 3 for rivet call-outs.

Step 2: Machine countersink the non-dimpled #19 screw holes at the inboard edge of the wing to fit a #8 flush head screw dimple. See Section 5.5. See Page 16-02, Figure 1.

Step 3: 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-00007A-L Rear Spar Web and W-1007E-L Rear Spar Doubler Plate as shown in Figure 1.

Step 4: Match-Drill #30 and cleco the outboard aileron hinge bracket assembly to the W-1012-R TRIMMED Outboard Wing Rib using the W-1014-L Outboard Aileron Hinge Bracket Assembly 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. Using an extended #30 bit, final-drill the Outboard Aileron Hinge Bracket Assembly to the W-00007-L Rear Spar Assembly.

Step 5: Un-cleco the W-1014-L Outboard Aileron Hinge Bracket from the wing assembly.

Deburr all parts Per Section 5.2.

Step 6: 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 W-1012-R TRIMMED Outboard Wing Rib then to the W-00007A-L Rear Spar Web and W-1007E-L Rear Spar Doubler Plate as shown in Figure 1.

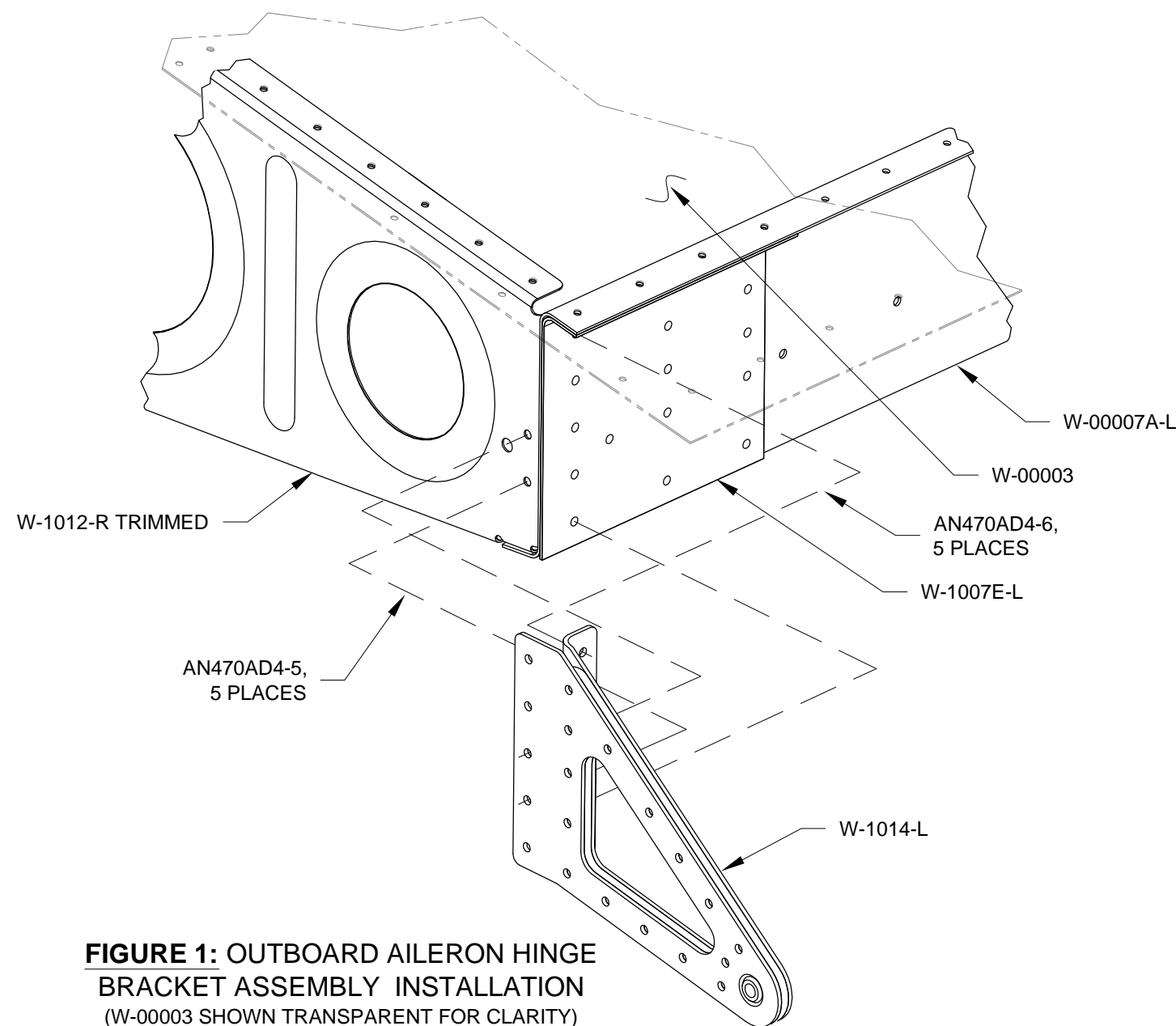


FIGURE 1: OUTBOARD AILERON HINGE BRACKET ASSEMBLY INSTALLATION
(W-00003 SHOWN TRANSPARENT FOR CLARITY)