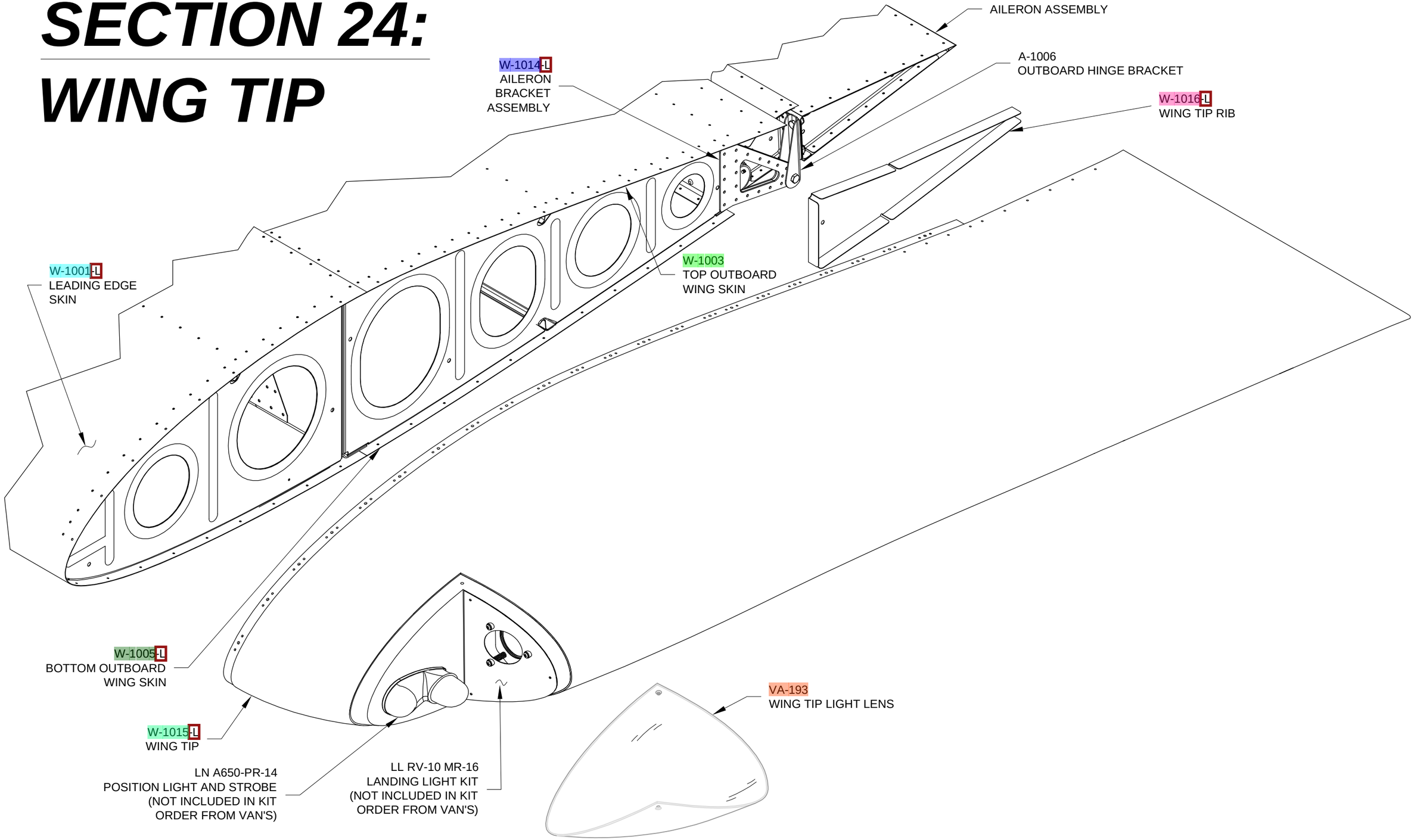
SECTION 24:
WING TIP



NOTE: The following instructions are for the left wing tip only. The right wing tip is a mirror of the left.

NOTE: Fiberglass will quickly dull tools. Locate and use the tools set aside for use in attaching the empennage fairings when working with the fiberglass wing tip.

Step 1: Trim away material in the shaded areas from the W-1015 Wing Tip as shown in Figure 1, Figure 2 and Figure 3. This will provide clearance between the wing tip, the W-1014 Outboard Aileron Hinge Bracket Assembly and the aileron assembly. Trim both the top and bottom sides of the wing tip to provide a 3/16 minimum gap between the wing tip and the outboard edge of the aileron assembly (see Figure 1 and Figure 2). Trim the top of the wing tip even with the aft edge of the W-1003 Wing Skin (see Figure 1). Trim the bottom of the wing tip starting with the dimensions given in Figure 2. Check that this trim provides a 3/16 gap between the forward edge of the A-1006 Outboard Hinge Bracket and the wing tip when the aileron is rotated to full up deflection. See Section 23 for aileron travel.

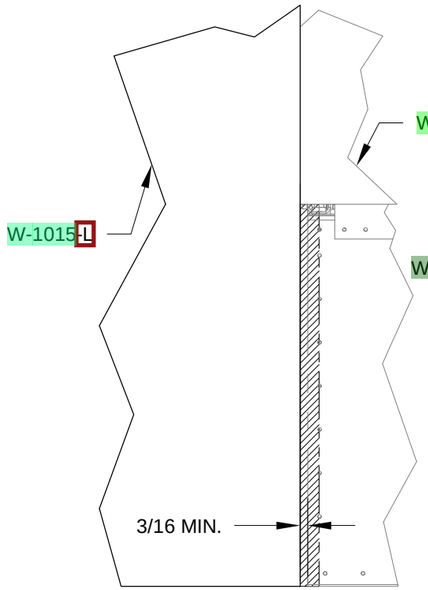


FIGURE 1: WING TIP TOP TRIM

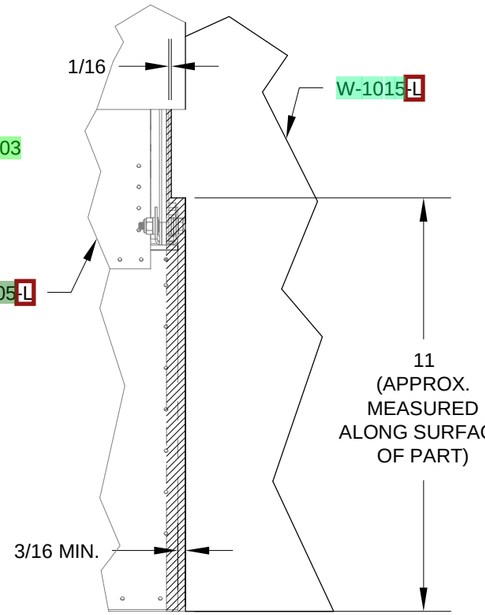


FIGURE 2: WING TIP BOTTOM TRIM

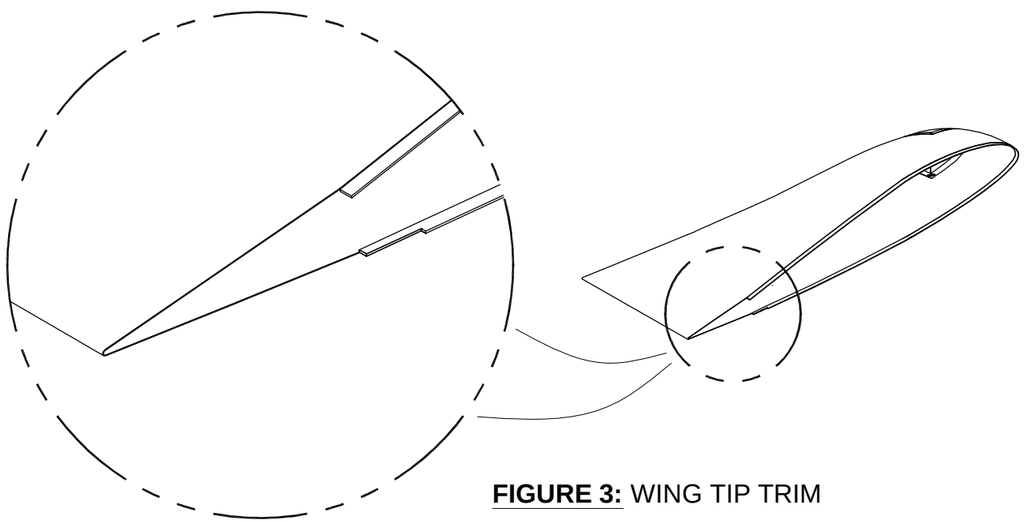


FIGURE 3: WING TIP TRIM

Step 2: Square the inside edge and corner of the lens recess in the W-1015-L Wing Tip with a file and/or a razor blade to allow the lens to lay flush with the wing tip.

Step 3: Cut the VA-193 Wing Tip Light Lens in half as shown in Figure 4. Determine the right and left lenses by placing them on their respective wing tips, then set the VA-193-R Right Lens aside.

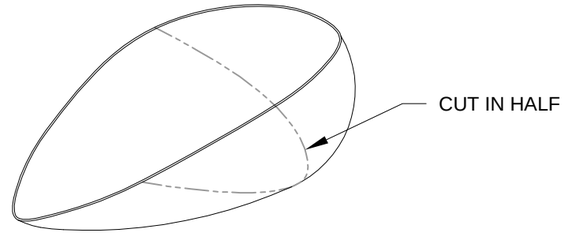


FIGURE 4: LENS MODIFICATION

Step 4: Mark a trim line for the recess onto the VA-193-L Left Lens. Remove and roughly trim the left lens to within 1/8 inch of the trim line. Carefully trim the left lens a little at a time to fit the recess until satisfied with the fit, then tape the left lens in place on the W-1015-L Wing Tip.

Step 5: Drill #40 the VA-193-L Left Lens into the W-1015-L Wing Tip at the upper and lower corners using the dimensions given in Figure 5. After drilling cleco each hole. Remove the tape and check the fit. Final-Drill #28 both holes in the wing tip and the left lens.

Step 6: Match-Drill #40 the nutplate attach pattern into the W-1015-L Wing Tip, orient the nutplate approximately as shown in Figure 5. Countersink the VA-193-L Left Lens for the head of a #6 flush head screw and the W-1015-L WIng Tip for the AN426AD3 nutplate attach rivets.

Step 7: Install the VA-193-L Left Lens using the hardware called out in Figure 5.

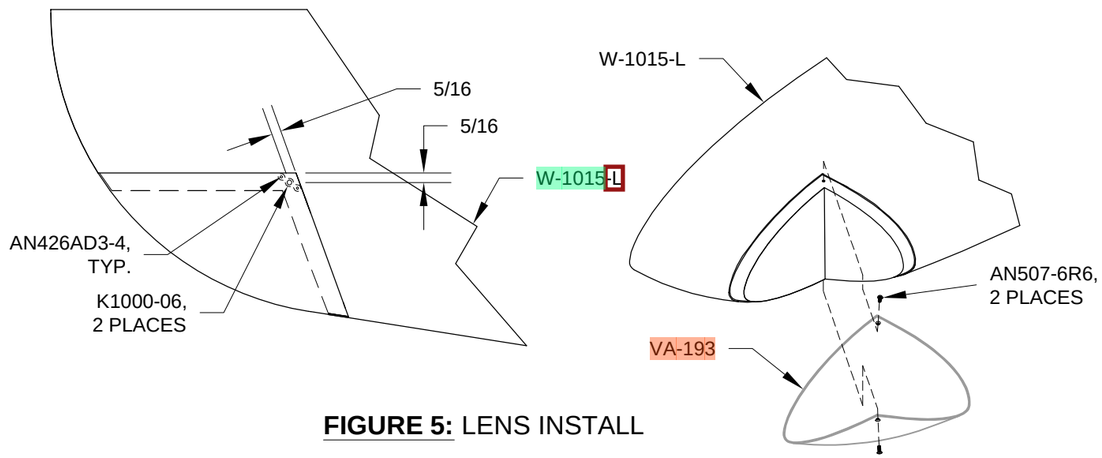


FIGURE 5: LENS INSTALL

Step 1: Insert the W-1015-L Wing Tip into the wing assembly. Match-Drill #40 and cleco the wing tip attach holes using the W-1001 Leading Edge Skin, W-1003 Top Outbd Wing Skin and the W-1005-L Bottom Outbd Wing Skin as drill guides. Start drilling the forward most holes, then progress towards the trailing edge alternating between the top and bottom holes.

Step 2: Remove the W-1015-L Wing Tip.

Step 3: Final-Drill #28 all wing tip attach holes in the W-1001-L Leading Edge Skin, W-1003 Top Outboard Wing Skin and W-1005-L Bottom Outboard Wing Skin, then deburr and dimple the holes for #6 flush head screws.

Step 4: Final-Drill the screw attach holes in the W-1015-L Wing Tip to #28. Match-drill #40 the nutplate attach pattern into the W-1015-L Wing Tip using a nutplate as a drill guide. Use a screw to position the nutplate in each hole, this will keep the nutplates aligned and will minimize puckering of the wing skins between attach the fasteners when the wing tip is secured to the wing. Machine countersink the nutplate attach holes for the head of an AN426AD3 rivet. Rivet the nutplates to the wing tip as shown in Figure 1. Machine countersink the screw holes in the tip for the corresponding dimple in the wing skin.

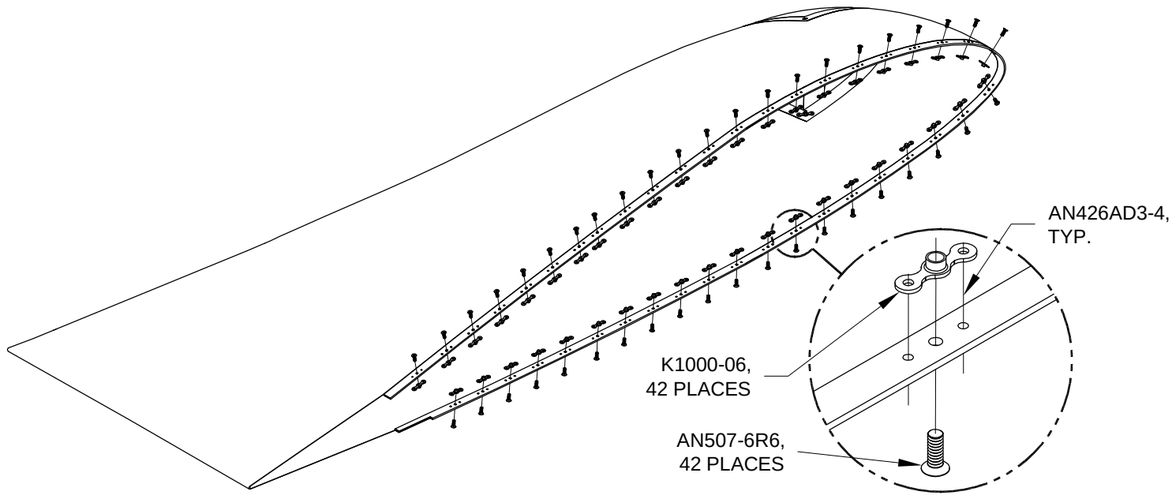


FIGURE 1: NUTPLATE ATTACH

Step 5: Attach the W-1015-L Wing Tip to the wing assembly and insert the W-1016-L Wing Tip Rib into the aft edge of the wing tip. Properly position the wing tip rib to fit snug into the wing tip without distorting the wing tip. Flush the inboard face of the web with the inboard edges of the wing tip (see Figure 2). With the wing tip rib positioned, mark the ends of the flanges onto the bottom and top sides of the wing tip. Using an edge distance of 5/16 layout a rivet pattern on the bottom and top of the wing tip using an approximate 1 1/2 inch spacing between rivets. See Figure 2.

Step 6: Drill #40 the forward and aft most holes of the pattern created in Step 5 into the W-1015-L Wing Tip. Draw a centerline on the flanges of the W-1016-L Wing Tip Rib and mark the forward most rivet location, 5/16 from the forward edge of the forward upper flange. Insert the rib back into the wing tip. Use the marks visible through the holes in the wing tip for alignment. Match-Drill #40 and cleco the rib using the guide holes in the wing tip. Drill #40 and cleco the remaining holes through the wing tip into the wing tip rib using the rivet pattern created in Step 5 as a drill guide.

Step 7: Machine countersink the W-1016-L Tip Rib attach holes in the W-1015-L Wing Tip for the head of an AN426AD3 rivet. Remove and deburr the wing tip rib. Prime the tip rib if/as desired. Clean out any debris from the wing tip. Rivet the wing tip rib to the wing tip per the callout in Figure 3.

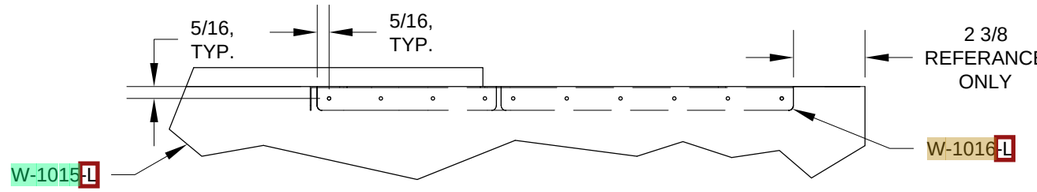


FIGURE 2: LAYING OUT THE TIP RIB RIVET PATTERN

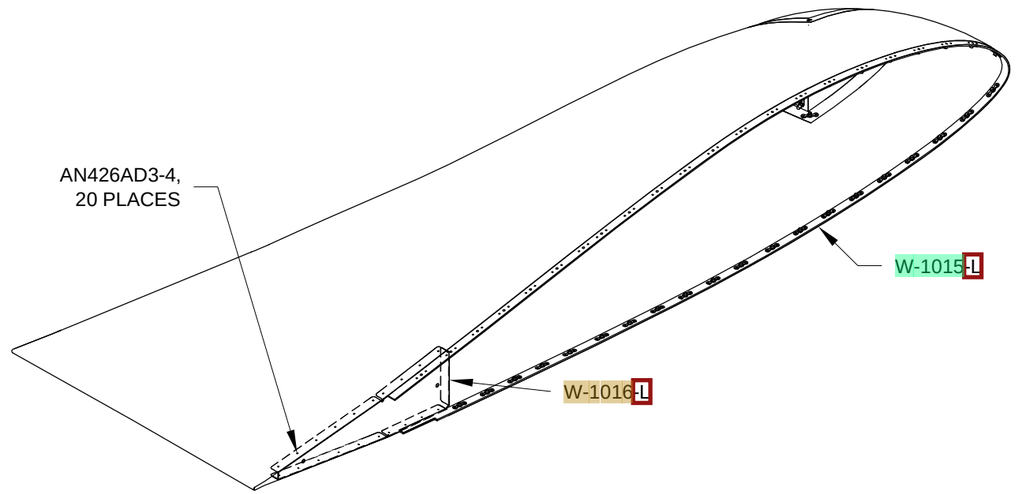


FIGURE 3: TIP RIB ISO VIEW
(TIP RIB SHOWN WITH HIDDEN LINES
FOR CLARITY)

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