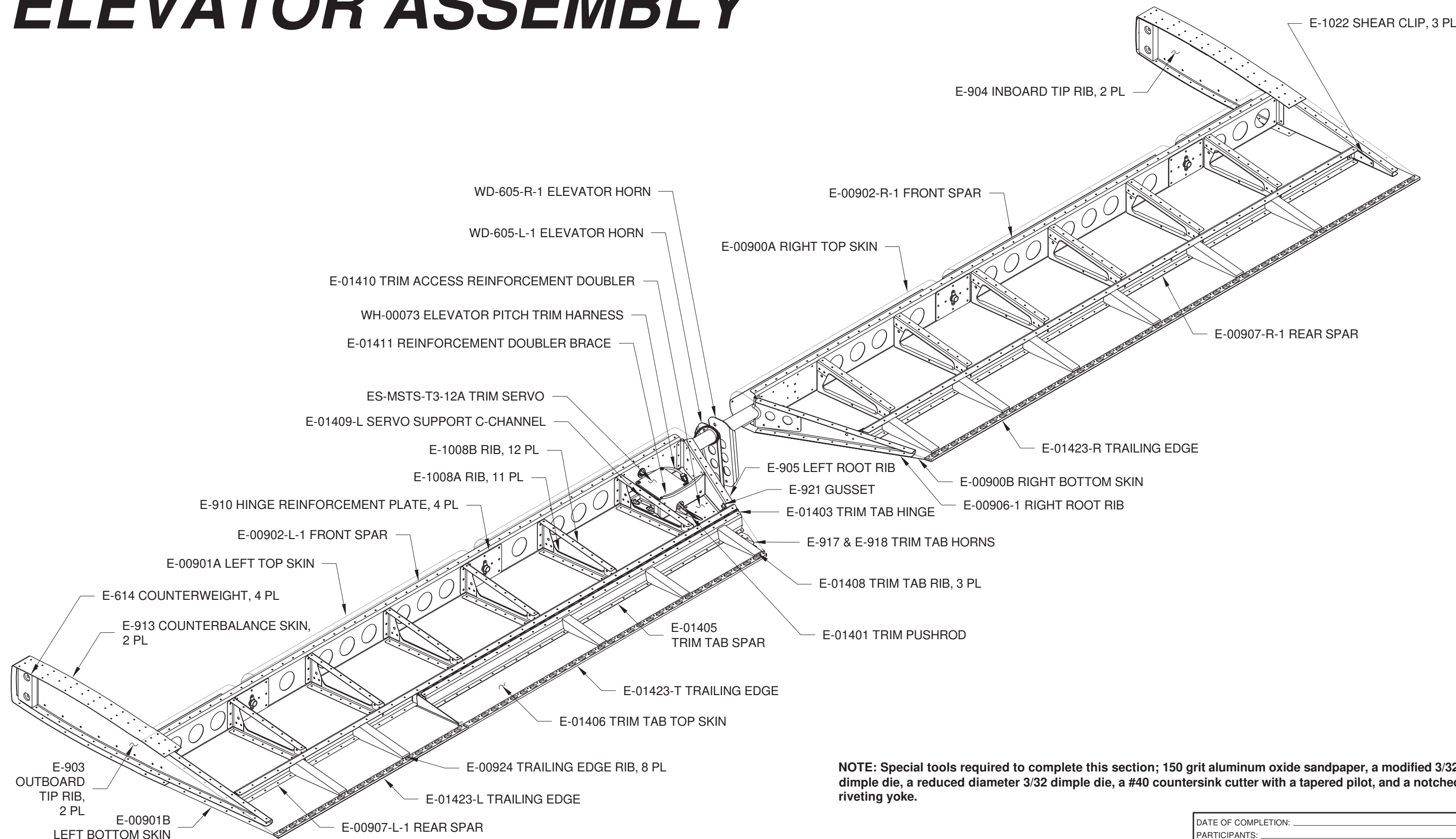
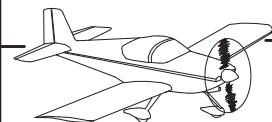


# SECTION 9: ELEVATOR ASSEMBLY



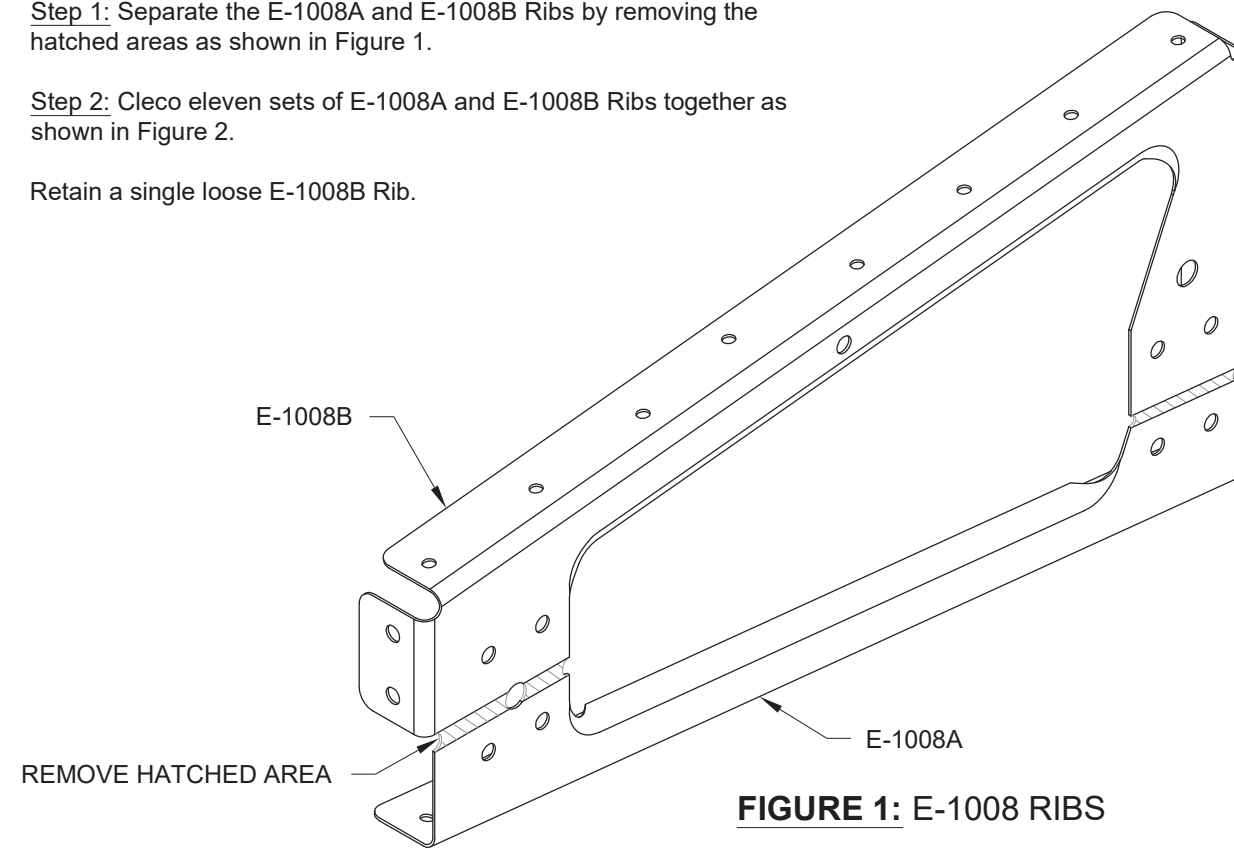
**NOTE:** Special tools required to complete this section; 150 grit aluminum oxide sandpaper, a modified 3/32 dimple die, a reduced diameter 3/32 dimple die, a #40 countersink cutter with a tapered pilot, and a notched riveting yoke.



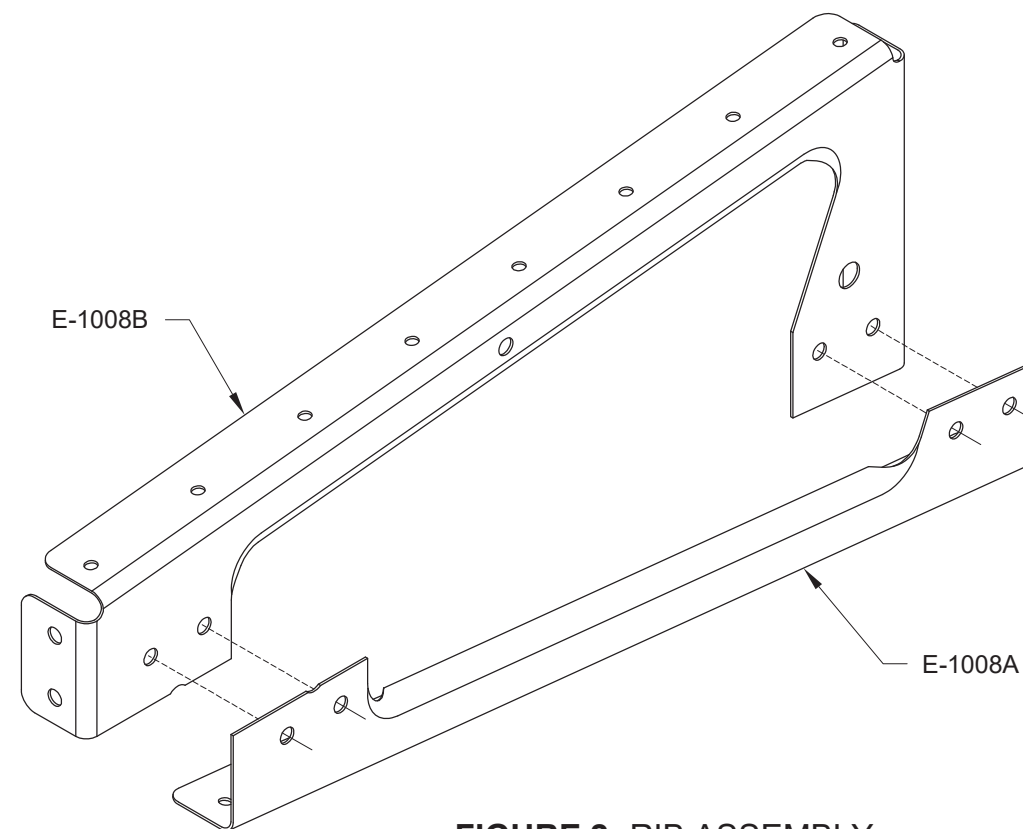
Step 1: Separate the E-1008A and E-1008B Ribs by removing the hatched areas as shown in Figure 1.

Step 2: Cleco eleven sets of E-1008A and E-1008B Ribs together as shown in Figure 2.

Retain a single loose E-1008B Rib.



**FIGURE 1: E-1008 RIBS**



**FIGURE 2: RIB ASSEMBLY**

Step 3: Separate the four E-1022 Shear Clips by removing the hatched areas as shown in Figure 3.

Step 4: Ensure the flanges of the E-903 Outboard and E-904 Inboard Tip Ribs are bent 90°. Use a hand seamer to adjust the flanges as necessary.

Step 5: Flute the flanges of the E-903 and E-904 Tip Ribs as required to straighten them. See Figure 4.

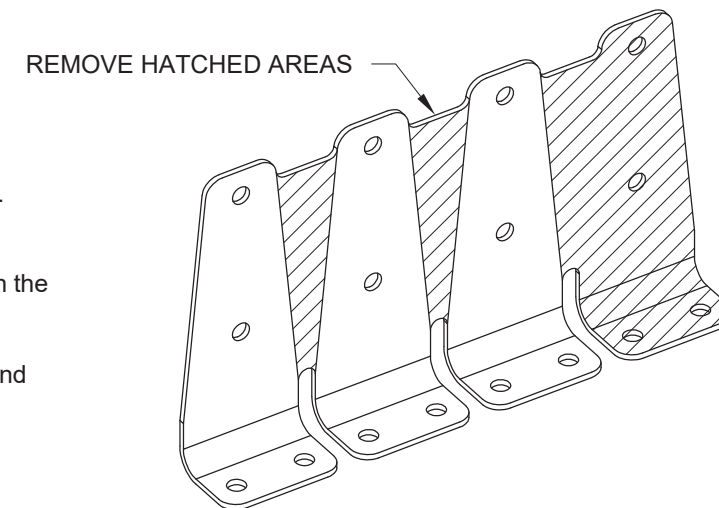
Check for straightness by ensuring the holes in the tip rib flanges line up with the holes in the E-913 Counterbalance Skin.

Step 6: Remove the vinyl from the mating surfaces of the E-913 Counterbalance Skins and E-903 & E-904 Tip Ribs.

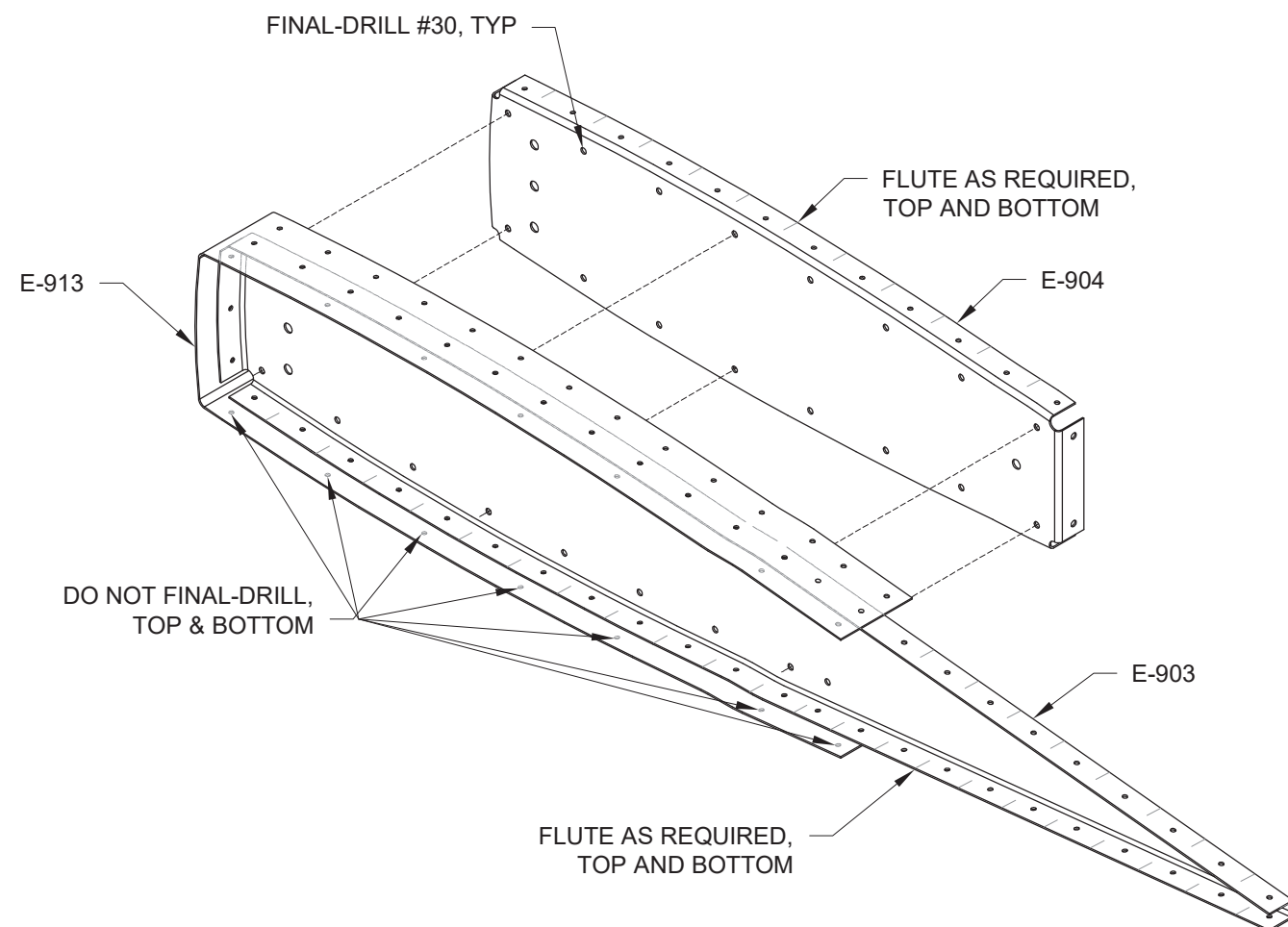
Cleco together two sets of counterbalance skins and tip ribs as shown in Figure 4.

Step 7: Final-Drill #30 all .125 holes in the web of the E-904 Tip Ribs. See Figure 4.

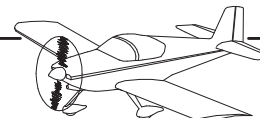
Final-Drill #40 all of the .098 holes common to the E-913 Counterbalance Skins and tip ribs. See Figure 4 for exceptions.



**FIGURE 3: E-1022 SHEAR CLIPS**

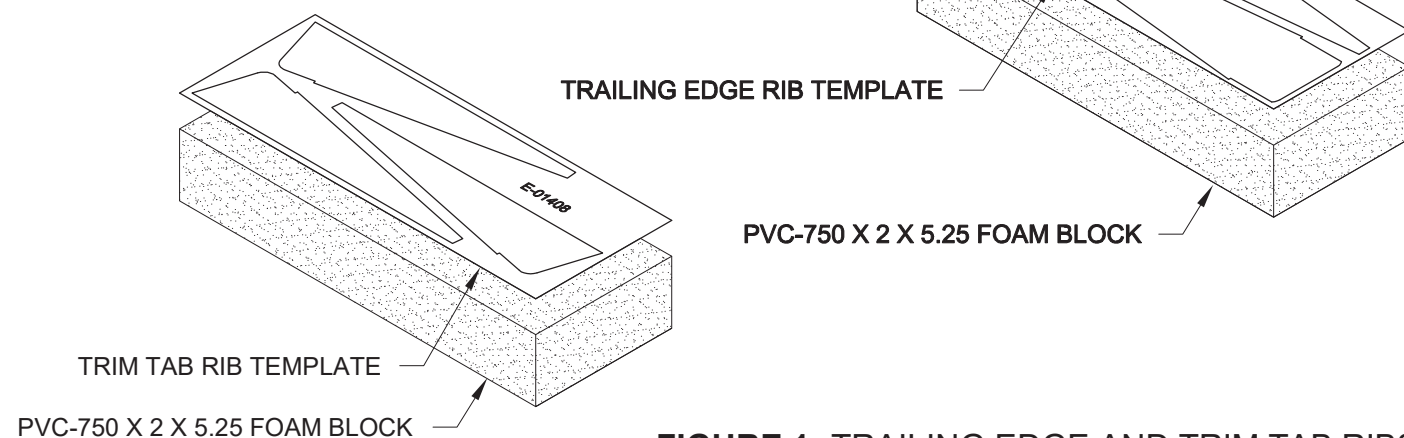


**FIGURE 4: TIP RIB ASSEMBLY**



**Step 1:** Fabricate eight E-00924 Trailing Edge Ribs and three E-01408 Trim Tab Ribs from the PVC-750 X 2 X 5.25 foam blocks.

Use a spray adhesive to glue the templates found on Page 09-29, to the foam blocks. Use a band saw to cut the ribs from the blocks, then use a sanding block to finish the edges exactly to the template lines.

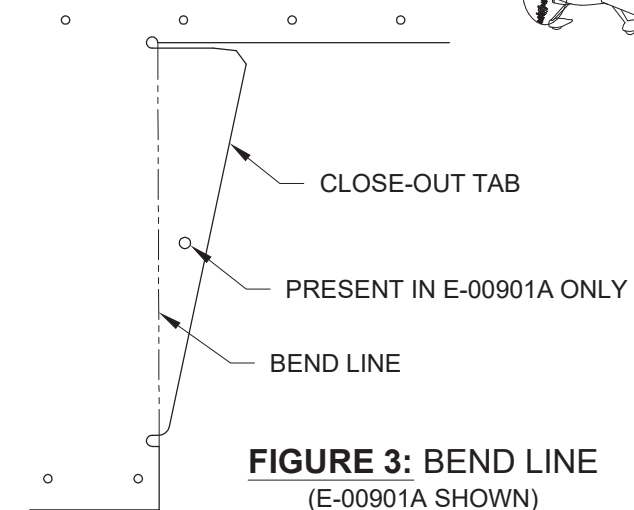


**FIGURE 1:** TRAILING EDGE AND TRIM TAB RIBS

**Step 3:** Remove the vinyl from the E-00901A and E-00901B Skins in the area of the close-out tabs.

Use a fine tip sharpie pen to mark the bend line on the outer surface of the skins as shown in Figure 3.

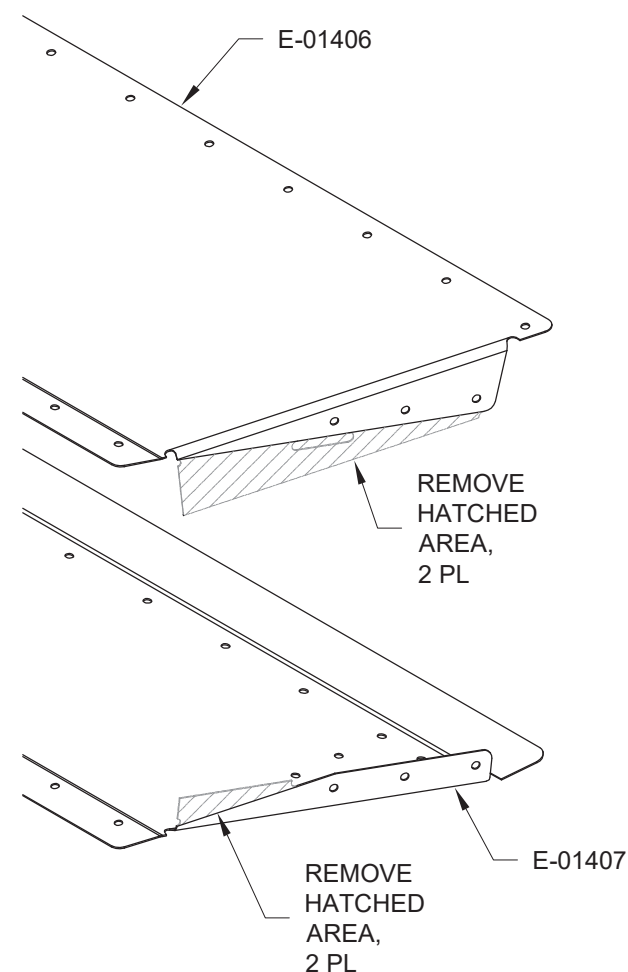
The close-out tabs on the E-00901A Left Top Skin and the E-00901B Left Bottom Skin, once bent, will point to the inside surface of the Elevator, making them easier to identify. Use a sharpie pen to label the inside of the skins for easy identification. See Figure 4.



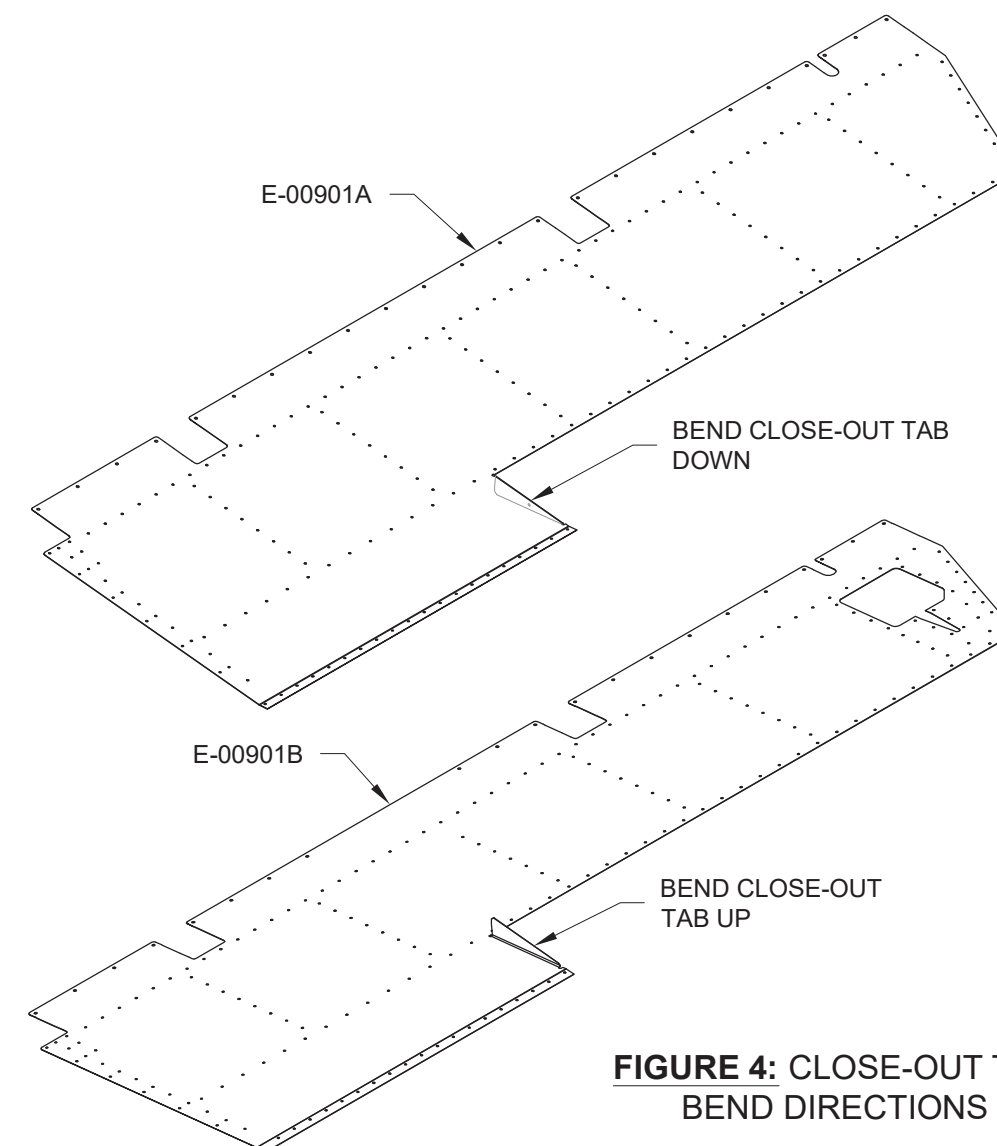
**FIGURE 3:** BEND LINE  
(E-00901A SHOWN)

**Step 2:** Remove the hatched areas of the E-01406 and E-01407 Trim Tab Skins as shown in Figure 2.

The close-out tabs on the E-01406 and E-01407 Trim Tab Skins point to the inside surface of the Trim Tab. Use a sharpie pen to label the inside surface of the skins for easy identification.



**FIGURE 2:** TRIM TAB CLOSE-OUT TABS



**FIGURE 4:** CLOSE-OUT TAB  
BEND DIRECTIONS



Step 1: Clamp the E-00901A Left Top Skin between a workbench and a wood block as shown in Figure 1.

Position the close-out tab bend line to overhang 1/64 [0.4 mm] beyond one corner of the workbench.

Position the trailing edge bend line to be just overhanging the edge of the workbench.

Bend the close-out tab in the left top skin down using a small wood block. Use a rivet gun turned to a low setting with a flush rivet set to finish the bend by tapping back and forth along the close-out tab.

Use a hand seamer to finish bending the close-out tab to 90°

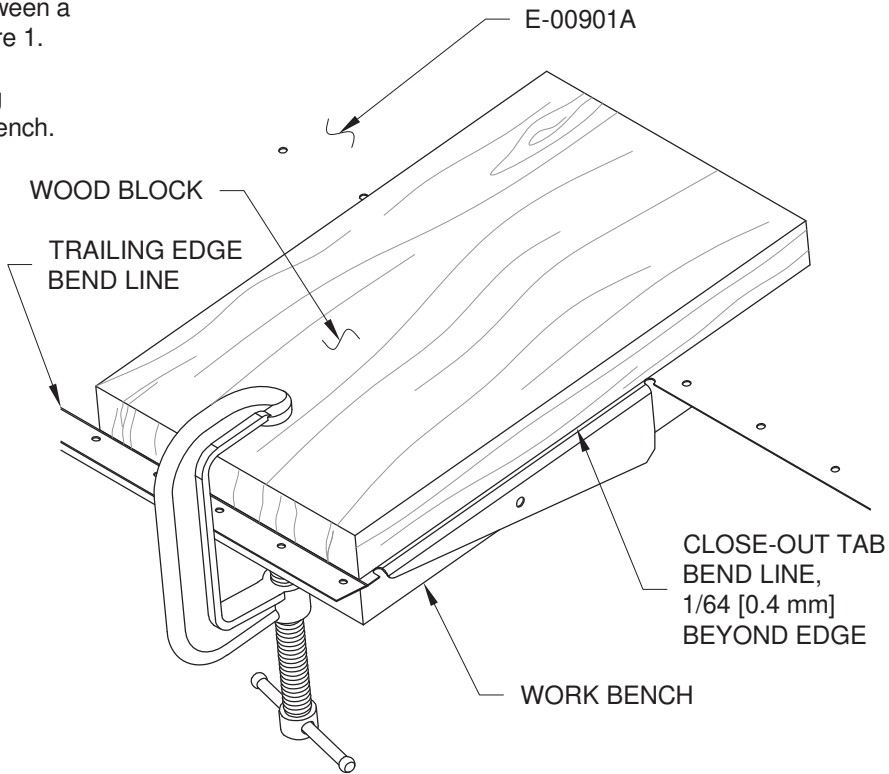


FIGURE 1: LEFT TOP SKIN CLOSE-OUT TAB

Step 2: Clamp the E-00901B Left Bottom Skin between a workbench and a wood block as shown in Figure 2.

Position the close-out tab bend line to overhang 1/32 [0.8 mm] beyond one edge of the workbench.

Position the trailing edge bend line to be just overhanging the edges of the workbench.

Bend the close-out tab in the left top skin as described in Step 1.

Use a hand seamer to finish bending the close-out tab to 90°

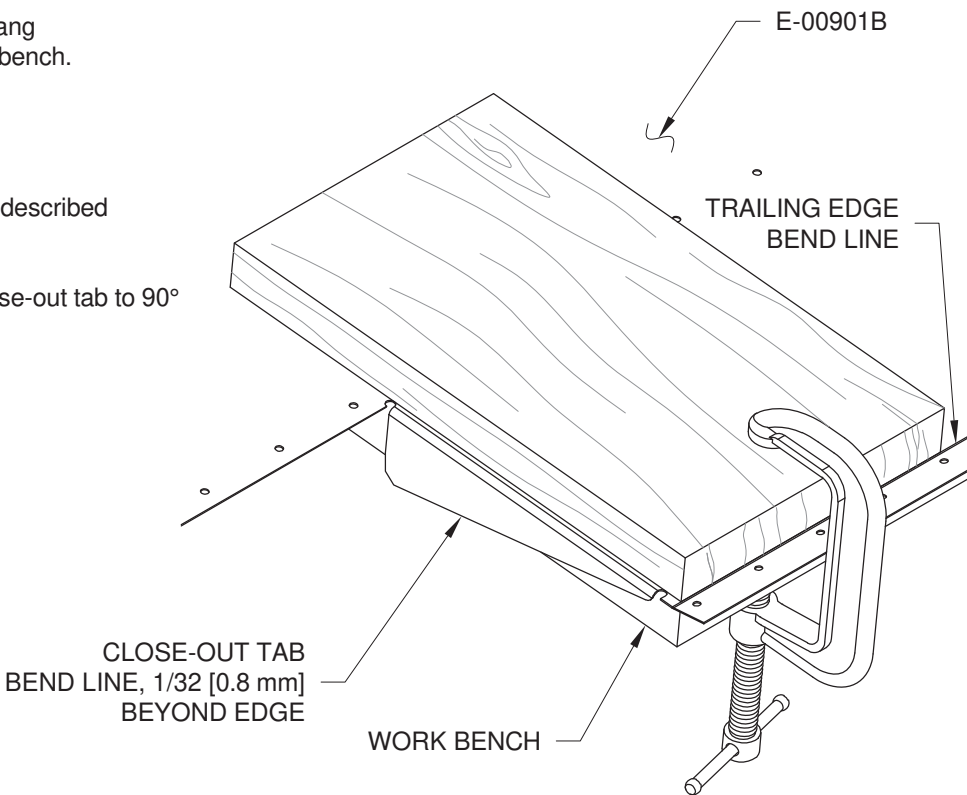


FIGURE 2: LEFT BOTTOM SKIN CLOSE-OUT TAB

Step 3: Trim the end of one of the E-00907-1 Rear Spars parallel to the beveled edge as shown in Figure 3.

Label this part "E-00907-R-1."

Label the remaining E-00907-1 Rear Spar "E-00907-L-1"

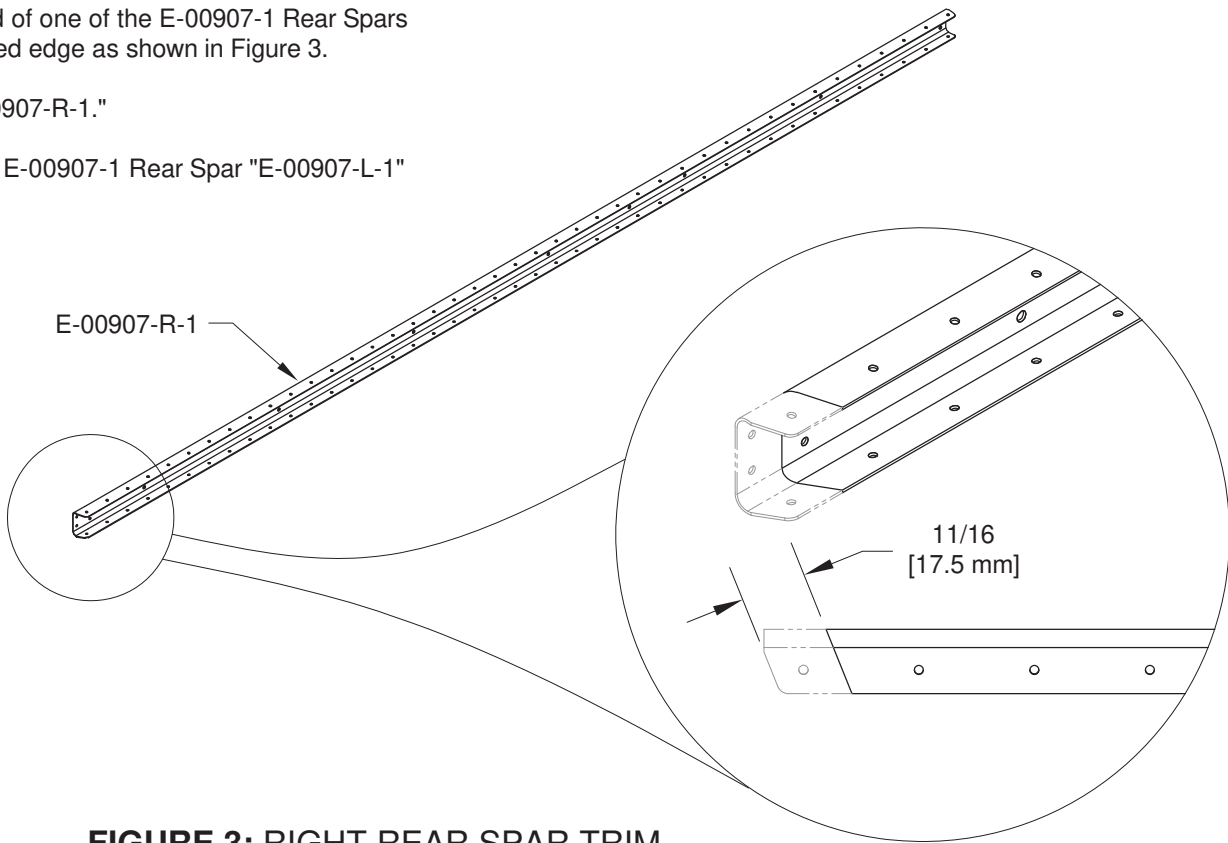


FIGURE 3: RIGHT REAR SPAR TRIM

NOTE: Verify the fore and aft hinge width as shown in Figure 4.

Step 4: Use a length of AN257-P2 Piano Hinge to fabricate the E-01403 Trim Tab Hinge as shown in Figure 4.

Use a sharpie pen to label the fore and aft halves for later identification.

Step 5: Mark then drill the two pilot holes in the end of the E-01403 Trim Tab Hinge as shown in Figure 4.

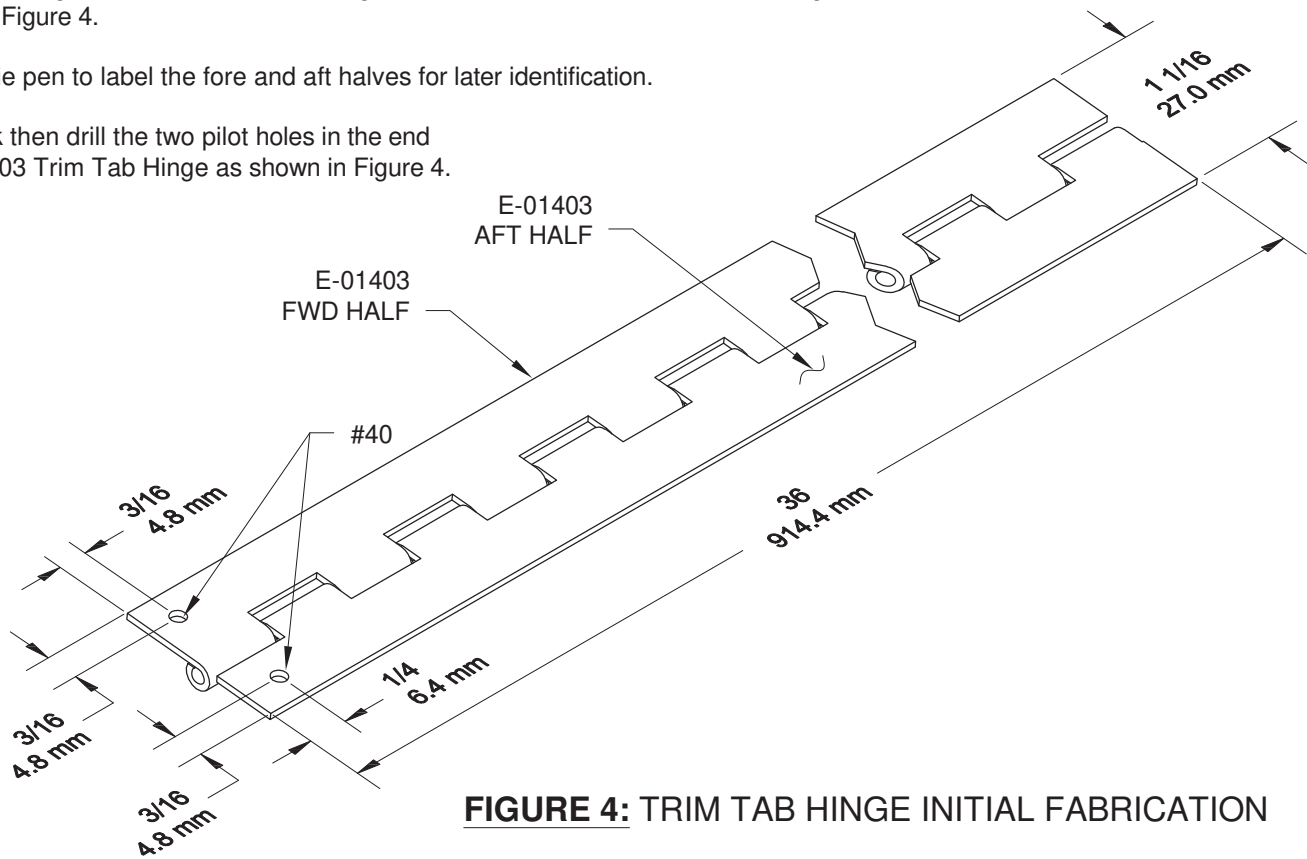


FIGURE 4: TRIM TAB HINGE INITIAL FABRICATION



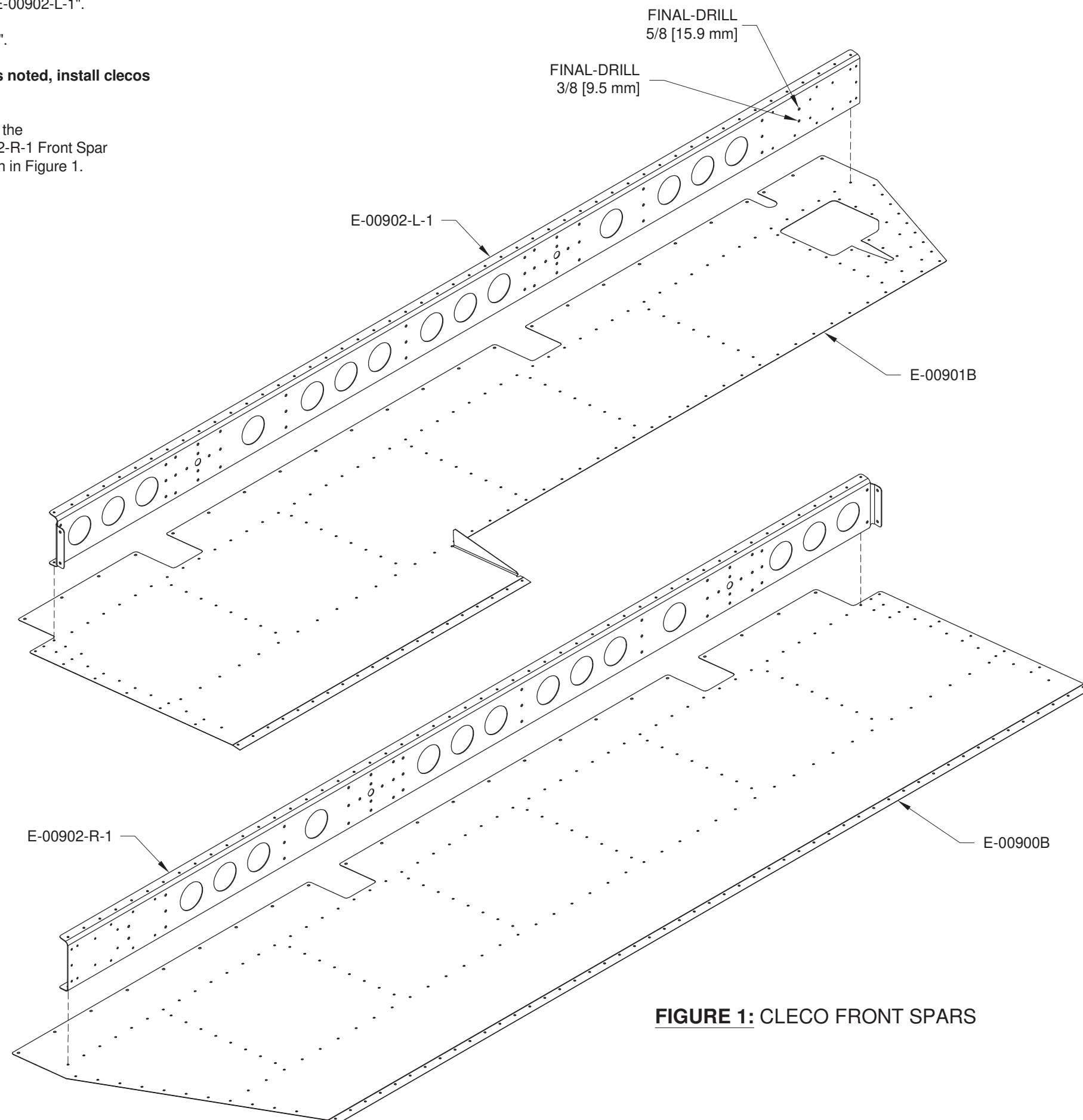


Step 1: Use a step drill to enlarge the #30 holes in one of the E-00902-1 Front Spars as shown in Figure 1. Label this front spar "E-00902-L-1".

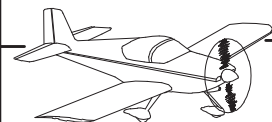
Label the remaining front spar "E-00902-R-1".

**NOTE: Throughout this section, except as noted, install clecos from the outside of the Elevator.**

Step 2: Cleco the E-00902-L-1 Front Spar to the E-00901B Left Bottom Skin, and the E-00902-R-1 Front Spar to the E-00900B Right Bottom Skin as shown in Figure 1.



**FIGURE 1: CLECO FRONT SPARS**



**NOTE: All the flanges of all E-1008 Ribs are directed outboard.**

Step 1: Assemble the Right Elevator by clecoing together the six E-1008 Ribs, E-902-R-1 Front Spar, E-00906-1 Right Root Rib, E-00907-R-1 Rear Spar, and E-00900B Right Bottom Skin as shown in Figure 1.

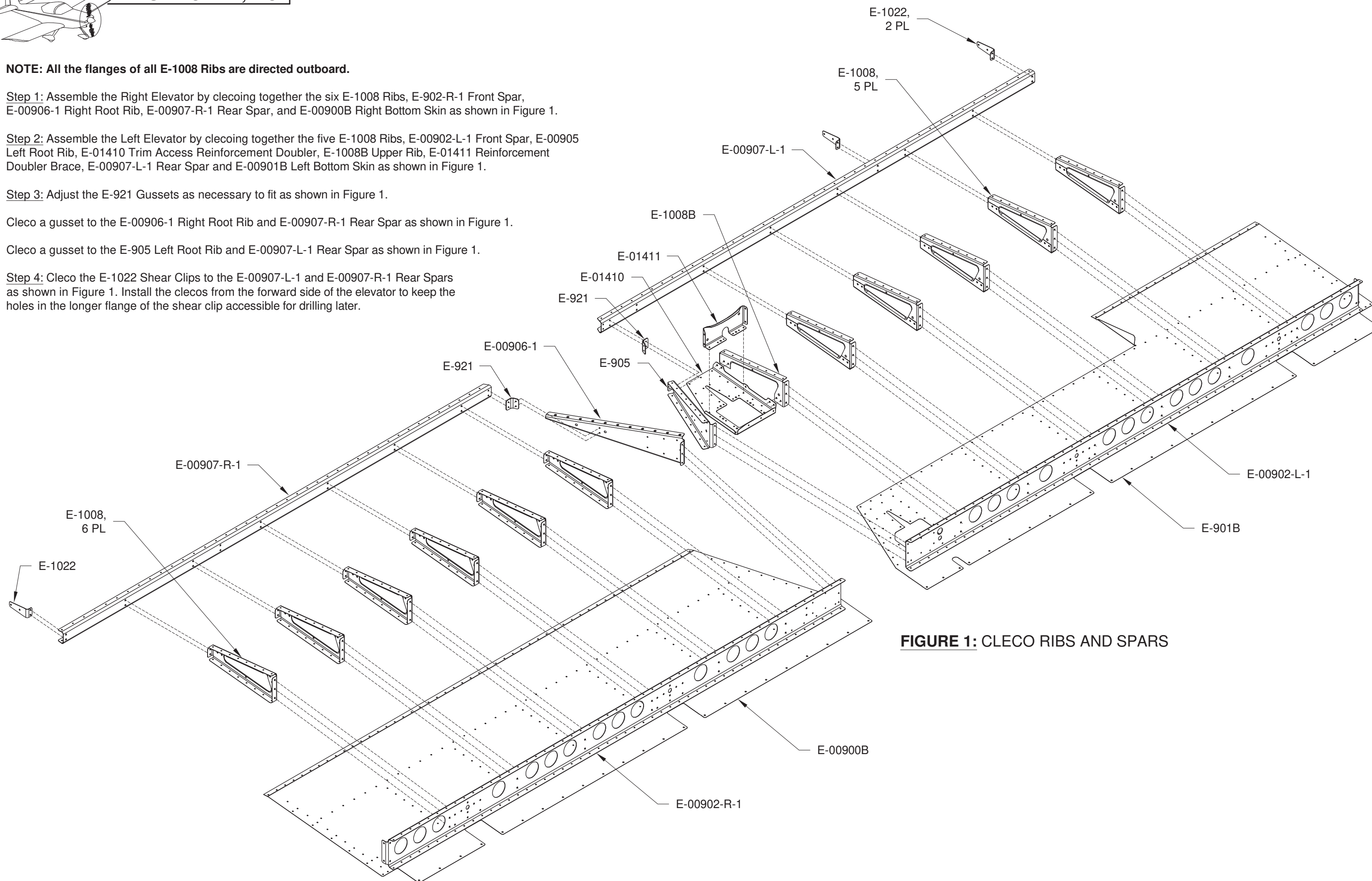
Step 2: Assemble the Left Elevator by clecoing together the five E-1008 Ribs, E-00902-L-1 Front Spar, E-00905 Left Root Rib, E-01410 Trim Access Reinforcement Doubler, E-1008B Upper Rib, E-01411 Reinforcement Doubler Brace, E-00907-L-1 Rear Spar and E-00901B Left Bottom Skin as shown in Figure 1.

Step 3: Adjust the E-921 Gussets as necessary to fit as shown in Figure 1.

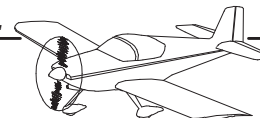
Cleco a gusset to the E-00906-1 Right Root Rib and E-00907-R-1 Rear Spar as shown in Figure 1.

Cleco a gusset to the E-905 Left Root Rib and E-00907-L-1 Rear Spar as shown in Figure 1.

Step 4: Cleco the E-1022 Shear Clips to the E-00907-L-1 and E-00907-R-1 Rear Spars as shown in Figure 1. Install the clecos from the forward side of the elevator to keep the holes in the longer flange of the shear clip accessible for drilling later.



**FIGURE 1: CLECO RIBS AND SPARS**



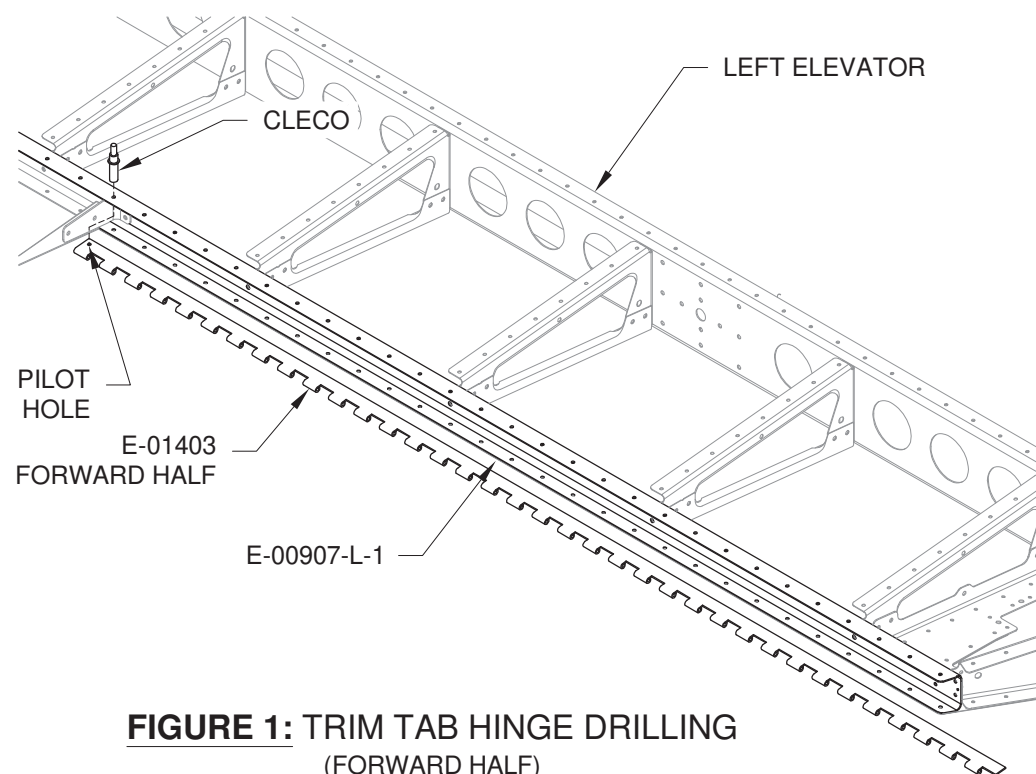
**Step 1:** Remove the hinge pin from the E-01403 Trim Tab Hinge.

Use the pilot hole to cleco the forward half of the trim tab hinge to the bottom side of the top flange of the E-00907-L-1 Rear Spar as shown in Figure 1.

Align the trim tab hinge so it is parallel with the the edge of the top flange of the rear spar.

Clamp the hinge to the rear spar about 6 inches [152.4 mm] inboard from the cleco.

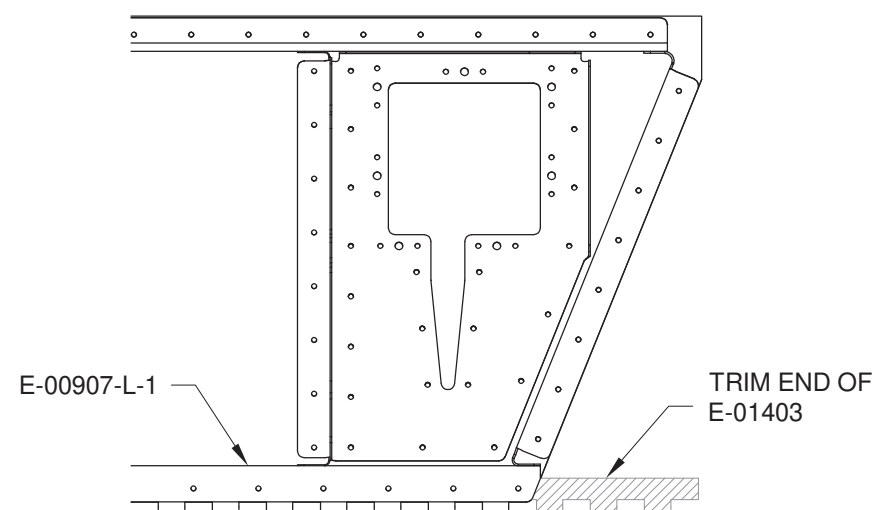
**Step 2:** Match-Drill #40 the holes in the E-00907-L-1 Rear Spar into the forward half of the E-01403 Trim Tab Hinge. Cleco each hole as it is drilled. Clamp securely as the holes are drilled.



**FIGURE 1: TRIM TAB HINGE DRILLING**  
(FORWARD HALF)

**Step 3:** Mark then trim the forward half of the E-01403 Trim Tab Hinge flush with the beveled end of the E-00907-L-1 Rear Spar as shown in Figure 2.

Deburr the trimmed edges.



**FIGURE 2: TRIM TAB HINGE TRIMMING**  
(FORWARD HALF)

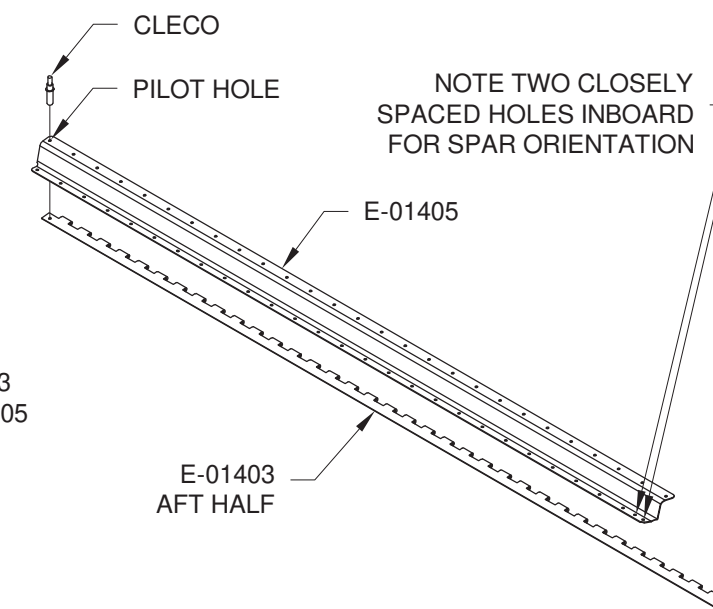
**Step 4:** Use the pilot hole to cleco the aft half of the E-01403 Trim Tab Hinge to the bottom side of the E-01405 Trim Tab Spar top flange as shown in Figure 3.

Align the hinge so it is parallel with the edge of the trim tab spar top flange.

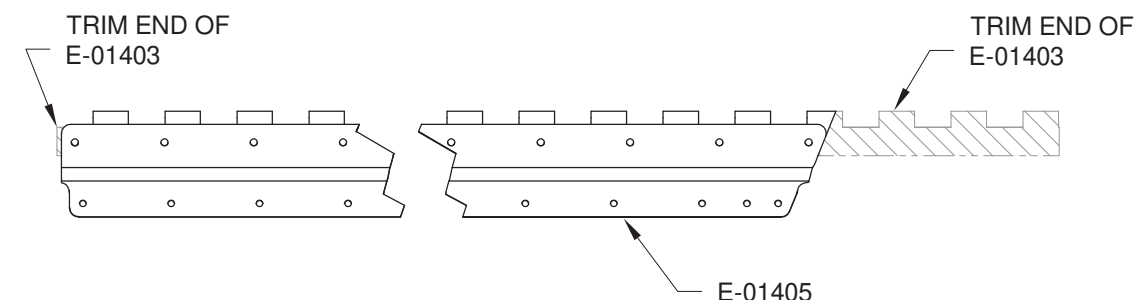
Clamp the hinge to the trim tab spar.

**Step 5:** Match-Drill #40 the holes in the E-01405 Trim Tab Spar into the aft half of the E-01403 Trim Tab Hinge. Cleco each hole as it is drilled.

**Step 6:** Mark then trim the aft half of the E-01403 Trim Tab Hinge flush with the ends of the E-01405 Trim Tab Spar as shown in Figure 4.



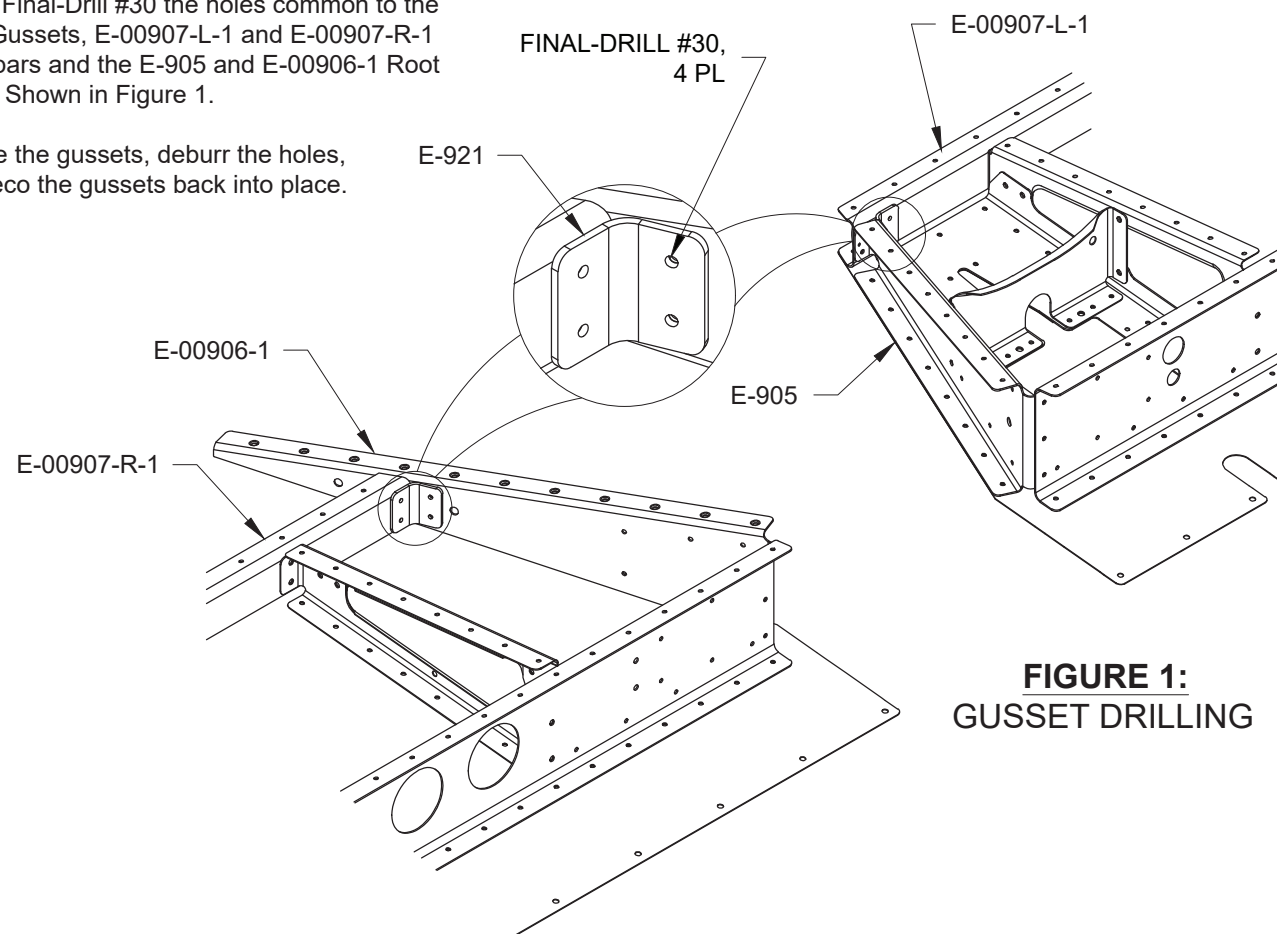
**FIGURE 3: TRIM TAB HINGE DRILLING**  
(AFT HALF)



**FIGURE 4: TRIM TAB HINGE TRIMMING**  
(AFT HALF)

**Step 1:** Final-Drill #30 the holes common to the E-921 Gussets, E-00907-L-1 and E-00907-R-1 Rear Spars and the E-905 and E-00906-1 Root Ribs as Shown in Figure 1.

Remove the gussets, deburr the holes, then cleco the gussets back into place.



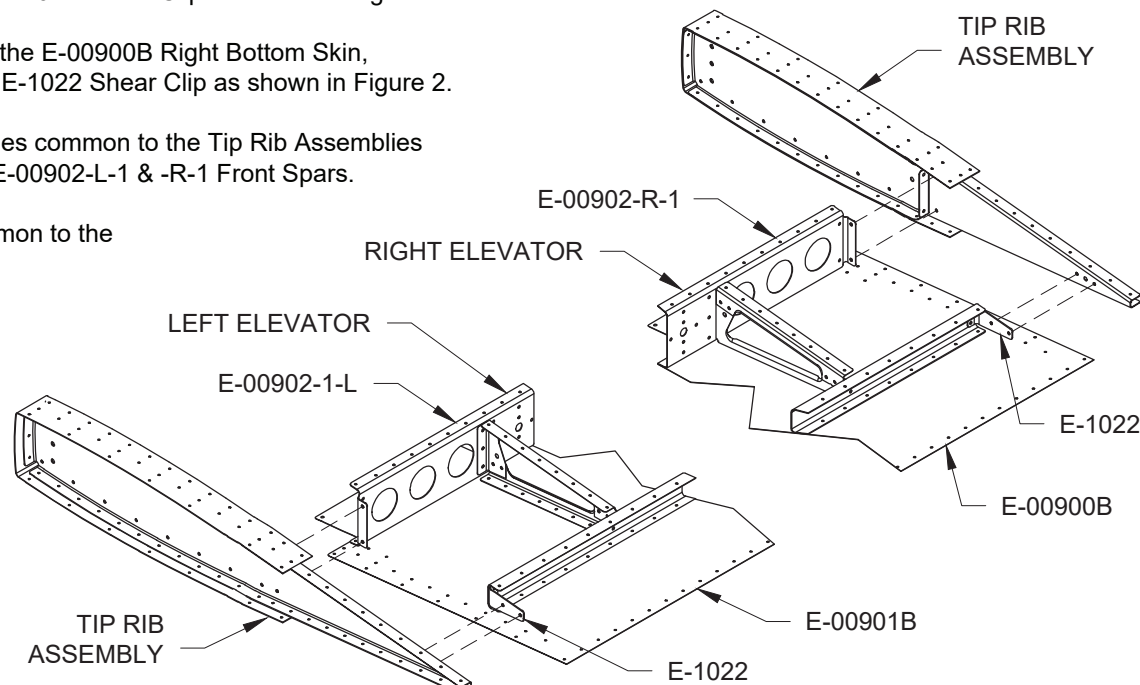
**FIGURE 1:**  
GUSSET DRILLING

**Step 2:** Cleco a Tip Rib Assembly to the E-00901B Left Bottom Skin, E-00902-L-1 Front Spar and E-1022 Shear Clip as shown in Figure 2.

Cleco a Tip Rib Assembly to the E-00900B Right Bottom Skin, E-00902-R-1 Front Spar and E-1022 Shear Clip as shown in Figure 2.

**Step 3:** Final-Drill #30 the holes common to the Tip Rib Assemblies and outboard flanges of the E-00902-L-1 & -R-1 Front Spars.

Final-Drill #30 the holes common to the Tip Rib Assemblies and the E-1022 Shear Clips.



**FIGURE 2:** CLECO TIP RIB ASSEMBLIES

**Step 4:** Remove Clecos as necessary and Cleco the E-00901A & E-00900A Top Skins and E-01423 Trailing Edges to the Elevators as shown in Figure 3. The thicker edges of the Trailing Edges are positioned aft.

**Step 5:** Use a sharpie pen to mark the inboard and outboard edges of the E-00900A and E-00901A Skins on the E-01423 Trailing Edges.

Remove the trailing edges and label them as shown in Figure 3.

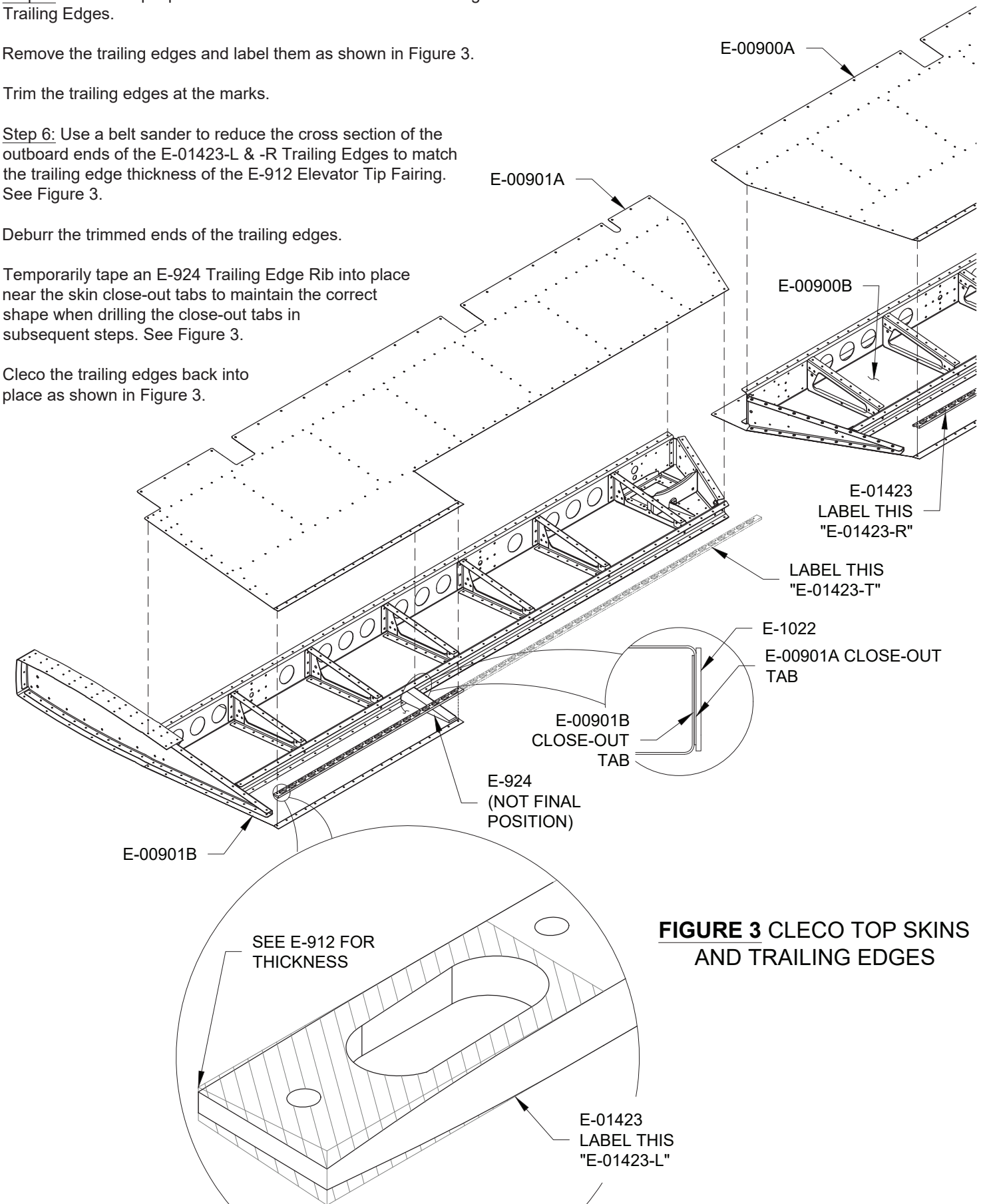
Trim the trailing edges at the marks.

**Step 6:** Use a belt sander to reduce the cross section of the outboard ends of the E-01423-L & -R Trailing Edges to match the trailing edge thickness of the E-912 Elevator Tip Fairing. See Figure 3.

Deburr the trimmed ends of the trailing edges.

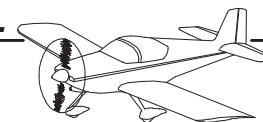
Temporarily tape an E-924 Trailing Edge Rib into place near the skin close-out tabs to maintain the correct shape when drilling the close-out tabs in subsequent steps. See Figure 3.

Cleco the trailing edges back into place as shown in Figure 3.



**FIGURE 3** CLECO TOP SKINS  
AND TRAILING EDGES

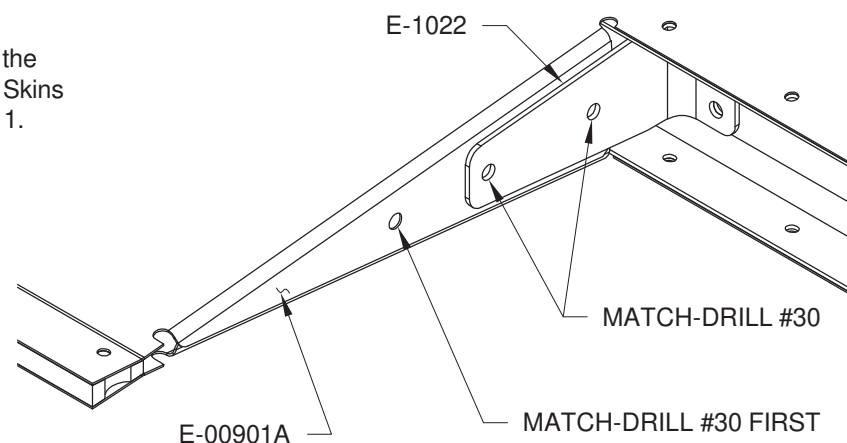




**NOTE: Use a sharp drill bit.**

Step 1: Match-Drill #30 then cleco the holes in the close-out tabs of the E-00901A and E-00901B Skins and the E-1022 Shear Clip as shown in Figure 1.

Hold or clamp the skins into contact with the E-924 Trailing Edge Rib taped inside the close-out tabs to maintain the correct shape when drilling.



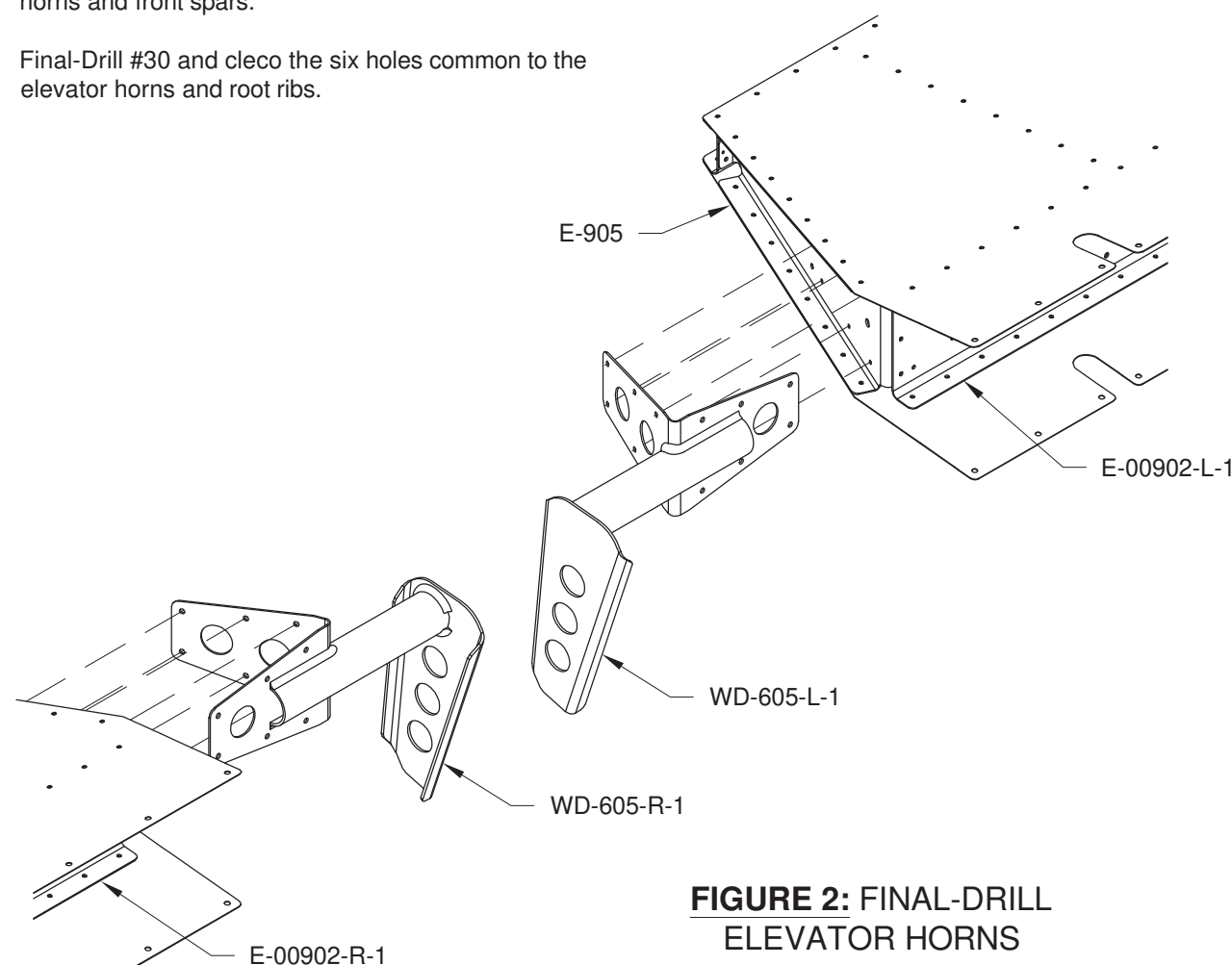
**FIGURE 1: MATCH-DRILL CLOSE-OUT TABS**

Step 2: Remove the clecos securing the E-905 and E-00906-1 Root Ribs to the E-00902-L-1 and E-00902-R-1 Front Spars.

Cleco the WD-605-L-1 and WD-605-R-1 Elevator Horns to the root ribs and spars as shown in Figure 2.

Final-Drill #30 and cleco the six holes common to the elevator horns and front spars.

Final-Drill #30 and cleco the six holes common to the elevator horns and root ribs.



**FIGURE 2: FINAL-DRILL ELEVATOR HORNS**

Step 3: Mark all parts so they can be reassembled in the same position.

Disassemble both elevators.

Step 4: Deburr all holes and any unfinished edges.

Step 5: Dimple all of the #40 holes in both E-913 Counterbalance Skins except as shown in Figure 3.

Step 6: Break the trailing edges of the E-913 Counterbalance Skins and the E-00900A, E-00900B, E-00901A and E-00901B Skins slightly towards the interior of the elevator.

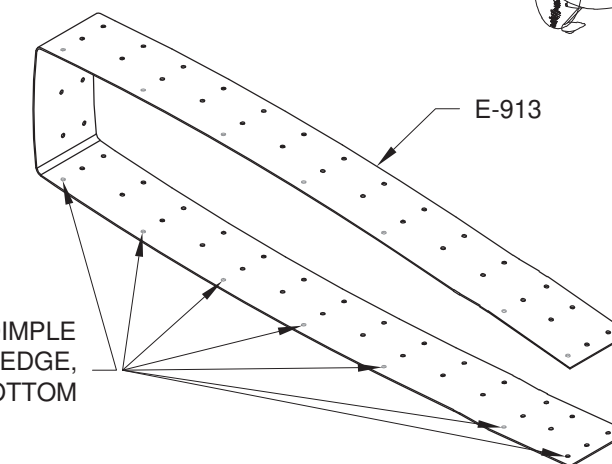
**NOTE: A normal dimple die will overlap the trailing edge bend of the elevator skins. Use the trailing edge dimpling technique described on Page 09-28 to dimple the holes in the bent trailing edges.**

Step 7: Dimple all #40 holes in the E-00901A, E-00901B, E-00900A and E-00900B Skins except as shown in Figure 4.

**NOTE: Use a grinder to taper the pilot of a #40 cutter to allow machine countersinking perpendicular to the trailing edge faces as shown in Figure 4.**

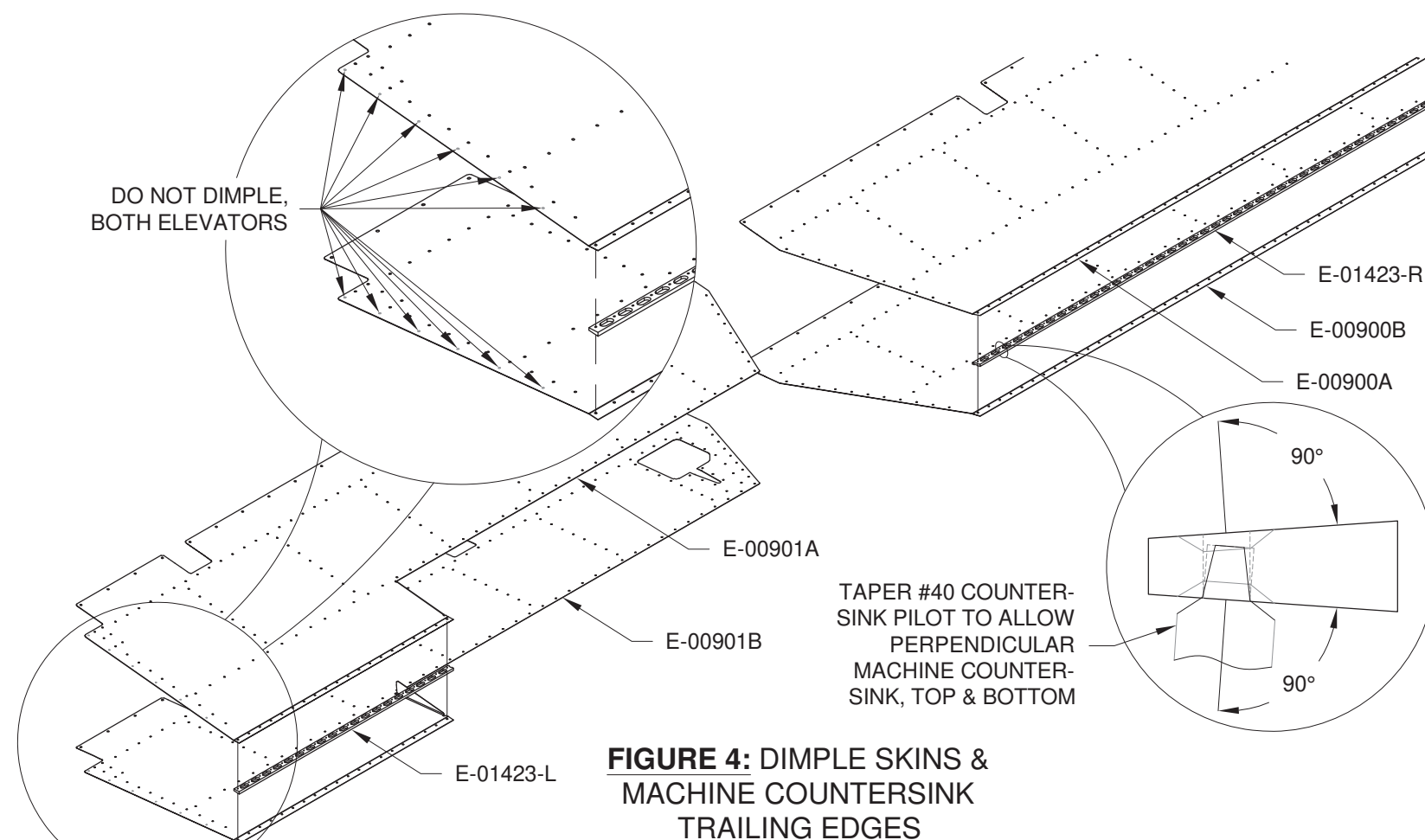
Step 8: Machine countersink the 3/32 [2.4 mm] holes in the E-01423-L & -R Trailing Edges to fit a dimpled skin. Ensure the countersinks are perpendicular to the trailing edge faces as shown in Figure 4. See Section 5.8 for more information on countersinking the trailing edges.

DO NOT DIMPLE OUTBOARD EDGE, TOP AND BOTTOM



**FIGURE 3: DIMPLE COUNTERBALANCE SKINS**

DO NOT DIMPLE, BOTH ELEVATORS



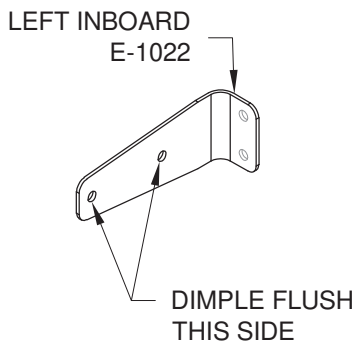
**FIGURE 4: DIMPLE SKINS & MACHINE COUNTERSINK TRAILING EDGES**



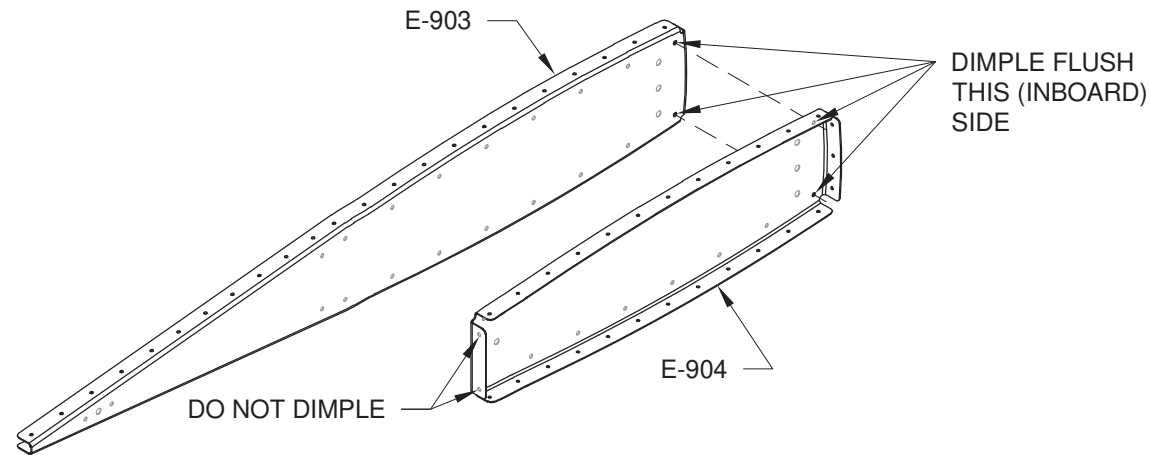
Step 1: Dimple the #30 holes in the left inboard E-1022 Shear Clip as shown in Figure 1. Dimple only the left inboard E-1022 Shear Clip.

Step 2: Dimple the two #30 holes in the E-904 Inboard Tip Ribs and E-903 Outboard Tip Ribs as shown in Figure 2.

Dimple the undimpled #40 holes in the flanges of the inboard and outboard tip ribs.

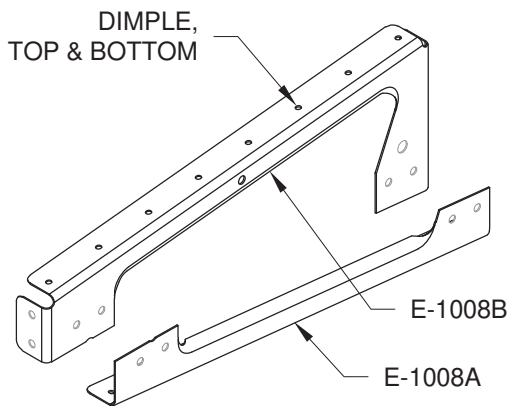


**FIGURE 1: DIMPLE SHEAR CLIP**



**FIGURE 2: DIMPLE TIP RIBS  
(LEFT SIDE SHOWN)**

Step 3: Dimple the #40 holes in the top and bottom flanges of the E-1008A and E-1008B Ribs shown in Figure 3.

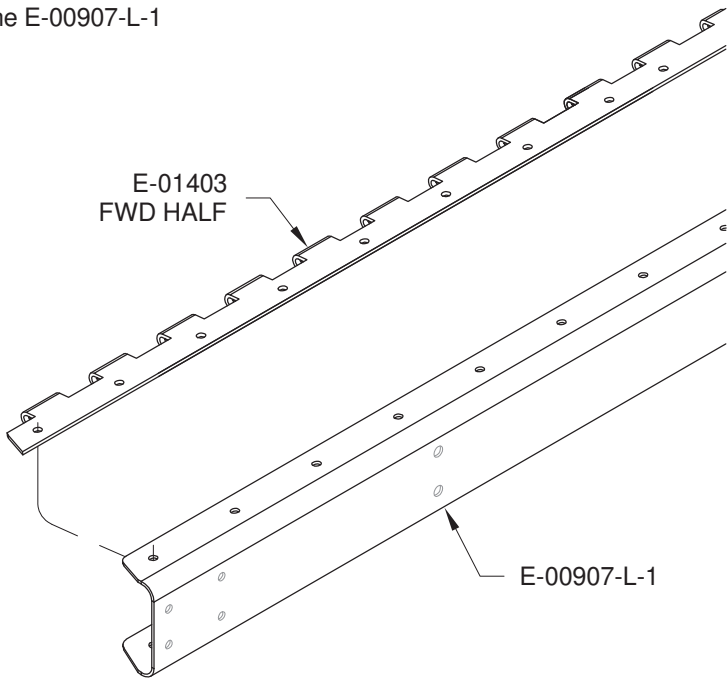


**FIGURE 3: DIMPLE RIBS**

Step 4: Cleco the forward half of the E-01403 Trim Tab Hinge to the E-00907-L-1 Rear Spar as shown in Figure 4.

Machine Countersink the holes in the top flange of the rear spar common with the trim tab hinge to accept a dimpled skin.

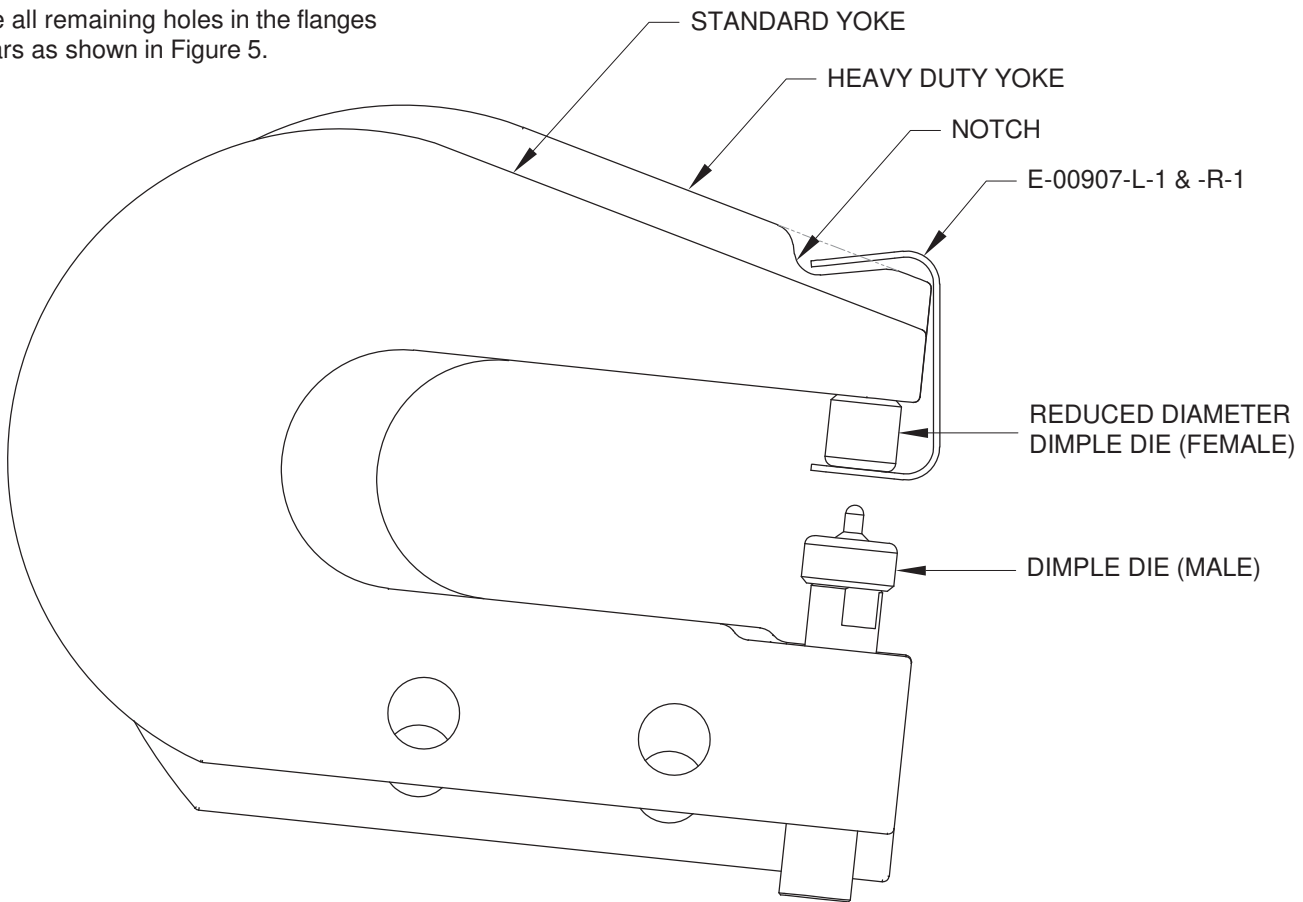
Remove the forward half of the E-01403 Trim Tab Hinge and deburr the holes.



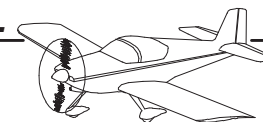
**FIGURE 4: MACHINE COUNTERSINK  
AND DIMPLE REAR SPAR**

**NOTE: The E-00907-L-1 & -R-1 Rear Spars will not accommodate some rivet squeezer yokes. Use a yoke that fits or modify a yoke as described in Figure 5.**

Step 5: Dimple all remaining holes in the flanges of the rear spars as shown in Figure 5.

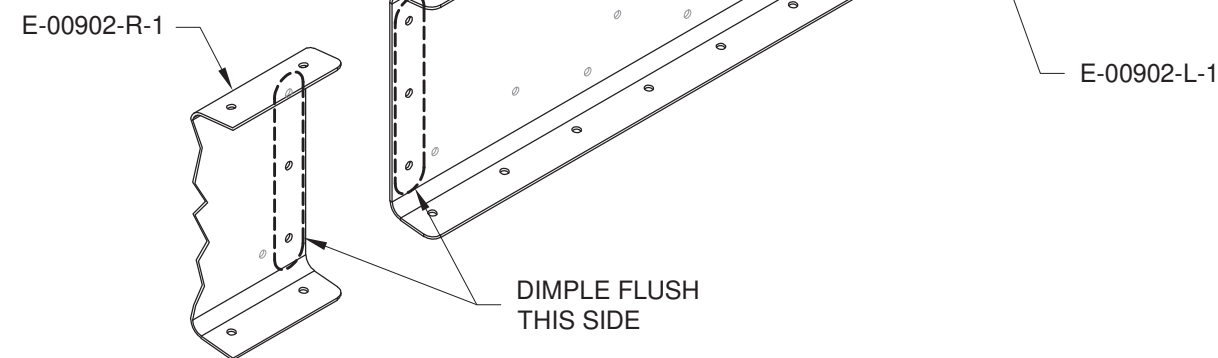


**FIGURE 5: DIMPLE REAR SPAR FLANGES**



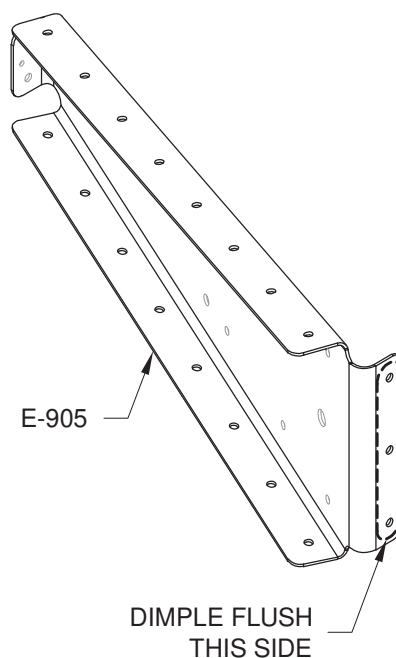
Step 1: Dimple the three #40 holes in the webs of the E-00902-L-1 & -R-1 Front Spars as shown in Figure 1.

Dimple the #40 holes in the flanges of the front spars.



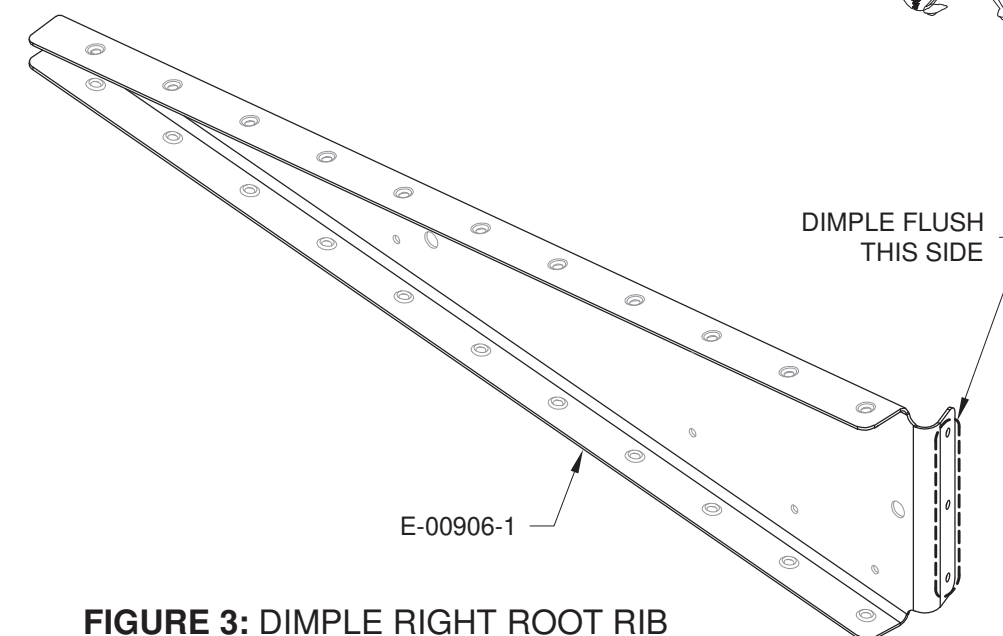
**FIGURE 1: DIMPLE FRONT SPARS**

Step 2: Dimple the #40 holes in the forward, top and bottom flanges of the E-905 Left Root Rib as shown in Figure 2.



**FIGURE 2: DIMPLE LEFT ROOT RIB**

Step 3: Dimple the #40 holes in the forward flange of the E-00906 Right Root Rib as shown in Figure 3.

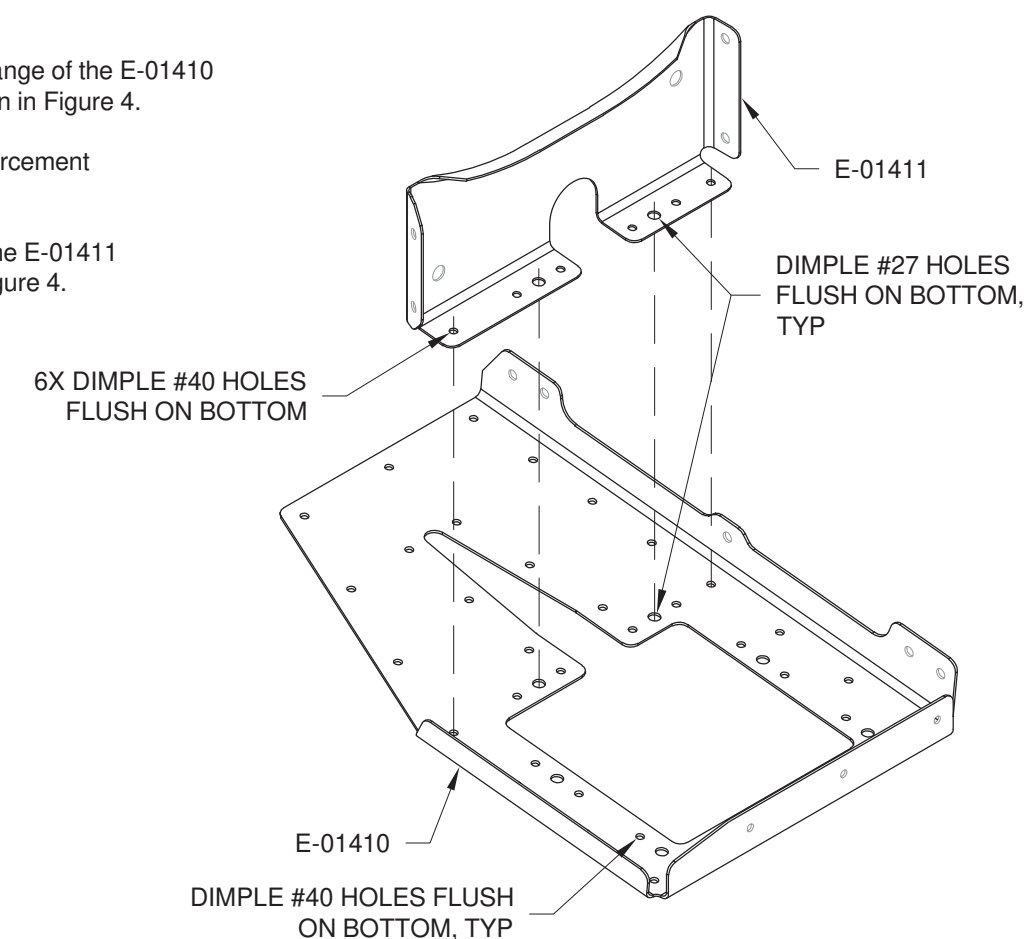


**FIGURE 3: DIMPLE RIGHT ROOT RIB**

Step 4: Dimple the #27 holes in the bottom flange of the E-01410 Trim Access Reinforcement Doubler as shown in Figure 4.

Dimple the #40 holes in the trim access reinforcement doubler as shown in Figure 4.

Dimple the #27 and #40 holes in the web of the E-01411 Reinforcement Doubler Brace as shown in Figure 4.

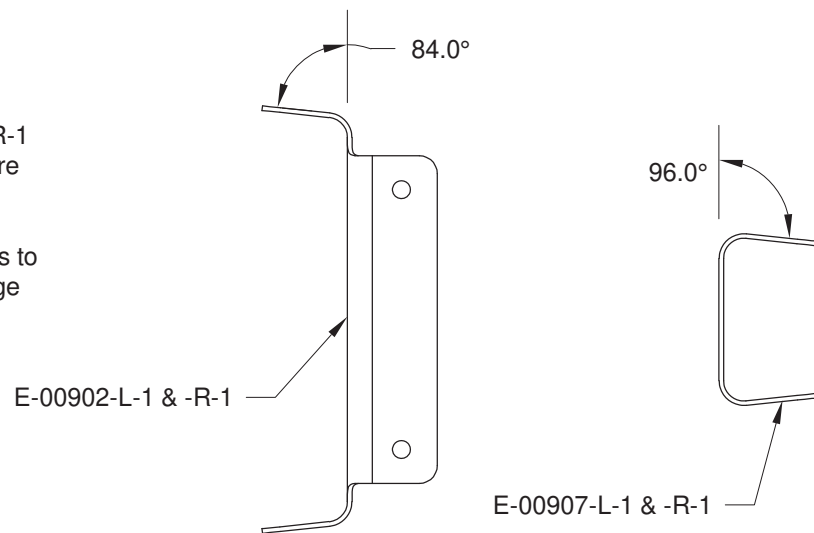


**FIGURE 4: TRIM ACCESS REINFORCEMENT DOUBLER AND BRACE**



**Step 1:** Ensure the flanges of the E-00902-L-1 & -R-1 Front Spars and E-00907-L-1 & -R-1 Rear Spars are bent as shown in Figure 1.

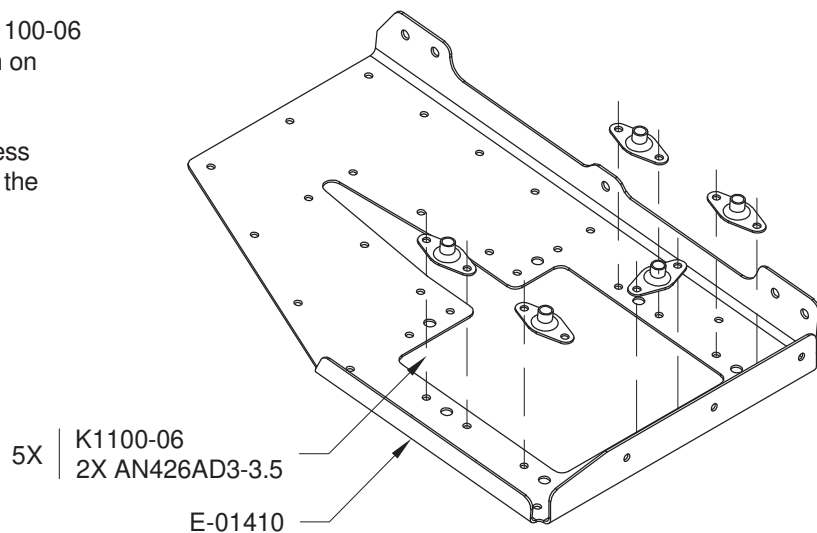
Dimpling may have caused the flanges of the Spars to bend slightly. Use hand seamers to adjust the flange angles as necessary.



**FIGURE 1: SPAR FLANGE ANGLES**

**Step 2:** Dimple the attachment holes in seven K1100-06 Nutplates. See Section 5.16 for more information on dimpling nutplates.

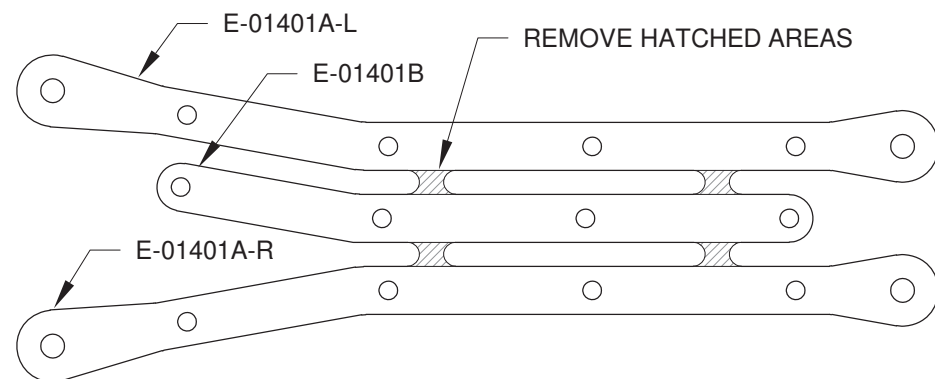
Rivet the five nutplates to the E-01410 Trim Access Reinforcement Doubler as shown in Figure 2. Of the seven, two nutplates will be installed later.



**FIGURE 2: TRIM ACCESS REINFORCEMENT DOUBLER**

**Step 3:** Label the E-01401AB Elevator Trim Pushrod Parts as shown in Figure 3 and Figure 4.

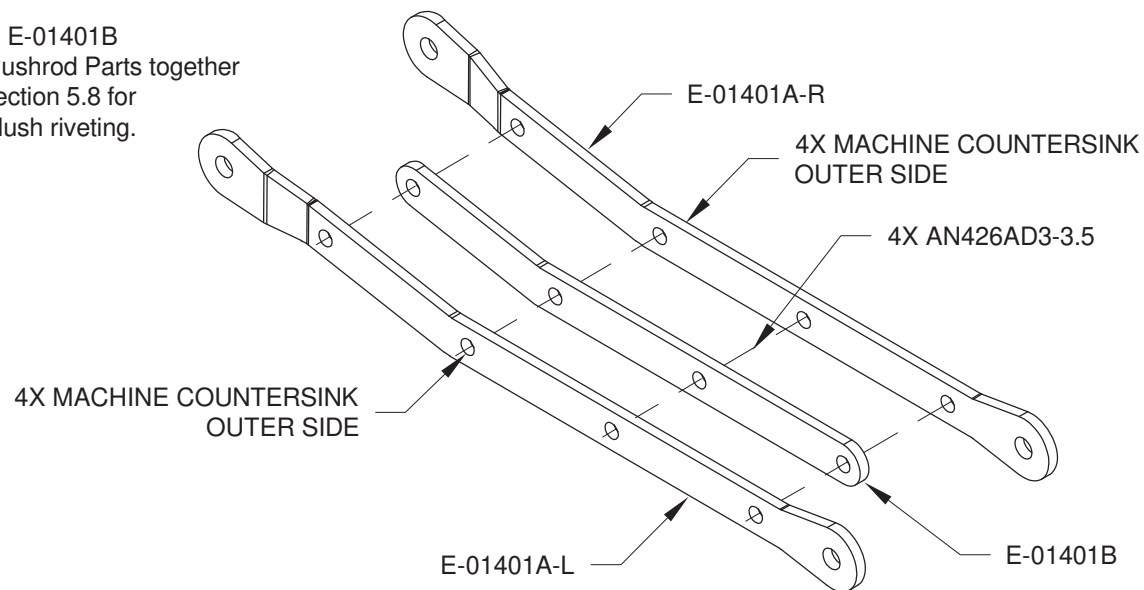
Separate the elevator trim pushrod into individual parts by removing the hatched areas as shown in Figure 3.



**FIGURE 3: ELEVATOR TRIM PUSHROD (SHOWN FLAT)**

**Step 4:** Machine countersink the #40 holes in the E-01401A-L & -R Trim Pushrod Parts to fit the head of an AN426AD3 Rivet.

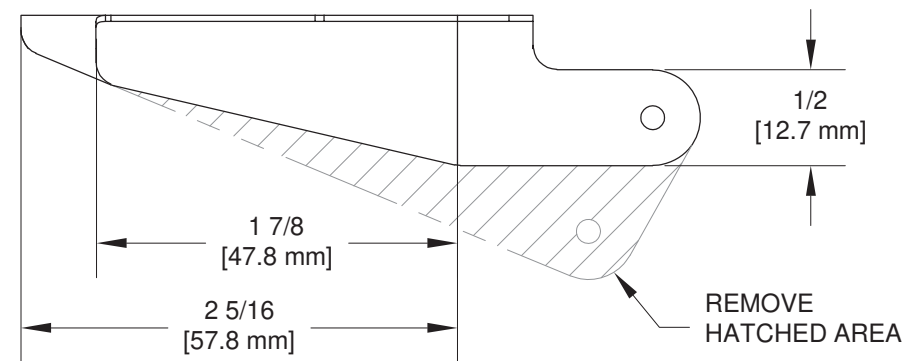
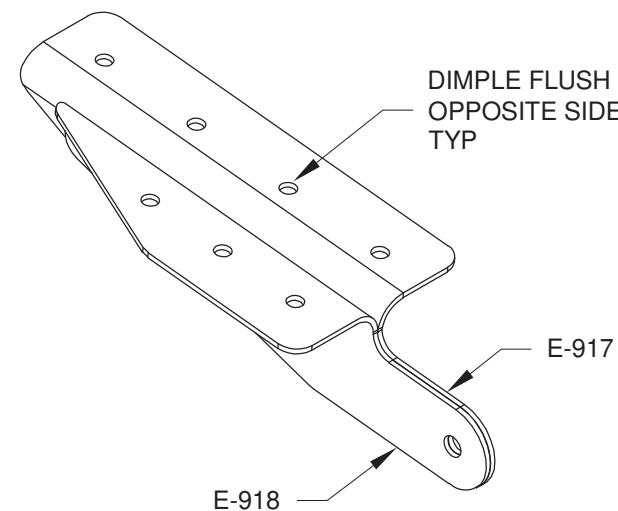
**Step 5:** Double flush rivet the E-01401B and E-01401A-L & -R Trim Pushrod Parts together as shown in Figure 4. See Section 5.8 for more information on double flush riveting.



**FIGURE 4: E-01401 TRIM PUSHROD**

**Step 6:** Remove the hatched areas from the E-917 and E-918 Trim Tab Horns as shown in Figure 5.

Dimple the #40 holes in the flanges of the E-917 and E-918 Trim Tab Horns as shown in Figure 5.



**FIGURE 5: TRIM TAB HORNS**





Step 1: Dimple the .098 holes in the close-out tabs of the E-01406 and E-01407 Trim Tab Skins as shown in Figure 1.

Step 2: Cleco the E-01406 and E-01407 Trim Tab Skins and the E-01423-T Trailing Edge together as shown in Figure 1. The thicker edge of the trailing edge is positioned aft.

Temporarily tape the E-01408 Trim Tab Ribs into place near the skin close-out tabs as shown in Figure 1.

Cleco the E-01405 Trim Tab Spar to the skins as shown in Figure 1.

Cleco the close-out tabs together.

Uncleco and final-drill #33 the .098 [2.5 mm] holes in the close-out tabs one at a time as shown in Figure 1.

Step 3: Use a sharpie pen to mark the inboard and outboard edges of the E-01406 and E-01407 Trim Tab Skins on the E-01423-T Trailing Edge.

Remove the skins and E-01408 Trim Tab Ribs, marking the boundaries of the trailing edge on the inside surface of the skins as access is gained.

Remove the trailing edge and trim it at the marks.

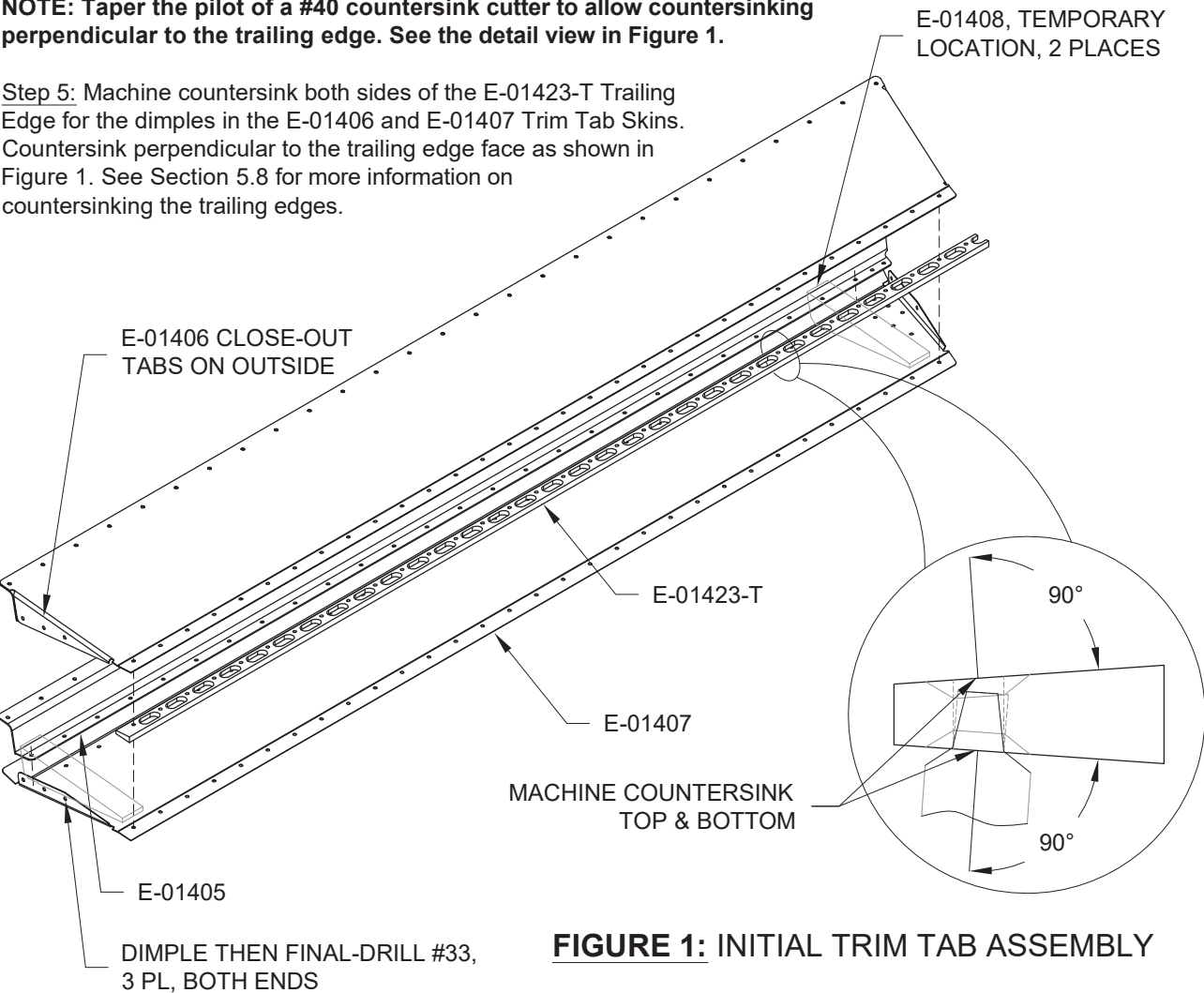
Deburr the ends of the trailing edge.

Disassemble the Trim Tab.

Step 4: Break the trailing edges of the E-01406 and and E-01407 Trim Tab Skins slightly to allow the skins to lay flat after riveting. See Section 5.10 for more information.

**NOTE: Taper the pilot of a #40 countersink cutter to allow countersinking perpendicular to the trailing edge. See the detail view in Figure 1.**

Step 5: Machine countersink both sides of the E-01423-T Trailing Edge for the dimples in the E-01406 and E-01407 Trim Tab Skins. Countersink perpendicular to the trailing edge face as shown in Figure 1. See Section 5.8 for more information on countersinking the trailing edges.



**FIGURE 1: INITIAL TRIM TAB ASSEMBLY**

Step 6: Cleco the aft half of the E-01403 Trim Tab Hinge to the top flange of the E-01405 Trim Tab Spar as shown in Figure 2.

Machine Countersink the holes in the top flange of the trim tab spar to accept a dimpled skin.

Step 7: Dimple the #40 holes in the bottom flange of the E-01405 Trim Tab Spar.

Remove the E-01403 Trim Tab Hinge from the trim tab spar.

**NOTE: The trim tab ribs and trailing edge are bonded to the skins in a later step. The bonding agents require a clean, scuffed surface for proper adhesion.**

Step 8: Mask the inside surfaces of the E-01406 and E-01407 Trim Tab Skins and the E-01405 Trim Tab Spar around the locations of the E-01408 Trim Tab Ribs and E-01423-T Trailing Edge. See Figure 3.

Scuff the skins, spar and trailing edge with 150 grit aluminum oxide sandpaper as shown in Figure 3.

Clean the scuffed areas with acetone until all sanding residue is removed, then remove the masking.

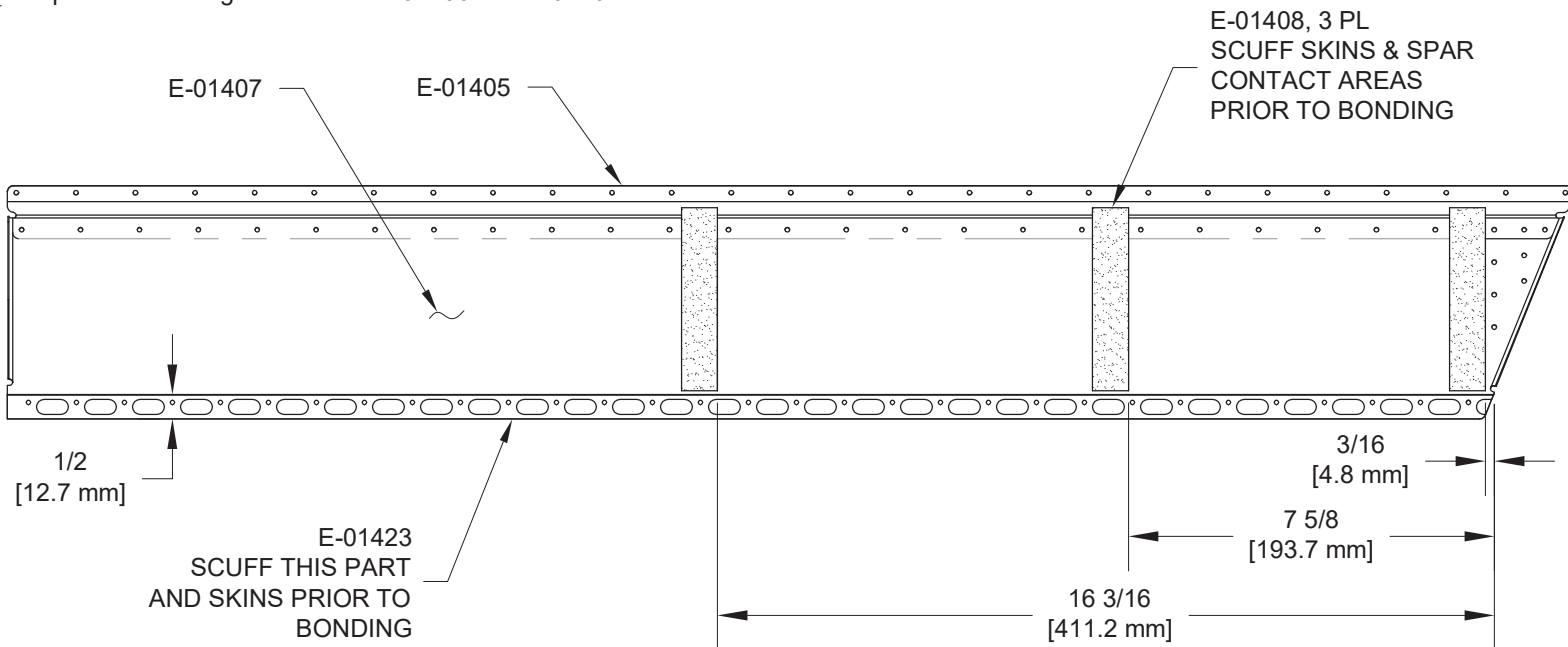
**NOTE: Do not prime the rib or trailing edge locations**

Step 9 (Optional): Mask the inside surface of the E-01406 and E-0147 Trim Tab Skins and E-01405 Trim Tab Spar to cover the areas just scuffed.

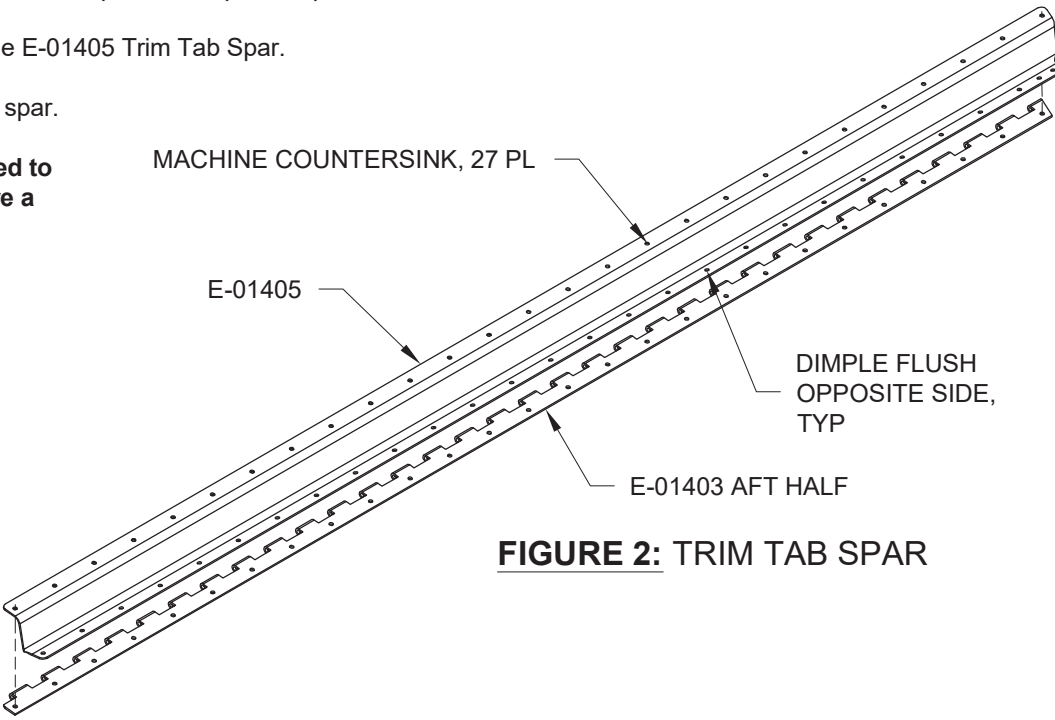
Prime the inside surfaces of the trim tab skins and trim tab spar as desired.

**NOTE: A normal dimple die will overlap the trailing edge bend. Use the trailing edge dimpling technique described on Page 09-28 to dimple the holes on the bent trailing edges.**

Step 10: Dimple all remaining holes in the E-01406 and E-01407 Skins.



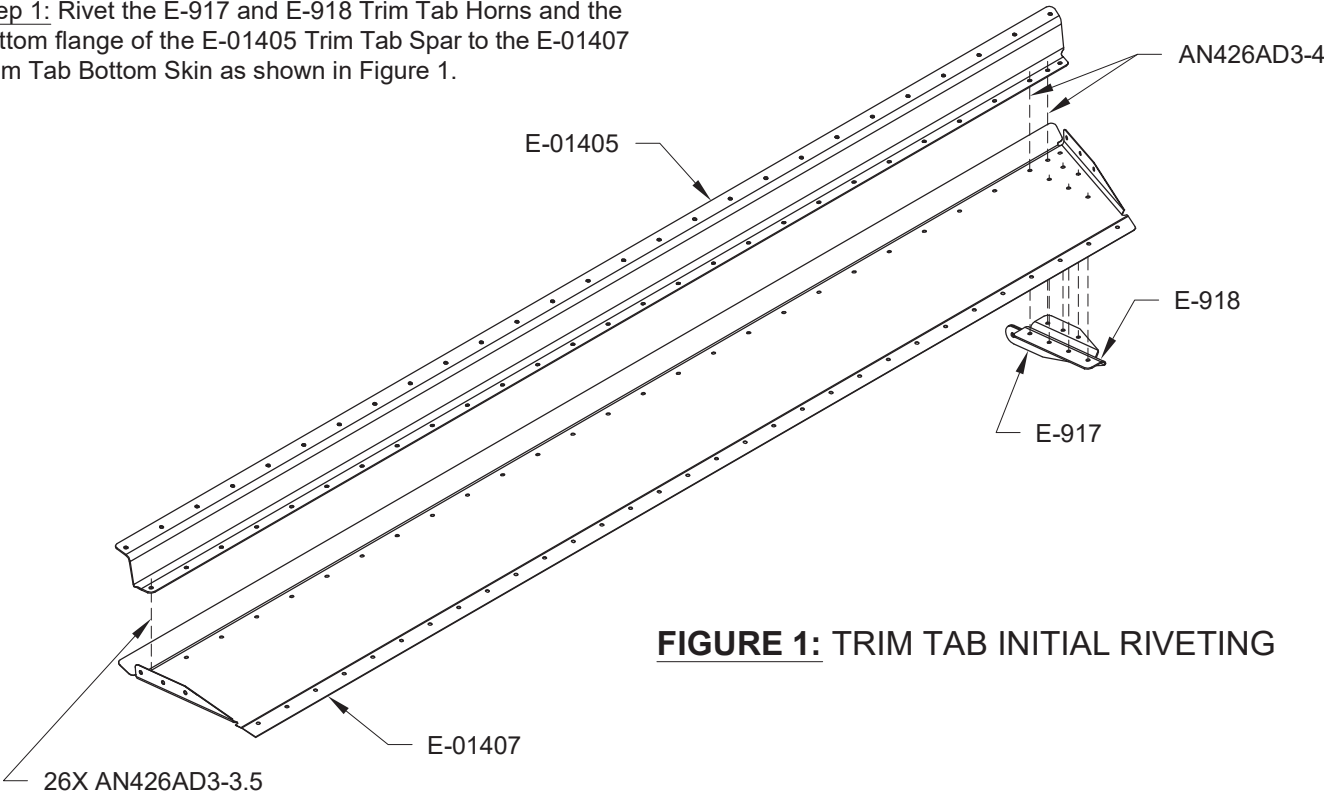
**FIGURE 3: TRIM TAB RIB LOCATIONS**



**FIGURE 2: TRIM TAB SPAR**



Step 1: Rivet the E-917 and E-918 Trim Tab Horns and the bottom flange of the E-01405 Trim Tab Spar to the E-01407 Trim Tab Bottom Skin as shown in Figure 1.



**FIGURE 1: TRIM TAB INITIAL RIVETING**

Step 2: Prep the mating surfaces of the E-01406 & E-01407 Trim Tab Skins and E-01423-T Trailing Edge for bonding with isopropyl alcohol as described in Section 5.8.

**NOTE: Step 3 thru 6 must be completed in one work session.**

Step 3: Apply tank sealant in a coat of no more than a 1/32 inch [0.8 mm] thickness to the mating surfaces of the E-01408 Trim Tab Ribs.

Install the trim tab ribs into the previously scuffed locations. See Figure 2 and Page 09-13, Figure 3.

Step 4: Cleco and bond the mating surfaces of the E-01406 & E-01407 Trim Tab Skins and E-01423-T Trailing Edge with double sided tape as described in Section 5.8. See Figure 2.

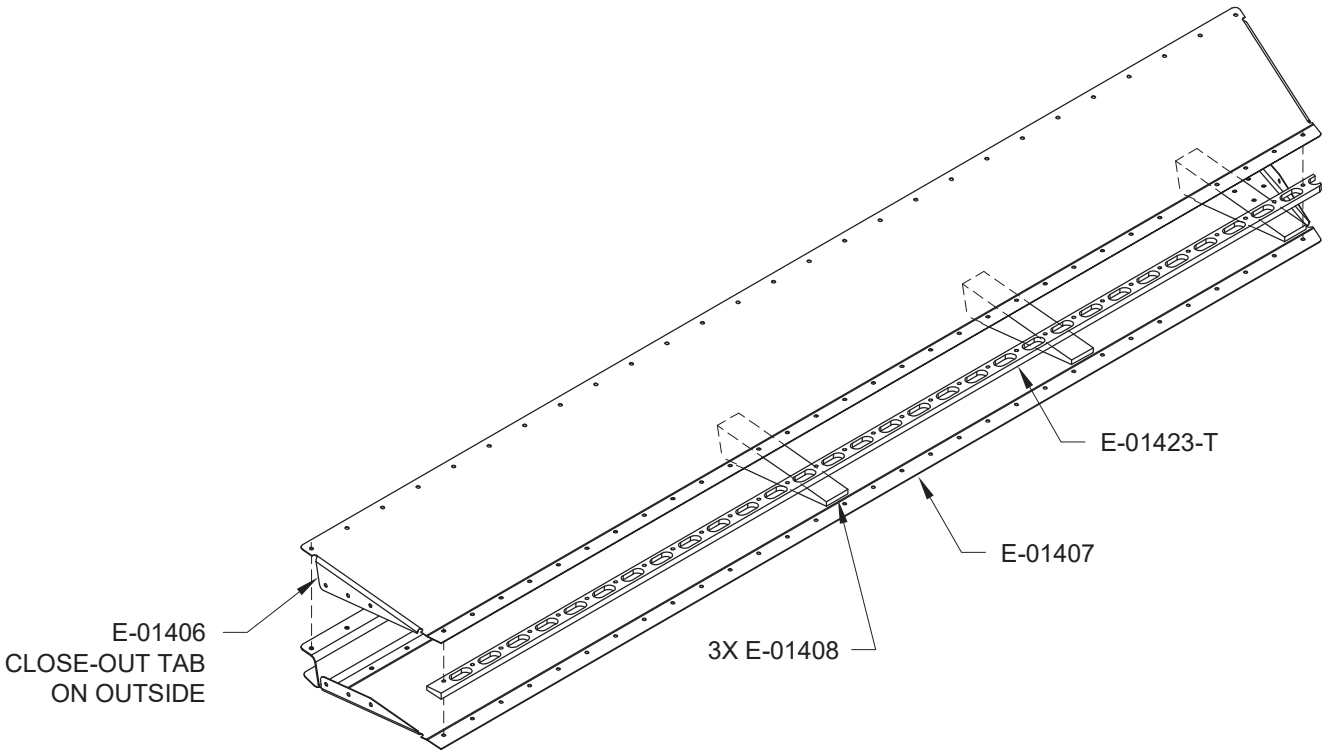
Step 5: Rivet the E-01406 Trim Tab Top Skin to the E-01405 Trim Tab Spar and aft half of the E-01403 Trim Tab Hinge as shown in Figure 3.

**NOTE: Be sure the work table is well and truly flat.**

Step 6: Flip the Trim Tab upside down and lay it flat on a work table with the clecos securing the trailing edge hanging over the edge of the table.

Place a weighted board on the E-01407 Trim Tab Bottom Skin to ensure contact between the skins and the E-01408 Trim Tab Ribs.

Set the trim tab aside for a few days to allow the sealant to cure.

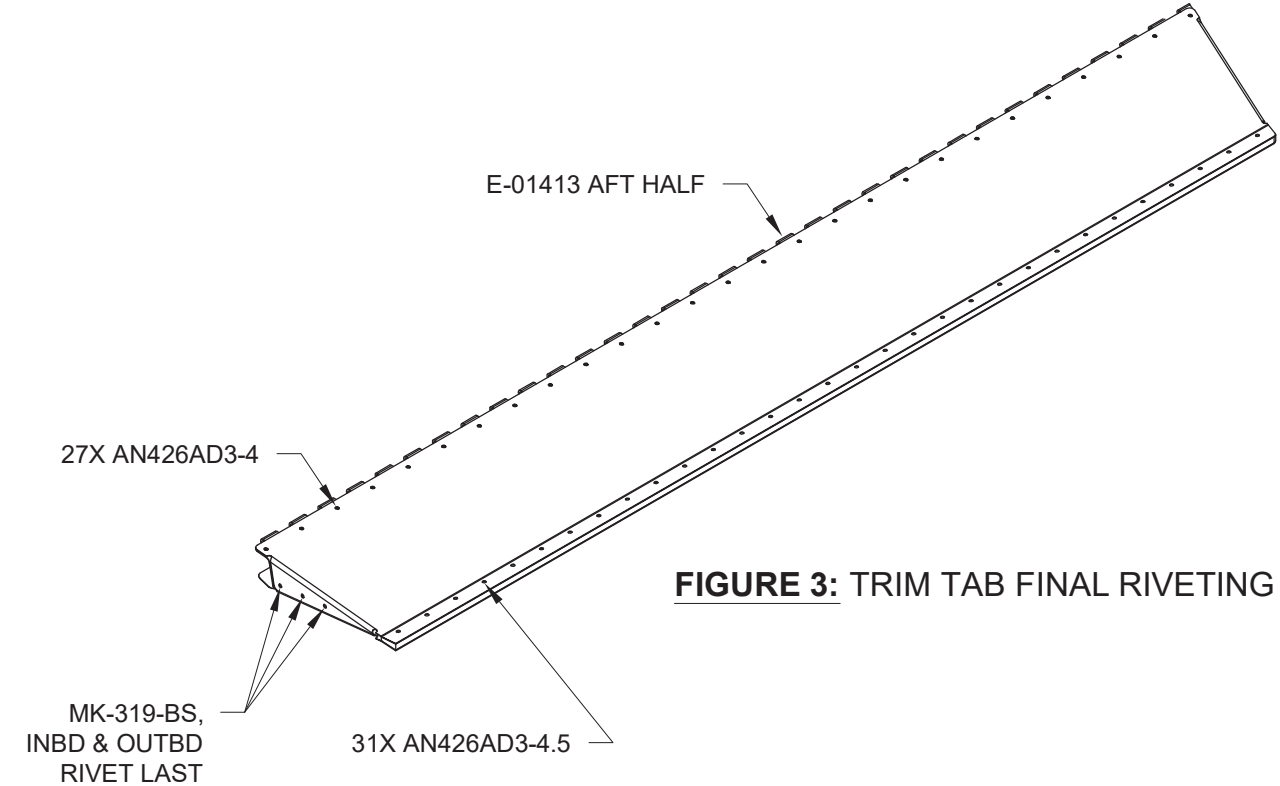


**FIGURE 2: TRAILING EDGE AND RIB INSTALLATION**

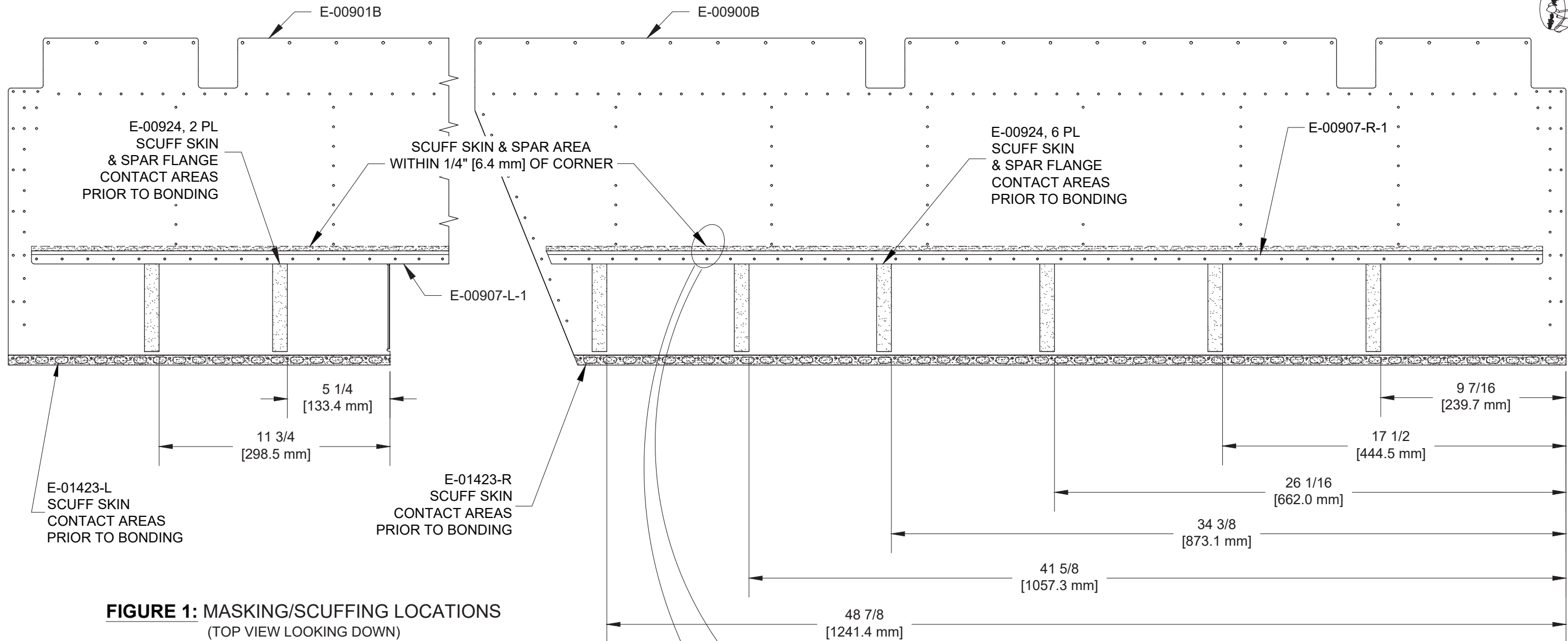
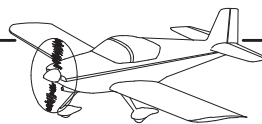
**NOTE: Check for twist before riveting.**

Step 7: Double flush rivet the E-01407 & E-01406 Trim Tab Skins to the E-01423-T Trailing Edge as shown in Figure 2. See Page 09-28 and Section 5.8 for more information.

Step 8: Rivet the close-out tabs of the E-01406 and E-01407 Trim Tab skins together as shown in Figure 3.



**FIGURE 3: TRIM TAB FINAL RIVETING**



**FIGURE 1: MASKING/SCUFFING LOCATIONS**  
(TOP VIEW LOOKING DOWN)  
(E-00900A AND E-00901A NOT SHOWN)

**Step 1:** Mask the inside surfaces of the E-00900A & B and E-00901A & B skins around the perimeter of the areas that will interface with the E-00924 Trailing Edge Ribs and E-01423-L & -R Trailing Edges. See Figure 1.

**Step 2:** Mask the E-00907-L-1 & -R-1 Rear Spars around the portions of the flanges that will interface with the upper/lower surfaces of the E-00924.

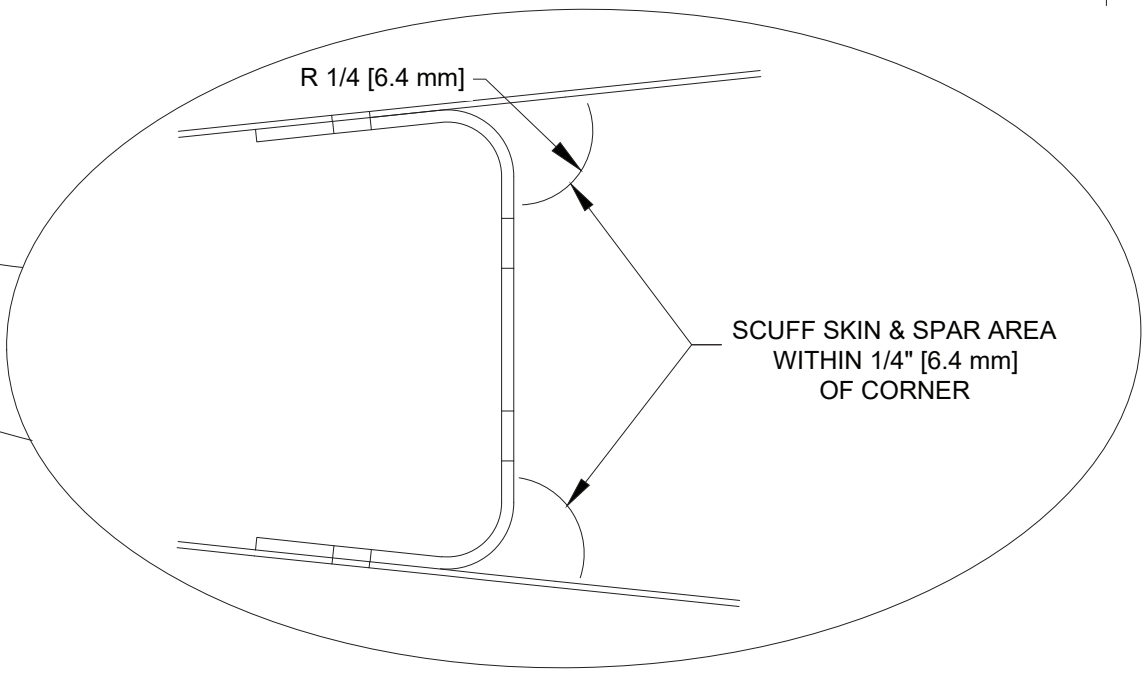
**Step 3:** Mask the E-00900A & B, E-00901A & B, and the web of the E-00907-L-1 & -R-1 just outside of the arcs shown in the detail view of Figure 1.

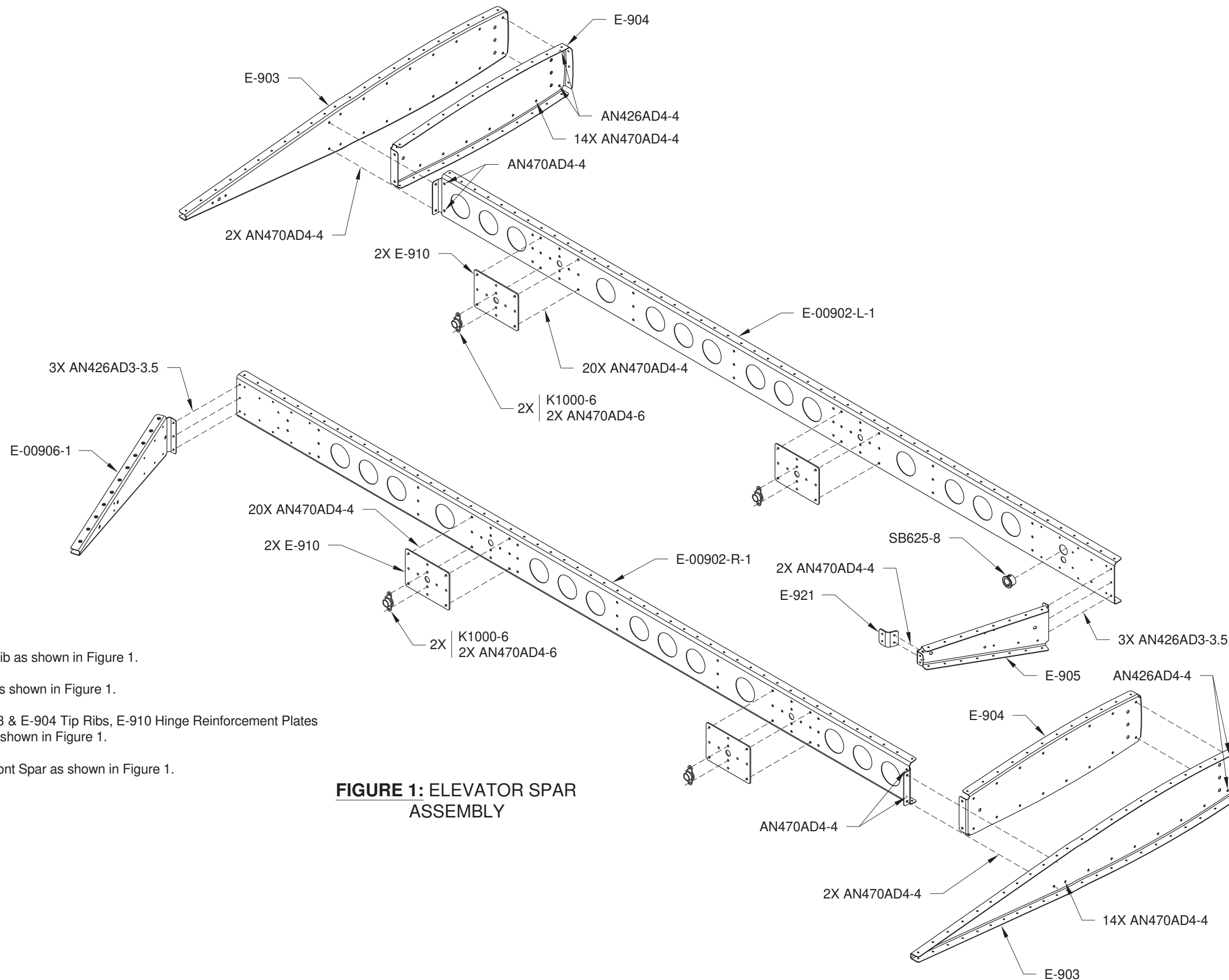
**Step 4:** Use 150 grit aluminum oxide sandpaper to scuff the exposed areas of the E-00900A & B, E-00901A & B, and E-00907-L-1 & -R-1 that are within the masked areas.

**Step 5:** Clean the scuffed areas with acetone until all sanding residue is removed, then remove the masking.

**NOTE:** Do not prime the scuffed areas.

**Step 6 (Optional):** Mask the scuffed areas, then prime the E-00900A & B, E-00901A & B, and E-00907-L-1 & -R-1 as desired.





**FIGURE 1: ELEVATOR SPAR ASSEMBLY**

Step 1: Rivet the E-921 Gusset to the E-905 Left Root Rib as shown in Figure 1.

Step 2: Rivet the E-903 Tip Ribs to the E-904 Tip Ribs as shown in Figure 1.

Step 3: Rivet the E-905 and E-00906-1 Root Ribs, E-903 & E-904 Tip Ribs, E-910 Hinge Reinforcement Plates and nutplates to the E-00902-L-1 & -R-1 Front Spars as shown in Figure 1.

Step 4: Install the snap bushing into the E-00902-L-1 Front Spar as shown in Figure 1.

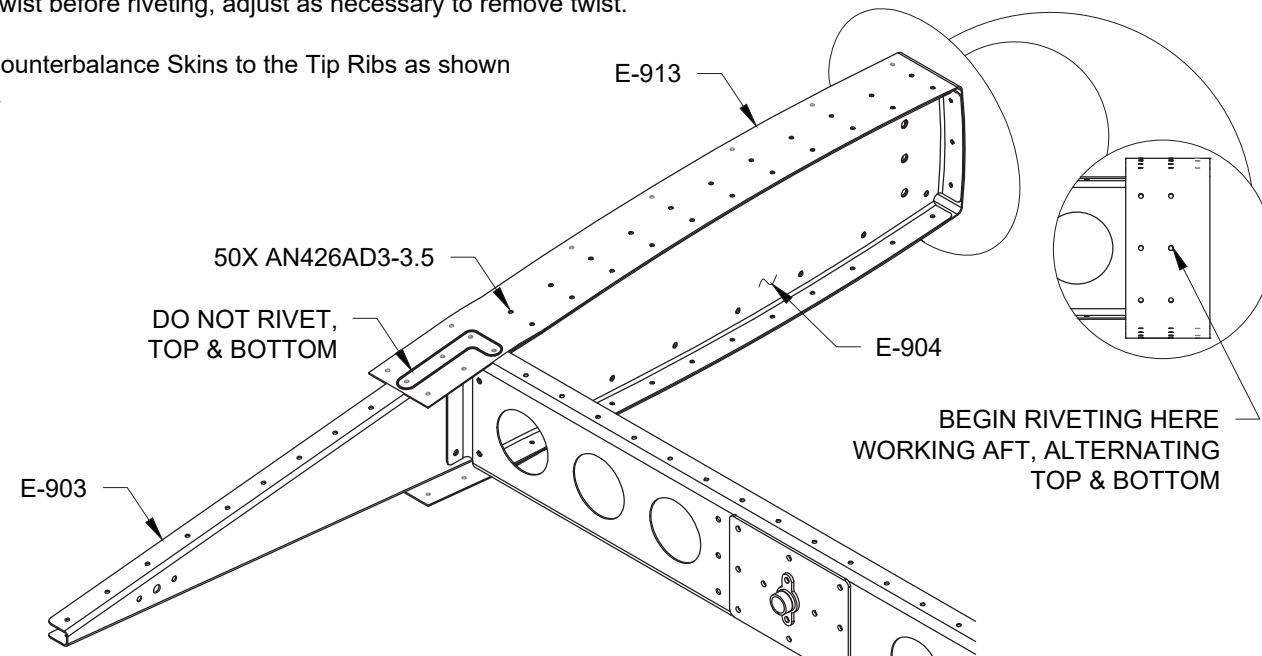




Step 1: Cleco the E-913 Counterbalance Skins to the E-903 and E-904 Tip Ribs as shown in Figure 1.

Check for twist before riveting, adjust as necessary to remove twist.

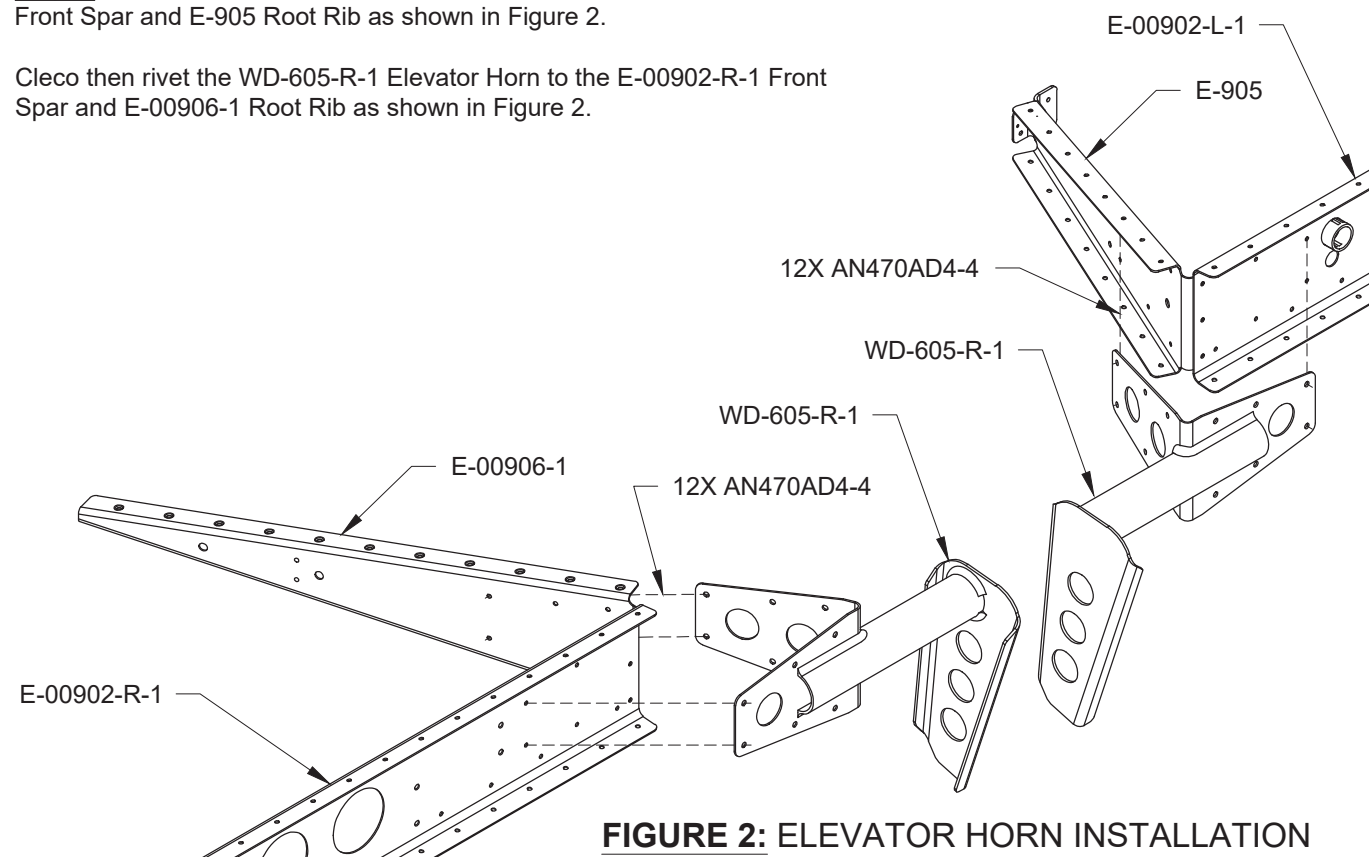
Rivet the Counterbalance Skins to the Tip Ribs as shown in Figure 1.



**FIGURE 1: COUNTERBALANCE SKINS INSTALLATION**

Step 2: Cleco then rivet the WD-605-L-1 Elevator Horn to the E-00902-L-1 Front Spar and E-905 Root Rib as shown in Figure 2.

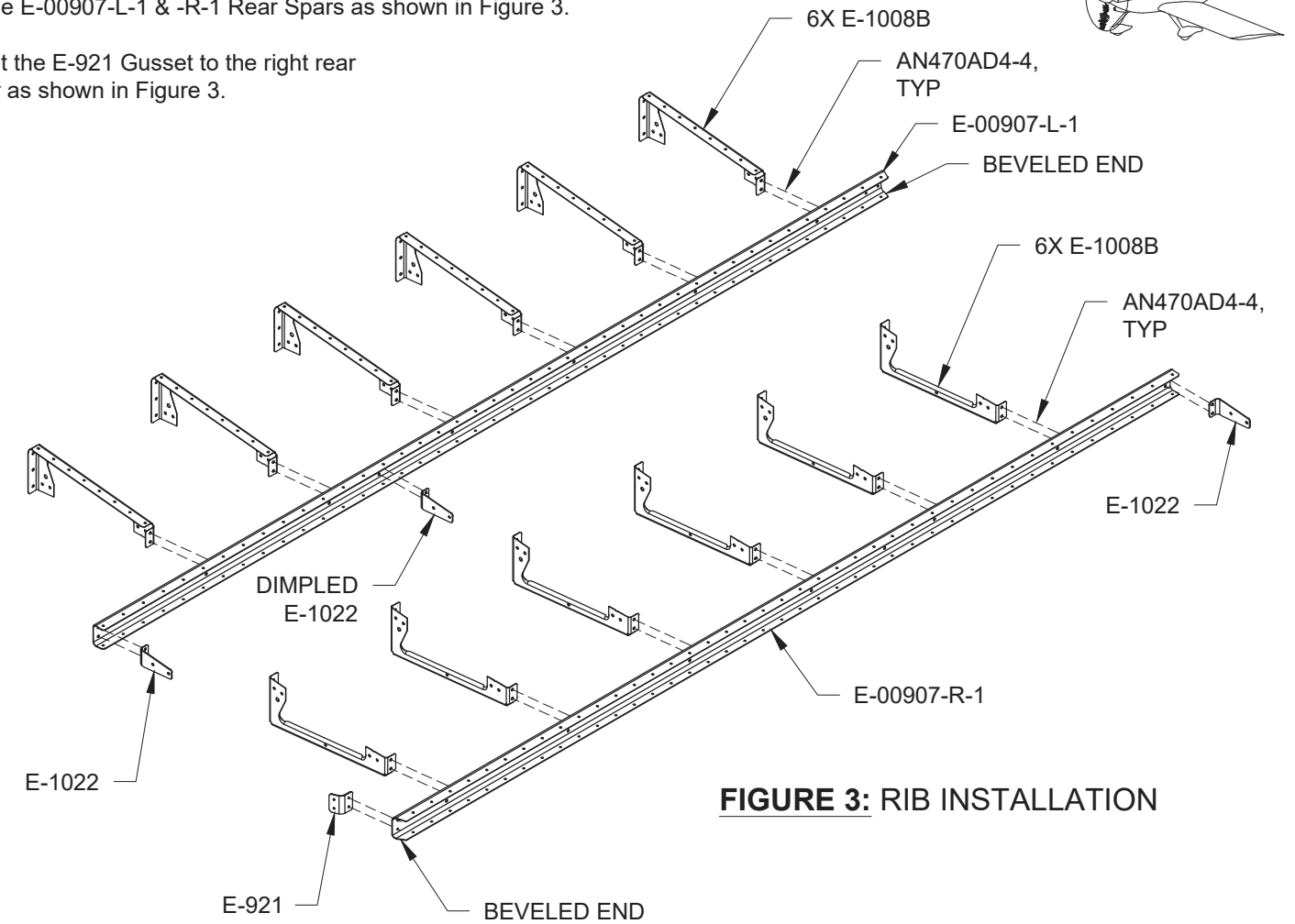
Cleco then rivet the WD-605-R-1 Elevator Horn to the E-00902-R-1 Front Spar and E-00906-1 Root Rib as shown in Figure 2.



**FIGURE 2: ELEVATOR HORN INSTALLATION**

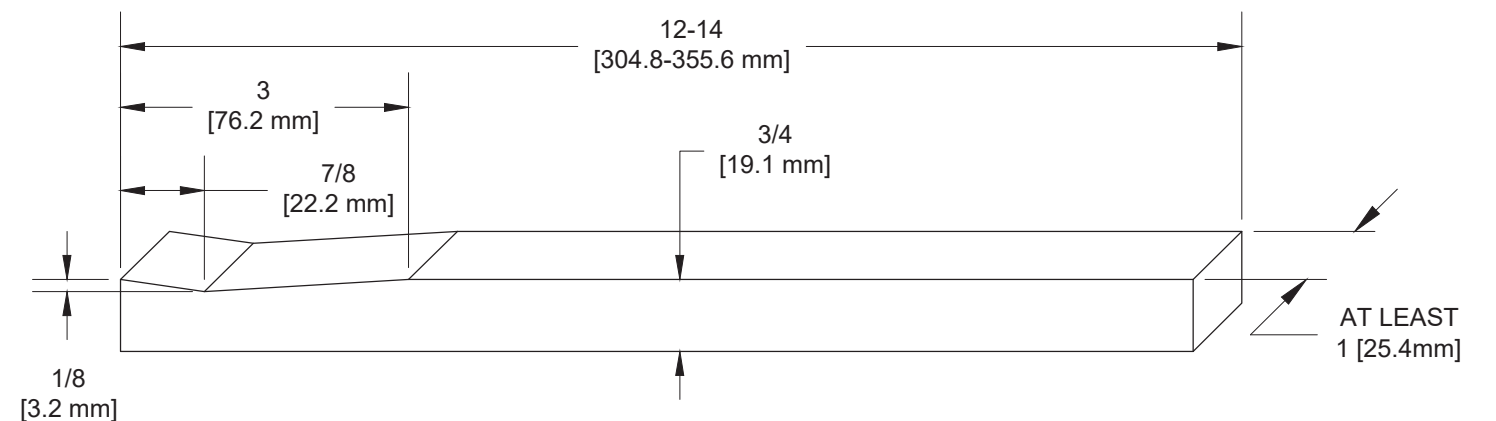
Step 3: Cleco then rivet the E-1008B Ribs and E-1022 Shear Clips to the E-00907-L-1 & -R-1 Rear Spars as shown in Figure 3.

Rivet the E-921 Gusset to the right rear spar as shown in Figure 3.



**FIGURE 3: RIB INSTALLATION**

Step 4: Fabricate the special bucking bar shown in Figure 4 or order one from an aircraft tool supplier. It is acceptable to substitute MK-319-BS blind rivets for the solid rivets in the locations that this bucking bar is used. Match-Drill #33 any holes that will be filled with a MK-319-BS. The blind rivets are not supplied in the kit, but can be purchased through Van's Aircraft.



**FIGURE 4: SPECIAL BUCKING BAR**



**Step 1:** Cleco the E-1008B Ribs, E-00907-L-1 Rear Spar and the forward half of the E-01403 Trim Tab Hinge to the E-00901A Left Top Skin as shown in Figure 1.

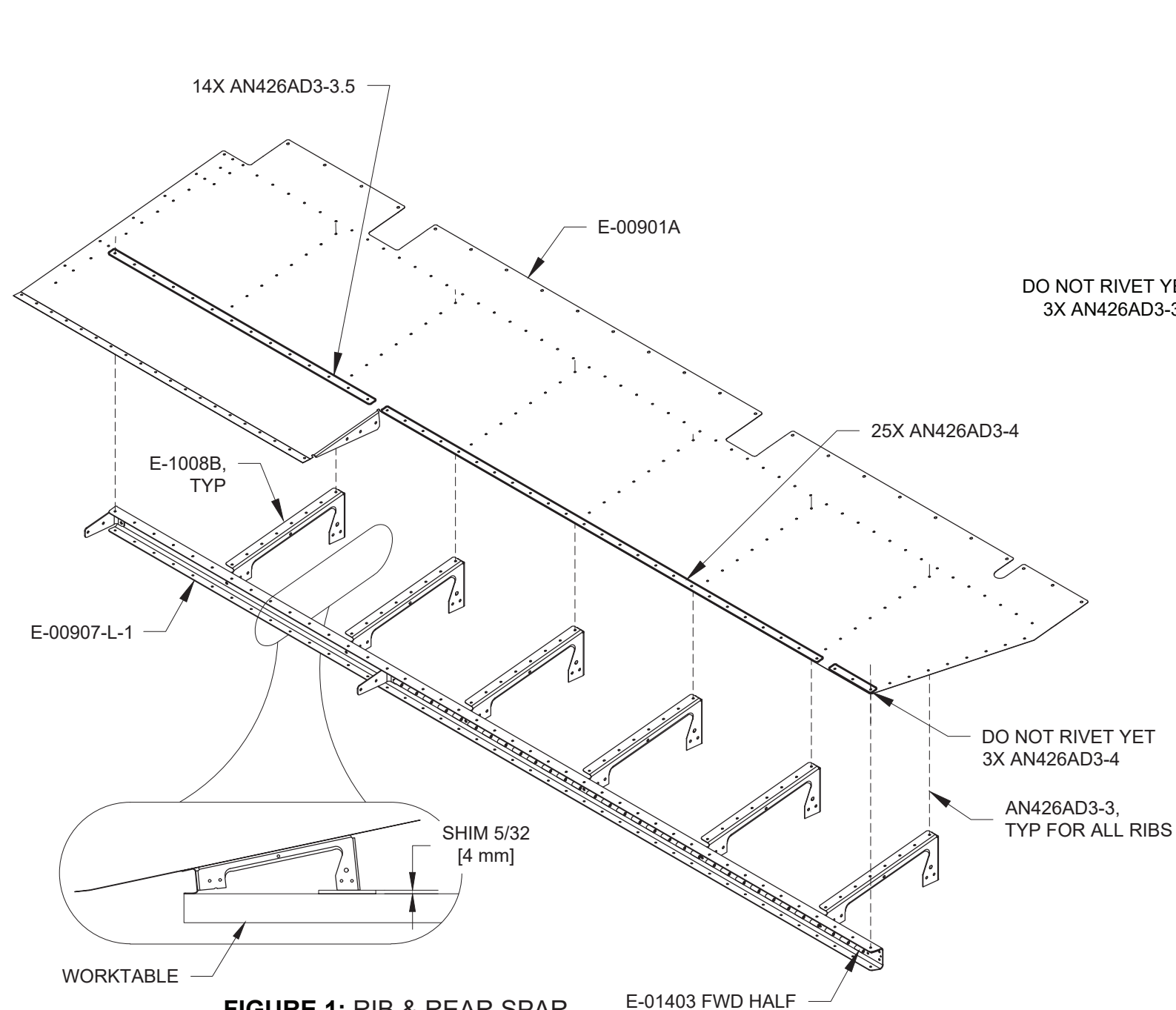
Align the edge of the rear spar flange with the edge of a workbench.

Use spring clamps to secure the rear spar to the workbench.

Shim the ribs up from the workbench as shown in Figure 1 to avoid deformation.

**Step 2:** Rivet the E-00907-L-1 Rear Spar to the E-00901A Left Top Skin except as shown in Figure 1.

**Step 3:** Remove the clamps and back rivet the E-1008 Ribs to the E-00901A Left Top Skin. See Section 5.6 for more information on back riveting.



**FIGURE 1: RIB & REAR SPAR INSTALLATION**

**Step 4:** Cleco the E-1008B Ribs and E-00907-R-1 Rear Spar to the E-00900B Right Bottom Skin as shown in Figure 2

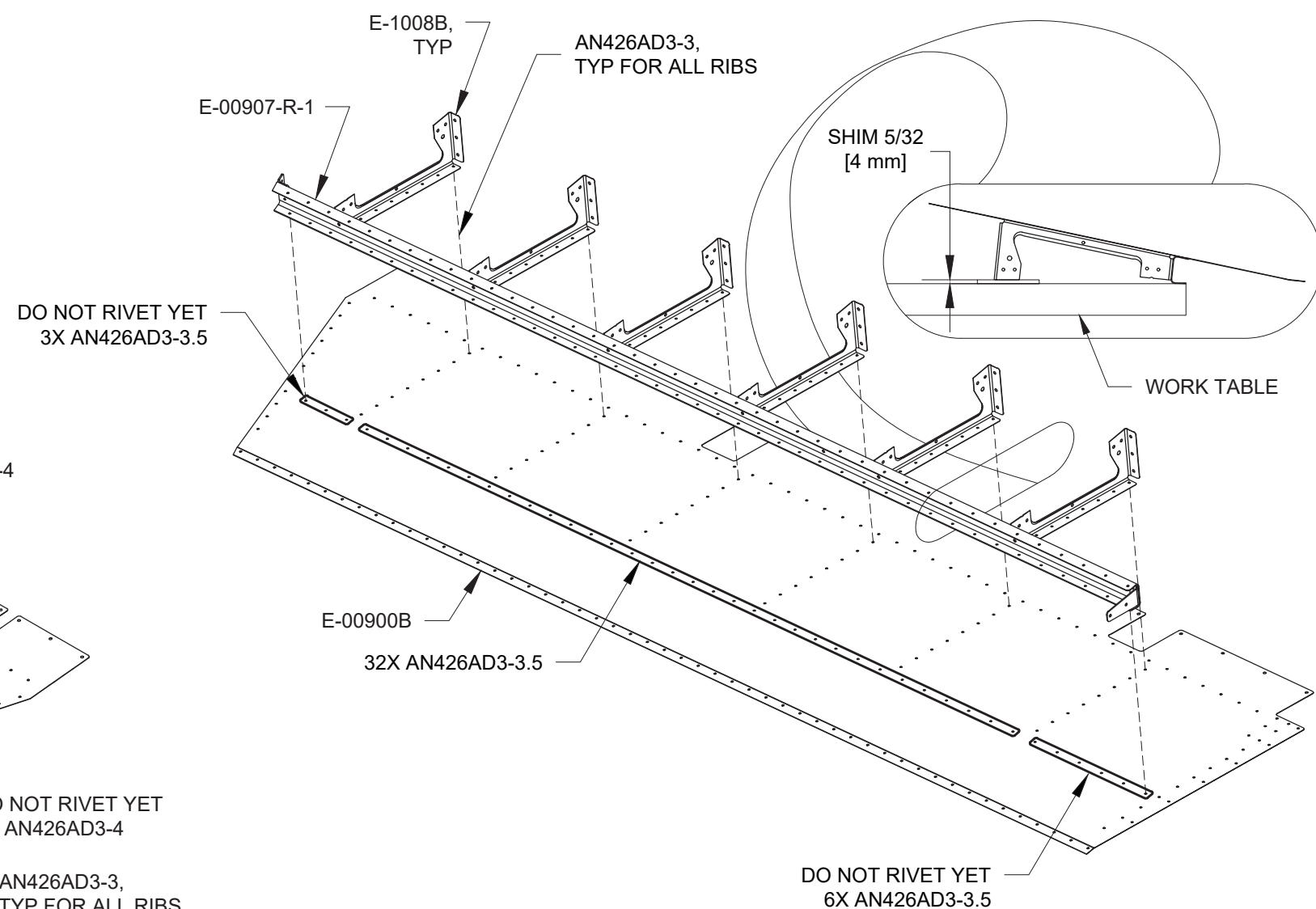
Align the edge of the rear spar flange with the edge of a workbench as shown in Figure 2.

Use spring clamps to secure the rear spar to the workbench.

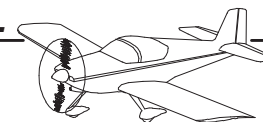
Shim the ribs up from the workbench as shown in Figure 2 to avoid deformation.

**Step 5:** Rivet the E-00907-R-1 Rear Spar to the E-00900B Right Bottom Skin except as shown in Figure 2.

**Step 6:** Remove the clamps and back rivet the E-1008 Ribs to the E-00900B Right Bottom Skin. See Section 5.6 for more information on back riveting.



**FIGURE 2: RIB & REAR SPAR INSTALLATION**



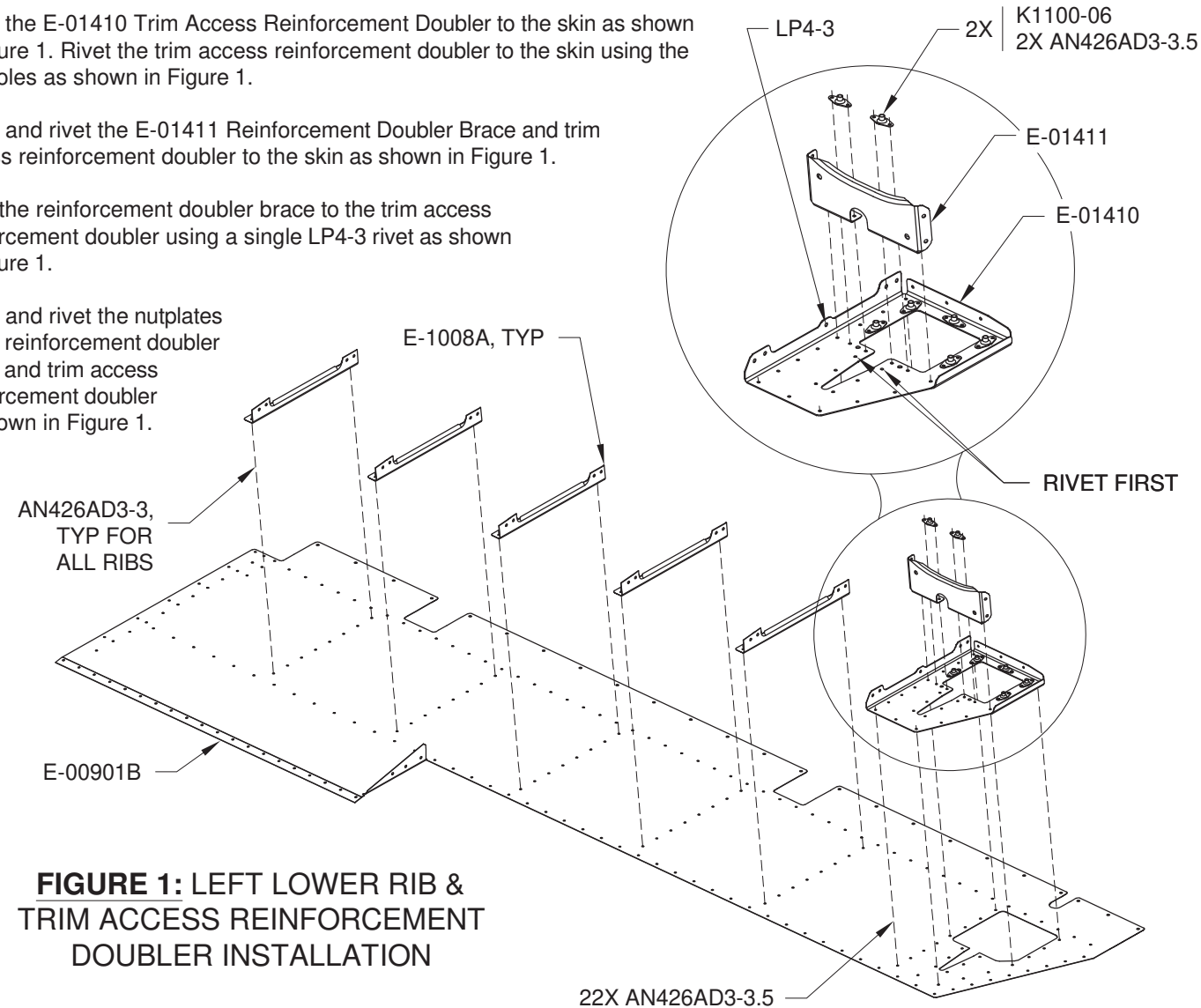
Step 1: Back Rivet the E-1008A Ribs to the E-00901B Left Bottom Skin as shown in Figure 1.

Cleco the E-01410 Trim Access Reinforcement Doubler to the skin as shown in Figure 1. Rivet the trim access reinforcement doubler to the skin using the two holes as shown in Figure 1.

Cleco and rivet the E-01411 Reinforcement Doubler Brace and trim access reinforcement doubler to the skin as shown in Figure 1.

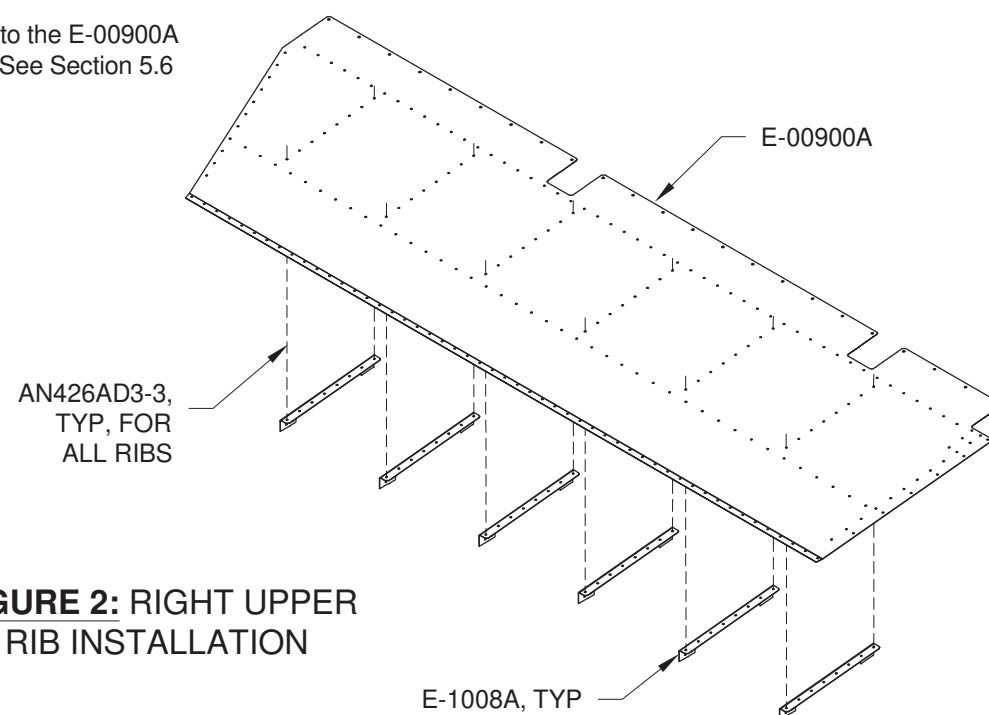
Rivet the reinforcement doubler brace to the trim access reinforcement doubler using a single LP4-3 rivet as shown in Figure 1.

Cleco and rivet the nutplates to the reinforcement doubler brace and trim access reinforcement doubler as shown in Figure 1.



**FIGURE 1: LEFT LOWER RIB & TRIM ACCESS REINFORCEMENT DOUBLER INSTALLATION**

Step 2: Back Rivet the E-1008A Ribs to the E-00900A Right Top Skin as shown in Figure 2. See Section 5.6 for more information on back riveting.



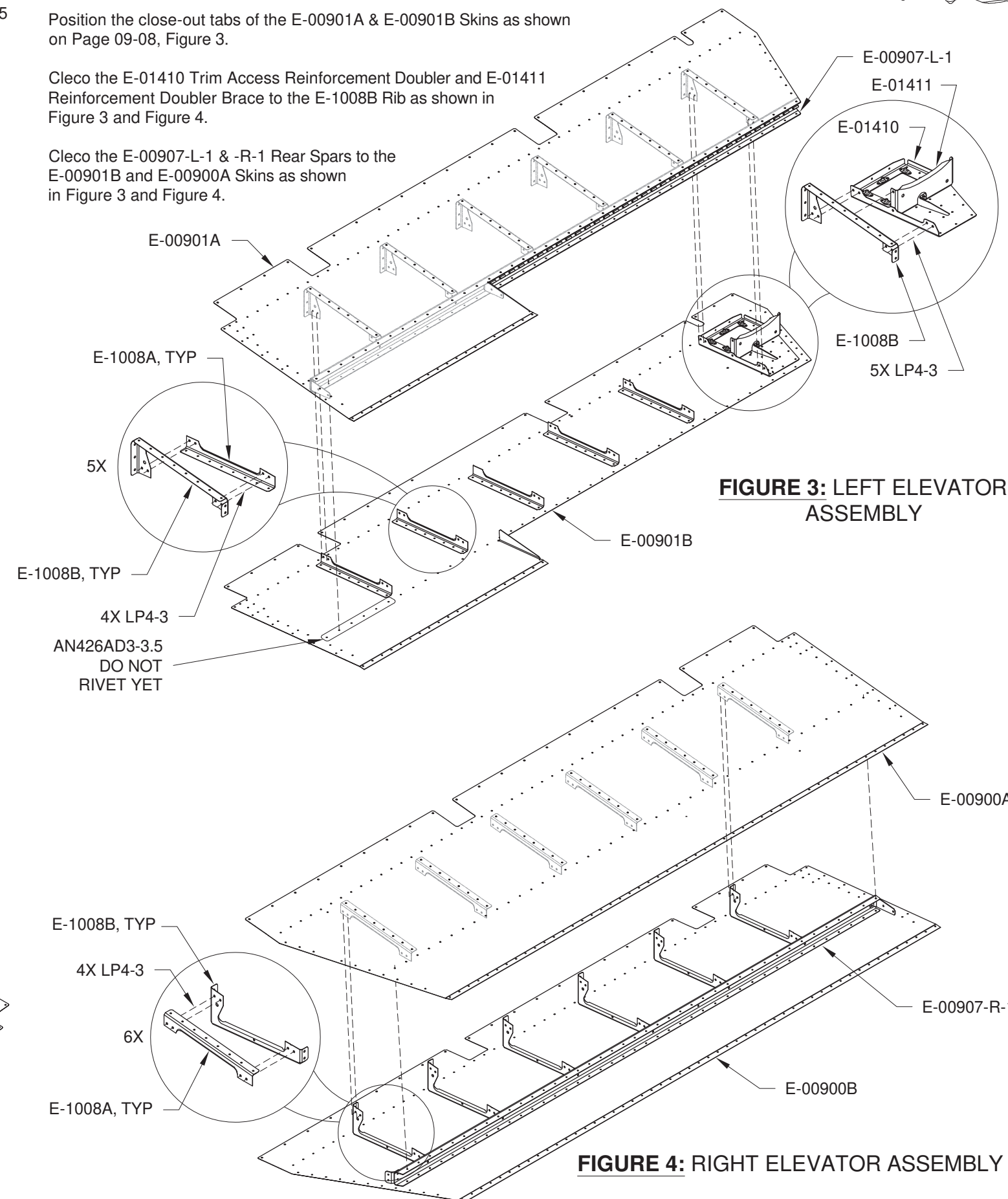
**FIGURE 2: RIGHT UPPER RIB INSTALLATION**

Step 3: Cleco the E-1008A & E-1008B Ribs together as shown in Figure 3 and Figure 4.

Position the close-out tabs of the E-00901A & E-00901B Skins as shown on Page 09-08, Figure 3.

Cleco the E-01410 Trim Access Reinforcement Doubler and E-01411 Reinforcement Doubler Brace to the E-1008B Rib as shown in Figure 3 and Figure 4.

Cleco the E-00907-L-1 & -R-1 Rear Spars to the E-00901B and E-00900A Skins as shown in Figure 3 and Figure 4.



**FIGURE 3: LEFT ELEVATOR ASSEMBLY**

**FIGURE 4: RIGHT ELEVATOR ASSEMBLY**





**NOTE: Riveting the E-00901B Left Bottom Skin first provides experience using the Special Bucking Bar prior to riveting the more visible locations on the E-00900A Right Top Skin.**

Step 1: Position the Left Elevator on a workbench as shown in Figure 1.

Shim the Elevator up from the workbench as shown in Figure 1 to avoid deforming the trailing edge.

Position the Special Bucking Bar from Page 09-17, Step 4 as shown in Figure 1 and rest the bar on the workbench. Apply downward pressure when riveting.

Step 2: Rivet the E-00907-L-1 Rear Spar to the E-00901B Left Bottom Skin as shown in Figure 1. See Page 09-19 Figure 3 for exceptions.

Step 3: Repeat Step 1 for the right elevator

Step 4: Rivet the E-00907-R-1 Rear Spar to the E-00900A Right Top Skin as shown in Figure 1.

Step 5: Fabricate the Rivet Puller Spacer from .063 in. [1.6 mm] aluminum as shown in Figure 2.

Step 6: Rivet the E-1008A & E-1008B Ribs in both Elevators together as shown on Page 09-19, Figure 3.

It may be difficult to reposition the rivet puller when setting the aft two rivets. If a rivet does not fully set with one stroke of the handles, release the handles, slip the Rivet Puller Spacer between the rivet puller and the rivet head, then finish squeezing the rivet.

Installing the aft two rivets in each rib may be challenging. Tubes or pipes may be slipped onto the rivet tool handles, extending them to fit more easily into the tight spaces.

Rivet the E-1008B Rib to the E-01410 Trim Access Reinforcement Doubler and E-01411 Reinforcement Doubler Brace as shown on Page 09-19 Figure 3.

Step 7: Cut a 12 inch [304.8 mm] segment of AT0-035X3/8 (or similar) aluminum tube. On one end of the tube, bend the last 1 in. [25.4 mm] to 2 in. [50.8 mm] to 45°. Attach the long end of the tube to a fuel tank sealant container/dispenser, such as the nozzle of an MC-236-B1/2 Flamemaster Integral Fuel Tank Sealant injection kit, using a strong tape and/or adhesive.

Deburr and radius the outer edge of the opening on the bent end of the aluminum tube, to minimize the chance of the tube edge scratching the surfaces during the Step 8.

Step 8: Apply fuel tank sealant to the upper and lower corners where the E-00907-R-1 and -L-1 Rear Spar meets the E-00900A&B skins using the 3/8 in. [9.5 mm] aluminum tube. Do not apply sealant in regions of the spar that have not yet been riveted to the skin; See Page 09-18, Figure 3, and Page 09-19, Figure 2 ("Do not rivet yet").

Use the bend at the tip to keep the end of the tube approximately parallel to the surface of the skins and to the rear spar.

As sealant is released from the end of the tube, slide the dispenser and tube so as to push the tube towards its opening, towards the bead of sealant being released. This causes the edge of the tube opening to form a radius fillet of sealant in the corner between the rear spar and the skin. See Figure 3.

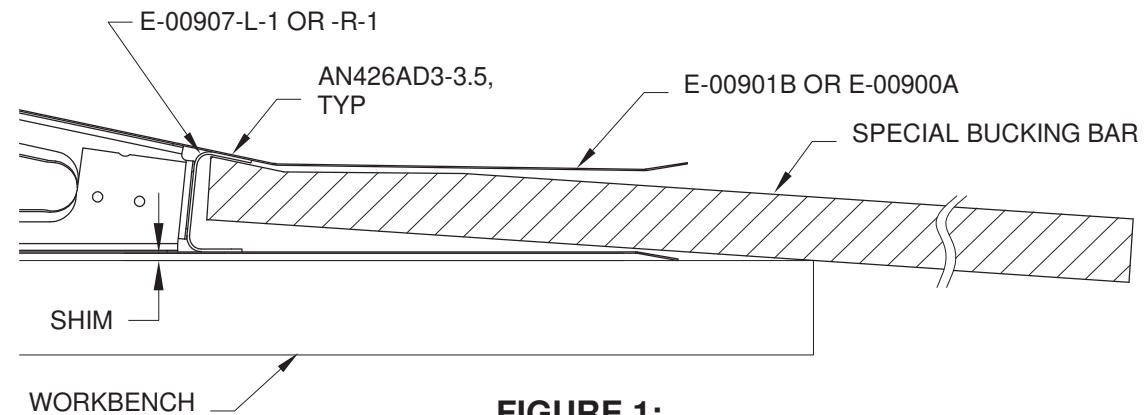
It is recommended that sealant be applied to one half of a rib bay while pushing the tube from one direction, then applied to the other half while pushing the tube from the other direction. See Figure 4.

It is not necessary to apply sealant in the area within 1/2 in. [12.7 mm] of the E-1008A&B ribs.

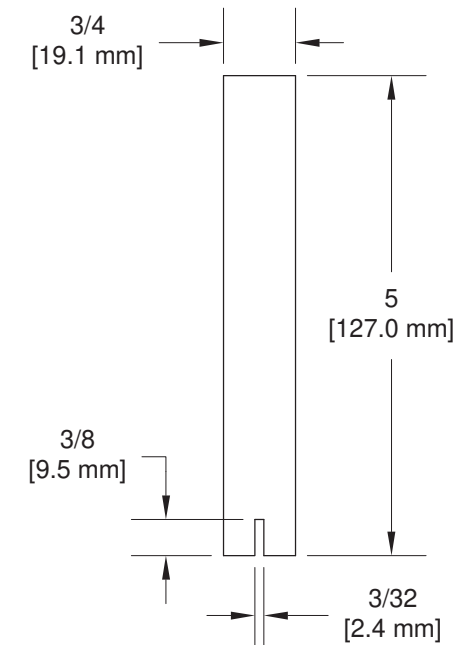
**NOTE: Minimize the application of excess fuel tank sealant. Squeeze out sealant slowly, so that the bead ahead of the tube is only slightly wider than the tube itself. See Figure 3.**

Step 9: Trim the end of a wooden rod to a sharp, flat, spatula-like wedge. Use it to scrape off excess sealant which might have been applied beyond the fillet. See Figure 3.

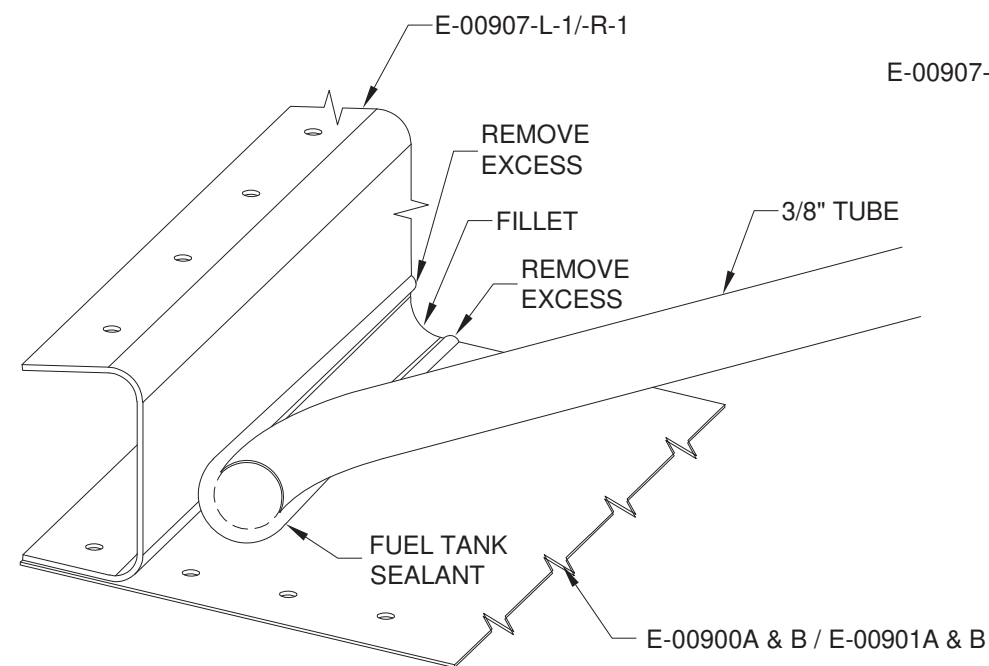
Wait until the sealant has cured (is no longer sticky) before moving on to the next step.



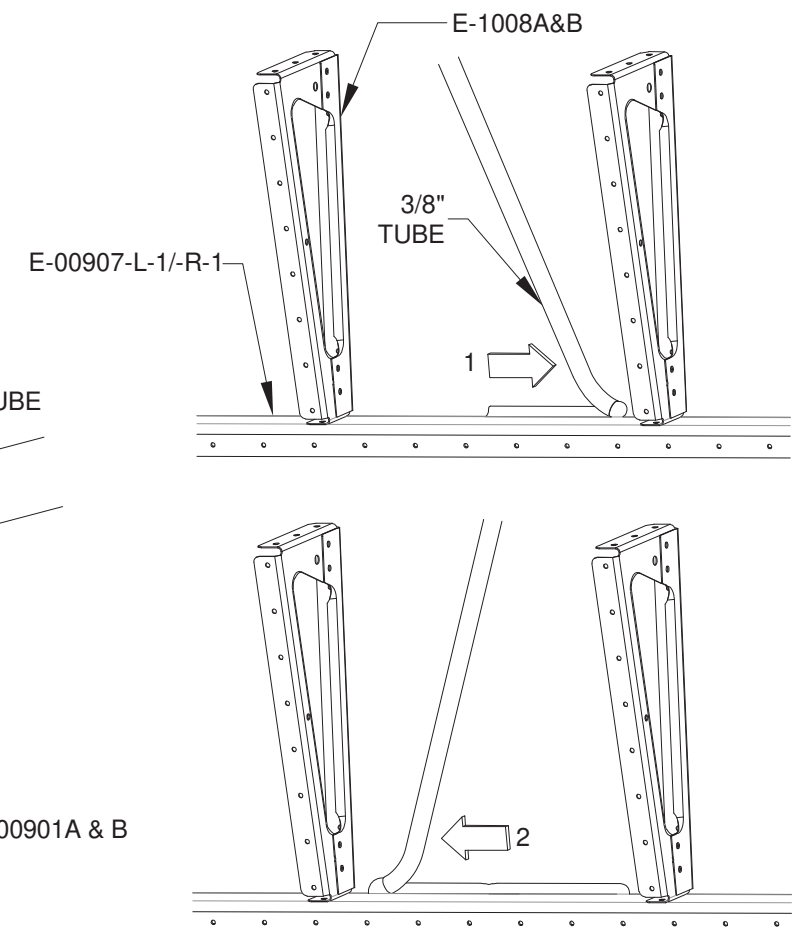
**FIGURE 1:  
RIVETING REAR SPAR**



**FIGURE 2: RIVET PULLER SPACER**



**FIGURE 3: SEALANT FILLET**



**FIGURE 4: SEALANT APPLICATION**





Step 1: Cleco the E-00902-L-1 & R-1 Front Spars to the E-1008 Ribs and E-00900A, E-00900B, E-00901A and E-00901B Skins as shown in Figure 1.

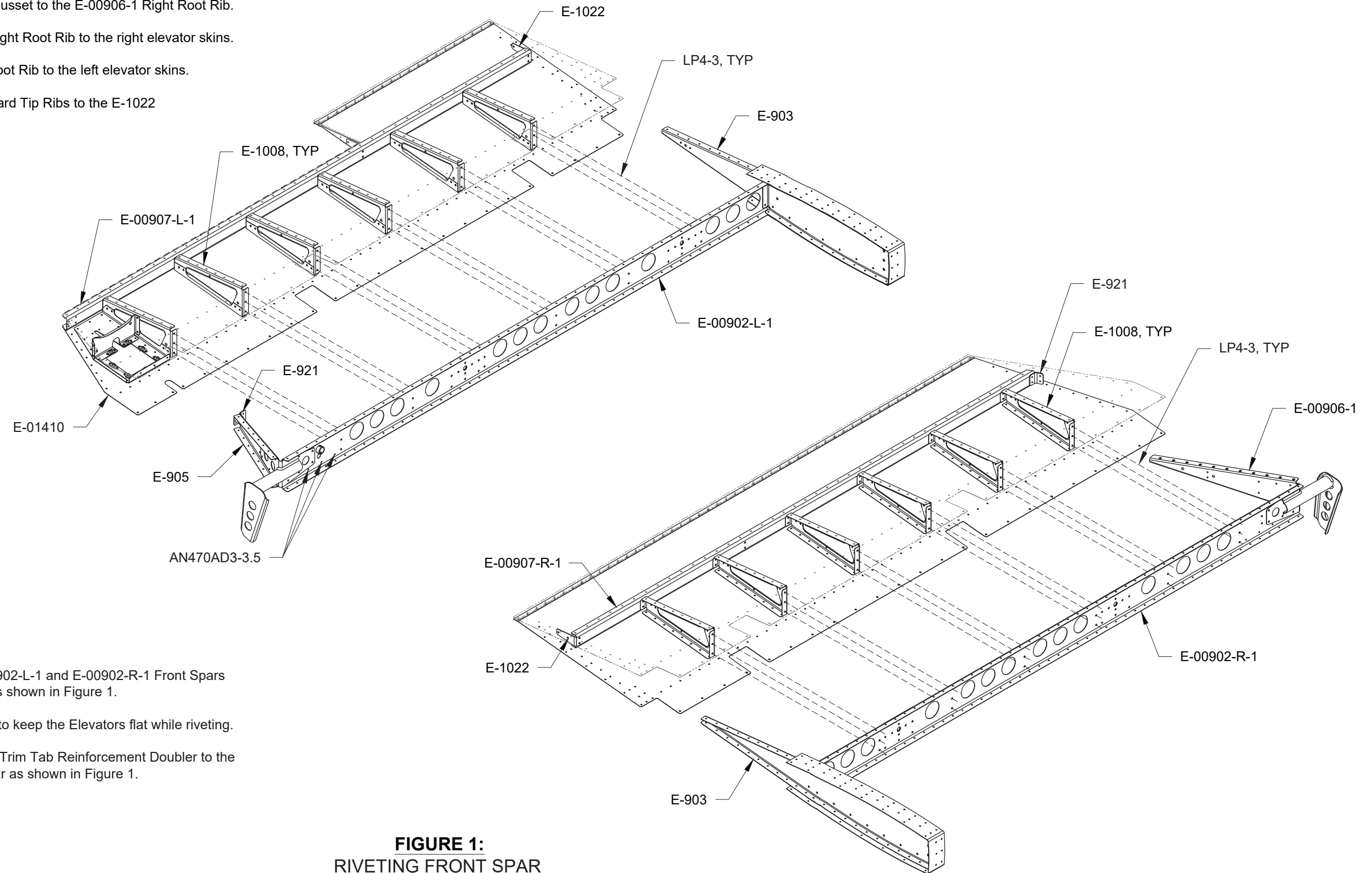
Cleco the left E-921 Gusset to the E-00907-L-1 Rear Spar.

Cleco the right E-921 Gusset to the E-00906-1 Right Root Rib.

Cleco the E-00906-1 Right Root Rib to the right elevator skins.

Cleco the E-905 Left Root Rib to the left elevator skins.

Cleco the E-903 Outboard Tip Ribs to the E-1022 Shear Clips.



Step 2: Rivet the E-00902-L-1 and E-00902-R-1 Front Spars to the E-1008B Ribs as shown in Figure 1.

Use a weighted board to keep the Elevators flat while riveting.

Step 3: Rivet E-01410 Trim Tab Reinforcement Doubler to the E-00902-L-1 Front Spar as shown in Figure 1.

**FIGURE 1:**  
RIVETING FRONT SPAR



Step 1: Rivet the aft flange of the E-905 Left Root Rib to the E-00907-L-1 Rear Spar as shown in Figure 1. Use a flush rivet set on the manufactured head of an AN470 Rivet where access is tight.

Step 2: Remove the clecos holding the E-00901A Left Top Skin to the E-905 Root Rib and E-00907-L-1 Rear Spar.

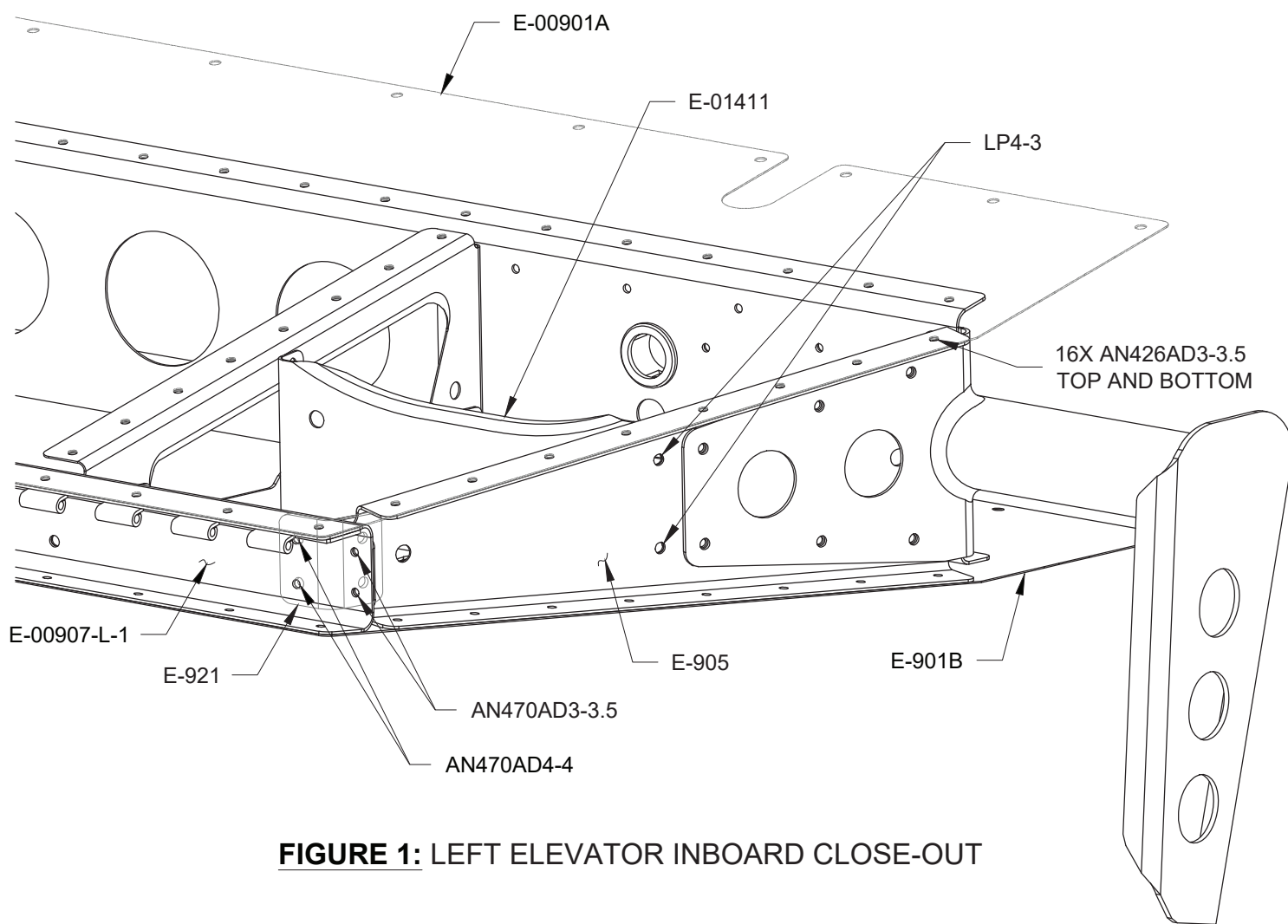
Lift the skin to gain access to the E-921 Gusset.

Rivet the gusset to the E-00907-L-1 Rear Spar as shown in Figure 1.

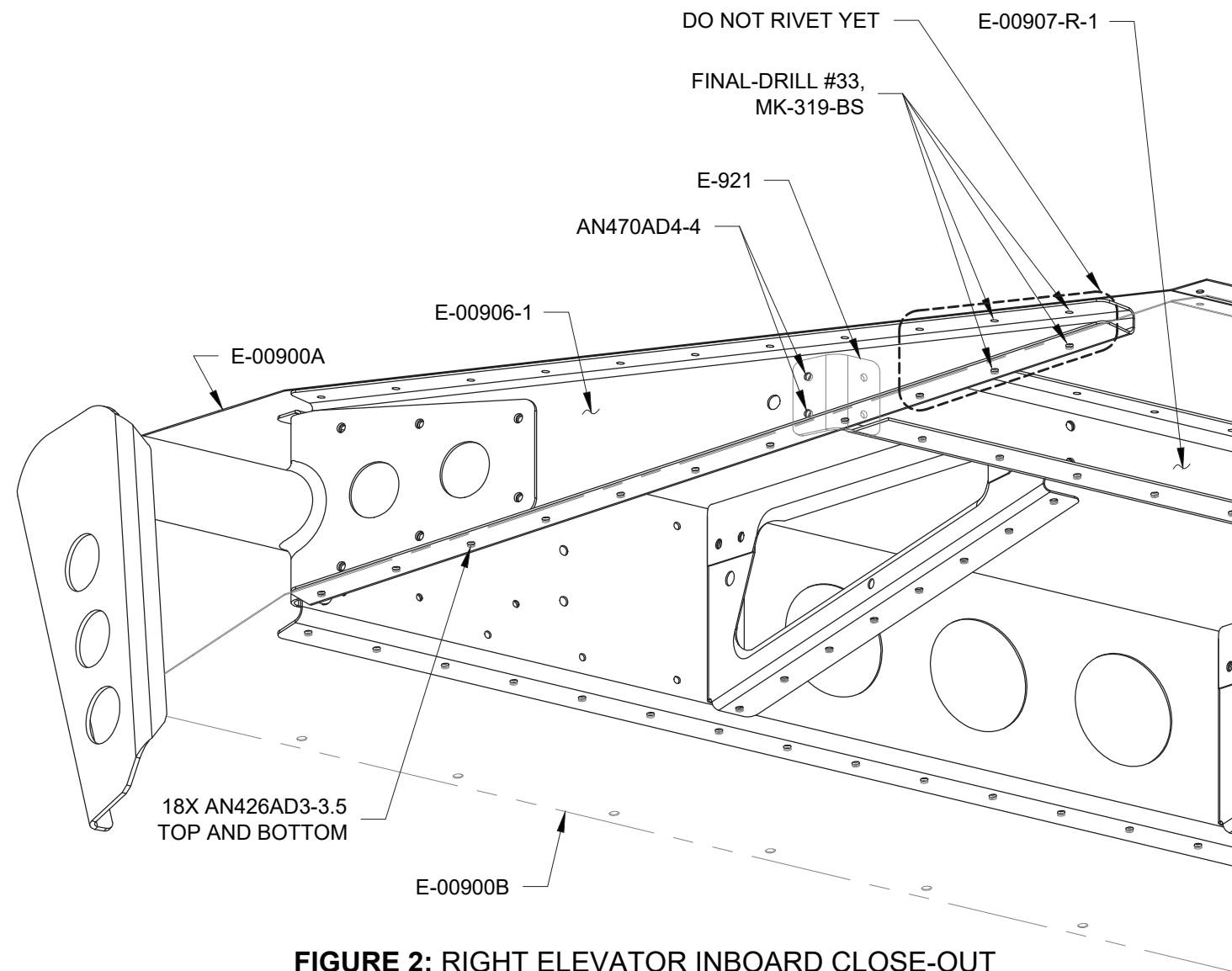
Step 3: Rivet the E-01411 Reinforcement Doubler Brace to the E-905 Left Root Rib as shown in Figure 1.

Step 4: Rivet the three remaining inboard holes in the E-00901A Left Top Skin to the E-00907-L-1 Rear Spar as shown on Page 09-18, Figure 1.

Step 5: Rivet the upper and lower flanges of the E-905 Left Root Rib to the E-00901A & E-00901B Skins as shown in Figure 1.



**FIGURE 1: LEFT ELEVATOR INBOARD CLOSE-OUT**



**FIGURE 2: RIGHT ELEVATOR INBOARD CLOSE-OUT**

Step 6: Remove the clecos holding the E-00900B Right Bottom Skin to the E-00906-1 Right Root Rib and E-00907-R-1 Rear Spar.

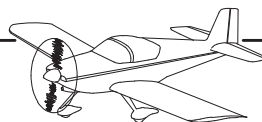
Lift the skin to gain access to the E-921 Gusset.

Rivet the gusset to the root rib as shown in Figure 2.

Step 7: Rivet the three remaining inboard holes in the E-00900B Right Bottom Skin to the E-00907-R-1 Rear Spar as shown on Page 09-18, Figure 2.

Step 8: Match-Drill #33 the four holes in the E-00900A and E-00900B Skins as shown in Figure 2.

Rivet the upper and lower flanges of the E-00906-1 Right Root Rib to the E-00900A & E-00900B Skins, except as shown in Figure 2.



Step 1: Rivet the E-903 Outboard Tip Rib to the E-1022 Shear Clips as shown in Figure 1.

**NOTE: The E-913 Counterbalance Skins lie underneath the skins.**

Step 2: Rivet the 6 outboard holes in the E-00901B Left Bottom Skin that are common to the E-00907-L-1 Rear Spar as shown on Page 09-19, Figure 3 (which shows them as "do not rivet yet").

Step 3: Pull the E-00901B Left Bottom Skin down to gain access the underside of the E-00901A Left Top Skin.

Rivet the two holes common to the E-00901A Left Top Skin and the E-913 Counterbalance Skin as shown in Figure 1. It is acceptable to use MK-319-BS rivets (not supplied) in place of an AN426AD3-3 rivet. Final-Drill #33 any holes that will be filled with MK-319-BS rivets.

Step 4: Rivet the single hole common to the E-00901A Left Top Skin, E-913 Counterbalance Skin and the top flange of the E-00902-L-1 Front Spar as shown in Figure 1.

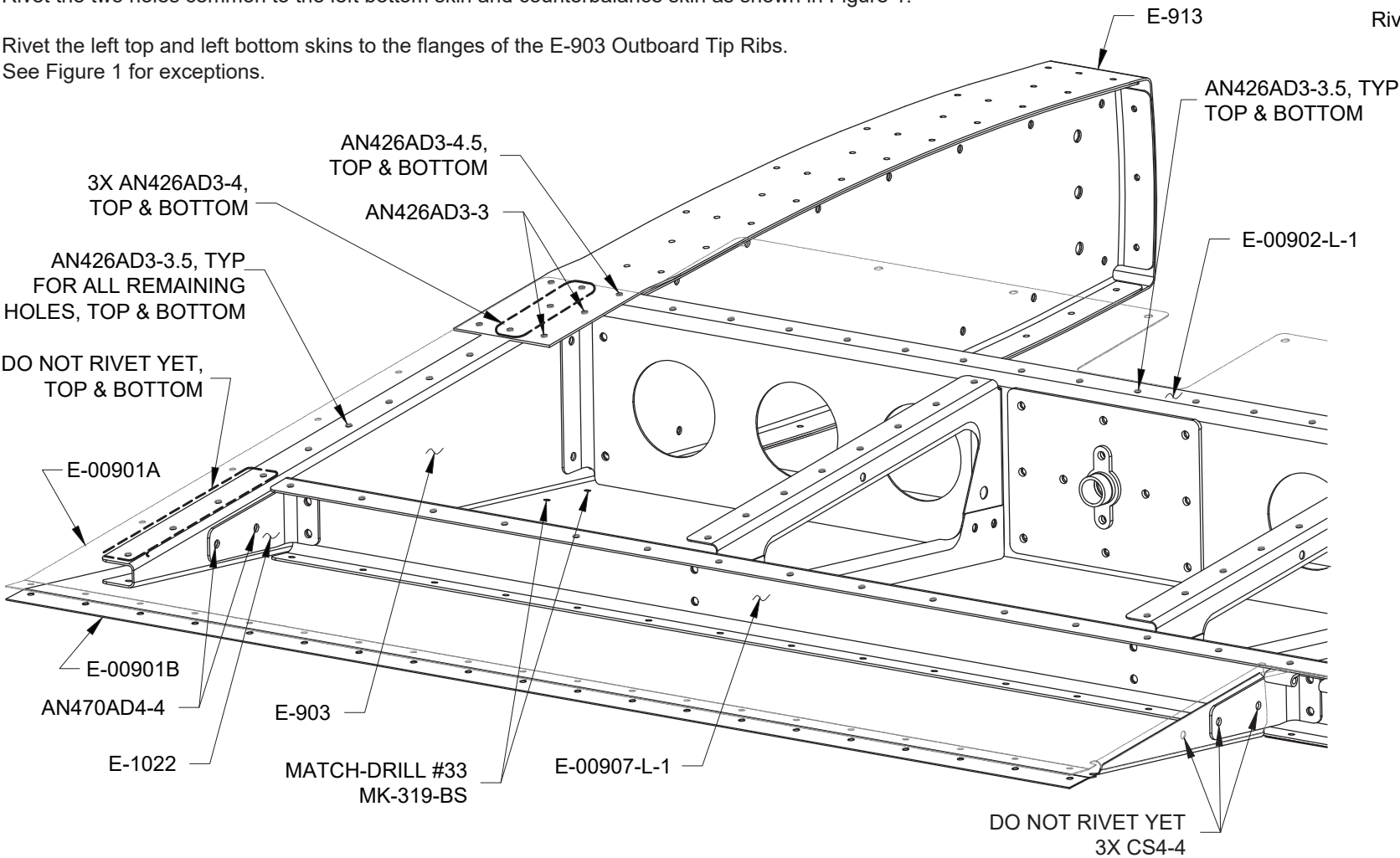
Rivet the E-00901A Left Top Skin to the top flange of the front spar as shown in Figure 1.

Rivet the E-00901B Left Bottom Skin and counterbalance skin to the bottom flange of the front spar as shown in Figure 1.

Step 5: Final-Drill #33 the two holes common to the E-00901B Left Bottom Skin and E-913 Counterbalance Skin as shown in Figure 1.

Rivet the two holes common to the left bottom skin and counterbalance skin as shown in Figure 1.

Rivet the left top and left bottom skins to the flanges of the E-903 Outboard Tip Ribs. See Figure 1 for exceptions.



**FIGURE 1: LEFT ELEVATOR OUTBOARD CLOSE-OUT**

Step 6: Rivet the E-903 Outboard Tip Ribs to the E-1022 Shear Clip as shown in Figure 2.

Step 7: Rivet the 6 outboard holes in the E-00900B Right Bottom Skin that are common to the E-00907-R-1 Rear Spar as shown on Page 09-18, Figure 2 (which shows them as "do not rivet yet").

Step 8: Pull the E-00900B Right Bottom Skin down to gain access to the underside of the E-00900A Right Top Skin.

Rivet the two holes common to the E-00900A Right Top Skin and the E-913 Counterbalance Skin as shown in Figure 2. It is acceptable to use MK-319-BS rivets (not supplied) in place of an AN426AD3-3 rivet. Final-Drill #33 any holes that will be filled with MK-319-BS rivets.

Step 9: Rivet the single hole common to the E-00900A Right Top Skin, E-913 Counterbalance Skin and the top flange of the E-00902-R-1 Front Spar as shown in Figure 2.

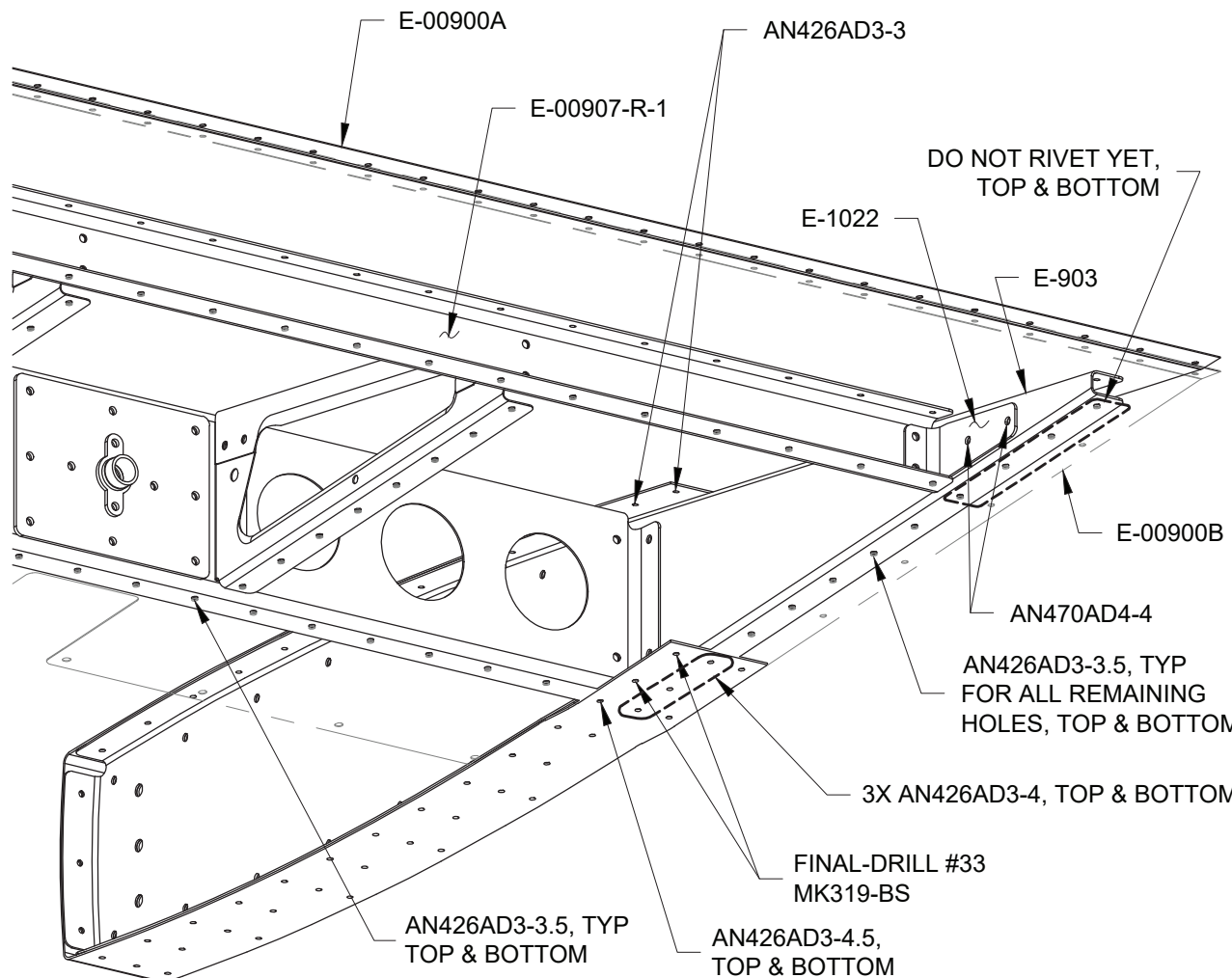
Rivet the E-00900A Right Top Skin and counterbalance skin to the top flange of the front spar as shown in Figure 1.

Rivet the E-00900B Right Bottom Skin and counterbalance skin to the bottom flange of the front spar.

Step 10: Final-Drill #33 the two holes common to the E-00900B Right Bottom Skin and E-913 Counterbalance Skin as shown in Figure 2.

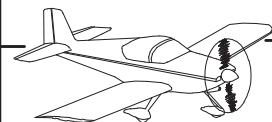
Rivet the two holes common to the right bottom skin and counterbalance skin as shown in Figure 2.

Rivet the right top and right bottom skins to the flanges of the E-903 Outboard Tip Ribs. See Figure 2 for exceptions.



**FIGURE 2: RIGHT ELEVATOR OUTBOARD CLOSE-OUT**





**NOTE: For the elevators, use the information provided in Section 5.8, Page 09-28 and the experience gained previously in riveting trailing edges and installing foam ribs to complete Steps 1-12.**

Step 1: Prep the mating surfaces of the E-00900A, E-00900B, E-00901A and E-00901B Skins and E-01423-L & -R Trailing Edges.

Step 2: Apply double sided tape to both sides of the E-01423-L & -R Trailing Edges as described in Section 5.8.

Step 3: Remove the backing from the tape on the lower mating surfaces of the E-01423-L & -R Trailing Edges and then cleco the trailing edges to the E-00900B and E-00901B Bottom Skins. Allow the tape adhesive to set overnight.

Step 4: Remove the clecos holding the E-01423 Trailing Edge to the E-00900B and E-00901B Bottom Skins.

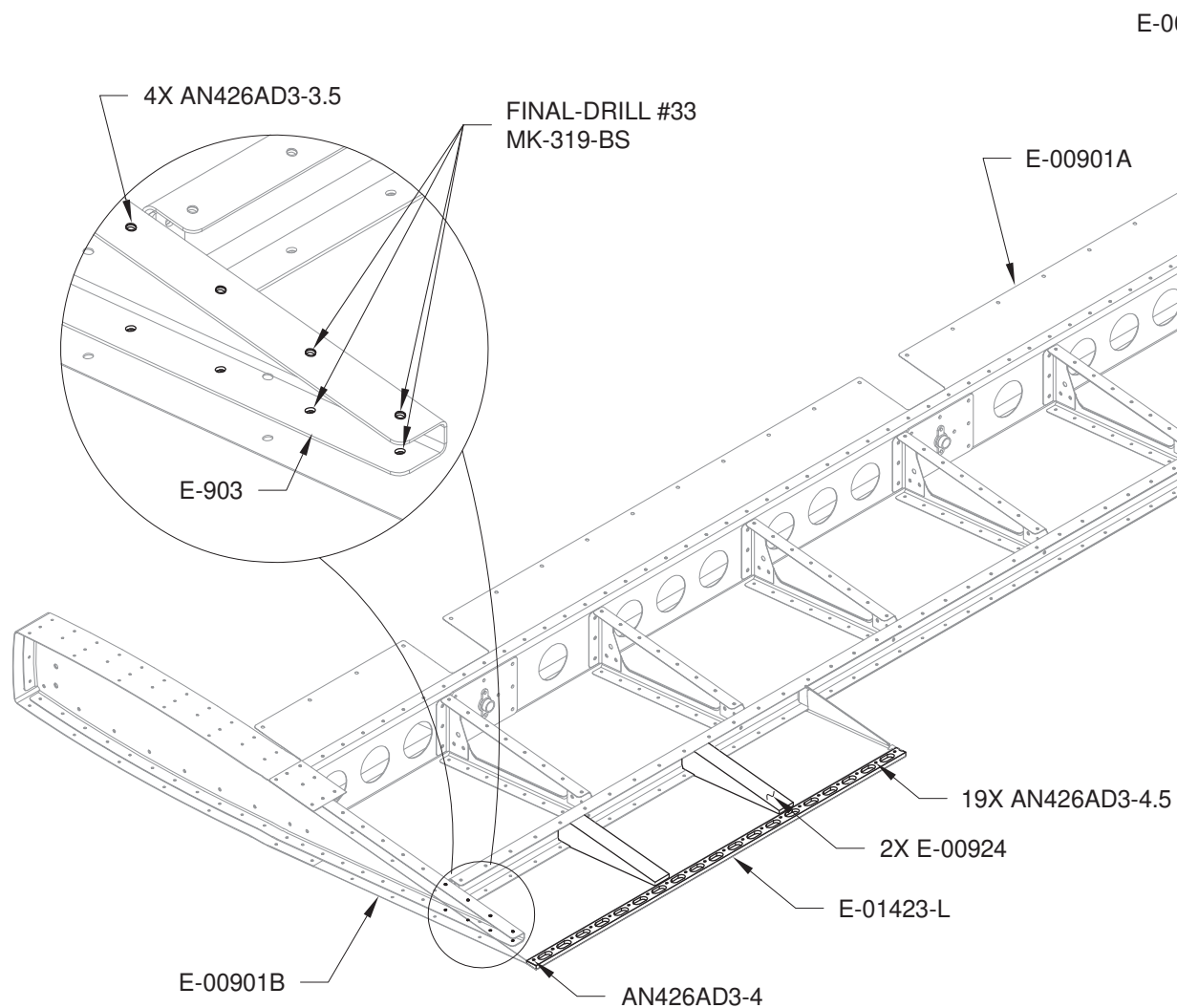
Step 5: Apply tank sealant to the region where the E-00907-L-1/-R-1 Rear Spars meet the skins, in the outboard bay of each elevator. Follow Page 09-20 Steps 7 through 9. Insert the bent tube through the lightening holes of the E-00902-L-1/-R-1 Front Spar in order to reach the front of the Rear Spar.

Step 6: Apply tank sealant in a coat of no more than a 1/32 inch [0.8 mm] thickness to the mating surfaces of two of the E-00924 Trailing Edge Ribs.

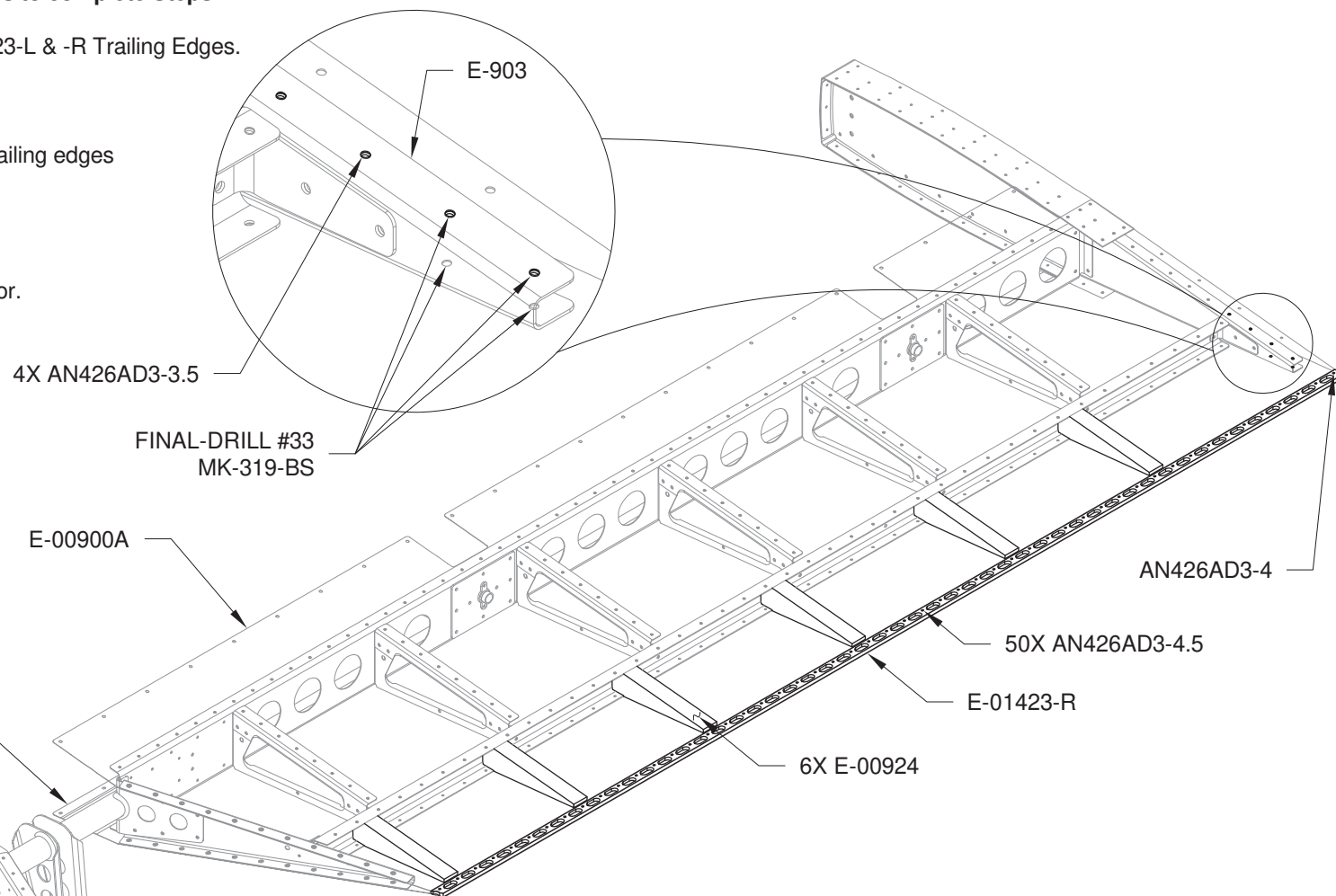
Install the trailing edge ribs into the previously scuffed locations in the Left Elevator as shown in Figure 1 and on Page 09-15, Figure 1.

Step 7: Cleco together the E-00901A and E-00901B Left Skins and the E-01423-L Trailing Edge.

Step 8: Place a weighted board on the left top skin to ensure contact between the skin and the E-00924 Trailing Edge Ribs, then set the Left Elevator aside for a few days to allow the sealant to cure.



**FIGURE 1: FINAL ELEVATOR CLOSE-OUT**



Step 9: Apply tank sealant in a coat of no more than a 1/32 inch [0.8 mm] thickness to the mating surfaces of the remaining E-00924 Trailing Edge Ribs.

Install the trailing edge ribs into the previously scuffed locations in the Right Elevator as shown in Figure 1 and on Page 09-15, Figure 1.

Step 10: Cleco together the E-00900A and E-00900B Right Skins and E-01423-R Trailing Edge.

Step 11: Place a weighted board on the E-00900A Right Top Skin to ensure contact between the skin and the E-00924 Trailing Edge Ribs, then set the Right Elevator aside for a few days to allow the sealant to cure.

Step 12: Rivet the remaining open holes in the E-00900A and E-00900B Right Skins to the E-903 Tip Rib as shown in Figure 1.

Rivet the remaining open holes in the E-00901A and E-00901B Left Skins to the E-903 Tip Rib as shown in Figure 1.

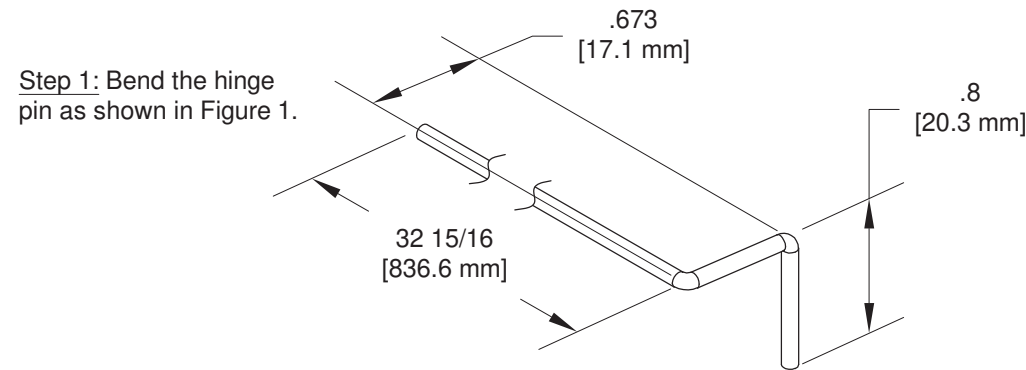
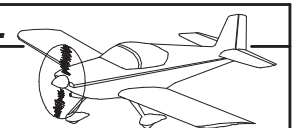
Step 13: Remove the backing from the tape on the upper mating surfaces of the E-01423-L & -R Trailing Edges. Bond the trailing edges to the E-00901A and E-00900A Top Skins as described in Section 5.8.

Double flush rivet the skins to the E-01423-L and E-01423-R Trailing Edges as shown in Figure 1. See Page 09-28 and Section 5.8 more information.

Step 14: Blind rivet the close-out tabs in the E-00901A and E-00901B Skins as shown on Page 09-23, Figure 1.

Step 15: Rivet the remaining holes in the E-00906-1 Right Root Rib as shown on Page 09-22, Figure 2.

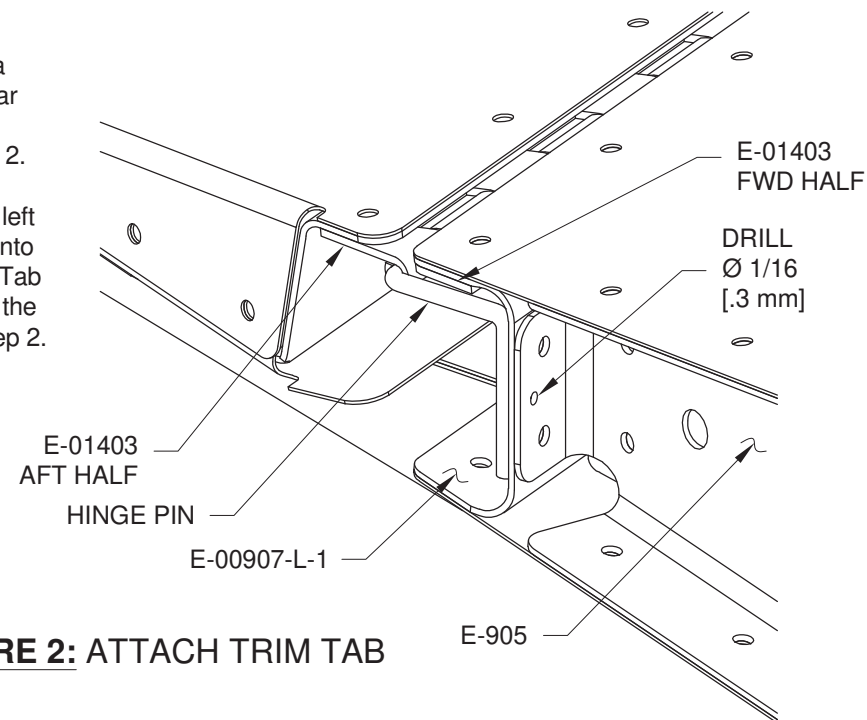




**FIGURE 1: BEND HINGE PIN**

**Step 2:** Drill a 1/16 inch [.3 mm] a hole in the E-00907-L-1 Rear Spar and the aft flange of the E-905 Left Root Rib as shown in Figure 2.

**Step 3:** Attach the trim tab to the left elevator by sliding the hinge pin into both halves of the E-01403 Trim Tab Hinge. Use safety wire to secure the hinge pin to the hole drilled in Step 2.



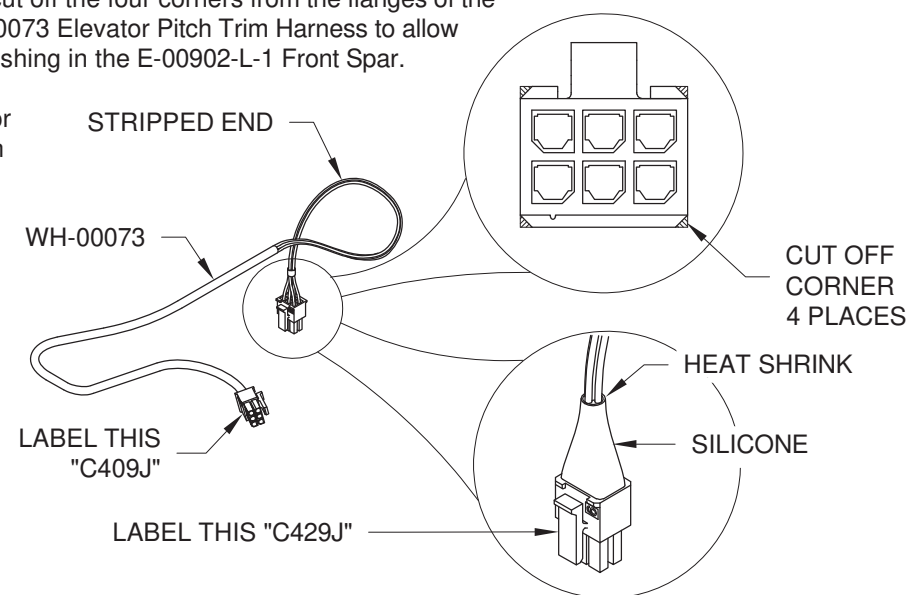
**FIGURE 2: ATTACH TRIM TAB**

**Step 4:** Use a razor blade to cut off the four corners from the flanges of the molex connector in the WH-00073 Elevator Pitch Trim Harness to allow it to pass through the snap bushing in the E-00902-L-1 Front Spar.

Label both ends of the elevator pitch trim harness as shown in Figure 3.

Use silicone to seal the end of the trimmed molex connector. Cover the pins of the molex connector, extending the seal up to the heat shrink as shown in Figure 3.

Allow the silicone to cure.



**FIGURE 3: ELEVATOR PITCH TRIM HARNESS**

**Step 5:** Dimple the #27 holes in the E-01402 Trim Cover Plate as shown in Figure 4.

Machine Countersink the #40 holes in the trim cover plate to fit the head of an AN426AD3 rivet.

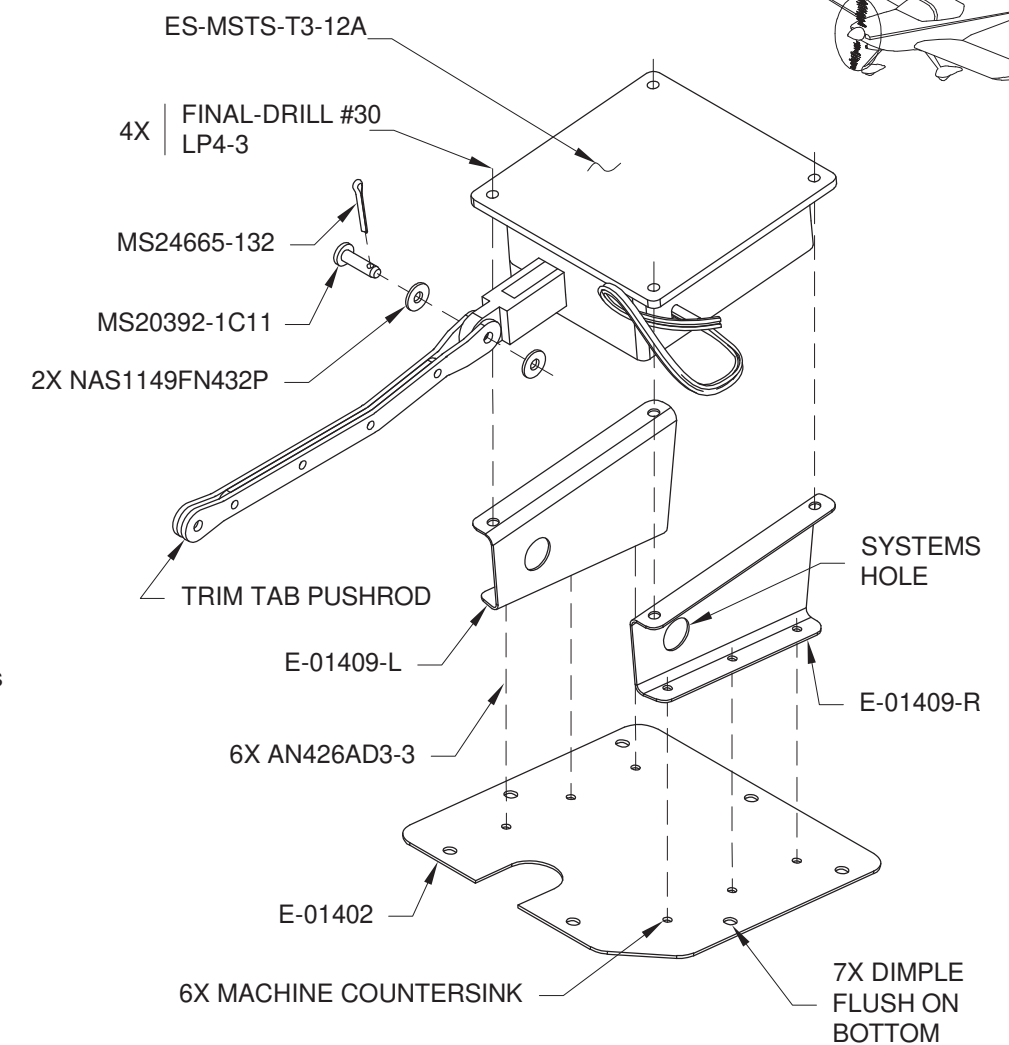
**Step 6:** Rivet the E-01409-L & -R Servo Support C-Channels to the E-01402 Trim Cover Plate as shown in Figure 4.

**Step 7:** Route the ES-MSTS-T3-12A Trim Servo wires through the systems hole in the E-01409-R Servo Support C-Channel.

Final-Drill #30 the ES-MSTS-T3-12A Trim Servo and E-01409-L & -R Servo Support C-Channels as shown in Figure 4.

**Step 8:** Rivet the ES-MSTS-T3-12A Trim Servo to the E-01409-L & -R Servo Support C-Channels as shown in Figure 4.

**Step 9:** Secure the Trim Tab Pushrod to the ES-MSTS-T3-12A Trim Servo as shown in Figure 4.

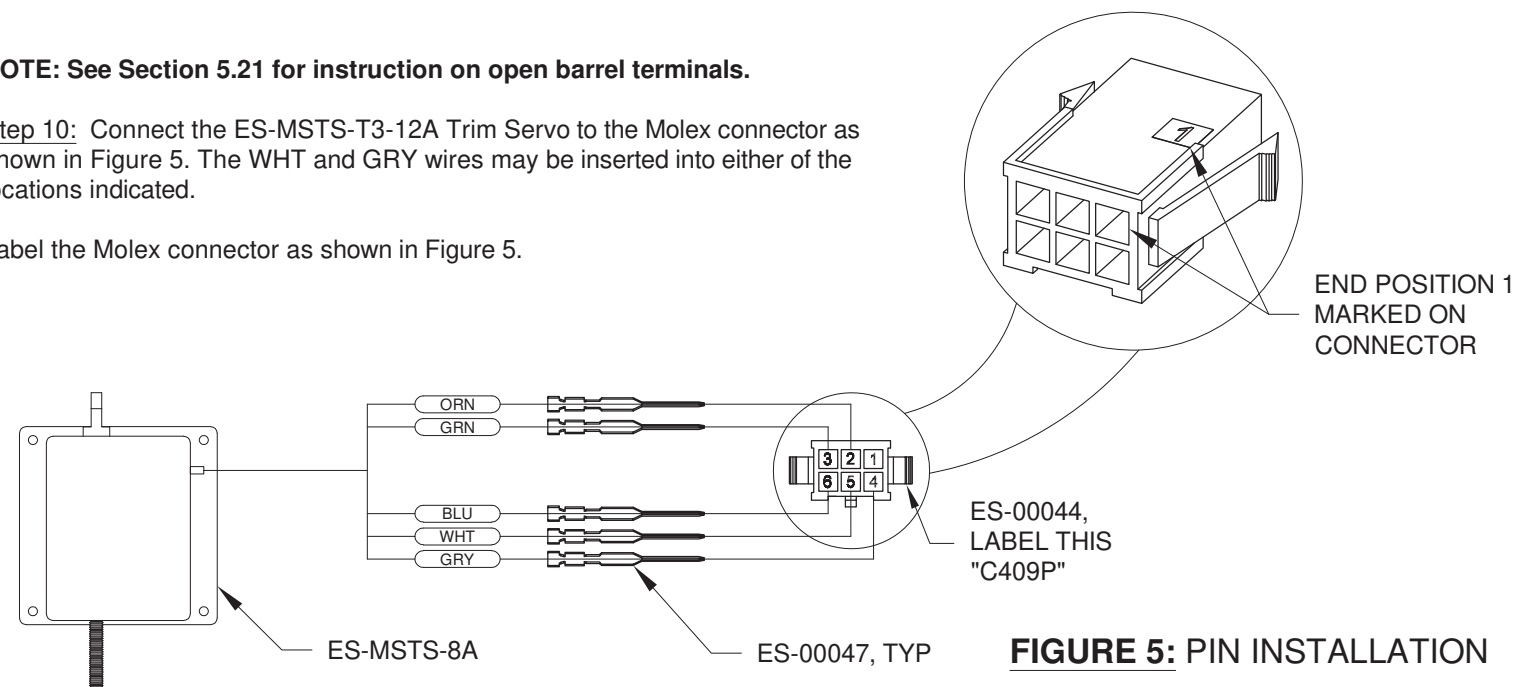


**FIGURE 4: PITCH TRIM SERVO ASSEMBLY**

**NOTE:** See Section 5.21 for instruction on open barrel terminals.

**Step 10:** Connect the ES-MSTS-T3-12A Trim Servo to the Molex connector as shown in Figure 5. The WHT and GRY wires may be inserted into either of the locations indicated.

Label the Molex connector as shown in Figure 5.



**FIGURE 5: PIN INSTALLATION**



Step 1: Connect C409J to C409P.

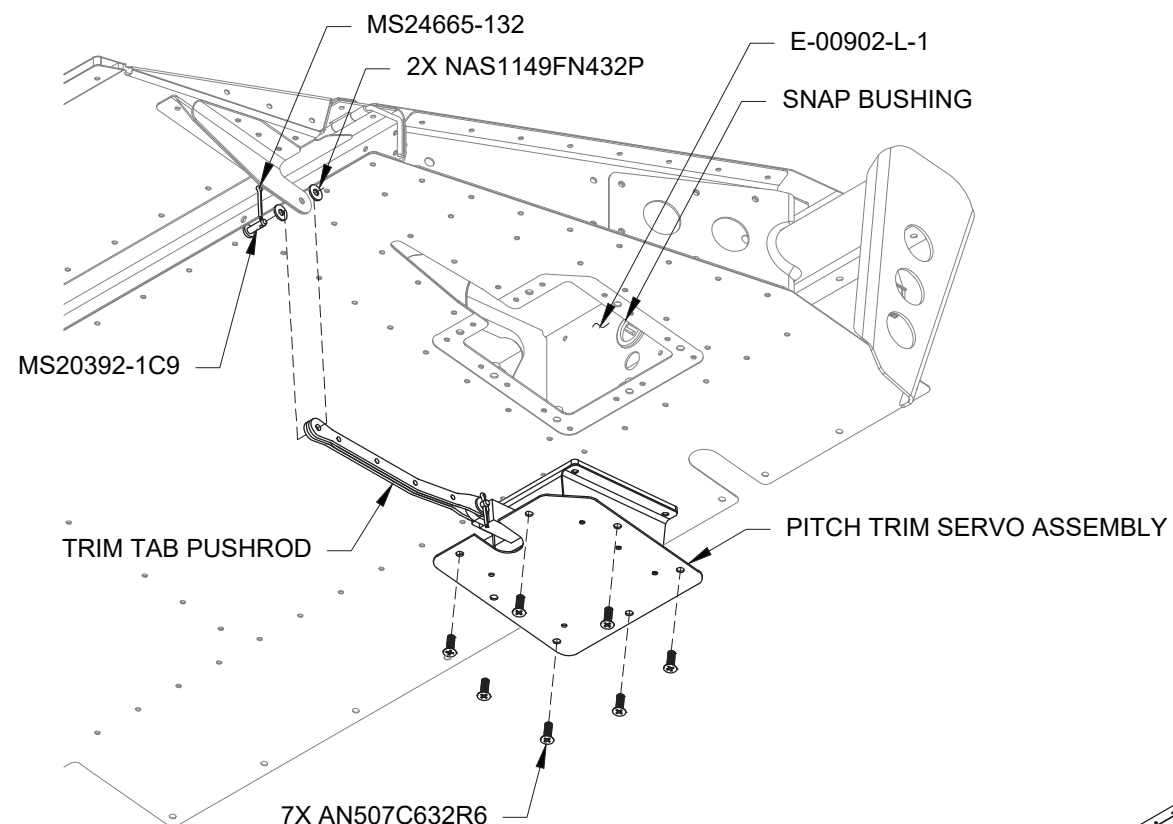
Step 2: Route the WH-00073 Elevator Pitch Trim Harness forward through the snap bushing in the E-00902-L-1 Front Spar.

Step 3: Install the Pitch Trim Servo Assembly into the left Elevator as shown in Figure 1.

Step 4: Wrap the free end of the WH-00073 Elevator Pitch Trim Harness around the WD-605-L-1 Left Elevator Horn as shown in Figure 2.

Use a piece of tape to temporarily secure the harness to the left elevator horn.

Step 5: Attach the Trim Tab Pushrod to the Trim Tab as shown in Figure 1.



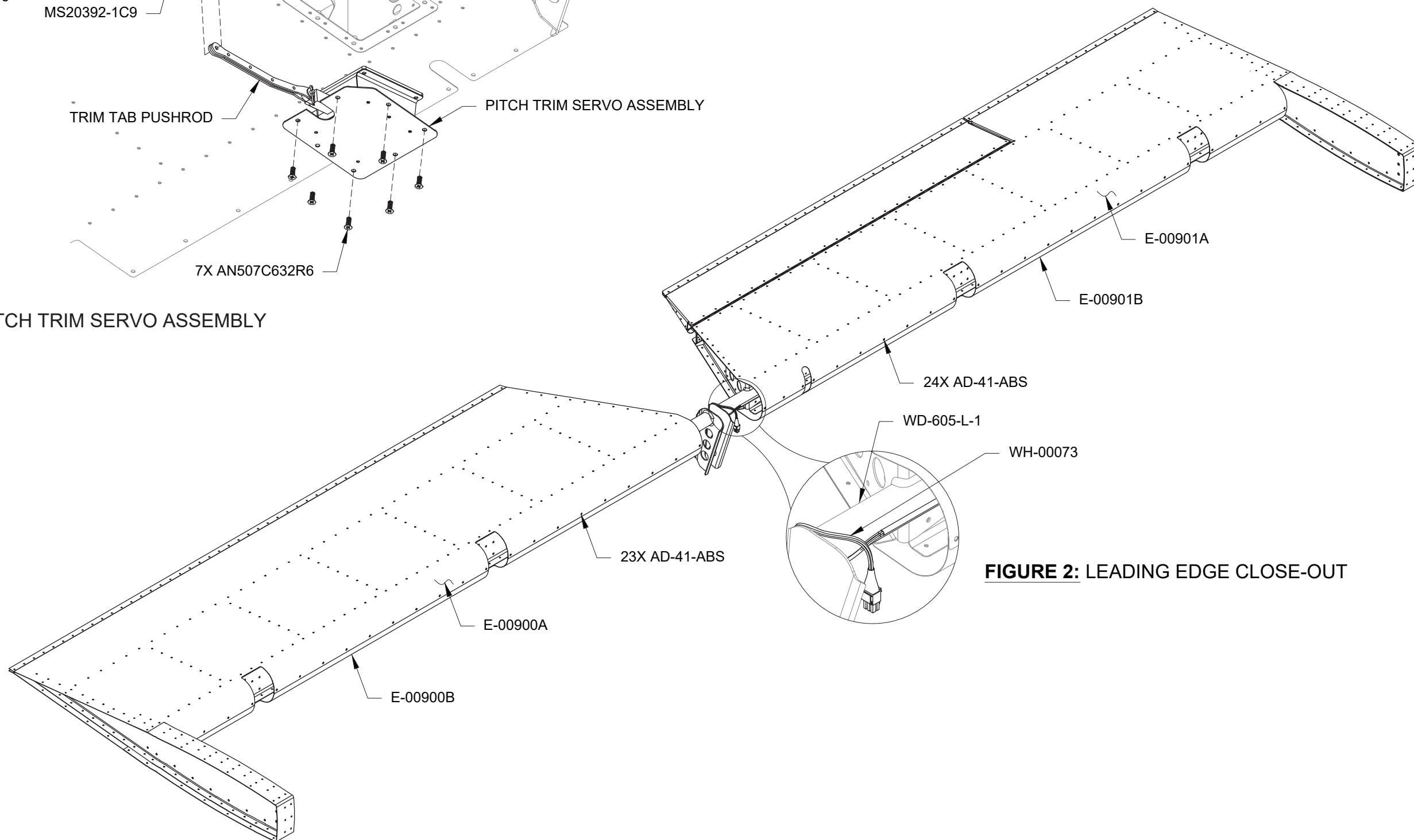
Step 6: Make a slight break along the leading edge of the E-00901A Left Top Skin and E-00900A Right Top Skin. See Section 5.10 for more information.

Roll the leading edges of the E-00901A, E-00901B, E-00900A and E-00900B Skins. See Section 5.9 for more information.

Cleco the leading edges together with the E-00901A Left Top Skin overlaying the E-00901B Left Bottom Skin, and the E-00900A Right Top Skin overlaying the E-00900B Right Bottom Skin as shown in Figure 2.

Step 7: Rivet the E-00900A, E-00900B, E-00901A and E-00901B Skins together as shown in Figure 2.

**FIGURE 1: INSTALL PITCH TRIM SERVO ASSEMBLY**



**FIGURE 2: LEADING EDGE CLOSE-OUT**



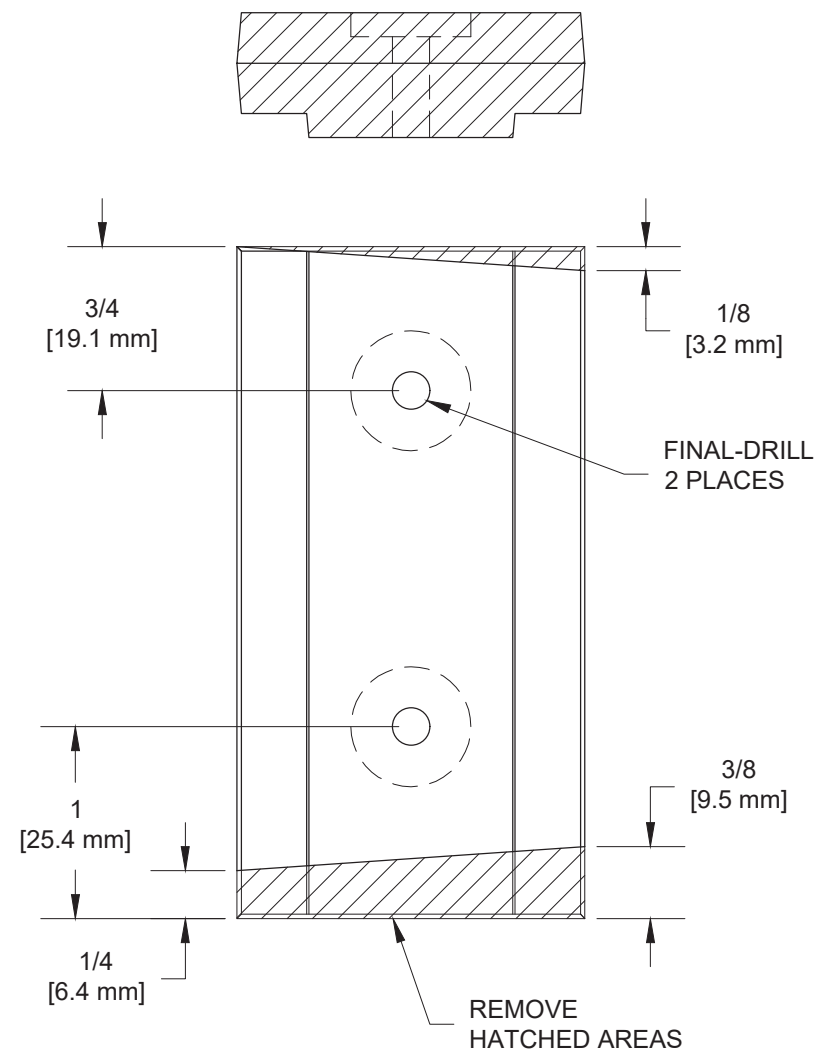
Step 1: Final-Drill #12 the holes the E-614 Counterweights as shown in Figure 1.

**NOTE: The two holes are closer to the top edge of the E-614 Counterweight.**

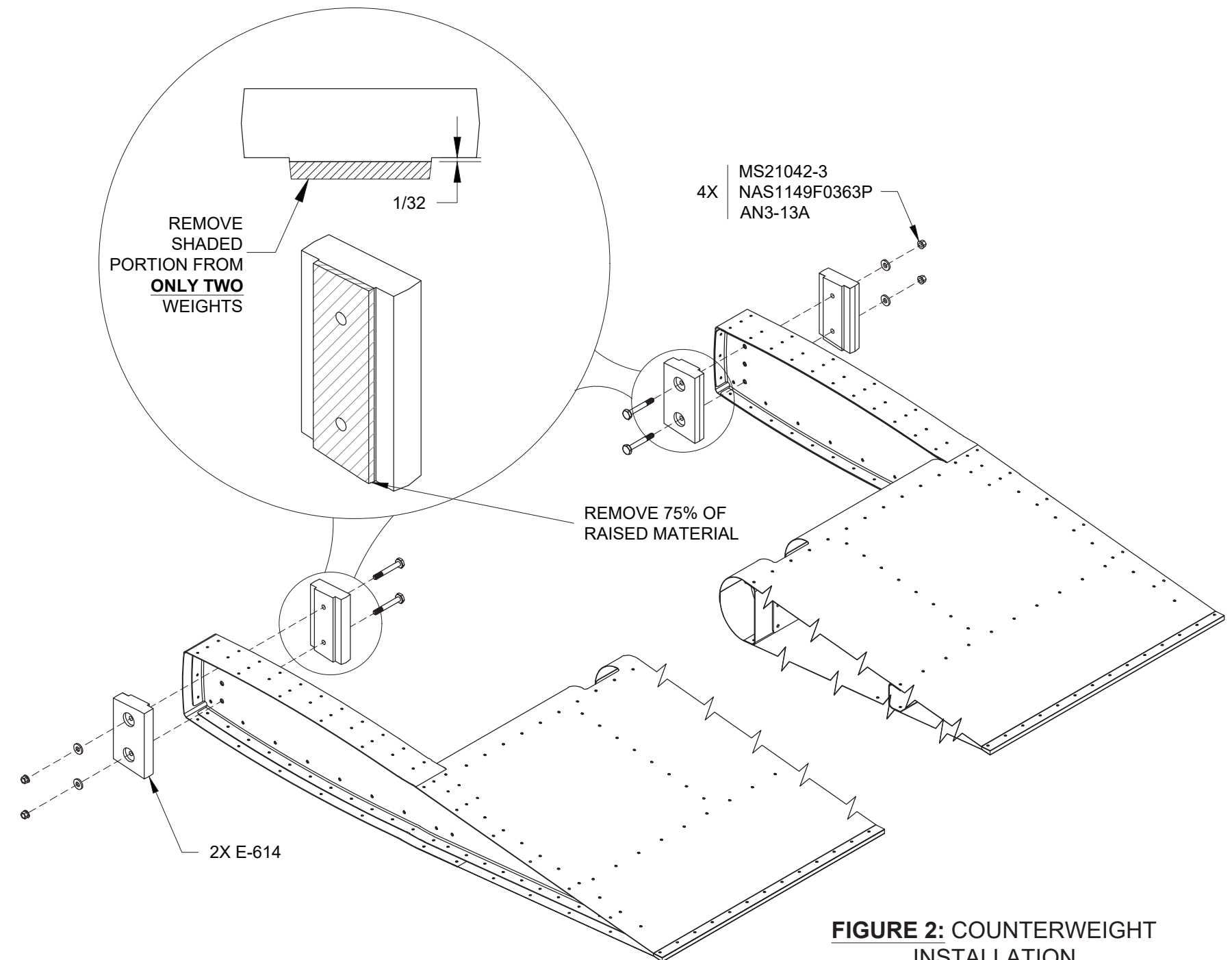
Step 2: Remove the hatched areas from the E-614 Counterweights as shown in Figure 1.

Step 3: On two of the counterweights (one per elevator), remove the shaded area as shown in Figure 2, which consists of 75% of the raised thickness. This will leave 1/32" of raised material.

Step 4: Install the E-614 Counterweights as shown in Figure 2.



**FIGURE 1:**  
TRIM COUNTERWEIGHTS



### **FIGURE 2: COUNTERWEIGHT** **INSTALLATION**

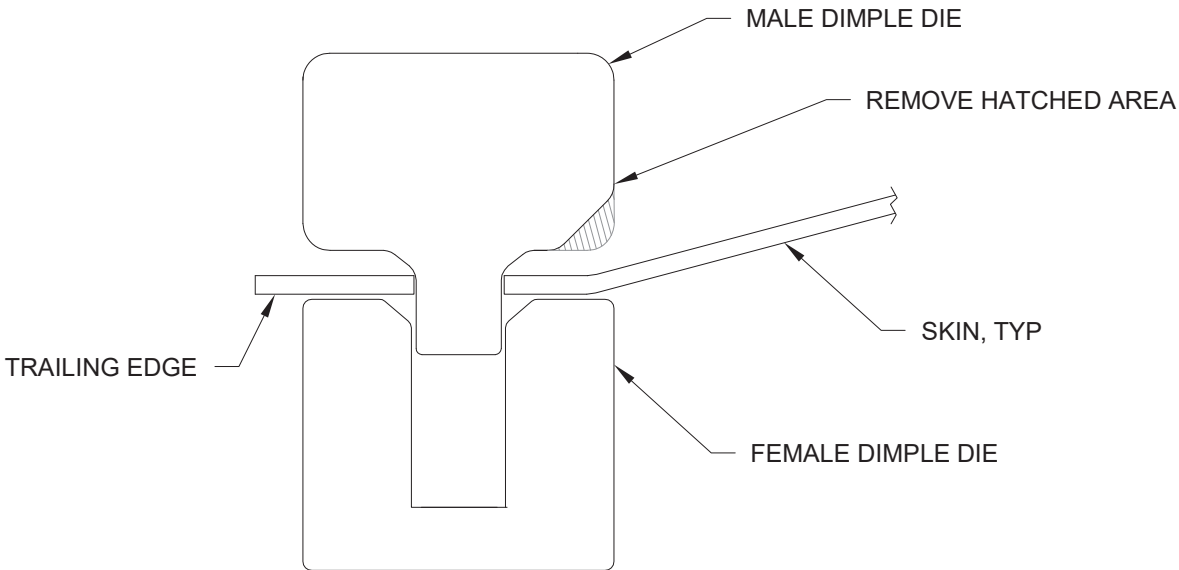


**NOTE: Use the following steps to dimple the bent trailing edges of the Elevators and Elevator Trim Tab. See Section 5.5 for more information about dimpling.**

Step 1: Modify a male dimple die on one side as shown in Figure 1. The modified dimple die must avoid the bend in the trailing edge when fully inserted into the holes in the trailing edge of the skin.

Many companies sell "economy" dimple dies.

Step 2: Use the modified dimple die to dimple the trailing edge as shown in Figure 1.



**FIGURE 1: TRAILING EDGE DIMPLING**

**NOTE: Use the following steps as a reference when riveting the trailing edges of the Elevators and Elevator Trim Tab. See Section 5.8 for more information on riveted trailing edges.**

Step 1: Cleco together the skins and trailing edge.

Step 2: Remove a cleco and insert a rivet into the hole. For best appearances, place the manufactured head in the top skin of the Elevator or Trim Tab.

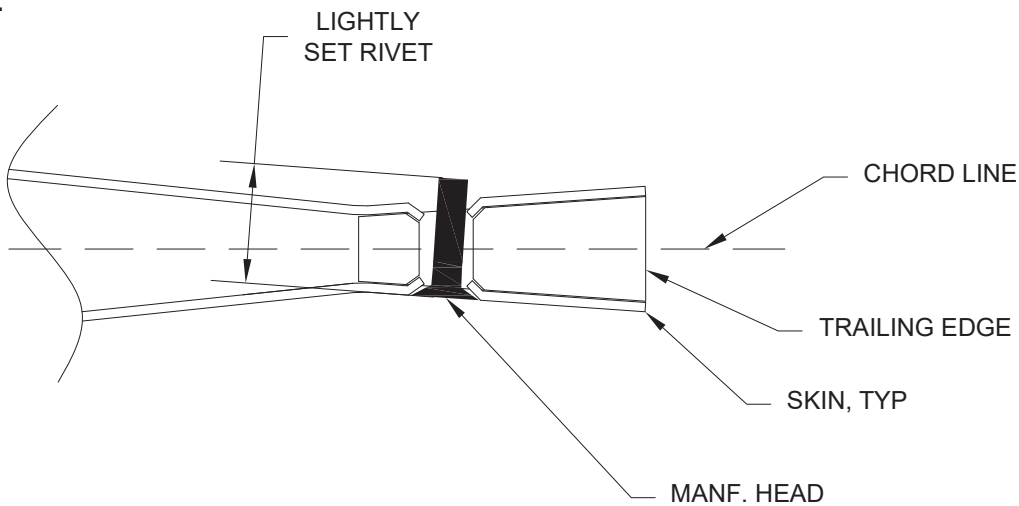
Lightly set the rivet by squeezing perpendicular to the manufacturer head skin face as shown in Figure 2.

Step 3: Shim the Elevator or Trim Tab up from the work table surface until the trailing edge skin rests parallel with the back riveting plate as show in Figure 3.

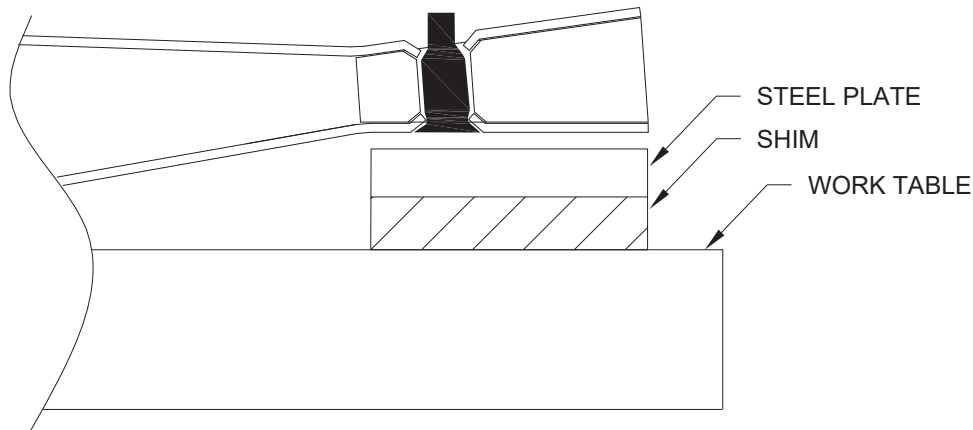
Step 4: Use a rivet gun with a flat faced, small diameter rivet set to fully set both sides of the rivet parallel to the skins as shown in Figure 4.

Use a low setting on the rivet gun. The shop head of the rivet will not completely fill the dimple.

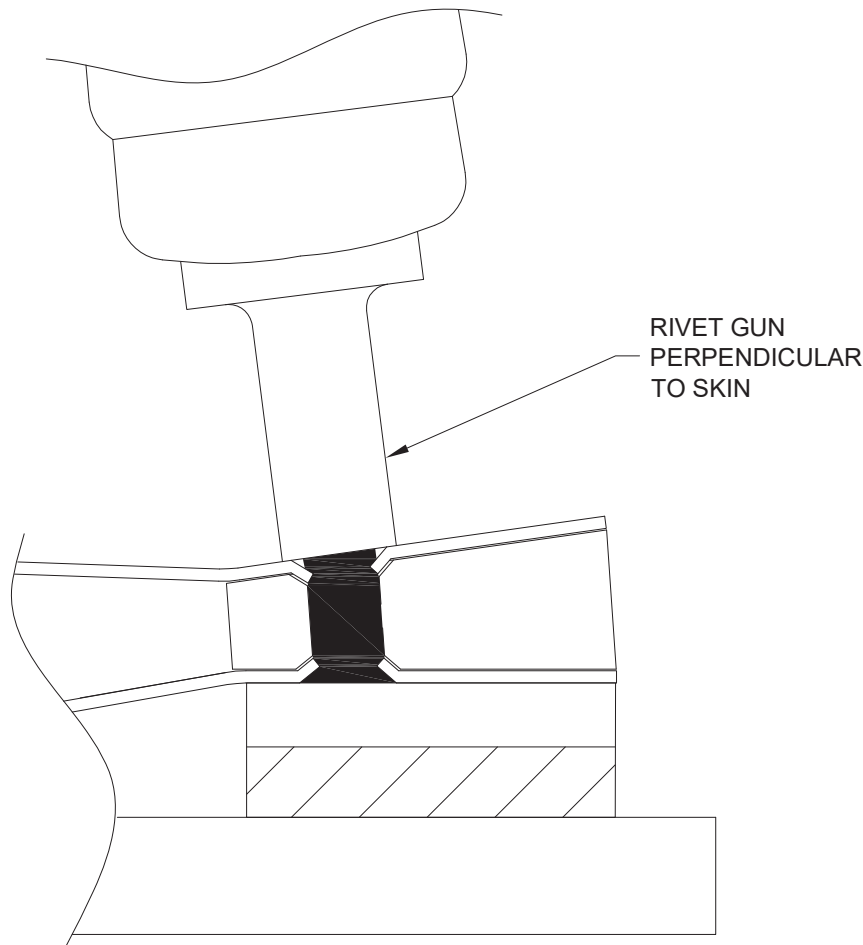
Weight the Elevator and tape it to the back riveting plate to prevent it from slipping off the rivet plate during riveting.



**FIGURE 2: RIVETING THE TRAILING EDGE, INITIAL**

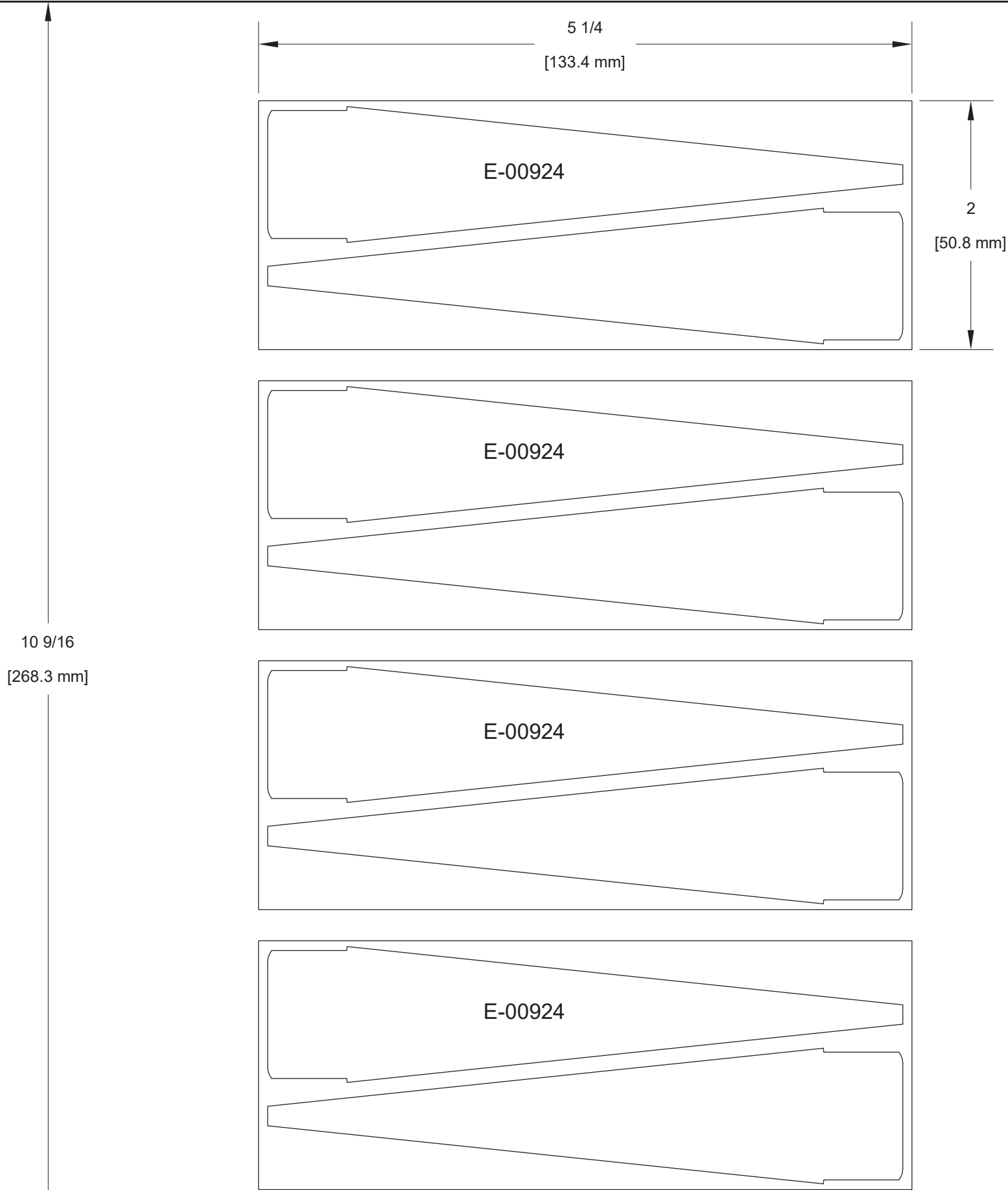


**FIGURE 3: BACK RIVET SETUP**



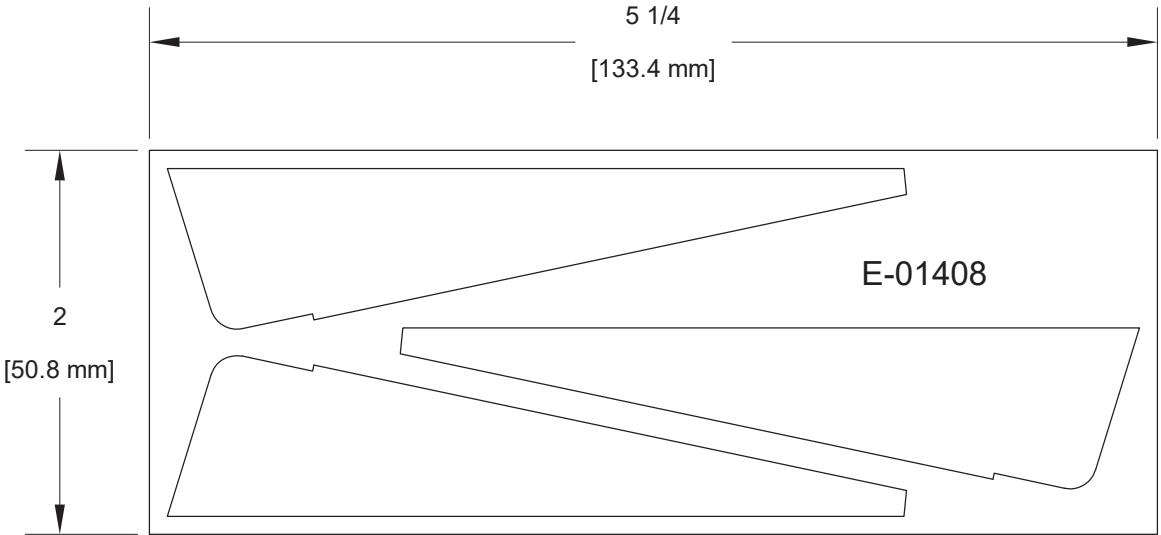
**FIGURE 4: DOUBLE FLUSH RIVETING THE TRAILING EDGE**





**FIGURE 1: TRAILING EDGE RIB TEMPLATE**

NOTE: CHECK PRINTED SCALE 1:1 PER SECTION 3 BEFORE USING THE TEMPLATES!



**FIGURE 2: TRIM TAB RIB TEMPLATE**

NOTE: CHECK PRINTED SCALE 1:1 PER SECTION 3 BEFORE USING THE TEMPLATES!



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