

TOTAL PERFORMANCE
VAN'S AIRCRAFT

14401 Keil Road NE, Aurora, Oregon, USA 97002
PHONE 503-678-6545 • FAX 503-678-6560 • www.vansaircraft.com • info@vansaircraft.com
Service Letters and Bulletins: www.vansaircraft.com/public/service.htm

REVISION DESCRIPTION:

Page 08-01 REV 1: Inboard rib call-out "HS-1230, INBD RIB" was "HS-1222, AST RIB, 4 PLACES / SIDE"

Revised depiction of inboard rib, HS-1230 was HS-1222.

Page 08-02 REV 1: Step 3: Rewritten to include instructions for an upgraded inboard rib.

Revised Figures 2, 3, and 4 and corresponding call-outs to depict HS-1230.

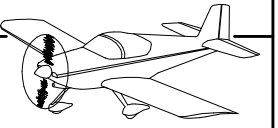
Page 08-03 REV 1: In Step 1, HS-1220-R was F-1220-R.

Revised Step 3 for the HS-1230 Inbd Rib.

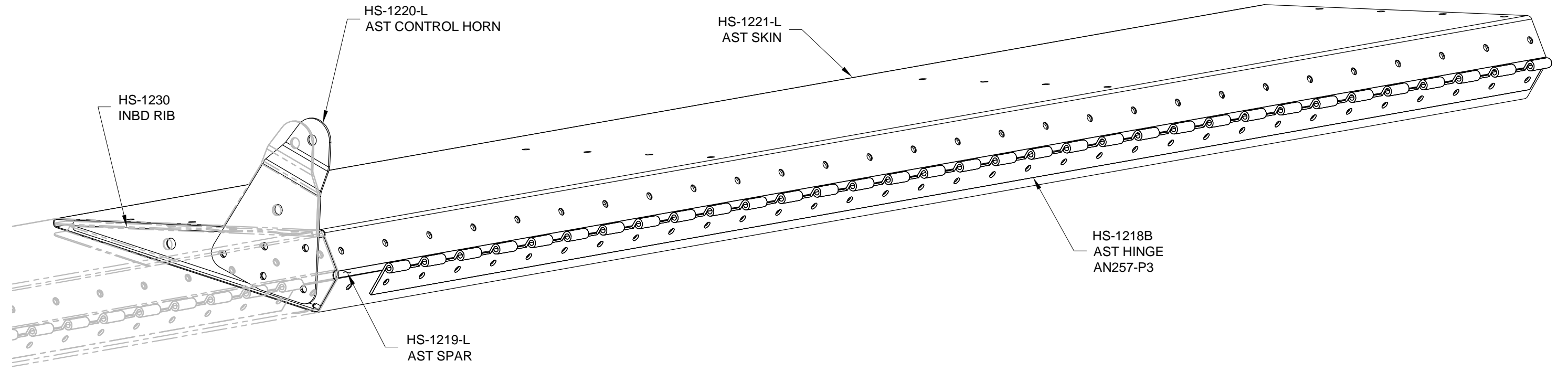
Revised Figures 2, 4 and corresponding call-outs to depict HS-1230.

Page 08-04 REV 1: Rewritten to include the HS-1230 Inbd Rib.

Revised Figure 1, 2, 3 to depict HS-1230.



SECTION 8: ANTI-SERVO TAB (AST)



NOTE: This section describes the Anti-Servo Tab (AST) construction for the left side. Construction for the right side is a mirror of the left, and should be done at the same time.

Step 1: Read all steps prior to construction.

Step 2: Remove the material shown hatched from the bottom half of the HS-1221-L AST Skin as shown in Figure 1.

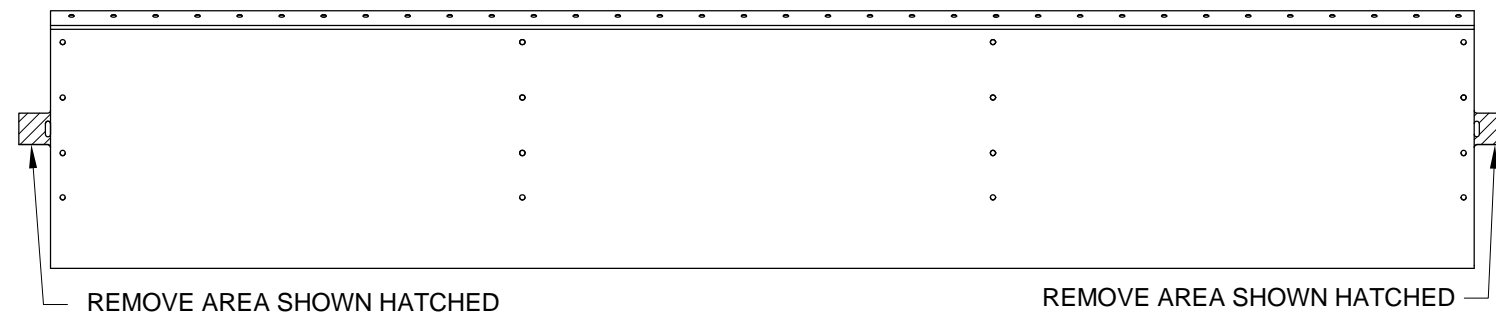


FIGURE 1:
HS-1221-L TAB REMOVAL

NOTE: The top surface and inboard end of the HS-1221-L AST Skin can be identified by the AST Control Horn cutout, called out in Figure 4.

Step 3: Cleco the top and bottom flanges of the four ribs and the HS-1219-L AST Spar (not shown) to the inside of the HS-1221-L AST Skin. See Page 08-03, Step 4 instructions for positioning the spar. Orient the flanges of the three inboard ribs to point outboard. Orient the flanges of the outboard rib to point inboard as shown in Figure 2.

NOTE: When drilling the HS-1230 Inbd Rib's two forward flanges use a new bit, high speed, and very little pressure to avoid drilling the hole off-center. Be patient. This takes time.

Match-Drill the HS-1230 Inbd Rib flanges at the spar using the holes in the skin and spar as guides.

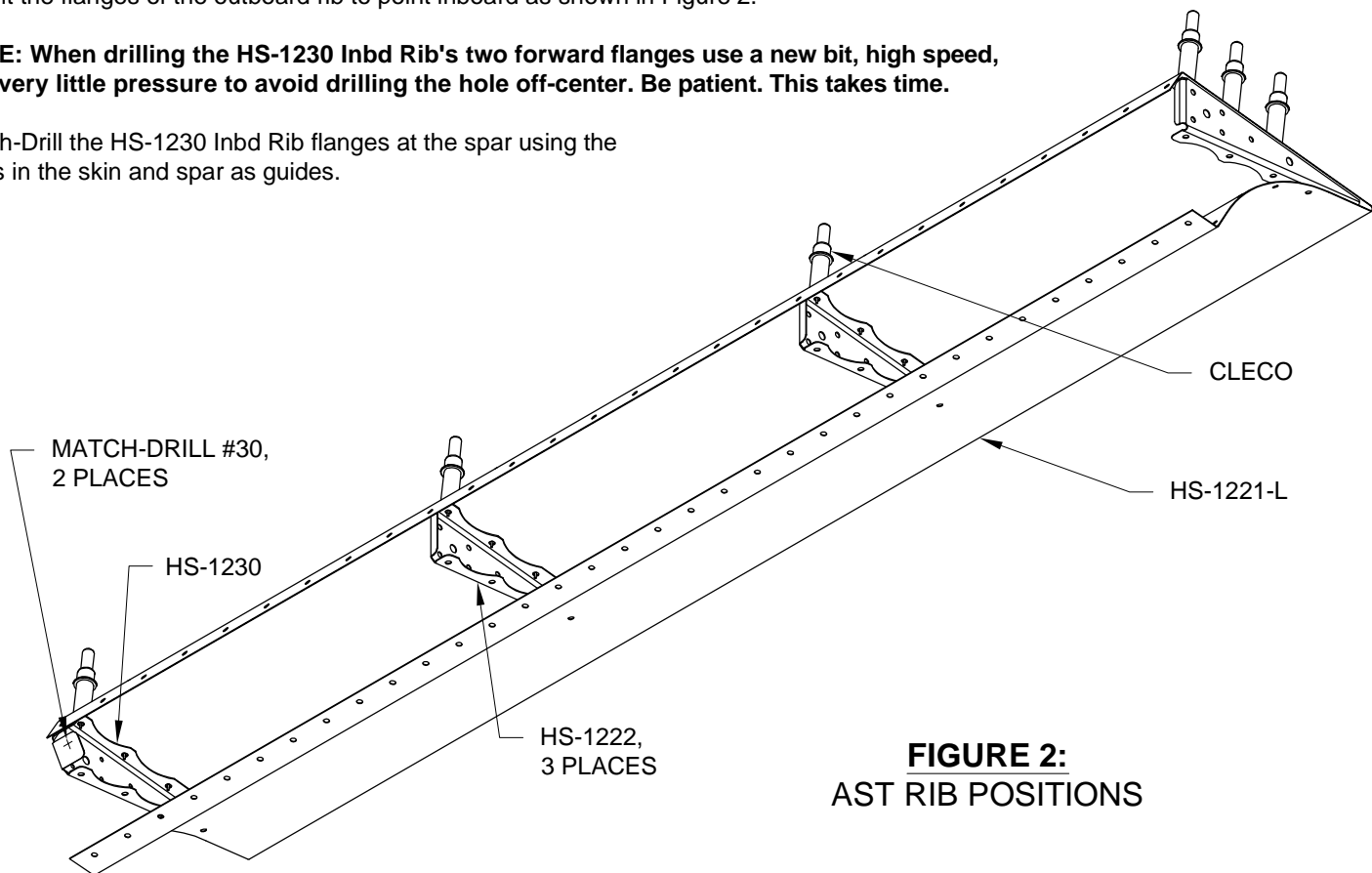


FIGURE 2:
AST RIB POSITIONS

Step 4: Final-Drill #30 the four ribs using the holes in the HS-1221-L AST Skin nearest to the trailing edge as a guide. Mark the rib locations to return them to the same position as drilled for final assembly.

Disassemble, deburr holes and remove any chips.

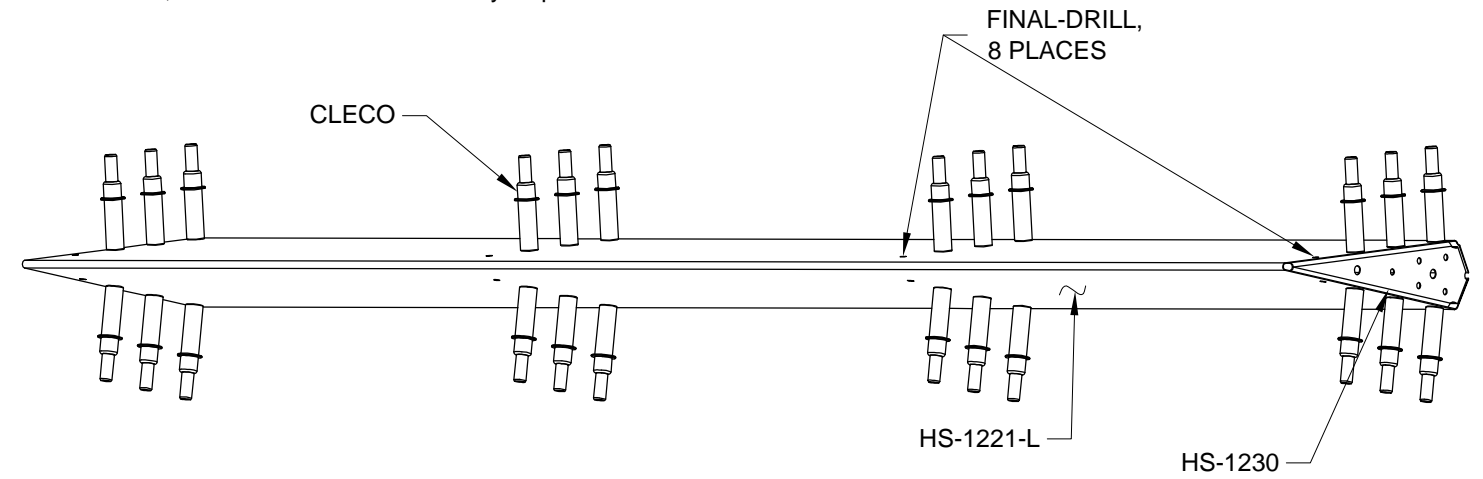


FIGURE 3:
MATCH-DRILL RIBS

Step 5: Rivet only the top flange of the four ribs inside the top surface of the HS-1221-L AST Skin per the rivet call-out in Figure 4.

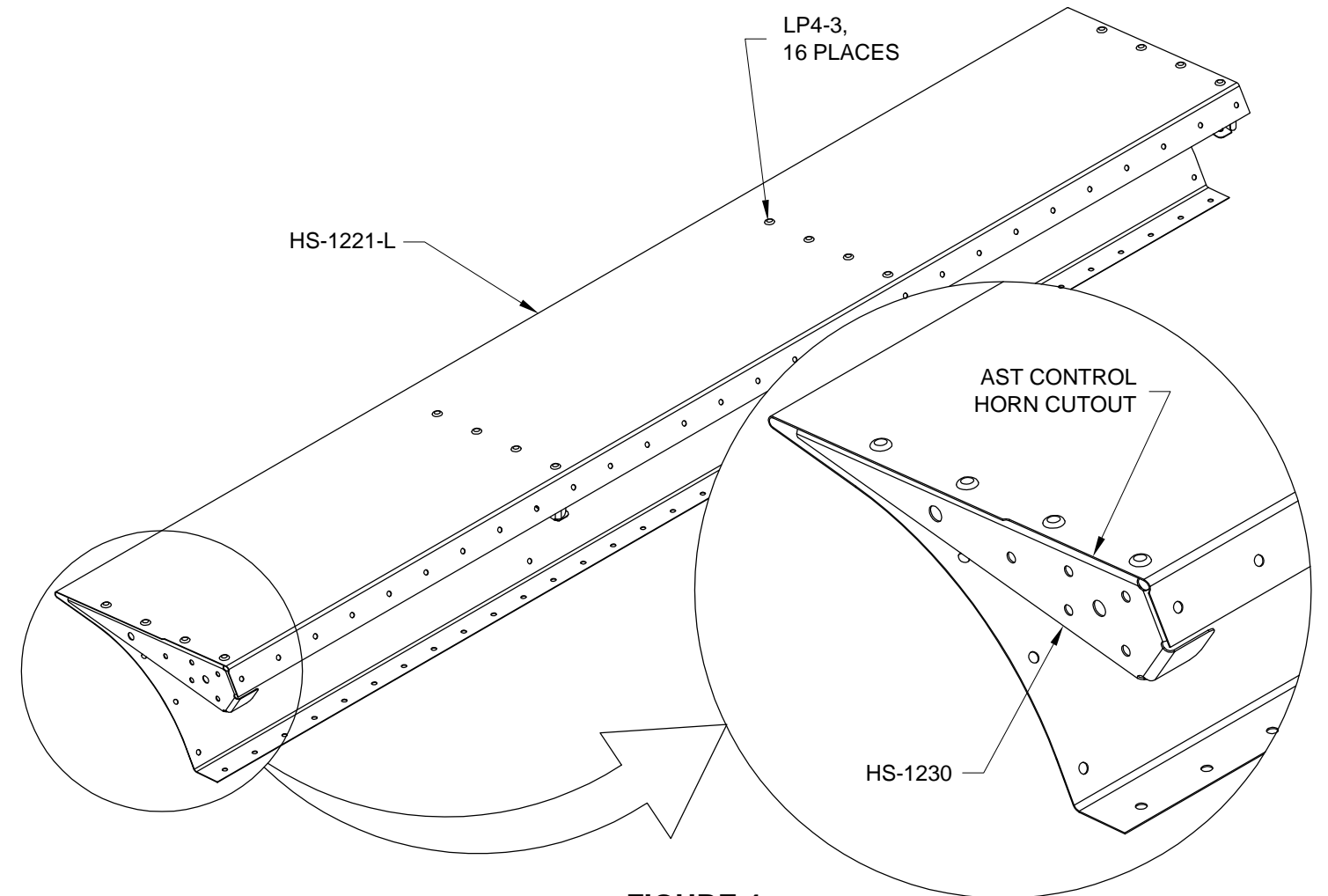
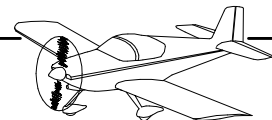


FIGURE 4:
AST SKIN RIVETS



Step 1: Mark and separate the HS-1220-LR AST Control Horns per call-outs in Figure 1.

Step 2: Machine countersink the HS-1220-L AST Control Horn for a 3/32 inch rivet per call-out in Figure 2.

Step 3: Orient the AST Control Horn to pass through the AST control horn cut-out. Rivet the HS-1220-L AST Control Horn to the HS-1230 Inbd Rib as shown in Figure 2.

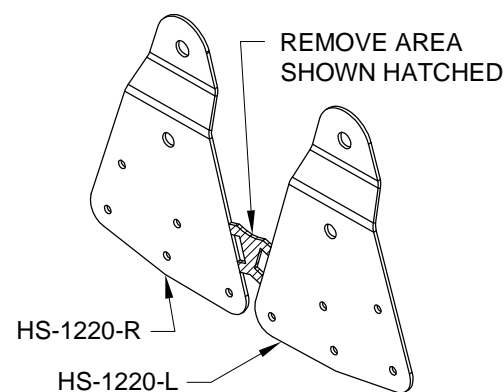


FIGURE 1:
AST CONTROL HORN SEPARATION

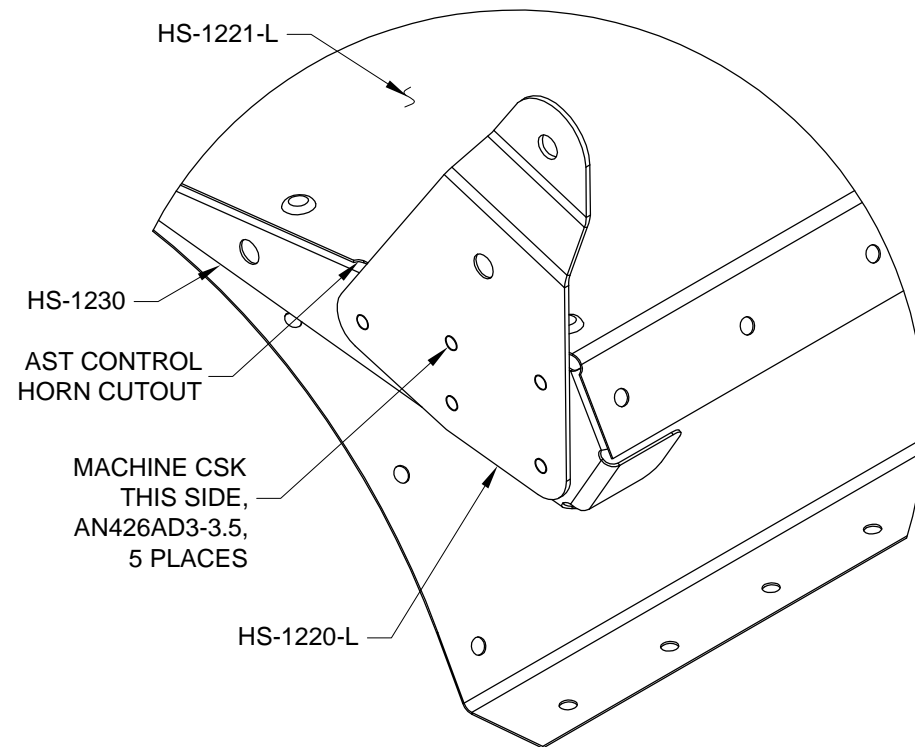


FIGURE 2:
AST CONTROL HORN INSTALLATION

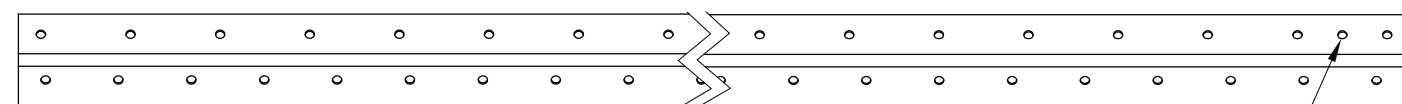


FIGURE 3:
HS-1219-L REFERENCE HOLE

CAUTION: Rivet only the upper flange of the skin to the spar at this time per Step 4.

Step 4: The HS-1219-L AST Spar must be installed on the inside surface of the HS-1221-L AST Skin as shown in Figure 4. The reference hole in the spar, shown in Figure 3, must be oriented up and outboard. Rivet the spar to the skin per the call-out in Figure 4. Omit the reference hole when riveting.

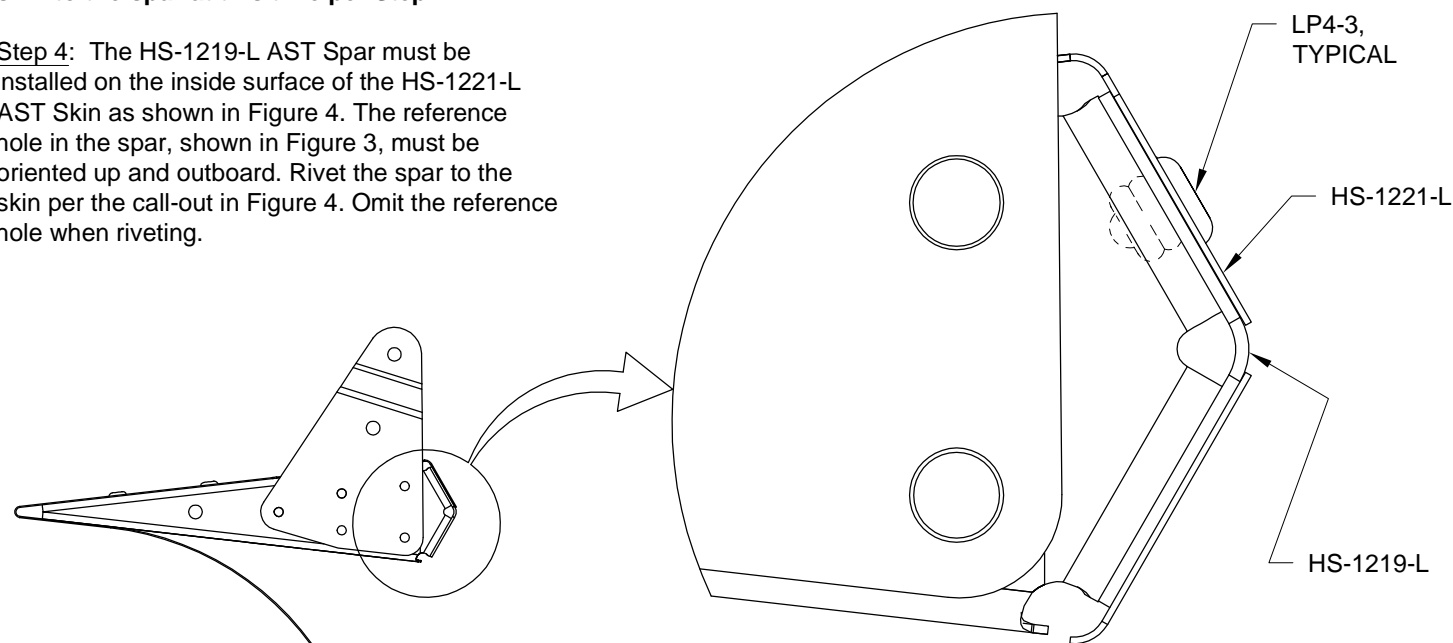


FIGURE 4:
AST SPAR INSTALLATION

Step 5: Remove the hinge pin from one AN257-P3X6' (also known as MS20257-3) Piano Hinge. Cut each of the hinge halves into two lengths per dimensions given in Figure 5.

Locate cuts so that there are hinge eyelets at both ends of all four hinge halves.

Two hinge half lengths will be the left and right HS-1218B AST Hinges. The other two lengths will be the left and right HS-1218A Aft Stab Hinges. The aft stab hinges will be installed during Section 9, Stabilator Assembly. The hinge pins will be installed during Section 11, Empennage Attach.

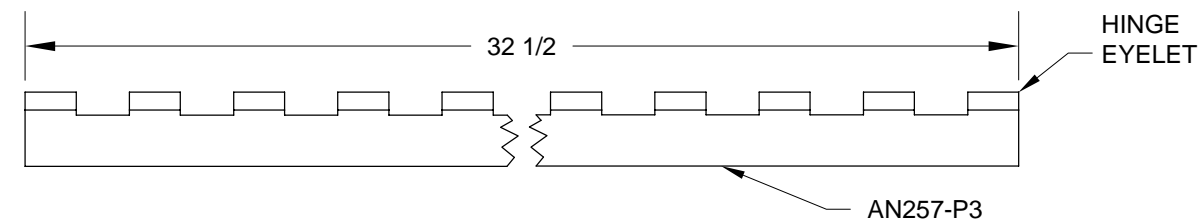
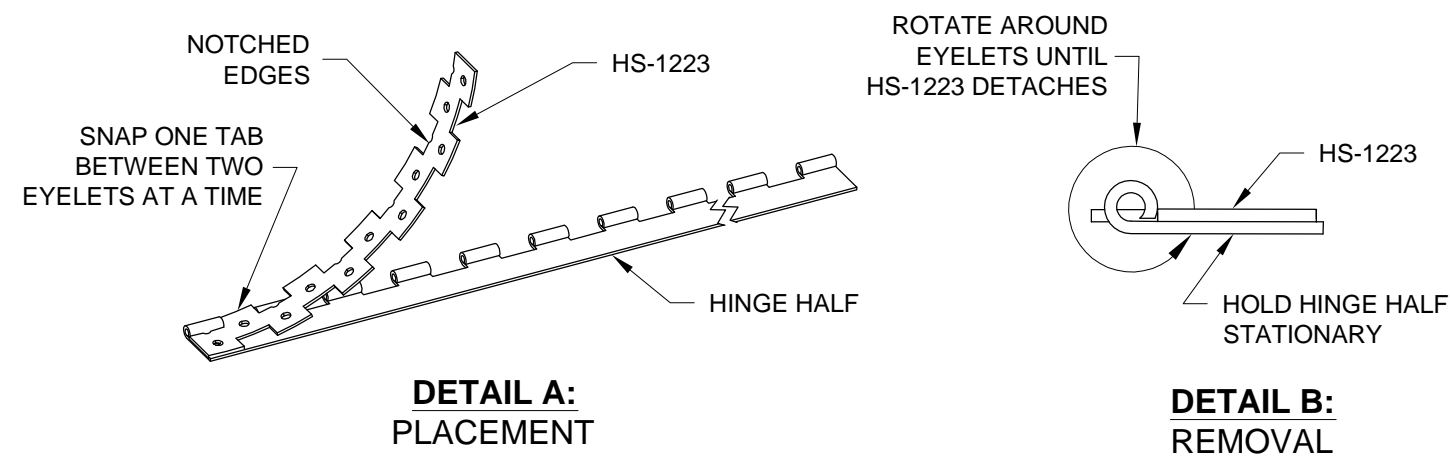


FIGURE 5:
MAKE FOUR HINGE HALVES

NOTE: Save the HS-1223 Drill Guide called out in Figure 6 and 7, it will be used again during Section 9, Stabilator Assembly.

Step 6: Position the HS-1223 Drill Guide per Figure 6, Detail A. Orient the notched edges of the drill guide adjacent to the eyelets of the AST hinge half, then clamp the drill guide onto the AST hinge half.



DETAIL A:
PLACEMENT

DETAIL B:
REMOVAL

FIGURE 6:
DRILL GUIDE TIPS

Step 7: Match-Drill #30 the Hinge Half, using the HS-1223 Drill Guide per Figure 7. Refer to Figure 6, Detail B to remove the drill guide. Repeat Step 6 and Step 7 until the entire hinge half has been drilled to make the HS-1218B AST Hinge Half.

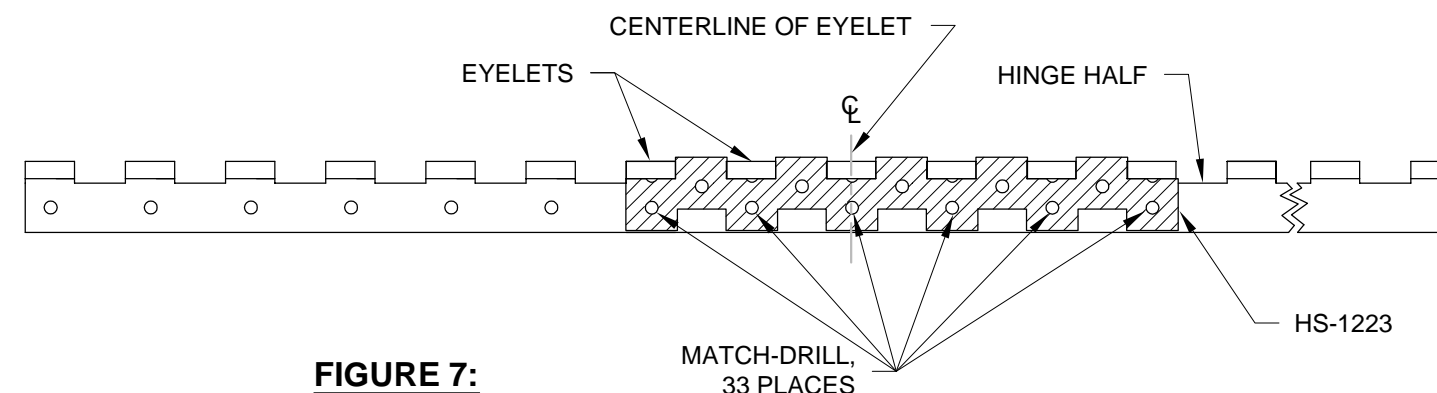
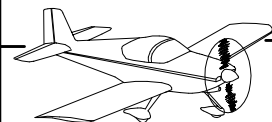


FIGURE 7:
DRILLING THE AST HINGE



Step 1: Rivet the bottom surface of the HS-1221-L AST Skin to the HS-1222 AST Ribs and the HS-1230 Inbd Rib per the rivet call-out in Figure 1. Guide the lower flange of the AST skin to the outside surface of the HS-1219-L Spar as shown in Figure 2.

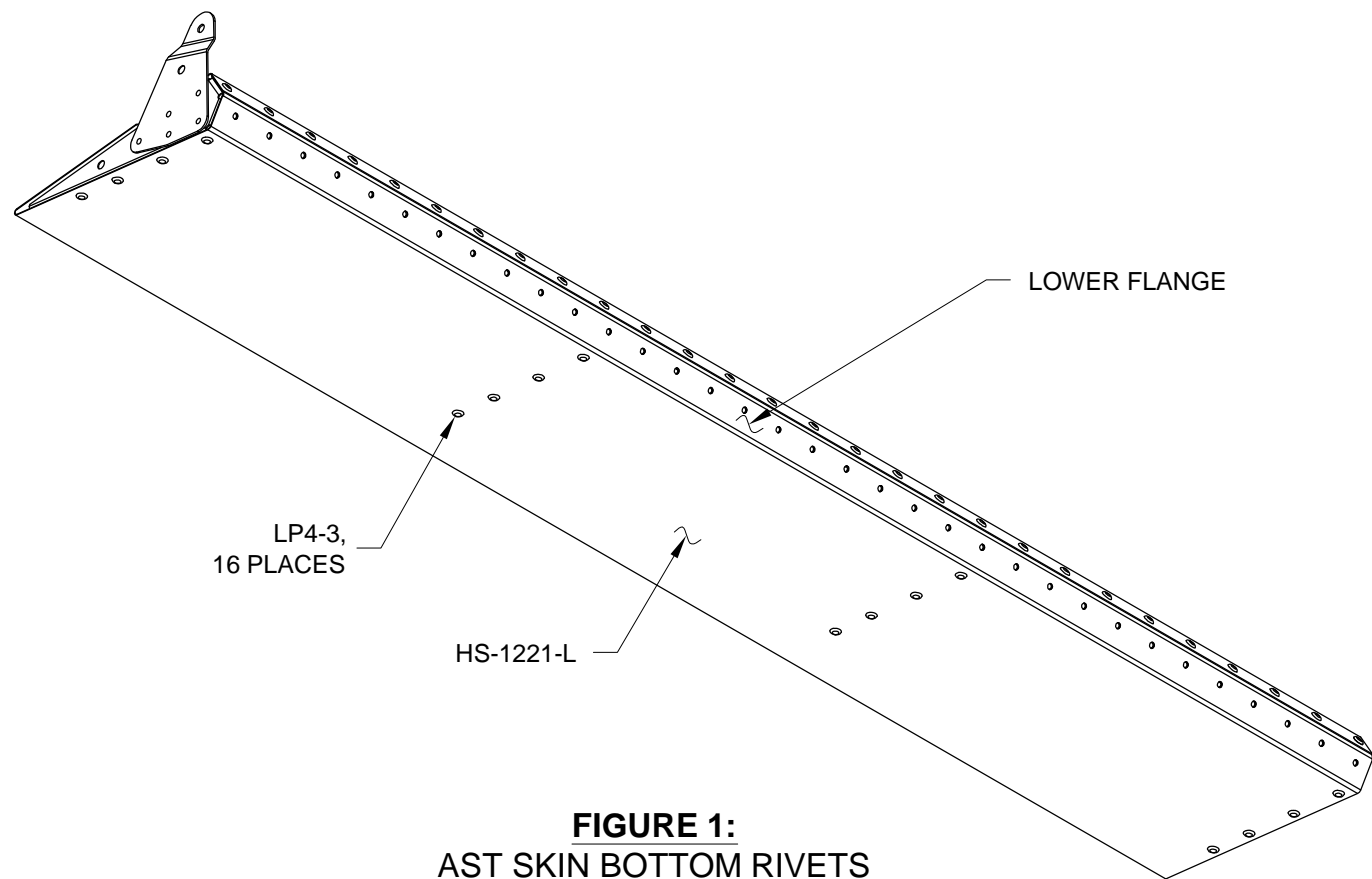


FIGURE 1:
AST SKIN BOTTOM RIVETS

Step 2: Install the AST Hinge with eyelets outward, as shown in Figure 2. Rivet the HS-1218B AST Hinge to the HS-1221-L AST Skin, the HS-1219-L AST Spar and HS-1230 Inbd Rib per call-outs in Figure 3. Begin at the hole farthest from the HS-1220-L AST Horn.

Hereafter refer to this as the AST Assembly Left and the opposite assembly as the AST Assembly Right.

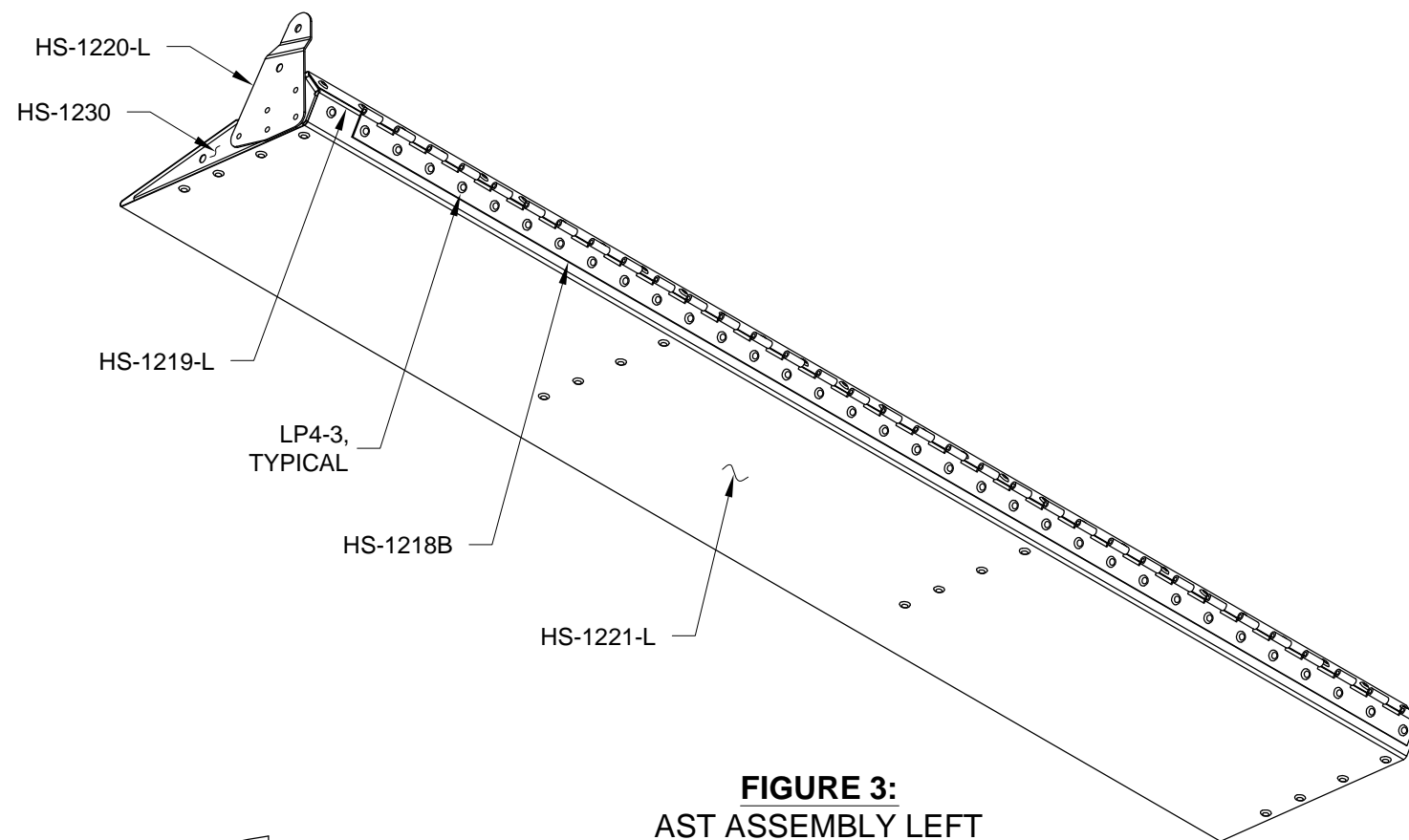


FIGURE 3:
AST ASSEMBLY LEFT

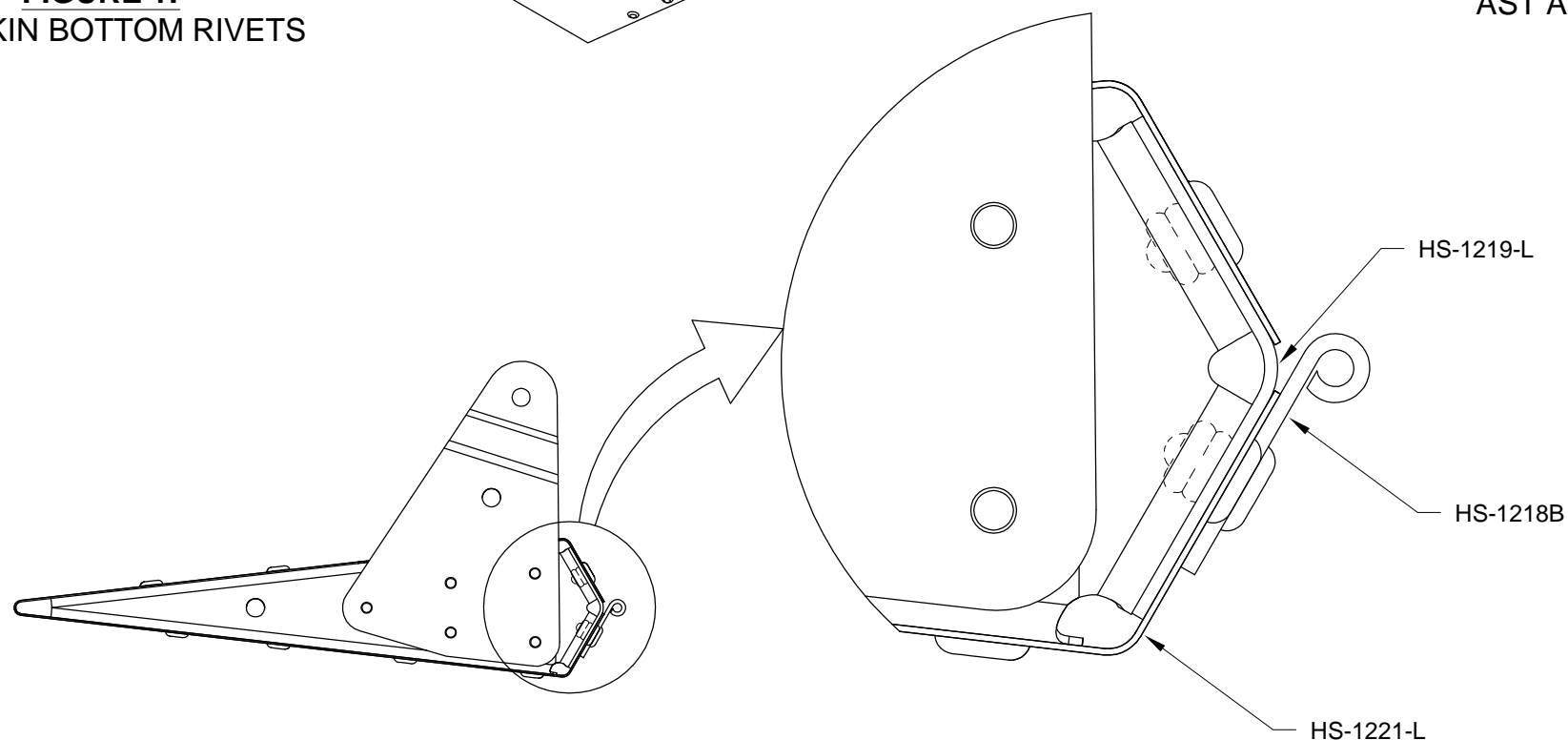


FIGURE 2:
AST SIDE VIEW