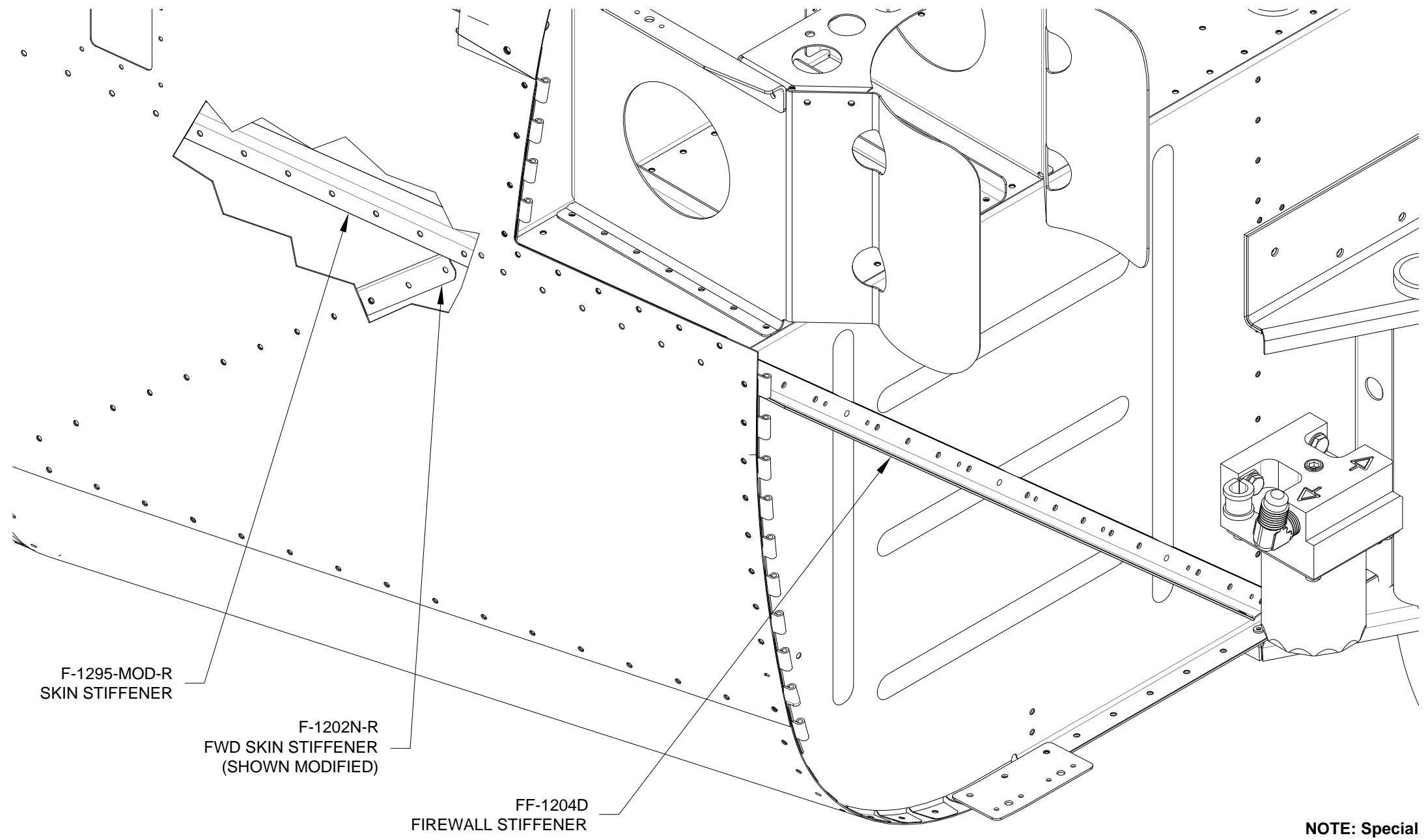


SECTION 54: STIFFENER RETROFIT



NOTE: Special materials needed include thin steel sheet scrap approximately 2X3[50x75mm].

DATE OF COMPLETION: _____			
PARTICIPANTS: _____			
DATE: 01/18/13	REVISION: 0	RV-12	PAGE 54-01

CAUTION: Have an appropriately rated fire extinguisher readily available before beginning work on fuel system components.

NOTE: Use Boelube or equivalent when drilling through stainless steel firewall. For the purpose of clarity some parts have been omitted throughout this section.

Step 1: Move fuel valve handle to the "UP-OFF" position. See Figure 1.

Step 2: Remove the upper and lower cowl. Cowl not shown.

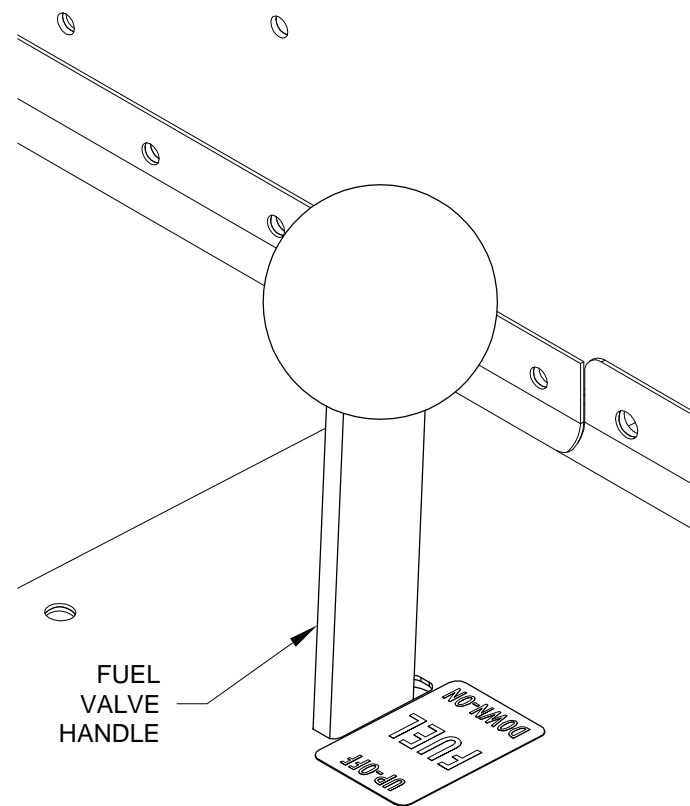


FIGURE 1: CLOSE FUEL VALVE

Step 3: Remove the large cushioned clamp attaching the radiator hose to the nose gear leg and secure the hose so it's out of the way. See Figure 2.

Step 4: Place a drain pan below the gascolator and drain the fuel from it and the lines by removing the CAV-110 Drain Valve at the base of the bowl.

Step 5: Remove the four screws attaching the gascolator bowl to the gascolator and remove the bowl.

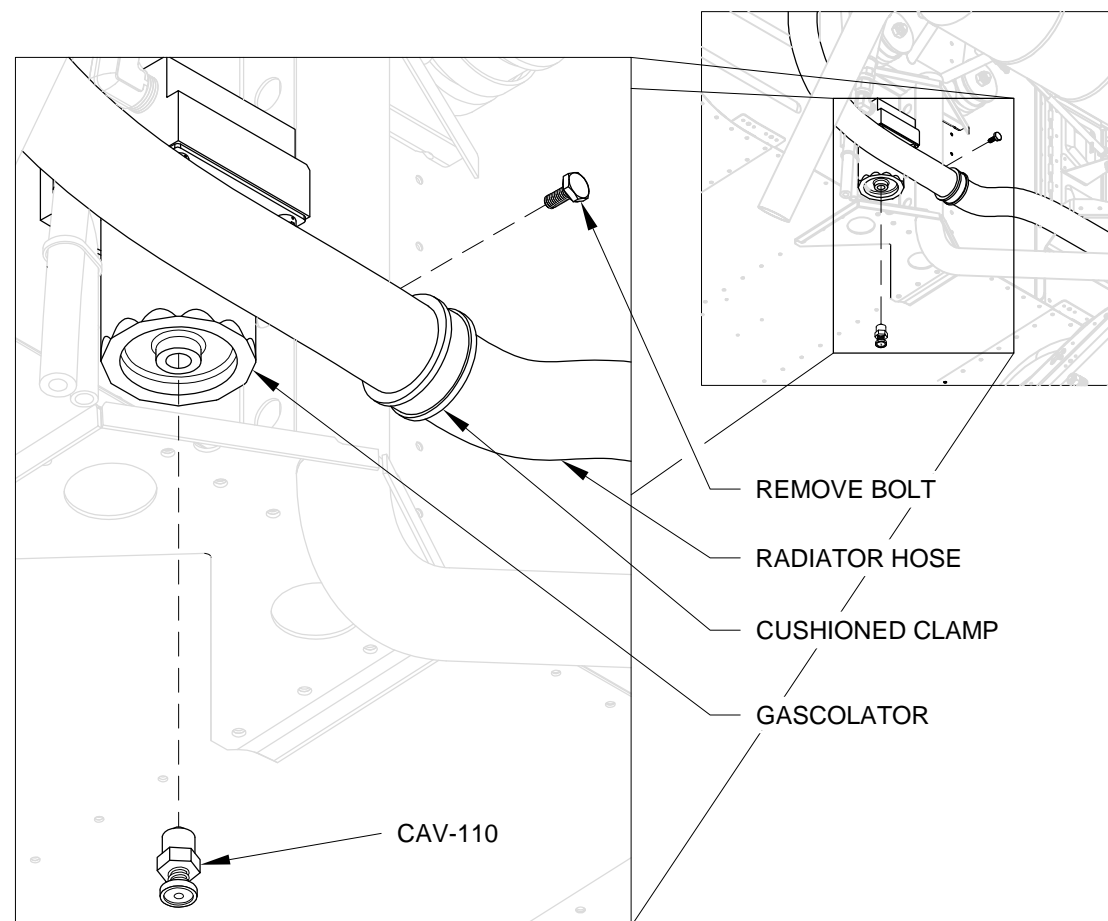


FIGURE 2: DRAIN FUEL

Step 6: Unscrew the bolt called out in Figure 3 just enough to provide access to the rivet directly behind the bolt.

Step 7: Remove the called out rivet. See Figure 3.

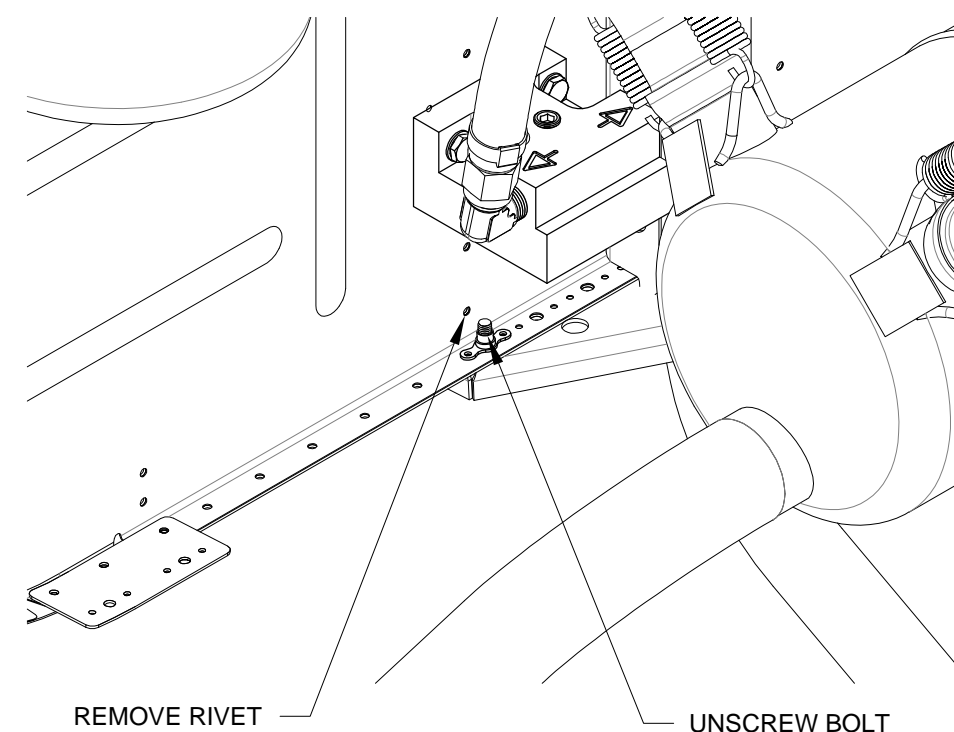
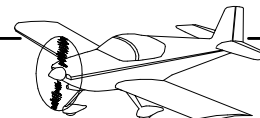


FIGURE 3: REMOVE RIVET



NOTE: If there are no stiffening beads on the firewall omit the FF-1204E Firewall Stiffener Spacer.

Step 1: Cleco the FF-1204E Firewall Stiffener Spacer to the FF-1204D Firewall Stiffener noting orientation. See Figure 1.

Match-Drill #40 the stiffener using the #40 holes in the spacer as guides then remove the clecos. See Figure 1 call-outs.

Machine countersink the #40 holes in the spacer on the side facing the firewall for the head of the called out rivet. See Figure 2.

Separate the spacers by removing the shaded area shown in Figure 1 detail and deburr.

Rivet the spacers to the stiffener using a rivet squeezer and the rivets called out in Figure 2. Hereafter refer to this unit as the Stiffener Assembly.

Step 2: Cleco the lower end of the Stiffener Assembly to the F-1201C Firewall Bottom at the #30 hole drilled out earlier and indicated in the Figure 2 detail.

Rotate the Stiffener Assembly into the upper corner of the firewall bottom until the upper-most corner of the assembly is about coincident with the tangent of the firewall radius as shown in the detail. Spacers should not contact the firewall stiffening beads.

Step 3: Match-Drill #30 the F-1201C Firewall Bottom at the upper-most hole called out in the Figure 2 detail. Insert a cleco into this hole.

Match-Drill #30 the firewall bottom using the remaining #30 holes in the Stiffener Assembly as guides. For best results begin near the stiffener assembly's midpoint and insert clecos along the way.

Remove the Stiffener Assembly and deburr the holes in the firewall bottom.

Step 4: Rivet the Stiffener Assembly to the F-1201C Firewall Bottom per the rivet call-outs, placing the manufactured head on the firewall's fwd side.

NOTE: Delay covering the blind manufactured rivet heads with fuel tank sealant until later.

Step 5: Reinstall the bolt that was unscrewed. See Page 54-02, Step 6.

DO NOT REMOVE SHADED AREAS UNTIL FF-1204D IS MATCH-DRILLED

ORIENT PARTS USING THESE TWO FEATURES

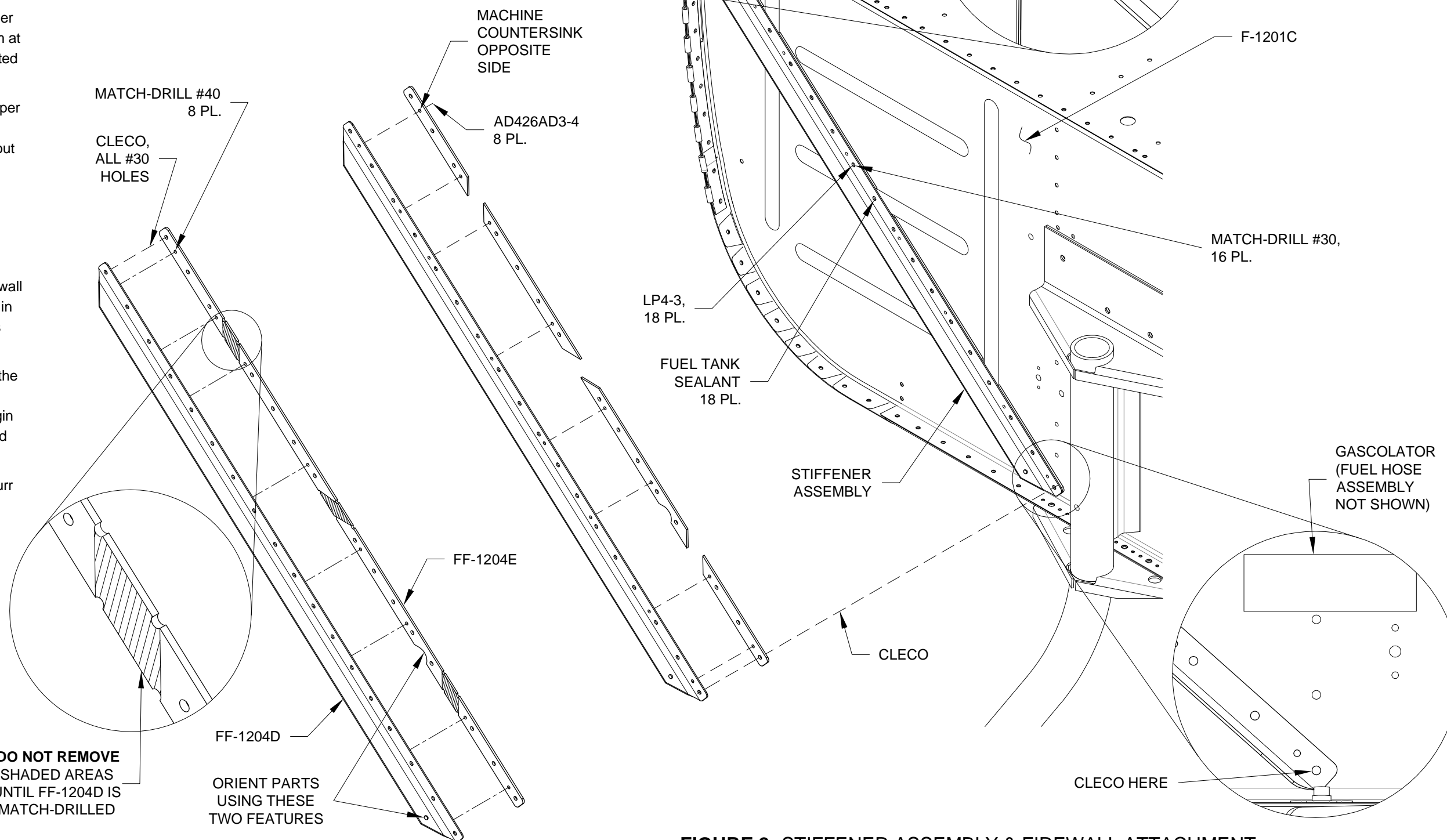
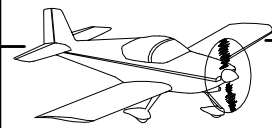


FIGURE 1: PREP STIFFENER & SPACERS

FIGURE 2: STIFFENER ASSEMBLY & FIREWALL ATTACHMENT



Step 1: Separate F-1295-MOD Skin Stiffener into F-1295-MOD-L & -R and deburr as shown in Figure 1.

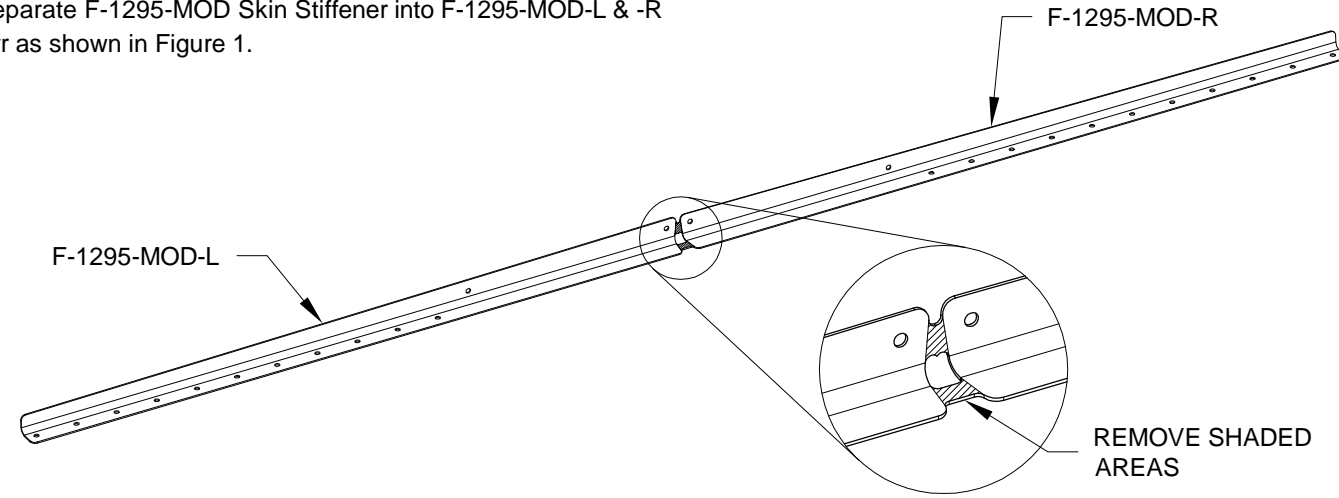


FIGURE 1: SEPARATE SKIN STIFFENERS

NOTE: Only the right side parts and installation has been shown. It is the builder's choice as to whether to complete all steps for the right side before repeating those steps for the left side or to complete each step for both right and left sides before moving to the next step.

Step 2: Remove the three upper-most rivets attaching the F-1202N-R Fwd Skin Stiffener (not shown) to the F-1270-R Fuselage Side Skin as shown in Figure 2.

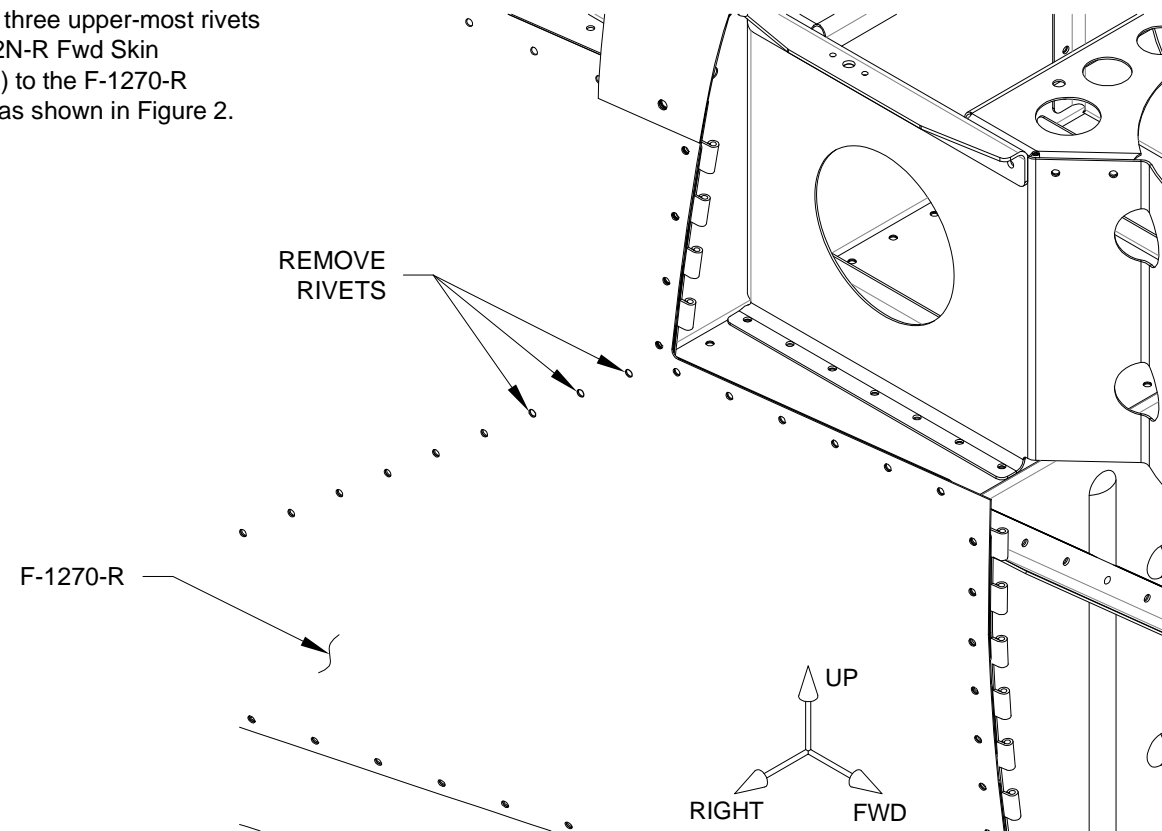


FIGURE 2: REMOVE SIDE SKIN RIVETS

Step 3: Remove the two rivets attaching the tab of the F-1202N-R Fwd Skin Stiffener (see Page 54-05, Figure 1) to the aft side of the F-1201A Firewall Upper as shown in the Figure 3 detail.

Remove the two called out rivets on the F-1201B Firewall Shelf as shown in Figure 3.

Draw a centerline between the two now empty holes on the shelf and layout four new hole locations using the spacing shown but do not drill them yet.

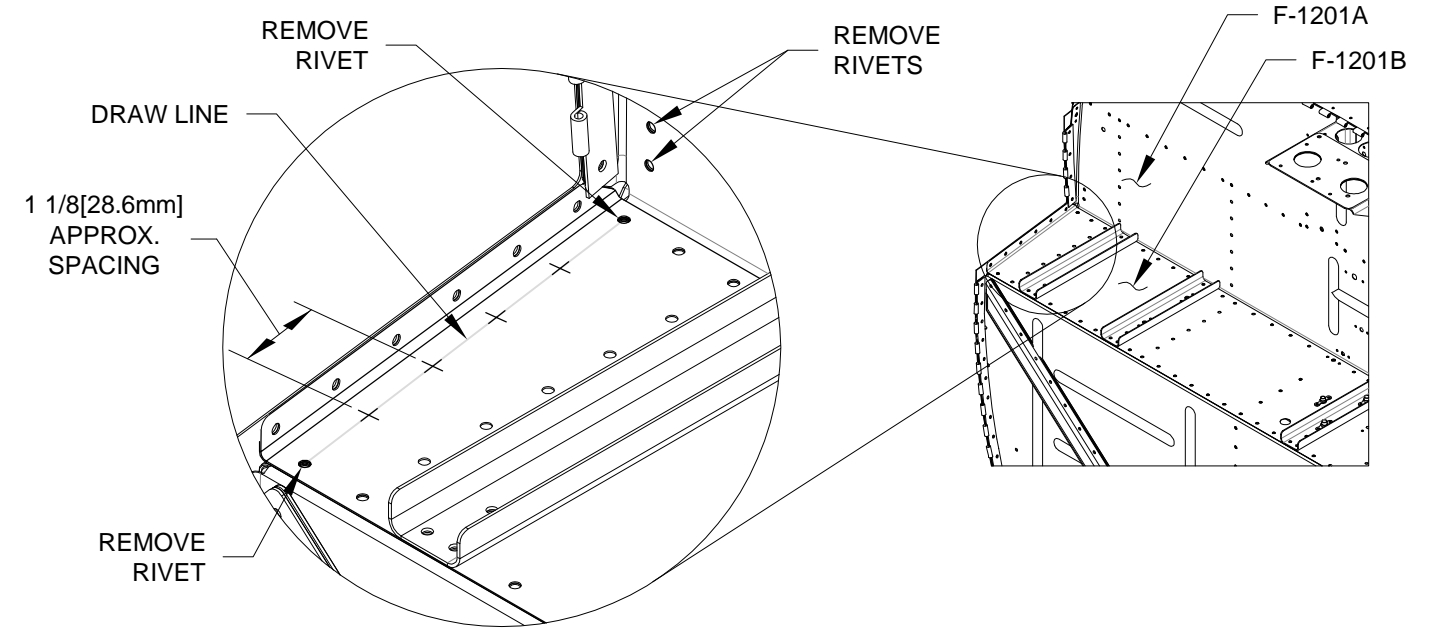
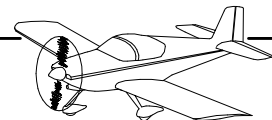


FIGURE 3: REMOVE RIVETS & LAY OUT HOLES



Step 1: Slide a piece of thin steel (cut a piece from a canned goods can) between the F-1270-R Fuselage Side Skin and the F-1202N-R Fwd Skin Stiffener then cut off the stiffener to the dimension shown in Figure 1. Use a cutting disk in a die grinder, Dremel or similar tool.

Chamfer the corners of the stiffener and deburr rough edges.

Reattach the stiffener to the skin using the called out rivets, placing the manufactured head outside the cockpit.

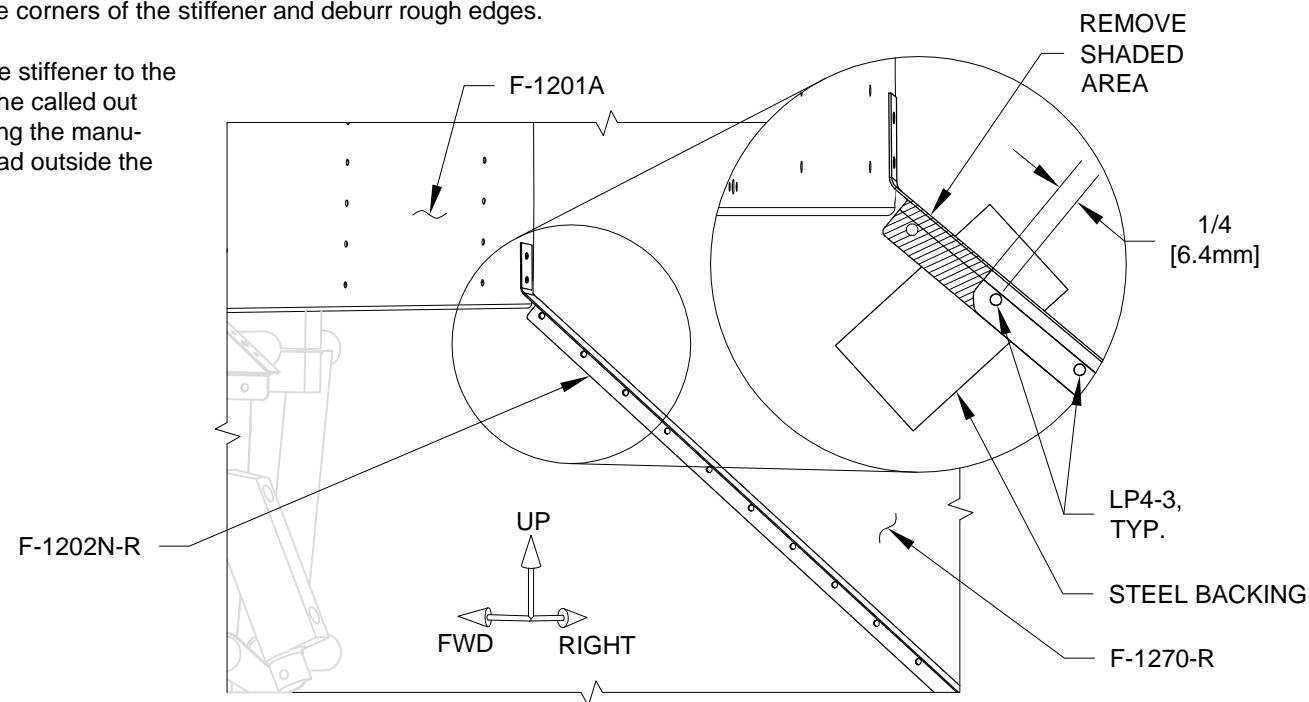


FIGURE 1: MODIFY SKIN STIFFENER
(VIEW FROM INSIDE COCKPIT)

Step 3: Match-drill #30 the F-1270-R Fuselage Side Skin using F-1295-MOD Skin Stiffener holes as guides. See Figure 3. Refer to Page 54-06, Figure 1 and make sure the aft end of the angle is properly positioned using the dimension then drill the aft-most hole first. Insert clecos along the way.

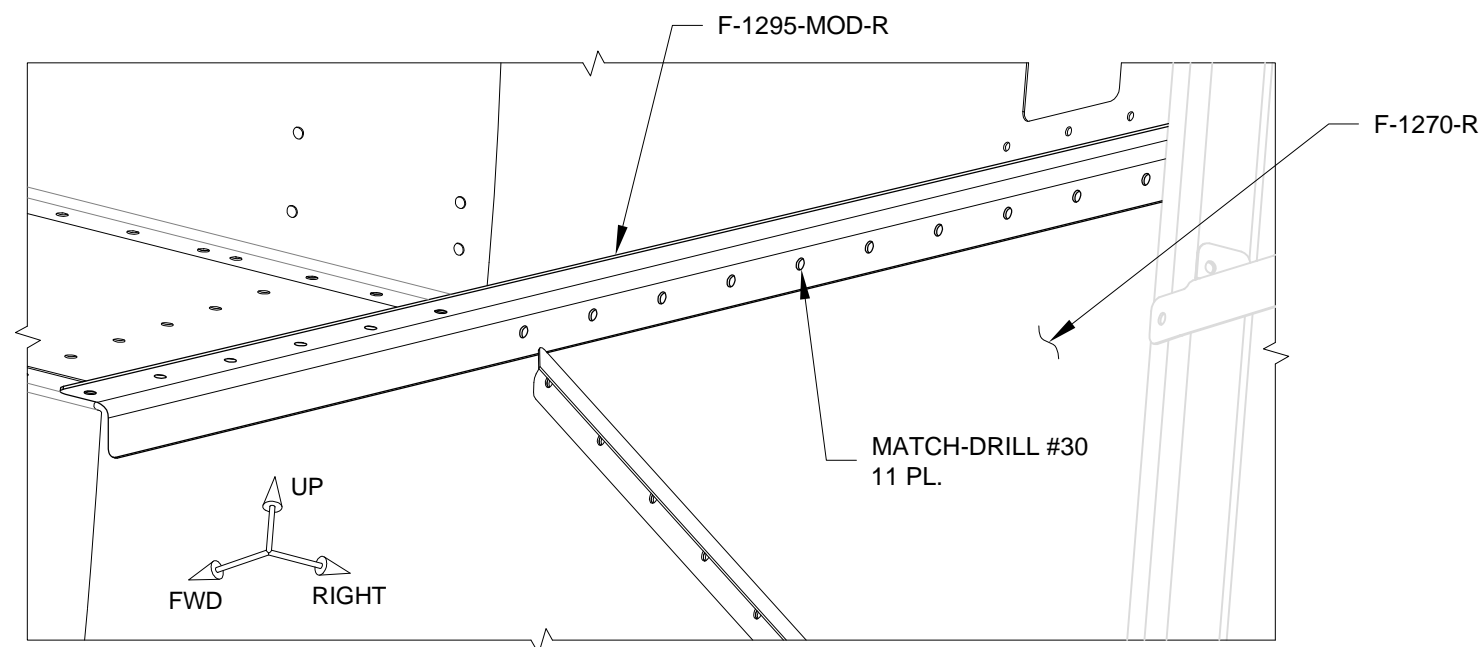


FIGURE 3: MATCH-DRILL SIDE SKIN

Step 2: Cleco the F-1295-MOD-R Skin Stiffener to the bottom surface of the F-1201B Firewall Shelf using the two #30 drilled out rivet hole locations. See Figure 2.

Drill four #30 holes through both shelf and stiffener from above at the four new hole locations marked earlier. See Page 54-04, Figure 3. Insert clecos along the way.

Remove the angle, clean out any chips or burrs and cleco at all six hole locations.

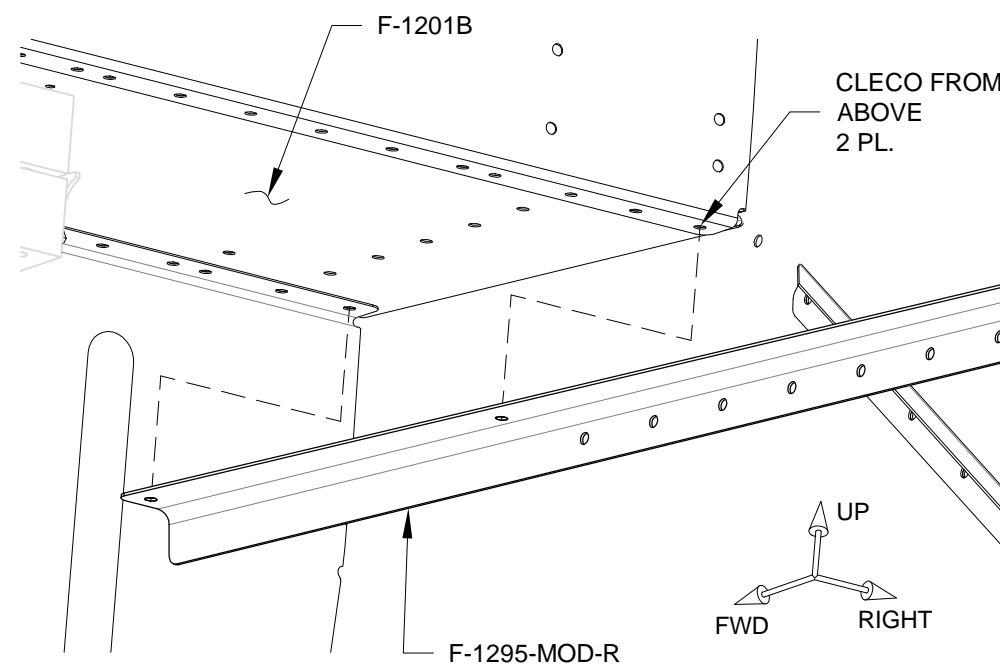
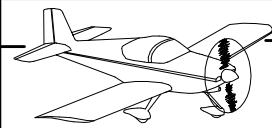


FIGURE 2: CLECO SIDE SKIN STIFFENER INTO PLACE



Step 1: Lay out rivet locations at the fwd end of the F-1295-MOD-R Skin Stiffener by drawing a line on the outside of the F-1270-R Fuselage Side Skin using the row of rivet holes drilled in the previous step. See Figure 1. If the fuselage is painted apply blue painter's tape on which to mark the line.

Mark off the hole locations using the spacing called out. Drill #30 through both skin and F-1295-MOD-R Skin Stiffener at the new hole locations, inserting clecos along the way. Disassemble and deburr.

Rivet the stiffener into place using the rivets called out in Figures 1 and 2.

Step 2: Install F-1295-MOD-L Skin Stiffener to the left side of the fuselage.

Step 3: Cover completely with fuel tank sealant the head of each newly installed rivet located on the forward side of the firewall.

Fill the unused hole in the skin by working fuel tank sealant into the groove formed between skin and stiffener. Give the sealant plenty of time to cure before using a razor blade to trim it flush to the outer surface of the skin. See Figure 1.

Step 4: Reinstall the CAV-110 Drain Valve, gascolator bowl and radiator hose clamp with hose.

NOTE: Weight and balance change negligible.

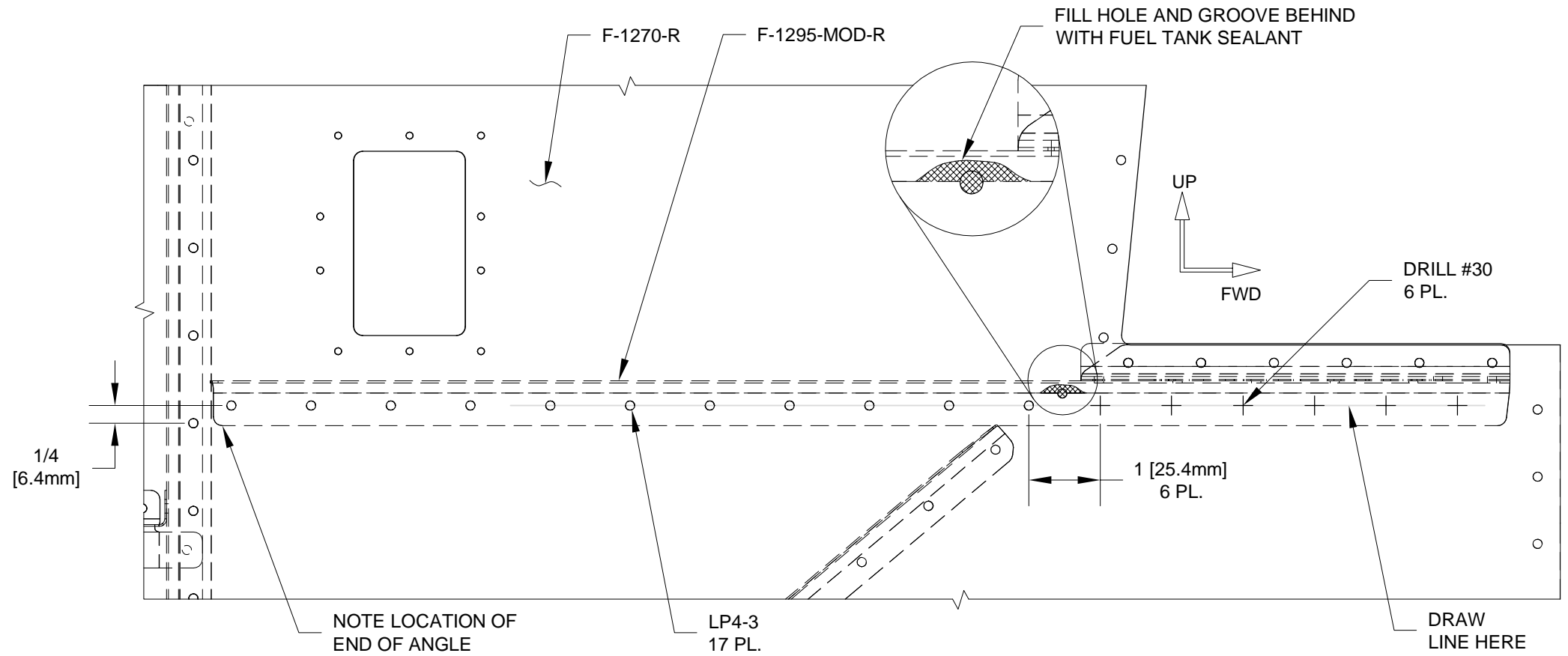


FIGURE 1: DRILL SIDE SKIN FOR FWD END OF SKIN STIFFENER

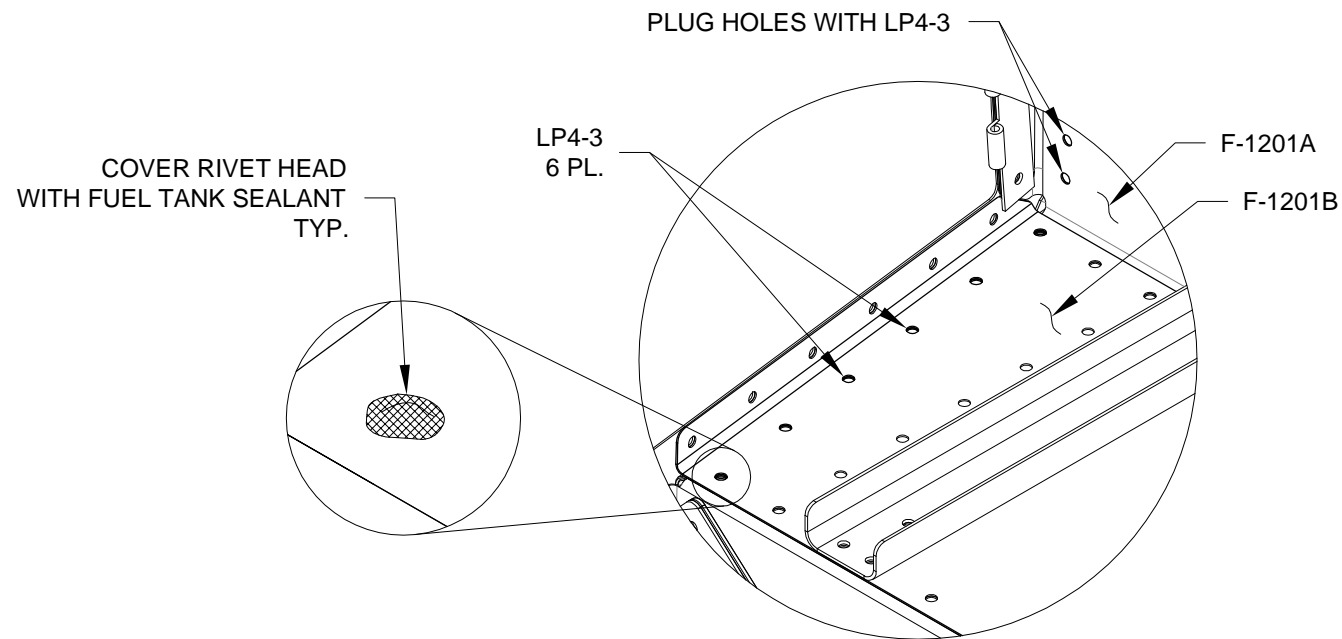


FIGURE 2: RIVET STIFFENER TO FIREWALL SHELF