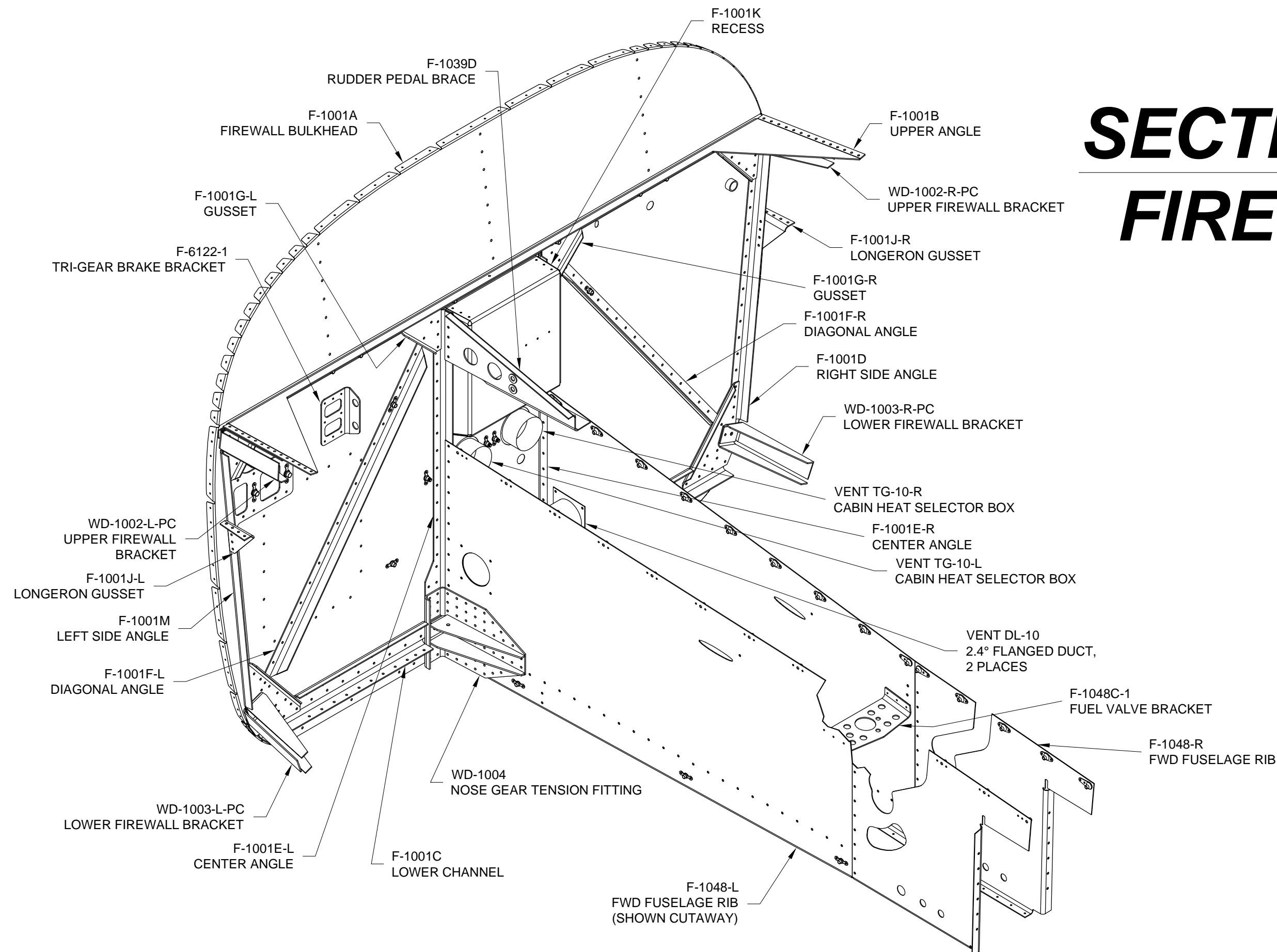
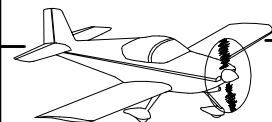


SECTION 27:

FIREWALL





CAUTION! Stainless steel edges are very sharp, handle parts with care.

NOTE: Stainless steel will quickly dull cutting tools (drills, deburring tools and unibits). Use plenty of lubricant (Van's Aircraft uses Boelube) and keep the cutter speed low. Use a unibit to make any holes over 1/4 diameter.

Step 1: Cleco then final-drill #40 all the holes that attach the F-1001K Recess to itself (See Figure 1). Final-Drill #30 the five F-1039D Rudder Pedal Brace attach holes in the side of the recess as called out in Figure 2.

NOTE: Flush heads on all AN426 rivets should be on the front of the firewall assembly (inside face of the F-1001K Recess) to keep the forward face of the firewall and the inside face of the recess smooth.

Step 2: Dimple the holes that connect the corners of the F-1001K Recess for the head of an AN426AD3 rivet. It is permissible in this instance to dimple both the tab and flange of the recess at the same time. Dimple the five F-1039D Rudder Pedal Brace attach holes for the head of an AN426AD4 rivet. Dimple the upper most rudder pedal brace hole using a female dimple die and a rivet.

Step 3: Rivet the holes that attach the F-1001K Recess to itself as called out in Figure 1. If using a Lycoming engine enlarge the three control cable holes indicated in Figure 1 to 5/8 diameter. If not using a Lycoming engine final-drill and dimple these holes #40 then fill them with AN426AD3-3 rivets.

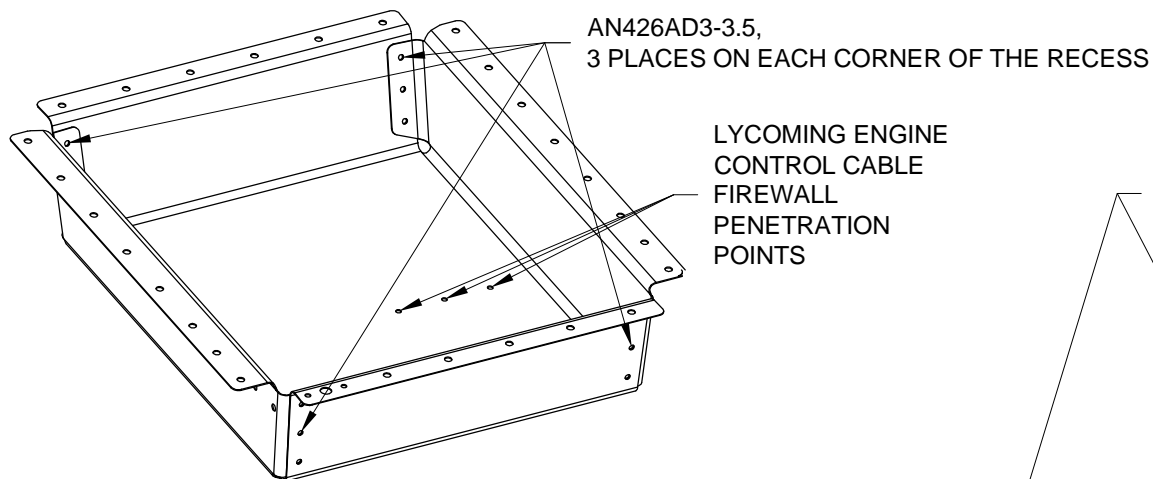


FIGURE 1: PREPARING THE RECESS

Step 4: Cleco the F-1001B Upper Angle, F-1001C Lower Channel, F-1001D Right Side Angle, F-1001E-L and -R Center Angles, F-1001F-L and -R Diagonal Angles, F-1001G Gussets, F-1001K Recess, F-1001M Left Side Angle, F-6122-1 Tri-Gear Brake Bracket, WD-1002-L-PC and -R-PC Upper Firewall Brackets, WD-1003-L-PC and -R-PC Lower Firewall Brackets and WD-1004 Nose Gear Tension Fittings to the F-1001A Firewall Bulkhead as shown in Figure 2.

The F-1001J-L and -R Longerons Gussets come tabbed together. Break the F-1001J into the left and right gussets and deburr the edges. Cleco the gussets to the left and right side angles as shown in Figure 2.

Step 5: Final-Drill #40 all the nutplate attach rivet holes. Final-Drill the screw holes for the two K1000-4 nutplates 1/4 diameter and the screw holes for the fourteen K1000-3 nutplates #12. Final-Drill #40 the eight holes common to the F-1001A Bulkhead and the F-6122-1 Tri-Gear Brake Bracket. Final-Drill #30 all the remaining holes common between the bulkhead and the parts clecoed together in Step 4. Final-Drill #30 all the holes common to the F-1001J-L and -R Longerons Gussets and the F-1001D and F-1001M Side Angles. Final-Drill #30 all remaining open holes that attach the oil cooler (see Page 27-5 Figure 1) and the open holes for the upper fwd fuse ribs, see Figure 2.

Step 6: Disassemble the parts. Dimple (flush head on forward side) all rivet holes in the web of the F-1001A Firewall Bulkhead and flanges of the F-1001K Recess. Note that the four lowest holes common to the F-1001E-L and -R Center Angles and WD-1004 Nose Gear Tension Fittings need to be dimpled with a modified dimple die set or a rivet and the female die. Machine countersink all parts that lay against the web of the firewall bulkhead for the dimples in the firewall bulkhead and recess. Prime all aluminum parts if/as desired.

Step 7: Reassemble the bulkhead assembly per Step 4 except the F-1001E-L and -R Center Angles, F-1001G-L and -R Gussets and WD-1004 Nose Gear Tension Fittings.

Cleco the two K1000-4 and fourteen K1000-3 nutplates to the firewall as shown in Figure 2 and Page 27-5, Figure 1. Note that all but two of the nutplates attach to the aft side of the firewall, see Page 27-5, Figure 1. Rivet the assembly together per the callouts in Page 27-5, Figure 1. **Do not rivet any of the holes common to the center angles, gussets or nose gear tension fittings until Page 27-4!** If not using a Lycoming engine fill the holes that attach the oil cooler box (see Page 27-5, Figure 1) except those common with the F-1001M Left Side Angle with AN426AD4-4 rivets. The finished Firewall Bulkhead Subassembly is shown in Figure 2 (note the center angles, gussets and nose gear tension fittings that are not riveted at this time are shown transparent).

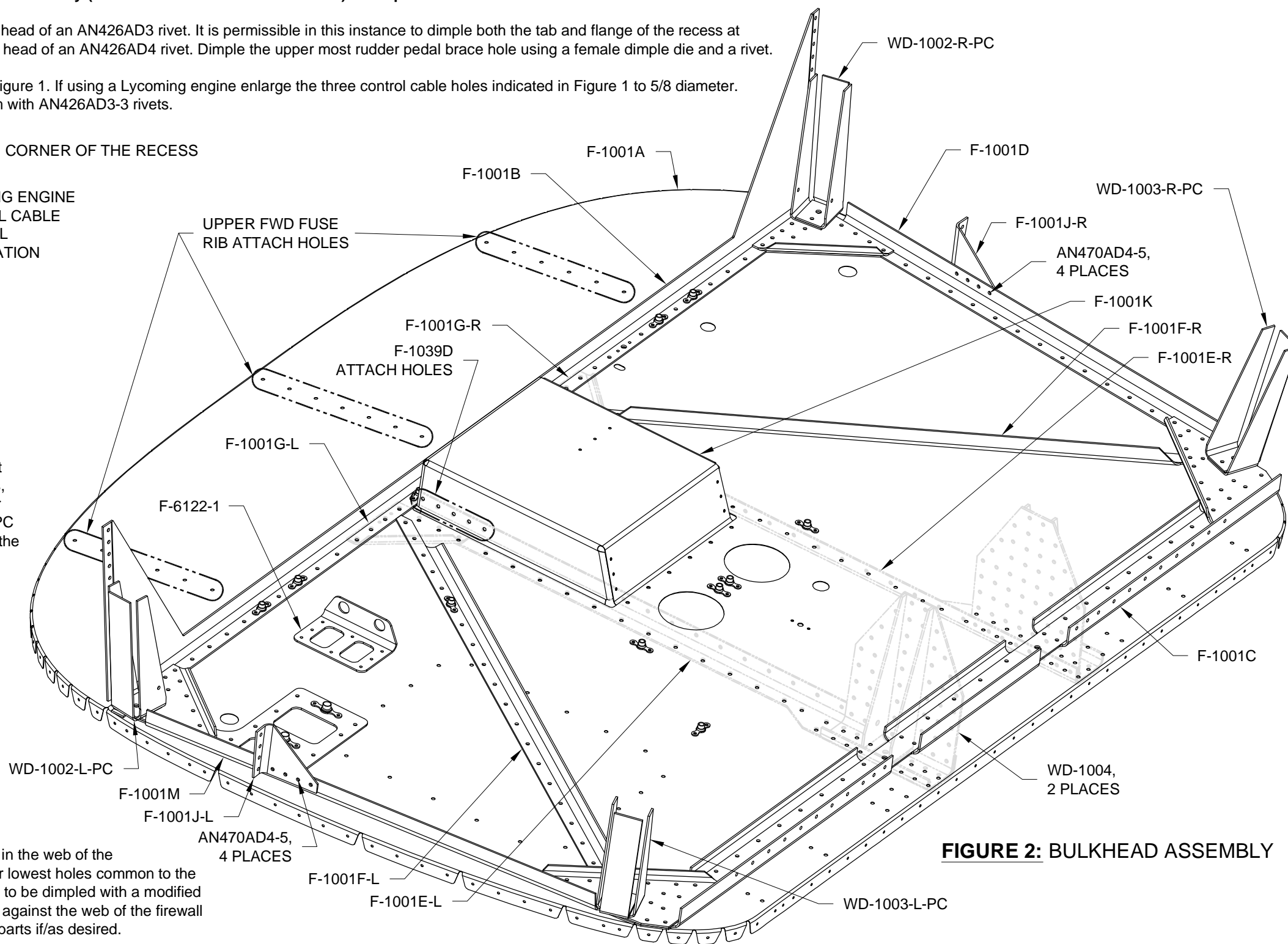


FIGURE 2: BULKHEAD ASSEMBLY

Step 1: Layout the bottom most attach hole for the F-1051J Scat Tube Support on the F-1048-R Fwd Fuselage Rib using the dimensions given in Figure 1. The exact location is not critical.

Step 2: Drill #19 the location marked out in Step 1.

Step 3: Using a #8 screw align the F-1051J Scat Tube Support parallel with the forward edge of the F-1048-R Fwd Fuselage Rib as shown in Figure 1. Match-Drill #19 the upper screw hole into the fwd fuselage rib. Remove the scat tube support. Final-drill #19 the lower screw hole in the scat tube support.

Step 4: Deburr then dimple the two #19 holes drilled in the F-1048-R Fwd Fuselage Rib for the head of a #8 screw, flush on the outboard face.

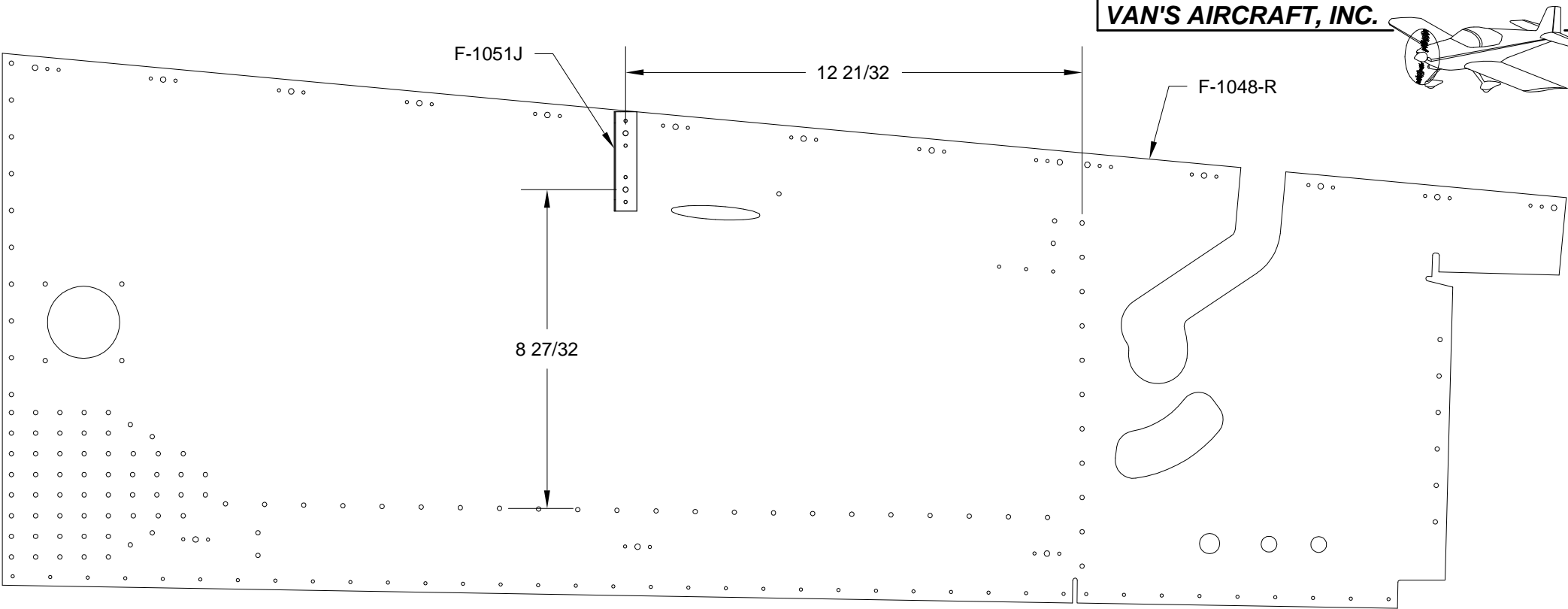


FIGURE 1: DRILLING THE F-1048-R FWD FUSELAGE RIB

Step 5: Final-Drill #40 the nutplate attach holes in the F-1051J Scat Tube Support. See Figure 2.

Step 6: Deburr the edges and holes in the F-1051J Scat Tube Support. Dimple the nutplate attach holes in the scat tube support. Dimple the nutplates. Dimple both screw holes in the scat tube support for the head of a #8 screw. Prime the support if desired.

Step 7: Rivet nutplates to the F-1051J Scat Tube Support as shown in Figure 2.

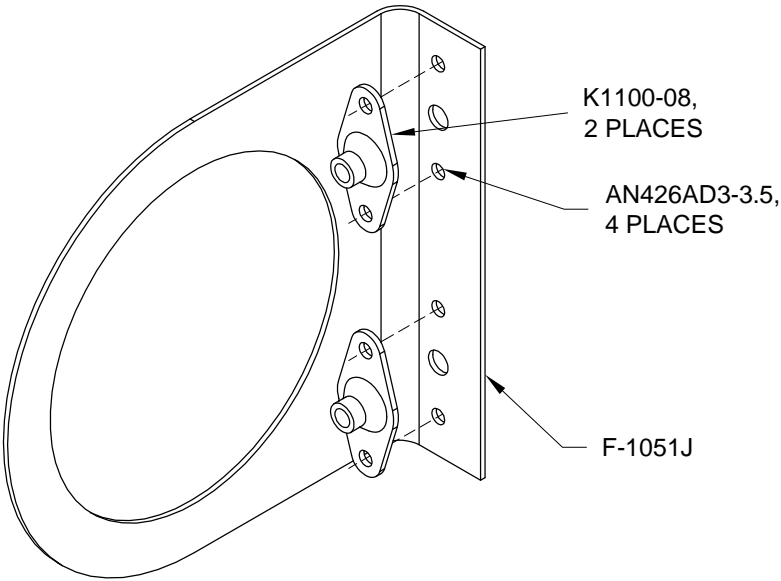
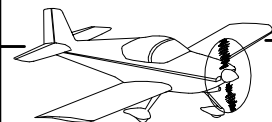


FIGURE 2: SCAT TUBE SUPPORT NUTPLATE INSTALLATION



Step 1: Cleco the WD-1004 Nose Gear Tension Fitting, F-1001E-L Center Angle and F-1048-L Fwd Fuselage Rib together as shown in Figure 1 to create the Left Forward Rib Subassembly. Repeat this step to create the Right Forward Rib Subassembly. The right subassembly is a mirror of the left.

Step 2: Final-Drill #30 all the holes common between the parts assembled in Step 1. Final-Drill #40 the nutplate attach holes in the F-1048-L and -R Fwd Fuselage Ribs. Final-Drill #19 the screw holes for the nutplates in the fwd fuselage ribs. Final-Drill #30 the five F-1039D Rudder Pedal Brace attach holes (see callout in Figure 1) in the F-1001E-L Center Angle only.

Step 3: Machine countersink the F-1039D Rudder Pedal Brace attach holes on the inboard face of the F-1001E-L Center Angle that will lay against the F-1001K Recess, for the dimples in the recess.

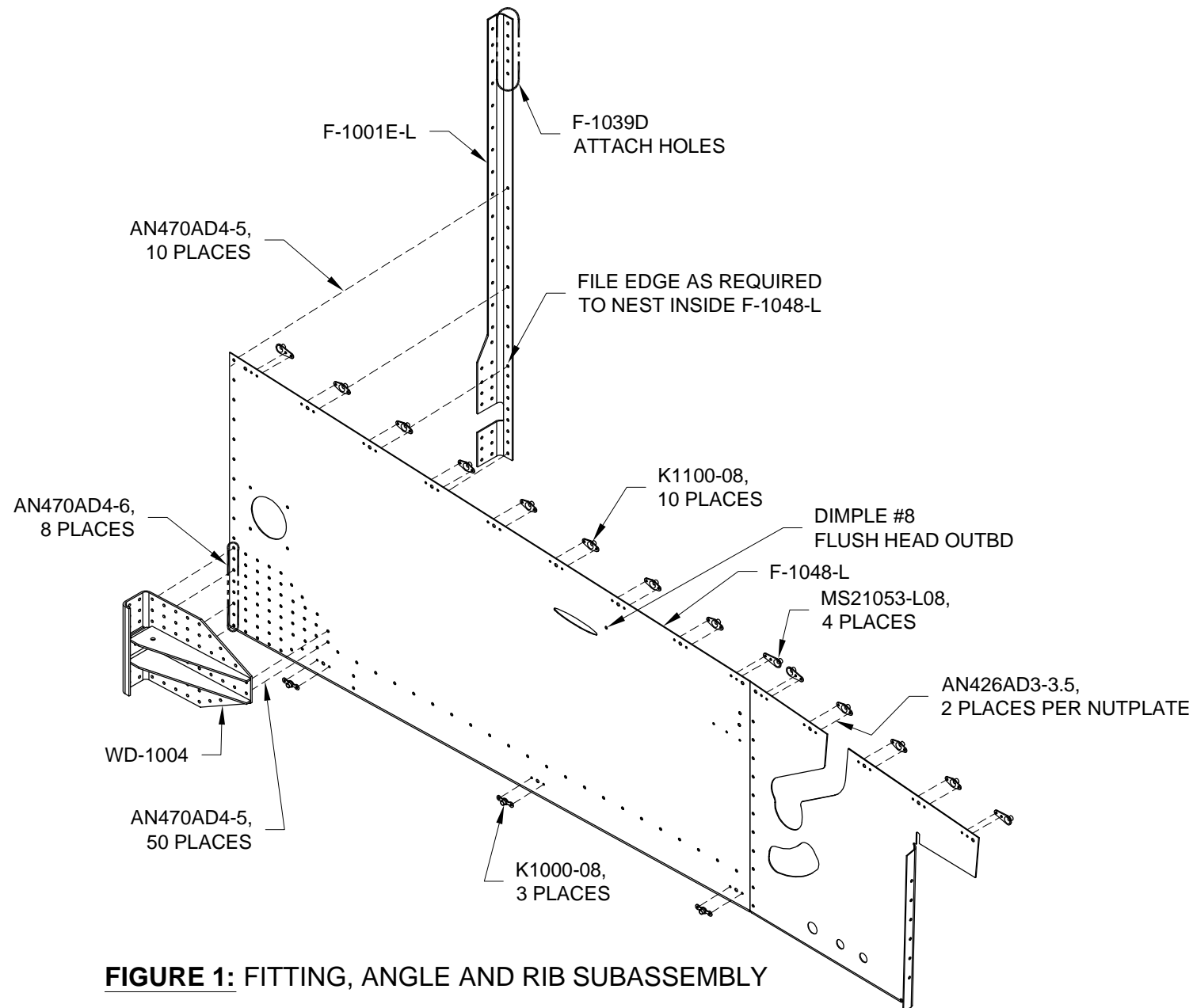


FIGURE 1: FITTING, ANGLE AND RIB SUBASSEMBLY

Step 4: Cleco the Left and Right Forward Rib Subassemblies and F-1001G-L and -R Gussets to the Firewall Bulkhead Subassembly as shown in Figure 2. Cleco the F-1048C-1 Fuel Valve Bracket between the F-1048-L and -R Fwd Fuselage Ribs.

Insert both VENT DL-10 2.4° Flanged Ducts into the VA-175 Heat Duct Tee. Rotate the flanged ducts until their mounting plates are parallel with the fwd fuselage ribs (the ribs taper between the firewall bulkhead subassembly and the fuel valve bracket). Cleco the flanged ducts to the fwd fuselage ribs.

Step 5: Final-Drill #30 all the holes common between the parts just clecoed together and the Firewall Bulkhead Subassembly. Final-Drill #30 the holes common between the F-1048-L and -R Fwd Fuselage Ribs and the VENT DL-10 2.4° Flanged Ducts. Final-Drill #40 the holes common between the F-1048C-1 Fuel Valve Bracket and the fwd fuselage ribs.

Step 6: Disassemble and deburr all parts assembled in Step 1 and Step 4. Dimple the nutplate attach holes in the F-1048-L and -R Fwd Fuselage Ribs and the holes that attach the F-1048C-1 Fuel Valve Bracket for the head of an AN426AD3 rivet. Final-Drill #19 then dimple (flush head outbd) the hole near the oval slot in the center of the fwd fuselage ribs (see Figure 1). Prime aluminum parts if/as desired.

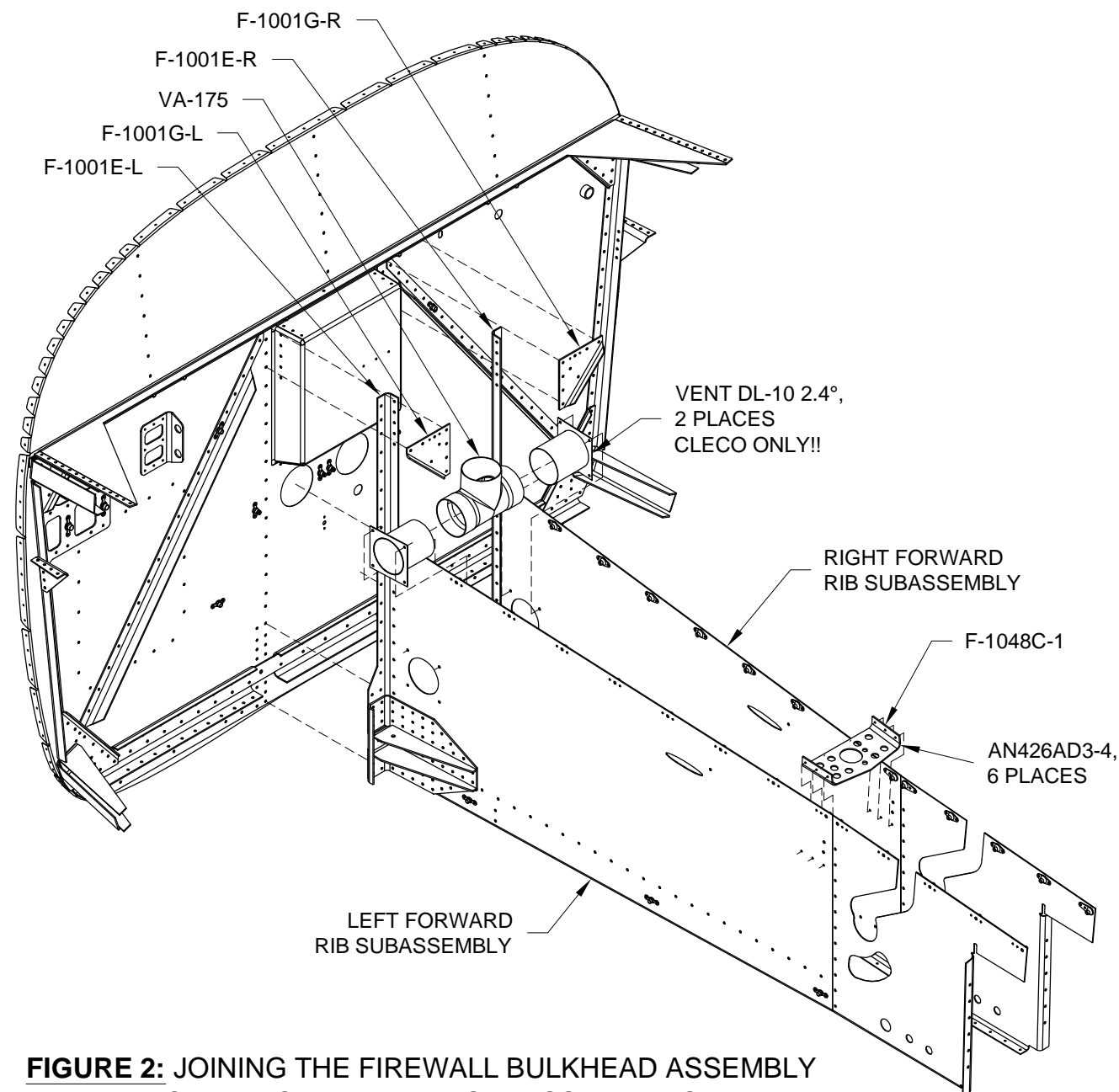
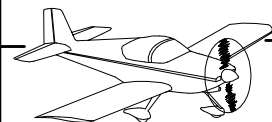


FIGURE 2: JOINING THE FIREWALL BULKHEAD ASSEMBLY TO THE FORWARD RIB SUBASSEMBLIES

Step 7: Rivet the WD-1004 Nose Gear Tension Fitting, F-1001E-L Center Angle and nutplates to the F-1048-L Fwd Fuselage Rib per the callouts in Figure 1 to create the Left Forward Rib Subassembly (place the shop head of the rivet on the outboard face of the nose gear tension fitting). Repeat this step to create the Right Forward Rib Subassembly.

Step 8: Rivet the Left and Right Forward Rib Subassemblies and F-1001G-L and -R Gussets to the Firewall Bulkhead Subassembly per the callouts in Page 27-5, Figure 1. Rivet the F-1048C-1 Fuel Valve Bracket to the the fwd fuselage ribs per the callouts in Figure 2. Insert the VENT DL-10 2.4° Flanged Ducts into the VA-175 Heat Duct Tee, then cleco the flanged ducts to the fwd fuselage ribs per the callouts in Figure 2.





Step 1: Cleco, then Final-Drill #30 the F-1039D Rudder Pedal Brace to the Firewall Bulkhead Subassembly as shown in Figure 1. Remove deburr and prime the rudder pedal brace if desired.

Step 2: Rivet the F-1039D Rudder Pedal Brace to the firewall bulkhead subassembly per the callouts in Figure 1.

Step 3: Insert two snap bushings into the F-1039D Rudder Pedal Brace as shown in Figure 1.

Step 4: Install SB625-8 snap bushings in the Firewall Bulkhead Subassembly as shown in Figure 2.

Step 5: Bolt the VENT TG-10-L and -R Cabin Heat Selector Boxes to the Firewall Bulkhead Subassembly per the callouts in Figure 2.

Step 6: Proseal any gaps around the F-1001K Recess and around the holes through which the VENT TG-10-L and -R Cabin Heat Selector Boxes protrude.

NOTE: Parts of the brake system can be installed at this time, see Section 36.

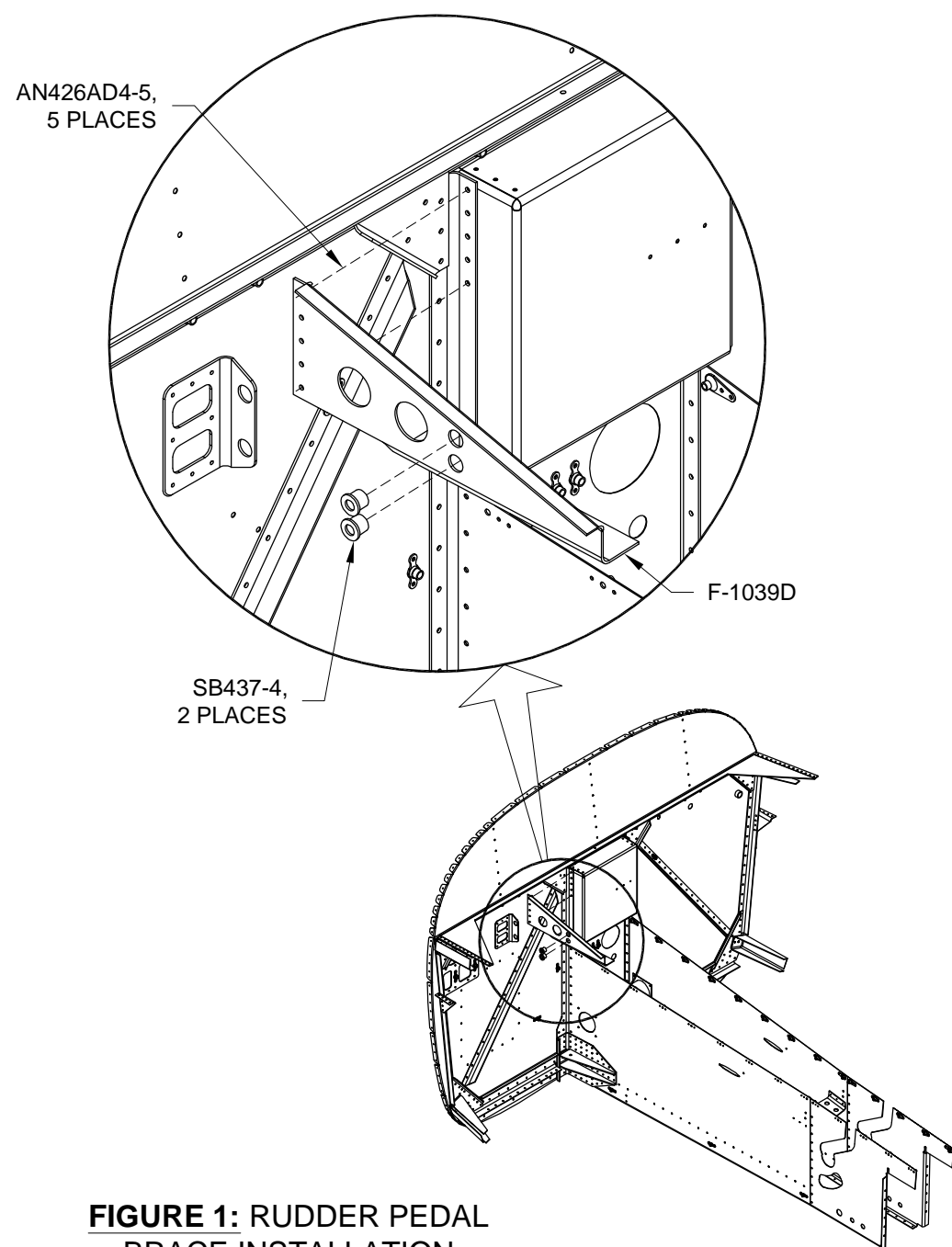


FIGURE 1: RUDDER PEDAL
BRACE INSTALLATION

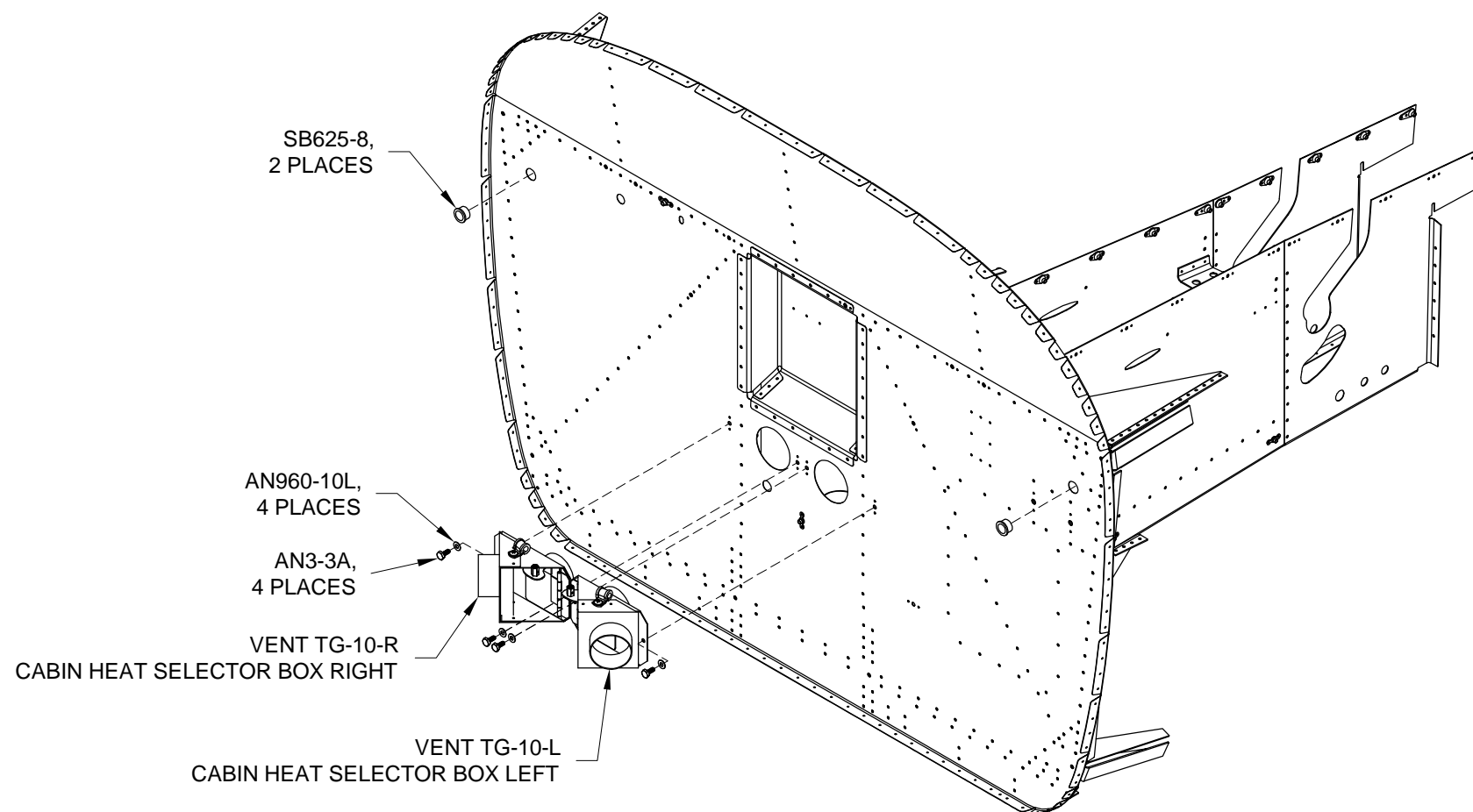


FIGURE 2: CABIN HEAT SELECTOR BOX INSTALLATION