

TOTAL PERFORMANCE
VAN'S AIRCRAFT

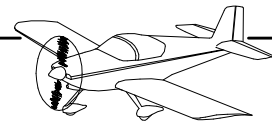
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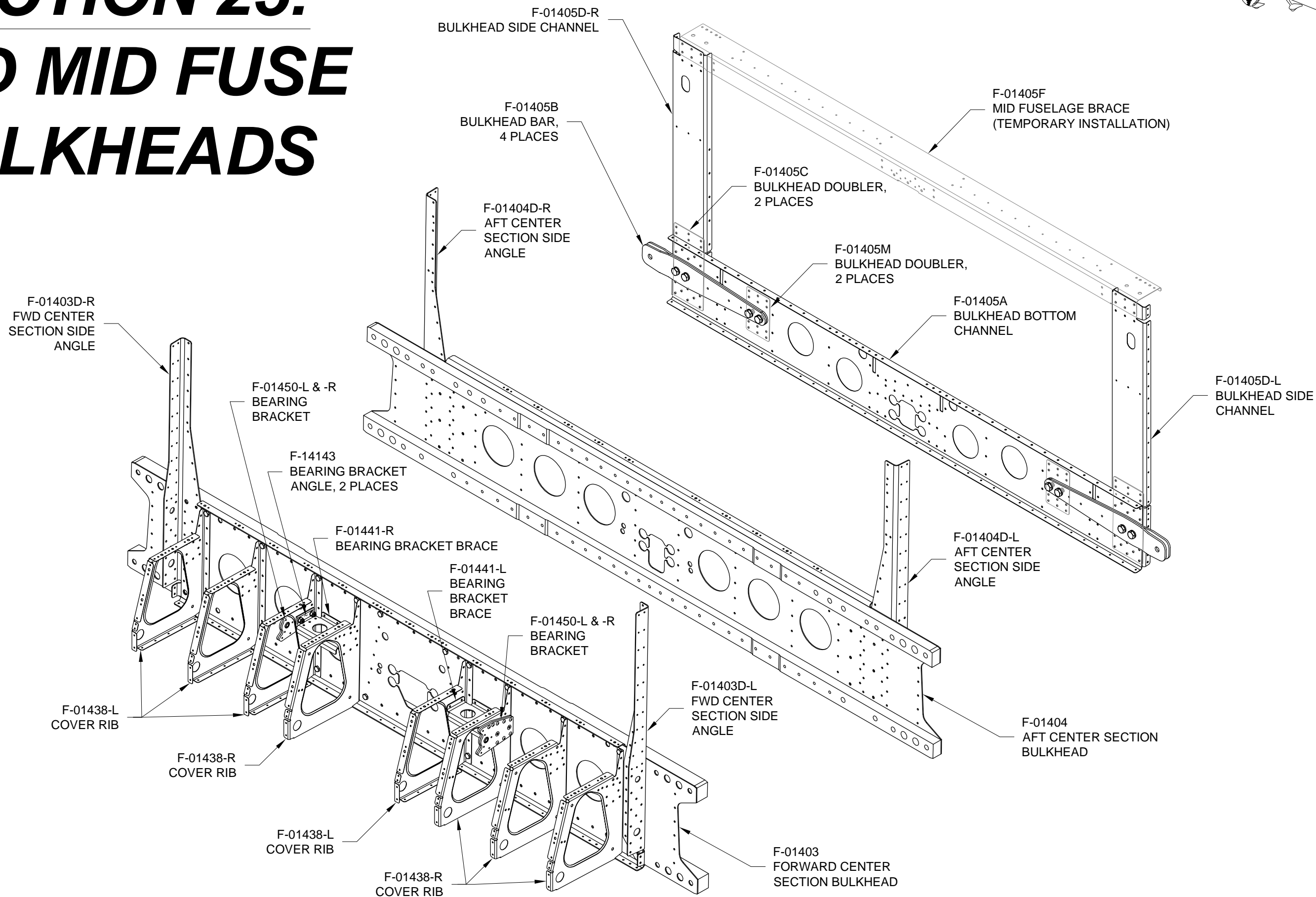
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REVISION DESCRIPTION:

Page: 25-02 MEMO: In NOTE before Step 5, "Whenever possible, ream using a drill press..." was "Always ream using a drill press...".



SECTION 25: FWD MID FUSE BULKHEADS





NOTE: Except where separate instructions and/or figures exist for both left and right sides of the aircraft, only the left side parts, assemblies, or installations will be shown.

It is the builder's choice as to whether to complete all steps for the left side before repeating those steps for the right side, or to complete each step for both left and right sides before moving to the next step.

Step 1: Separate the F-01405B Bulkhead Bars as shown in Figure 1.

Step 2: Dimple the #40 holes in the F-01405D-L & -R Bulkhead Side Channel flanges except as noted in Figure 2.

Dimple the #30 three holes in the bulkhead side channel flanges as shown in Figure 2.

Dimple all #40 holes in the bottom flange of the F-01405A Bulkhead Bottom Channel.

Step 3: Cleco and rivet the F-01405M Bulkhead Doublers to the F-01405A Bulkhead Bottom Channel as shown in Figure 2 & Figure 3.

Step 4: Cleco the F-01405D-L & -R Bulkhead Side Channels and F-01405C Bulkhead Doublers to the F-01405A Bulkhead Bottom Channel as shown in Figure 2.

Cleco the F-01405F Mid Fuselage Brace to the bulkhead side channels as shown in Figure 2.

Insert rivets in the topmost and bottom most holes common to the side channels, doublers and bottom channel to aid in alignment prior to setting any rivets.

Rivet the side channels and doublers to the bulkhead bottom channel as shown in Figure 3. **DO NOT** rivet the mid fuselage brace. Position the manufactured head of the rivets on the aft side of the doublers.

NOTE: Wherever possible, ream using a drill press set at low speed. Use lubricant and remember to clean the reamer before every hole. Ream from the front side of the F-01405 Bulkhead.

Step 5: Ream .311 the outboard most hole common to the F-01405A Bulkhead Bottom Channel, F-01405D-L Bulkhead Side Channel and F-01405C Bulkhead Doubler as shown in Figure 3.

Step 6: Using a $\varnothing 3/8$ bolt, temporarily bolt the pairs of F-01405B Bulkhead Bars onto the end of the Wing Rear Spar Assembly (or a 1/4 [6.4 mm] spacer with a $\varnothing 3/8$ hole), then double-flush rivet the bars together using the rivets called out in Figure 2. See Section 5.8 for more information on double-flush riveting. Hereafter referred to as the F-01405B Bulkhead Bar Assemblies.

Step 7: Ream .311 the hole in the F-01405B Bulkhead Bar Assemblies as shown in Figure 2.

NOTE: Use temporary nuts for all Bulkhead Bar nuts. Final installation with permanent nuts will be completed in Section 29.

Step 8: Bolt the F-01405B Bulkhead Bar Assemblies to the F-01405 Bulkhead using the hole reamed in Step 7. Leave the nuts fairly loose for now. See Figure 2.

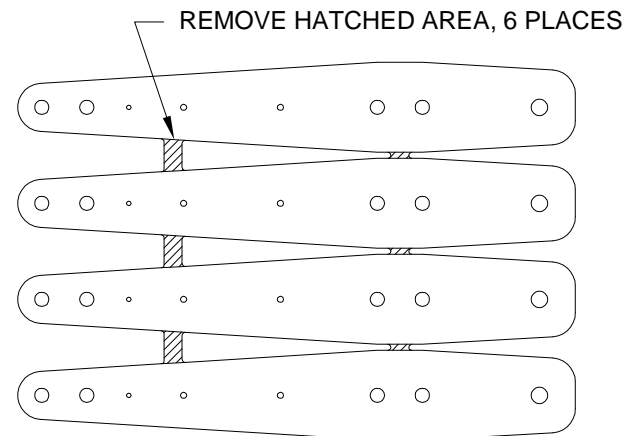
Step 9: Cleco the F-01405B Bulkhead Bar Assemblies to the F-01405 Bulkhead and then fully tighten the temporary nut.

Step 10: Ream .311 the inboard most hole common to the F-01405B Bulkhead Bar Assemblies, F-01405A Bulkhead Bottom Channel and F-01405M Bulkhead Doubler. Ream from the front side. See Figure 3.

Step 11: Bolt the F-01405B Bulkhead Bar Assemblies to the F-01405 Bulkhead using the hole reamed in Step 10. See Figure 2.

Step 12: Ream .311 the remaining holes through the F-01405B Bulkhead Bar Assemblies, F-01405A Bulkhead Bottom Channel, F-01405D-L Bulkhead Side Channel, and the F-01405C and F-01405M Bulkhead Doublers

Step 13: Install the two remaining bolts attaching the F-01405B Bulkhead Bar Assemblies to the F-01405 Bulkhead Assembly as shown in Figure 2.



**FIGURE 1:
SEPARATE F-01405B**

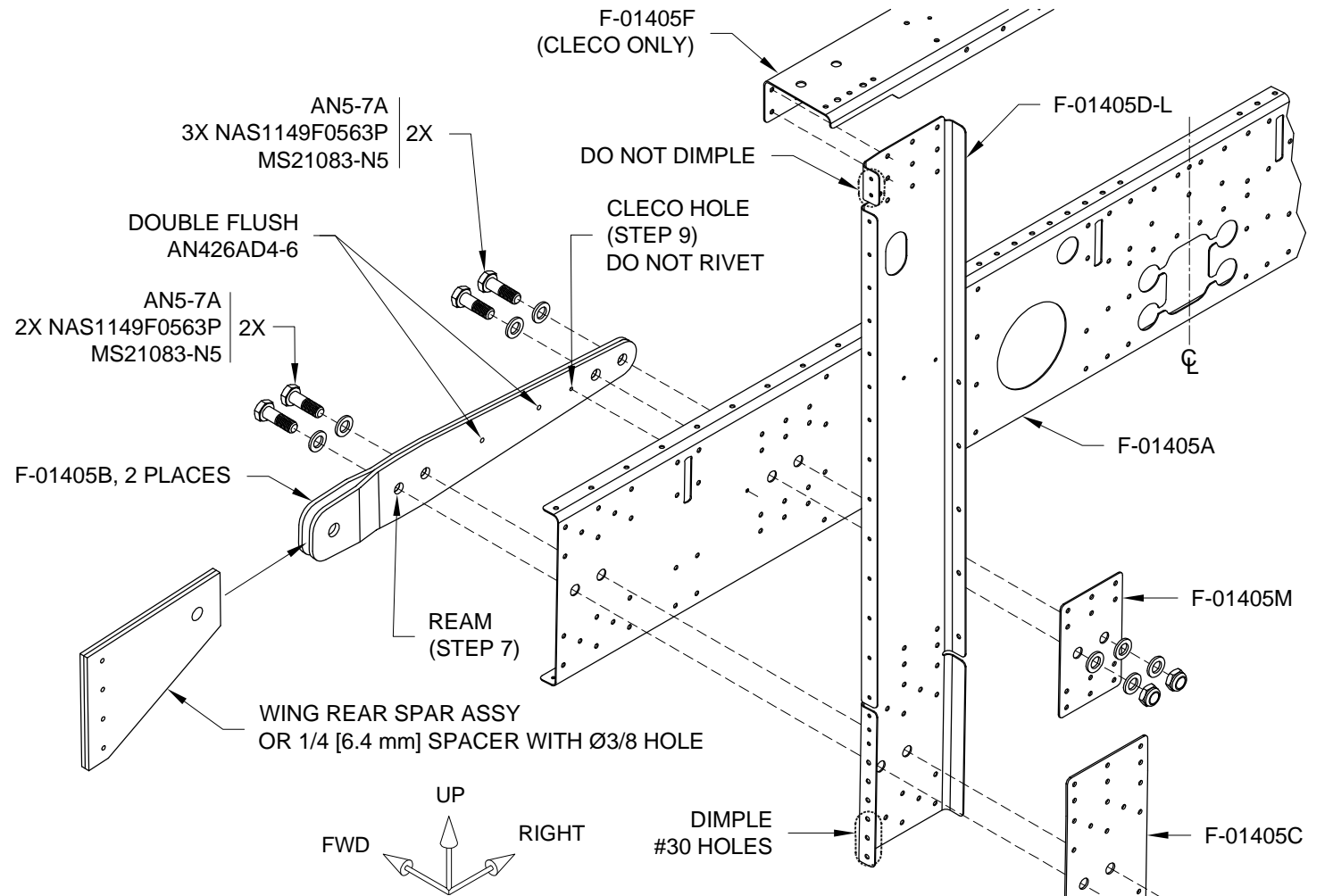
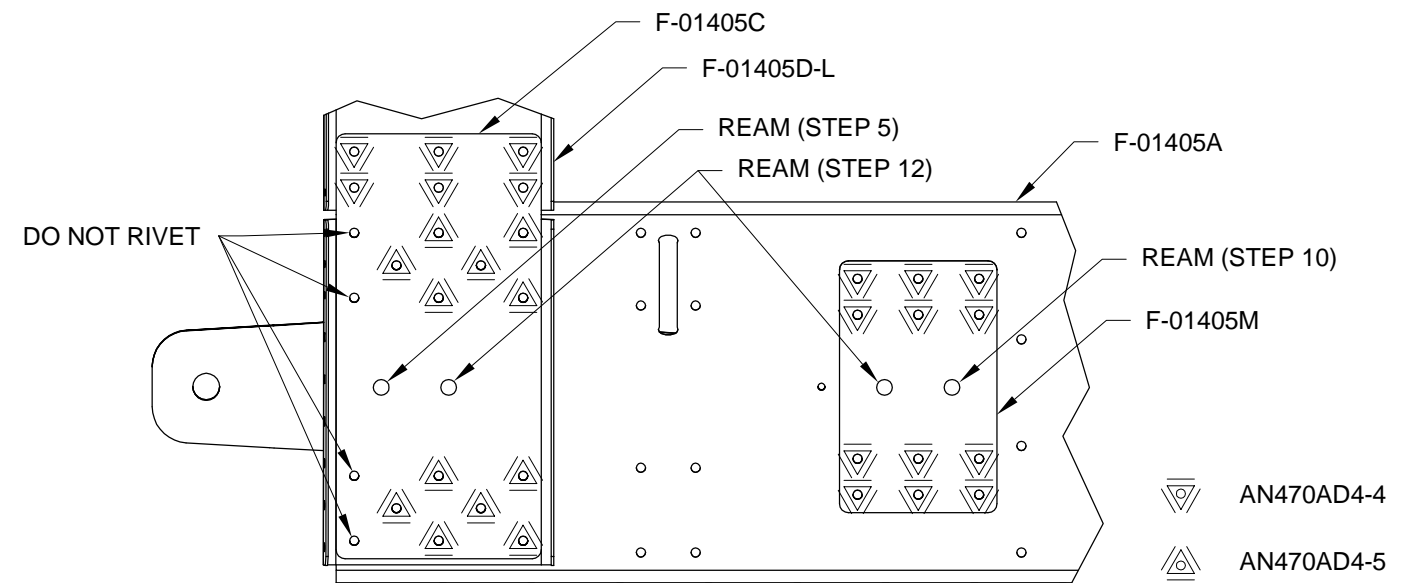
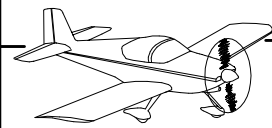


FIGURE 2: F-01405 BULKHEAD ASSEMBLY



**FIGURE 3: F-01405 BULKHEAD ASSEMBLY RIVETS
(AFT FACE, LEFT SIDE SHOWN)**



NOTE: Nutplates will be installed on the forward flanges of the Cover Ribs in Section 29.

Step 1: Drill #17 and dimple the two #19 holes in the top flange of the single F-01438-R Cover rib as shown in Figure 1.

Dimple all #40 holes in the top, bottom, and forward flanges of the F-01438-L & -R Cover Ribs, except as noted in Figure 1.

Step 2: Dimple two K1000-06 nutplates.

Step 3: Rivet the nutplates to the F-01438 Cover Ribs as shown in Figure 1.

Step 4: Cleco and rivet the left Bearing Bracket Assembly to the F-01438-R Cover Rib as shown in Figure 1.

Step 5: Final-Drill #19 the two holes in the Bearing Bracket Assembly into the F-01438-R Cover Rib.

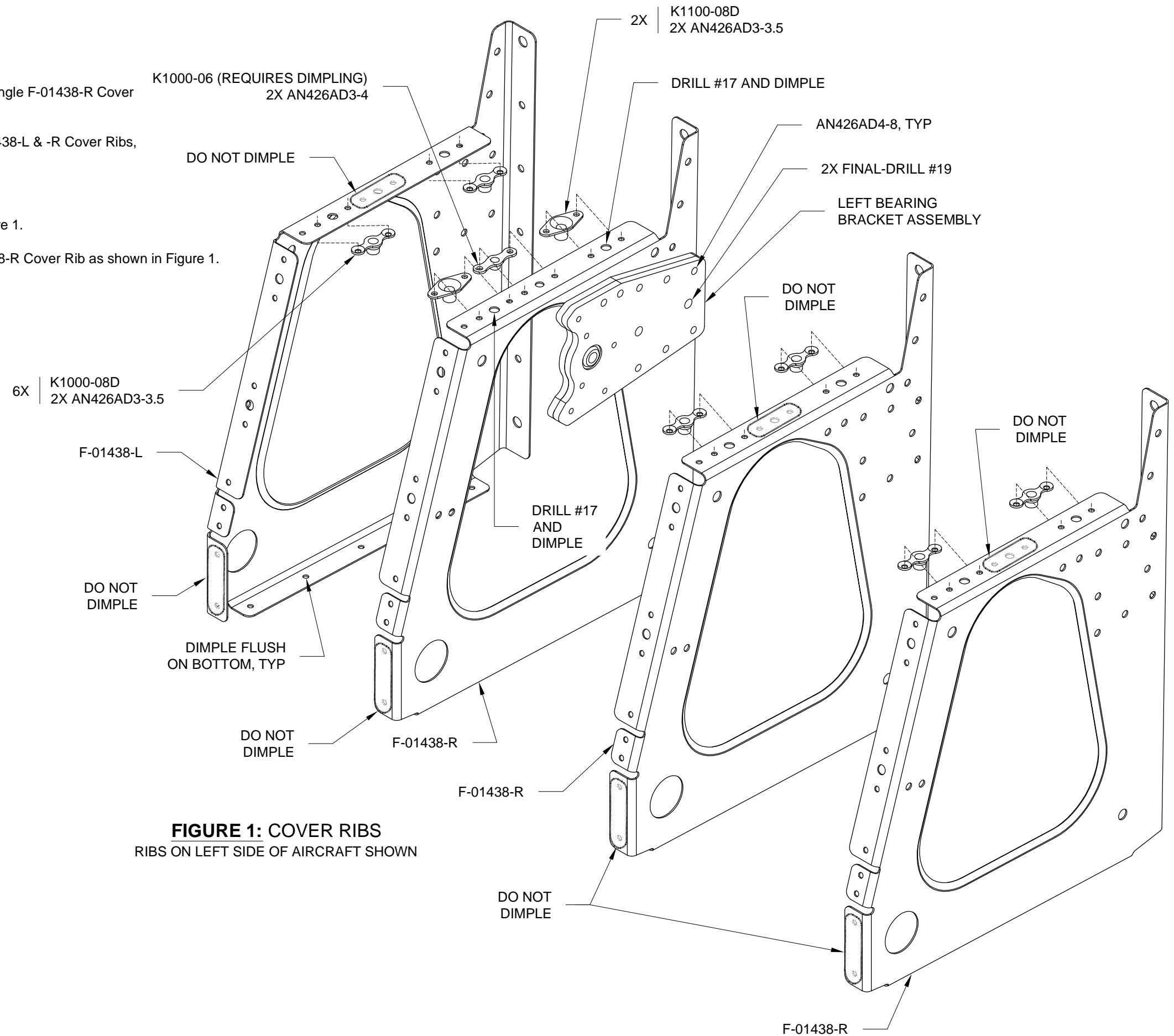
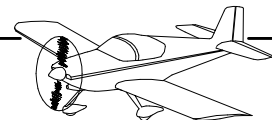


FIGURE 1: COVER RIBS
RIBS ON LEFT SIDE OF AIRCRAFT SHOWN



Step 1: Separate the F-01441-L & -R Bearing Bracket Braces and F-14143 Bearing Bracket Angles as shown in Figure 1 and Figure 2.

Step 2: Machine countersink the holes in the web of the F-01441-L & R Bracket Braces as shown in Figure 3.

Step 3: Cleco & rivet the F-01441-L Bearing Bracket Brace and F-14143 Bearing Bracket Angle as shown in Figure 3.

Step 4: Machine Countersink the #40 holes in the top flange of the F-01403 Forward Center Section Bulkhead to fit the head of an AN426AD3 rivet.

Step 5: Machine Countersink the #30 and #40 holes in the bottom flange of the F-01403 Forward Center Section Bulkhead to fit a dimpled .032 skin.

Step 6: Rivet the nutplates to the top flange of the F-01403 Forward Center Section Bulkhead as shown in Figure 4.

NOTE: Insert rivets in the topmost and bottom most holes common to the side angles and forward center section bulkhead to aid in alignment prior to setting any rivets.

Step 7: Bolt, cleco and rivet the F-01403D-L Forward Center Section Side Angle to the F-01403 Forward Center Section Bulkhead as shown in Figure 4. See section 5.20 for bolt torque values.

NOTE: The outboard most Cover Ribs are attached using only one bolt at this time.

Step 8: Bolt, cleco and rivet the F-01438-L & -R Cover Ribs to the F-01403 Forward Center Section Bulkhead. See Figure 4. See Section 5.20 for bolt torque values. Position the manufactured head of the rivets on the forward side of the bulkhead.

Step 9: Attach the Bearing Brace Assembly to the Bearing Bracket Assembly using the structural screws shown in Figure 4.

Step 10: Rivet the Bearing Bracket Assembly to the F-01403 Forward Center Section Bulkhead and F-01438 Cover Rib.

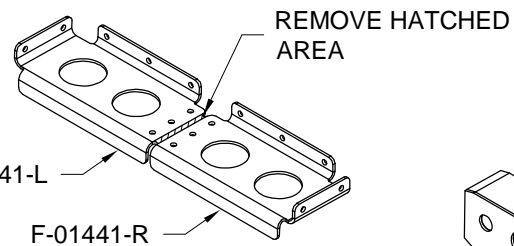


FIGURE 1: BEARING BRACKET BRACES

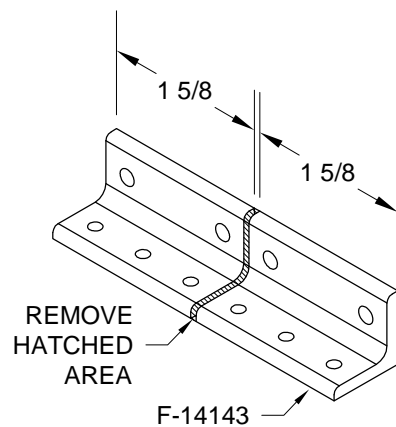


FIGURE 2: BEARING BRACKET ANGLES

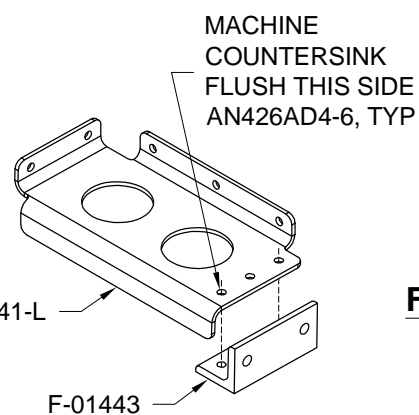


FIGURE 3: BEARING BRACE ASSEMBLY LEFT ASSEMBLY SHOWN

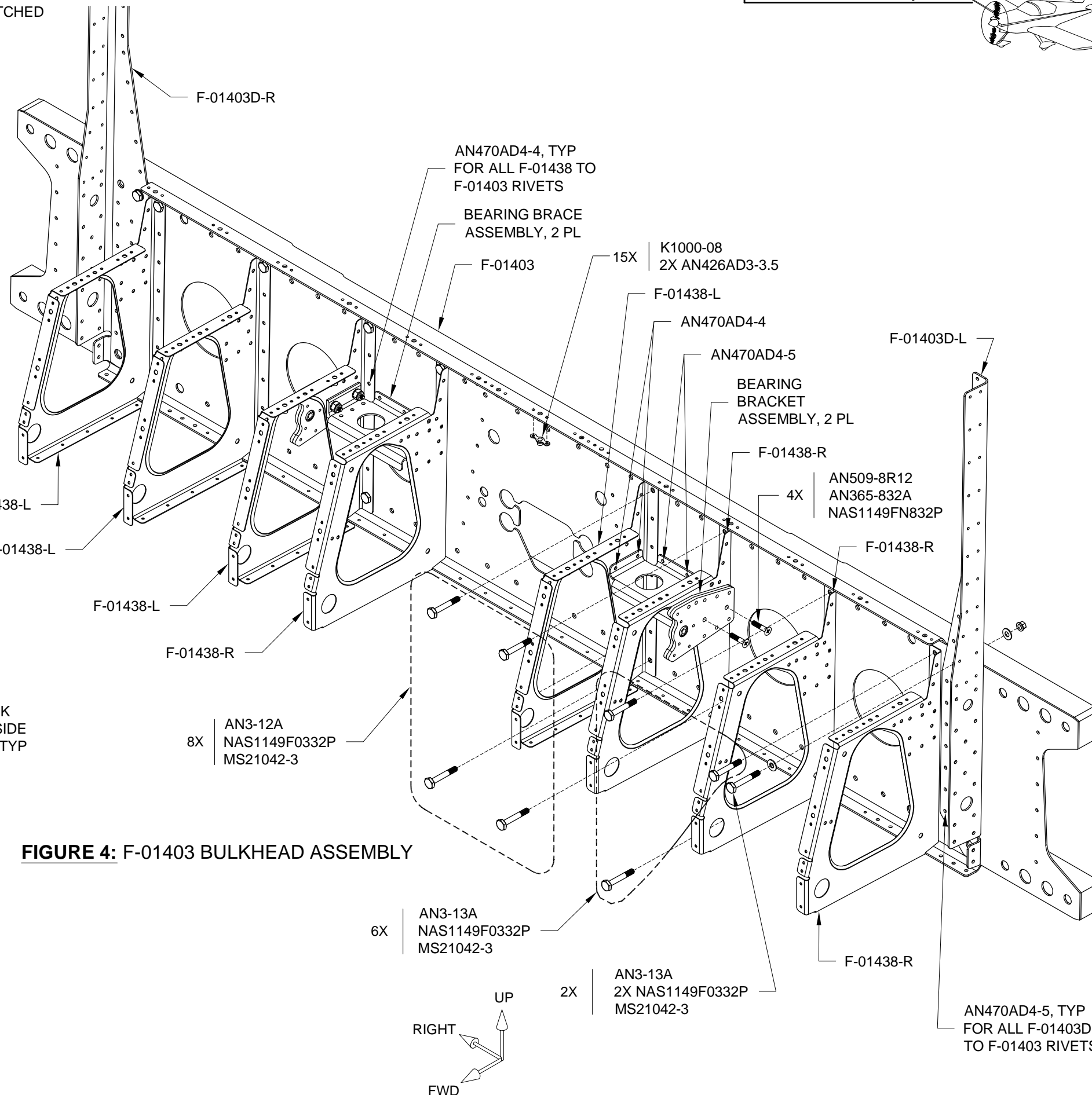


FIGURE 4: F-01403 BULKHEAD ASSEMBLY



Step 1: Ream the holes in the webs of the in the F-01404 and F-01403 Bulkhead Assemblies as shown in Figure 1.

NOTE: For best results, ream using the following process:

Lube the reamer, then insert it into the hole in the bar of the bulkhead assembly.

Begin slowly turning the reamer while pushing it through the web of the bulkhead assembly. Avoid applying any side load.

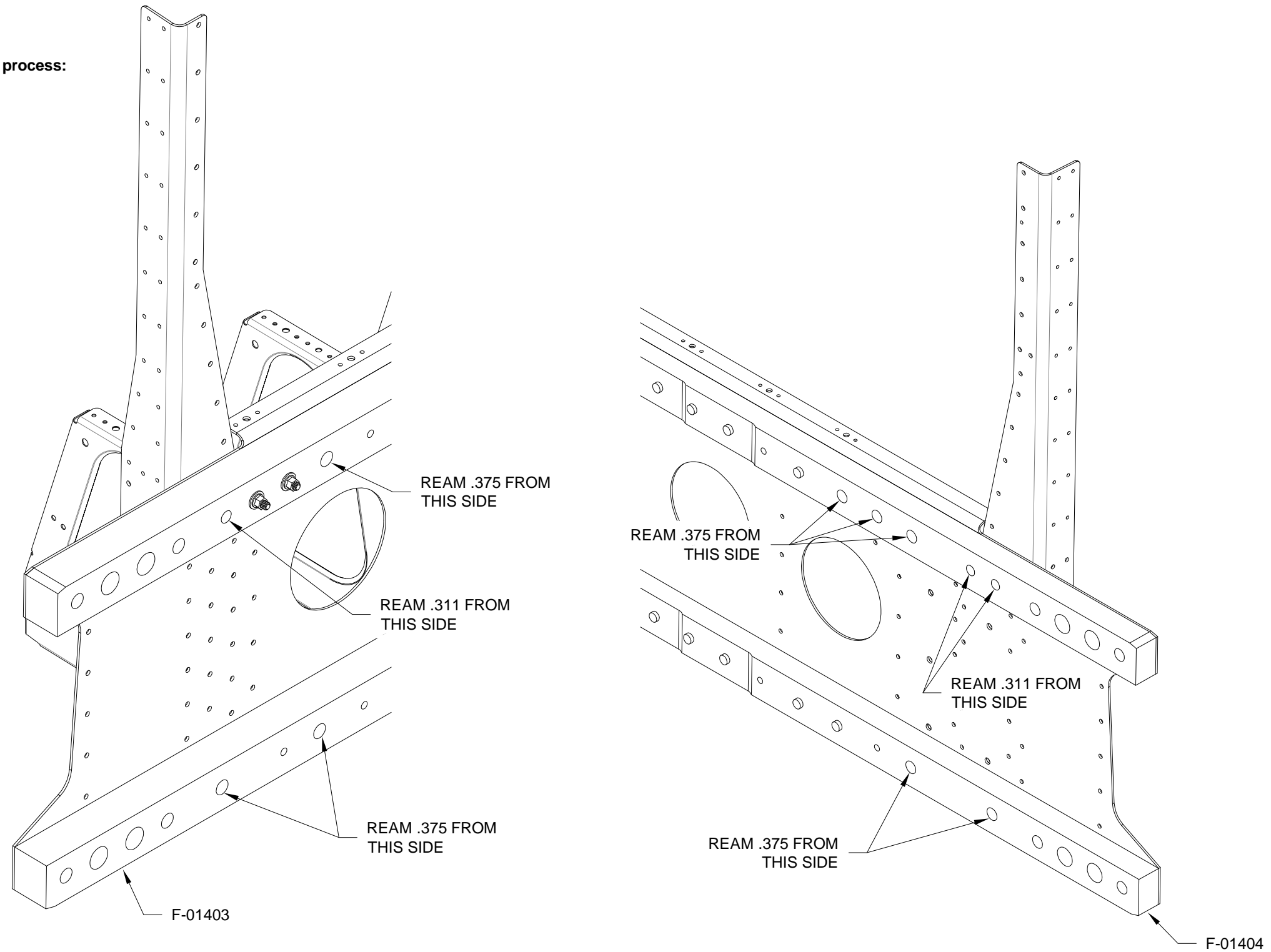


FIGURE 1: REAMING