

# SECTION 36iS/U: GEAR LEG & WHEEL FAIRINGS

U-0007  
NOSE LEG  
FAIRING

U-0005B  
WHEEL FAIRING AFT

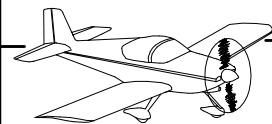
U-0005A-1  
WHEEL FAIRING FRONT

U-0001A  
WHEEL FAIRING  
FRONT

U-0001B  
WHEEL FAIRING AFT

**NOTE:** Special tools required to complete this section include a "longeron" yoke for a rivet squeezer.

DATE OF COMPLETION: _____			
PARTICIPANTS: _____			
DATE: 08/26/19	REVISION: 1	RV-12iS	PAGE: 36iS/U-01



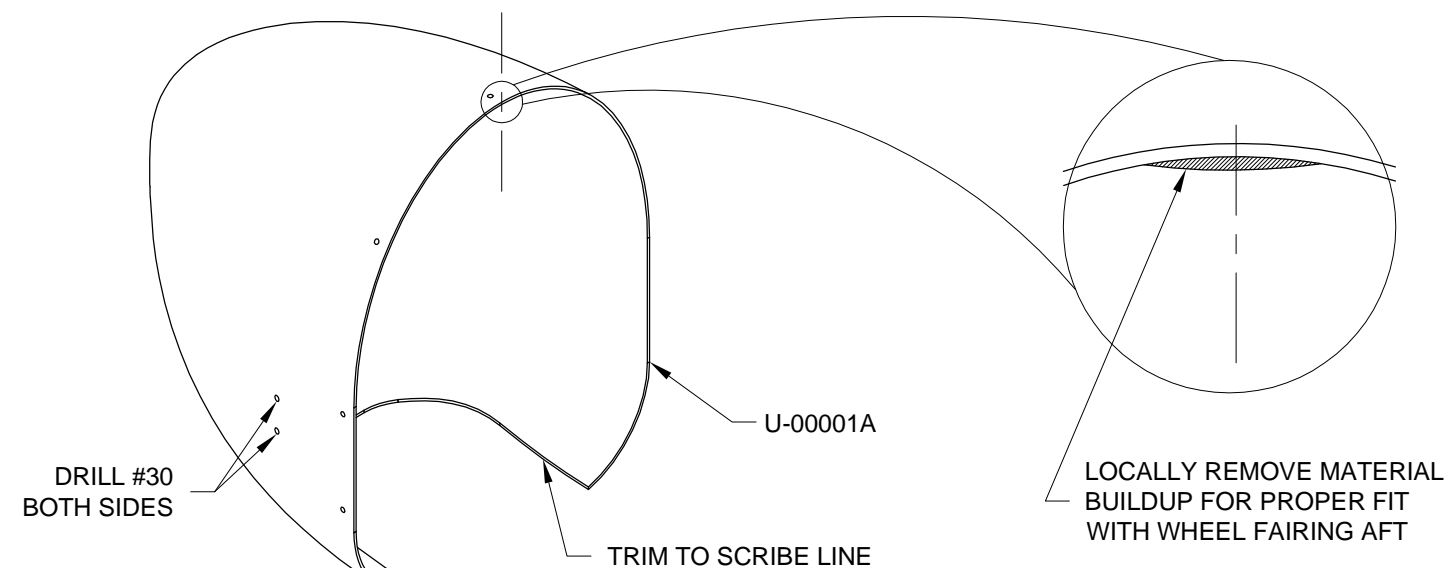
**NOTE:** Except where separate instructions and/or figures exist for both left and right sides of the aircraft, only the left side parts, assemblies, or installations will be shown.

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

Refer to Section 5.18 MATCH-DRILLING OPAQUE FIBERGLASS PARTS and MIXING COTTON FLOX WITH EPOXY RESIN.

Step 1: The U-00001A has been laid up so that there are overlapping layers of cloth along its centerline. The area of overlap is thicker than the rest of the fairing. Sand down this thicker area so that at least 3/4 in. [19.1 mm] of the aft edge of the wheel fairing front is the same thickness all along its length.

Step 2: Trim the tire opening of the U-00001A the scribe line. Drill the dimple locations shown. See Figure 1.

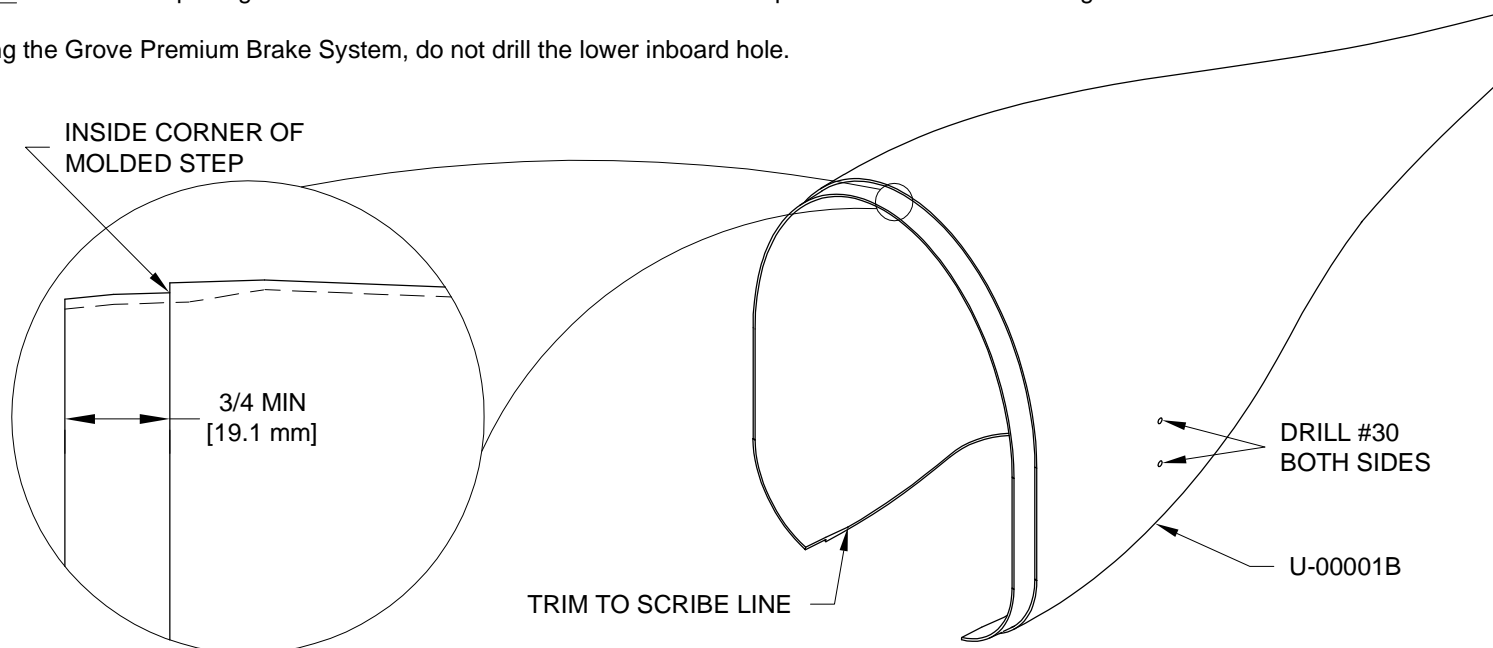


**FIGURE 1: PREP FRONT FAIRING**

Step 3: If necessary, square up the inside corner of molded step in the U-00001B to allow for a good fit of the fairing halves as shown in Figure 2. A coarse file works well. Trim the flange as shown in Figure 2.

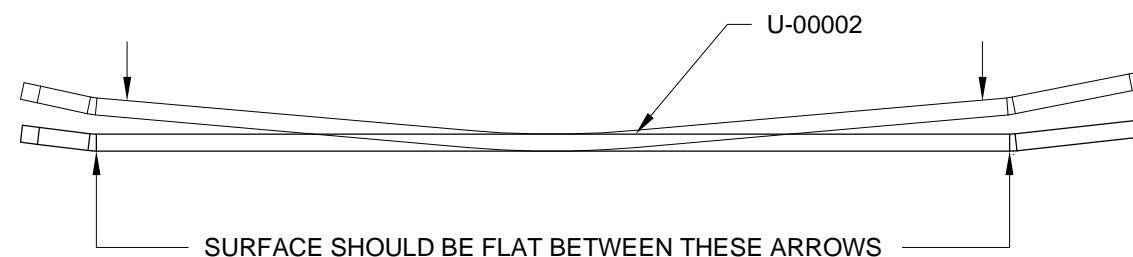
Step 4: Trim the tire opening of the U-00001B to the scribe line. Drill the dimple locations shown. See Figure 2.

If using the Grove Premium Brake System, do not drill the lower inboard hole.



**FIGURE 2: PREP AFT FAIRING**

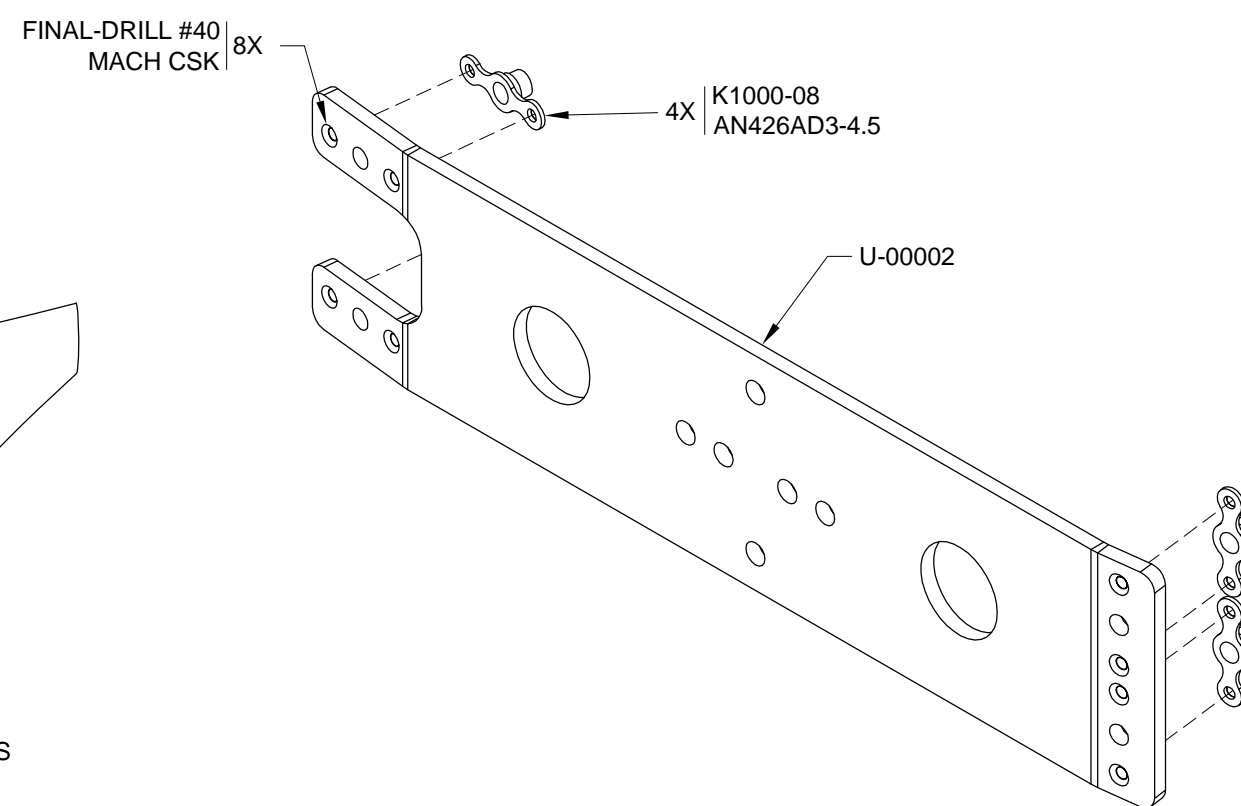
Step 5: Check each of the U-00002 Wheel Fairing Brackets for curvature. If the part is curved, straighten as shown in Figure 3.



**FIGURE 3: STRAIGHTENING THE WHEEL FAIRING BRACKETS**

Step 6: Final-Drill #40 and machine countersink all nutplate rivet holes in each U-00002. See Figure 4.

Step 7: Rivet the nutplates to the four U-00002 as shown in Figure 4.



**FIGURE 4: ATTACH NUTPLATES TO WHEEL FAIRING BRACKETS**



Step 1: Cleco #30 the U-00001A, U-00001B, and two U-00002s together as shown in Figure 1, ensuring tire openings are aligned.

Step 2: Remove material as necessary from the U-00001A up to the scribe line to achieve a precision fit between the wheel fairing halves. A sanding block or coarse sandpaper glued to a straight stick as a disposable file work well here. Only remove material that prevents the halves from matching smoothly. See Figure 2.

Step 3: When the U-00001A and B are aligned as well as possible, temporarily tape them in this position and place a tape reference mark across the seam, as shown in Figure 1 and Figure 3. Slit the tape along the seam with a razor blade and use the mark to realign the fairings during assembly.

Step 4: Use a fine tip felt pen to transfer the bracket hole to the inside of the U-00001B as shown in Figure 1. This will be the tire inflation hole.

Step 5: Drill a pilot hole centered on the tire inflation hole marked in Step 3. This hole will be final-drilled later in this section.

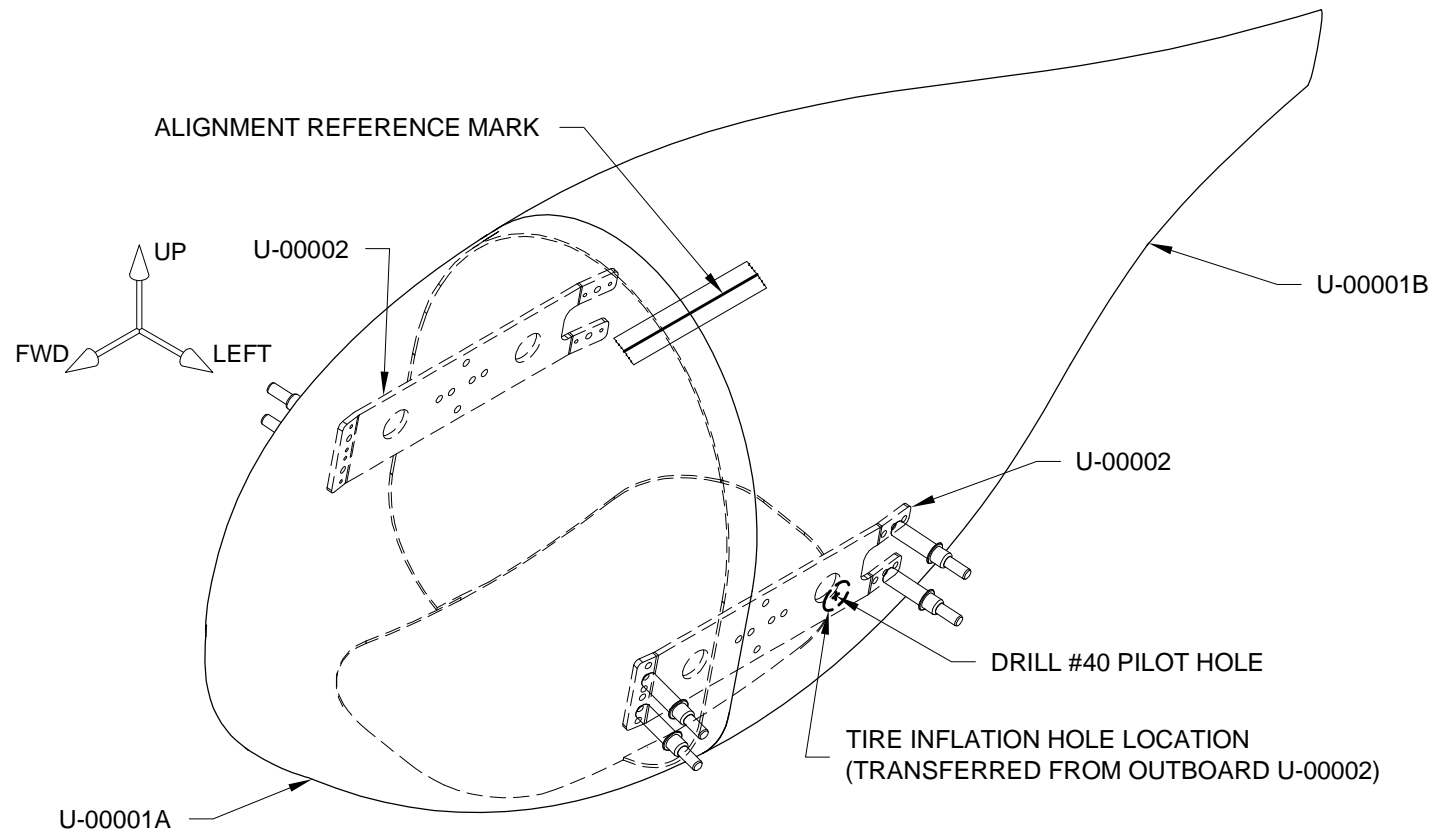
Step 5: Match-Drill #40 the wheel fairings at each of the "dimples" that are molded into the circumference of the U-00001A where it overlaps the U-00001B. Seen Figure 3.

Cleco each drilled hole before drilling the next.

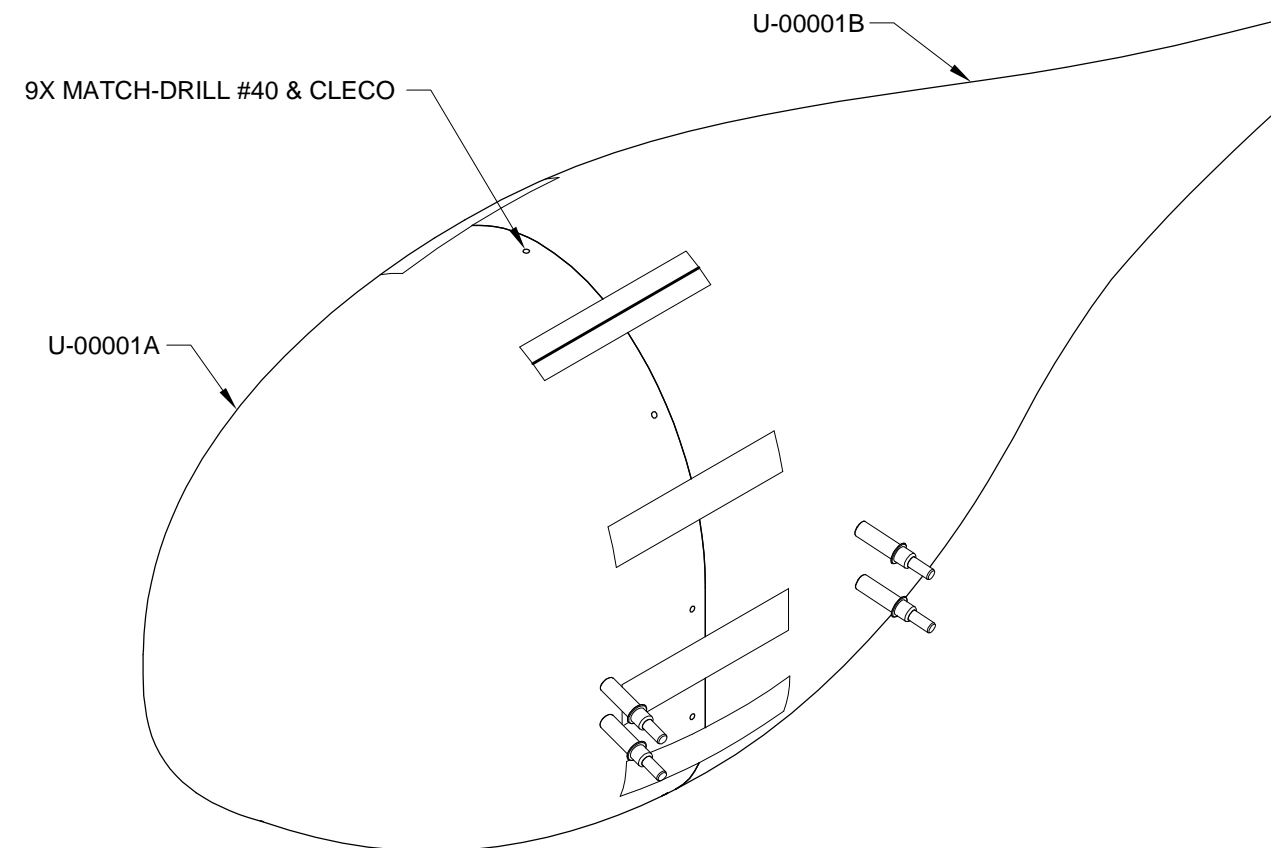
Begin match-drilling at the top-center and work downward, alternating left/right side-to-side until all nine dimples have been drilled.

Hold the drill bit perpendicular to the surface of the wheel fairing halves while match-drilling.

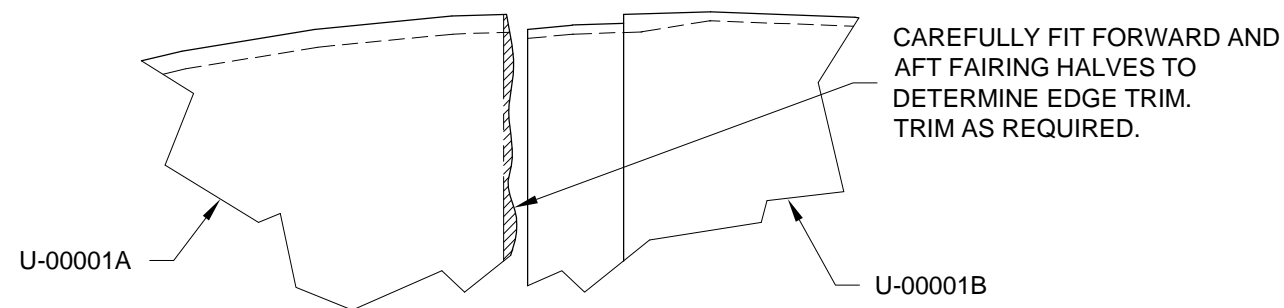
Be aware of debris between parts as drilling progresses. Take apart and clean-out as necessary.



**FIGURE 1: ALIGNING THE WHEEL FAIRING HALVES**



**FIGURE 3: MATCH-DRILL FAIRING HALVES**



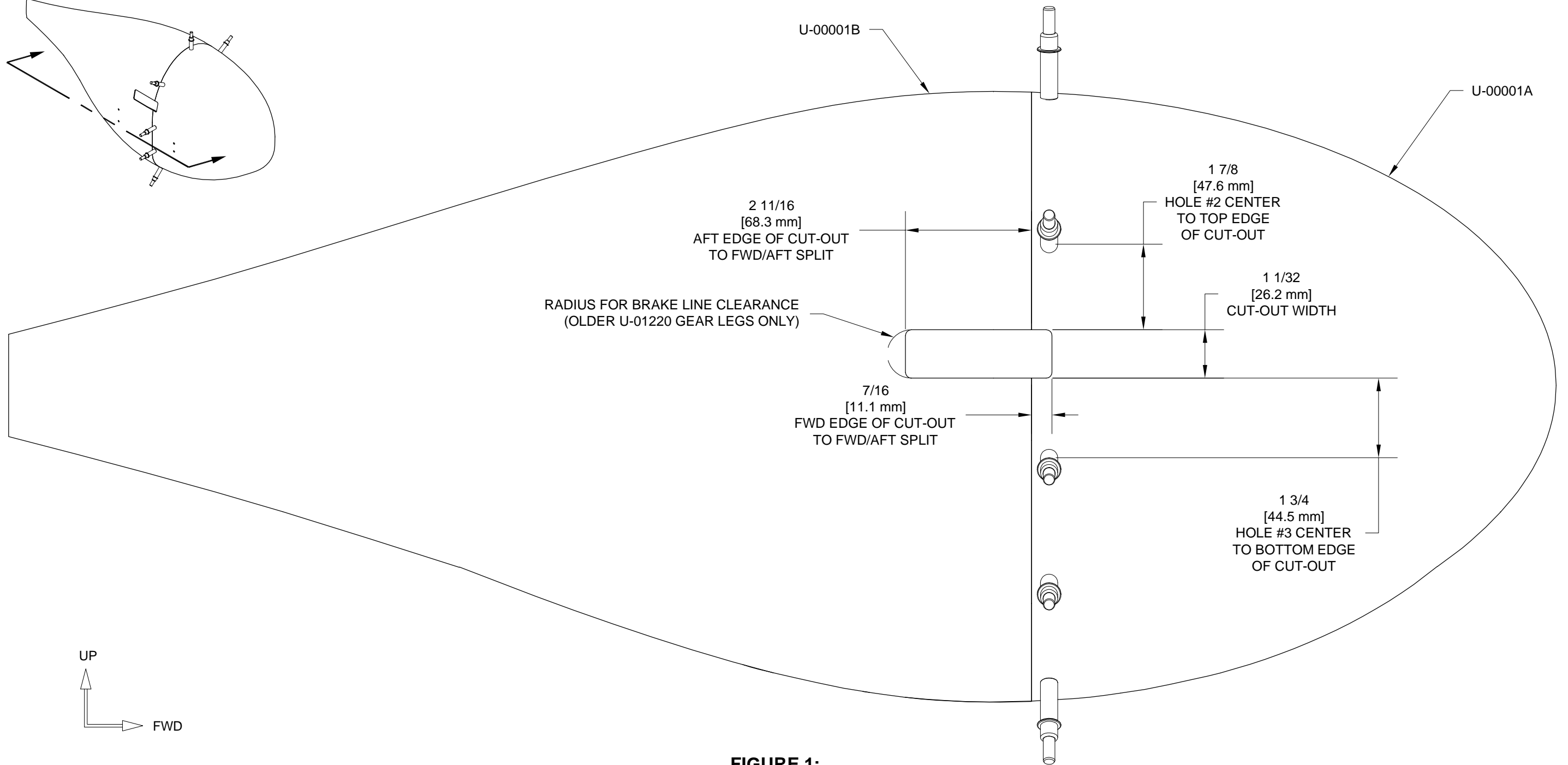
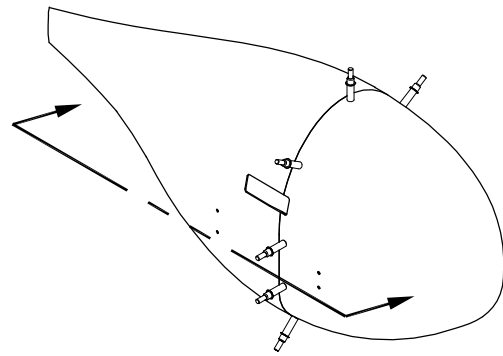
**FIGURE 2: FIT AND TRIM FAIRING HALVES**



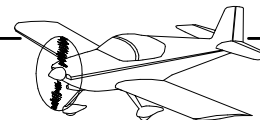
**NOTE:** Figure 1 shows the left side installation only, make the cutout on the opposite side of the fairings when modifying the right wheel fairings.

**Step 1:** Use a fine point felt pen to mark the gear leg opening on the U-00001A and U-00001B as shown in Figure 1. Trim to within 1/16 in. [1.6 mm] of the trim line then sand to the finish edge.

**Step 2:** If using the older non-drilled U-01220 Main Landing Gear Legs, add a radius to the U-00001B for brake line clearance as shown in Figure 1.



**FIGURE 1:**  
GEAR LEG CLEARANCE HOLE



**NOTE:** See Section 35iS/U for information related to installation and removal of the wheels and brakes.

**NOTE:** If using the Grove premium brake system, the inboard U-00002 Wheel Fairing Brackets must be trimmed as shown in Figure 2.

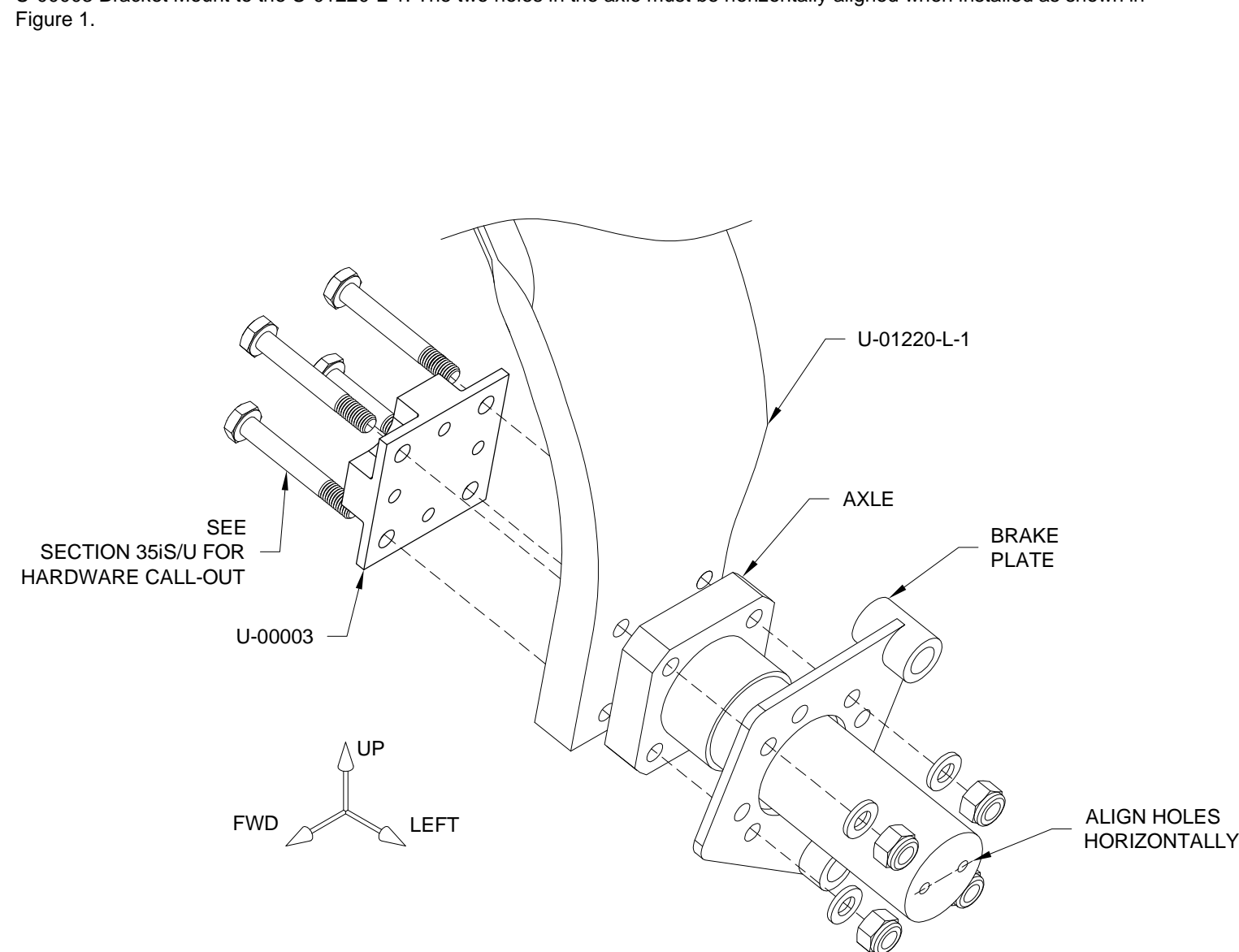
**Step 1:** Remove the main wheel from the axle.

**Step 2:** Remove the bolts that attach the axle and brake plate to the U-01220-L-1 Main Gear Leg.

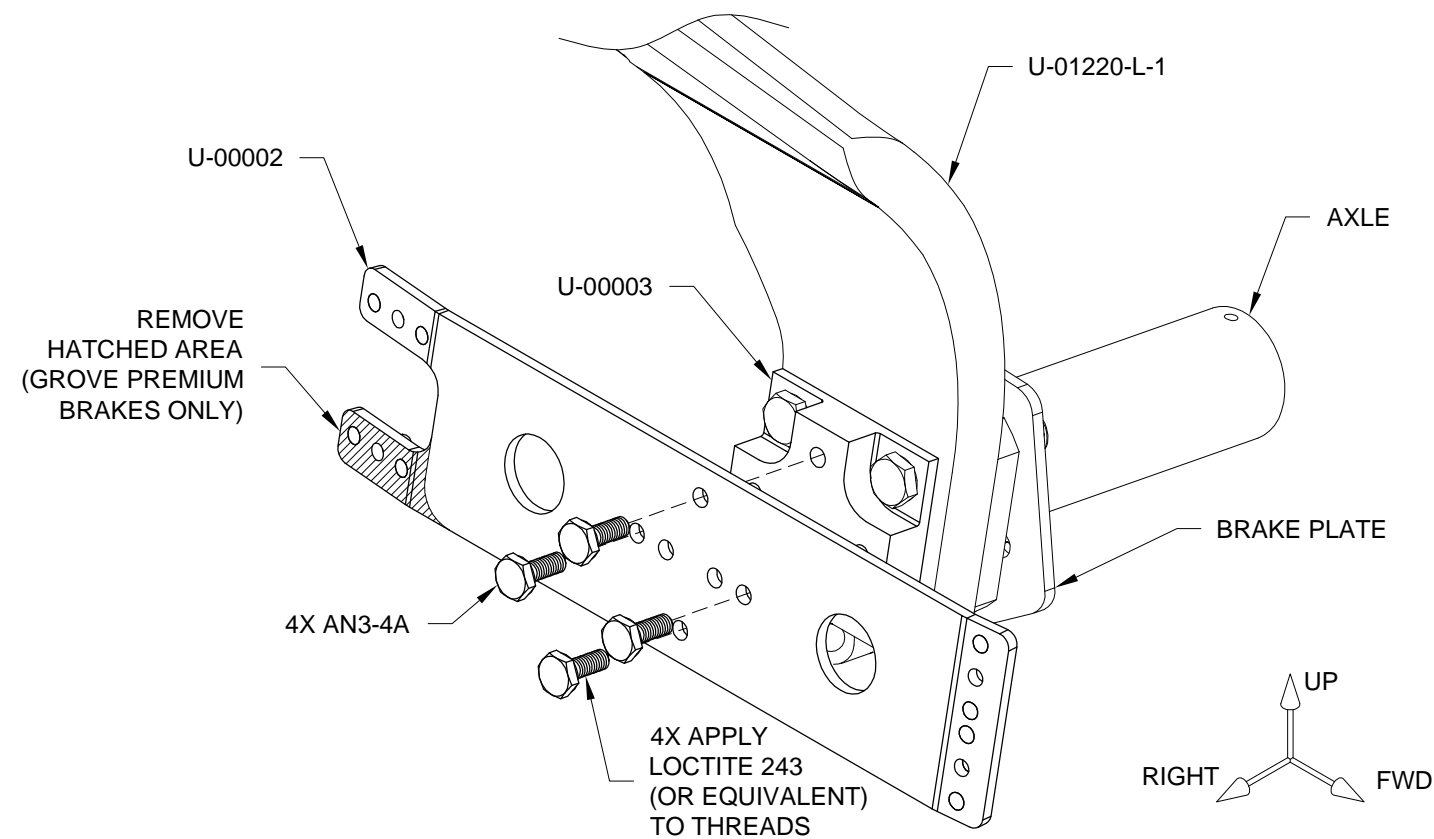
**Step 3:** Discard the two washers that were installed under each axle attach bolt head and reinstall the axle, brake plate, and U-00003 Bracket Mount to the U-01220-L-1. The two holes in the axle must be horizontally aligned when installed as shown in Figure 1.

**Step 4:** Attach one of the U-00002 to the U-00003 as shown in Figure 2.

**Step 5:** Reinstall the main wheel on the axle.

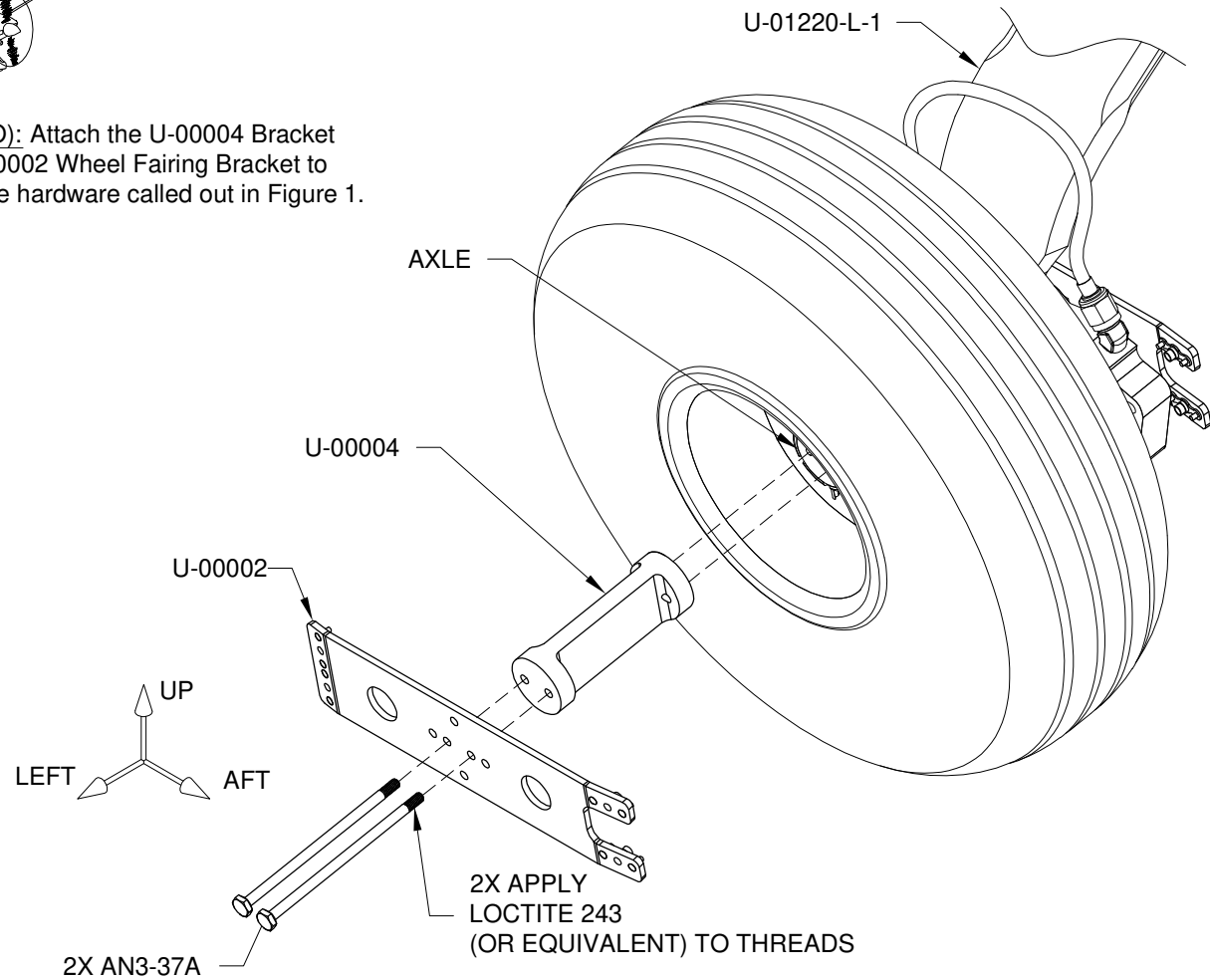


**FIGURE 1:**  
ATTACH BRACKET MOUNT TO MAIN GEAR LEG  
(LEFT SIDE SHOWN)



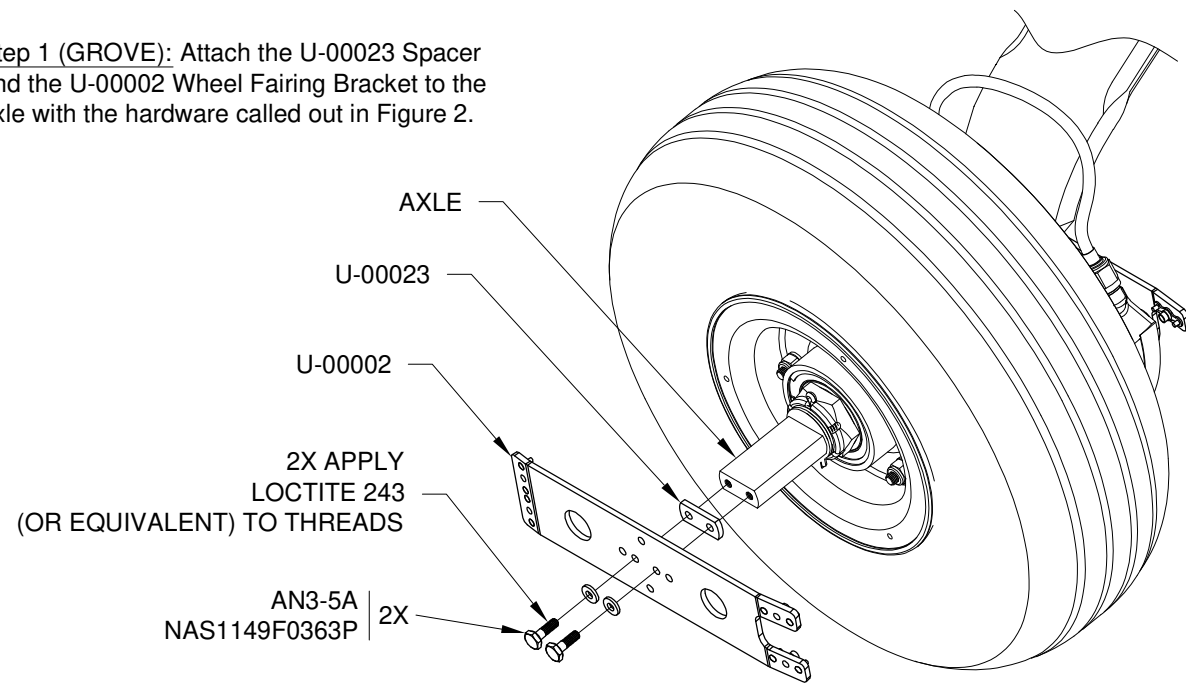
**FIGURE 2:** ATTACH INBOARD WHEEL FAIRING BRACKET  
(LEFT SIDE SHOWN)

**Step 1 (MATCO):** Attach the U-00004 Bracket Mount and U-00002 Wheel Fairing Bracket to the axle with the hardware called out in Figure 1.



**FIGURE 1: ATTACH BRACKET MOUNT & WHEEL FAIRING BRACKET TO MATCO (LEFT SIDE SHOWN)**

**Step 1 (GROVE):** Attach the U-00023 Spacer and the U-00002 Wheel Fairing Bracket to the axle with the hardware called out in Figure 2.



**FIGURE 2: ATTACH BRACKET MOUNT & WHEEL FAIRING BRACKET TO GROVE (LEFT SIDE SHOWN)**

**NOTE:** The brake line may be gently re-formed by hand to fit inside the wheel fairing.

**Step 2:** Cleco the U-00001B to the U-00002. The clearance on the inboard and outboard side of the wheel opening are different. Ensure the inboard clearance to the tire is at least 1/2 in. [12.7 mm].

**Step 3:** Mark the U-00001B along the aft and outboard wheel opening so that the distance is the same as that of the inboard wheel opening. See Figure 3.

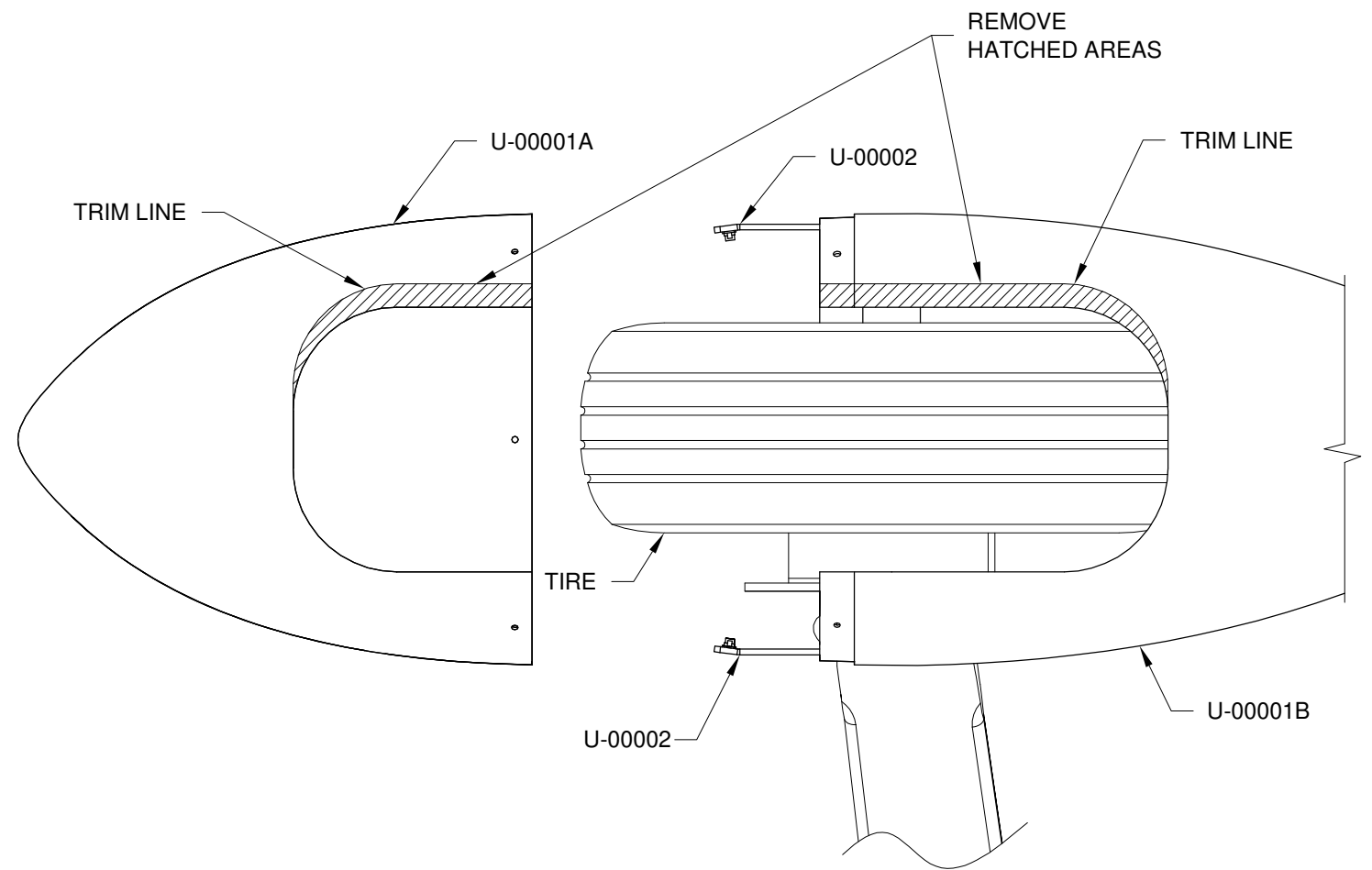
Remove the U-00001B and trim to the trim line. Cleco the U-00001B to the U-00002s.

**Step 4:** Cleco the U-00001A to the U-00002s and to the U-00001B as shown in Figure 3.

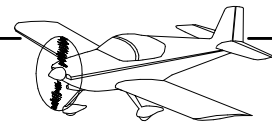
**Step 5:** Mark the U-00001A on the outboard side where it meets the U-00001B wheel opening. Continue marking along the outboard side and front of the wheel opening to create the 1/2 in. [12.7 mm] minimum wheel clearance.

**Step 6:** Remove the U-00001A and trim to the trim line.

**Step 7:** Reinstall the U-00001A and check that the wheel openings allow a minimum of 1/2 in. [12.7 mm] tire clearance. See Figure 3.



**FIGURE 3: MODIFYING WHEEL FAIRING HALVES**



**Step 1:** Final-Drill #19 the U-00001B and U-00001A to the U-00002. See Figure 1. Avoid drilling into the nutplates mounted on the U-00002.

**Step 2:** Remove the clecos, U-00001A and U-00001B. Aggressively roughen the inside of the U-00001A and U-00001B at the #19 hole locations, then clean the roughened areas.

**Step 3:** Coat the threads of the 8-32 screws (called out in Figure 2) with wax to prevent epoxy from bonding to them. Tape and wax the U-00002 tabs to prevent the epoxy/flox mixture from bonding to them.

**Step 4:** Tape the outside of the #40 pilot hole in the U-00001B to keep the epoxy/flox inside the fairing.

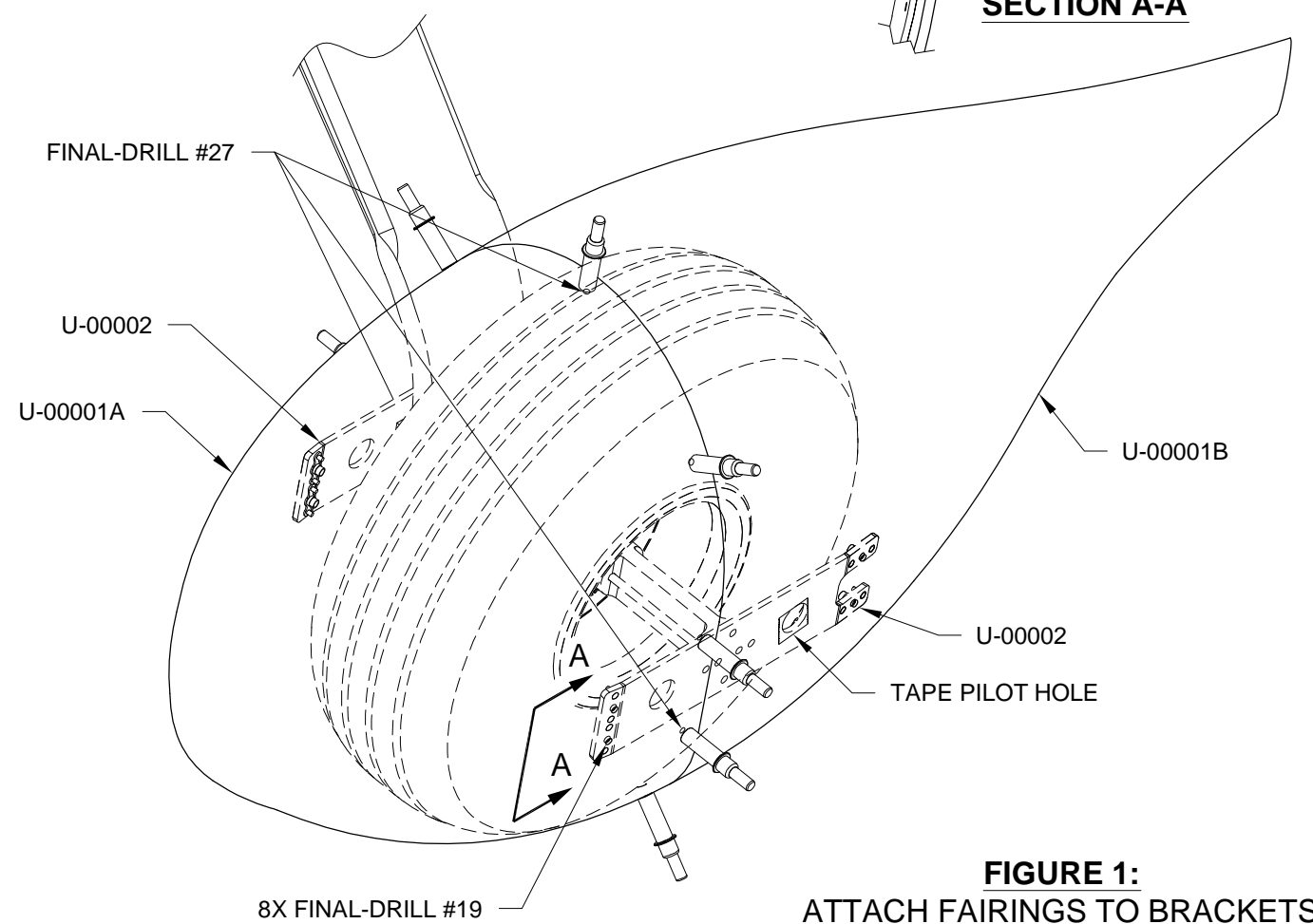
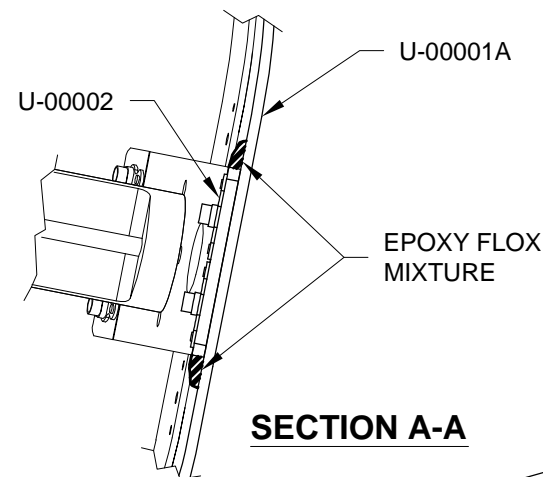
**Step 5:** Mix epoxy and flox and build up the areas around the #19 holes on both the U-00001A and U-00001B. Apply enough epoxy mixture (approximately 1/16 in. [1.6 mm]) to create a recess when the two U-00002 are pressed against them, but not so much that the epoxy will capture the U-00002. See Figure 1 Section A-A.

While the mixture is wet, loosely screw the U-00001A and U-00001B to both U-00002 and cleco them to each other. Do not fully tighten the screws. Leave a 1/16 in. [1.6 mm] gap between the screw head and the surface of the fairings.

**Step 6:** After the epoxy has cured, final-drill #27 three of the #40 screw attach holes in the U-00001A and U-00001B as shown in Figure 1.

**Step 7:** Remove the U-00001A and U-00001B from the U-00002. Remove the tape and wax from the U-00002.

**Step 8:** Final-Drill #19 the bracket holes in the U-00001A and U-00001B again to remove any epoxy/flox mixture.



**FIGURE 1:**  
ATTACH FAIRINGS TO BRACKETS

**NOTE:** To locate the nutplate rivet holes, the nutplate is held in place with a mounting screw and the nutplate is used as a drill template. Cleco the first drilled rivet hole to prevent the nutplate from rotating while locating the second rivet hole. It is important on curved surfaces that the nutplate is match-drilled from the side of the part on which it will later be installed.

**NOTE:** In fiberglass, machine countersinks that are up to .005 too shallow are acceptable, even preferable, to countersinks that are too deep. Rivets should be slightly under set where installed in fiberglass parts.

**Step 9:** At the three #27 hole locations drilled in Step 6, match-drill #40 and countersink the U-00001B for nutplate rivets. See Figure 2. Deburr the holes.

**NOTE:** Depending on the fiberglass layup, the thickness of the U-00001B flange may vary. Ensure that the rivets are the correct length for your fairings before riveting. Substitute longer rivets as required.

**Step 10:** Rivet the nutplates to the U-00001B as shown in Figure 2.

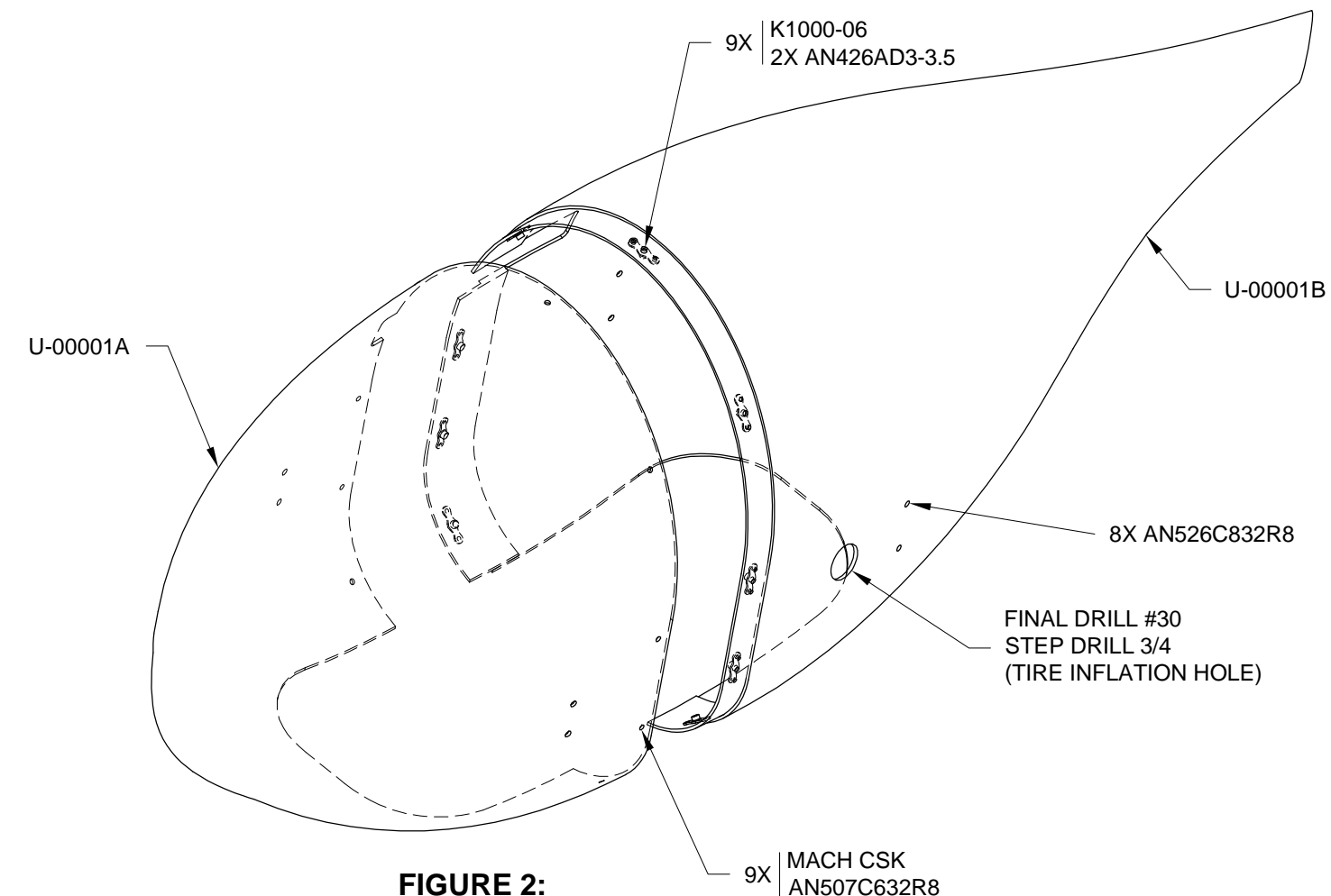
**Step 11:** Join the U-00001A and U-00001B together using three #6 screws in the nutplates and clecos in the rest of the #40 holes. Final-Drill #27 the #40 holes. Separate the wheel fairing halves.

**Step 12:** Install the remaining nutplates on the U-00001B as shown in Figure 2.

**Step 13:** Machine countersink the #27 holes in the U-00001A as shown in Figure 2.

**Step 14:** Final-drill #30 the tire inflation pilot hole, then enlarge using a step drill as shown in Figure 2.

**Step 15:** Attach the U-00001B and U-00001A to the U-00002 and to each other using the hardware called out in Figure 2.



**FIGURE 2:**  
ATTACH WHEEL FAIRINGS  
TO EACH OTHER



**NOTE: See Section 35iS/U for information related to installation and removal of the axle and nose wheel.**

**Step 1:** Remove the Nose Wheel Assembly from the WD-01230-1 Nose Fork.

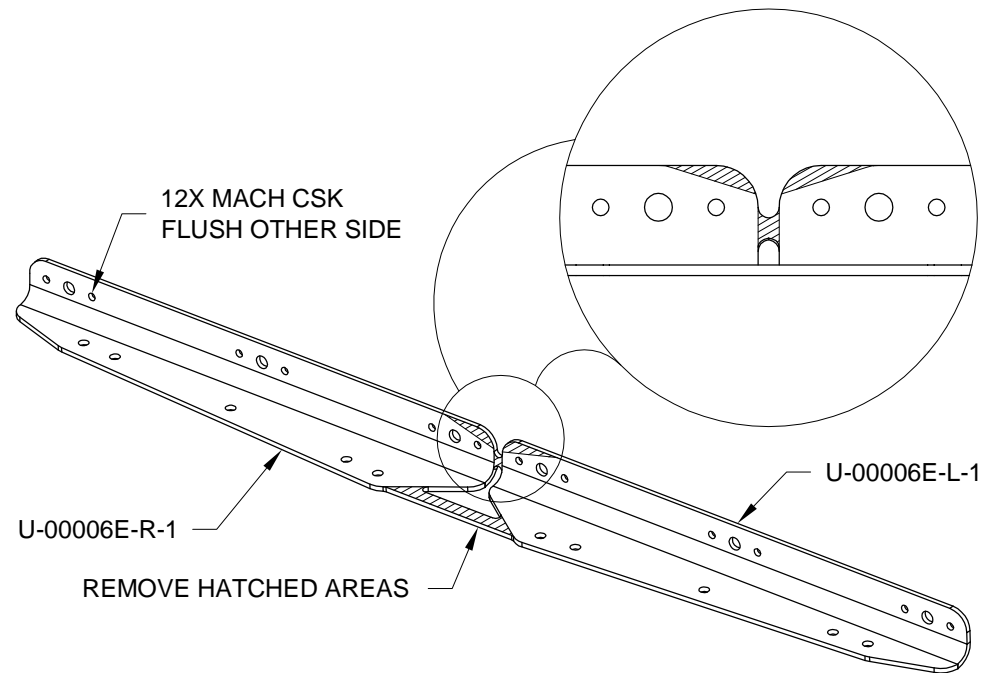
**Step 2:** Remove the hatched areas from the U-00006E-1 Wheel Fairing Bracket Mount to create the U-00006E-L-1 & -R-1 Wheel Fairing Bracket Mounts.

**Step 3:** Machine countersink #40 all nutplate rivet holes on the U-00006E-L-1 & -R-1 as shown in Figure 1.

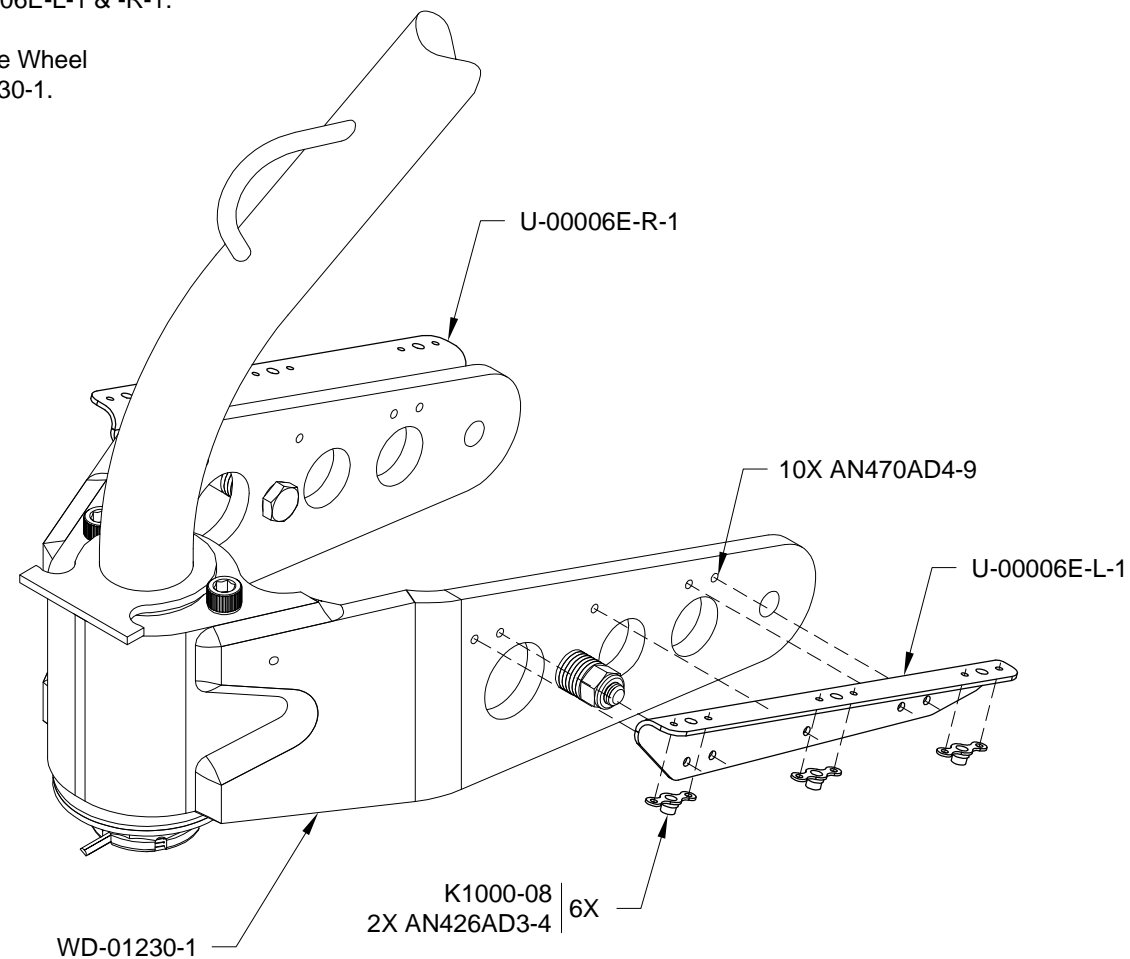
**Step 4:** Rivet both U-00006E-L-1 & -R-1 to the WD-01230-1 using the rivets called out in Figure 2.

**Step 5:** Rivet the nutplates called out in Figure 2 onto both U-00006E-L-1 & -R-1.

**Step 6:** Reinstall the Nose Wheel Assembly in the WD-01230-1.



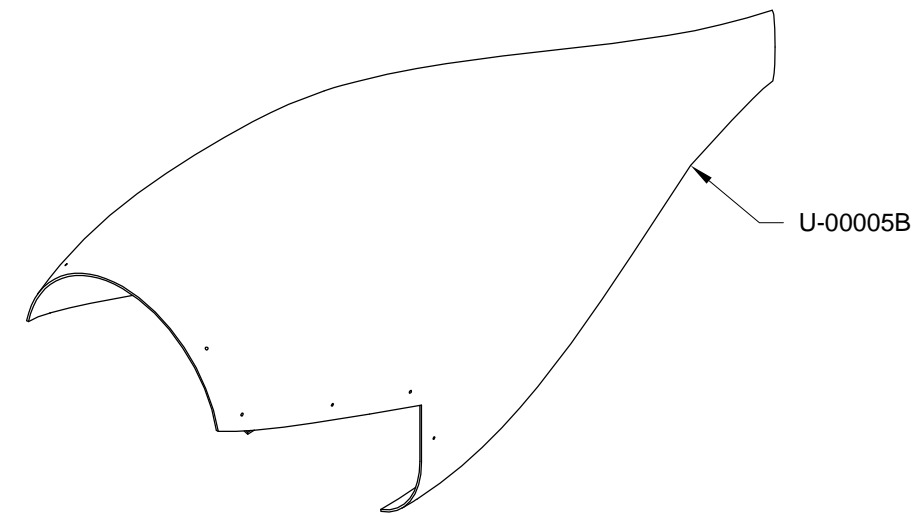
**FIGURE 1: SEPARATING THE U-00006E-1**



**FIGURE 2: ATTACHING THE WHEEL FAIRING BRACKET MOUNTS**

**Step 7:** Trim the forward edges and wheel opening of the U-00005B to within 1/16 in. [1.6 mm] of the scribe lines. See Figure 3.

**Step 8:** Check the inside of the U-00005B in the areas where the part is dimpled by running a finger over the interior surface. If there are thick spots or bumps in the fiberglass, sand them down to make a uniform surface.

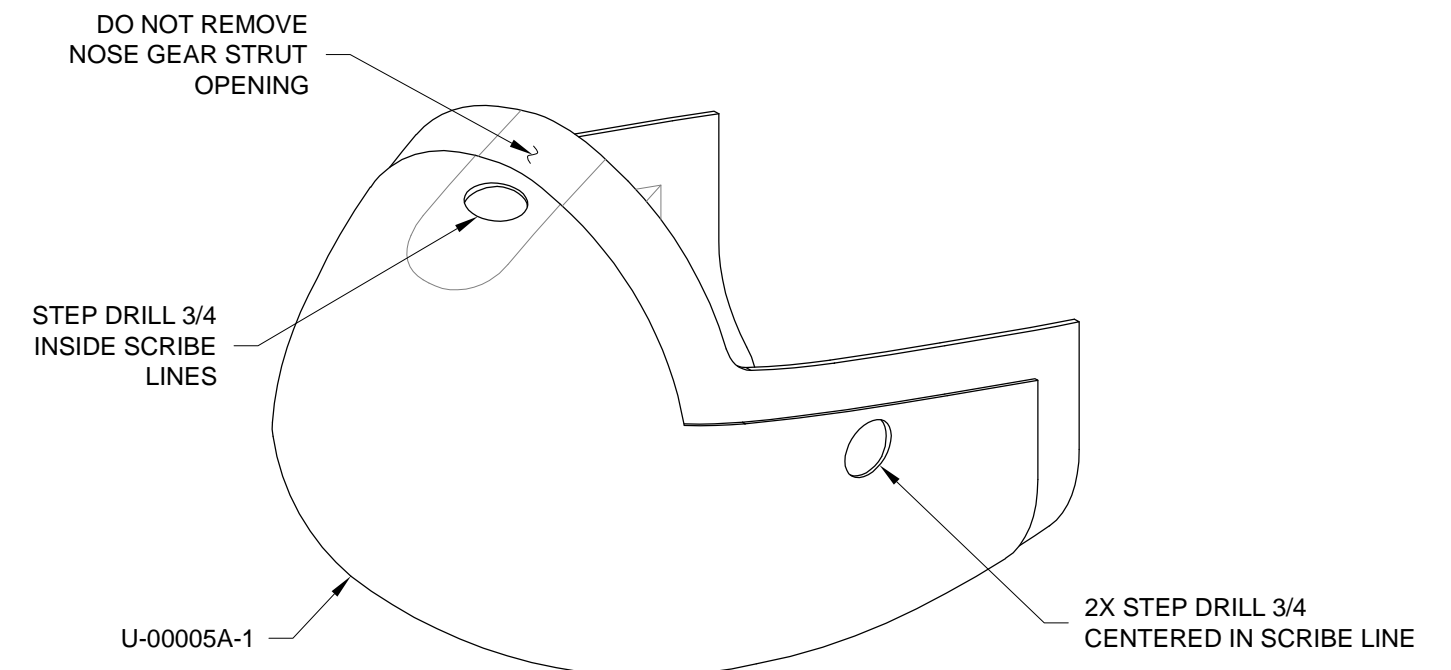


**FIGURE 3: TRIMMING THE U-00005B**

**Step 9:** Trim the edges of the U-00005A-1 flanges to the scribe lines. Trim the wheel opening to within 1/16 in. [1.6 mm] of the scribe lines. Do not trim the nose gear strut opening.

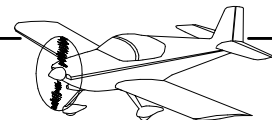
**Step 10:** Check the inside of the U-00005A-1 flanges by running a finger over the interior surface. If there are thick spots or bumps in the fiberglass, sand them down to make a uniform surface.

**Step 11:** Drill holes in the U-00005A-1 using a step drill bit as shown in Figure 4.



**FIGURE 4: TRIMMING & DRILLING THE U-00005A-1**





**Step 1:** Assemble the U-00005A-1 and U-00005B. Ensure that the wheel hole opening scribe lines are aligned. Tape and clamp in this position, then place reference marks on the tape across the seam. Slit the tape along the seam with a razor blade and use these marks to realign the fairing halves during assembly.

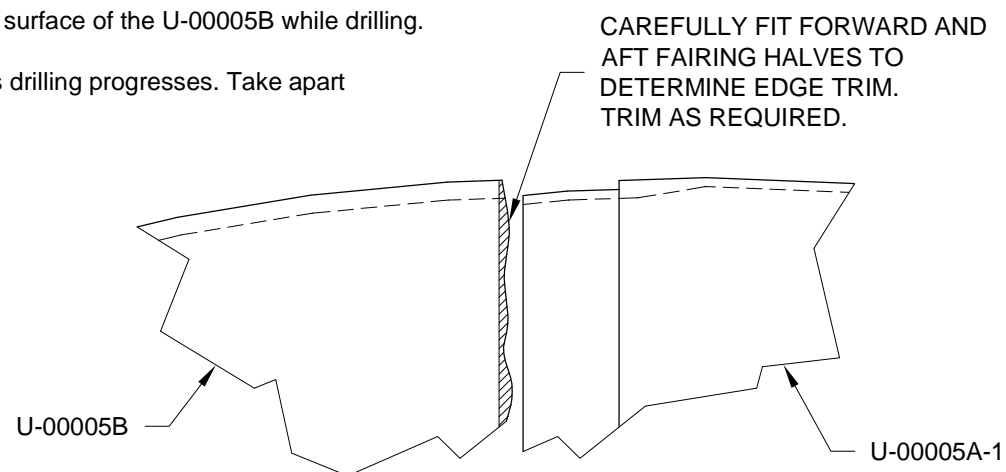
**Step 2:** Remove material from the U-00005B up to the scribe line as required to achieve a precision fit between the wheel fairing halves. See Figure 1. A sanding block or coarse sandpaper glued to a straight stick as a disposable file work well here. Only remove material that prevents the halves from matching smoothly.

**Step 3:** When satisfied with the fit, join the U-00005A-1 and U-00005B as shown in Figure 2. Align the parts until they fit as well as possible, then use several strips of tape and clamps to hold them together.

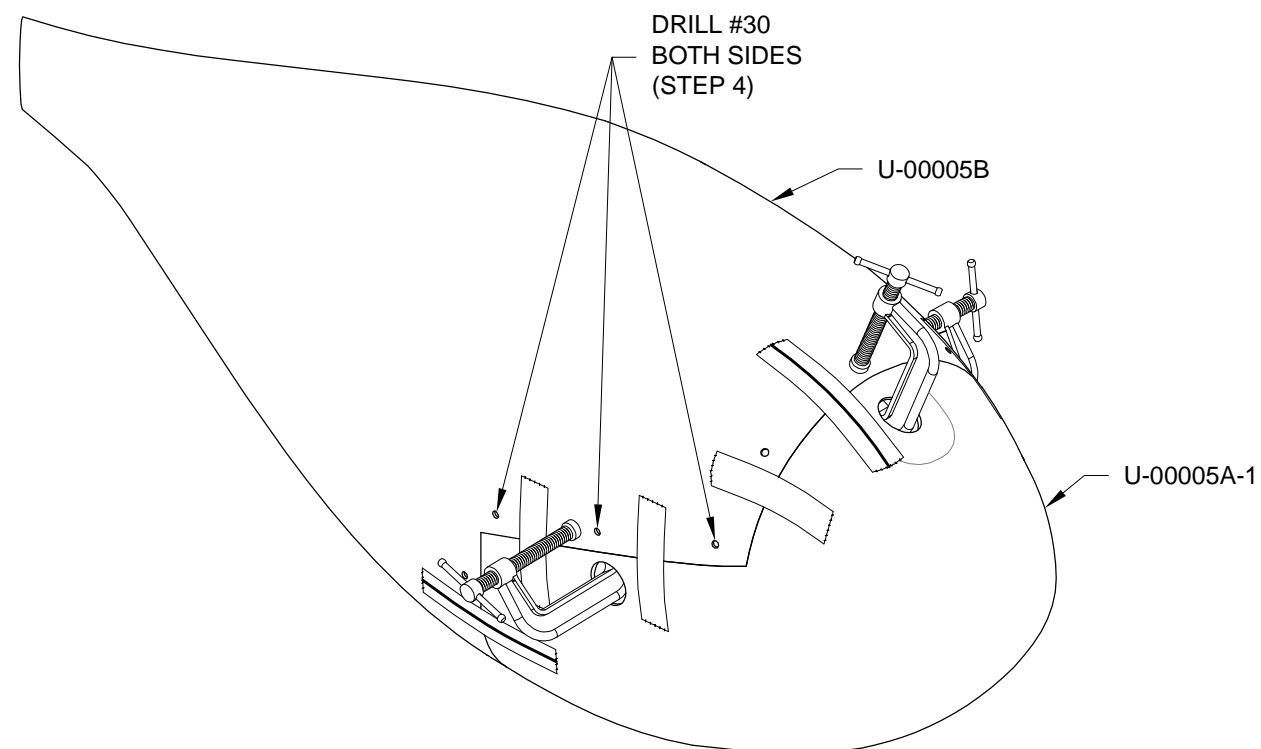
**Step 4:** Drill the U-00005A-1 to the U-00005B at the molded "dimples" indicated in Figure 2. Cleco each drilled hole before drilling the next.

Hold the drill bit perpendicular to the surface of the U-00005B while drilling.

Be aware of debris between parts as drilling progresses. Take apart and clean out as necessary.

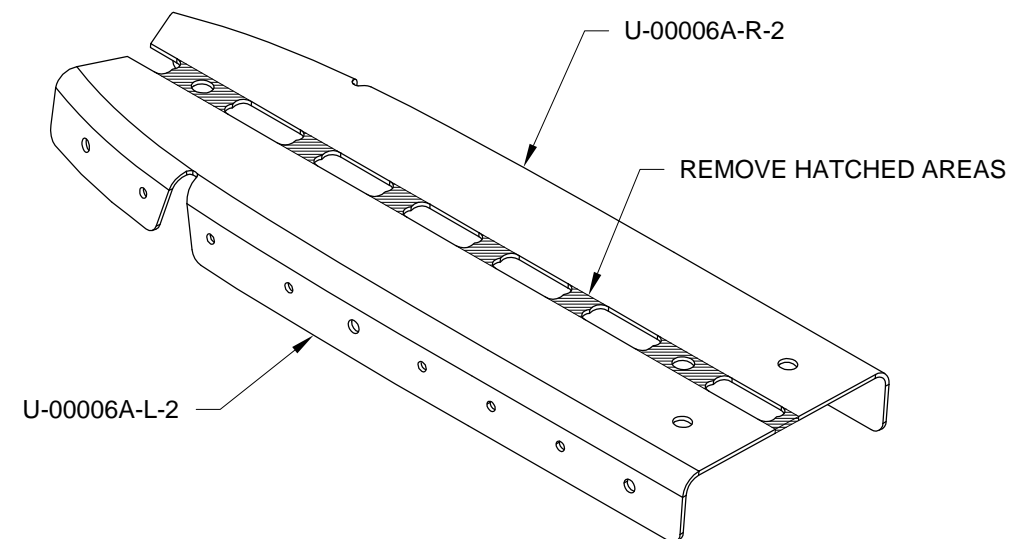


**FIGURE 1: FIT AND TRIM FAIRING HALVES**



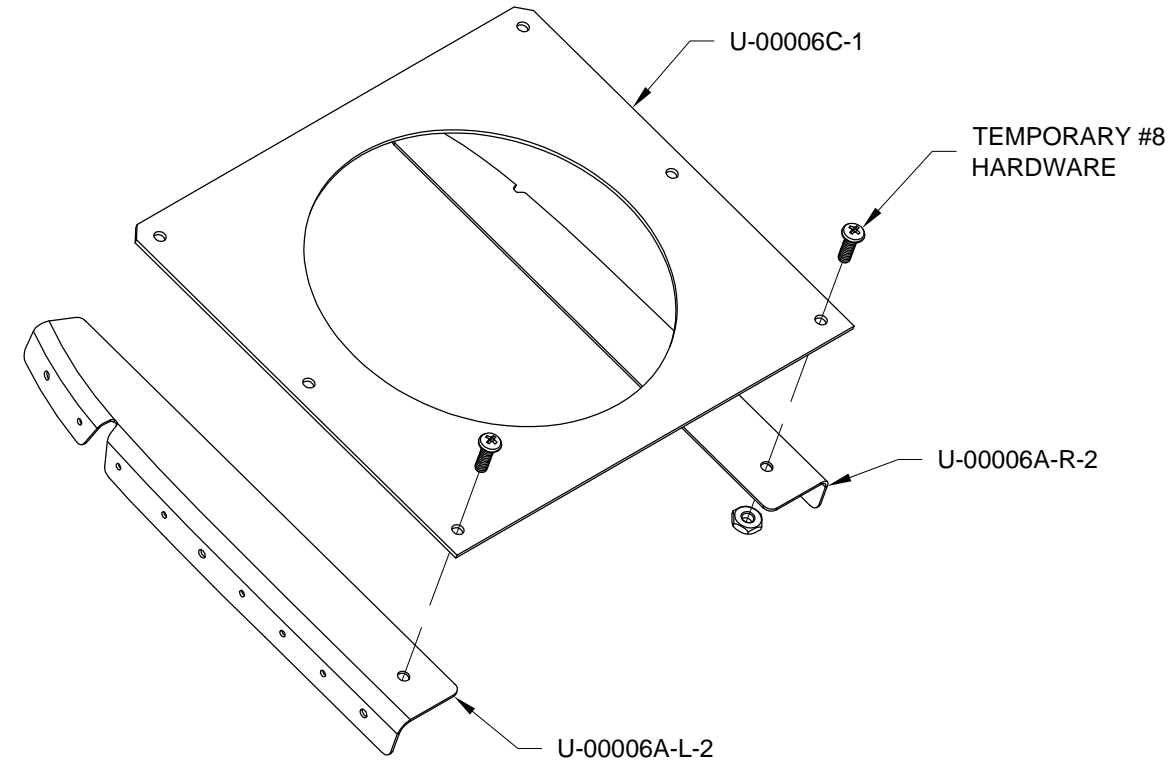
**FIGURE 2: FITTING THE FAIRINGS**

**Step 5:** Separate the U-00006A-2 Wheel Fairing Bracket into the U-00006A-L-2 & -R-2 as shown in Figure 3.



**FIGURE 3: WHEEL FAIRING BRACKET SEPARATION**

**Step 6:** Temporarily attach the U-00006C-1 Drill Template to the U-00006A-L-2 & -R-2 with #8 screws and nuts as shown in Figure 4.



**FIGURE 4: BRACKET DRILL TEMPLATE**



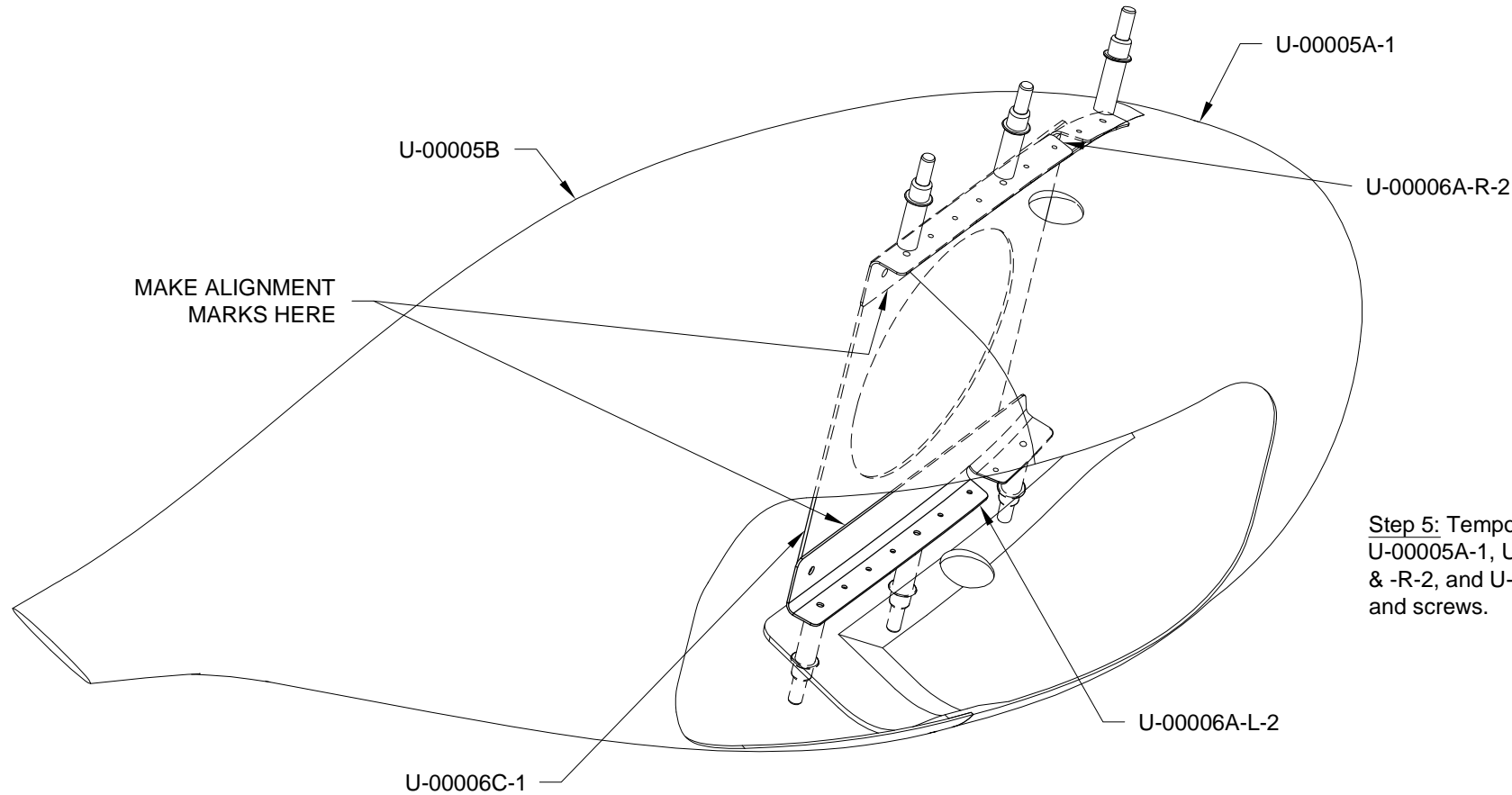
**Step 1:** Attach the U-00006A-L-2 & -R-2 to the U-00005A-1 and U-00005B with clecos in the #30 holes as shown in Figure 1. Adjust the flanges of the U-00006A-L-2 & -R-2 by hand as necessary to fit against the U-00005A-1 and U-00005B.

**Step 2:** Clamp the U-00006C-1 to both U-00006A-L-2 & -R-2 brackets. Mark the U-00006C-1 along the intersection between the U-00006C-1 and the U-00006A-L-2 & -R-2. See Figure 1.

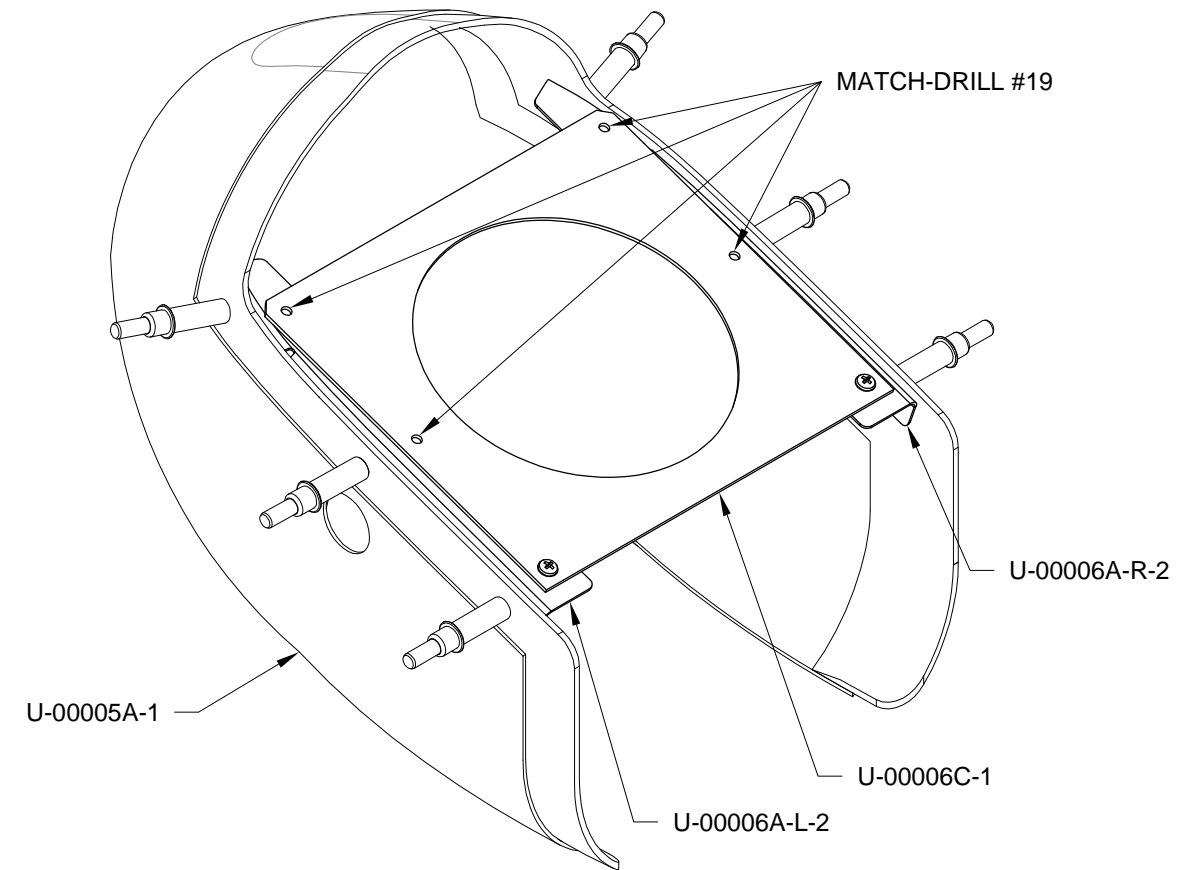
**Step 3:** Remove the U-00005B.

**Step 4:** Check that the U-00006C-1 is still clamped and aligned properly with the U-00006A-L-2 & -R-2 by checking the alignment marks made in Step 2. Match-Drill the U-00006AC-1 to the U-00006A-L-2 & -R-2. See Figure 2.

Hold the U-00006A-L-2 & -R-2 in position with clamps and temporary #8 screws/nuts as you drill each hole.



**FIGURE 1: POSITIONING THE DRILL TEMPLATE**



**FIGURE 2: DRILLING THE BRACKETS**

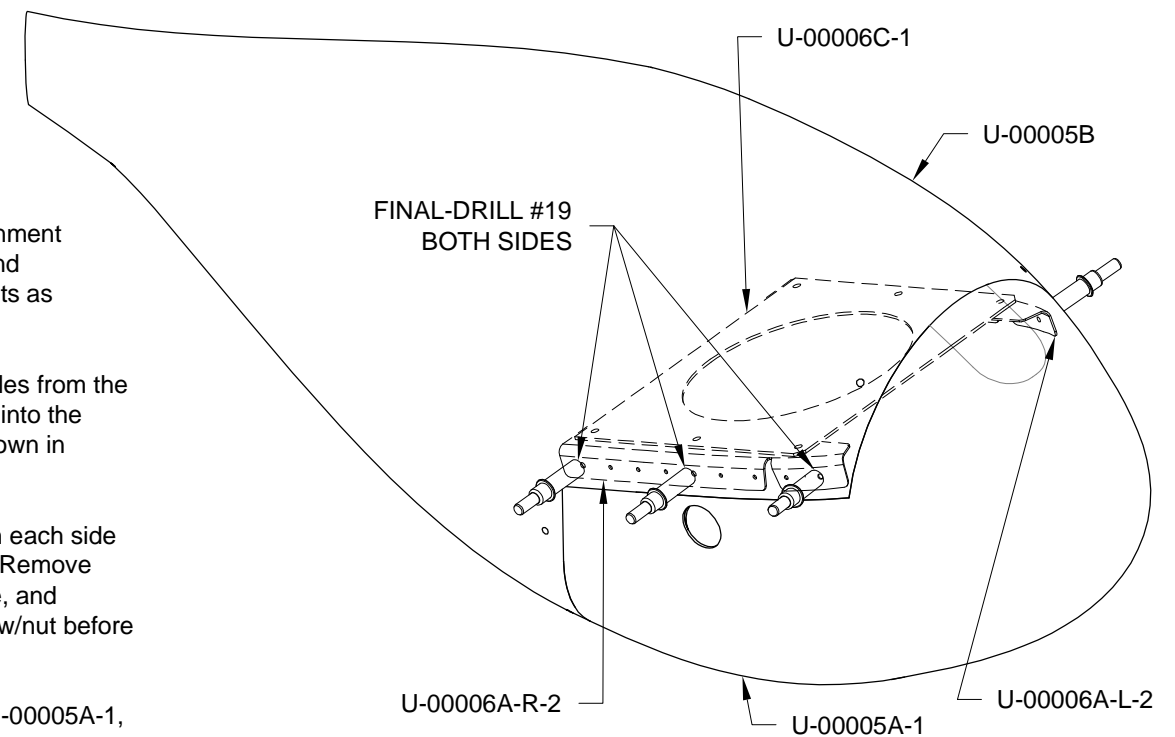
**Step 5:** Temporarily reassemble the U-00005A-1, U-00005B, U-00006A-L-2 & -R-2, and U-00006C-1 with clecos and screws.

**Step 6:** Final check the alignment and fit of the U-00005A-1 and U-00005B. Make adjustments as necessary.

**Step 7:** Final-Drill the six holes from the U-00005A-1 and U-00005B into the U-00006A-L-2 & -R-2 as shown in Figure 3.

Start with the center hole on each side and drill one hole at a time. Remove one cleco, final-drill the hole, and temporarily install a #8 screw/nut before moving to the next hole.

**Step 8:** Dissassemble the U-00005A-1, U-00005B, U-00006A-L-2 & -R-2, and U-00006C-1.



**FIGURE 3: MATCH-DRILLING THE FAIRINGS AND BRACKETS**



**NOTE:** To locate the nutplate rivet holes, the nutplate is held in place with a mounting screw and the nutplate is used as a drill template. Cleco the first drilled rivet hole to prevent the nutplate from rotating while locating the second rivet hole. It is important on curved surfaces that the nutplate is match-drilled from the side of the part on which it will later be installed.

**NOTE:** In fiberglass, machine countersinks that are up to .005 too shallow are acceptable, even preferable, to countersinks that are too deep. Rivets should be slightly under set where installed in fiberglass parts.

**Step 7:** Assemble the U-00005A-1, three nutplates, and the Left Bracket Assembly using three #8 screws in the nutplates as shown in Figure 3. Align the nutplates as shown.

**Step 8:** Use an extended bit to match-drill #40 the rivet holes from the Left Bracket Assembly into the U-00005A-1 as shown in Figure 3. Cleco each hole before drilling the next. Disassemble and deburr the holes.

**Step 9:** Repeat Steps 7 and 8 for the Right Bracket Assembly.

**Step 10:** Machine countersink the rivet holes in the U-00005A-1.

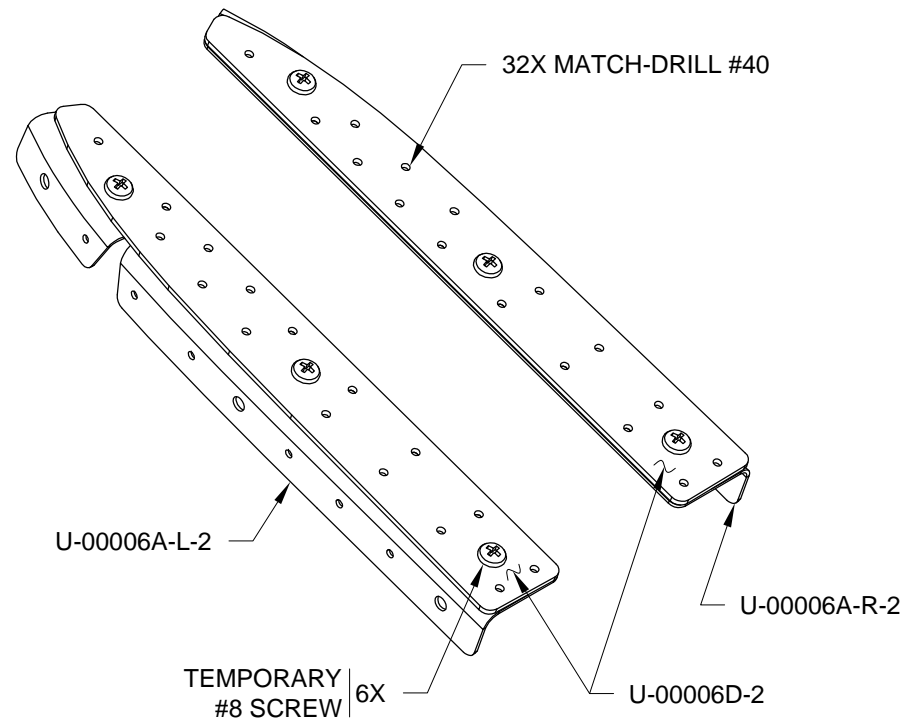
**NOTE:** A "longeron" yoke for your rivet squeezer is required to rivet the Bracket Assemblies to the U-00005A-1.

**Step 11:** Rivet the Left and Right Bracket Assemblies to the U-00005A-1 as shown in Figure 3.

**Step 1:** Temporarily assemble the U-00006D-2 Doubler Plates and U-00006A-L-2 & -R-2 as shown in Figure 1.

**Step 2:** Match-Drill the U-00006A-L-2 & -R-2 as shown in Figure 1.

Disassemble and deburr the U-00006D-2 and U-00006A-L-2 & -R-2.



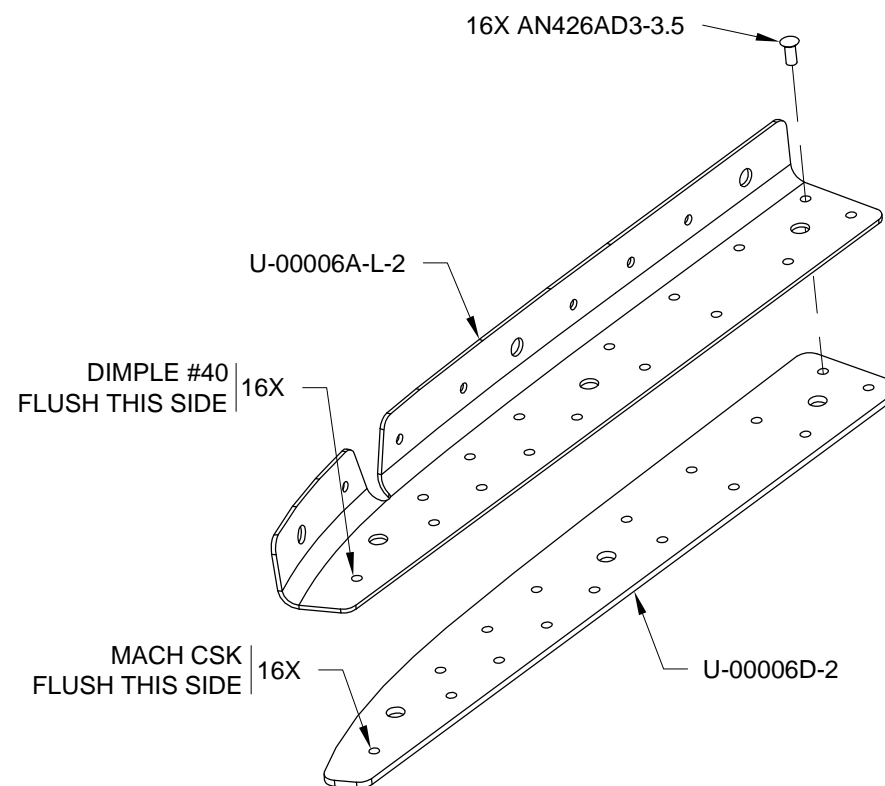
**FIGURE 1: DRILLING THE BRACKETS**

**Step 3:** Dimple the U-00006A-L-2 as shown in Figure 2.

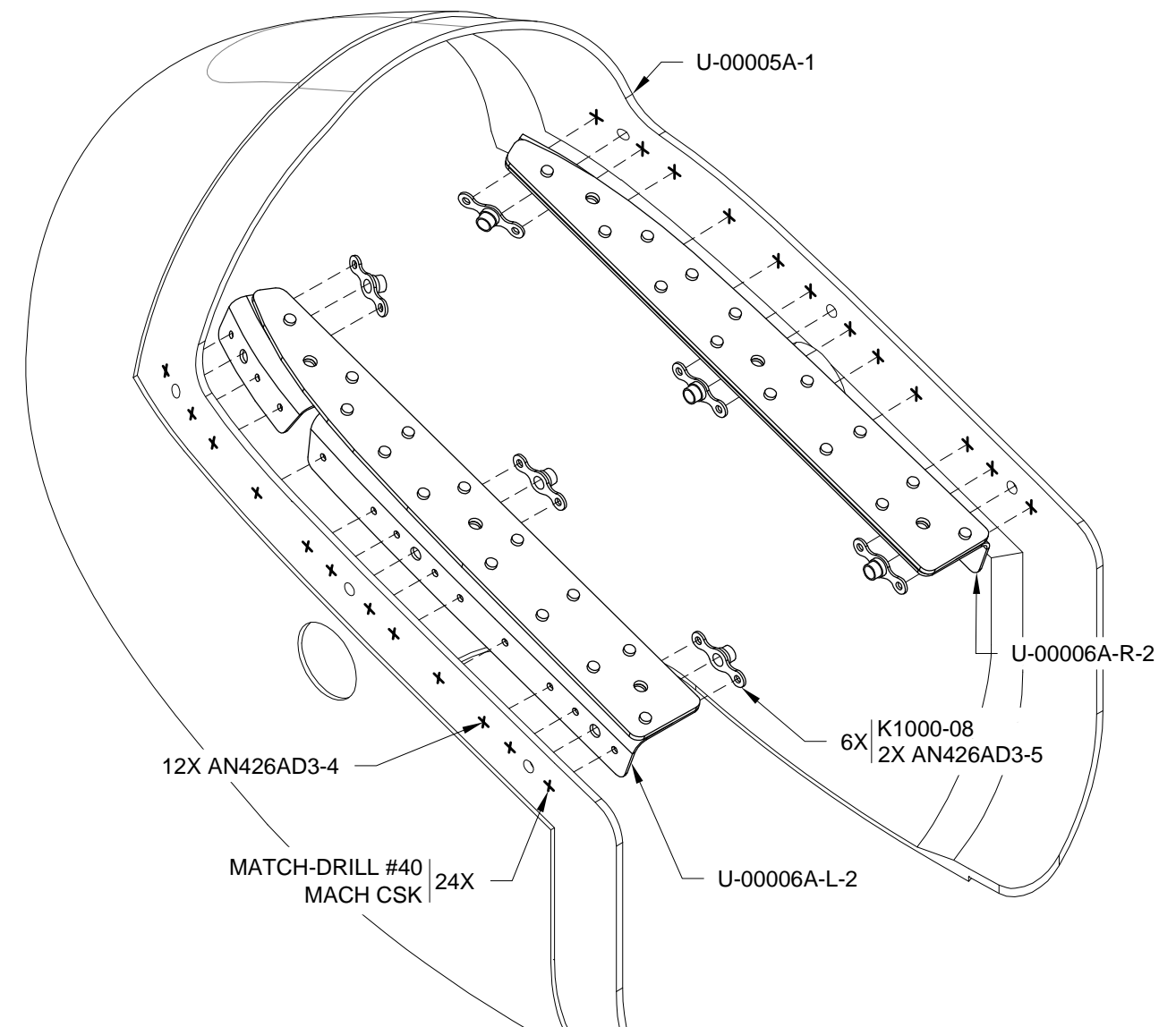
**Step 4:** Machine countersink the U-00006D-1 to accept the dimples in the U-00006A-L-2.

**Step 5:** Make the Left Bracket Assembly by riveting the U-00006D-2 to the U-00006A-L-2 as shown in Figure 2.

**Step 6:** Make the Right Bracket Assembly by repeating Steps 3 & 4 with the U-00006A-R-2 and second U-00006D-2.



**FIGURE 2: LEFT BRACKET ASSEMBLY**



**FIGURE 3: INSTALLING THE BRACKET ASSEMBLIES**



Step 1: Measure, mark, and drill pilot holes in the U-00005A-1 as shown in Figure 1.

Step 2: Remove the hatched area as shown in Figure 1.

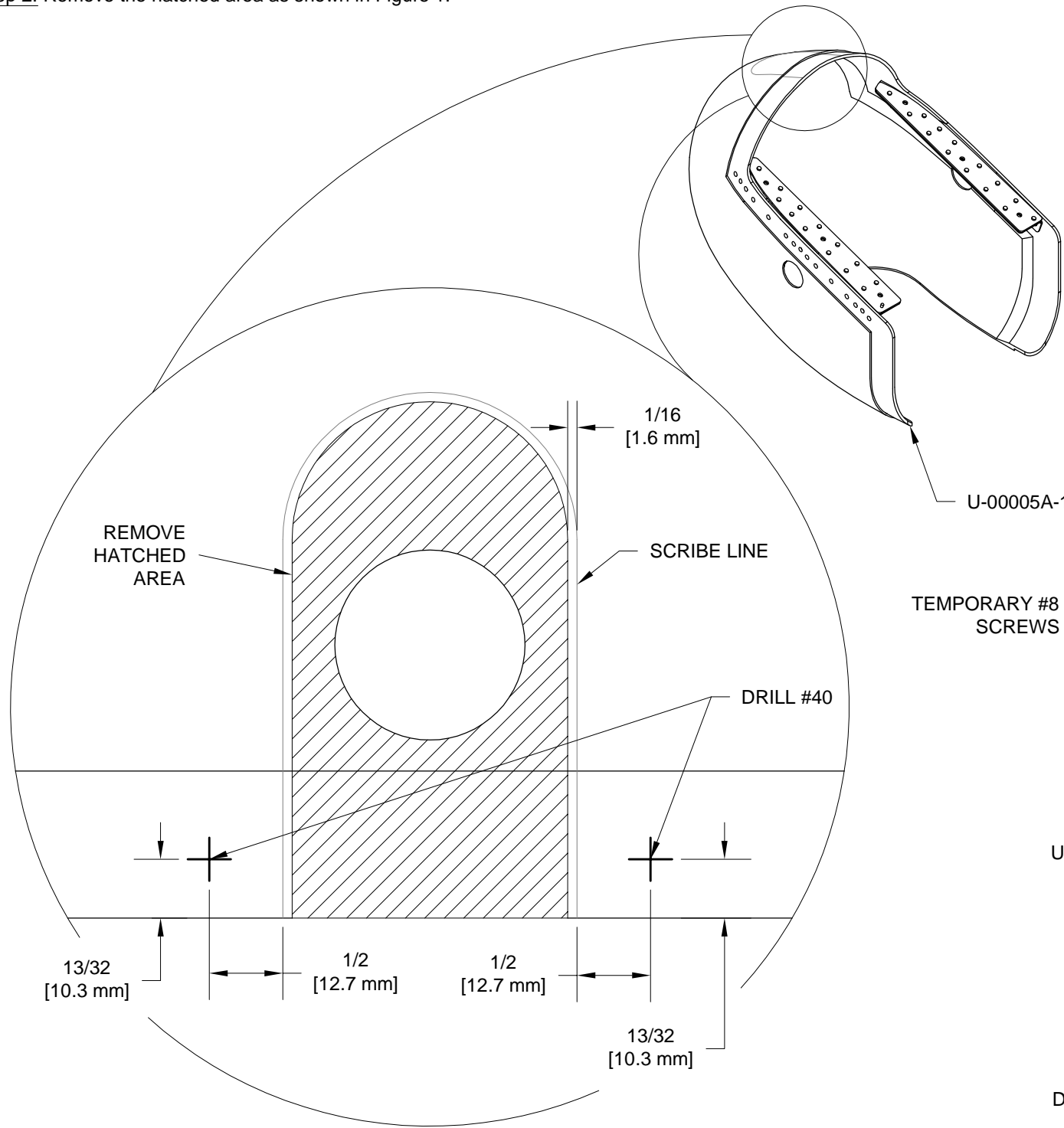


FIGURE 1: TRIMMING THE U-00005A-1

Step 3: Temporarily reinstall the U-00006C-1 to the U-00006A-L-2 & -R-2 with screws/nuts in the four corner holes, then attach the U-00005B to the U-00005A-1 with #8 screws as shown in Figure 2.

Step 4: Final check the fit of the U-00005A-1 and U-00005B. Adjust as necessary.

**NOTE: Cleco or install temporary screws at each drilled hole before drilling the next. Hold the drill bit perpendicular to the surface of the U-00005B while match-drilling. Be aware of debris between parts as drilling progresses. Take apart and clean-out as necessary.**

Step 5: Match-Drill from the inside the two pilot holes near the top center with an extended #40 bit. Cleco each hole.

Step 6: Match-Drill #40 the U-00005B to the U-00005A-1 at each of the "dimples" in the U-00005B.

Step 7: Final-Drill #19 each of the #40 holes in the U-00005A-1 and U-00005B. Disassemble the U-00005A-1 and U-00005B and discard the U-00006C-1.

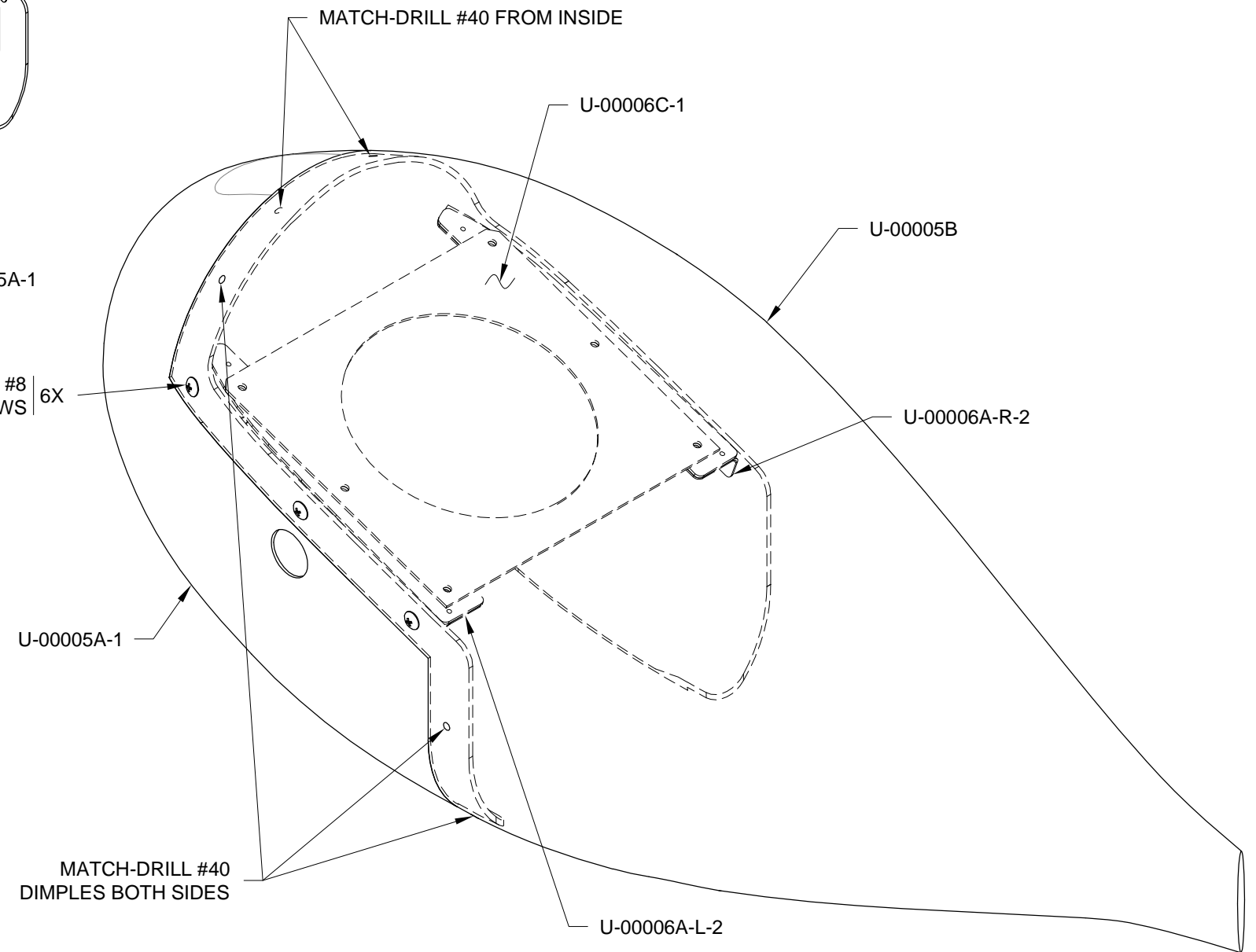
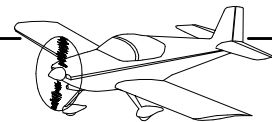


FIGURE 2: LEFT BRACKET ASSEMBLY



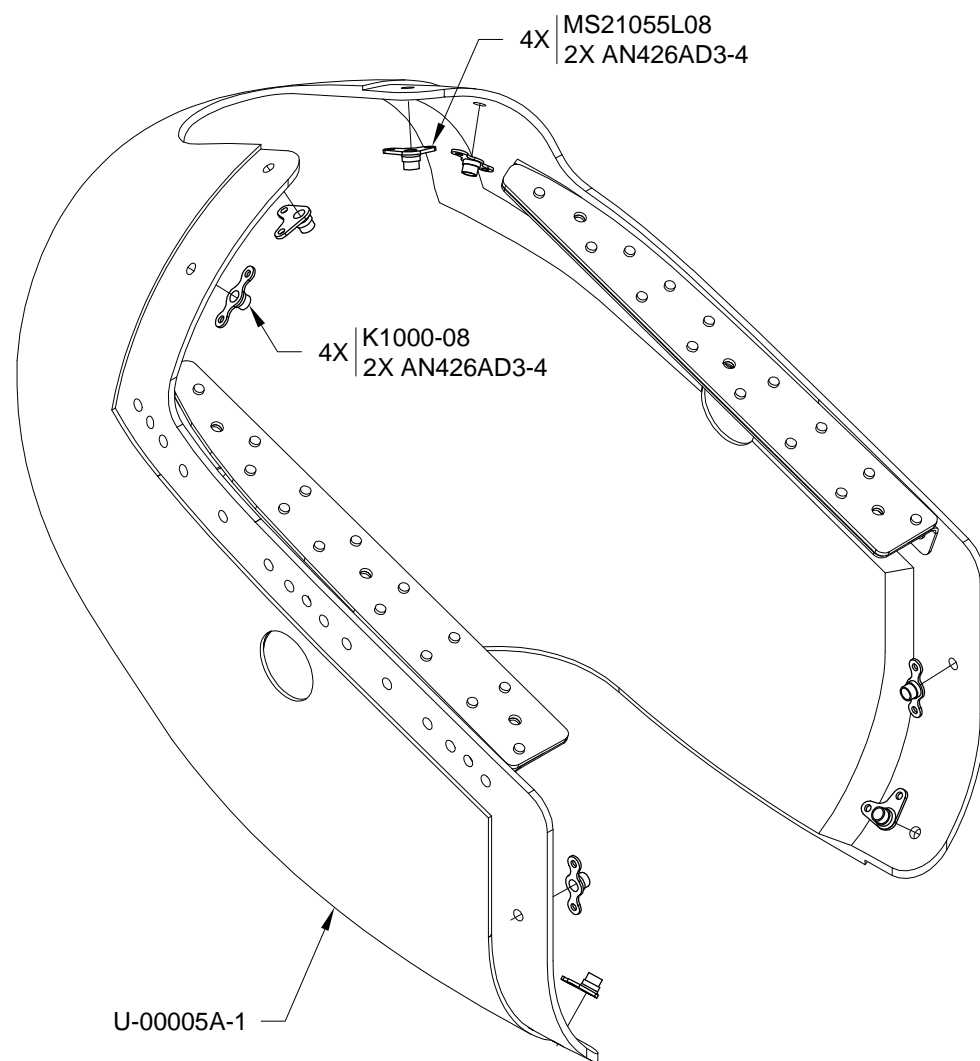
**NOTE:** To locate the nutplate rivet holes, the nutplate is held in place with a mounting screw and the nutplate is used as a drill template. Cleco the first drilled rivet hole to prevent the nutplate from rotating while locating the second rivet hole. It is important on curved surfaces that the nutplate is match-drilled from the side of the part on which it will later be installed.

**NOTE:** In fiberglass, machine countersinks that are up to .005 too shallow are acceptable, even preferable, to countersinks which are too deep. Rivets should be slightly under set where installed in fiberglass parts.

**Step 1:** Match-Drill #40 and machine countersink the U-00005A-1 for nutplate rivets. See Figure 1.

**NOTE:** Depending on the fiberglass layup, the thickness of the U-00005A-1 flange may vary. Ensure that the rivets are the correct length for your fairings before riveting. Substitute longer rivets as required.

**Step 2:** Rivet the nutplates to the U-00005A-1 as shown in Figure 1.

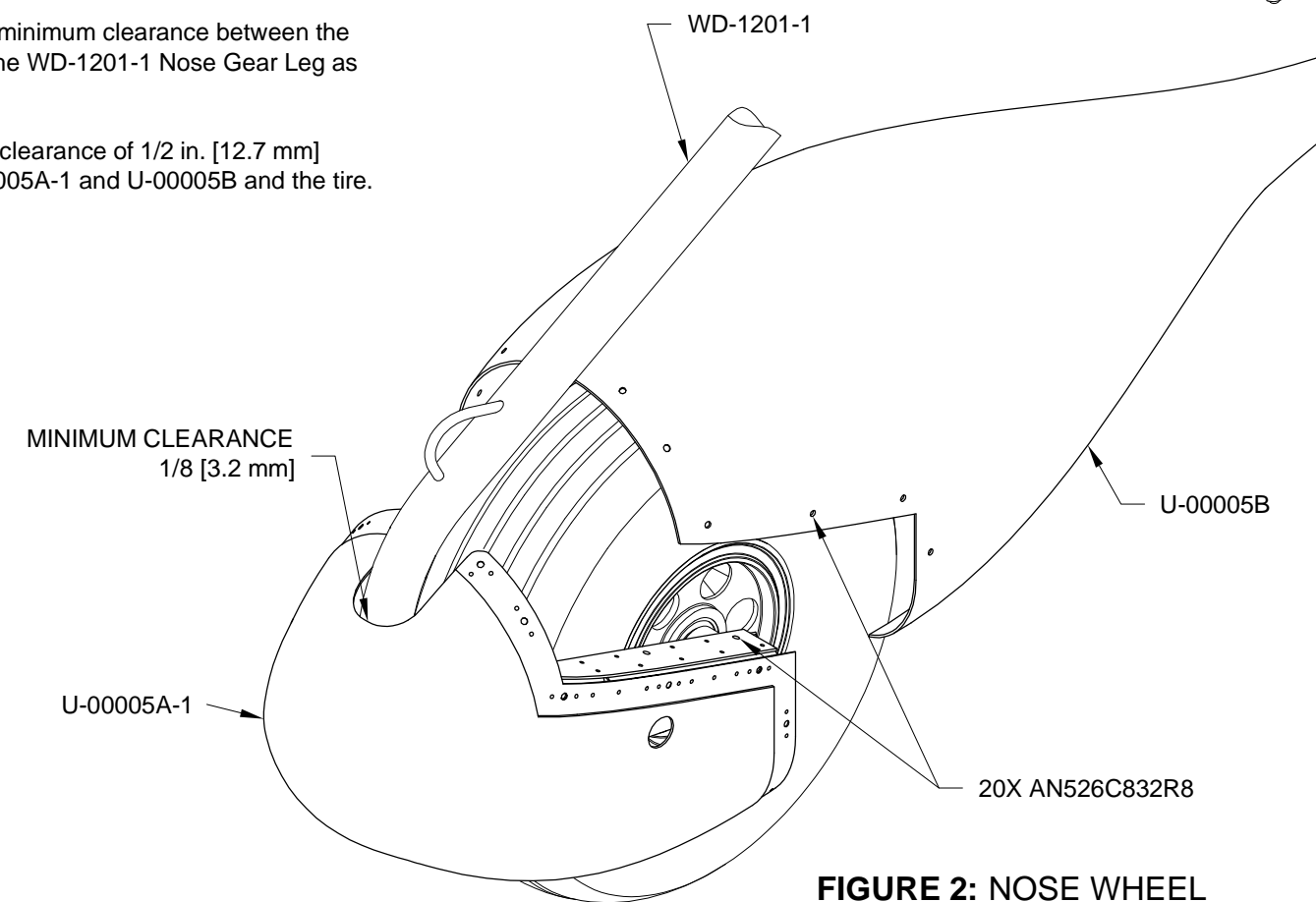


**FIGURE 1: INSTALLING NUTPLATES**

**Step 3:** Install the U-00005A-1 and U-00005B on the WD-01230-1 Nose Fork as shown in Figures 2 & 3.

**Step 4:** Check for minimum clearance between the U-00005A-1 and the WD-1201-1 Nose Gear Leg as shown in Figure 2.

Verify a minimum clearance of 1/2 in. [12.7 mm] between the U-00005A-1 and U-00005B and the tire.



**FIGURE 2: NOSE WHEEL FAIRING INSTALLATION**

**NOTE:** The nose wheel valve stem can face either the right or left side of the aircraft. Complete the following steps on the side matching the valve stem.

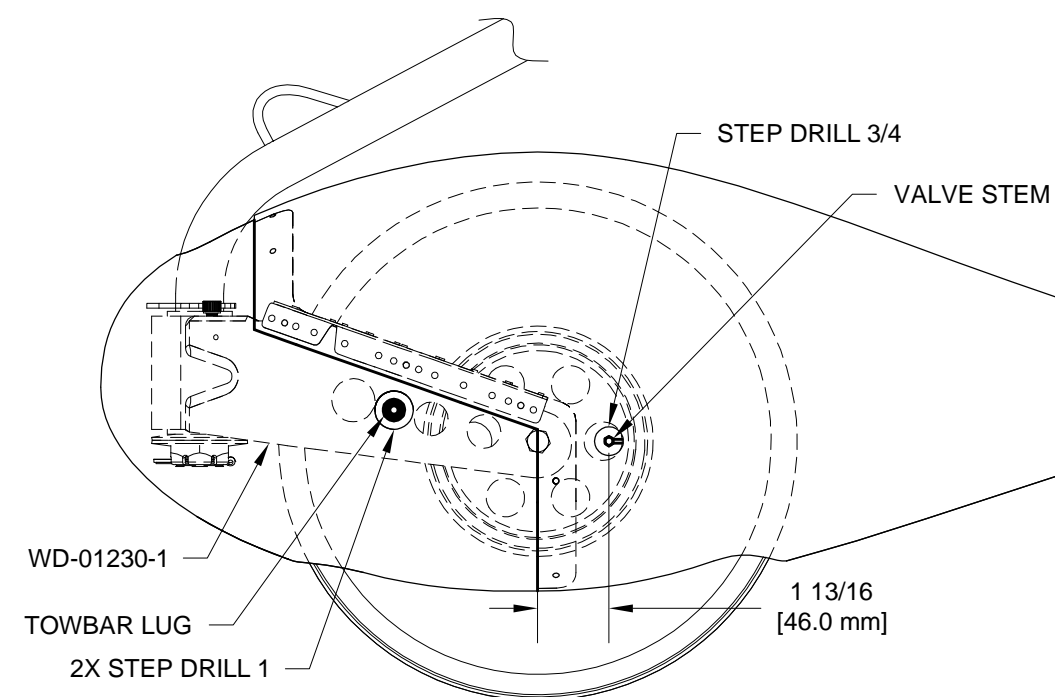
**Step 5:** Rotate the nose wheel until the valve stem is aligned directly aft of the axle as shown in Figure 3.

**Step 6:** Measure and mark the location of the tire inflation access hole as shown in Figure 3. Drill #30 a pilot hole on the mark.

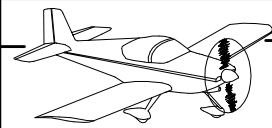
**Step 7:** Check to ensure the pilot hole aligns with the valve stem, then step drill 3/4 the access hole.

**Step 8:** Check to ensure the towbar access holes are centered on the towbar lug, then step drill the access holes as shown.

**Step 9:** Remove the U-00005A-1 and U-00005B from the WD-01230-1.



**FIGURE 3: TIRE INFLATION ACCESS HOLE**



Step 1: Trim the U-00007 to the scribe lines. See Figure 1.

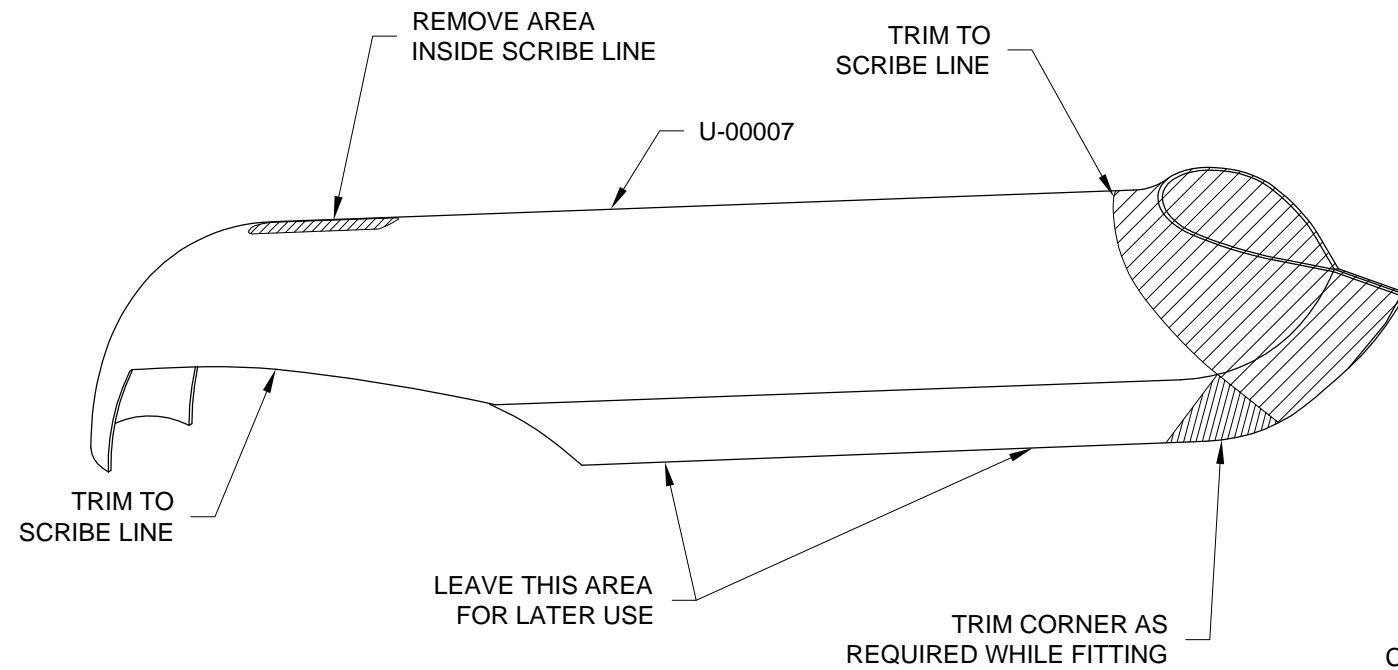


FIGURE 1: NOSE LEG FAIRING TRIM

NOTE: Level the aircraft in roll during the fitting of the U-00007 Nose Leg Fairing to achieve a good fit.

Step 2: Slip the U-00007 over the WD-1201-1 and clamp the lower portion as shown in Figure 2. It may be necessary to enlarge the hole in the U-00007 for the welds on the WD-1201 lug. See Figure 2.

Step 3: Trim the "tail" of the U-00007 as required to clear the tire as shown in Figure 2.

Step 4: Attach plumb lines to the upper portion of the U-00007 as shown in Figure 2 Section A-A. Align the U-00007 so that it is centered between the plumb lines.

Step 5: Clamp the upper portion of the U-00007 in place when satisfied with its position.

Step 6: Drill #40 and cleco three places as shown in Figure 2.

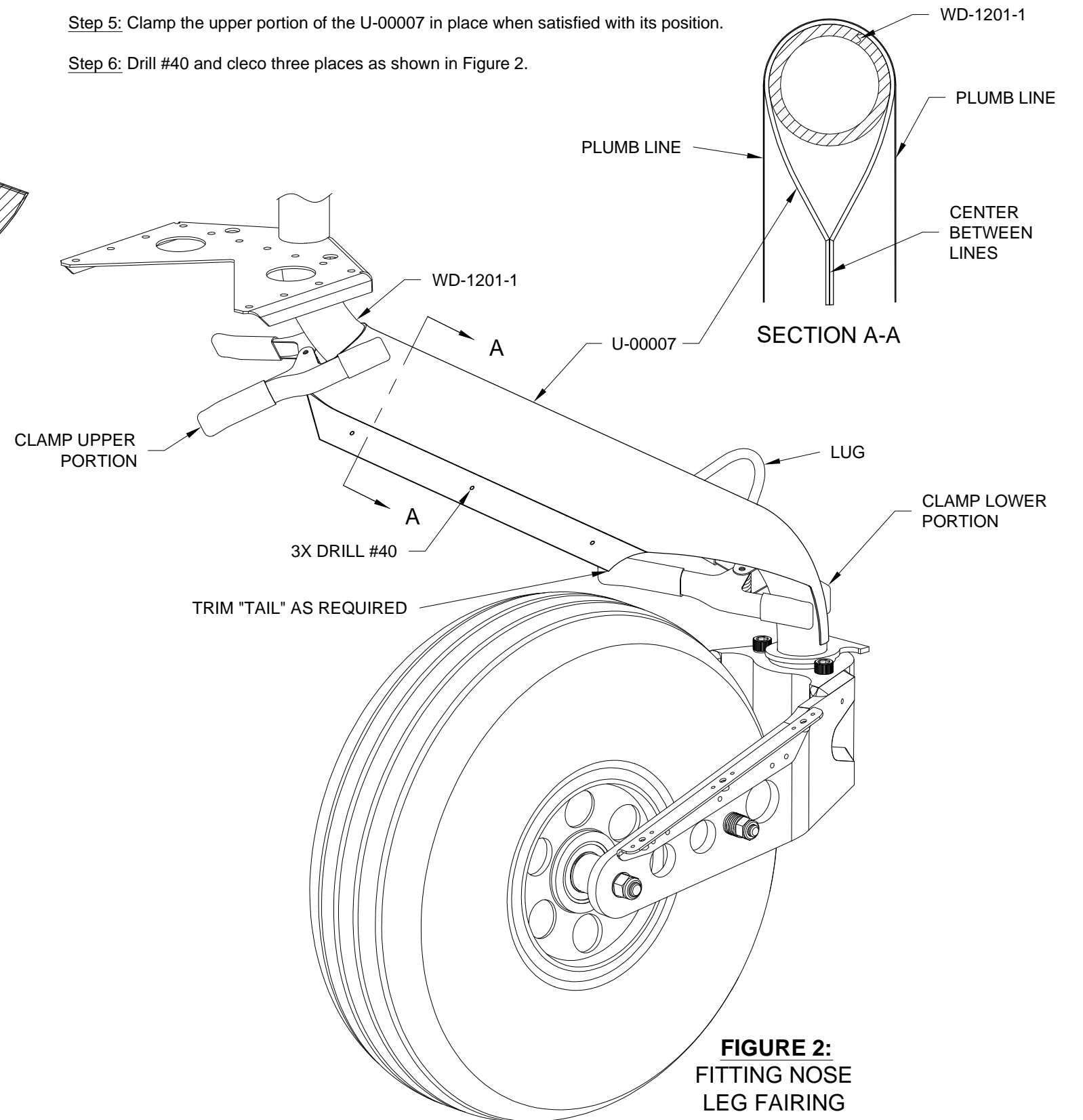
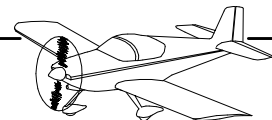


FIGURE 2: FITTING NOSE LEG FAIRING



**Step 1:** Lightly apply a length of masking tape to each side of the U-00007 as shown in Figure 1.

**Step 2:** With the nose wheel turned to one side, take a square and align it against the U-00007 as shown in Figure 1. Rocking the square forward and aft over the taped area will produce a mark on the masking tape at the tangent of the U-00007.

Repeat on the opposite side of the U-00007.

**Step 3:** Measure from the bottom of the lug on the WD-1201-1 as shown in Figure 1 and mark where the rub mark on the masking tape and measured length intersect on the sides of the U-00007.

**Step 4:** Drill #30 at the points marked on each side of the U-00007 into the WD-1201-1.

**Step 5:** Remove the clamps, clecos, tape, and U-00007 from the WD-1201-1.

**Step 6:** Tap 8-32 the two holes drilled in the WD-1201-1.

**Step 7:** Final-Drill #19 the two holes drilled in the U-00007. Aggressively roughen the inner surface of the U-00007 around the holes. Clean the roughened surface.

**Step 8:** Wrap tape around the WD-1201-1, covering the area around the tapped holes.

**Step 9:** Coat the threads of the screws called out in Figure 1 with wax.

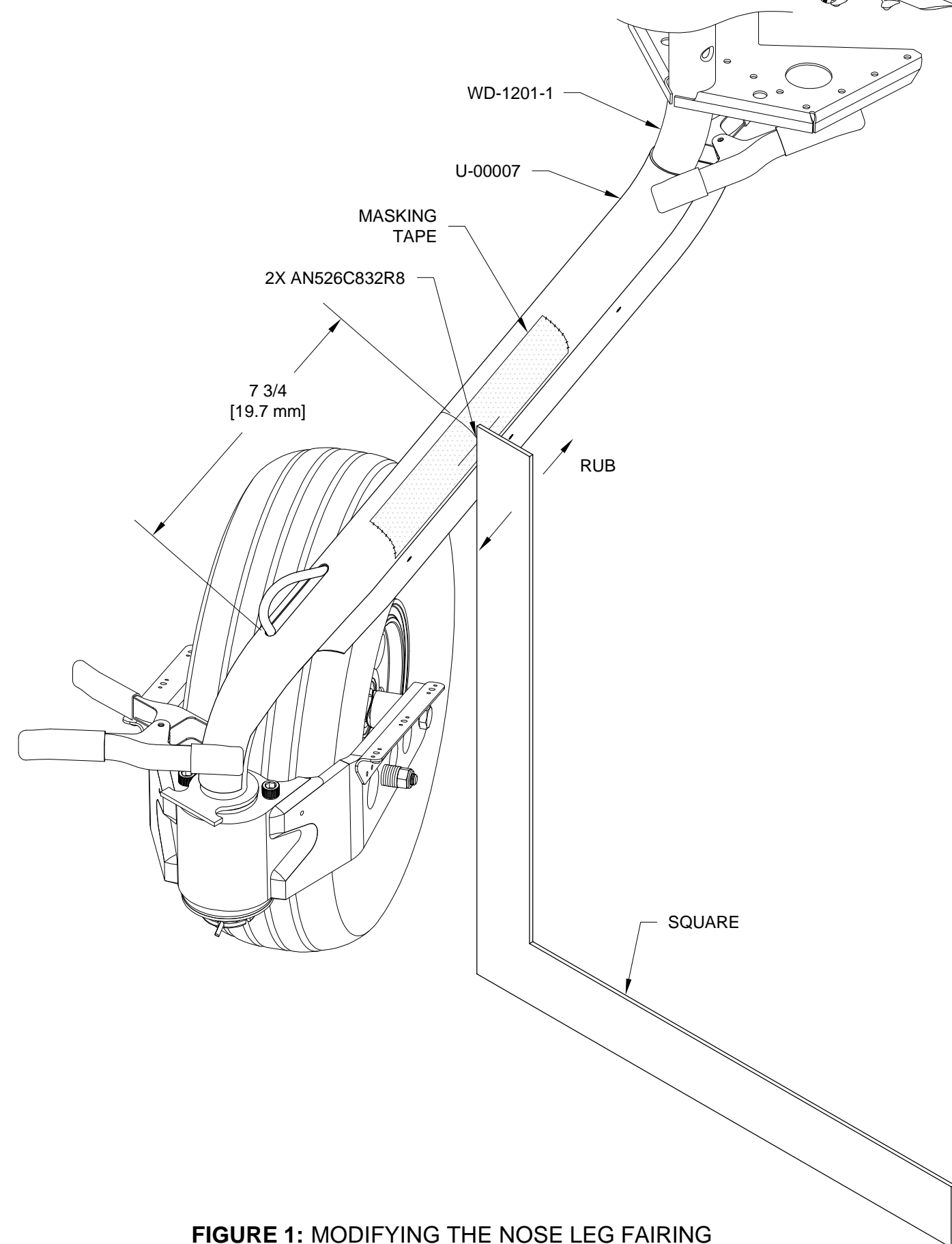
**Step 10:** Slip the U-00007 onto the WD-1201-1 and clamp in place.

**Step 11:** Mix a small amount of epoxy/flox mixture. Squeeze enough of the mixture into the holes on either side of the U-00007 to make a disc 1/4 to 5/16 in. [6.4 to 7.9 mm] in diameter between the WD-1201-1 and the U-00007.

**Step 12:** While the epoxy is still wet, insert the screws called out in Figure 1 in both sides of the U-00007. Take care not to over tighten the screws.

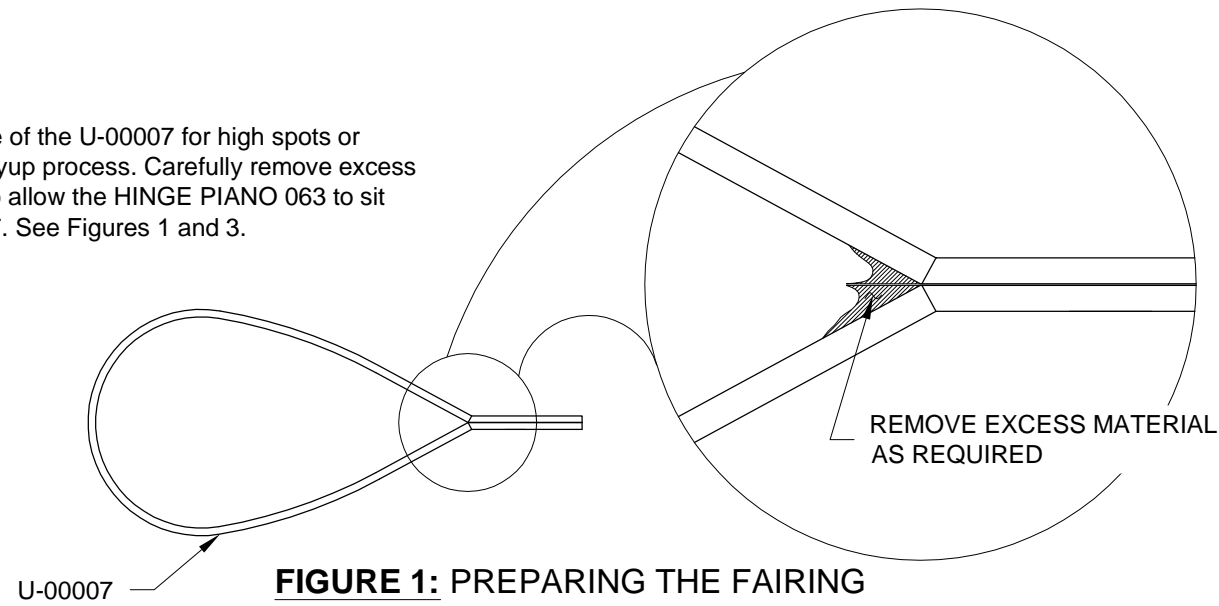
**Step 13:** Allow the epoxy flox mixture to cure, then remove the screws and U-00007. Final-Drill #19 the holes in the U-00007 to clean out all debris.

**Step 14:** Remove the tape from the U-00007 and WD-1201-1.



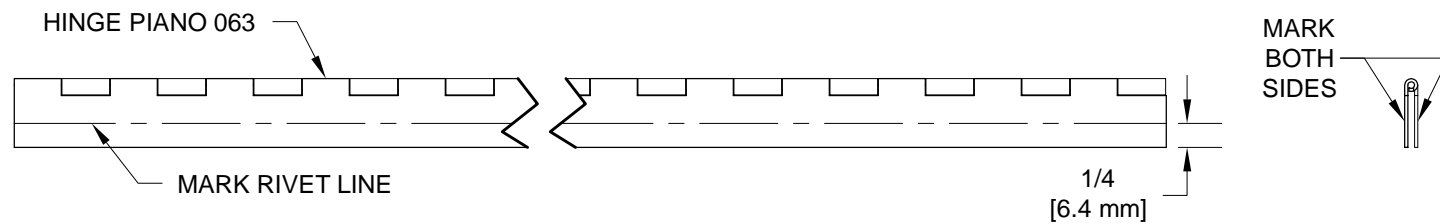
**FIGURE 1: MODIFYING THE NOSE LEG FAIRING**

**Step 1:** Check the inside of the U-00007 for high spots or excess resin from the layup process. Carefully remove excess material as necessary to allow the HINGE PIANO 063 to sit flush inside the U-00007. See Figures 1 and 3.



**FIGURE 1: PREPARING THE FAIRING**

**Step 2:** Use a fine point felt pen to mark both outside surfaces of the HINGE PIANO 063 as shown in Figure 2.

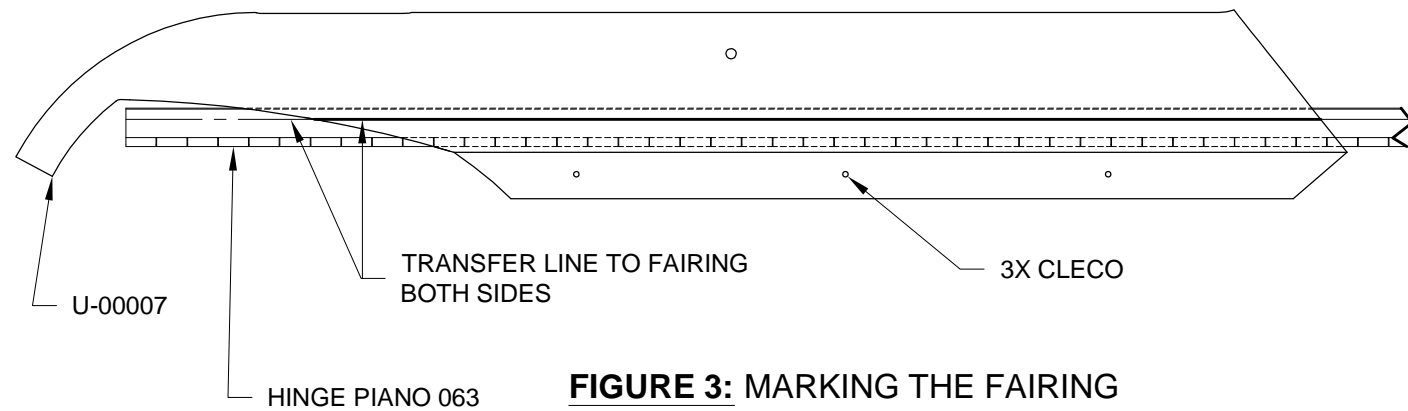


**FIGURE 2: MARKING THE HINGE**

**Step 3:** Cleco the U-00007 and place the marked HINGE PIANO 063 inside the U-00007 as shown in Figure 3.

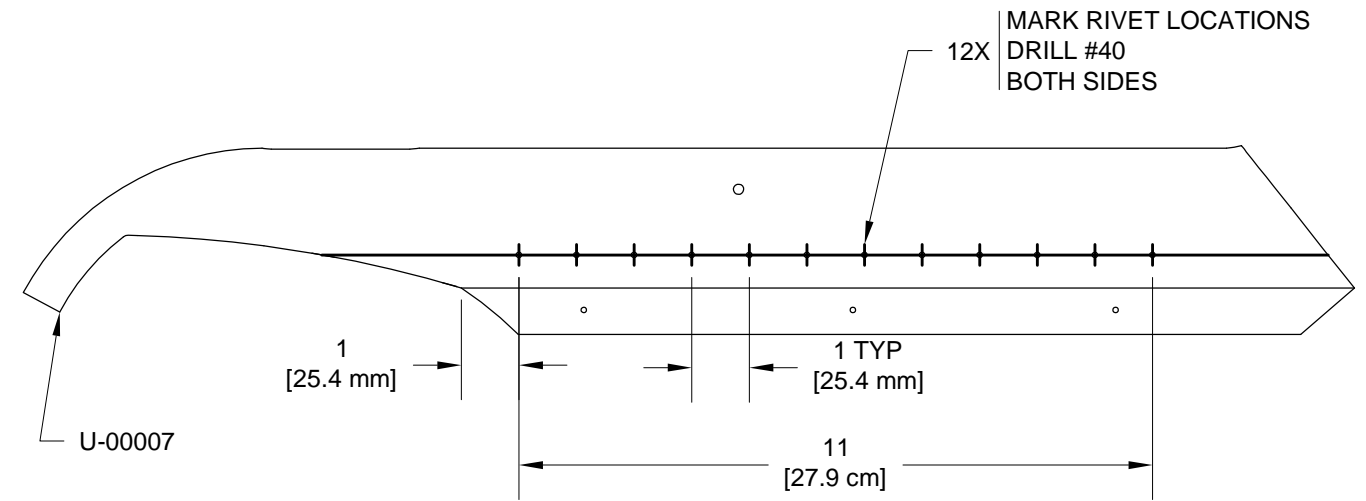
**Step 4:** Transfer the line from the HINGE PIANO 063 to the outside of the U-00007.

**Step 5:** Remove the clecos and HINGE PIANO 063.



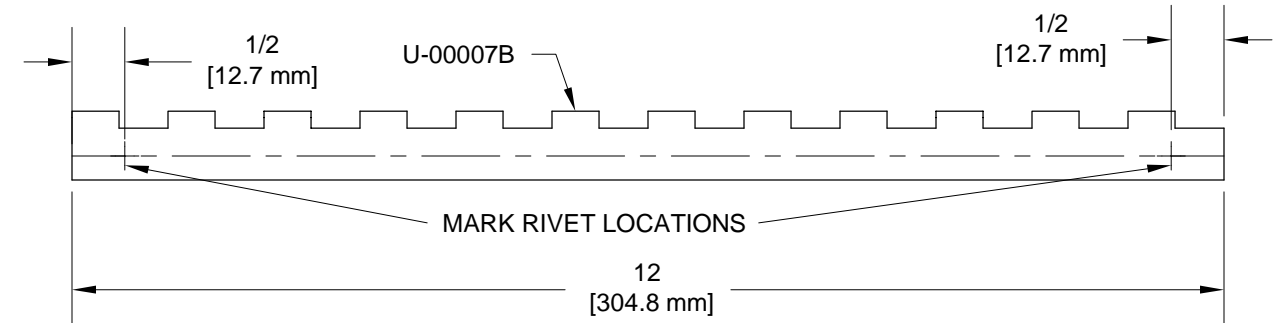
**FIGURE 3: MARKING THE FAIRING**

**Step 6:** Mark and drill #40 the rivet locations on the U-00007 using the dimensions shown in Figure 4. Hold the drill bit perpendicular to the surface of the U-00007 while drilling.



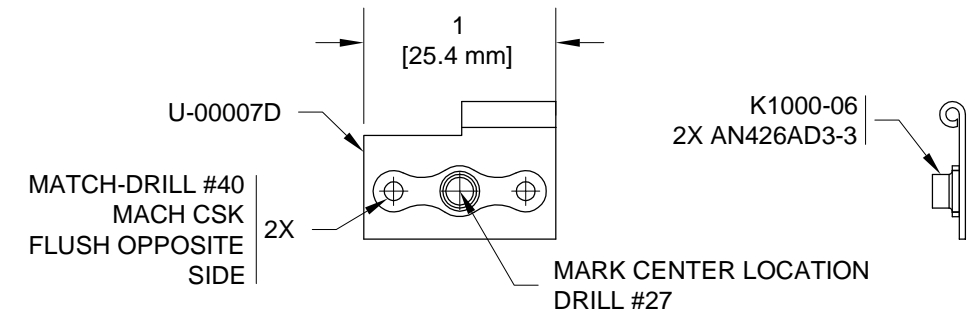
**FIGURE 4: DRILLING THE FAIRING**

**Step 7:** Make the two U-00007B Nose Leg Hinges from HINGE PIANO 063 as shown in Figure 5. Ensure that the line drawn in Step 2 is still visible. Mark the rivet locations as shown.



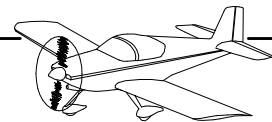
**FIGURE 5: NOSE LEG HINGES**

**Step 8:** Make the U-00007D Hinge Pin Retainer from a small piece of HINGE PIANO 063 as shown in Figure 6. Use the nutplate to match-drill the rivet attachment locations.



**FIGURE 6: HINGE PIN RETAINER**





**Step 1:** Install clecos in the U-00007. Insert the hinge pin and position both U-00007Bs inside the trailing edge of the U-00007 as shown in Figure 1.

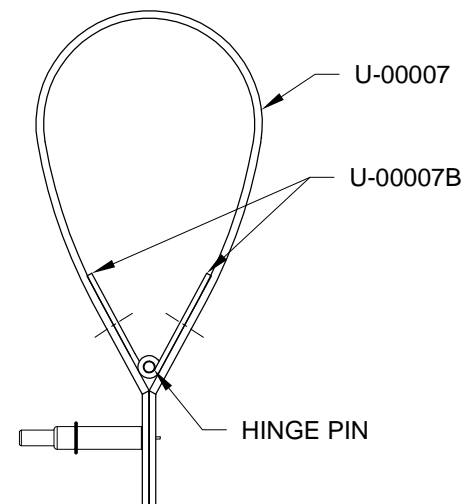
**Step 2:** Align the rivet marks on the U-00007B with the end holes in the U-00007. Clamp the ends of one U-00007B in place.

**Step 3:** Begin at one end and match-drill #40 the U-00007B to the U-00007.

Use light pressure and a high drill speed to allow the bit to cut through without distorting the hinge. Work from one end of the U-00007 to the other.

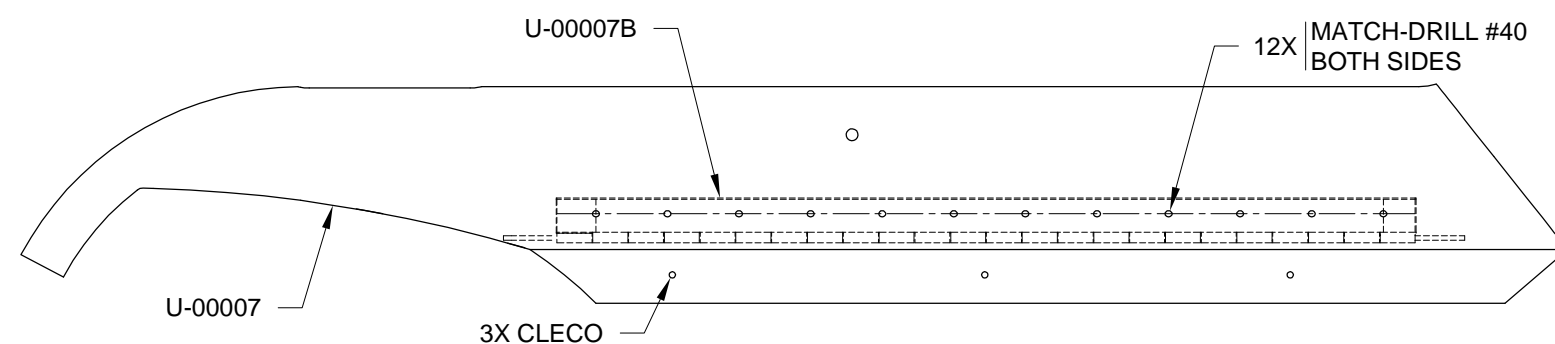
Ensure the reference line on the U-00007B remains visible through the holes in the U-00007. Cleco each hole before drilling the next.

**Step 4:** With the first U-00007B clecoed in place, clamp the second U-00007B in place and repeat step 3 for the other side of the U-00007.



**Step 7:** Fit the U-00007 to the WD-1201-1 as shown in Figure 3. Align the U-00007 by inserting the screws as shown, then insert the hinge pin through both U-00007Bs. Install the U-00005A-1 and U-00005B.

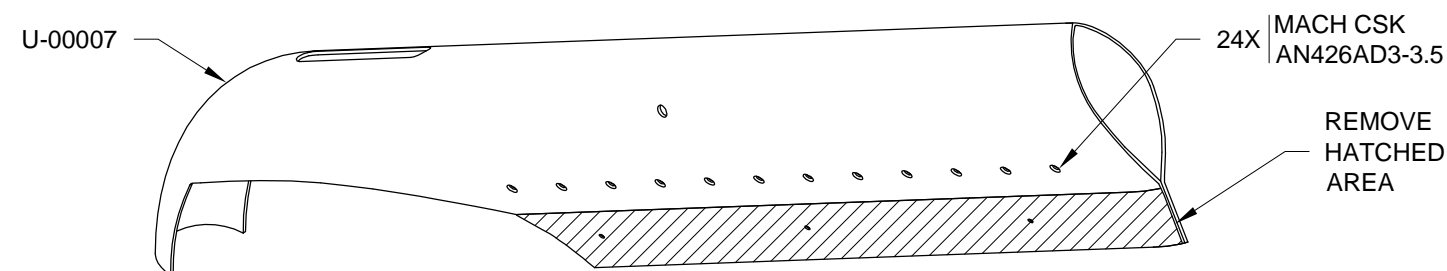
**Step 8:** Rotate the nose wheel from side to side to check for clearance. Trim the U-00007 as required to ensure the clearance shown.



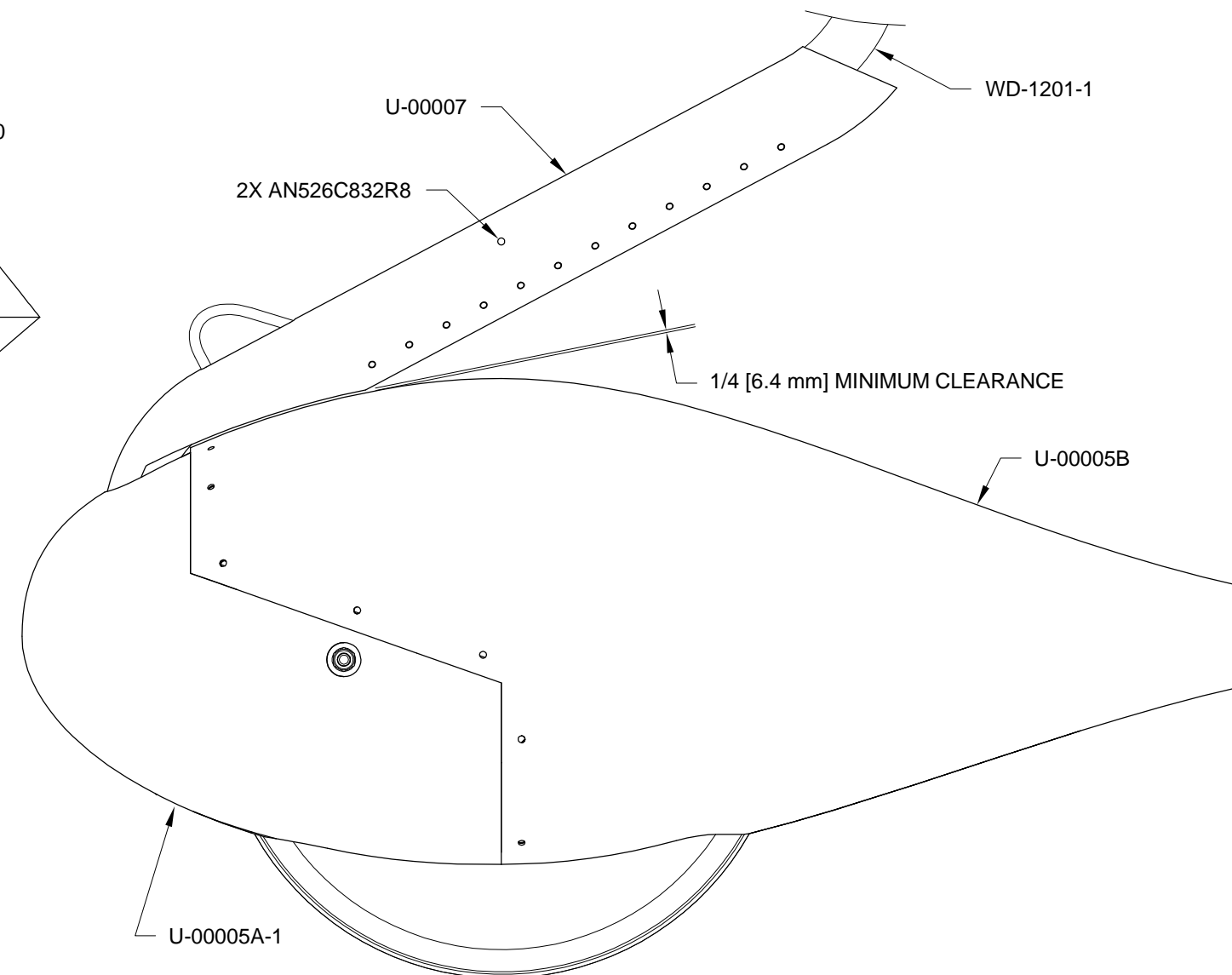
**FIGURE 1: MATCH-DRILLING THE HINGE TO THE FAIRING**

**Step 5:** Machine countersink the rivet holes in both sides of the U-00007. Remove the clecos and both U-00007Bs from the U-00007. Final trim the U-00007, removing the material as shown in Figure 2.

**Step 6:** Rivet both U-00007Bs to the U-00007 with the rivets called out in Figure 2.



**FIGURE 2: TRIMMING THE NOSE LEG FAIRING**

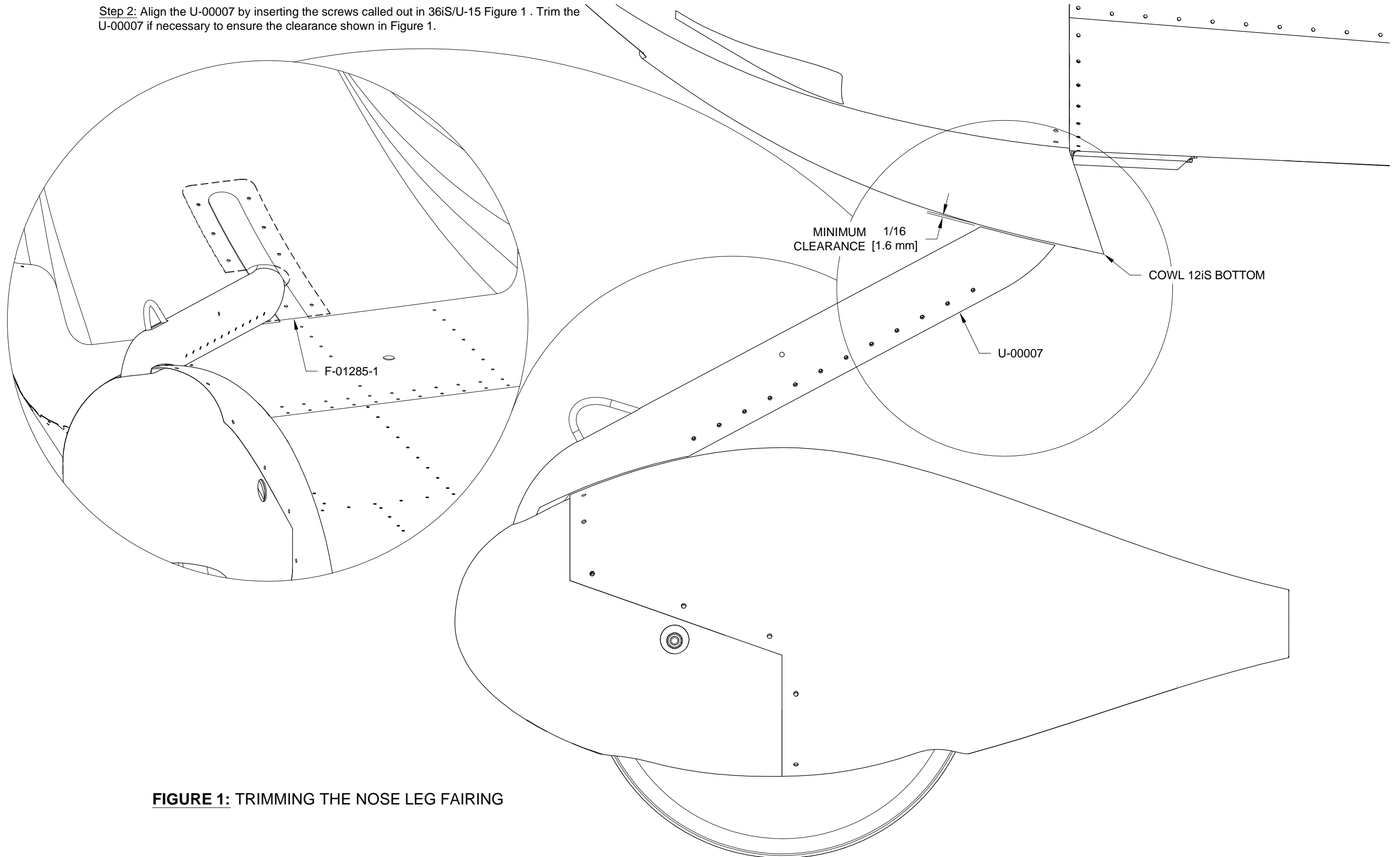


**FIGURE 3: ATTACHING THE NOSE LEG FAIRING**

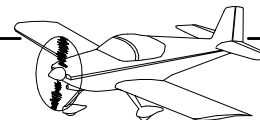


Step 1: Install the COWL 12iS BOTTOM Bottom Cowl and the F-01285-1 Cowl Bottom Close-Out. See Section 37iS/U.

Step 2: Align the U-00007 by inserting the screws called out in 36iS/U-15 Figure 1 . Trim the U-00007 if necessary to ensure the clearance shown in Figure 1.



**FIGURE 1: TRIMMING THE NOSE LEG FAIRING**



**Step 1:** Bend one end of the provided hinge pin to create the U-00007C Hinge Pin. The U-00007C should fit into the loop of the U-00007D as shown in Figure 1. Dimensions given in Figure 2 are for reference only, adjust as required to achieve a good fit.

**Step 2:** With the U-00007D attached to one end of the U-00007C, slide the U-00007C into the two U-00007B. Press the U-00007D against the side of the U-00007 and mark the center of the nutplate on the outside of the U-00007 with a fine point felt pen.

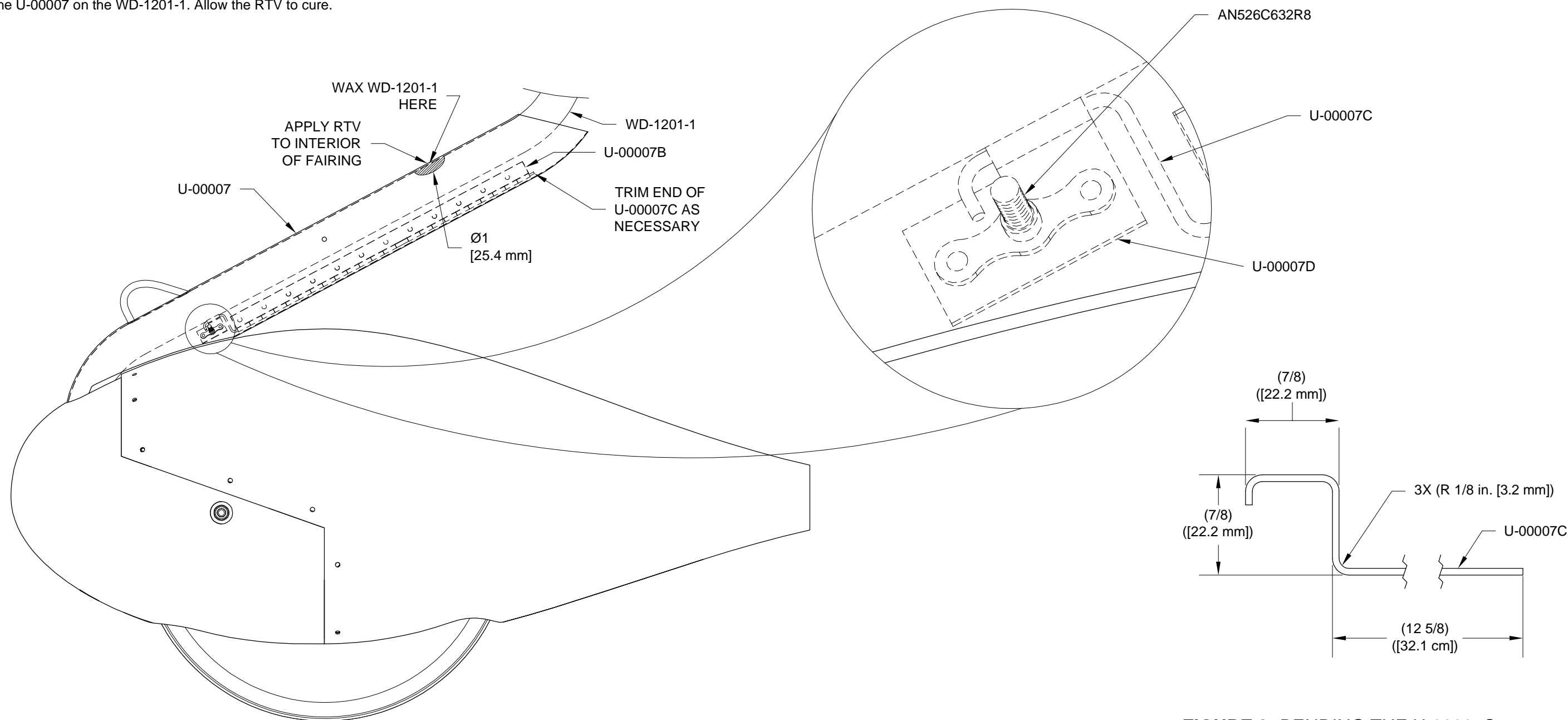
**Step 3:** Drill #27 the U-00007 for the screw called out in the detail view of Figure 1. Install the screw through the U-00007 and into the U-00007D.

**Step 4:** Check the length of U-00007C protruding from the other end of the U-00007B. Trim the U-00007C as required.

**Step 5:** Remove the U-00007 and apply wax to an approximately 1 in. [25.4 mm] diameter area of the WD-1201-1 where shown in Figure 1.

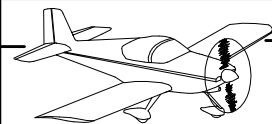
Roughen the inside of the U-00007 in the same area. Apply a bead of RTV approximately 1/8 in. [3.2 mm] thick and 1/2 in. [12.7 mm] in diameter to the inside of the U-00007.

Install the U-00007 on the WD-1201-1. Allow the RTV to cure.



**FIGURE 1: HINGE PIN RETAINER LOCATION**

**FIGURE 2: BENDING THE U-00007C**



**NOTE: Any weight and balance information recorded for the aircraft must be updated. Depending on the state of your kit, some steps may not be applicable.**

Step 1: In the RV-12iS Maintenance Manual (MM) "INSTALLED EQUIPMENT LIST" table, add "GEAR LEG & WHEEL FAIRINGS" to the "ITEM" column. On the same line, add a checkmark to the "INSTALLED" column.

Enter 9.5 lb for "Weight", 77.895 in. for "Location/Arm" and 740 in-lb "Moment" onto the same line as "GEAR LEG & WHEEL FAIRINGS".

Step 2: In the RV-12iS Pilot Operating Handbook (POH) "OPTIONAL EQUIPMENT LIST" table, add "GEAR LEG & WHEEL FAIRINGS" to the "ITEM" column. On the same line add a checkmark to the "INSTALLED" column.

Enter 9.5 lb for "Weight", 77.895 in. for "Location/Arm" and 740 in-lb "Moment" onto the same line as "GEAR LEG & WHEEL FAIRINGS".

**NOTE: Steps 3-5 on this page are only applicable if a final weight and balance as specified in the PAP has been completed.**

Step 3: In the RV-12iS Pilot Operating Handbook (POH) "YOUR AIRPLANE" table, enter the new total values for the arm, weight, and moment of the installed equipment.

Step 4: In the RV-12iS Pilot Operating Handbook (POH) "YOUR AIRPLANE" table, recalculate and enter new values for the Empty Weight, Empty Moment, and Empty Arm.

Step 5: Make an entry, as calculated in the previous step, on the WEIGHT AND BALANCE RECORD page of the RV-12iS Maintenance Manual (MM) as follows:

As of this date: \_\_\_/\_\_\_/\_\_\_ the following values represent current Weight and Balance calculations resulting from the installation of the Gear Leg and Wheel Fairings Optional Kit.

Revised Empty Weight: \_\_\_\_\_ lbs  
Revised Empty Moment: \_\_\_\_\_ in-lbs  
Revised Empty Arm: \_\_\_\_\_ in                      Signed: \_\_\_\_\_

**NOTE: The remaining steps on this page are only applicable for aircraft which have passed a final airworthiness inspection.**

Step 6 (ELSA): Make an appropriate entry in the airframe logbook. See example below:

Installed the GEAR LEG & WHEEL FAIRINGS option in accordance with Van's Aircraft KAI Section 36iS/U and confirmed proper operation.

Signature \_\_\_\_\_ Certificate # \_\_\_\_\_

Step 6 (SLSA): Complete the notification N 19-06-18 (available from the Van's Aircraft web site) corresponding to the GEAR LEG & WHEEL FAIRINGS installation.

Step 7: END OF SECTION.