

# GLASTAR SERVICE BULLETIN 8


**Subject:** Wing Main Root Ribs (Part Numbers 201-00001-01 and -02)

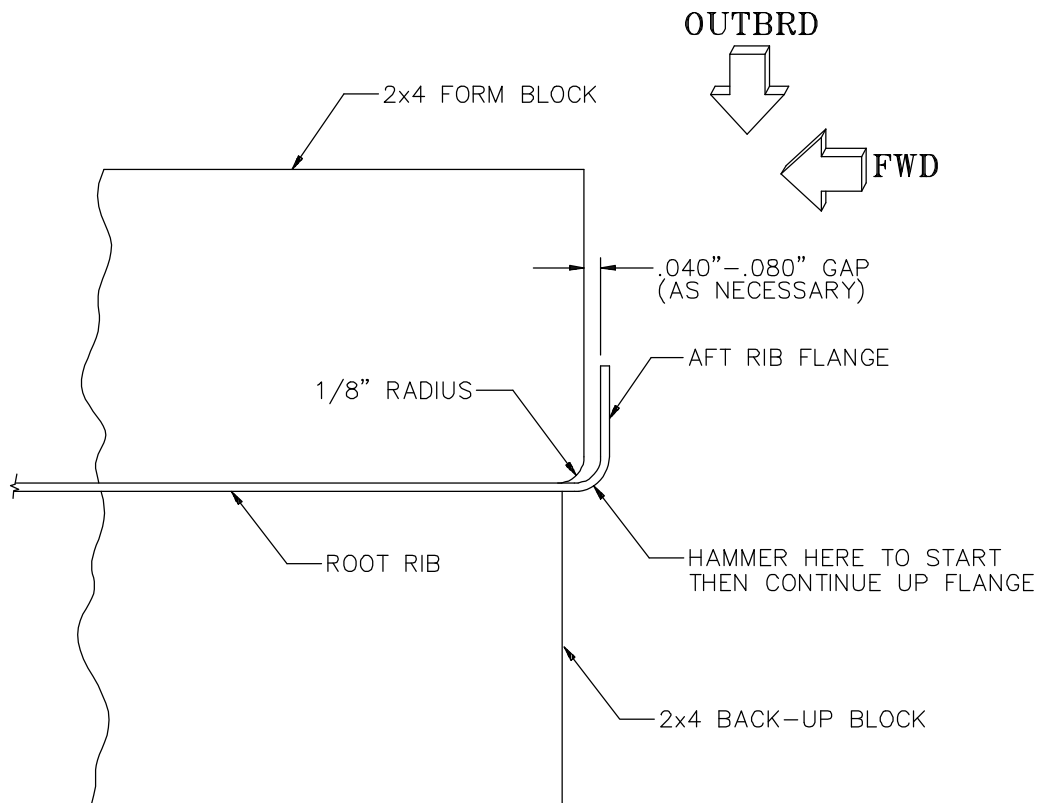
**Applicability:** Wing Main Root Ribs shipped before 5/17/96 (through Kit #5235). These ribs will have either no date stamp at all or a date stamp before 3/1/96.

**Discussion:** The affected root ribs are from .040" to .080" too long. At least one early builder has reported that wings built with these ribs had the spars too far apart to fit the wing attach fittings on the fuselage cage. It should be obvious that the ribs are too long when building the wing—forcing a too-long rib into position spreads the spars apart so that the forward spar tends to lift up from its wing jig fitting. If the discrepancy is only about .040", however, it could go unnoticed. In any case, to prevent difficulty fitting the wing to the cage later, steps must be taken to correct the problem when first fitting the ribs between the spars.

## Recommended Action:

**SOLUTION A, FOR WINGS WITH THE RIBS AND SKINS NOT YET INSTALLED:** After all the wing spar root reinforcements have been riveted to the spars and the spars are ready to fit into the jig, first verify that the inboard spar wing jig brackets are the correct distance apart on the jig post. The top side of the inboard **forward** spar wing jig bracket must be **21.95"** above the top side of the inboard **aft** spar wing jig bracket, as described in Step 3 in "SECTION VI: WING ASSEMBLY" of the *GlaStar Assembly Manual*. Mount the wing spars in the jig as described in the *Assembly Manual*, and then check the fit of the root ribs between the spars. The ribs should fit easily between the spars with no tendency to force the spars apart. As an additional check, measure the root ribs. The early, incorrectly-sized ribs are about **21.60"–21.64"** long; the later ribs that have been shortened for a better fit are about **21.56"** long. If your ribs are too long, shorten them by reforming the aft flange, as described in the following paragraphs.

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### Set-Up for Adjusting the Rib Flange

Cut two lengths of 2 X 4 about **1'** long. Form a **1/8"** radius on one of the 3-1/2"-long edges at the end of one of the 2 X 4s. Place the radiused 2 X 4 against the **inboard** surface of the root rib, with a **.040"-.080"** gap between the end of the 2 X 4 and the **aft** rib flange, as shown in the figure. The size of the gap depends on how much you need to shorten the rib; an easy way to establish a uniform gap is to temporarily insert a scrap metal piece of the proper thickness between the 2 X 4 and the flange.

Once the gap is set where you want it, place the other 2 X 4 on the outboard surface of the rib and clamp the entire assembly tightly together either in a heavy-duty vise or (using large C-clamps) to the edge of a work bench. To help keep the rib from moving relative to the 2 X 4s when hammering, you could also pin the whole assembly together with a bolt or screw through the tooling hole in the rib. Remove any scrap metal piece(s) used to establish the gap between the 2 X 4 and the rib flange and hammer the rib flange forward against the end of the 2 X 4, starting low on the flange radius, as shown.

When you have closed the gap between the rib and the 2 X 4 by hammering, unclamp the rib and check its fit between the spars. Repeat the flange forming process, if necessary.


This process moves the aft end of the rib outboard up to .080" when the rib is installed. This does not cause any problems, however, since the fuel tank has plenty of space at both ends to absorb the change in rib position.

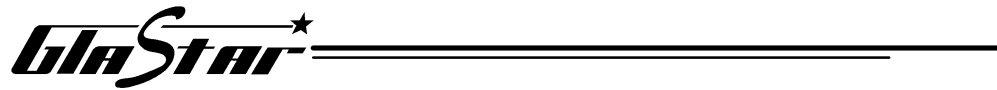
**SOLUTION B, FOR WINGS WITH THE RIBS (AND SKINS) INSTALLED:** Measure the distance between the forward surface of the forward spar and the aft surface of the aft spar; if this distance is 22-1/2" or less, the wings will fit the fuselage cage fittings and no further action is necessary. If the distance is greater than 22-1/2", the wing spars are too far apart to fit the cage easily, in which case remove the root rib and shorten it as described in SOLUTION A. Check the distance between the spars and reinstall the rib. If the rib flanges are damaged during removal, replace the rib. If the wing skins have been drilled and the spars are too far apart, the inboard skins between the spars must also be replaced with special skins that are made without the spar-attach rivet holes pre-punched in the skins.

Please contact our Builder Support Department for information on availability, lead time and cost of any parts that may need to be replaced as a result of this service bulletin.

**SOLUTION C, FOR WINGS THAT ARE ALREADY ASSEMBLED:** For this solution, the distance between the forward and aft spars is reduced to fit the fuselage cage fittings by removing material from the forward side of the forward spar assembly. At the same time, additional material must be added to the aft side to maintain the original thickness of the spar assembly.

To accomplish this, first drill out rivets as necessary to remove the root main rib and the root nose rib. Press out the wing attach bushing from the **forward** spar. Drill out the rivets and remove the **forward spar** root doublers.

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Use the **rear-side** forward spar root doubler as a pattern to make an additional rear-side root doubler from 2024-T3 sheet aluminum of a thickness equal to the excess distance between the spars. For example, if the spars are .040" too far apart to fit the fuselage cage fittings, make your new root doubler from .040"-thick aluminum.

Machine the inboard 1-1/2" of the **forward** face of the **front-side** forward spar root doubler to a depth equal to the thickness of the **new** doubler. Machine at least a 1/8" radius at the outboard end of the machined area so there is no sharp corner in the doubler.

Reinstall the doublers to the spar with the new doubler placed between the rear-side forward spar root doubler and the forward spar root doubler angle. (You'll need slightly longer rivets, of course, with the additional doubler in place.) Reinstall the wing attach bushing.

Use the procedures described in Solution A, above, to shorten the **forward** end of the root rib by an amount equal to the thickness of the new doubler. Reinstall the nose rib and the root rib.

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