

## Procedure 3.030

### Install Rib Q, J, Rib R Flange and I.

*In this procedure...*

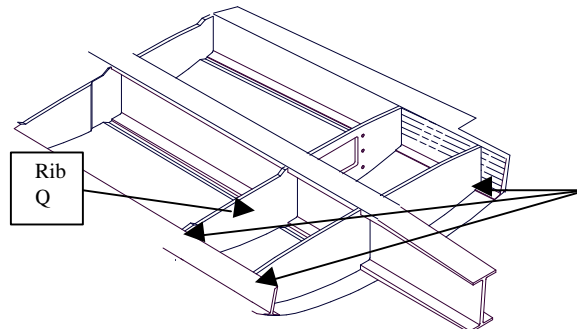
**Ribs Q, J, Rib R Flange and I will be positioned and laminated into the wing.**

**For this procedure, the following parts will be required:**

| <u>Part Number</u> | <u>Description</u> | <u>Quantity</u> |
|--------------------|--------------------|-----------------|
| 111-12-017         | Rib R              | 2               |
| 111-12-017-01      | Rib R Flange       | 2               |
| 111-12-017-02      | Rib R Flange       | 2               |
| 111-12-016         | Rib Q              | 2               |
| 111-12-002         | Rib J              | 2               |
| 111-12-013         | Rib I              | 2               |

#### **Step 1. Reinstall Rib Q.**

Place Rib Q into its original position in the wing and hot glue in place. Insure that they are square with the spar and plum. You may need to remove some of the forward edge to accommodate for the installation of the Uni on the forward shear web. Q-cell and tape Rib Q in position in the same manner used in previous procedure. (Outboard side only).



Remove material from ribs in this area to obtain fit after UNI is installed

#### **Step 2. Check for Wing Skin Clearance.**

- A. Place the Lower Wing Skin in position. Ensure that the spar centerline scribed on the wing skin is aligned with the centerline on the wing spar and that the wing tip joggle is aligned with the top wing skin.
- B. Once the wing skin is positioned correctly, drill a 1/8" hole through the skin and the spar flange at the outboard end. This will facilitate future alignment. **(Caution, Do Not Drill**
- C. Check to see that Rib Q and R are **not** preventing the wing skin from lying down on the spar and the forward or aft shear webs. You may need to sand a small amount off the rib to insure a proper fit. Reach in from the inboard end of the wing and mark on the lower wing skin where Rib Q contacts the wing skin.

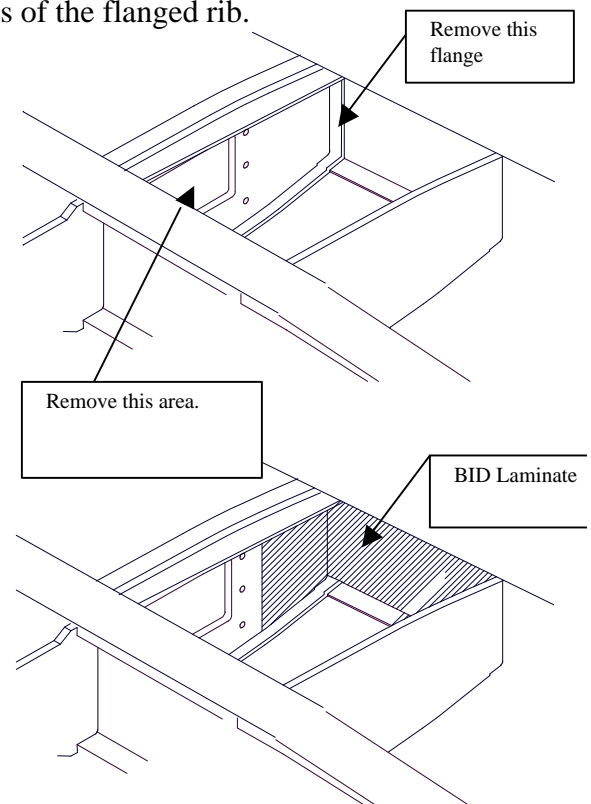
- D. Remove the wing skin and place it aside. **(Caution, when lifting the wing skin us care to support the center of the wing to prevent buckling of the skin.)**

### Step 3 **Construct Flange on Rib Q.**

Place a 6" wide strip of Saran Wrap (or like material) on the wing skin where Rib Q contacts it. Tape in place and lay-up 3 plies of 7781, 4" wide, centered on the Rib Q centerline. When cured place a milled fiber bead on Rib Q and place the lower skin on the wing. When the milled fiber is cured lift off the wing skin. Use caution to make sure the flange that you laid up on the wing skin remains secured to Rib Q. Laminate the flange on the rib using 2 laminates in each side.

### Step 4 **Install the Inboard and Outboard Rib R Supplemental Flanges Ribs.**

- A. Dry fit the outboard Rib R flanged rib and insure proper fit. Mark and cut out landing gear access hole.
- B. Using a Milled Fiber Mixture bond the outboard flanged rib to Rib R. Use "C" Clamps to clamp the flanged rib to Rib R.
- C. Clean all excess Milled Fiber from around the edges of the flanged rib.
- D. After the Milled Fiber has cured remove the clamps, clean and prep the inboard side of Rib R for installation of the Inboard Flanged Rib. Mark and remove landing gear access hole.
- E. Remove the aft flange on the Inboard Flanged Rib. Dry fit the flanged rib to insure proper alignment.
- F. Using a Milled Fiber Mixture bond the inboard flanged rib to the Rib R assembly. Use "C" Clamps to secure the flanged rib to the assembly.
- G. Clean all excess milled fiber from the edges of the flanged rib assembly.
- H. Laminate 6 plies of 7781 BID cloth to the forward edge of rib R assembly. This laminate must extend onto the main spar web by 4 inches and cover the forward 12 inches of rib R. This laminate is done on both the inboard and outboard side of Rib R.



- I. Laminate 6 plies of 7781 BID cloth to the aft end of rib R. These laminates will extend along the aft shear web inboard to WBL 24 and the aft 4 inches of rib R. This laminate is done on the inboard side only.

**Step 5 Install Ribs J and I.**

- A. Install Ribs J and I with the center of the rib located on WBL 22.5. Insure the rib is 90° to the main spar web and plum.
- B. Q-Cell the all edges of the Rib.
- C. Position the lower wing skin on the wing assembly. Use the previously drilled alignment holes to insure proper alignment. Check to insure that the ribs are not preventing the wing skin from contacting the wing spar and shear webs. If necessary sand down to top of the rib to insure contact. When the proper fit is assured remove to wing skin.
- D. Laminate 6 plies to the inboard side of Rib I. These laminates must cover the face of the rib and extend onto the wing skin and shear web EOP, and 3 inches onto the main spar. Laminate 4 tapes to the out board side of Rib I.
- E. Place an aluminum strip along the topside of Rib J and secure it at each end using hot glue. This strip will be used as a backing plate for the flange that will be installed in the next step.
- F. Laminate 6 Plies of 7781 to the outboard side of Rib J. These laminates are the same as those on Rib I except that they extend up onto an aluminum strip to form a flange on the topside of Rib J. No laminates are made on the inboard side of Rib J at this time.