Bell 407/427 Main Rotor Blade Folding Kit

Required Pre-installed Equipment

- Expandable blade bolts (Bell Helicopter Part Number 406-310-103-103 must be installed in the trailing edge of two opposing blades. It is suggested that the two blades directly over the swashplate drive links be chosen for the expandable bolts.

  (NOTE: This is in contrast to the Bell 407 Maintenance Manual. You must choose the trailing edge of opposing blades when using Paravion Blade Fold Kit.)

- Paravion® Blade Fold Hardware Kit P/N 407BF-100 OR 427BF-100 must be installed on the aircraft per FAA STC SR00411DE (407) or per FAA STC SR00472DE (427).

- For ease of alignment of the blades during the unfolding process, alignment stripes should be painted on the root and grip of each foldable blade as shown on page 8 of this manual.

- The provided yellow CAUTION label informing the pilot of the installation of the blade fold kit must be displayed in the cockpit in plain view of the pilot.

<table>
<thead>
<tr>
<th>CONTENTS</th>
<th>May 24, 2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUBJECT</td>
<td>PAGES</td>
</tr>
<tr>
<td>Folding the Main Rotor Blades</td>
<td>1 thru 7</td>
</tr>
<tr>
<td>Unfolding the Main Rotor Blades</td>
<td>8 thru 11</td>
</tr>
</tbody>
</table>

**NOTE**

Because the use of the Paravion® Main Rotor Blade Fold Kit requires the removal and replacement of critical hardware, the user must be approved by the local governing agency to perform this task.

Paravion® Technology Inc.
2001 Airway Avenue
Fort Collins, Colorado 80524 USA

Phone 970-224-3898
FAX 970-224-3899
www.paravion.com
E-mail: paravion@paravion.com
Installing the Blade Folding Kit and Folding the Main Rotor Blades

NOTE
The Paravion Blade Fold Kit is not a blade tie down kit. It may be used in conjunction with Bell Helicopter’s Blade Tie-Downs in windy conditions. The Blade Fold Kit is not to be used in wind conditions in excess of 50 knots.

Remove the Blade Handling Bar from the carrying case.

NOTE
A spring has been incorporated into the Blade Handling Bar hook to prevent the bar from being inadvertently left on the end of the blade.

It is necessary to properly align the main rotor blades prior to installing the Blade Supports. Accomplish this by selecting a convenient blade and inserting the hook on the Blade Handling Bar into the hole in the tab at the end of the blade. Depress the spring on the Bar by pulling downward. Rotate the rotor system until the two blades with removable attachment pins are directly forward and aft over the helicopter fuselage.

Remove the Blade Handling Bar from the blade.
Remove the Rear Blade Support and Support Strut from the bag and slide the tubes together end-to-end to form the assemblies.

Pull each of the knobs back and rotate into a slot to tighten the internal restraining cord.

Connect the Support Strut rod end to the Blade Support assembly’s upper clevis using the attached quick release pin.
Install the Rear Blade Support by positioning it over the horizontal stabilizer and tilting it forward. While keeping it clear of the main rotor blade, insert the quick release pins into the clevises and support brackets at the leading edge of the stabilizer.

Rotate the Blade Support up and rearward until the Support Strut clevis aligns with the Support Strut bracket located at the rear of the horizontal stabilizer and attach using the provided quick release pin.

The aft blade should now be supported. Loop safety strap over top of blade and snap ends together.
Remove the Forward Blade Support from the bag and slide the tubes together end-to-end to form the assembly.

Place the roller end of the Blade Support on the ground and align the opposite end with the attach fittings located near the landing light. Use the two quick release pins to attach the Support to the fittings.
Attach the snap that slides freely on the Forward Blade Support rope to the bracket located at the center of the wind screen.

Rotate the forward Blade Support up and under the main rotor blade. Secure by attaching the snap on the end of the rope to the clevis located at the mid-point of the Support Assembly. Loop safety strap over top of blade and snap ends together.
Remove the expansion bolts attaching the trailing edge of the two supported main rotor blades by removing the safety pin and rotating the bolt handle up to vertical and then pulling the bolt upward.

For storage of the expansion bolts, gently slide each bolt into the hole in the adjacent swashplate drive link and swing the handle over the top and away from the cowling.

**WARNING**
Care must be taken to not damage the swashplate drive links when inserting or removing the expansion bolts.

Insert the hook on the Blade Handling Bar into the hole in the tab at the outboard end of the main rotor blade on the left side of the aircraft. It will be necessary to pull down slightly to depress the spring, allowing the hook to engage.

Rotate the blade toward the front of the aircraft to within approximately eight inches of the Forward Blade Support.
To prevent the blades from contacting each other, attach the Blade Handling Bar to the tabs at the outboard end of the two forward blades using the quick release pins and clevis fittings located at each end of the bar.

**WARNING**
The Blade Folding Kit is not designed to be used to restrain the blades in windy or pitching conditions. To prevent uncontrolled flapping of the blades, the Bell supplied blade tie downs must be installed in conjunction with the folding kit. It is necessary to modify two of the boots to allow exposure of the blade tip tabs for the attachment of the Blade Handling Bar.

The helicopter may now be moved using normal methods.
Unfolding the main rotor blades and removing the Blade Fold Kit.

Remove the Blade Handling Bar from the two forward main rotor blades by removing the two quick release pins.

Insert the hook on the Blade Handling Bar into the hole in the tab at the outboard end of the forward unsupported main rotor blade. It will be necessary to pull down slightly to depress the spring, allowing the hook to engage.

Rotate the blade toward the back of the helicopter until the lines on the root end of the blade and the blade grip are aligned.

Remove the Blade Handling Bar from the blade and place it into the carrying bag.
WARNING
Care must be taken to not damage the swashplate drive links when inserting or removing the expansion bolts.

Remove an expansion bolt from its storage place in the swashplate drive link. With the bolt handle in the full open position, insert the bolt into the grip and blade root. Insure that the notch in the bolt head aligns with the small pin on the upper face of the grip.

Rotate the handle down around the trailing edge of the blade and snap it over the end of the expansion bolt. Safety the handle by inserting the safety pin through the small hole in the end if the expansion bolt and snapping the pin closed.

Repeat this process on the other blade.

NOTE
Use 50-75 lbs. (222-334N) closing force as measured at the end of the handle to secure expandable bolt (Reference Bell 407/427 Maintenance Manual).

Remove the Forward Blade Support by releasing the support rope, lowering the support to the ground, disconnecting the sliding snap at the center of the windscreen, and removing the quick release pins near the aircraft landing light.
Remove the Rear Blade Support by removing the quick release pin from the Support Strut attaching point at the rear of the stabilizer and leaning the Blade Support forward until it no longer contacts the blade. Remove the two quick release pins from the base and lift the assembly clear of the tailboom.

Fold the Forward Blade Support by pulling the joints apart and folding each section back to the adjoining section. Use the hook and loop straps to secure the folded assembly.

Place the folded assembly into the carrying bag.

Remove the Rear Blade Support by removing the quick release pin from the Support Strut attaching point at the rear of the stabilizer and leaning the Blade Support forward until it no longer contacts the blade. Remove the two quick release pins from the base and lift the assembly clear of the tailboom.
Place the Rear Blade Support and the Support Strut into the carrying bag. Zip the bag closed and store as desired.

Remove the Support Strut from the Rear Blade Support by removing the quick release pin at the upper end of the Strut.

Release the tension on the internal restraining cord of each of the three tubes by pulling the knob back, rotating it into the long slot, and sliding it forward.

Fold the Support Strut and Blade Support by pulling each of the joints apart and folding each section back to the adjoining section. Use the hook and loop straps to secure the folded assemblies.

Place the Rear Blade Support and the Support Strut into the carrying bag. Zip the bag closed and store as desired.

NOTE
Prior to starting the helicopter, insure that all parts of the Blade Folding Kit are removed and the blade expansion bolts are properly installed.