Bulletin #: TB980615 Fusion Sprog Inspection **Date: 06/15/98**

Revised 1/13/99 Destroy All Previous Copies

Applies To:

All Fusions equipped with carbon reinforced sprog assemblies.

Background:

Over the past year, we have encountered several different types of service related failures of Fusion sprog assemblies. As a result, we have made several changes to the sprog design since the initial product release to improve maintenance and durability issues. Most recently, we have completely redesigned the sprog assembly (see below). Since the sprogs are concealed in the sail, and can be deployed without inspection, it is possible for significant damage to remain undetected. It is essential that Fusion owners regularly perform the inspection procedure detailed below.

Inspection Procedure:

Inspect the sprogs, sprog hardware and sprog cables. If the sprogs have been loaded heavily, it is possible that the sprog tubes may have split and the cables may have been stretched.

The normal cable length is 19.5" from hole center to hole center. Any cable which exceeds this measurement by more than 1/16" should be replaced. Also check the attachment tangs for any sign of elongation of the holes. Replace if elongation is found.

Pay special attention to the carbon fiber tubes of the sprog assembly.

Caution - use care when inspecting any carbon fiber part. Carbon fiber splinters can be very dangerous.

Carefully inspect the perimeter of the tubes on both sides of the aluminum knuckle fitting in the middle of the assembly for splitting or cracking. If you suspect any damage to the composite part of the sprogs, remove them from the glider for a more thorough inspection. Note: Sprogs manufactured in 1997 were assembled with a slight downward bow at the center joint. This downward bow is therefore normal, and not indicative of a failure or problem with the sprog.

Inspect the sprog fork, the hinge pillar to which it mounts, and the junction between the hinge pillar and the leading edge bracket for damage and free swiveling both vertically and laterally. Corrosion or tight bolts can cause binding and damage to the fork ears. If necessary, remove the hinge pillar and lubricate the interface to the sprog fork and leading edge bracket with a light coat of white grease. Reinstall the bolts being careful not to overtighten the nuts so as to apply any clamping force.

Inspect the front of the sprog tube at the interface with the threaded insert. In this area, check that the tube is not split or otherwise damaged, that the threaded insert is securely bonded into the end of the tube, that the fork turns freely within the threaded insert, and that the threads are undamaged. We applied a locking compound to the sprog fork threads of early model Fusions. If the threaded assembly does not turn freely, you must remove the sprogs from the leading edge bracket before you attempt to twist or otherwise adjust it, and you must clamp or otherwise secure the threaded insert directly against turning as you rotate the fork. If the sprog tube is, or was ever twisted with stiff or frozen threads, it is possible that the bond between the sprog tube and the threaded insert will have been sheared, allowing the threaded insert to spin inside the sprog tube, and allowing the sprog tube to become detached completely from the insert. Also, the sprog tube or fork may have been damaged. The threads on the sprog fork and threaded insert are very fine pitch, and are easily damaged by cross threading, or by forcing an adjustment when the threads are bound up. If the threads are damaged, these parts must be replaced.

New Sprog Design:

All Fusions manufactured after June of 1998 will be made with a new sprog design, utilizing a new, all 7075 aluminum tube, a new center fitting, a new rear paddle, a new cable, and a new threaded insert and stainless steel threaded fork. These parts, taken together as an assembly, with the addition of a longer bolt to mount the cable to the leading edge bracket, are backwards compatible with all earlier Fusions. In addition, the new threaded sprog fork is backwards compatible with the earlier carbon reinforced sprog tubes (if the original threaded insert is undamaged).

Replacement and Upgrade Options:

We are offering several warranty, replacement, and upgrade options as detailed below. All warranty returns must be made through an authorized Wills Wing dealer, and will be shipped back to that dealer by Wills Wing.

Warranty A

Eligibility: Any failure of a carbon reinforced sprog which occurs within one year of glider delivery date during normal service (no crash landings or other abnormal use).

Wills Wing will repair or replace (at our option) any damaged components without charge and provide return shipping to the customer. If we are out of stock of Carbon Sprog Assemblies, customer will be upgraded to current configuration without charge.

You must return both complete sprog assemblies (everything shown in diagrams 83E03 and 83E07 in your owners manual except the "Bracket LE Sprog Hinge") to be eligible for warranty coverage.

Package and label the left and right side separately. Tape the threaded fork to the sprog tube to prevent it from rotating. Reinstallation may require a complete readjustment of the sprog angle (stability settings) and a test flight by a factory authorized technician or dealer, at your expense.

Warranty B

Eligibility: Any failure of a carbon reinforced sprog which occurs more than one year after glider delivery date, or which is the result of a crash landing or other abnormal use.

Availability: While supplies of replacement parts last. If we are out of stock of replacement parts, you must upgrade to current configuration. See below.

Wills Wing will replace part number 40M-1161 SPROG ASSY - FUSION for $30 each (33% of the normal retail price). 20G-2440 SPROG FORK ALUMINUM will be inspected, serviced and replaced if damaged for $7.50 each (33% of the normal retail price) without additional labor charge. Customer pays shipping both ways.

You must return both sides 40M-1161 SPROG ASSY - FUSION (everything shown in diagram 83E07 in your owners manual) to be eligible for warranty coverage.

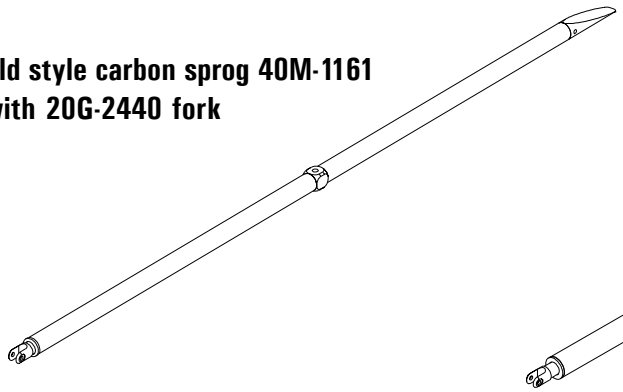
Package and label the left and right side separately. Tape the threaded fork to the sprog tube to prevent it from rotating. Reinstallation may require a complete readjustment of the sprog angle (stability settings) and a test flight by a factory authorized technician or dealer, at your expense.

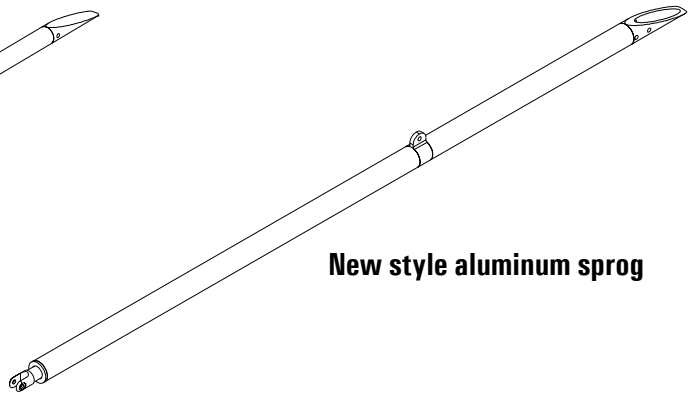
Upgrade to current configuration.

Eligibility: Any glider with carbon reinforced sprog assemblies

A sprog upgrade kit is available for $75 retail per side and includes the parts listed in the first table below. By re-using those parts which are interchangeable from your old sprogs (listed in the second table) you can mount the new aluminum sprog assemblies. After mounting, the sprogs will need to be re-adjusted to the proper stability settings as specified in your manual, and a test flight to confirm proper adjustment is recommended. Any expense incurred for adjustment and/or test flight will be your responsibility.

Old style carbon sprog 40M-1161 with 20G-2440 fork





New style aluminum sprog

Items Included In Upgrade Kit

ID	DESCRIPTION	WARRANTY RETAIL
40M-1162	Sprog Tube Assy - Aluminum	
10B-2464	Bolt AN 24-46A Ground/Keyhole	
40P-6005	Wire Sprog Assy TGL Jaw 25.5	
10T-5101	Spacer NY .75 * .125 * .310 Drilled 1/4"	
10B-1101	Bolt AN 23-10A	
10N-1730	Clinch Nut 3/16 MS20142-3	
Total For Upgrade Kit		$ 75.00

If any of the interchangeable parts are damaged, missing or otherwise not re-useable, or if you wish to replace any of these parts with new parts, the table below shows all other parts used in the sprog assembly, except for the hinge bracket which is riveted to the leading edge and the neoprene sprog cover. Prices shown below for the Sprog Fork and Sprog Hinge Pillar are discounted substantially from normal retail, other prices are normal retail.

Items Not Included In Upgrade Kit Which Can Be Re-used From Original Sprogs

PURCHASE NEW AS NEEDED:

ID	DESCRIPTION	WARRANTY RETAIL
10B-2201	Bolt AN24-20A	$ 2.03
10N-1740	Clinch Nut 1/4 MS21042-4 (2 Required)	$ .96
10C-4081	Bolt NAS 623-3-8	$ .38
10N-1730	Clinch Nut 3/16 MS20142-3	$ .32
20G-2441	Sprog Fork Stainless	$ 16.05
20G-2448	Sprog Fork Hinge Pillar	$ 5.18
10U-1140	Washer Steel AN960-416	$ .08
Total If All Parts Purchased		$ 25.00

NOTE: Each table above shows the parts for one sprog assembly. Two such assemblies are required for each glider.

Additionally, we are offering a $15 retail credit per sprog for the return of the carbon sprog tube assemblies and cables, including the sprog tube, center bracket, rear paddle, threaded adjuster insert, and sprog cable, but excluding the threaded sprog fork, hinge pillar and all other interchangeable parts as listed in table 2 above.