Retrofit Stabilizer Kit - Parts List and Installation Instructions

40S-1420 STABILIZER KEEL EXT ASSY FITS 42MM
(Spectrum, Super Sport, XC, HP AT, Falcon 140/170, Sport AT, Sport E, HPII 88/89, Sport American 180, Falcon 2 all sizes)
40S-1430 STABILIZER KEEL EXT ASSY FITS 1.75"
(Early model Ultra Sport)
40S-1440 STABILIZER KEEL EXT ASSY FITS 50MM
(Falcon 1 195/225, Fusion)
40S-1445 STABILIZER KEEL EXT ASSY FITS 1.5"
(Sport American 167, HP II before 1988, HP 1, and earlier gliders.)

Parts List

(1) Dacron stabilizer cover
(1) Keel extension:

44mm	(40S-1420)
1.875"	(40S-1430)
52mm	(40S-1440)
1 5/8"	(40S-1445)

(1) 10mm stabilizer leading edge tube
(1) 10mm stabilizer trailing edge tube w/corner fitting
(1) Clevis Pin

10G-1570	(40S-1420)
10G-1610	(40S-1430)
10G-1650	(40S-1440)
10G-1530	(40S-1445)

(1) 10P-1100 small safety ring

Tools Required

Electric drill with 3/16" bit
Tubing cutter or hacksaw
File

Instructions

Completely set-up your glider before beginning installation.

CAUTION! *No vertical stabilizer should ever be attached in such a way that it is not oriented exactly vertically, and secured solidly against rotation. Gliders with removable rear keel sections must have those sections secured to the main keel with a through bolt or pin prior to mounting and using a stabilizer.*

Pre-Installation Considerations

Without modification to the keel, the retrofit stabilizer will lengthen the keel by a little more than 19". As a result, the keel would tend to contact the ground first during an agressive flare, and might inhibit the flare as a result. We recommend, therefore, that the keel tube be shortened prior to the installation of the stabilizer, and that the stabilizer oversleeve then be left installed on the keel. In this way, the overall keel tube length will be about the same after the

installation as it was before, and the installation of the stabilizer during set-up for flying will be simplified.

On all models except the Falcon 1 195 and 225, there is more than 19" of rear keel tube extending aft of the rear edge of the oversleeve at the rear keel wire junction. We would therefore recommend that the keel tube be shortened at the rear by 19". On the Falcon 1 195 and 225, there is typically about 12" of keel tube aft of the rear edge of the wire junction sleeve. On these models, we recommend that the keel be shortened by no more than 10" (it is not a good idea to have two oversleeves butt directly to one another.)

If you would prefer that your keel be a little longer than it is (in order, for example, to keep the tips of the sail a little higher off the ground during set-up and breakdown), you can choose to shorten the keel tube by less than the stabilizer will lengthen it, and as a result have a longer keel after the installation.

Installing Keel Extension

1. Decide how much you will be shortening the rear of the keel, and measure and mark the keel at this point.
2. If you have a tubing cutter, you can simply use it to cut off the keel at your mark. If you are using a hack saw, use a bendable straight edge around the circumference of the keel to guide you as you trace a line around the circumference of the keel at your mark.
3. Carefully cut off the keel along the line you traced using the hack saw.
4. Use a file to de-bur and lightly chamfer the rear end of the keel tube.
5. Slide the keel extension onto the keel until the forward bushing seats against the end of the keel (approximately 5.75").
6. Insert the straight 10mm stabilizer trailing edge tube into either bushing in the keel extension. Use it as a sighting reference to exactly align the extension so the bushings are vertical, i.e. in line with the rear wire bolt. Lift the keel to a horizontal position and sight along it so that the trailing edge tube and the kingpost are aligned. You do not want your stabilizer to be tilted to one side or the other.
7. While carefully maintaining this alignment, use the 3/16" holes in the sides of the keel extension as guides and drill 3/16" holes through each side of the keel. Make a final pass with the drill all the way through the keel, and verify that the 3/16" clevis pin can be easily installed.
8. Insert the clevis pin and secure it with the safety ring.

Installing Stabilizer Frame and Cover

1. Join the trailing and leading edges of the stabilizer frame by inserting the corner fitting on the straight trailing edge tube into the end of the leading edge tube. The stop-collared ends go at the bottom.
2. Insert the frame ends into the bushings on the keel extension with the curved leading edge tube forward. Make sure the stop-collars seat against the bushings.
3. Slide the dacron stabilizer cover over the frame and secure with the overlapping velcro. The cover should be pulled on as tightly as possible. Installing the cover can be easier with the glider set up and the extension tube on the glider.

For breakdown and storage remove the stabilizer cover, remove the stabilizer frame and separate the tubes, then roll the frame and cover together and stow in the glider bag.

Tuning your glider after installation

The stabilizer weighs a little more than one pound, and even after shortening the keel, will add enough weight to the rear of the glider to change the trim. Depending on your weight and glider model, you will need to move your hang loop forward 3/8" to 1" to recover your original trim speed.

Please contact your dealer or Wills Wing if you have any questions.