Falcon Tandem with Hydranet Trailing Edge

This advisory applies to a limited number of Falcon Tandem models that were produced with Hydranet sail cloth in the trailing edge panel, as opposed to the more common 240 HTP or 240 MT material. Hydranet can be identified by the fact that the squares of reinforcing threads are just under 3/16" wide. On HTP or MT material, the squares are 5/16" wide.

In order to achieve the proper trim and pitch characteristics on Falcon Tandems equipped with Hydranet trailing edges, two configuration modifications and a number of tuning adjustments may be required. When configured and tuned as described herein, the Falcon Tandem with Hydranet trailing edge has exhibited the same trim and pitch characteristics, both in flight and on the test vehicle, as the Falcon Tandem equipped with 240 HTP or 240 MT.

Note: Proper pitch characteristics includes the requirement that with a prone pilot in steady state flight, at a full forward position relative to the control bar, there should be at least four pounds of positive pitch pressure per hand in the control bar.

In general, pitch pressures will be higher at higher wing loadings (tandem, for example), and lower at lighter wing loadings (especially single place). The Falcon Tandem is not approved for flight at speeds in excess of 53 mph, or for any aerobatic dives or aerobatic maneuvers, and the pilot should not expect positive pitch force in all achievable flight conditions if operating outside of the recommended operating limitations as stated in the owner's manual.

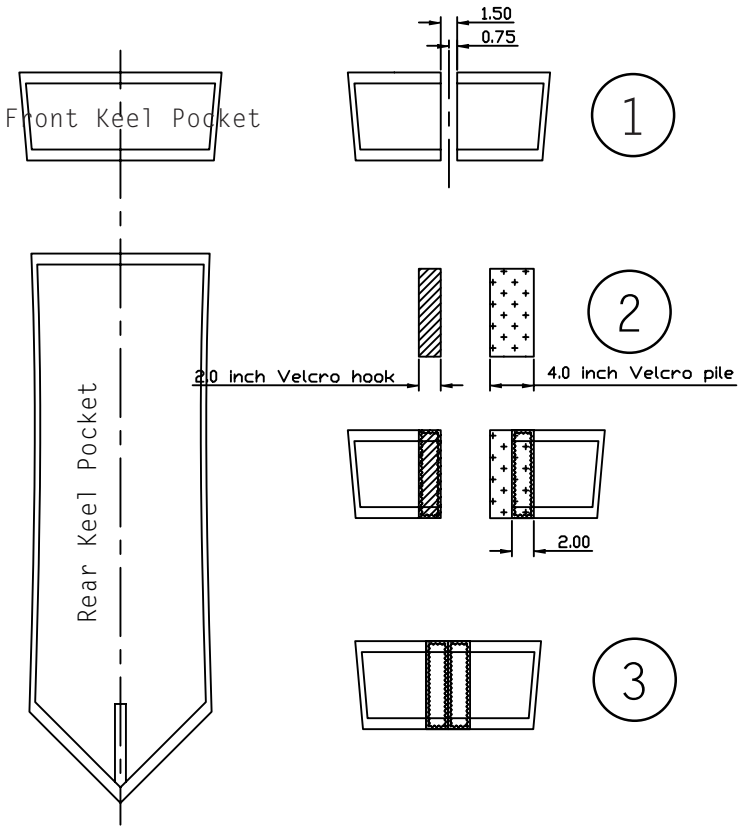
The configuration changes that may be required are to shorten the front keel pocket by ¾" in accordance with the included instructions, and to increase the batten reflex on the #6 and #7 battens to match the indicated lines on the revised batten batten pattern dated September 20, 2002.

The following tuning adjustments are required:

1. Number one batten tension: Set as high as the 10mm battens will support without buckling. If set right, the battens will actually buckle slightly as you pull the string over the end of the batten, and then return to straight with the string installed.
2. Leading Edge Shims: Each leading edge should have at least 3/8" of shims, and can have up to ½" of shims. More than that risks permanently stretching the mylar pocket panel.
3. Hang Loop: For solo flight, at 210 lbs hook in or less, the hang loop should be set full aft – with the center of the loop at 73" from the front of the bottom noseplate. Adjust forward as appropriate for heavier wing loadings and tandem flight.
4. Sail Mount Plug Alignment: The sail mount plugs should be aligned so that the slot in the plug in which the mounting webbing fits aligns perpendicular to the washout tube. (This is the normal, stock alignment.) If it is necessary to twist a tip for a turn, you should twist down on the wing towards which the glider is turning before twisting up on the other wing.
5. Mass - moment balance wheel sets: Any added accessories, such as wheel sets, should be mass – moment balanced to preserve pitch trim. That is, the total added weight added ahead of the hang point, multiplied by the distance ahead of the hang point, should equal the total weight added behind the hang point, multiplied by the distance behind the hang point.
6. Batten spring tension – Spring tip battens should be at the higher of the two tension settings that have been used – the forward punch in the rear of the batten (the punch that retains the front of the spring) should be at 4.375" from the aft cut end of the batten tube (as opposed to 4.625").

Falcon Tandem Keel Pocket Modification Diagram Applicable to Hydranet Sails

August 9, 2002



Mark the centerline of the front keel pocket (no mod to rear keel pocket). Mark and cut 3/4 inch each side of center, resulting in a 1.5 inch wide gap. Heat seal the fabric edge.

The keel pocket modification kit contains 1 each piece of 2 inch wide hook and 4 inch wide pile type Velcro. Install the 2 inch hook flush with the cut edge of one side of the keel pocket. Install the 4 inch pile overlapping 2.0 inches of the other side of the keel pocket, leaving 2.0 inches of exposed pile. Sew each piece of Velcro to the keel pocket with a perimeter zig-zag stitch of v-92 guage thread.

Mate the cut edges of the keel pocket flush, with 2.0 inches of overlapping Velcro securing the junction.