

16 Flowform

Sewing Instructions

presented by "Stretch" Tucker

These instructions together with the materials and resources list will enable you to build yourself a 16 square foot Flowform, and are presented in two parts; a brief synopsis of the steps taken in order, followed by more detailed instructions.

Building sequence:

- a] Cut out all pieces needed for kite. Appliqué design on base panel.(optional)
Mark rib sewing lines on top & base.
- b] Add reinforcing on keels.
- c] Hem top of centre keel. Edge bind leading edges, and bottom edges of keels.
- d] Sew bridle loops onto keels.
- e] Cut vent holes in top and base panels.
- f] Sew ribs to top panel.
- g] Sew keels to base panel.
- h] Sew ribs(with top panel) to base.
- j] Clean up trailing edge, and cut V-notch.
- k] Edge bind V-notch.
- l] Sew trailing edge together with edge binding.
- m] Make bridle, and fit to kite.

Now go and fly your new creation !

Building sequence:

- a] Cut out all pieces needed for kite. This should already be done before you come to this workshop, so that you have all the pieces ready before you start working. Now is the time to do any design or appliqué on the base panel, before you start sewing things together. Mark out the lines on the inside of the top and base panels where you are going to sew the ribs. The ribs are spaced 10 inches apart, and there is a 1/4" seam allowance on the outside edges of the side cells. Also mark the keel sewing line down the centre of the base panel on the face of the kite.

b] Add reinforcing onto keels. Cut patches from your 3.0 oz dacron to fit the tips of the keels. **Warning!** The centre one is **not** the same as the outside two, and you also need to use the remainder to make your bridle loops (see **d]**). Make the patches large enough to support the bridle loops you sew on in step **d]**, stick them onto the keels and sew across the open top edge (closest to kite).

c] Edge bind leading edges, and bottom edges of all three keels. **First** take the centre keel, and fold and sew a 1/4" double fold hem along the top edge, which is later sewn onto the base panel. If you are using the 3/4" or 1" ripstop strips then fold them in half lengthways, place them over, and sew them onto the leading edges of :
the top panel, the base panel, the five ribs, both of the lower edges of the three keels, (leading and trailing).

d] Sew bridle loops onto keels. Take the leftover 3.0 oz dacron and cut 3 strips 3/4" wide by 4 inches long. Fold them in half lengthways and sew down the strip. Fold the strips in half, and sew them onto the reinforced corners of the keels, with about 1/2" to 3/4" hanging over the corner. Try to split the angle equally.

e] Cut vents in top and base panels. The vent holes are all cut on the centreline of each cell, (i.e. 5" from each rib), and are 4" in diameter (2" radius). **All measurements are from the leading edge of the panel to the centre of the vent.**
On the **top** panel, in the middle two cells the vents are 17 1/2" back, and in the outer cells the vents are centred 41" back.
On the **base** panel, the middle cell vents are 17 1/2" back, and the outer cell vents are 10" back from the leading edge.
These vent holes can be cold-cut with a circle cutter, or hot cut using a template.

**All sewing alignment is made at the leading edges of the top and base panels.
There is a 1/4 inch seam allowance included in the templates where necessary.**

f] Sew the ribs onto the top panel. The seams on the side ribs will be inside the kite, so think about it before you rush in. Place the top panel on the table, top side up, leading edge away from you. Take the left outside rib, lay it on the top panel, outside side down. align the top of the rib with the right side of the top panel, **remember** to do a 1/2" backtack, and sew a 1/4" seam to hold them both together. Sew the middle three ribs down the lines you drew in **a]**, and repeat the above process with the other outside rib.

g] Sew the keels onto the front of the base panel. The centre keel is sewn onto the centre of the base panel, down the line you drew in **a]**. You will sew down the centre of the double-fold hem you created in **c]**. Just align the start of the seam with the leading edge of the base panel, and carefully sew the hem of the keel down onto the line. **Remember** to backtack 1/2" at the start and finish of the seam. The tops of the keels are aligned with the sides of the base panel, with the bridle points facing the centre, and the seam is sewn 1/4" in from the side edge. You may wish to use double-sided tape to hold things in place while you sew, and then remove it later.

h] Sew assembly **f]** to the base panel. Start with the rib on the right hand side of the kite. Lay the base panel on the table, face side with keels up, leading edge away from you, and lay the assembly **f]** on top with the ribs uppermost. Align the right side of both pieces, and sew them together with a 1/4" seam, and **stop** with a backtack at the end of the rib. **Yes**, you will be sewing down the same seam that you made in step **g]**. Now sew the remaining side of the top to the base with a 1/4" seam, starting at the tail end of the keel. Unfold the whole package, and roll up the base so that it will pass under the arm of the sewing machine. Now with the top on the left side, and the base on the right, pull over each successive rib and sew it onto the base panel, using the lines you drew in **a]** as guides, until you get to the last rib. Now take the assembly and roll it up from the first seam towards the last seam to make a long roll. Wrap the rib around the roll, align the base of the rib with the edge of the base, and sew a 1/4" seam, stopping with a backtack at the end of the rib. Sew the rest of the edges together, and then pull the roll out through the front opening of the cell which will turn inside out as you do so.

j] Clean up trailing edge, and cut V-notch. Your kite is almost finished, all you have to do is lay it out on its back on the cutting table and smooth out the top and base panels so that they are exactly on top of each other. Measure one inch behind the end of the outside ribs and mark and cut the trailing edge on this line. Hot cutting may help here. On the base panel measure 39" down the centre rib line and make a mark. The Vee cut out goes from this point to the trailing edge where the sewing lines each side of centre meet it.

k] Edge bind V-notch. From the centre, mark 7" down each side of the Vee on top and base panels. This is the open part of the v-notch, the rest is sewn together, so you need to sew edge binding on each side of the Vee for 7 1/2" to 8" on both the top and base panels. Think about how to get edging material into the notch of the Vee.

l] Sew trailing edge together with edge binding. You can either start at the 7" mark you made in **k]** and sew to the top of the Vee, or vice versa. You will be sewing both the top and the base panels together with the one piece of edging. After you have sewn the sides of the Vee, sew edge binding across the trailing edges of the outside cells, once again sewing the top and base panels together at the same time. You can also add loops on the trailing edge if you want at this time.

m] Make bridle, and fit to kite. Take the 36 feet of 150 lb. test dacron line and fold it into thirds. Now tie an overhand knot in one end, so that you have a tow-point loop with three equal length bridle legs. Tie the three legs onto your kite bridle loops. The two outside bridles need to be the same matching length, and the centre one will be a little shorter by about 1" to 2". You want to end up with a kite which is flat across the base at the front of the kite, so you may need to experiment with the centre bridle length to find the exact length to achieve this.

Now go and fly your new kite !

Note: this plan is from the early 1990s, when it was more common to sew the seams on the outside of the kite. It is now more common to sew all seams internally. Either method will work!

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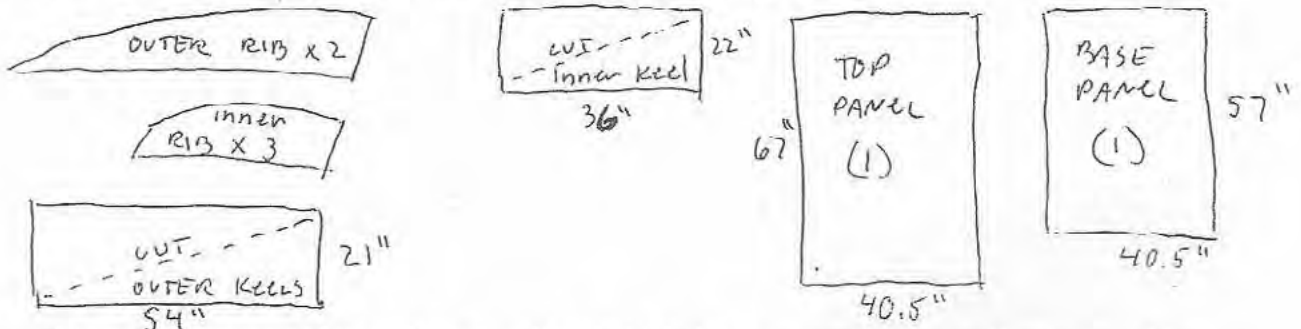
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This project requires a lot of cutting and sewing. In order to finish the project in the time allowed, you will have to precut the ribs, keels, top, and bottom panels. Give some thought as to what color you want each piece before you begin. Fabric kits are available from the Kite Studio.

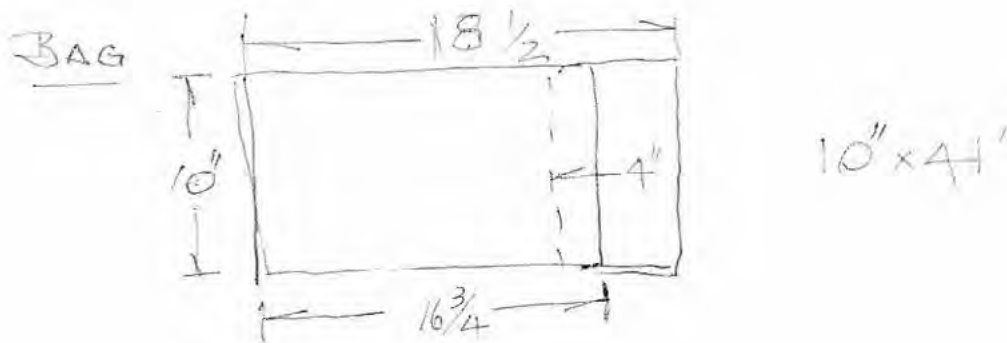
You will need fabric in the sizes listed below to build this kite.

- 1 Top Panel - 1 piece of white ripstop 40.5" x 67"
- 1 Base panel - 1 piece of color ripstop 40.5" x 57"
- 1 Center keel - 1 piece color ripstop 22" x 36"
- 2 Side keels - 1 piece color ripstop 21" x 54" to make both keels
- 2 Side ribs - 2 pieces color ripstop 62" x 16" to make ribs
- 3 inner ribs - 3 pieces color ripstop 43" x 16" to make ribs
- about 50' of 3/4" or 1" wide ripstop strips for edge binding
- about 6" of 30z. dacron for reinforcing
- 36' of 150 lb test dacron for bridles

Included in this packet are the rib templates. Please have 2 side and 3 inner ribs cut to this pattern. Also, cut the rectangles for the keels in half on one diagonal.



Bring all of the usual kitemaking supplies that inhabit your sewing room. Sewing machine, thread, scissors, straight edge, triangle, pencils, seam ripper, etc.



X-coordinate	Y-coordinate	X-coordinate	Y-coordinate
0"	9"	32"	11.5"
2"	11.25"	34"	10.75"
4"	12.5"	36"	10"
6"	12.875"	38"	9.25"
8"	13.25"	40"	8.5"
10"	13.5"	42"	7.625"
12"	13.75"	44"	7"
14"	13.875"	46"	6.25"
16"	14"	48"	5.5"
18"	14"	50"	4.5"
20"	13.875"	52"	3.75"
22"	13.5"	54"	3"
24"	13.25"	56"	2.25"
26"	12.875"	58"	1.5"
28"	12.5"	60"	0.5"
30"	12"		

Red line indicates end of inner ribs.
 This kite requires 3 inner ribs and 2 outer ribs.

