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Fort Worth, Texas. USA.
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Mini - Guide to Bridling an Indian Fighter Kite.

Fighter Kites are normally purchased un-bridled, as they are when they leave the Indian kite-maker. When it comes to bridling these kites, there are no rules, measurements or guidelines as such; they are normally done 'by eye'. Once you have a general idea how to bridle a fighter kite, you will not need to measure anything; however, I have attempted to explain this in words, and have given approximate measurements as a guide to teach you. There are various ways of bridling, depending upon the flyer's preferred flying style and also the wind conditions. The bridle is attached to the front face of the kite, and the bamboo spars are on the back face.

Reinforcing the Sail.

Before bridling the kites it is a good idea to reinforce the sail first, to give it additional strength in the stress points. Ideal materials for reinforcing are *Scotch Magic Tape* or *Surgical Micropore*. *Scotch Tape* also works well on *Mylar* kites as it becomes almost invisible, but it can deteriorate and become brittle over time. The length of tape for all the reinforcements should be about 3-5cm / 1½" to 2" long.

First reinforce the nose with two pieces of tape folded over the edge of the tissue on either side of the nose, covering both the front and back faces of the kite. Then fold a length of tape over the top edge of each wingtip, enclosing the bamboo bow, and covering both the front and back surface of the kite. Now reinforce the top bridle point, where the bow crosses the spine. The tape can be applied to either face of the kite, and should be vertical along the spine, and under the bow if it is applied to the back. Finally you will need to do the same for the lower bridle point on the spine. The lower bridle point is approximately just under one third of the distance up the spine, from the bottom of the tail.

As with the top bridle point, you should apply reinforcement tape in a vertical direction over the bamboo spine. The tape can be stuck on either the front or the back surface of the kite.

Selecting the Bridle Points.

We have seen kites bridled with single as well as double strands of cotton, linen and also monofilament nylon. When we bridle our own fighters we tend to use a finely braided suture, about the thickness of button thread. All are quite suitable; just use whatever is the easiest and most readily available.

Indian Fighter Kites have a simple two-leg bridle, and the attachment points are situated along the central spine of the kite. The top bridle attachment point is normally where the bow crosses the spine, although for stronger wind conditions the bridle can be attached to the spine below the point where the bow crosses it. However if the bridle is attached on the spine below the bow, it is necessary to bind the spine and bow together with a couple of stitches to hold them securely in place.

The lower bridle attachment point varies depending upon who is bridling the kite. Getting this position right isn't crucial, as the final angle of attack [the angle at which the kite faces the wind] will be set once the bridle has been looped and tied. Some kite flyers place their hand across the tail of the kite and use the width of their hand as a measure for positioning the bridle point. As an approximate guide, we have bridled a small sized kite, measuring 47cm / 18½" along the spine from the nose to the tail. The width is 55cm / 21½" and this has been measured in a straight line across the kite, between the wingtips. The normal place for the top bridle point is where the bow crosses the spine, and on this kite the lower bridle point is about 13.5cm / 5¼" up the spine from the bottom of the tail.

Attaching the Bridle to the Kite.

Once the sail has been reinforced with tape, you will need to pierce it and tie on the bridle. Cut approximately 1 Meter / 3 Feet of your chosen bridle line, and thread a needle with the line. Start with the front face of the kite upwards, and the bamboo spars on the underside. Pierce the sail through the front, at the point where the bow crosses the spine and pull the needle and line through to the back of the sail, in between the spine and the bow. Now push the needle through the sail from the back to the front again, over both spars, to make a small diagonal stitch. The holes should be very close to the bamboo spars. Turn the kite back so that the front is facing upwards and draw the line through the kite and around the spars. Tie the line 2 or 3 times with a simple overhand knot, leaving a tail about 5-7cm / 2"-3". This end should be left hanging on the front face of the kite, and is used for fine-tuning of the bridle.

To attach the bridle to the lower point, with the front face of the kite upwards, push the needle and line through the sail from the front to the back, over the bamboo spine, and then back through to the front face again. The holes should be horizontal and close to the bamboo spine.

Before tying the end off, you will need to set the length of the bridle. This is done by pulling the line across one side of the kite, so that it extends about 12cm / 5" beyond the wing tips. Hold the bridle line in position at the lower attachment point and tie firmly with a couple of overhand knots. Trim off the excess line, leaving another fine-tuning tail of about 2"-3".

Tying the Bridle Loop / Setting the 'Angle of Attack'.

The final part of bridling your kite is setting the 'angle of attack'. This is the angle at which the kite is presented to the wind. The flatter the kite is set to the wind, the more pressure there is on the sail, and this increases pull and stability. Fighter kites are normally set with the nose slightly forward [closer to the flyer], which allows the kite to spin more easily and improves maneuverability.

Suspend the kite about 1" above a tabletop, with a finger in the bridle line. Adjust the position of your finger so that the kite hangs horizontally with the nose and tail at the same height above the table. Now move your finger forward slightly [about ½"] towards the nose, shortening the upper bridle leg. Pinch the bridle line at this point and fold it ready to tie the bridle loop. Now tie the bridle loop into a single overhand knot, making a loop approximately 2" long. This is the 'tow point', the place where your flying line is attached.

Fine - Tuning / Adjusting the 'Angle of Attack'.

It is not normally necessary to make any adjustments to the bridle once you have found your own optimum setting, but any changes are made with the little pieces of bridle line left hanging from the kite. If you want to increase the spin rate and make the kite more agile, you will need to shorten the upper bridle leg. This will bring the nose closer to you and allow a little more of the wind to spill out from the tail end of the kite. To make this adjustment, use the piece of line hanging from the top bridle point, twist it around the upper bridle leg and tie a little overhand knot. This will shorten the upper bridle leg a fraction, and if you need to shorten it further, tie another knot ! To decrease the spin rate you will need to tie the knots at the lower bridle point instead.