

Tips for Straightening Twisted Limbs

There are several methods used to straighten twisted limbs.

Don'ts.

1. Don't use open flames to heat limbs
2. Don't use industrial heat guns (type used for shrink wrap). Even in the low setting, they are too hot and will generally scorch the glass and discolor the limb.

Options. There are several options to heating the limb to make it easier to bend back into shape:

1. You can use the hot water method to successfully straighten limbs. Make sure there is no delamination. If so, fix the delamination and seal the limb so water doesn't seep in and swell the wood. This can cause permanent damage to the limbs. Heat the limb by holding it under the hot water stream for several minutes. Grab the twisted limb and twist it in the opposite direction of the twist. Use light pressure at first, too much can cause damage and ruin the limb. Let the limb cool and string the bow. Check the limb and repeat the process using more or less twisting pressure, depending on the results of the first attempt.
2. You can use a hair dryer to heat the limbs prior to bending them back into shape. Use the same procedure as above to take out the twist.

Another option is to clamp a vise grip over leather on the edge of the twisted limb at the twist point and hanging a 3 to 5 pound weight from the vise grip to pull the limb away from the twist, and leaving for a couple of days.

Another option is to lay the bow on a flat surface with the twisted limb point up. Then place weights on top of the limbs to straighten them. This method can be used with a blow dryer to heat the limb.

Yet another option is to place a bracket on a post with a nail 18-20" below so the strung bow can be placed on the bracket and the string pulled down to the nail (at about $\frac{3}{4}$ draw), and leaving it partially drawn in place over night.

In any case, try to mark the direction of the limb twist with a washable marker or a piece of tape on the limb that is twisted. If possible try to determine where the twist is on the limb. Some are towards the tip and others are more towards the center of the limb (In many cases for vintage recurves the twist was caused by stringing the bow with the old step through method of stringing – so the twist is generally where the limb was placed on the ankle for stringing).

I have found that most twists can be reasonably straightened. However, not all bow limbs can be straightened, especially light poundage bows with narrow limbs. Not all straightened bows will remain straight.

Testimonials:

1. I have tried several methods and folks on the collectors forum finally told me to just use hand pressure and not to use heat or hot water. String the bow and carefully flex the tip back past straight - as far as you can without causing it to unstring - and keep doing this every time you pick the bow up. Eventually it will stay. Worked for me.
2. I have an old Shakespeare Super Necedah that had a twist in the upper limb. The string was tracking at least 1/4 inch out of the groove. I would constantly twist it back and it would track true, but after about 6 or 7 pulls it would drift back to the original twist. I finally tried the hot water method after reading about it here and it worked. I held it under the faucet, about 105 degrees, for about a minute, twisted the limb hard and had someone change the water to cold before removing it. I think the water was hot enough to set the repair, but not hot enough to cause de-lamination issues. I've pulled the bow hundreds of times since and the twist has not returned.
3. A few months ago I corrected one of my Kodiaks that had a slight lower limb twist. Instead of holding the bow under hot running water, I filled one bucket with really hot water and another bucket with cold water. The hot water was so hot that I could just barely keep my hand in it. While the bow was strung up, I put it in the hot water bucket for about 4 or 5 minutes, pulled it out and twisted the limb until straight, then submersed it in the cold water bucket for a couple of minutes. I had to do this three times before it finally stayed, but is in on good shape now! I think one of the key things is to leave the bow strung up for a few days afterward.

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