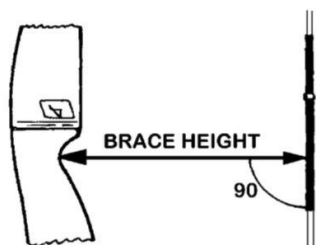


## Bow Setup & Tuning: Brace Height and Tiller

In last month's newsletter we talked about arrow selection. This month we'll touch on two very much easier to get right parts of bow tuning but still very important. First we'll cover brace height.



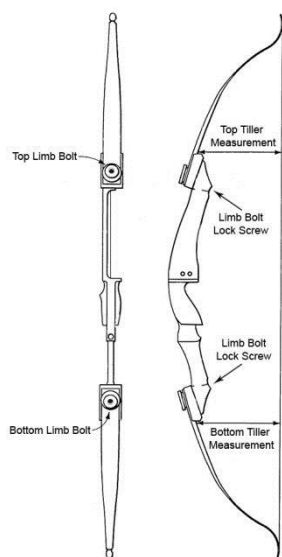
Brace height is the distance between the deepest part of the grip (or the middle of the plunger hole) and the string. You would normally measure this using a bow square clipped onto the string. Bow squares are incredibly useful and cheap bits of kit so worth having in your bag. But you can just use a tape measure or ruler!

Your bow will come with manufacturers recommended brace heights for different length limbs so that should be your first start. You can normally find instruction manuals on the Internet if you don't have them for your riser.

To actually change the brace height you add or remove twists to the string – adding them to make it shorter and thus increasing the brace height and removing them to make the string longer and thus decreasing the brace height. As a rough guide a 68" bow (25" riser with medium limbs) will have a brace height of around 22-24cm. There will normally be a 2cm or so range for your bow which is acceptable.

A brace height set poorly will often result in a very noisy bow. That's often a first giveaway, but it will also affect the speed of the arrow and the point at which it releases the arrow which will both inevitably lead to larger groupings, especially if the brace height is allowed to change over time. For this reason people will often tie the ends of their strings together or keep them clipped into a 'string keeper' to stop them un-twisting between sessions.

So let's now move onto setting the tiller of your bow.....



The top tiller and bottom tiller measurements are shown in the diagram. It's the distance between the limbs and the string where they initially meet the riser. Because as archers we don't actually pull the exact middle of the string we aren't applying exactly the same power to each limb. We therefore need to adjust the strength of each limb so that they are exerting the same power at release and move at the same speed. This will make for a smooth, vibration free shot and ultimately better groups. We alter the tiller by un-doing the limb bolts and either tightening or loosening them. (Note that you do this with the bow unstrung!) You would tighten a limb bolt to decrease the tiller or loosen the limb bolt to increase the tiller, or perhaps a combination of both. Bearing in mind that changing the limb bolts is effectively changing the poundage of your bow, you probably want to change them as less as

possible, perhaps only by  $\frac{1}{2}$  turn at a time. A good starting point is to make the top tiller  $\frac{1}{8}$ " –  $\frac{1}{4}$ " larger than the bottom tiller. When it's wrong you'll normally notice a good level of vibration after the shot as one limb is still travelling after the first has finished. As you change the tiller you must

also continually check the brace height as this will change as you do it. You also need to do this with the string **removed** so it's a fairly slow process of trial and error, stringing and unstringing, until you get it right.

This covers the basics of brace height and tiller. Both of these can be taken a step further for really expert levels of bow tuning but for the majority of archers, this adjustment will be enough.