

I am interested in why you wouldn't want your upper and lower tiller measurements to be the same;

If the grip, arrow rest and nock point were all centred in the bow, then even tiller would be perfect. But it's not that way. The grip is below the arrow, below the nock point and below centre in the riser. So you're putting pulling force in one plane, pushing force in another.

Generally, consider the riser a lever and the grip as the fulcrum. The grip/fulcrum is closer to the bottom end of the riser than to the top end. So the top end of the lever is longer than the bottom. Basic grade school physics tells us that the top end has greater mechanical advantage and we either have to increase the weight on the bottom end, or decrease the weight on the top end, in order to balance the lever over the fulcrum.

But if you would prefer to leave the physics out of it (and I really hope you would prefer it) there is an easy way to see it. Just pick up your bow, aim a sight pin at a point on the wall and, slowly, begin drawing straight back. If you've got your bow set at even tiller, the effect should be immediate as soon as you apply the first bit of drawing force.

The bow will rock back in your hand and the pin will lift up, off the spot. The reason is the top limb, on the long end of the lever, has more mechanical advantage than the bottom limb and is overpowering it. Now, if you pull on back through the breakover to full draw, stabilize the hold on the spot and release an arrow, what do you think that bow is going to do? *It will do exactly the same on the shot as it did during the draw!* The bow will rock in your hand again during the shot.

The result is you will feel the bow's movement as shock or vibration. It might make more noise than it should. Your bow will be harder to hold on target than it should be, with the limbs straining and fighting against each other. You will have a harder time tuning the bow because you have to fiddle around with adjustments until you find the exact spot in that rocking motion where the arrow finally leaves the bow. The bow's rocking motion guarantees your nock travel will not - CAN NOT - be straight and level.

So, what to do? Well, assuming the pin lifts UP off the target, you add weight to the bottom limb bolt; reduce the weight on the top limb bolt or both. You make a small adjustment, like 1/4 to 1/2 turn, then repeat the 'pick a spot and draw' test. You keep adjusting until you can put that pin on its spot and draw straight back without it wanting to either lift up off the target or sink below it.

That's a simple, down and dirty way to adjust the bow's *dynamic* tiller, to custom match your individual grip. There are other, more complicated and involved ways of doing it, but this is very easy and plenty good enough for all but the very best, world class type shooters.

Quote:

...and generally what bow problems could be "fixed" by playing with the limb bolts to tune the tiller specs.

As I've mentioned, it will keep the bow from rocking at the shot. So, you will feel less recoil and vibration during the shot. It will make the bow hold more steady and stable during aiming. It will make the bow easier to tune because you do not have to compensate for the rocking motion and your nock movement is straighter and more level. It will likely make the bow quieter. In fact, with the limbs balanced and working together during the shot, it is very likely that you will see a small increase in arrow speed, even though you might have reduced your draw weight by a couple of pounds.

Some say tiller doesn't matter on single cam bows and I've always said that's a load of rubbish. It works just the same on any bow, no matter what style cam(s) it has.

Now, doing this tiller adjustment will most likely cause your nockset to move, so you might not want to mess with it until after hunting season is over. You will also have to move your peep and any other string mounted anchor references (like a kissers). But the time you save in tuning your arrow flight will more than offset the time it takes to do this.