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Vince's Dynamic bow setup and Tuning

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Posted: Wed 27 Sep, 2006 10:44 am Post subject: Vince's Dynamic bow setup and Tuning

DYNAMIC BOW SETUP AND TUNING

I've spent a great deal of time gathering information from some of the most knowledgeable people in the industry in the area of bow tuning and setup. As a result, I've purchased some additional tuning equipment in the form of a bow drawing machine and a laser alignment tool. With these new tools and my new knowledge I have adopted an alternate tuning procedure, so I thought I would share it with you.

First and foremost.....This isn't meant to replace the original "Vince Method" rather, I would hope that it would take the procedure one step further. My Original method is a great way to get you very close to ideal idler wheel alignment and it shouldn't be necessary to vary from this condition more than one or two twists to one side or the other of the yoke. All bows (even the same models) may react with slight differences dynamically. It is for this reason that the Mathews recommended tuning procedure of setting the idler straight up and down at full draw is an excellent one to follow and works well for most archers. Due to the changes that occur in the loads on the harness system from brace to full draw, all compound bows exhibit a difference in cam (or idler) orientation (or Lean) between brace and full draw. What I believe now is that if we can split the difference between the cam or idler lean at those two positions we may have the optimum set-up.

So, with this in mind, I set the bow to specs as listed by the manufacturer regarding ATA, BH and cam positioning at Peak draw weight. Next, I set the nocking point 1/8" above level, and the arrow rest so the arrow is centered on the Berger button hole. After that, with the bow in the relaxed position I adjust the cable harness so my Spot Hogg laser shoots a beam that runs from the left side of the idler wheel into the string track of the cam. This is my starting point. What I'm looking for in idler alignment is to split the difference of where the idler starts when relaxed and where it finishes at full draw with the string track being point zero. This is the bow "Sweet Spot", if you will. Some will travel a bit more than others and some will stay the same throughout the draw cycle but when tuned this way all bows will give you a margin of travel that cancels each other out within the full draw cycle. Without all of the special equipment, one can obtain good results with the "arrow on the idler method" by tuning the idler wheel yoke such that when an arrow is laid against the bow arm side of the idler wheel there is a gap between the arrow and the bow string of approximately 1/8". Once this is accomplished, I set the centershot at full draw. My new equipment that allows me to make sure that the arrow is aligned with the plane of string travel when the string is aligned with the center of the riser. Lacking the proper equipment to do this, I would simply set the centershot to the factory suggested specifications of 13/16" and move on to the paper tuning stage.

My paper tuning isn't nearly as involved as it once was. I am No longer concerned with obtaining a bullet hole. My main objective in paper tuning is only to adjust the nocking point height. I intentionally start a bit high and, if needed, I bring it down gradually until the arrow is leaving the bow on a "horizontal" plane. Next, it's time to take the bow to the range for walk back tuning.

Walk back tuning starts at 5 yards where I adjust my top pin for correct windage (left/right). This is the pin I use for the entire procedure. I move back in 5 yard increments and shoot a group of arrows each time (each group will be lower than the last due to the same pin being used). The idea now is to arrive at the best possible centershot position. Remember, in order to get the arrows in a vertical line, the adjustments to the centershot positioning of the rest is made by moving the rest in the opposite direction of the shot dispersion. This is a very important process and I take my time to get it just right. When each group of arrows is landing on the desired vertical line (plane) I lock down my centershot. As a final check, I do it again.

Having completed the walk back tuning I will not make any further changes to the centershot. The next step is to see where my broadheads impact in relation to my field points. I realize that there has been a lot said about people tuning their bows so that their broadheads impact at the same point as their field points at a given yardage. While this may be possible to accomplish, I don't feel that it should be the driving force behind bow tuning. There are just too many arrow-related variables that can prevent this from happening and in the process of changing your bow tuning to compensate for those variables you often sacrifice a degree of accuracy. A well tuned bow will shoot a tight group size with either broadheads or

field points and if you attempt to tune the bow further to bring the impact point of those groups closer together it is more than likely that it will result in larger group sizes in general.

At this point you can either adjust your sight so that it reflects where your broadheads are hitting or you can start working on the cause of the problem which is, the aerodynamic differences occurring with the broadhead tipped arrow. One way of getting your broadheads to impact closer, or with your field points, is to make some changes to the broadhead tipped arrow. The one bow tuning exception that I will make is to correct for broadheads that hit consistently high or low of the field point group. In this case I will make a minute change in nocking point height in the direction of the miss, but any left and right deviation (providing that my form is adequate) can more than likely be attributed to the change in the dynamic spine of the arrow due to the broadhead rather than bow tuning.

If you have a broadhead-tipped arrow that hits left of center, this would indicate that the arrow is acting as if it is overspined (Too Stiff). Instead of changing the centershot you could try a lesser spined arrow or try some of these changes to use your existing arrows:

increase draw weight

increase broadhead weight

increase arrow length

If the broadheads impact to the right of center, this could indicate an underspined arrow (Too Weak). In this case you could try a more stiff spined arrow or try some of these changes to use your existing arrows:

decrease draw weight

decrease broadhead weight

decrease arrow length

These adjustments can bring your broadheads right where you want them without changing the state of tuning that should provide you with your tightest groups. When this happens, it's possible to stack broadhead tipped arrows just as you do with fieldpoints.

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