

How to Measure Up a Custom Built or Self-Built String and Cable Set

Today's bows, while they are great shooters, are also very sensitive to having either their brace heights or axle-to-axle lengths, or both, within a very narrow range of values in order for them to shoot their best. The article that follows is a guide to help you to measure up your current bowstring and cables, without removing them from the bow, for either ordering a custom set or for building a set by yourself that will almost perfectly match what is on the bow now.

Preliminaries

I assume that you have the bow properly setup and tuned and also have taken the time to mark down all the settings mentioned in my previous article (See the last issue. Ed.), such as brace height, axle-to-axle length, peep height, nocking point height, etc. Items #1 and 2 on the list below can be factory specifications, however #3 thru 7 are seldom known by archers. If you really want to match up the new set with the old, these need to be measured out carefully. This helps to insure that the new string and cable combination are as close as possible to what is on the bow now. Your tune can be saved, and also your bow's draw length and speed can be preserved closely, since the weights of the string/cables will be close as well.

The following items will be addressed in this article:

- 1.string and cable lengths (if not known)
- 2.numbers of strands (if not known)
- 3.sizing of end loops
- 4.to serve or not to serve end loops for cam or axle pegs
- 5.serving lengths, end loops, "Y" splits, or special circumstances.
- 6.center serving
- 7.the power cable ("y" split)

Note The Photos included in this article have been set up for clarity. The yellow string used for measuring and the measuring tools were used in order to allow you readers to see clearly what is going on. However, I did find that measurement accuracy wasn't compromised during the photo process as long as the yellow string was stretched out fully.

Measuring Up the String and Cable Details

The first step in the process is to either look up the specifications for the particular bow model and cam size you are currently using. If you have changed the specifications for any reason, then you should use the new measurements for the new setup.

1. *String & Cable Lengths* Normally most people will stay with the specifications indicated by the manufacturer. However if you don't have that information, it is a simple

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process to determine your string length without removing your current string from the bow.

Simply:

- A. Take a piece of string that doesn't stretch, making it long enough to do the job. Center serving material works really well. Another thing that works well is a seamstress cloth tape measure.
- B. Tie a loop on one end and loop it over the string peg on the cam, then wrap it around the cam and down to the other cam, wrapping it around that cam, too. Then, at the end of the cam peg for the

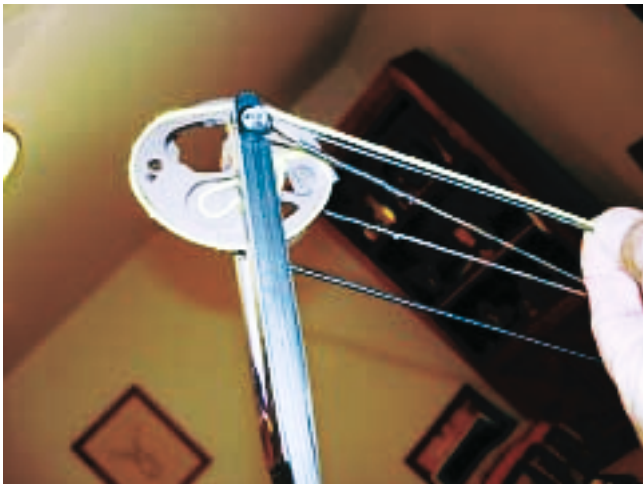


Photo 1 Measuring string hook up, . . .



Photo 2 . . . then pinching off for length measurement.

- C. Measure the length of the piece of string and record that length. Compare this to the manufacturer's specifications if you have them or to the limb tag on the bow. It will allow you to get the



Photo 3 Measuring string length . . .



Photo 4 . . . and sizes of end loops.

length of string you need based upon the tune of the current bow and allows for the "stretch" you get when the string is under pressure (*see Photo #3*).

2. *Number of Strands in the String and Cables* You should have counted these as part of your initial bow documentation. However, if you haven't, you can still count the strands. It is easiest to place the bow in a safe bow press and loosen the string enough so that you can count the strands. Do not remove the string from the cam pegs or the bow.

3. *Sizing of the End Loops* This is much more important than you might think. The size of the opening of the end loops can have a huge impact on how easy they fit onto or come off of the pegs. Too small, and you could tear the loops up getting them on and off. Too large and the "over serving" could

interfere with the string/cable fitting into the grooves on the cams. To measure the opening of the end loop, simply place a thin ruler marked off in $\frac{1}{16}$ " or $\frac{1}{8}$ " increments at the end of the cam peg and measure to where the long serving starts down the end serving of the string or cable. Most loops that I've seen are about $\frac{3}{4}$ " long, but some are a bit longer than this. Smaller than $\frac{3}{4}$ " is rare and is usually too tight to fit on today's cam pegs (see Photo #4 above).

4. *To Serve or Not to Serve the End Loops* Many strings and cables that come with bows today do not have the ends of the loops served. All those strands are "open" and fit over the cam peg. However, many of the custom string manufacturers automatically serve these so that the end loop will fit cleanly over the cam peg and you don't have to worry about a "stray strand." You need to make that decision on your own. Personally, I prefer to have those loops served.

5. *Serving Lengths* This is an easy thing to measure up so that your new string and cables have the same amount of serving on them and that the center serving is in the same location on the string as the original set. You can also do this without removing the string or cable(s) from the bow.

- A. Using the same piece of serving with the loop that you made to measure string length, again place that onto the cam peg and wrap it around the cam (see Photo #5).
- B. Pull it tight and pinch it off with your thumb/forefinger where it comes to the finish off of the end serving.
- C. Write this measurement down to nearest $\frac{1}{8}$ ".

Repeat A-C, above, for all the end serving lengths for the both the string and the cables (see Photos 5 & 6 right).

6. *Center Serving* The center serving's location can be a very important matter, especially on today's high performance bows and the very "slippery" nature of today's string materials. The length of the center serving is one of personal preference, with 3-D shooters normally putting as little center serving on the string as possible and FITA style shooters putting as much as 12 inches of center serving onto the bow. However, it is a wise idea, in my opinion and experience, to position that center serving so that no less than $1\frac{1}{2}$ " of serving is above the nocking point location. Release shooters tend to put a lot of upward pressure on a nocking point or D-loop. Therefore, any serving separation or movement will be upwards.

If there isn't any serving above the nocking point to



Photo 5 Measuring end loop serving length . . .



Photo 6 . . . and down to the top of the center serving.

"absorb" this movement or to lock the serving down, then the entire serving can move and ruin a good tune in no time. Here is one way of duplicating the location of the center serving by measuring it while it is still on the bow (see Photo #6).

- A. Choose one cam or the other. On a single cam bow, you have no choice; it is the bottom cam for both ends of the string.
- B. Place the loop of the measuring string you've been using on the cam peg.
- C. Wrap that string around the cam and follow the string to the start of the serving. (I always use the top cam on a cam and a half bow or twin cam bow).
- D. Pinch off the measuring string where it contacts

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the start of the serving.

- E. Measure and write down this distance.
- F. Measure the length of the serving down towards the bottom cam and then write this down.
- G. When ordering your string, specify how far from the end of the top loop to go before starting the top of the center serving and how long to make the center serving. It is also a good idea to tell the string maker the size and type of nock you are using and ask them to serve the serving so that type of nock has proper fit onto the center serving.

7. *The Power Cable ("Y" split)* The power cable has one other specification that can be very important. Some "Y" split cables are not served at all where the split of the cable occurs to the axle on the top limb. Other manufacturers have their splits served. I personally like to have mine served at the split. Measuring the "Y" split is a simple process:

- A. Using a ruler, write down the length of each leg of the "Y" from the end of the axle loop to where the "split" occurs (*see Photo #7*). Write down this length.
- B. Measure how long the serving is from the split down the string. Most are from 1 1/2" to 3" in length. Remember, the closer to the axle end you go with the "Y" split serving, the less limb clearance you are going to have with your "pigtailed" (*see Photos 7 & 8*).

These pigtailed can be twisted to align the top cam lean or the idler wheel lean. In addition, the "pigtailed" can be used for fine tuning draw length as well. Always remember that changing the length of the power cable by twisting it will change the nocking point height and, therefore, its travel.

In this article, I have outlined the seven basic steps needed to duplicate your bowstring in order that the loop sizing, the loop serving lengths, the Y-split lengths, and the center servings are as close as possible to being the same as on your original string. You can do all this without removing your bowstring from the bow.

As in all measurement systems, consistency is the key. If you are uncertain, take the measurement again, always being sure to write the numbers down. I also recommend that you always start from the top of the bow and work towards the bottom of the bow; do the bow string first, then the power cable (Y-split), and then, if a cam and a half, the "control" cable.



Photo 7 Measuring length of Y-split loop serving . . .



Photo 8 . . . and the Y-split serving length.

If you know, for certain, you have changed the string and cables away from factory specifications for whatever reason, or that the bow is shooting so well with how you have it set now that you want to duplicate what is on there, I'd still recommend that you go with the factory specifications. If you are in doubt, you can look up the specifications for the strings and cables on the bow manufacturers' websites.

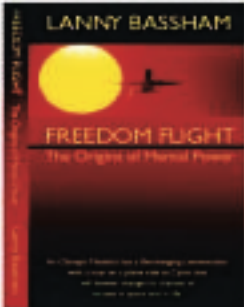
Through the use of nothing more than a piece of serving thread or a seamstresses tape and a tape measure, you now have the means to do this without disrupting your bow's setup and tune! You can now measure up for the new strings and cables and continue to shoot while you await your new set to arrive. Once completed, if you have written all of this down on your documentation record, ordering or building a

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new set of strings and cables is an easy and repeatable process.

Tom Dorigatti has been shooting archery since he was 12 years old. He has been bowhunting and in competitive archery for nearly 40 years. During his archery career, Tom has competed or shot archery in no fewer than 38 of the contiguous United States plus Alaska, Hawaii, the Azores, and Guam. He has won numerous local and state tournament titles and has placed as high as second overall in three different sections of the NFAA. Tom prefers to shoot in the Unlimited Division, but has recently been learning to shoot a recurve bow FITA style. He is also the mastermind behind the archery puzzles currently adorning these pages.

