

VERIFYING ARROW SPINE

(part 3)

When we look at static spine of a shaft we go off IBO measurements. This standard way to measure is supporting an arrow at 28 inches with an indicator setting at 14 inches from each support. Then an 880-gram weight is hung at this center point of shaft. The reading on the indicator translate to the static spine of the shaft. This means if we get a deflection reading is .325 then the static spine is 325.

Doing this test there are things we do not know from the manufactures. Do they use indicators and testers like the ram or do the use lasers and measurements? This is something we don't know. If indicators are used are they using analog or digital? Do they consider the spring pressure and the weight added to the arrow with the stem on the indicator? Where is the indicator set for stroke of the indicator? With a ram tester it is fixed so this is set if using this tester. Now what indicator are the using because this will make a difference.

Let's look at why it makes a difference. I have two different indicators. one digital, a Pittsburgh, and the one mechanical is a Kurt. The mechanical, I have removed the spring, so the indicator only has the weight of the stem being applied to the arrow when testing.

The **Kurt indicator** when set at .875 travel on a gram scale shows 31g.



The **Pittsburgh indicator** at .874 travel on gram read 151.3g.



What does this mean? Let's look at the IBO measurement again. The weight used to spine check an arrow is 880g. so when testing with the two indicators we different outcomes. The Kurts adds 31g. meaning now I've got a total of 911g. on arrow. The Pittsburgh is applying 151.3g. for a total of 1031.3g. It's easy to see we are going to get a different reading between the indicators.

SET UP.

My ram tester allows me to move my indicator up and down so when I test I can set my travel to what I want before zeroing the indicator. For this paper I will set the indicator at .870 to .875 while on the arrow. Then zero the indicator. This will be my set point for the indicators.



TEST RESULTS.

Arrow 1: Easton xx75 2114 aluminum shaft.

The 2114 shaft with the Kurt indicator the spine is .515 the Pittsburgh displays .474. As you can see there is a difference of .040 from the two extremes. According to the charts a 2114 aluminum arrow is a 510 static spine.



Arrow 2: Gold Tip Velocity

The gold tip shaft with the Kurt indicator the spine is .342. the Pittsburgh displays .330. As you can see there is a difference of .012 from the two extremes. This arrow is a 340 static spine.



Arrow 3: Victory TDT 240

The TDT shaft with the Kurt indicator the spine is .240 the Pittsburgh displays .232 As you can see there is a difference of .008 from the two extremes. This arrow is a 240 static spine.



WHAT DOES THIS MEAN.

We can see depending on what indicator we use will affect the outcome. This is due to the spring tension in the indicator and stem weight. How much travel we set the indicator to have will also determine the outcome. Without knowing what indicator, the manufactures use and how far they have set up the indicator for travel or if they are compensating for the added weight then our static spine reading can be off.

Unless you have adjusted your weight to compensate for this added weight all readings will be a stiffer indication of what the shaft truly is.

HOW IMPOTANT IS SPINE READING.

With what I've seen testing. I don't look so much at the static spine. What I look at when spine testing is consistency between the shafts. The consistency between the shafts is what's going to get the groups we are wanting when shooting.

2018 EWN

Physics never lies, but bowhunters do.