



Notes About Shaft Spines:

This is the result of 20 years worth of shaft work I've done and studied. I'll try to summarize. There is a concept that no golf shaft is perfectly round and they all have a "spine" which results in a stronger side and a weaker side. The idea is to find that neutral point and assemble the club so that every club in your set has the spine in the same position for consistency. You can't actually do anything to change the spine, just define where it is. And no documented proof that you gain any performance from any specific spine angle.

30 years ago when steel shafts were welded tubing there was for sure an identifiable spine. And in the early days of graphite shafts the manufacturing process didn't always give you a perfectly round shaft with equally consistent wall thickness so you could end up with a spine. So there was some legitimacy to spining or FLO (flat line oscillation) to finding that spine and positioning it throughout the set. The people who created SST Pure capitalized on this process with some more high tech sensing and software algorithms, put them on a scope and printed out reports and they marketed this concept as being something that would "change your game". Not likely. The Tour Pros they note on their website are paid to let SST PURE advertise their name to get people like you and me to pay for their service. See the statement below that Team Titleist put out about PURE'ing their sponsored pros shafts.

Fast forward 30 years in high tech manufacturing. Steel shafts are no longer welded seam tubes. They are seamless tubing with drawing processes that can give intricately definable variable thickness walls to create complex flex profiles. Pretty neat stuff. Graphite has come even further in their process. Folks like Paderson Kinetixx using materials like 40T high modulus graphite sheets, and Kevlar fibers do a tabled rolled shaft with a vacuum process that extracts all of the air as the shaft is being cured. It results in a perfectly concentric shaft with no detectable spine. And today, all major shaft manufacturers like Kinetixx, Fujikura, Aldila and others check these shafts during production and identify any spine and align them before the paint and graphics go on the shafts.

Here's a few notes on the subject if you decide you want to dig a little deeper in the value of spining.

<https://forum.mygolfspy.com/topic/710-what-is-spining-explained/> (from Tom Wishon)

<https://forum.mygolfspy.com/topic/18719-sst-pured-shafts-benefit-or-bunk/>

<http://www.clubmaker-online.com/spines.html> This one was first written in almost 20 years ago.

*Statement from Team Titleist about shaft "Pureing" (or spining)

The Titleist Golf Club R&D group has conducted testing with tour and better players to compare performance between shafts that have been PURE'D and shafts that have not. We have never been able to see or measure any performance difference whatsoever. Therefore, we do not feel PURING adds any performance improvement or benefit.

We have no plans to offer PURE'D shafts and do not endorse or recommend the process for Titleist clubs.

Tour players can indeed have their shafts pure'd. However, we feel that this process can only make a psychological difference vs a measurable performance difference based on our extensive testing as stated above. It is also important to note that not 'all' tour players play with pure'd shafts. In fact, most of our Titleist Tour players do not have their shafts pure'd.

Titleist stands behind the performance of our product 100% with the shafts and processes we have tested ourselves within our own facilities using our own equipment.

Team Titleist

Tony Hood



WWW.TSHGOLF.COM
TONY@TSHGOLF.COM