

Graphite Golf Shafts: Myths, Facts, Trends and the Future

Myth: Low torque shafts have better dispersion: Many golfers believe a lower torque shaft will twist less at impact resulting in improved dispersion.

Fact: High speed camera studies have shown that even on a 9 degree torque shaft the ball stays in contact with the face for only thousandths of a second, not allowing for the twisting of the shaft to alter the ball's horizontal trajectory.

Torque plays a large role in the feel of the golf shaft. The Grafalloy Blue and ProLaunch Red were stiff butt, stiff tip shafts, yet Blue felt much firmer than the ProLaunch Red because its torque was almost a degree lower. As a result, we stopped chasing lower torque and now focus on how we can tune torque to provide the feel that suits the target player profile for a particular design. Shafts designed for penetrating ball flights, such as the ProLaunch Axis Red, will feel best with a torque between 3 and 4 degrees while higher launching shafts such as the ProLaunch Axis Blue work best with a torque of 4 degrees and higher.

Myth: Shaft performance is all about material: Some shaft companies are touting the use of their own or premium fibers to provide ultimate performance.

Fact: There are a very few manufacturers of the high and super high modulus fibers used in today's high end golf shafts. Even companies that make high end fiber and use it in their own branded shafts sell these fibers to other shaft manufacturers. Performance gains are made with superior design and understanding of flex/torsional/cross sectional profiles and use of the fibers in cutting edge shaft technologies. While two shafts may use the same Japanese made super high modulus fibers, the shaft designer who is able to best harness the properties of those fibers into technologies such as Smart Ply and Micromesh will be able to maximize the material, the shaft and the swing.

Trend: Cross Sectional Stability. Several 2008/2009 golf shafts have touted increased cross-sectional (or hoop) stability. Cross-sectional stiffness (or stability) is the shaft's resistance to ovalization. When a traditional shaft is loaded, its cross section deforms from a circle to an oval. The energy that goes into this deformation cannot be returned to the ball and is lost. Increased cross-sectional stability also provides a more stable feel and improved shot-to-shot consistency.

There are several methods for controlling cross-sectional stiffness, with one of the most popular methods being multi-axis weaves. While these weaves have an undeniable aesthetic value, they are not an efficient way to use carbon fiber. Carbon fiber performs its best when held straight; weaves require the fibers to be curved around one another. Technologies utilizing thin uni-directional carbon fiber layers, such as Grafalloy's Axis Technology, limit cross sectional deformation much more efficiently.

Future: The groove change and what it means to your driver. By now everyone has heard about the USGA mandated groove change that will take place effective January 1, 2010. This groove change is intended to reduce the spin golfers can achieve from the rough with existing grooves. With these rolled back grooves, many golfers will switch to a ball that spins more to retain their drop and stop abilities around the greens. This ball change will create an increase in spin with the driver, resulting in ballooned shots and lost distance. Enter Project X.

The new Project X wood shafts were designed to be the lowest spinning shafts available. With two additional layers of super high modulus tip reinforcement, Project X has continually shown

several hundred RPM reduction in spin over the other premium low spin shafts on the market. The introduction of graphite Project X wood and hybrid shafts means golfers can now benefit from Project X performance in every club, driver through wedge.