

# BEHIND THE SHAFT: **PROJECT X** STORY

In early 2008, True Temper's Product Development Team was given a monumental task: Translate the same performance characteristics of the world-renowned Project X steel shaft into hybrid and wood shafts.

"Making a graphite shaft to mimic steel performance has been tried before, never very successfully," said Don Brown, manager of product development. "It is very difficult to design a graphite shaft that can exactly match the performance of a steel shaft."

## The Design Phase

The team, based at True Temper's state-of-the-art composite research and development facility in Mira Mesa, Calif., started by breaking Project X down to its fundamental engineering element, its relative stiffness plot (EI profile). Using proprietary design software, the engineers began modeling the first prototypes. The hyper-accurate model predicts all the crucial elements of the shaft, including frequency, torque and tip stiffness, by performing more than 100,000 calculations for every change made to the design. With the first prototypes completed, it was time for testing.

"The Project X hybrid shafts were fantastic," said Greg Cavill, True Temper's director of metals R&D and design.

"They performed just like the iron shafts and were a great fit for the player looking for Project X playability in their hybrids."

## Perfecting Project X

The wood shafts would need some tweaking, though. While the constant taper rate of the Project X EI did provide the desired smooth feel and increased ball speeds, the longer length of the driver shaft caused the spin rate to be too high for it to bear the Project X name.

Returning to the lab, the engineers had to take this already good driver shaft and make it the ultimate in a spin-reducing driver shaft.

"We had a good shaft already," Brown said. "The feel was smooth and ball speeds were up, but we needed to optimize the tip section, without sacrificing the positive design elements we had."

In addition to controlling spin, the team also wanted

FLEX	PROJECT X FLEX CHART			
	IRON	FLIGHTED	WOOD	HYBRID
X+	7.0			7.0
X	6.5	7.0	7.0	6.5
S+	6.0	6.5	6.5	6.0
S	5.5	6.0	6.0	5.5
R+	5.0	5.5	5.5	5.0
R		5.0	5.0	

Each Project X shaft has been meticulously designed to provide unique playing characteristics, by using a specific EI profile for each shaft.

The chart above has been developed to show how each design will play compared to traditional flex ratings. Golfers should use this chart as a reference when selecting the most suitable flex of Project X for their game.

to improve the graphite shaft's feel to match the unique stability of the steel shaft. They accomplished that goal by positioning layers of fiber in a circumferential orientation to strengthen the shaft's cross section. The new prototype, with its reinforced tip and feel improvements, was shipped for testing at a Nationwide Tour event in Fort Smith, Ark., in May 2008.

## The Performance Payoff

The results were nothing short of spectacular. Within two weeks, double-digit quantities of the shaft were in play on tour, and the momentum continued into 2009.

In 2010, Project X was the winningest driver shaft on the PGA TOUR and racked up significant wins worldwide, including the British Open. Today, golfers of all levels are experiencing success with Project X in their driver and hybrid clubs.

**PROJECT X**

6.0

PROJECT X

PROJECT X

## Experience Success

Project X revolutionized steel shafts. Countless tour wins and a legion of golfers followed. The innovation continued and the new Project X graphite shaft forever changed the world's expectations about shaft performance.

Project X shafts deliver more energy to the ball for longer, more accurate shots, and today golfers around the world are experiencing success with Project X.

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