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FROM THE Club FITTING BENCH

Getting Shafted - The Technical Details

How important are the shafts in you golf clubs to how you play? You may have heard that the shaft is the engine of the club. We think that it's actually the transmission; you are the engine, and it's the shaft that has the job of transferring power to the club head. You will note that these days, while lots of iron sets in the stores are still made with steel shafts, hardly any drivers or fairway woods have them now. Nowadays drivers, fairway woods, or fairway "metals", and hybrids are usually shafted with graphite shafts.

There are a few reasons why graphite is popular for the longer clubs. One is that these shafts are a lot lighter than steel, and that means a lighter total weight for the club. For example, a raw steel driver shaft can weigh up to 130 grams, but a modern regular flex graphite shaft could be 65 grams or less. That saves 2 ounces of weight or more in the club. That's a lot for a club weighing less than a pound. Conventional wisdom is that you can swing a lighter club faster than a heavier one. We have not seen actual data to back up that assertion, but it does make sense. So graphite shafts are used in drivers and longer clubs to help achieve more club head speed, and therefore more distance.

Another reason why graphite shafts are often used in the longer clubs is that they can be manufactured with flexibility in different positions of the shaft length

Club Fitting Bench...continued from page 12

The newest wrinkle in shaft technology is incorporating carbon nanotubes into the resin matrix. The nano materials are fibres that are even thinner than the graphite, but are 1,000 times stiffer than steel. Obviously incorporating these materials into golf shafts will create a very light shaft that is also extremely strong. And, of course, they are expensive. Do they make a difference to ball flight and distance? Some say yes, others are agnostic. Our opinion is that most golfers can be satisfied by high quality graphite shafts like the brands mentioned earlier, that are excellent, but don't break the bank.

to affect ball flight. Steel shafts can also be made with low, mid or high kick points, but the options available in graphite are wider. Typically a low kick point shaft is used to help deliver a higher ball flight. Graphite shafts can also have a soft to very soft tip, which bends a lot at the bottom of the swing, in effect adding loft to the club head and more height to the ball flight. These soft tip shafts need to be carefully selected for the right player, typically ones with slower swing speeds, because they can also add fade or hook ball flight if used by a stronger player.

Conversely, a shaft with a high kick point and a stiffer tip will tend to deliver a lower, more penetrating ball flight. This can be an advantage, by the way, in winter golf conditions on local golf courses where higher flying balls descending at steeper angles can plug in soaking wet fairways. The golfer who plays in the winter would benefit from having a set for winter golf with different shafts and perhaps stronger lofts than for summer golf.

We often recommend graphite shafts for longer clubs and for irons. Steel shafts in irons deliver a lot harsher feedback to the golfer, and there are a lot of die-hard golfers out there who would use nothing else. They are forgiven. For the rest of us, graphite shafts in irons save both weight and offer a wider range of fitting choices for a just-right feel. They are also extremely stable, and have fantastic feel. We like the Wishon, Accra and Aerotech brands for delivering lightweight and superb performance.

There is a range of quality in graphite shafts that consumers should be aware of. Graphite shafts are a mixture of graphite fibres and epoxy resin, usually in a ration of about 60% fibres and 40% resin. Cheaper shafts use less graphite, but have the same outward appearance. We believe that many of the name brand clubs you buy in the golf stores use proprietary shafts that are not the same quality as aftermarket shafts. Graphite fibres are very small, about 7 micrometers in diameter, and as stiff as steel. The epoxy resin matrix is about 60 times less stiff than steel so you can see that a shaft with different proportions of graphite fibres along its length can be designed with different rates of flex at specific points on the shaft.

Club Fitting Bench...continued on page 26

When fitting a golfer for the right shaft, we look at proper playing length, swing and club head speed, the force of the transition at the top of the backswing, where the wrists release the club on the downswing, the weight shift, the ball position at the ball strike, and the general strength and athletic ability of the golfer. These variables help us select the right shaft for your particular swing characteristics.

We do believe that the shaft in the club makes a difference in how you play. If you have any questions about your clubs, please give us a call or drop by the studio.

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