

# The benefits & pitfalls of interchangeable shaft technology

## With Urban Golf's leading specialist club-fitter Zane Navie

With more and more mainstream golf manufacturers now introducing the option of interchangeable shaft systems, I have been inundated with questions as to how this technology can help a golfer to improve and what are the key points to bear in mind when speaking to your local professional or specialist club-fitter. So here's a brief overview that – hopefully – will help to save you time and money.

The latest in interchangeable club-head and shaft technologies are intended to make possible the more precise fitting of drivers, fairway metals and hybrids to match a golfer's needs and preferences. The concept is actually nothing new. Manufacturers like PING (and the lesser known ZEVO) created forerunning examples of interchangeable fitting systems as far back as the 1990s. More recently, as the technology has evolved, major manufacturers have created more sophisticated fitting systems, and as these feature ever more highly in their marketing literature so more and more golfers are asking questions about the benefits.

Cleverly designed shaft tips and clubhead hosel connections have made the process so simple – with a quick turn of a wrench you can fit a new shaft and, within minutes, experience a totally different feel and performance. At the same time, many of today's leading models also allow for the simple adjustment of a club's loft, lie, and face angle to the desired specification. Such instant adjustability is a luxury that has been available to the top pros for years, courtesy of tour vans and leading custom-fit technicians. Now that same technology is available to a wider audience and at an affordable cost. But a word to the wise: avoid "trial and error" without professional direction.

The golfer who succumbs to the temptation to adjust his or her driver according to how they might be hitting the ball on that particular day risks never repeating swing habits for long enough to ingrain them – i.e. infinite inconsistency! This golfer may even end up adjusting the face angle, for ex-

ample, simply to counteract a fundamental issue with the club's own 'dynamic' performance. What you need to understand is that it's not only the club's adjustability that determines its performance, it is also the dynamic set up and characteristics of the clubhead itself. By constantly tinkering with the playing characteristics of the clubhead, you are essentially creating yet another strand of inconsistency in your game.

### Identifying the shaft 'profile' that consistently works for you

The whole purpose of being professionally fitted for golf clubs is that you have a complete set of 'matched' clubs – irons, wedges, woods and driver – that are built to your specification and with shafts that match your swing profile. That way you get a consistent feel on every type of shot. By swinging each club in basically the same way, your swing then has a chance to repeat, and, ultimately, you will play better and more consistent golf.

The key – in consultation with your club-fitter – is to first establish the ideal dynamics of your shaft profile: i.e. the optimum shaft weight (in grams), length, flex and bend profile. Once that has been determined, matched to the characteristics of your swing, you can then identify the clubhead you like and fine-tune its characteristics (i.e. work on the loft, lie and face angle).

Getting the order of this process right is the key to its success. It is vital that you identify shaft profile first, and then turn your attention to face angle and loft. The shaft is the most important element of the golf club to get right. It impacts on the overall dynamics of the way the finished club will play.

Bear in mind, also, that any adjustment to open or close the clubface angle will directly affect the loft of the club in a negative or positive way. For example, opening a 10.5 degree driver by 1.5 degrees will decrease the loft of the clubface to 9 degrees. [Vijay Singh plays a 10.5 degree driver, open two degrees, which gives him an 8.5 degree loft angle.] So it may well be you end up playing with a club stamped 10 degrees on the sole that you know to be really 8.



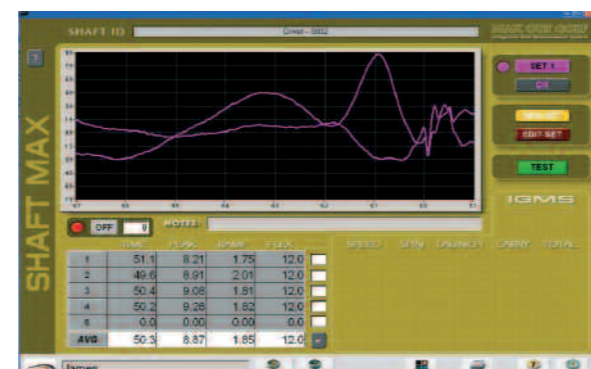
The reading on the monitor below shows the shaft 'load' data as recorded recently with James McLean, a former US tour player. How and where the shaft is moving under 'load' and in the release through the ball gives us the information we need to identify the correct category of shafts (by weight, flex and bend profile). Through our own independent testing we then have the ability to accurately match players with a specific golf shaft – and there are hundreds out there to choose from!

### Shaft 'load' profiling

So how do you find out what type of shaft suits your golf swing? That's one of the big questions I get asked here at Urban Golf, and the answer is very simple: we use what's known as a 'Strain Gauge'. This device fits on to the golf club and enables us to gather vital data on an individual's load characteristics. During the swing the shaft will steadily 'load' as it stores energy before the release of this power into the ball through impact. Because each player produces a slightly different amount of load on the shaft during the swing, the shaft is without doubt a major factor in maximising any golf club's performance.

While you swing the club, strain gauges attached to the clubshaft can measure deflection, shaft load, time frame, amount of deflection placed on the shaft, acceleration and swing plane. This helps discern a golfer's unique shaft profile. After analysing the data, the correct flex, bend profile and gram weight of shaft can be determined to match the player's needs.

As a result of this process, which takes just a few minutes hitting half a dozen balls, we can narrow down the search criteria and focus on specific shafts we know fall within the player's profile. Shaft technology is so advanced these days that without this data you're playing a real guessing game: every shaft model (and there are hundreds of them) is manufactured to suit a certain type of player and designed to promote a particular ball flight. And even within the correct profile of suitable shafts there is plenty of room to experiment and find the one that will feel and perform the best.



[Note: Any experimentation with shafts that fall outside your shaft profile will be pointless, and will result in you losing track of what is causing your ball flight issues. Just because there's a huge choice nowadays doesn't mean you need to try them all...]



Measuring shaft 'load' with a Strain Gauge provides an instant bank of data which we use to identify the shaft profile that will optimise performance



### Match the head to the shaft

Once you have identified the spec of the shaft that best suits your swing you can then turn your attention to the clubhead, and pinpoint the precise combination of the loft and clubface angle which works best for you. This is the professional way of doing business. Trying out new shafts (that fall within your profile) will then not harm your game because you will be able to put the same swing on each club and really gauge what affect the test product is having on performance (i.e. ball flight). The best thing about interchangeable products is that you can return the club back to the rack exactly as it was should the experiment not work out as you'd hoped!

Truly understanding how the different shafts perform (without manipulation) can occur pretty quickly and will decrease the need for random trial and error; as long as you maintain the clubhead as the constant factor in the process. Hitting a small number of shots with each potential shaft will give you some really good feedback



Only once you have identified the shaft profile that suits your swing should you move on to ballistics testing. Using the Maxout launch monitor, we can then see how the dynamics of the shaft reacting with the clubhead to produce a certain ball flight. Fine tuning the face angle and true dynamic loft – to optimise spin rates and launch angle – completes the process. All of these factors influence ball flight and distance.

data, narrowing down the true performance of particular shafts for each individual.

Let me stress the importance of that last point again: any time you go out to test a golf shaft you need a consistent clubhead – if I put a Matrix Ozik Code 6 into, say, a Tileist 909 D3, then take it out and put it into a Ping Rapture V2, the performance will be totally different. (Because the two clubheads have totally different ball flight charac-

teristics, the data from any testing would be irrelevant.)

To summarise, if you are serious about maximising the benefits of the new equipment available today, seek the advice of an independent equipment specialist who can gather the data I have talked about in this article and give you the confidence that you are matching technology with your individual needs. Rather than a culture of trial and error, embark on a fitting philosophy which identifies the ultimate combination of head and shaft. In the long run this saves money, as you don't go through the process of trying out every new model that appears on the market. Find a club fitter who can help you make the proper decisions, and it could prove as valuable – in some cases more valuable – than a good coach.

## DIVOTS BY TONY HUSBAND

