

TECH REPORT

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SHAFT FITTING SPECIFICS

Guidelines for
making the right shaft
decisions for
the golfer

Fitting Club Length

What is the right method?

The HOW-TO and the WHY

of MOI Matching Clubs Within Sets



There is an old saying in shaft fitting... *"Fit your golfers with the lightest, most flexible shaft they can control."* Be very aware, the skill in this credo is to define what is meant by **CONTROL**. If the shaft is too light for the physical strength and tempo of the player, they won't be able to control the club and more problems with tempo and off-center hits will result. The same thing is true for a shaft that is too heavy for the physical strength of the player – they will struggle with consistently delivering the club to square at impact and may actually lose clubhead speed as well.

If the shaft is too stiff or too flexible for the swing speed and swing characteristics of the golfer, the club will also be harder to control. However, from an overall performance standpoint, when in doubt as to the choice between two flexes in a particular shaft for the golfer, it is always best to err on the side of more flexibility. If you are unsure, compare the possible outcome from both.

If the shaft truly is too flexible for the golfer, they will hit the ball a little higher, will receive a little more transmission of a solid feel of the impact, and potentially the clubface may close a tiny amount more just before impact with the ball. Such a result would only be worse for a golfer who struggles a lot with a hook and hits the ball too high already – and while there are some golfers who may fall into this category, their number pales in comparison to the vast majority.

If the shaft is too stiff for the golfer, they will hit the ball lower and may lose distance from the lower flight, will feel a greater sense of 'harshness' from impact, and may "hang the ball" out to the right (RH golfer, opposite for the LH player) from a lack of forward bending of the shaft not allowing the face to completely rotate back to square on the downswing.

So if you just use logic, the statement, "fit your golfers with the lightest, most flexible shaft they can control" is a pretty good basic guideline for any clubmaker to keep in mind when they approach a shaft fitting.

Shaft fitting from a procedural standpoint requires a combination of measurements and of course, judgment – part of which can be taught, and part from experience. My basic shaft fitting procedure consists of the following:

Step 1: Start with an accurate measurement of the golfer's swing speed. Wood shaft fitting uses a driver or 3w swing speed reference, iron shaft fitting with a 5- or 6-iron swing speed.

Step 2: Next, start to get an idea of the shaft weight range that would be best for the golfer's optimum performance and swing consistency. Of course, the basics are to match the shaft weight to the golfer's strength, as well as their tempo and rhythm in the swing. Stronger, faster and more aggressive normally means heavier shaft weight. Less physically strong, smoother and less aggressive means a lighter shaft weight. Remember, "fit your golfers with the lightest, most flexible shaft they can control." Just because a golfer is strong

physically, strong players can be correctly fit into a very light shaft, as long as the swingweight or MOI of the assembled club(s) with that very light shaft are higher than normal to offset any tendency of their strength to cause them to swing too quickly, and thus afford the requirement of **control** with the lighter shaft.

However, if the physically strong golfer also happens to be too quick in their swing tempo, and suffers from off and on bouts with off-center hits when they are not able to control their swing tempo, most definitely you are looking at a golfer that will be better off using a heavier graphite or a steel shaft to increase the total weight of the club, and again, help afford a higher level of **control**.

On the other hand, people of average to lower physical strength, and/or with smoother and a much more rhythmic swing are always better off with lighter shafts. When I say lighter shaft, I don't mean you have to be searching in the 48-55g range – you can be light enough for most golfers with the usual range of 60-70g in the shaft. Usually the only golfers you would drop lower than that (into a sub 60g range) would be the golfers who are definitely weaker in strength, or of average strength but who are much more smooth in their swing tempo and rhythm.

Step 3: Next you have to be aware of the shaft's bend profile characteristics – I mean whether the golfer would be better off with a shaft that is more tip firm, or more tip flexible in the design. This decision would be based on two basic points you have to analyze and determine:

- whether the golfer additionally needs the shaft to provide more help for increasing or decreasing trajectory to optimize their launch parameters for maximizing distance.
- the golfer's swing movements on the downswing.

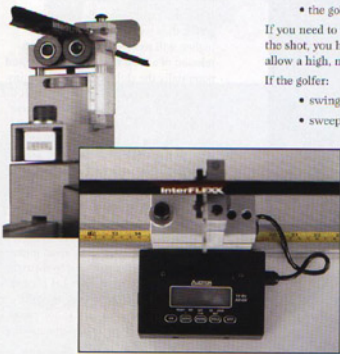
If you need to use the shaft to further manipulate the trajectory of the shot, you have to determine if the golfer's swing movements will allow a high, mid or low flight shaft to do its job as designed.

If the golfer:

- swings mostly with the arms,
 - sweeps the ball,
 - has an early wrist-cock release,
 - cannot deliver the club with a straight line from the shoulder down the arm, down the shaft to the clubhead at impact,
- then likely the high or low flight characteristics of a shaft won't work for them. Such swing movements will offset the flight tendencies of most shafts, so that a high and a low flight shaft will both result in the same shot trajectory.

However, if the golfer has even a modicum of reasonable swing fundamentals such as:

- using some body turn through the swing,
- able to at least prevent the wrist cock from un-



hinging until just about at waist height or below on the downswing,

- does not allow the wrist cock to flex forward too much before impact,

then shafts that are designed for high, mid or low flight will at least have a chance to do their job as designed.

Under normal shaft fitting procedures, it is best to match a golfer with the following swing movements with a shaft that is tip firm, tip medium, mid or low flight design...

- a decent turn/rotation of the shoulders/hips through the entire swing,
- the ability to start the downswing with the shoulders or hips and not just the arms/hands,
- a later release of the un-hinging of the wrist cock.

Better swing moves such as these above will keep a bending force on the shaft until later in the downswing, closer to impact. Regardless of tip firm/tip flexible design of the shaft, the bottom half of a shaft is always more flexible than the butt end. Thus, on the downswing, these better than average swing moves will bend that tip half of the shaft more than a swing that uses more arms and has an early wrist-cock release. As a result, golfers with better swing fundamentals (as listed above) are better matched with a more tip firm, tip medium, low flight or mid flight type of shaft, unless their goal is a high flight.

Of course it is ok for golfers with these types of more proficient downswing movements to use tip flexible or high flight shafts if they want to hit the ball higher. In these cases, the golfer needs to be told the shaft will **feel** more flexible to them and thus would be a feature of the shaft feel they would just have to get used to.

To contrast, under normal shaft fitting procedures, it is best to match a golfer with the following swing movements with a shaft that is tip flexible or a high flight design:

- a swing that starts down with the arms, with less tendency to start the downswing with the shoulders or hips.



Gram weight scale reading of the Wilson InterFlex High Launch Shaft

- an earlier release of the wrist cock with shafts.

Less skilled swing movements such as those above reduce the forward bending on the shaft before impact. This does not allow the golfer to keep bending force applied to the shaft as the club approaches impact. Because of this, the tip flexible/high flight shafts are better matched to this type of swing because they will remain flexed forward more as the club approaches impact. Again, if this golfer wants to try to use the shaft to lower their trajectory, it is ok to put this swing into a lower flight design shaft, **but** you have to really look at the swing with the points above in mind to judge if their swing moves are such that a mid-to-low flight shaft would even have a chance to work. In many cases, a lower flight shaft will also feel more stiff overall. If so, the result would more likely be a loss of dis-

tance and a less solid feel of an on-center impact. In truth, this type of golfer needs swing coaching first to help improve their downswing moves before a shaft can even begin to help lower the flight.

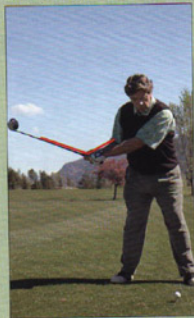
Step 4: Once you have made all of the measurements and evaluations mentioned in steps 1, 2, and 3, you can start eliminating shafts from consideration that do not match up with your evaluation of their swing speed, shaft weight evaluation, and shaft bending profile evaluation. The swing speed ratings for shafts that are provided in shaft company, and more experienced component company catalogs are ok for being able to check to see what shafts fall within the wood and iron swing speed exhibited by the golfer. This way you have at least one good way to narrow your selection.

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From one extreme to another



If the golfer cannot deliver the club to impact with a "straight line" from lead shoulder to clubhead (at right), and allows the wrists to "flex forward" (at left) this is an indication different launch height shafts will not display a difference in trajectory, so they will for golfers who can keep the impact position at right.



Being able to keep the wrist cock from unbending until the arms are parallel to the ground will place more bending force on the shaft later in the swing. This in turn indicates the need for a firmer overall flex, AND/OR a more firm tip section in the shaft design.



So if you have a golfer with a 90mph swing, you feel they need to be in a shaft of 60-70g weight, and you feel that they need to be in a more tip flexible/high flight design, now you can go through all of the shafts and only consider the ones that satisfy all of these criteria as your method of reducing possible candidate shafts for them to use.

One more thing about the swing speed range of shafts as listed in the catalogs. All of the shafts are listed with a 10 or 15mph range in swing speed. Let's say that your golfer has a driver swing speed of 90mph. That normally means any of the wood shafts that are listed for a range such as 85-95mph, 85-100mph can be considered because the 90mph swing speed falls within that range.

You will also find shafts that are listed with ranges such as 80-90mph and 90-100mph, for example. If your 90mph golfer has a quick tempo, is physically stronger, or has a quicker transition between the end of the backswing and beginning of the downswing, you would want to use the swing speed range where the golfer's swing speed would be at the **lower** end of the shaft swing speed range. That is because such faster, stronger, more aggressive types of swing moves will bend the shaft more than would swing moves which are smoother and have a more gentle transition between the end of the backswing and beginning of the downswing.

Thus you would be picking from shafts that are just a little stiffer. And the opposite is true as well. Let's say your 90mph golfer had a smooth swing tempo and much less aggressive tendencies. In this case you would be looking within shaft ranges of 80-90mph because less aggressive downswing movements would bend the shaft less. //