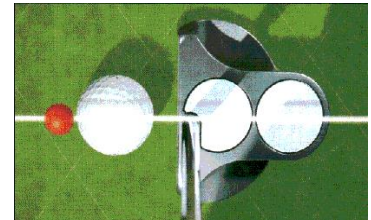




This month I would like to focus on putting and share some information about the putting stroke. A July Puttlab clinic will be posted on the web, in the golf shop, and at the ball bin bulletin board. I worked for a company call SCIENCE & MOTION that developed the SAM puttlab. Prior to the release of the puttlab, SCIENCE & MOTION was on the PGA and European tours collecting data on the best putters. They collect information such as face angle at address, face angle at impact, path, impact point, club-head rotation rate, and rhythm/timing.

FACE ANGLE AT ADDRESS

- The most important factor is the consistent aim at address
- Aiming to a point slightly left or right of the target is more important than trying to aim square
- Brad Faxon aims 2 in. to the right every time

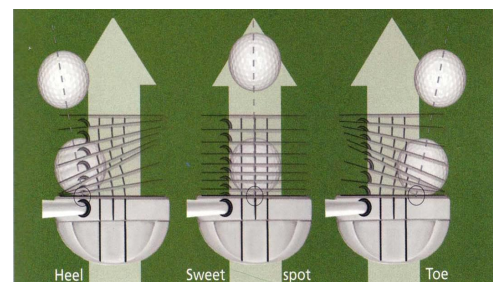


FACE ANGLE AT IMPACT

- The most important factor is the direction of the ball
- It determines about 82% of ball direction
- A 1 degree face error will result in missing a 12 foot putt (if swing path direction is straight)
- It is four times more important than swing path direction at impact

PUTTER PATH

- It determines about 18% of ball direction
- A 4 degrees direction error will result in missing the hole in a 12 foot putt
- The effect of direction error is often overestimated
- It compensates misaligned face angles



swing path

- A hit spot normally on the toe results from a path cutting inside
- The true sweet spot exists slightly inside and up on the face
- It has up to 5 % influence on the ball direction
- It has up to 15% energy loss (less distance)
- Can cause a thin impact and “bad” feeling

CLUB FACE ROTATION

- Consequence of a tilted pivot of the spine as axis of the shoulder turn
- More rotation for upright posture
- Less rotation for horizontal pivot (grip down)
- Wrists should not break
- Minimum rotation has to be achieved bio-mechanically
- High rotation through impact is dependent on proper timing
- Most players manipulate their hands to avoid rotation
- Manipulations are sensitive to pressure situations



RHYTHM AND TIMING

- The backswing should be twice as long as time to impact (count 1 and – 2)
- The backswing time is smaller than the forward swing time
- Timing (time to impact) is 35% of the forward swing
- Consistent timing controls the complete stroke
- For different lengths, timing is constant, but amplitudes changes
- Good feel means good timing
- The absolute times differ for swing types, but the relations remain constant





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Understand some basic fundamentals of the putting stroke:

Face angle is more important than aiming square

- Face angle at impact is 4 times more important than path
- Hitting the sweet spot of your putter influences the distance
- Your posture at address can influence face rotation
- The putting stroke must have a constant rhythm.

Good Golfing

Mark Rudy, PGA Professional