

Asymmetric sole construction for golf shoes to stabilize the back swing and support the follow through

Introduction:

Swinging a golf club is a physical process involving biomechanical body movement. Scientifically speaking the golf swing works like a pendulum supported by a lever (golf club), which transports an object (golf ball) towards a target. Biomechanically speaking tension is generated by swinging the arms back and turning shoulders and hip while feet stay connected to the ground (upswing). At the end of the back swing (energy reversal point), right handed players have a maximum “weight shift” on their right leg. The following follow through loses generated muscle tension and causes a horizontal twist in the body. During the follow through and due to body turn, weight shifts towards the left leg. Resulting in maximum weight on the left leg of a right handed player.

For a steady swing it is necessary to maintain the vertical swing axis all through the back swing action (picture 1).

Due to horizontal movement and weight shift to the right during the back swing action, the **right knee is one of the most instable points at this swing period**. Due to body rotation to the right there exists **danger of not maintaining the vertical axis**, which is one of the **most frequent problems while swinging a golf club** on a physically correct plane (pictures 3 to 5).

Follow through starts by **turning/rotating the right knee to the left** (picture 5). This becomes **impossible when the vertical axis has not maintained before**.

When turning/rotating the right knee to the left and spinning the body/hip as well, the **right foot turns with heel on top resting on toe** (pictures 6 and 7). This describes **another area of problem** with regard to the swing.

Due to body rotation and weight shift to the left while maintaining the vertical axis, the **left foot twists a bit while staying connected to the ground** (picture 8). This describes another area of problem.

These explanations are for right handed players. They can be used vice versa for left handed players too.

Following picture sequence of a perfect golf swing executed by world class player Jason Day. Areas of attention are graphically marked.

Legends:

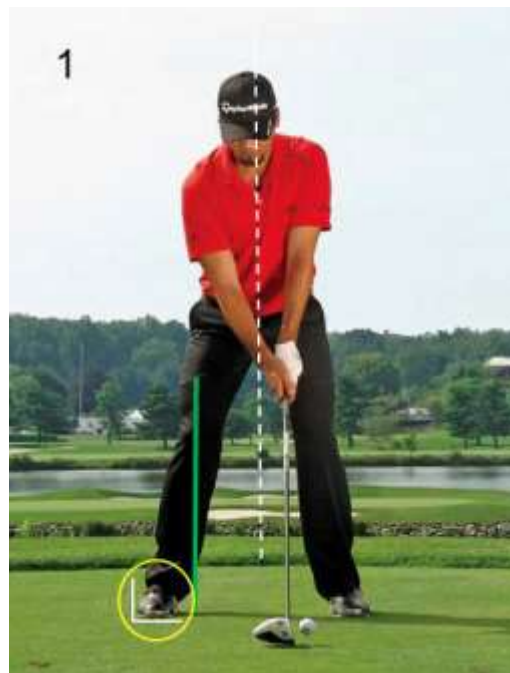
Green line = correct

Red arrow = incorrect

White broken line = vertical axis

Yellow ring = observe (by the reader)

Yellow arrows = correct move



When addressing the ball, body weight is placed on both legs equally.



To move consistently it is necessary to maintain the vertical body axis during the back swing action. Weight moves towards the right leg due to body twist during the back swing action which can cause instability of the right knee. This instability causes too much body weight on the right edge of the right foot. As a result the body can move off the vertical axis.



Follow through starts by a horizontal hip rotation. The right knee turns inside and the right foot starts to turn with heel on top resting on toe. Due to body movement and weight shift towards the left leg during follow through, left foot twists a bit while staying connected to the ground. A combination of these two essential motions causes a smooth body rotation. The result is more effective energy transfer due to moving on the physically correct plane. This causes in a straighter ball flight and last but not least farther distance.



In a correct finish position the whole body weight is shifted on the left leg, with foot twisted a bit while staying connected to the ground. The right foot is completely turned with heel on top resting on toe.

Invention:

All explanations are based on the inventor's copy right of:

“Vector Swing Concept” UR Nr.: 154/2004.

The German Patent for a pair of asymmetrical golf shoe soles is registered at:

Deutsches Patent- und Markenamt, Nr. 10 2008 029 832.8-26

The European Patent for a pair of asymmetrical golf shoe soles is registered at:

European Patent Office, EP No. 2 293 697 B1

The US Patent for a pair of asymmetrical golf shoe soles is registered at:

United States Patent and Trademark Office, No. 13/001,327

The invention is a pair of asymmetrical golf shoe soles. Due to asymmetrical construction differences, they support a stable weight shift to the right during the back swing action as well as they support a dynamic follow through and a weight shift to the left foot.

The above principal can be very well applied to left handed players apparently with everything vice versa.

Due to their asymmetric construction these soles stabilize and support the biomechanical and physical action of the golf swing. Individual extensions are possible and are exclusively, in any case, part of the invention. The invention does not depend on the factors like sex or age of the person and it can be used in every type of shoe (men, women, junior and kid). The shoe soles are unique from every and any part of the construction. If separate insoles come into existence in future they nevertheless belong to the patent.

Construction:

The invention is a **sturdy construction without any mechanism** like inserted midsole or any other implements.

In fact, and unique up to now, the construction is based on the **asymmetrical difference between the right and the left shoe sole**. The construction comes quite naturally as golf swing is inherently a one-sided direction oriented move (like baseball and cricket, disc and hammer throw).

Energy transfer is clearly optimized due to the invention. So the invention could probably be used as shoe soles of the named discipline.

The invention is completely void off midsoles or any other mechanical components.
Any optimizing elements that are in-built is completely in line with the Rules of Golf.

Johannes Schwarz