United States Golf Association
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NOTICE TO MANUFACTURERS OF GOLF CLUBS AND GOLF SHAFTS

Subject: Dissimilar Bending and Twisting Properties in Golf Shafts

This Notice supercedes the Notice of November 13, 1990, same subject (copy attached).

Rule 4. Clubs (Preamble) states:
Where a club, or part of a club, is required to have some specific property, this means that it must be designed and manufactured with the intention of having that property. The finished club or part must have that property within manufacturing tolerances appropriate to the material used.

4.1. Form and Make of Clubs states in part:

a. General
…The club shall not be substantially different from the traditional and customary form and make…

b. Shaft
The shaft shall be straight, with the same bending and twisting properties in any direction…

Appendix II
DESIGN OF CLUBS states:
4-1b. Shaft
Bending and Twisting Properties
At any point along its length, the shaft shall:(i) bend in such a way that the deflection is the same regardless of how the shaft is rotated about its longitudinal axis; and (ii) twist the same amount in both directions.

As stated in the Notice referenced above, manufacturing tolerances together with intent in design have been considered to be relevant to the enforcement of this Rule. The language in the Preamble was added in 1992 to emphasize this point.

The intent of the Rule, as stated previously, is for shafts to perform symmetrically with respect to these properties, and the goal from a manufacturing standpoint should be to achieve this objective to the extent that it will make no difference how a particular shaft is oriented in a golf club.

Since the 1990 Notice, there have been several articles advocating the identification and orientation of irregularities in shafts. The stated purpose of such a process in most cases was to "neutralize" the potential effect of any such irregularities with regard to the intended performance of the shaft during the swing.

A few individuals have stated, either through patent design or claims based on such patents, that the process of identifying irregularities in shafts and orienting those irregularities in certain ways can produce results that are contrary to the intent of the Rule, e.g., correct hooks or slices.

The Implements and Ball Committee has reviewed this situation with respect to the intent of the Rule and the claims and practices of those who advocate or believe that manufacturing irregularities can be used to affect performance.

Previously, there was a reluctance to condone the advertising or other public acknowledgement to this effect by shaft manufacturers, other OEMs, and club makers. However, shaft manufacturers have not yet been able to assure us that they can maintain tolerances which greatly minimize or eliminate asymmetries in twisting and bending.

The Committee has therefore concluded that the process of orienting a shaft with the intent of causing it to perform as if it were symmetrical would not be inconsistent with Rule 4-1b.

It would be impractical to formulate a standard that manufacturers could meet without revising their processes for making shafts. Consequently, the Technical Department will intensify its monitoring of shaft design and manufacture. If it appears that a manufacturer is maintaining wide tolerances for the purpose of affecting performance, the manufacturer will be asked to correct the situation.

Manufacturers are encouraged to contact the Technical Department with respect to any information regarding manufacturing process or tolerances that may be of assistance in the monitoring process.

Yours sincerely,

Frank W. Thomas
Technical Director

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Golf Association

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SUBJECT: DISSIMILAR BENDING PROPERTIES IN GOLF SHAFTS

Rule 4-1b states:

> "b. SHAFT
> The shaft shall be generally straight, with the same bending and twisting properties in any direction, and shall be attached to the clubhead at the heel either directly or through a single plain neck or socket. A putter shaft may be attached to any point in the head."

Appendix II 4-1b covers this in a little more detail and states:

> "BENDING AND TWISTING PROPERTIES
> The shaft must be so designed and manufactured that at any point along its length:
> (i) it bends in such a way that the deflection is the same regardless of how the shaft is rotated about its longitudinal axis; and
> (ii) it twists the same amount in both directions."

Because manufacturing tolerances and intent in design were considered to be the bounds of enforcement, the Rule, as printed above and adopted in 1984, was not quantitatively specific.

It has come to our attention that shafts are being produced which possess a spine of sufficient consequence that it needs to be identified and oriented in the clubhead in such a manner as to make a difference in club performance. The USGA believes that if there is need to identify the location of a spine in a shaft it is of sufficient consequence to violate the Rule quoted above.

Accordingly, we request that manufacturers review their production methods and take the necessary precautions and measures to eliminate the spine phenomenon, at least to the extent that it is no longer of sufficient consequence to need identification.

We invite your response to this request and hope that your cooperation will eliminate the need for further action.

Frank W. Thomas
Technical Director

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