



**United States Golf Association  
and  
R&A Rules Limited**

WEIGHT AND SIZE TEST  
PROCEDURES

USGA-TPX3008

February 28, 2011



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## WEIGHT AND SIZE TEST PROCEDURES

### 1. Scope

- 1.1 This method covers the procedures for weight and size conformance for golf balls as administered by the United States Golf Association (USGA). The procedures are performed by utilizing a laboratory balance scale, an electronic scale, an insulated ring gauge, a specially designed ball track, and a hierarchy of statistically designed tests.
- 1.2 The results of the conformance test are used by the USGA and R&A Rules Limited (R&A) in determining conformity of the golf balls to the Rules of Golf.
- 1.3 The values stated in English units are to be regarded as standard. The values stated in SI units are for information only.

### 2. Applicable Documents

- 2.1 USGA documents:
  - Rules of Golf
  - Conforming Golf Balls booklet
- 2.2 R&A documents:
  - Rules of Golf
  - Conforming Golf Balls booklet

### 3. Summary of Method

- 3.1 The golf balls are tested for their weight by a using an electronic scale.
- 3.2 The golf balls are tested for their size by a combination of a screening test and a final test. The insulated ring gauge is used for the

screening test and the ring gauge and the ball track are used for the final test.

### 4. Significance

- 4.1 This method is used to determine the weight and size properties of golf balls. The data obtained from this method is used to ascertain the conformance of the golf balls to the size and weight standards as stated in the Rules of Golf (Appendix III).
- 4.2 If any combination of four or more balls, from the two dozen submitted, fails the tests for size, weight or initial velocity (Ref. USGA Initial Velocity Test Procedure USGA-TPX3007), then the submitted lot does not conform to the Rules of Golf.
- 4.3 Golf balls that conform to the weight, size, spherical symmetry, initial velocity, and overall distance standards are included in the List of Conforming Golf Balls, published by the USGA.

### 5. Apparatus and Materials

- 5.1 *Ohaus Electronic Scale*, shown in Figure 1.
- 5.2 *Insulated ring gauge*, shown in Figure 3.
- 5.3 *Ball Track*, shown in Figure 4.
- 5.4 *Incubator*, shown in Figure 5.
- 5.5 *Test Golf Balls*, submitted by manufacturers. A total sample of two dozen (24) golf balls are required for the conformance test.

## 6. Preparation of Apparatus

- 6.1 Prior to testing the balls should be separated into two individual boxes labeled Dozen 1 and Dozen 2. Verify that ball numbers 1 through 12 are contained in Dozen 1 and that ball numbers 13 through 24 are contained in Dozen 2.
- 6.2 Ensure that the room temperature is kept at  $75 \pm 2^\circ\text{F}$  ( $23.9^\circ\text{C}$ ).
- 6.3 Verify that the incubator temperature has been set to  $75.0 \pm 1.0^\circ\text{F}$  ( $23.9^\circ\text{C}$ ) and store the test golf balls in the incubator for at least 3 hours.
- 6.4 Ensure good mechanical operation of the test equipment and calibrate the Ohaus scale.

## 7. Procedure for Measurement of Ball Size

- 7.1 Remove the test golf balls from the incubator and select one ball to be tested.
- 7.2 Hold the ring gauge in a horizontal position and place the selected ball in the ring gauge. Observe if the ball passes through the ring gauge with no external forces applied. Rotate the ball to several different orientations and repeat. If the ball passes through the gauge, then perform Sections 7.3 and 7.4. If the ball does not pass through the gauge, then proceed to Section 8.0.
- 7.3 Place the ring gauge over position #1 of the ball track. Place the ball on the gauge and

attempt to pass the ball through by holding the outside of the ring gauge and lifting it upward. Roll the ball with the ring gauge out of contact with the ball to position #2 and again lift the ring gauge. Repeat this for positions #3-#10.

- 7.4 Repeat Section 7.3 ten times with the same ball. Record the number of times the ball passes through the ring gauge.
- 7.5 If a particular ball falls through the ring gauge more than 25% of the time when tested on the ball track, then that particular ball fails the size test.

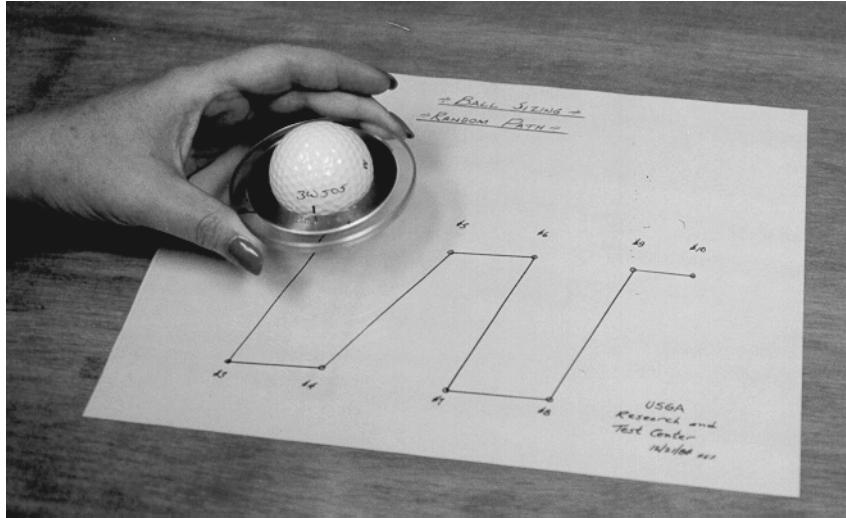
## 8. Procedure for Measurement of Ball Weight

- 8.1 Place the ball on the Ohaus electronic scale and record the weight.
- 8.2 Select another ball from the lot and repeat Section 8.1 until all the balls have been tested.
- 8.3 If a particular ball weighs more than 1.620 ounces avoirdupois (45.93 g) when weighed on the Ohaus electronic scale then that particular ball fails the weight test.

Note: If the total number of balls in the two dozens that fail either the initial velocity test, weight test or the size test is less than or equal to three then the lot conforms to the Rules of Golf. Otherwise, the lot does not conform.



**FIGURE 1 - Ohaus Electronic Scale**



**FIGURE 2 - Insulated Ring Gauge**

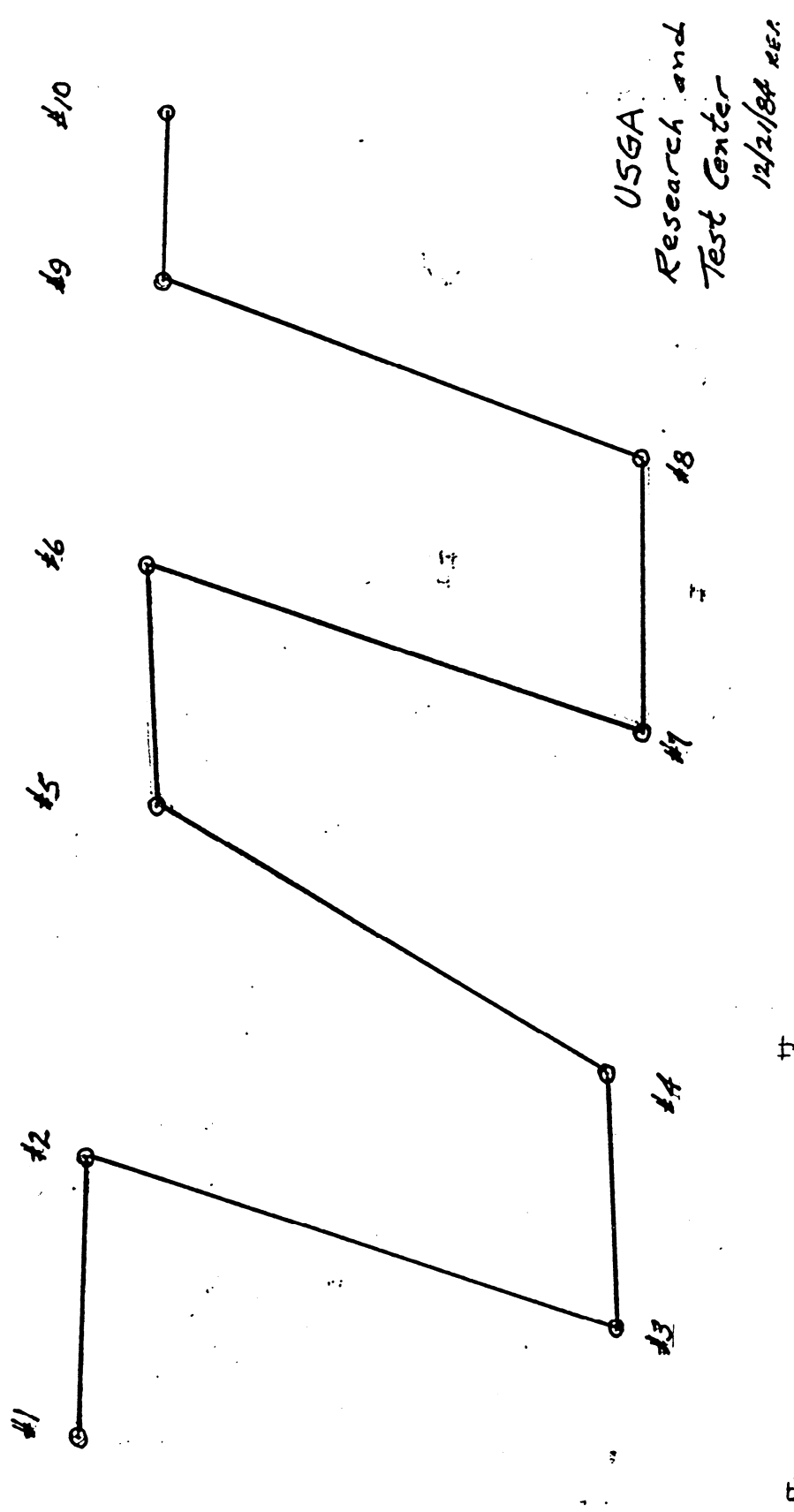
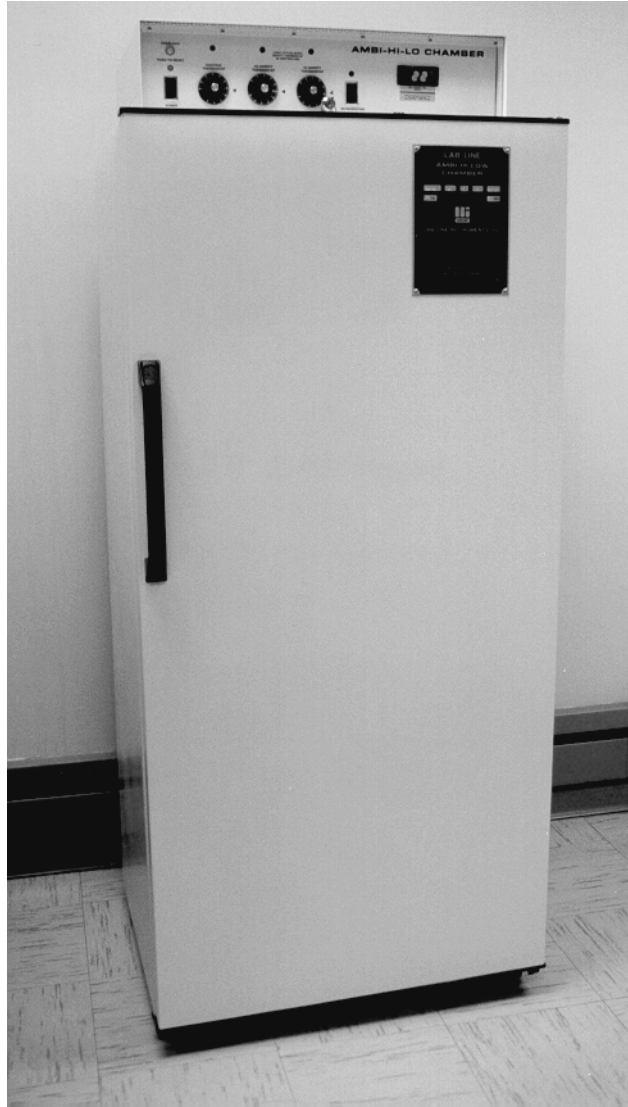


FIGURE 3 - Ball Track



**FIGURE 4 - Incubator**