



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

WEIGHT AND SIZE TEST
PROCEDURES

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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 utilising 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 R&A Rules Limited (R&A) and USGA 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 R&A and USGA documents:
 - Rules of Golf
 - Conforming Ball List

3. Summary of Method

- 3.1 The golf balls are tested for their weight by a combination of a screening test and a final test. The laboratory balance scale is used for the screening test and the electronic scale is used for the final test.
- 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, fail the size, weight or initial velocity (Ref. R&A/USGA Initial Velocity Test Procedure) tests, 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 listed in the Conforming Ball List, published by the USGA.

5. Apparatus and Materials

- 5.1 *Ohaus Electronic Scale*, shown in Figure 1.
- 5.2 *Laboratory balance scale and calibrated weight*, shown in Figure 2.
- 5.3 *Insulated ring gauge*, shown in Figure 3.
- 5.4 *Ball Track*, shown in Figure 4.
- 5.5 *Incubator*, shown in Figure 5.

5.6 *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. Each ball should have a USGA Lot number as well as an individual ball number. Verify that the markings and the USGA Lot number on the balls match those on the boxes and 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°C).

6.3 Verify that the incubator temperature has been set to $75.0 \pm 1.0^\circ\text{F}$ (23.9°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 laboratory balance scale against the calibrated weight. If the ball is heavier than the weight, then proceed to Section 8.2. If the ball is lighter than the calibrated weight, then proceed to Section 8.3.

8.2 Place the ball on the Ohaus electronic scale and record the weight.

8.3 Select another ball from the lot and repeat Section 8.1 until all the balls have been tested.

8.4 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.

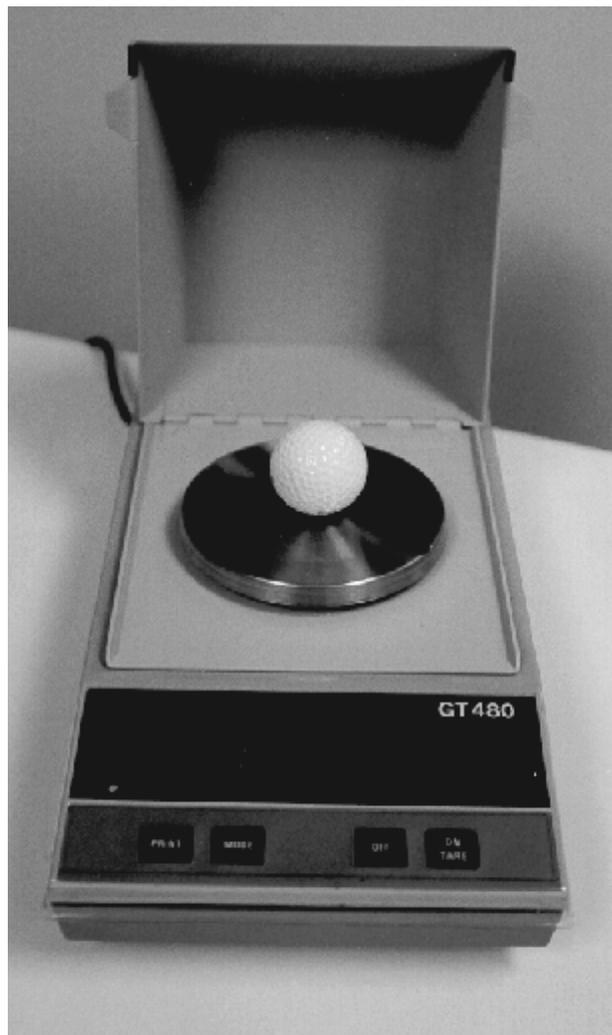


FIGURE I - Ohaus Electronic Scale

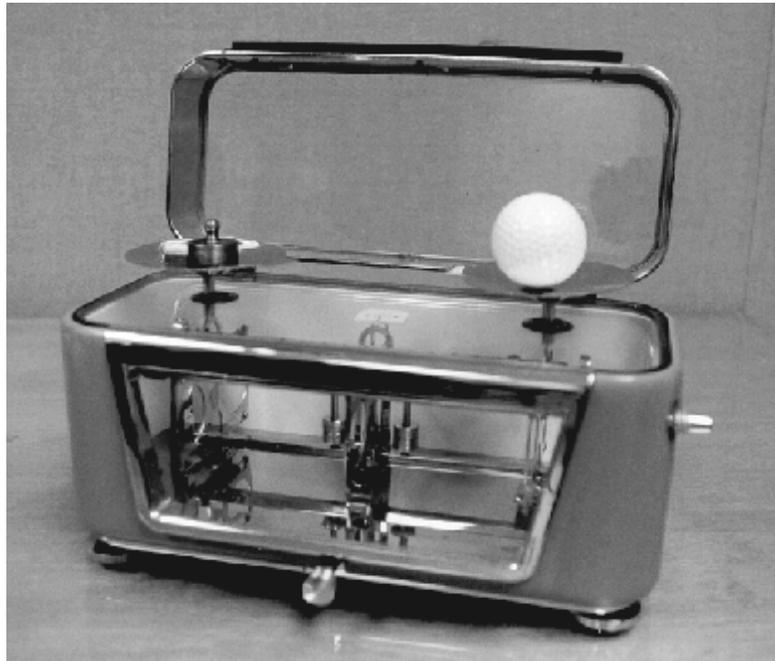


FIGURE 2 - Laboratory Balance and Calibrated Weight

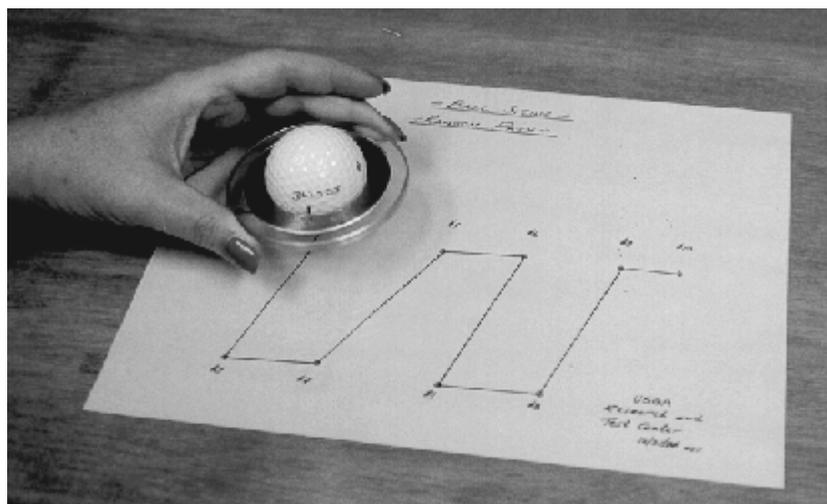
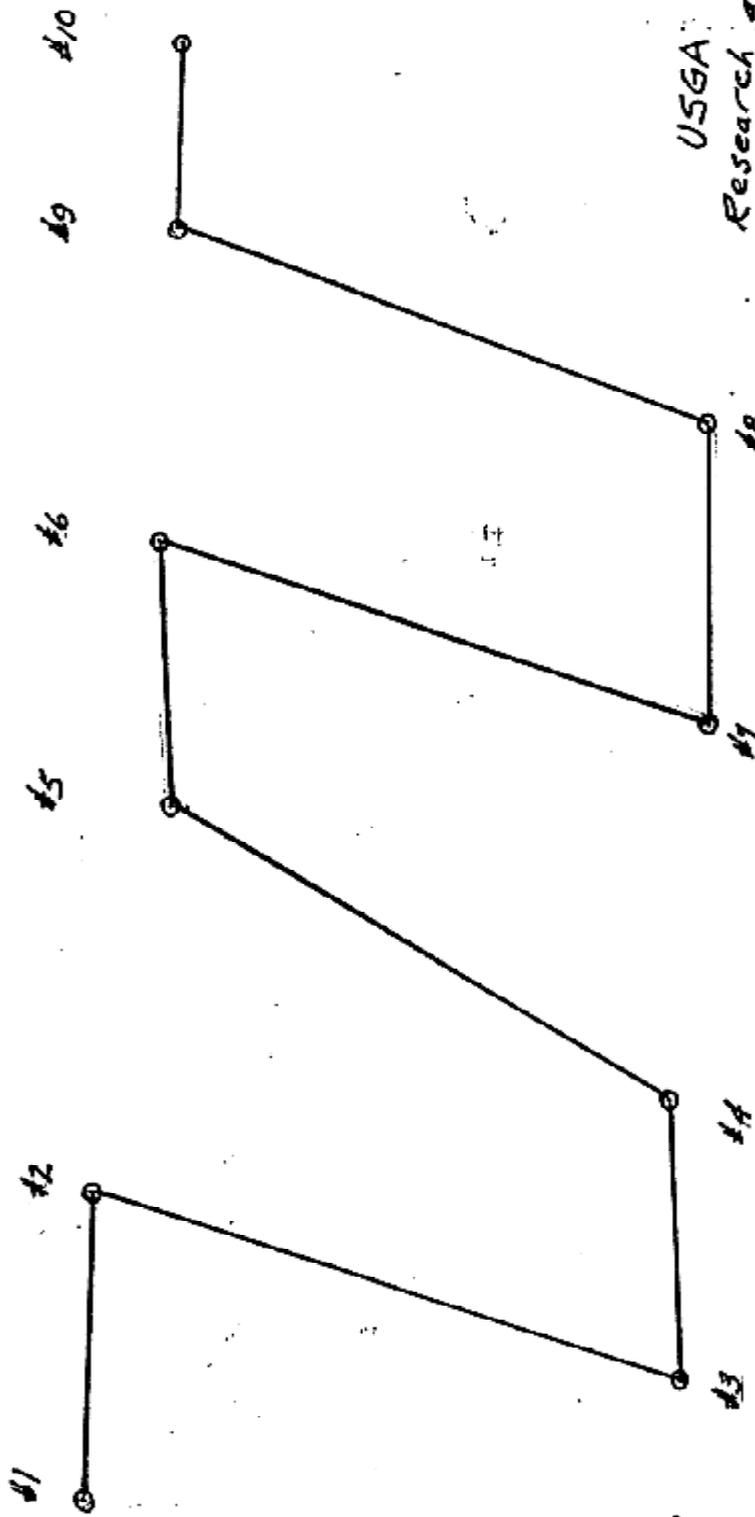


FIGURE 3 - Insulated Ring Gauge



USGA
 Research and
 Test Center
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FIGURE 4 - Ball Track

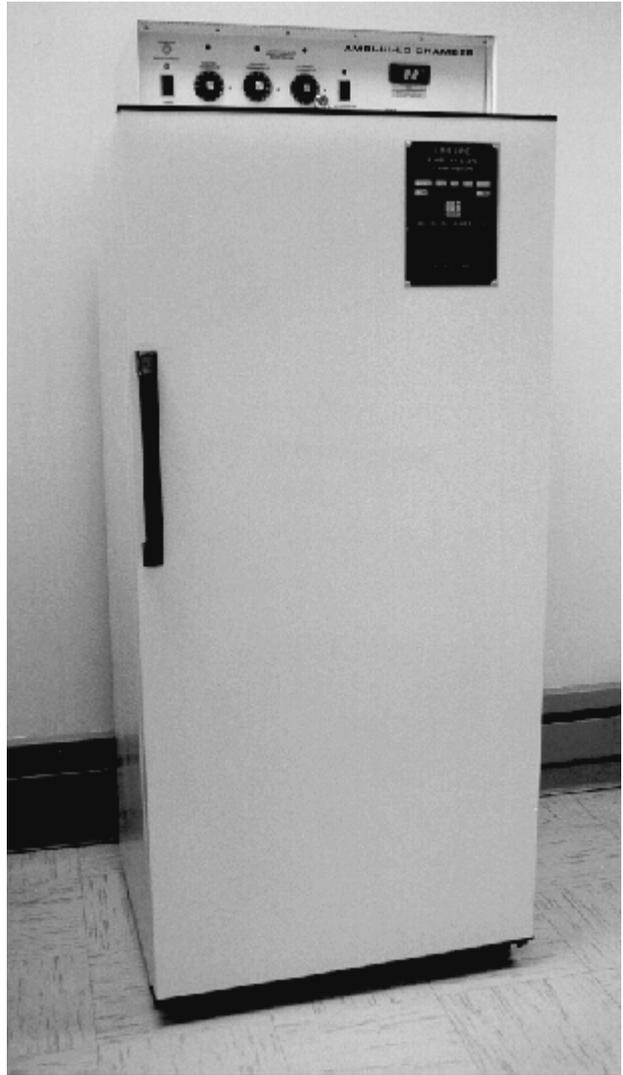


FIGURE 5 - Incubator