



Vertical Rebound Resilience Tester



Table of Contents

1. Scope.....	P2
2. Principles.....	P2
3. Specifications.....	P2
4. Installation	P2
5. Instrument Description.....	P3
6. Operating Specifications.....	P4
7. Maintenance.....	P5



1. Scope

This test machine is designed with reference to ASTM-D2632, ISO-10012 and other standard documents, mainly for testing the rebound height of hard rubber material - not applicable for testing soft rubber or glued leather. The test results are in units. The test method can be used for material research and identification, and cannot directly describe the final performance.

2. Principle

This machine uses the vertical free fall hammer method to observe its rebound height.

3. Specifications

Sample Thickness	12.5mm
Sample Diameter	∅ 28mm
Falling Height	400mm
Hammer Weight	(28g±0.5)g
Volume	250x150x525mm
Machine Weight	8kg

4. Installation

- 1) Operating environment conditions: The required temperature is $(23 \pm 2) ^\circ \text{C}$, and the humidity is $(65 \pm 5) \text{RH}\%$
- 2) The instrument should be placed on a flat platform of 25cm x 15cm or more.



5. Instrument Description



Figure 1

Function of each component:

1. Scale, index: The rebound height of the main inspection materials.
2. Adjustable Handle: Adjust the position of the pointer.
3. Slider: The steering hammer acts as a guide.
4. Punching: Impact on the test piece.
5. Pole: Support the entire machine.
6. Pull rod: Start the hammer to test.
7. Horizontal foot: Adjust the level of the machine. When the bubble in the horizontal ball is in the center, the machine is in a level state.
8. Fixing screw: Adjust the height of the test piece holder to place the test piece.



6. Operating Instructions

1) Prepare the test piece:

a. Determination of the position of the test piece: Select the test piece from the dispersed position of the same batch of materials.

b. Test piece production: Cut the test piece into two pieces of standard disc core test piece with a thickness of 12.5mm and a diameter of 28mm.

2) Operation steps:

1. Confirmation before operation:

a. Check if the machine is level. If the machine is not in the horizontal state, adjust the machine to the level through the adjustable feet.

b. Confirm that the slider is vertical.

2. Clamp the test piece: Loosen the fixing screw of the machine stand and move the test piece up to the position where the rubber test piece can be placed. After pressing the rubber, lock the fixing screw.

3. Start the test:

3.1 Move the hammer along the slide bar to the highest point, use the trigger to fix the hammer.

3.2 Press the lever, the hammer will naturally fall to the test piece along the slide bar and the height will be the rubber rebound height.

Note:

◆ The same test piece is tested six times, the first three times are predicted first, no need to record the value, and then the adjustment handle is locked.

◆ After predicting three times, test again three times and record the rebound heights h1, h2, h3.

◆ Only when the test piece is clamped, the test can be carried out, otherwise the hammer and the base will be damaged.

4. Recording method: The bounce height is read from the scale.

Note:

◆ When reading, the line of sight should be perpendicular to the scale to avoid errors in the test results.

◆ When reading a value, generally retain 1 decimal place, and the second digit is rounded.

◆ The scale next to the slide bar of the machine, each scale is 4mm.

5. Results Processing

Take the average of the first three test results

$$\text{Rubber Rebound Height (W)} = \frac{(h1 + h2 + h3)}{3}$$



7. Maintenance

1. Check the verticality of the hammer guide before the test.
2. Check if the machine is level before the test.
3. The instrument can't be lubricated, otherwise it will affect its performance.
4. Keep the appearance of the machine clean and organized.
5. Please operate and maintain by professionals only.