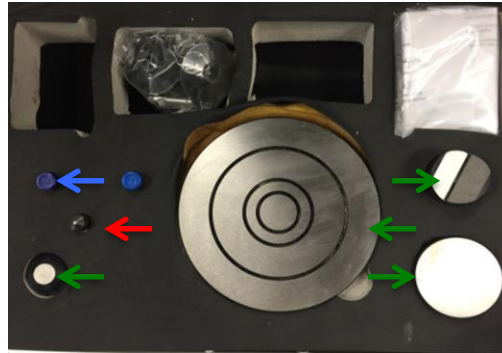


The Rockwell hardness tester is an indentation tester that measures a material's hardness. The harder the material, the more it will resist indentation. The Rockwell hardness tester measures an initial position, applies a specified force and compares the final position to the initial to provide a hardness value.

STEP 1: EQUIPMENT SELECTION

Indenter: Reference the attached table to choose the appropriate indenter. Depending on the material you can choose **diamond** or 1/16 in **steel ball**.

Platform: Depending on the size and shape of the material, choose a **platform** that will hold it best.



STEP 3: SETUP

Set or screw the **table** in place and screw in the **indenter**, do not over tighten. Make sure the flat side of the indenter lines up with the screw. Set the force by adjusting the **knob** on the right hand side. Reference the attached table for the appropriate force settings.

STEP 3: TESTING

- 1) Set the **load handle** to unload (toward the front) and adjust the **dial** so that the C is on top.
- 2) With your material on the table, rotate the **rotary handle** until the tip makes contact with the material. Continue rotating until the dial needle passes 'C' 3 times. If you happen to pass 'C,' **DO NOT REVERSE**. Adjust the dial so that 'C' lines up with the dial needle.
- 3) Push the load handle slowly to load (toward the back). Wait until the dial stops moving, then wait 10 more seconds for the system to reach equilibrium.
- 4) Pull the load handle back to unload and read the dial needle for a hardness measurement. Depending on the indenter you will read the red or black numbers, this is specified in the attached table.



Rockwell Hardness Tables

Scale Symbol	Indenter	Total Test Force in N	Dial Figures	Typical Applications
A	Diamond	588	Black	Thin steel, cemented carbides, shallow case-hardened steel
B	1/16" Ball	980	Red	Copper alloys, steels, aluminum alloys, malleable iron
C	Diamond	1471	Black	Steel, hard cast iron, pearlitic malleable iron, titanium, deep case hardened steel, other materials higher than 100 in R B Scale
D	Diamond	980	Black	Thin steel and medium case hardened steel, and pearlitic malleable iron
E	1/8" Ball	980	Red	Cast iron, aluminum & magnesium alloys, bearing metals
F	1/16" Ball	588	Red	Annealed copper alloys, thin soft sheet metals
G	1/16" Ball	1471	Red	Malleable irons, copper, nickel alloys. Upper limit G 92 to avoid possible flattening of the ball.
H	1/8" Ball	588	Red	Aluminum, zinc, lead
K	1/8" Ball	1471	Red	
L	1/4" Ball	588	Red	
M	1/4" Ball	980	Red	Bearing metals and other very soft or thin
P	1/4" Ball	1471	Red	materials. Use the smallest ball and
R	1/2" Ball	588	Red	the heaviest load that does not give
S	1/2" Ball	980	Red	anvil effect.
V	1/2" Ball	1471	Red	