EXPERIMENTAL TECHNIQUE - Rockwell Hardness Tester

Description:
To test the hardness level of a material, one of the test apparatus that can be employed is the Rockwell Hardness Tester. Hardness is a measure of the resistance of a material to plastic deformation.

Procedure on operating the tester:
1. Turn on the machine power switch located at the back of the tester.
2. Determine the proper scale symbol from Table #7 on page 21 of the hardness tester manual depending on the material of the sample/specimen that you intend to test.
3. Based on the scale symbol obtained from step 2, refer Table #5 on page 15 (or use table printed on the tester) to determine each of the following items:
   a. Test Scale Display, for example: HRA1, HRK or HRS
   b. Major Load
   c. Type of Penetrator ball that you are going to use for the test
4. Replace the correct penetrator ball on to the tester depending on the input from step 3.
5. Use the “Test Scale Scroll” button from the control panel of the tester to select the scale on which the testing is to be performed. This display confirms the choice of scale and indicates the correct minor/major loads and correct penetrator.
6. Set the major load to the value obtained from step 3 by turning the load selector dial to the correct position. Note: It should be noted that the major load display on the control panel will flash if the load setting is incorrect.
7. Place the test piece on the anvil and turn the capstan handwheel to elevate the specimen into contact with the penetrator. As the penetrator contacts the specimen, rotate the handwheel very slowly as the minor load LED bar increases until an audible ‘click’ is detected. At this point, the instrument automatically initiates the remainder of the test cycle. During this portion of the cycle, the main display shows the word “TESTING”.
8. When the test is completed the Rockwell number including the scale designation is shown in the main display adjacent to the “Test Scale Scroll” button.
9. Continue the same procedure for the remainder of the samples/specimens.