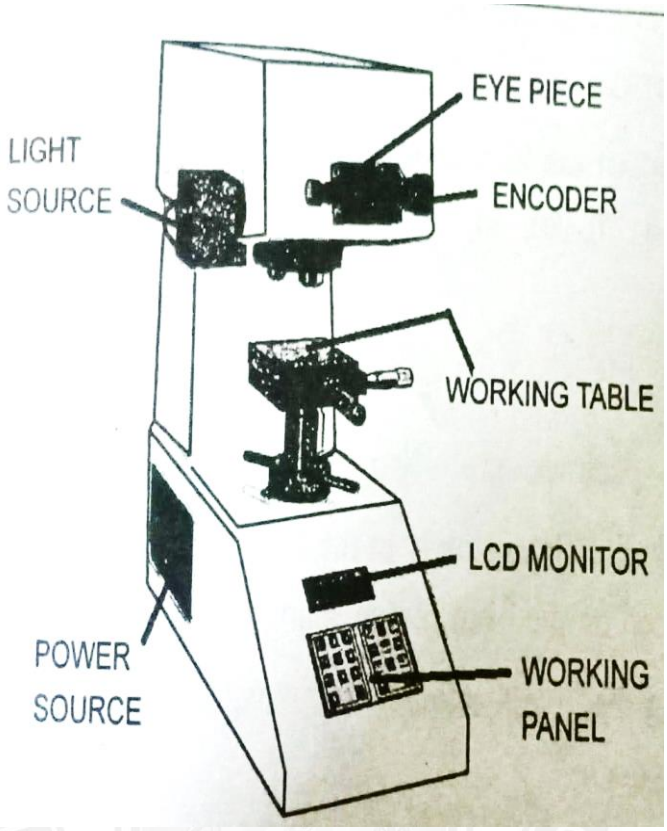
2.5 VICKER HARDNESS TEST



- The Vickers hardness test, used to determine quantitatively the indentation hardness of material under the application of a constant static load, is a widely accepted method for research work because it is capable of measuring hardness from very soft materials to extremely hard materials without changing the load or indenter.

1. PRINCIPLE

- A diamond indenter in the form of a right pyramid with a square base and with a specified angle between opposite faces at the vertex is forced into the surface of a test piece followed by measurement of the diagonal length of the indentation left in the surface after removal of the test force F.

2. COMPONENTS

- Vickers hardness tester
- Intender

3. INTENDER

- It is made of diamond in the form of a square-based pyramid with an included angle of 136° between opposite faces.

4. WORKING

- Place the specimen carefully on the testing table.
- Turn the hand wheel slowly in the clockwise direction so that the specimen gets focused on the front screen sharply.
- Now bring the inventor to the "set" position and turn on the loading, dwell-unloading cycle.
- The indentation is now projected on the front focusing screen.
- Measure the diagonals along both the axis of the impression and record them.

5. ADVANTAGES

- There is only one type of indenter, which can be used for all Vickers methods.
- Non-destructive testing is possible, so the test specimen can be used for other purposes.
- Useful for finding stress values.

6. DISADVANTAGES

- The test location must be prepared, otherwise precise evaluation is difficult.
- Relatively long test time due to the measurement of the diagonal lengths.
- Sensitivity of the diamond indenter to damage.
- Very sensitive to effects of vibration, especially in the micro hardness range.