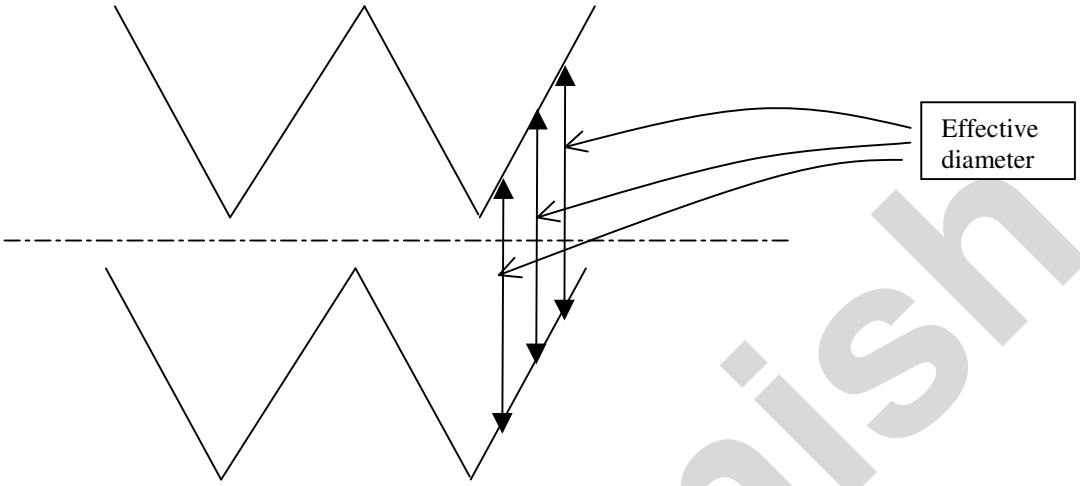
INSTRUCTIONS FOR MEASURING EFFECTIVE DIAMETER ON UNIVERSAL MEASURING MICROSCOPE

Principle: The effective diameter or pitch diameter of a thread is defined as the length of a line perpendicular to, and intersecting the axis, between the points where it meets the sloping flanks of the thread on opposite sides. This distance can be measured directly on the Universal Measuring Microscope for external threads.



Procedure:

1. Hold the object between the centres of the microscope ensuring that the axis of the thread is aligned with the x-axis of the microscope.
2. Make the crosswire of the sighting microscope to coincide on any portion of the flank, but avoiding the region near the root and crest of the thread. Note the reading in the y-axis scale.
3. Without disturbing the x-axis, move the object with table along the y axis, till the crosswires coincide with the flank on the opposite side of the thread. Note the y-axis scale reading.
4. The difference between the two y-axis scale readings gives the effective diameter.

INSTRUCTIONS FOR MEASURING EFFECTIVE DIAMETER ON THREAD PITCH MICROMETER

Principle: The effective diameter can be directly measured on a micrometer having special jaws.

Procedure:

1. Note the standard and pitch of the thread and select the corresponding anvils. M stands for metric, W for Whitworth and U for Unified.
2. Insert the anvils in the micrometer.
3. Close the micrometer and set the reading to zero. Adjust the fixed anvil if necessary, and lock it.
4. Open the micrometer and insert the thread between the anvils. Slowly close the micrometer till the anvils seat properly on opposite sides of the thread.
5. Note the reading on the micrometer which is the effective diameter of the thread.