



# SNS COLLEGE OF TECHNOLOGY

(An Autonomous Institution)

COIMBATORE-35

DEPARTMENT OF MECHANICAL ENGINEERING



## SINE BAR

A **sine bar** is an angular measuring instrument. Which is used to measure angle of surface very accurately and high precision.



- It is made high carbon, high chromium
- It is corrosion resistant material
- High hardness
- Its have two cylinders are attached at ends with axes to each other.
- Distance between two cylinders (rollers) range is 100mm-300mm

## CLASSIFICATION OF SINE BAR

- (i) According to accuracy

Grade A LC = 0.01mm

Grade B LC = 0.02mm

(ii) According to availability of designs

Type 1

Type 2

Type 3

Type 4

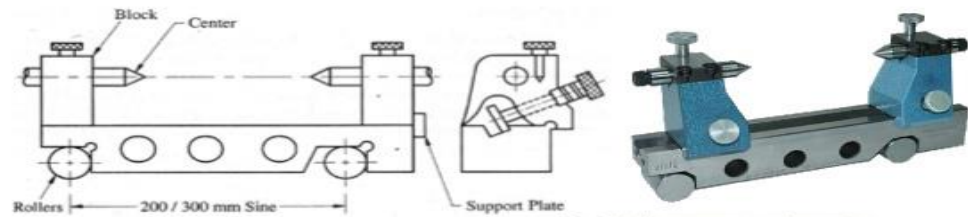
### MODIFICATION OF SINE BAR

- Sine centre
- Sine table



## Sine Centre

- Sine center is basically a sine bar with block holding centers which can be adjusted and rigidly clamped in any position. used for the testing of conical work, centered at each end as shown.
- Extremely useful since the alignment accuracy of the centers ensures that the correct line of measurement is made along the workpiece.
- The centers can also be adjusted depending on the length of the conical work piece, to be hold between centers.



Mechanical measurement and metrology  
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## LIMITATIONS OF SINE BAR

- Devices operating on the sine principle are fairly reliable at angles less than  $15^\circ$  become increasingly inaccurate as the angle increases.

Sine bars inherently become increasingly impractical and inaccurate as the angle exceeds  $45^\circ$ .

- The sine bar is physically clumsy to hold in position.
- The body of the sine bar obstructs the gauge block stack, even if relieved.
- Slight errors of the sine bar cause large angular errors.
- Long gauge stacks are not nearly as accurate as shorter gauge blocks.
- Temperature variation becomes more critical.
- The size of gauges, instruments or parts that a sine bar can inspect is limited, since it is not designed to support large or heavy objects.