



# MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE GWALIOR

## Department of Mechanical Engineering

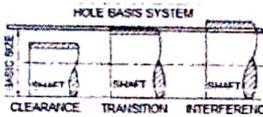
### REPORT OF SKILL BASED MINI PROJECT

Design of Machine Elements (120412)

**Title of Project:** HOLE BASIS SYSTEM

**Introduction:** There are two types of system. First one is hole basis system and the second one is shaft basis system. In hole basis system, the diameter of hole is fix or constant it does not varies and the diameter of shaft varies according to the type of fit. The characteristics which determines the nature of fit are dependent upon the size of shaft. When the shaft fundamental deviation is positive in sign, the fit becomes either a transition fit or an interference fit.

### Description of Model



In this model I had created a hole of fix size which is made of wood and three different size of shaft to demonstrate the model. The size of shaft is varying relatively to diameter of hole. If diameter of shaft is smaller then the diameter of hole then it is clearance and if the diameter of hole is approximately same as that of shaft then it is transition and if diameter of shaft is bigger then the diameter of hole then it is interference

### Applications of Model

It is more convenient to make holes of fix size

it is more convenient to make of fixed size since standard drills hammers and roaches are available to make holes

Leads to greater economy of production

### What I Learned Through Project:

- Hole basis system, the hole is kept as the constant, and the shaft upper and lower deviation values determine the type of fit. In a hole basis system, the Lower deviation of the hole will be Zero. The hole basis system is more preferable over the shaft basis system due to form manufacturing perspective. And it is easy to change shaft diameter as comparison to hole diameter. And by this analysis we can compare which size of diameter of shaft is more suitable for particular hole diameter

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