



MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE GWALIOR

## Department of Mechanical Engineering

### REPORT OF SKILL BASED MINI PROJECT

Design of Machine Elements (120412)

**Title of Project:** RECTANGULAR KEY JOINT

**Introduction:** key is usual proportion of width and thickness of key and diameter of hole in hub or the diameter of the shaft. They are installed in shaft for transmitting gear from shaft to shaft and other element. Machine keys are made up of same material but are generally tougher and harder than other components as well as shafts with which they are to be used but sometimes soft keys are chosen so that it will turn off at the time of excessive force therefore prevent the damage of expensive equipment.

**Description of Model :** working wooden model of rectangular key joint . eyed joints are made up of keys and keyways. These keys can be machined to different forms depending on the type of key joints required. Keyways are machined surfaces on a shaft in the dimension of the key. They are fixed together to ensure no pulling apart of component and prevent a relative movement between a shaft.



**Applications of Model :** A key joint is used as an important part of mechanical power transmission elements shaft and couplings. It ensures efficient transmission of the load, power, and rotation with slipping Rectangular keys as shown are wider than their height and are sometimes called a flat key. These are used on shafts up to about 500 mm or 20" in diameter. The extra key width allows it to transmit greater torque without increasing the depth. An increase in depth means a weaker shaft due to a reduction in effective shaft

**What I Learned Through Project:** we learn working of the rectangular key joint and its advantages .We learn its working principle and all about this joint .prantical use in real life. What are the applications of keys?A key is a machine element which is used to connect a shaft to other machine elements like Gears, Pullies, Couplings, Sprockets or Flywheels. Its primary function is to prevent relative motion between connected parts



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