MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE GWALIOR

Department of Mechanical Engineering

REPORT OF SKILL BASED MINI PROJECT

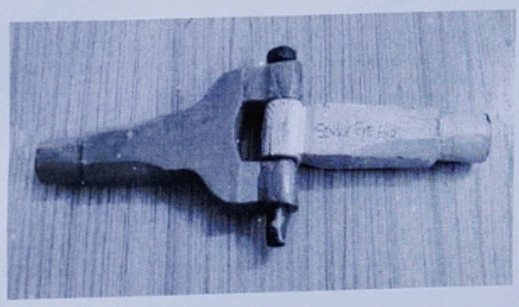
Design of Machine Elements (120412)

Title of Project: ASSEMBLY OF KNUCKLE JOINT

Introduction:

- The knuckle joint connects two rods whose axes coincide or meet and lie in the same plane, and it is exclusively used to transmit tensile loads.
- This joint allows for limited angular movement of the rods around the pin's axis. It isn't utilised to join rotating and torque-transmitting rods.
- Steel or wrought iron may be employed as the joint's material. The single eye is put between the double eyes, making all three holes concentric, and the components are secured with a pin.

Description of Model



- Two rods
- Double-eye end or fork end
- Single eye end
- Knuckle pin
- Collar
- Taper pin

Applications of Model

- Tie rod joint of roof truss.
- Tension link in bridge structure.
- Link of roller chain.
- Tie rod joint of jib crane.
- The knuckle joint is also used in tractor.
- Connecting rods between locomotive wheels.

What I Learned Through Project:

After completion of the project I was able to :-

- Understand the basic assembly of knukle joint.
- How to utiliuze the potential of team members to make the max. efficiency out of them.
- How to manage failures of knuckle joint.

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