MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE GWALIOR

Department of Mechanical Engineering

REPORT OF SKILL BASED MINI PROJECT

Design of Machine Elements (120412)

Title of Project: KNUCKLE JOINT

Introduction:

A knuckle joint is a mechanical joint used to connect two rods which are under a tensile load.They're commonly found in tractor-trailers, roof truss tie rods, suspension bridge link joints, and steering systems, where they're found between the steering rod and pinion.

Description of Model

Applications of Model

Knuckle joint is commonly used in the automotive industries to make the following joints:

The link in the cycle chain

Roof truss tie rod joints

Tension link in bridge structure

Various types of lever and rod connections.

In multi-axle vehicles, the link rod of the leaf springs is connected

Connections between the leaf spring and the chassis

Piston, piston pi.

By the way, Knuckle joints work in many places and they are also used in big industries. These are applied between the tie rod joint of a roof truss and the joint tension link in a bridge structure.

Mostly knuckle joints are employed in connecting rods of locomotive wheels. In addition, they are very useful in the valve mechanism of a reciprocating engine. These are utilized in the link of roller chain, bicycle chain, and chain straps of watches.

Knuckle joints are also applied on the rod joint of the jib crane and the fulcrum of the lever. These types of joints are used in the alignment parts of a tractor wheel. If we talk about automobiles, a knuckle is supporting the skeleton for the wheel assembly.

What I Learned Through Project:

Through this project we learned about designing of knuckle joint , its uses and application in different areas of mechanical world.

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