



# MADHAV INSTITUTE OF TECHNOLOGY & SCIENCE GWALIOR

## Department of Mechanical Engineering

### REPORT OF SKILL BASED MINI PROJECT

Design of Machine Elements (120412)

**Title of Project:** RIGID FLANGE COUPLING ASSEMBLY

**Introduction** A rigid coupling permits neither axial nor radial relative motion between the shafts of the driver and driven unit. When the two shafts are connected solidly and properly, they operate as a single shaft. A rigid coupling is primarily used for vertical applications, e.g., vertical pump. Types of rigid couplings discussed in this section are flanged, split, and compression.

**Description of Model :** A flanged rigid coupling is comprised of two halves, one located on the end of the driver shaft and the other on the end of the driven shaft. These halves are bolted together to form a solid connection. To positively transmit torque, the coupling incorporates axially fitted keys and split circular key rings or dowels, which eliminate frictional dependency for transmission. The use of flanged couplings is restricted primarily to vertical pump shafts.



#### Components

- Two flange
- Two shaft
- One board

#### Applications of Model

Flanged couplings are used where there is free access to both shafts. Split couplings are used where access is limited on one side. Both flanged and split couplings require the use of keys and keyways. Compression couplings are used when it is not possible to use keys and keyways (e.g., brass shafts).

#### What I Learned Through Project:

This project helped in understanding which machine elements to select and of what size. For example, gears, axles, belts, chain drives, etc.

#### Submitted By

Name and Signature: Aditya Pandey

Enrolment Number: 0901ME201012

Class: IV<sup>th</sup> Sem. Mechanical Engineering

#### Submitted To

Prof. Rajendra Prasad Kori

Assistant Professor

Head

Deptt. of Mechanical Engineering  
Madhav Institute of Tech. & Science  
Gwalior - 05 (India)