

Active Anti-vibration Mount System for Heavy Machineries payload (Vibsim1.1)

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viz a motor, a compressor, an engine, a prime mover or any such vibration generating element has been developed inhouse. In this mount system, stiffness of vibration pad (Rectangular/Cylindrical) made of elastomeric material is altered by compression or expansion by an actuating mechanism driven by a servomotor(s) controller. The control system comprising of PLC to which plurality of sensors for vibration, speed and load are connected which serve as reference inputs at all regimes of operation. The changes in regimes are instantaneously detected by sensors and gives feedback to the control system - actuating mechanism, which alters the stiffness characteristics of the elastomeric vibration pad thus eliminating the resonance zone completely. The maximum attenuation level is fixed at every regime based on the characteristics of the payload set in the control system.



Production Status

The Test set-up has been built in-house and installed in Vibrations Laboratory, Dept of Mechanical Engineering, DIAT(DU), Pune.

Current Status

Five research scholars are currently using this set-up for their Doctoral/Master's Thesis.

ToT Status

A Patent titled '*A Mounting assembly for attenuating vibrations of a Machine (202111011136)*' has been filed with Indian patent Office. [Lt Cdr. Anand Rengaraj and Prof. A.Kumaraswamy](#)

Salient Features (Given in a separate page)

Inventors

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About Product

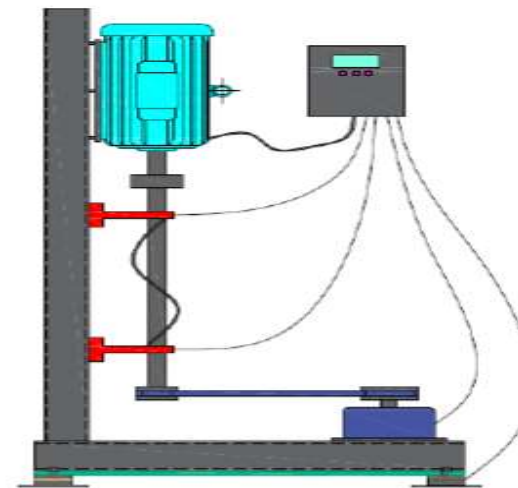
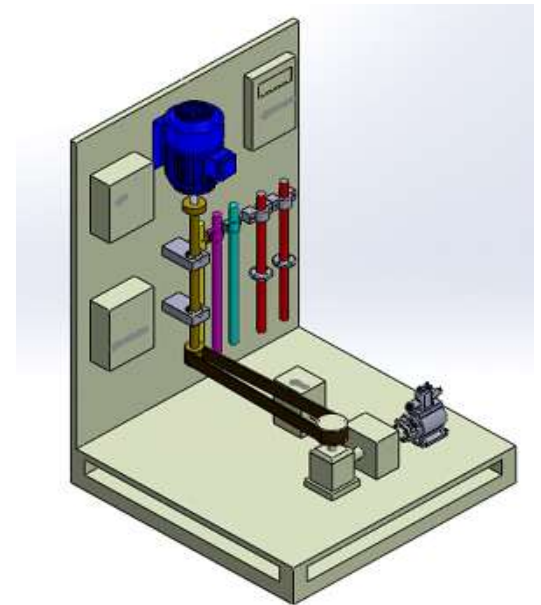
Vibsim1.1™ is capable to provide hands on experience on the following:-

- Training on shaft alignment and Assessment
- Hands on alignment defects of shafting
- Imbalance and Balancing of rotor
- Coupling defect identification and Assessment
- Foundation design, Assessment and Research
- Bearing Defects and vibration signatures
- Eccentric & cocked rotor defects and effects
- Vibration Resonance studies
- Belt drive performance, characteristics and defect identification
- Contact defect & Rub of components
- Signal processing techniques of vibration signatures
- Load effects on vibration signature
- Variable speed /regime effects on vibration
- Motor current analysis and interpretation
- Rotor dynamics & research
- Operating deflection shape and modal analysis
- Optimization study of sensor mounting
- Selection of Sensor Types (position/Velocity /acceleration)
- Overall and In-depth Vibration training
- Vibration mount analysis & design
- Attenuation studies

ITEMS :-

1. Power pack
2. Dynamometer
3. Variable frequency drive
4. Bearings with accessible support
5. Built in Vibration sensor
6. Built in Tachometer
7. HMI with touch screen
8. Vibration mounts and structure with Maintenance envelope
9. Variable Loading device
10. Variable rotors
11. Variable Couplings
12. Belt drive
13. Safety features
14. Connectors

PRODUCT IMAGES :-



Simulator (Vibration)