



## Fatigue Laboratory

## Vibration Shaker Laboratory

This lab houses the equipment for evaluating structural dynamics of components/aggregates simulating real time loading conditions etc. There are two Electrodynamic (ED) shakers associated with respective climatic chambers. The ED shakers intended to perform durability tests for components under dynamic loading at high frequencies.

### Electrodynamic Shaker 6T & 3T with Chamber

▪ Rated Force	:	6000 Kg	&	3000 Kg
▪ Maximum frequency	:	2000 Hz	&	2000 Hz
▪ Displacement (pk - pk)	:	51 mm	&	51 mm
▪ Maximum velocity	:	2 m/s	&	2 m/s
▪ Maximum acceleration	:	115 g	&	90 g
▪ Payload capacity	:	700 kg	&	500 kg
▪ Armature dia	:	440 mm	&	360 mm
▪ Mounting Base size	:	1.2 x 1.2 m	&	0.8 x 0.8 m



### Climatic Chamber

▪ Usable Size	:	2 x 2 x 2 m	&	1.5 x 1.5 x 1.5 m
▪ Temp range	:	-60 to +180°C	&	-60 to +180°C
▪ Temp rate	:	4 k/min	&	4 k/min
▪ Humidity	:	10% - 95% RH	&	10% - 95% RH





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### Four Poster - Passenger Cars

- Max. sprung mass/corner : 1050 kg
- Max. unsprung m/corner : 60 kg
- Actuator Rated f/corner : 51 kN
- Max. Acceleration : 39 G
- Max. Displacement :  $\pm 125$  mm
- Wheel Base & Track width : 1800 - 3200 mm, 1200 - 1800 mm
- Wheel pan tire sizes : 135/70R12 to 275/35R20



### Universal Test Benches

- Capable of testing variety of automotive components and its sub- assemblies.
- Linear Actuator
  - Max. Static Force : 15, 25, 50 & 150 kN
  - Max. Stroke : 150, 150, 250 & 150 mm
- Rotary Actuator
  - Max. Static Force : 10 kNm
  - Max. Stroke :  $\pm 45$  deg



### Multi Axle Simulation Table (Mast) with Chamber

- Max. Payload : 680 kg
- Total Payload (incl. table) : 1438 kg
- Acceleration
  - Vertical Axis : 11 g
  - Longitudinal Axis : 5.8 g
  - Lateral Axis : 5.9 g
- Configuration : Stewart Platform (6 DOF)
- Upper Table Size : 2 x 2.2 m
- Actuator Peak Force : 54 kN
- Bandwidth : Up to 100 Hz
- Climatic Chamber Spec
  - Temp. Range : -30°C to +80°C
  - Humidity : -10 to 95% RH
  - Dimension : 2.5 x 2.5 x 2.3 m

