

## Technical Terms & Conditions for Manufacturing of Shock Absorber Endurance Test rig components, its installation & commissioning at Structural Dynamics Lab

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### 1 Scope:

- 1.1 Manufacturing, Assembly & commissioning of test rig components as per drawings (Annex A2).
- 1.2 Material for all components of Sr. No. 1 above shall be En-8.
- 1.3 Tolerances for all components of Sr. No. 1 above shall be as per IS:2102 (Tolerance Class m)
- 1.4 Selection & installation of drive unit: Drive unit shall contain a gear box and/or electric motor conforming to output speed from 1 Hz (60rpm) to 1.66 Hz (100 rpm) and output torque of 550 Nm.
- 1.5 Control panel with speed control mechanism (if Equipped) and start & Stop switches for both mechanism motor and water pump shall be provided.
- 1.6 Installation of a recirculating water cooling system for shock absorber with a storage buffer tank, pump, water bath as per drawing & necessary piping with connections.

### 2 Specific Terms and Conditions:

- 2.1 Supply and installation of the required components shall be the responsibility of the supplier and shall demonstrate that equipment meets the requirement of the specification and standard mentioned herein.
- 2.2 Training shall be provided to CIRT staff for operation/working, programming, troubleshooting / breakdown and calibration of machine to our satisfaction.
- 2.3 Wiring of the system shall have resistance to mouse/rat bite.
- 2.4 Supplier shall certify that the system provided will meet the specification in full or otherwise they shall indicate the parameters where it is not meeting.
- 2.5 All components of controller & related hardware and software, supplied shall be of renowned brand make, universally & readily available.
- 2.6 Machine shall be made operational and Software development/modification shall be completed within sixty calendar days after acceptance of work order.
- 2.7 For any delay from CIRT side for any reason thereof, the completion date will be extended equal to the delayed period.
- 2.8 Any delay in completion of work will be charged 1% of the ordered value per week or part thereof.
- 2.9 Acceptance shall be sent to the Director, CIRT within two days after receipt of Work Order.
- 2.10 Preference will be given to those firms who have experience in similar type of work.

**3 Safety features:** Safety limits, warning buzzers for any malfunctioning of motor, surges/variations in voltage and required safety features shall be provided in the system.

**4 Warranty:** Supplier will provide five years warranty for the operating system and hardware supplied starting after installation & commissioning of system.

### 5 Drawings & Manual:

- 5.1 Two set of each Hard & soft copy for detailed circuit drawings/diagrams shall be provided.
- 5.2 Two set of each Hard & soft copy for Operation, Trouble shooting and other manuals shall be provided.

### 6 List of Spares:

- 6.1 Supplier shall give detailed list of all components, supplied for repairing/upgrading of machine.
- 6.2 List of frequently required items like fuses, relays, controllers, bearings & bushes etc. shall be provided with their make and rating details.