

The technology is revolutionizing. The wheels are safer than roads.



Automotive

In this issue:

- Electrodynamic Shaker
- Electromechanical UTM
- Airbag Test
- Crash Tester
- Seat & Head Restraint

## Automotive

### Features

#### Electrodynamic Shaker

1. It can perform vibration tests in orthogonal directions X, Y and Z.
2. It breaks down the frequency restriction by increasing useable frequency up to 2000Hz or more.
3. The Three-Axis Interlock Protection Device (TIPD) is designed to protect the specimen and the shaker from damage.
4. Stronger overturning restriction of devices under test by the use of high pressure oil.
5. Conforms to MIL-STD-810G Standard.

#### Electromechanical Universal Testing Machine

1. High Stiffness load frame ( 5 times or more than capacity) , with two or four columns in chromed steel and double ball screw.
2. High stability mainly at low speed.
3. The capability of keeping the load during long intervals, with error under 0.1% of the applied force, or even better (<0.01%).
3. Very low noise.
4. Low energy consumption and no need of expensive cooling systems.
5. Capacity upto 2000kN

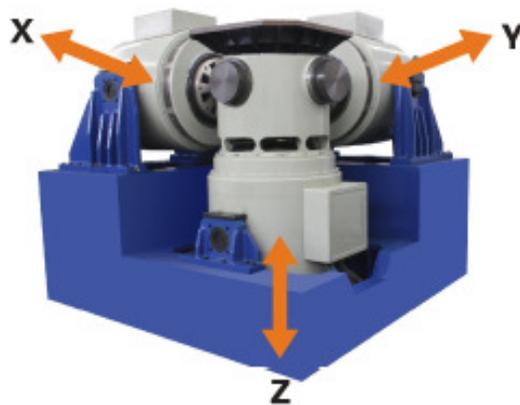
#### Three Axis Electrodynamic Shaker

The electrodynamic shaker has state-of-the art design, patented Orthogonal Coupling Bearing Unit, outstanding performance. The unit conforms to MIL-STD-810G wherein the three axis simultaneous vibration test was first introduced. This test concept can identify the failure modes that general single-axis shakers can't and hence it is the more reliable and robust product. Three-axis simultaneous vibration simulates the actual environment more accurately and realistically than the general single-axis shaker does. In the dynamic environment, actual vibrations generally occur in the three orthogonal directions at the same time and the three-axis shaker is especially designed for verifying the reliability of devices under such a mechanical environment.



#### Electromechanical Universal Testing Machine

Microtest EM2 Series are dual/four column tabletop/floor standing electromechanical Universal Testing Machines suitable for performing and low-frequency cyclic testing over a range of force applications from 5 kN to 2000 kN. A wide choice of load cells, extensometers, grips, specimen holders, fixtures and other testing accessories allow the EM2 Series Universal Testing Machines to be used for accurate and repeatable mechanical testing. In EM2 Series Universal Testing Machines, the upper crosshead is actuated by double ball screws and guided by two or four robust guidance columns. The lead ball screws are preloaded for backlash elimination. The precisely aligned, hard chrome plated guidance columns along with the preloaded ball screws provide superior stiffness and rigidity for these testing machines.



## Automotive



### Airbag Tester

Compact and versatile pneumatic airbag inflation system, that can reproduce flow and pressure airbag inflation conditions, without pyrotechnic charges.

Designed for airbag or lid testing, this system can deploy and fill a driver, passenger, lateral or curtain bag with a predetermined mass of air, selecting maximum pressure and fill velocity.

Our offering in terms of scope of work include : civil work definition, calculations and supervision, test system design, on-site set-up, operator training and post sale maintenance, system integration of related subsystems like DAS, high speed illumination and imaging systems, etc.

### Features

#### Airbag Tester

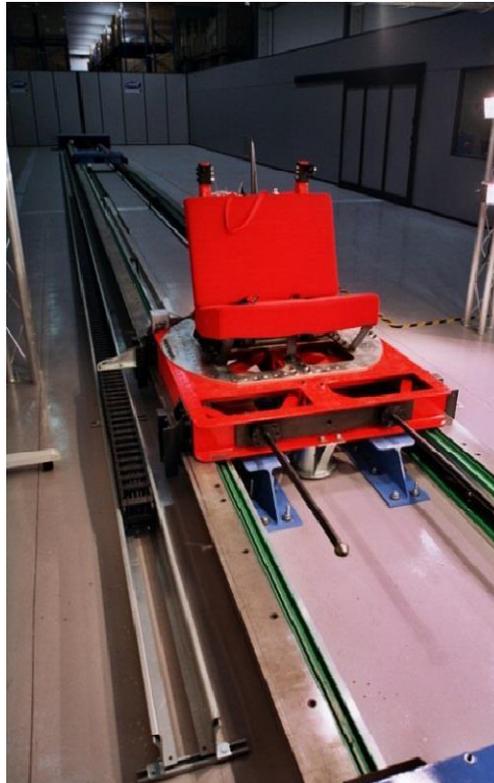
1. **Voltage Mode: From 1 to 40 V, in steps of 0.5, 0.1 V accuracy.**
2. **Constant Current Mode: From 1 to 4 A, in steps of 0.1 A, 0.05 A accuracy.**
3. **4 sequenced fire signals: Pulses of 100  $\mu$ s to 10 s. Precision of 10  $\mu$ s.**
4. **Dynamic Digital input/output module.**
5. **Transient Acquisition System**
  - 8 channels, 16 bit, 1.25 MHz aggregated.
  - Fire Voltage and current measurement (4 + 4 ch).

### Crash Tester

Crash simulation system is based in a bungee cord catapult that propels the perfectly guided specimen platform (sled) up to the programmed speed.

In order to obtain the deceleration curves required by the international regulations (EEC, FMVHSS, FIA, etc), the sled runs into an energy dissipation system which is located at the end of the track. This system can be either hydraulic or poly-urethane tube based.

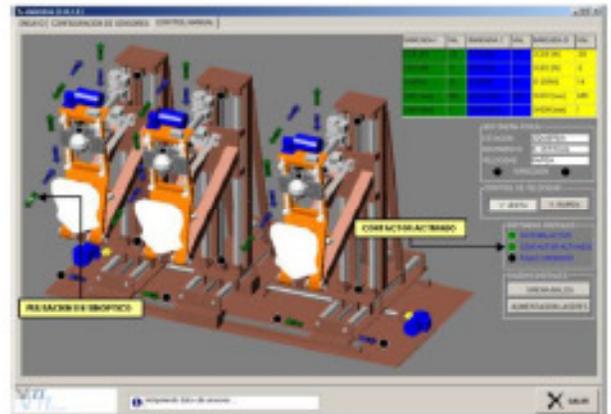
Different maximum speed and payload configurations, along with different energy dissipation systems, make crash simulators, flexible and easily upgradeable systems.



### Crash Tester

1. **Flexible and easily upgradable systems.**
2. **Maximum speed of CSS-S type system is 50 km/hr and that of CSS-L is 65 km/hr.**
3. **Sled Dimensions: CSS-S – 1.5 x 1.5 m and CSS-L- 2.5 x 1.5 m.**
4. **Payload: CSS-S- 250 kg and CSS-L- 500 kg.**
5. **Total length of CSS-S is between 23-30 m and that of CSS-L is between 28-35 m.**

## Automotive



### Seat and Head Restraint

It is a seat development and homologation test systems for carrying out approval tests described in ECE and FMVSS regulations regarding seats, their backs, headrest and anchors. A servo-hydraulic or servo-electric system can in particular carry our tests described in UNECE Regulations 17/25 and FMVSS 202 latest versions and others.

Based on three independent modules, this allows testing of individual, two or three seats with different positions in X and Z of the H point.

It has a great regulation ability that allows easy configuration of points R-H, as each module is adjustable in X, Y and Z, even allowing the testing of asymmetric three seated bench seats and with the central place moved ahead.

The control system can export data in standard formats, for carrying out automatic reports using Excel, etc...



The ranges of the movements can be defined by the customer depending on the range of the seats to be tested. The test is performed automatically, recording the torque-time, force-time and head penetration-time.

Different levels of motorization and automation let you choose an appropriate system according to the needs.

**Complete Instrumentation Solutions Private Limited**  
 Suite 511, Suncity Business Towers, Golf Course road,  
 Sector-54, Gurgaon- -122002, Haryana, India  
 Tel:+91-124-4929000 ; Fax:+91-124-4929010  
[info@instrumentation-solutions.com](mailto:info@instrumentation-solutions.com) ;  
[www.instrumentation-solutions.com](http://www.instrumentation-solutions.com)



**Complete  
Instrumentation Solutions**