

Multi-axial Shake Test: Complete solution for structural adequacy of added BSVI chassis mounting parts for commercial vehicle

In commercial vehicles, number of components are mounted on chassis such as cabin, spare wheel, fuel tank, Exhaust system, Air tank etc. Further a few more components such as Adblue tank, After Treatment System (ATS) are added on the chassis to fulfil forthcoming BSVI emission norms. Carrying out the validation of these components and their mounting on chassis in given time and also getting the correct correlation with required accuracy is major challenge for test engineers. Structural Dynamics Laboratory (SDL) of ARAI offers a unique solution for multi-axial-chassis-shake-structural durability assessment.

SDL has been carrying out multi-axial shake test and has completed more than 30 chassis/cabin shake testing for major OEM in India. Testing is carried out in all three axes simultaneously by mounting all chassis mounted components or cabin. Secondly, test is carried out in real time environment by carrying out in-lab simulation technique using acquired field data. Test setup is made in customized way for each test to ensure the correct loading path, as in case of vehicle. Major advantages offered by Multi-axis Chassis/cabin shake test is as below: -

- **Reduction of component validation time:** Simultaneous testing of all chassis mounted components
- **Better Correlation:** Real time simulation of field data
- **Multi-axis approach:** Testing in all three axes
- **Controlled environment:** Close monitoring of test components, even early cause of failure can be captured
- **Running the test in 24X6:** Test is running continuously in all three shifts to log more number of hours
- **Quick implementation of modified solution:** Immediate replacement of component with available modified part and use of same drive file to carry out the validation

Multi-axial chassis shake test proved to be more effective way of carrying out the test for chassis mounted components in SDL of ARAI and being preferred choice major OEM's in India.

Over three decades, SDL is one of the leading global brand in the area of vehicle and component evaluation. Using its Servo-hydraulic test facility & real time simulation capabilities, SDL is offering variety of structural testing solution to industry. Multi-axial durability offers most realistic way of testing the component/vehicle in controlled lab environment. For more details, you can send email to info@araiindia.com or contact our SDL team directly.

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