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Automotive External Mirror Deformation

Specification

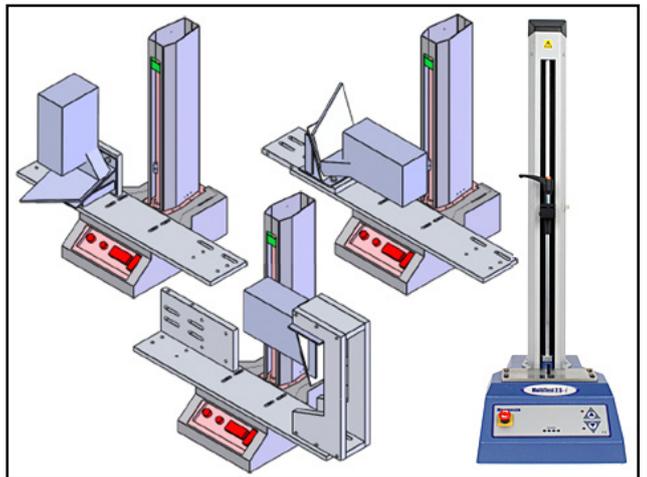
[Murakami Ampas](#) (Thailand), is a major supplier of mirror systems to the automotive industry. The company's expertise with optical filters and actuation mechanisms lends itself perfectly to the manufacture of these complex products. Global brands: Toyota, Honda and Ford, source their exterior and interior rear-view mirrors from Murakami. As with most vehicle sub-systems, especially safety-related, there are legislative standards that must be met. The company must also meet the challenge of packaging the necessary componentry to achieve the feature levels specified by the OEM, all within the constraints of the design - driven by style, aerodynamics and manufacturability. The additional ability to perform thorough functionality and durability testing enables this supplier to provide a complete solution to their customers. External mirrors must fold inwards to stow when needed, either powered or manually, and rotate if subjected to an impact force. In these circumstances, cosmetic damage should be minimized and functional performance maintained.



Automotive side mirror durability testing specification

Solution

Murakami had the requirement to apply forces to the mirror in two distinct tests. One procedure requires the application of a 40 N.m torque about the mirror's rotational axis for 1 minute, with no resulting defects in visual appearance or function. A further test applies a 400 N compressive load vertically for the same amount of time and checks for permanent deformation, alignment issues with the rotating mechanism, or other loss in functionality. Mecmesin Thailand supplied a touch screen controlled force testing stand with loadcell, and completed the solution with a specially-designed fixture to locate a mirror system and perform both tests. The flexibility to deliver comprehensively quality-tested sub-systems is an important capability for a trusted tier one automotive supplier.



Custom-designed fixture allows all tests to be performed on one test stand

System

- MultiTest 2.5-i touch screen controlled test system
- 2.5 kN loadcell
- Custom-designed and manufactured fixture

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