

Eliminating Damage to Automobile Door Panels Enidine Wire Rope Application

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Situation Overview

A major automotive manufacturer in Japan was looking for a solution to a problem on its cargo retainers. In the automotive industry, many manufacturers are trying to reduce shock and vibration as a requirement of ISO 14000. In addition, the trend toward computerization and faster throughput can create increasing shock and vibration challenges for manufacturing equipment.

During the assembly process, the company moves automobile door panels from one building to the next. The doors were loaded on a cargo retainer (cart), which was propelled by an Automatic Guided Vehicle (AGV). The cart carries 16 door panels to the next assembly area, where the doors are mounted on car frames. When the panels arrive, many have sustained damage caused by shock and vibration from the road and the AGV. Often, nearly half of the panels were being damaged during transport.



Product Solution

ITT Enidine Inc. contacted the automotive manufacturer to introduce Wire Rope Isolators (WRI). The company selected the WRI on a trial basis and manufactured a prototype system. They mounted six WR6-800 Isolators to the base of the cart. The WRI were mounted horizontally, one on each corner and two in the center of the cart.



Project Results

The test results exceeded their expectations. The maximum vertical shock was reduced from 24G to 2.5G. The customer appreciated the simultaneous shock and vibration attenuation capabilities of the WRI, as well as its maintenance-free and long service life attributes. They decided to retrofit their existing carts with WRI from ITT Enidine Inc. The manufacturer is also interested in applying WRI to the controller of its welding robots.

Solid opportunities exist in industrial material handling applications (SIC 3537: AGV's Industrial Trucks, Tractors, Trailers and Stackers) to reduce shock and vibration inputs which can cause damage to expensive components. ITT Enidine Inc.'s experience with semi-conductor and medical carts are other good examples of how the simultaneous shock and vibration capabilities of WRI can be used effectively.