

Students Create Design to Simulate Head-On Collision

Setting the Scene

With road rage and car accidents at an all time high, it is important to have accurate, measurable, and safe information. A group of engineering students were commissioned to build a crash-testing device that would simulate and measure a head-on collision. They turned to Pacific Bearing Company in order to come up with an appropriate system.

In order to simulate the crash, the students would need to have two opposing cars traveling at reasonable speeds in order to measure impact, but not damage the overall machine.



The Challenge

Designers wanted a robust system that would withstand the impact loads and provide as little friction as possible. The designers were looking for a linear rail system and Hevi-Rail® is the stand-alone option based on the impacts involved.

The Solution

The concept involved two parallel rails and 8 bearings to capture two opposing “cars” that would move toward each other at 4mph and simulate a crash. In order to meet the load carrying capacity and ability to handle the impacts, Hevi-Rail was the key product line considered. Also, the fact that Hevi-Rail is a rolling element – lower friction was desired – fit perfectly with the type of motion intended. Based on the 700 lbs load of each “car” and the speed, HVB-063 and HVR-6 were recommended. Standard fixed axial roller combined bearings and profile rails from the Hevi-Rail line were used, the largest size PBC carries.



Products Used

Standard fixed axial roller combined bearings and profile rails from the Hevi-Rail line were used—HVB-063 and HVR-6. The cars move toward each other at 4 mph and collide in a controlled crash.

 **Hevi-Rail**
Heavy Duty Bearing Systems

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