LINEAR BEARING SYSTEM PROVIDES COST-EFFECTIVE SOLUTION FOR CUSTOM VEHICLE DESIGNS

Special Vehicles Company (SPEVCO), based in Pfafftown, NC, has carved out a reputation for itself as a highly innovative problem solver in the specialty vehicle industry. Whether it’s converting vehicles for advertising top name brands at NASCAR races or providing mobile medical facilities for FEMA, SPEVCO prides itself on space planning and load designs that significantly expand the size and capability of a customer’s vehicle.

SPEVCO was recently approached to re-tool Speed TV’s vehicle for NASCAR race week broadcasts and events. The design required a 65ft trailer that houses a giant 24ft LED screen for broadcast at the events. One of the major issues within the design was that mechanical equipment needed to raise and hold the giant LED screen was so large that there was no space left for an operating booth. The booth is needed for the video production team, who are responsible for controlling the content displayed on the giant LED screen.

According to Luigi Utili, a mechanical engineer at SPEVCO, the company has developed incredible expertise in the development of PODs, which are custom-built slide out sections of trucks that immediately add extra square footage to any design.

“In this case we designed a 12 foot long POD that slid out 3 feet, therefore creating an additional 36 square feet for the video production technicians. Typically we would develop a custom hydraulic system to facilitate the sliding out of the POD but this is a major expense and any opportunity to significantly reduce costs is a major plus for the customer.”

In examining alternatives to the custom hydraulics system, Luigi looked at utilizing a linear bearing system to allow the sliding of the POD. “One option was the Telescopic Rail from Rollon Corporation because it’s a linear bearing that acts like a heavy duty drawer slide and would be easily able to meet the weight requirement of 500lbs,” reports Luigi.

“However, the mobile nature of this application means that parts often shift when the truck is transported from location to location, so we needed a linear bearing system that provided quite large tolerances of at least plus or minus half an inch.”
Thomas Osygus, regional sales manager at Rollon Corporation, recommended the Compact Rail to Spevco because the system absorbs rotational positioning errors, misalignments between lateral planes, and longitudinal parallelism errors, while still maintaining the system’s original preload setting. “Compact Rail is designed to provide smooth movement whether mounting plane parallelism can be guaranteed or not,” reports Thomas, “so it was the ideal solution for this SPEVCO application.”

Rollon Corporation has placed the raceways on the inside of the Compact Rail products to protect them from damage and contaminants while enabling the rail and slider to be mounted into small, compact, areas. Built-in, spring-loaded wipers in the heads and the lateral seals on the sides of the slider ensure they are suitable for the dirtiest of environments. These ‘Lubed for Life’ wipers continually deposit a thin film of oil on the races. Individual sliders can carry up to 3300 lbs.

Luigi Utili continues, “The covered raceways were also critical because this is an outdoor application and the vehicles are often parked in muddy fields. Reliability is extremely important because if the POD fails to open then the Speed TV technicians cannot access the control room for the LED screen – rendering the vehicle useless.”

“The application has been so successful and reliable that we have since been commissioned by to produce a second vehicle by the production company.”

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