

Capital Investment Makes Manufacturing RVs A Plush Ride



Advanced Machine & Engineering Co., (AME) offers its line of Amlok® cylinder rod locks for a variety of applications in myriad industries. One recent installation is on the worker lift platforms at a major RV manufacturer in the Elkhart-Goshen, Indiana area, home to that industry's leading producers of motor homes, fifth wheel campers, trailers, and other vehicles. According to the customer, the results of this installation have included more stability in the platforms, which frequently bear the load of multiple workers, considerable raw materials, and all the tools necessary to perform the various assembly operations.

At this manufacturing location, the frame and the axles move perpendicular to the work stations, on rail track-mounted dollies, unlike a conventional parallel-orientation assembly line. Owing to the highly customized nature of the RV industry, it is frequently necessary for one-off assembly operations to be performed in sequence, as the content of a day's quota. Plus, given the height of the units, these

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work platforms are invaluable assets to the production process at the company. In this case, work platforms were engineered and built to enable faster access from both sides of the unit.

With the work platform concept, the units can now be rolled from one station to the next, allowing the various build-ups to occur in sequence. As each step in the manufacturing process is completed, the entire work platform is raised. Because of the length of the platforms, (up to 30') and the weight load bearing requirements (typically several hundred pounds of materials and 1-2 workers per side), stability was a key issue.

One of the engineers at the integrator comments, "We'd seen the cylinder rod lock concept in a trade magazine article and contacted Advanced Machine & Engineering to discuss our needs. On each corner of the lifting system, the rod lock would need to attach to the platform and a separate rod installed for the Amlok."

The Amlok design, originated by AME, allows free movement of the cylinder during normal operation. When the lift system is stopped or when air pressure is lost, the locking mechanism secures the load in position until released by the return of air pressure. The positioning of the work platform is entirely controlled by the workers and is infinitely adjustable to the desired height for their cutting, routing, forming, and riveting of the various materials used for construction and assembly of these RV units. Each 1-3/4" diameter rod is mounted to the floor of the factory and the rod lock follows it, riding along a guide mechanism designed by the integrator and AME engineers, in cooperation with the factory workers at the plant. Upon completion of work at each station, the platform is raised to the top park position, where the Amlok is engaged in the locked condition, the RV unit is transported to the next station and the platform is loaded with the next unit's required materials. Each worker's complete toolbox remains on the platform throughout the work shift.

The Amlok rod locks used in this application are the company's fourth-generation design and prevent the typical problems encountered with most large scale air movement systems, namely, over-travel, bouncing, drifting, and reverse travel. The patented intensifier mechanism of the AME rod lock is spring-operated to lock and is released by normal 60-160psi air lines. These devices were deemed both cost-effective and functionally desirable for the work platform application at the RV builder.

On this project, AME supplied the rod locks, mounting brackets, and all hardware, while the integrator supplied the controls, pressure valves and all pneumatic circuitry to match the plant's existing air lines, which were substantial, given the number of air tools used in the manufacturing process.

Following the installation, the RV builder commissioned an independent engineering firm to fully certify that the work platforms met all relevant codes. This certification has been received.

Worker satisfaction with the system and the platform stability has been found to be very high, as well.

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Advanced Machine & Engineering Co., is a manufacturer located in Rockford, Ill., serving the machine tool, fluid power and safety, and product saw marketplaces with a variety of products under AME and sister companies. AME has manufacturing partners and customers around the world and across the U.S. To learn more, visit www.ame.com [1].

For technical questions on this story or the Amlok devices, please contact Ken Davis (ken@ame.com [2]) or Shane Hatfield (shane@ame.com [3]), the AME engineers on the project.

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