



▶ APPLICATION STORY

GAM Gearboxes Drive the Innovative PARKPLUS AGV System

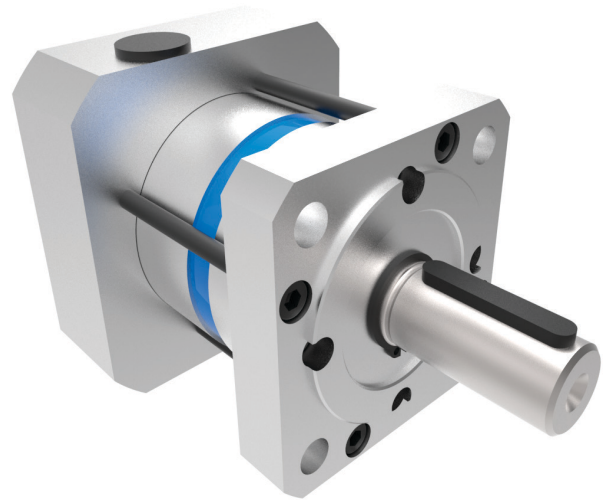
PARKPLUS is a leading provider of automated and mechanical high density parking solutions in North America. They developed an advanced parking system consisting of free-roaming, battery operated, omni-directional AGV units that utilize traffic management software, markers, vision systems and lasers for self-guidance to manage the automated storage and retrieval of vehicles on trays. The PARKPLUS system can be installed in new or existing multi-level parking structures. These structures typically have low ceilings to maximize vertical space, which presented a considerable challenge when designing the AGV.

Challenge

The AGV had to be powerful enough to transport a vehicle around the garage, yet also fit within the height restrictions. This put a tremendous amount of strain on the physical design envelope of the AGV, specifically for the drive train, which consists of two motors and gearboxes that mount directly into the omni-directional wheels.

GAM Solution

PARKPLUS partnered with GAM to develop a compact gearbox solution that could handle the demanding performance requirements associated with conveying vehicles. Given the predefined space limitations, GAM selected the 64mm frame size EPL gearbox, which could properly fit into the assembly and accommodate the basic torque requirements. The standard EPL series is extremely reliable with hardened and ground straight cut gears, and heavy duty angular contact bearings for a 30,000 hour life rating. To absorb the shock and reversing loads the AGV would encounter throughout the parking structures, GAM engineers designed a modified version with a more robust output housing, shaft, and added tie rods for additional reinforcement.



Results

The resulting EPL gearbox solution supports a 12 times safety factor specified by PARKPLUS. The PARKPLUS AGV system has been in operation for over two years in several locations and has been performing to specification.

"We chose to work with GAM because of the flexibility their engineering team offered given the stringent requirements placed on them as well as the willingness to provide the exact gearbox to suit our AGVs. They could not have been made as space efficient without the GAM gearboxes."

-Andreas Wastel, Vice President and Chief Engineer of PARKPLUS

For more information on GAM and the EPL series inline gearbox, visit <http://www.gamweb.com>.
For more information on PARKPLUS and the AGV system, visit <http://parkplusinc.com>.

