



Smart actuators help robot valets optimize high-volume auto storage and retrieval

Managing large, high-volume auto storage lots requires many manual, time-intensive tasks, and parking results in inefficient space and labor utilization, burning of fuel, and risk of accident and injury to attendants. Stanley Robotics, a leading provider of automobile storage logistics robots, hopes to change all that, offering a self-guided, vehicle-carrying platform that finds a car, lifts it, moves it gently, and parks it in an allocated space.



A recent article (also published in *ENR*) explores how Thomson smart electric linear actuators contribute to this solution by helping secure vehicles on the valet platform and lifting it.

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Design and Theory

DESIGN OVERVIEW | **BALL TRACK DIFFERENCES** | HOW SELF-ALIGNMENT WORKS

LOAD CAPACITY VS ANGLE TO THE BEARING TRACK

The following describes the the ball track differences in the 3 main product families:

- Precision steel (the original design)
- Super
- Super Smart

Precision Steel **Super** **Super Smart**

Hardened Ground Sleeve Floating Bearing plates Floating Bearing plates

• Loaded ball
• Unloaded ball
• Shifting

www.thomsonlinear.com

Precision steel, Super and Super Smart products all use recirculating balls. The main design difference is in the load bearing surface. Precision steel uses a hardened sleeve that has a bearing surface ground into it. Super and Super Smart utilize floating bearing plates. The floating bearing plates have the ball track(s).

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Design for high loads and longer life in space-conscious applications

Thomson German-engineered **miniature metric ball screws** with U.S.-based machining and distribution provide best-in-class load capacity in confined spaces. They use a unique multi-start ball return design that maximizes support for higher loads while providing precise, smooth and quiet operation.



- Screw diameters from 8 to 12 mm, screw lengths up to 3000 mm
- Ball nuts with flanged, cylindrical or threaded mounting interface
- Available with different coatings, lead accuracies and preloading options

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