



Thomson 500 Series Profile Rail Linear Guides Independent Slide Test Report

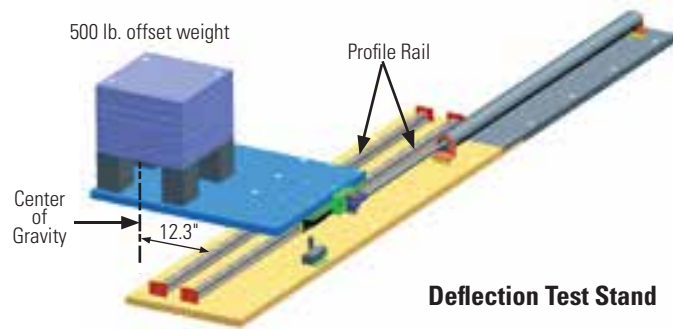
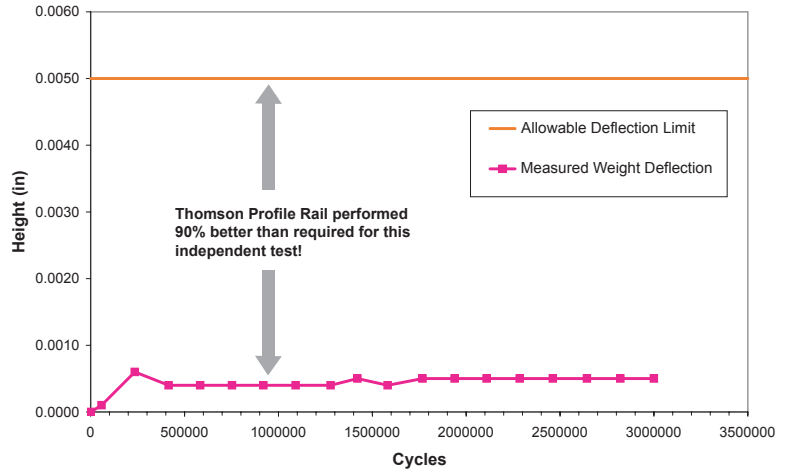
- 3 Million Cycle Deflection Test **PASSED**
- Side by Side Comparison: Thomson 500 Series vs. Thomson AccuGlide **500 Series Wins!**
- Features and Benefits Summary

Thomson Profile Rail Scores High on 3 Million Cycle Deflection Test Under Heavy Load

Thomson 500 Series Profile Rail recently passed with high marks a rigorous deflection test administered by an independent testing facility. A 500 lb. offset weight traveled along the profile rail for **3 million cycles**, which equals **72 million inches of total distance** travelled. The test ran uninterrupted for **122 days with zero maintenance** performed on the rails and carriage.

A mixture of metal particle contaminants was introduced to the 500 Series bellows eight times per week throughout the test. Designed to protect against dirt, dust and splashed liquids, the bellows was effective and did not allow any of the contaminants to enter the bearing races.

The chart at right shows the results with a measured deflection only 10% of the total allowed!



What does this mean to you?

Thomson 500 Series Profile Rail has the endurance, accuracy and reliability required to meet your toughest linear motion application.

Complete details of this test, often referenced in the demanding automotive industry, are available upon request.

Innovation and Product Evolution: 500 Series vs. AccuGlide

The Thomson 500 Series Profile Rail has many improvements when compared to the legacy Thomson AccuGlide. The 500 Series has improvements affecting Cost Savings, Process Improvements, and Reliability Improvements. These improvements result in longer life, ease of maintenance, and reduced cost of installation.

The product is stocked at Thomson's Saginaw, MI manufacturing facility, providing the ability to deliver within a short lead time and includes standard catalog and options for many of our custom products. The inventory includes our standard catalog items and accessories. At this facility, we have the expertise and flexibility to provide special machining options and cut to length rail to meet all of your individual profile rail needs.

Side by Side: 500 Series vs. AccuGlide

Carriage: Size 35 mm	500 Series: 511H35A0L	AccuGlide: CG35AAANLL	Change
Max. rail length	6000 mm	3000 mm	Improved
Accuracy	High ($\pm 50\mu\text{m}$)	Normal ($\pm 100\mu\text{m}$)	Improved
Lubrication features	Grease pockets increase lubricant retention in recirculation path. The new, optional "Lube for Life" Lube Block requires zero maintenance for the life of the carriage.	--	Improved
Smoothness	Optimized recirculation path profile	--	Improved
Noise	Reduction in transition insert molded recirculation path sleeve reduces noise	--	Improved
Load Capacity	Static: 84400 N Dynamic: 38700 N	Static: 47000 N Dynamic: 32000 N	Improved
Rigidity	Trapezoidal profile of rail increases carriage rigidity	--	Improved

500 Series Summary of Features and Benefits

Accuracy

The 500 Series standard accuracy class is High Precision. The improved manufacturing controls have allowed us to eliminate the lower class Normal accuracy. The result is improved machine accuracy.

Straightness

The 500 Series rails are subjected to multiple rail straightening steps during the heat treat and grinding process. The result is a rail that is greatly improved and exceeds the M200 special rail straightness specification of the AccuGlide which was .001mm/m.

6 Meter Single Piece Rail Lengths

The 500 Series rail is available in one piece lengths up to 6 meters in sizes 25mm and up. This results in reduced installation time and cost because there is not a need to properly match rails across joints and fewer installation errors related to butt joint positioning, alignment and support.

System Accuracy Improvement

Increased baseline accuracy, rail straightness and one piece rails up to 6 meters in length result in an improved system accuracy.

Modular Components – Field Replacement

The 500 Series was designed with modular accessories for easy upgrade and component replacement in the field. This allows for customization in the field without the need to stock replacement carriages. Additional seals can be added and end caps can be replaced while the carriage is on the rail. No need to remove carriage or disassemble entire assembly.

Reliability Improvement & Cost Savings

- Longer life as a result of higher load capacity
- Lubrication channels to drive lubrication to critical locations
- Lubrication pockets in recirculation path
- Improved lube block that has increased contact with rail
- Improved bellow clips have higher contact pressure for better holding and installation
- Modular accessories for customization to environment allows for adoption of carriages in the field
- Reduced cost of installation with single piece rail lengths up to 6 meters eliminates the need to butt joints

Process Improvement

- Increased accuracy through advanced grinding techniques
- Lowest accuracy is High, eliminated Normal accuracy
- Increased rail straightness & rigidity
- Reduced noise as result of injection molded recirculation paths
- Standardized catalog dowel holes for rails and carriages



“Lube For Life” Lube Block

The 500 Series has a redesigned Lube Block that requires zero maintenance for the life of the carriage, is a solid lubricant that is a mixture of polymers, oils and selected additives that reduce the penetration of dirt, grit and liquids into the ball path, preventing premature failures. The oil diffuses, lubricating the ball path surfaces by capillary action. Additional oil is supplied to the ball path surfaces from the polymer. For additional protection the assembly is packed with EP2 grease. There is no need for maintenance or additional lubrication to the Lube Block during the life of the carriage as demonstrated during the independent 3 million cycle deflection test. The Lube Block can be easily installed in conjunction with the other optional modular accessories such as a metal scraper providing an easy upgrade to the standard seal. These can be easily installed on-site in the field or can be supplied already assembled from the factory.

Metal Scraper

The Metal Scraper, made of stainless steel, serves as added protection to the seal lips against large dirt particles, metal shavings or chips. Large contaminants are easily pushed away, providing an extra level of protection to the seal lips. The Metal Scraper is easily installed in conjunction with the other optional modular accessories, providing you with an easy upgrade to the standard seal. These can be supplied direct from the factory or easily installed on-site in the field.

Bellows

Standard bellows are available for all assemblies. The bellows cover the entire length of the rail. The bellows are used to provide additional protection against dirt, dust and splashed liquids. Installation is simple and requires little time. Retrofitting is possible when the rail ends are drilled for the attachment of the endplate. The bellows can be supplied from the factory or easily installed on-site in the field and work in conjunction with other optional modular seals, providing you with a simple upgrade to the standard seal.

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