



## Case Study

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### Case Study: optiSLITE Miniature Ball Screws for Smoother, Quieter Performance

#### Challenge:

An established company that engineers and manufactures multi-axis stages was seeking smooth, quiet, long-lasting performance from its linear motion technology. The company's engineers decided to perform a comprehensive test on identical stages between a regular ball screw from a large OEM and new optiSLITE ball screws from Steinmeyer.

This company's precision, multi-axis stages are used for a variety of applications in optics, semiconductor, and other instrumentation fields. The stage selected for evaluation was an X-Y model with travel of 200mm. Each axis is driven by ball screw with a shaft diameter of 12mm and pitch of 4mm.

#### Results:

Once the testing began, the differences between the two were immediate and dramatic. The stage with the optiSLITE screws felt more fluid, exhibited less vibration, and produced significantly reduced noise. The test engineers could immediately distinguish between the two, making the choice of the optiSLITE ball screws self-evident.

#### About optiSLITE technology:

Steinmeyer's proprietary optiSLITE ball screws employ a "super finishing" process on the shaft raceway, which removes the largest irregularities left over from thread grinding. This improved surface quality results in noticeably smoother, quieter operation. Friction torque is also lowered, and made more consistent, resulting in enhanced servo performance. Finally, the lifetime of the screw may be increased by as much as 30% for certain applications.

[Contact a Steinmeyer engineer](#) to learn more about Steinmeyer premium miniature ball screws.