



PRESS RELEASE

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NSK Develops New X1 Ball Screw with Seal for Machine-Tool Applications
Helps Achieve Long Life in Machine Tools
and Reduces Environmental Impact

Tokyo, Japan, October 25, 2010 — NSK Ltd. (NSK; Headquarters: Tokyo, Japan; President and CEO: Norio Otsuka) today announced it has developed the new X1 Ball Screw with Seal, which is ideal for use in machine tools. The new ball screw, developed based on ball screws used in the latest higher-speed machine tools, will be available starting in April 2011. For ball screws used in high-speed machine tools, NSK is targeting total annual sales of 5 billion yen by 2013.

Highly dustproof seals developed by NSK in 2005 are now widely used in equipment including laser machine tools and woodworking machines, which operate in environments characterized by high levels of dust and foreign matter. The same seal technology was used to develop a new type of grease-sealing seal in 2007, which is now highly rated for use in injection molding machines. The newly developed X1 Ball Screw with Seal embodies a further refinement of this technology in that it combines highly dustproof performance with a grease-sealing technique, all in a low-friction torque type ball screw. The new X1 Ball Screw is expected to significantly extend the life of machine tools and reduce environmental impact.

NSK exhibited the new X1 Ball Screw with Seal at the 25th Japan International Machine Tool Fair (JIMTOF2010) held recently from October 28 to November 2 at Tokyo Big Sight (Koto Ward in Tokyo).

Product features

1. Sealing characteristics that combine grease seal with highly dustproof performance

The X1 Ball Screw with Seal features a highly dustproof seal—a lip area on the edge of the seal that is inclined towards the outside of the nut—together with a grease seal that inclines toward the inside of the nut. The new product achieves dustproof performance that reduces foreign matter (dust) penetration to less than one-thirtieth that of the current standard seal. The grease-sealing performance is approximately three times that of the current standard seal. These improvements contribute to longer service life for machine tools and reduce environmental impact.

2. Contact seal achieves low torque

Combining an optimized lip section on the edge of the seal that contacts the screw shaft with a special plastic material characterized by low-contact resistance achieves both low torque and high sealing performance. This new technology enables higher speeds and precision in machine tool performance.

Environmental considerations

The new X1 Ball Screw with Seal contains no materials considered to have a harmful impact on the environment.

Development background

Machine tools are sometimes operated in environments characterized by high levels of machine dust, foreign matter and coolant, which makes it very important to ensure they have excellent dustproof performance. Grease is coming into increasing use as lubrication as a way to reduce environmental impact. This has made it vital to improve grease-sealing performance in ball screws. NSK's newly developed X1 Ball Screw with Seal combines highly dustproof performance with good grease-sealing performance to achieve the low torque so important in machine tool applications. NSK will continue to introduce vital solutions like this to the marketplace.