

NSK Product Lineup for Machine Tools



NSK TOTAL SOLUTION

NSK is the only manufacturer to offer a complete development and supply service for the essential parts required for machine tools.

Ball Screws that have achieved top global brand status as a result of the cutting-edge technologies used, NSK Linear Guides[™] that are manufactured using production technologies guaranteeing high precision and product quality, Spindles that offer easily the fastest rotation speed capability available, and are of the highest standard in their class worldwide, as well as our trademark Bearings, which represent the core technology and capability for all NSK products with an unshakeable, global product strength.

Our "Comprehensive Technical Capability" includes 4 key features.

We provide a "Solution" that best fits the needs of our clients.

Our "Global" support service provided with our products always considers a worldwide view.

Our "Development" capabilities allow us to achieve next generation products that are one step ahead.

And of course, NSK "Quality" wins the approval and trust of clients all over the world.

As the only manufacturer to offer a comprehensive development and supply service for machinery parts,

NSK is able to meet the increasingly sophisticated needs of our clients, and we can assist with

both a speedy commencement of operations for machine tools, as well as optimal overall operation.





We have two general catalogs on "Super Precision Bearings" and "Precision Machine Components" available, which contain detailed information related to our bearings and linear products.

> SUPER PRECISION BEARINGS

Cat. No. E1254 in the "Super Precision Bearings" catalog



Cat. No. E3162 in the "Precision Machine Components" catalog

Super Precision Bearings & Spindles

Grease lubrication for machine tools serving the Green generation.

NSK Super Precision Bearings and Spindles use a Grease Replenishing System that enables grease lubrication in high speed applications, an area where previously only oil lubrication was possible. Greatly cutting down on the amount of lubricant and air used contributes to reduced energy requirements, and also helps to improve the operating environment by eliminating oil-mist and wind noise. NSK's low torgue products offer an environmentally friendly specification to reduce energy loss.

NSK

Sealed Angular Contact Ball Rearings High-Speed, High Precision Angular Contact Ball Bearings **Ball Bearings**

Sealed Angular Contact Thrust Ball **Bearings for Ball Screw Support**



Provided with seals that prevent grease leakage, plus greater enclosed grease capacity due to a wide design. The grease performance has an extended service life that is 1.7 times longer than open types.

Benefits:

1. Long operating life

- 2. Low heat generation
- 3. Reduced assembly time

Cat.No.E1277

Sealed bearings now available for easier handling. The contact seal types have highly reliable designs that are more resistant to grease leakage and dust compared to open types.

Benefits:

Cat.No.F1277

1. Highly functional design 2. Highly reliable and highly dust resistant design 3. Easier handling

Low Profile, High Precision Angular Contact Ball Bearings for Rotary/Tilt Applications

Offers the high running accuracy and low torque only achievable with ball bearings. This bearing has been newly designed specifically for machine tool swiveling spindle heads, with high moment stiffness that is on a par with crossed-roller bearings.

Benefits: 1. Rotational runout is less than 0.5 µm 2. High moment of stiffness

3. Compact design

Cat.No.F1257

Robustslim



Grease Replenishing For Machining Center System with Grease Lub



Achieved the world's highest speed performance of 20,000 min⁻¹ in Class ISO-40 high-speed machining centers, with quiet, energy-efficient operation through grease lubrication.

Benefits: 1. High speed

Cat.No.F2204

- 2. Maintenance-free operation
- 3. Wide-range heavy cutting performance



Provides grease lubrication for high speed equipment where oil-air lubrication systems, etc. were necessary until now. This new lubrication system breaks new ground in lubrication methods for high speed spindles.

Benefits:

- 1. High speed with a long operating life 2. Maintenance-free operation
- 3. Low noise & energy-saving

Cat.No.F1273

3 NSK

High Precision Angular Contact Ball Bearings



Our standard series of NSK precision angular contact ball bearings meets ISO standards. The rolling fatigue life is 1.8 times longer than conventional bearing steel. Sealed bearings also have an operating grease life that is 1.5 times longer.

Benefits:

- 1. Uses NSK's Z steel, a long life bearing steel 2.1.5 times longer grease life
- 3. Two types of cages available

Cat.No.E1257

Ultra High-Speed Angular Contact Ball Bearings with Oil-Air Lubrication

Snin-Shot™ I



Ultra High-Speed rotation and low-noise performance has been achieved through focusing efforts on optimizing the oil-air lubrication system of this bearing.

Benefits:

- 1. Achieves 40,000 min⁻¹ with ISO-40 equivalent taper using oil-air lubrication
- 2. Lower noise levels, approximately 3 dB to 5 dB
- 3. Half the air volume of conventional oil-air lubrication

Cat.No.E1257

High Rigidity Series



High Performance Double

Row Cylindrical Roller Bearings

Capable of stable rotation at high speeds, with a cage that features an optimized design and a high strength L-PPS resin.

Benefits: 1. High speed with low heat generation

2. Longer grease life

Cat.No.E1257



Developed with NSK's superior material, evaluation and analysis technologies. This is a highly functional series for high performance machine tools.

Benefits:

- 1. High-speed rotation with low heat generation
- 2. High speed with a long operating life
- 3. Various types available

Cat.No.E1257

Ultra High-Speed Single Row Cylindrical Roller Bearings

Ultra High-Speed Angular Contact Ball Bearings

The highly heat-resistant PEEK cage with excellent heat and wear resistant SHX steel helps the bearing achieve a dmn value of 2.20 X 10⁶. Benefits:

1. Low heat generation 2. Improved seizure resistance 3. High-speed performance

Cat.No.E1257



Ball Screws & NSK Linear Guides[™]

NSK has been contributing to industrial growth globally with the world's leading Ball Screws and an extensive product lineup of NSK Linear Guides.

NSK Ball Screws were developed through cutting-edge tribology (friction control technology), and NSK manufactures the largest volume in the world with its outstanding production and quality control techniques. In addition, the manufacturing process for NSK Linear Guides incorporates production technologies that ensure high precision and outstanding quality. We offer an extensive product lineup with high load capacities and excellent dust-resistant performance to meet the needs of a variety of industries. Furthermore, NSK continues to contribute to industrial growth on a global scale.

Ball Screws for High-Speed Machine Tools



HMD Series

Upgraded version of the highly regarded HMC Series, featuring a middle-deflector recirculation system that enables high-speed, low-noise operation.

Benefits: 1. High speed 2. Low noise

3. High load capacity

Ball Screws for Twin-Drive Systems TW Series



TW Series Ball Screws deliver the ideal functionality for twin-drive systems, and easily achieve the high rigidity, accuracy and responsiveness of twin-drive tables.

Benefits: 1. High rigidity and long operating life 2. High accuracy 3. Excellent responsiveness



RSI TM Ser

Ball Screws for Miniature Lathes

We provide a unified component design to facilitate short-term delivery. In addition, we have achieved high-speed and low-noise operation by adopting a new lubrication system

Benefits: 1. Short-term delivery 2. High speed and low noise

3. Dust resistance

NSK Roller Guides

NSK High-Rigidity Linear RA Series/RB Series

Benefits:

Cat.No.E3162

Cat.No.F3162

Cat.No.E3162



The RA Series represents the culmination of NSK's analysis technology and tribology, offering high load capacity and high rigidity. Our product lineup also includes the ultra-low profile RB Series, which enables a smaller machine footprint.

Benefits:

- 1. High rigidity and high load capacity
- 2. High accuracy and long operating life
- 3. High dust resistance and maintenance-free operation
- 4. Ultra-low profile with greater dimensional compatibility for
- installation (RB Series)

Cat.No.E3162

Lubrication Unit

NSK K1™



Ensures the long term maintenance-free operation and long operating life of components under tough lubrication conditions. This clean lubrication method is more environmentallyfriendly.

Benefits:

- I. Long term maintenance-free operation
- 2. Long operating life
- 3. NSK K1[™] for food processing or medical equipment also available

Cat No E3162 E9004

High Performance Seals

V1 Series



NSK's most advanced high-performance seals deliver more than four times longer operating life in contaminated environments than conventional models

Benefits: . High dust-resistance (multi-lip structure seal) 2. Long operating life

Cat.No.E3233, E3330



LA Series

Offers a high load capacity and high rigidity, with 3 roller grooves on each side for a total of 6 grooves. This design is perfect for highly precise and stable machining.

1. High rigidity and high load capacity 2. Impact load resistant 3. High accuracy



NSK S1[™] Series ensures quiet, nonobtrusive sound and low dust emission while exhibiting smooth operation.

Benefits:

- 1. Quiet, non-obtrusive sound emission
- 2. Smooth motion
- 3. Low dust emission
- 4. Wide variety





Worldwide Sales Offices

NSK LTDHEADQUARTERS, TOKYO, JA	APAN www.nsk.com	NSK-ABC BEARINGS LTD.		Poland:	
INDUSTRIAL MACHINERY BUSINESS DIVISIÓN-HEADQUARTERS	tel: 03-3779-7227	Chennai	tel: 044-2714-3000	NSK EUROPE LTD. WARSAW LI	AISON OFFICE
GLOBAL AFTERMARKET DEPARTMENT	tel: 03-3779-7253	Indonesia:		Warsaw	tel: 022-645-1525
PRECISION MACHINERY DEPARTMENT	tel: 03-3779-7163	PT. NSK INDONESIA	www.id.nsk.com	Wolbrzych	tol: 074 664 4101
MECHATRONICS BUSINESS DEPARTMENT	tel: 0466-21-3027	Jakarta	lei. 021-252-3456		D SP ZO O
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China:		Philippines:		United Kingdom:	CENTRE
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Changsha	tel: 0731-8571-3100	Ho Chi Minh City	tel:08-3822-7907	Ann Arbor	tel: 734-913-7500
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Gurgaon	tel: 0124-4104-530				
Kolkata	tel: 033-4001-2062			<	As of January 2012>
Mumbai	tel: 022-2838-7787		F	or the latest information please refer	to the NSK website
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