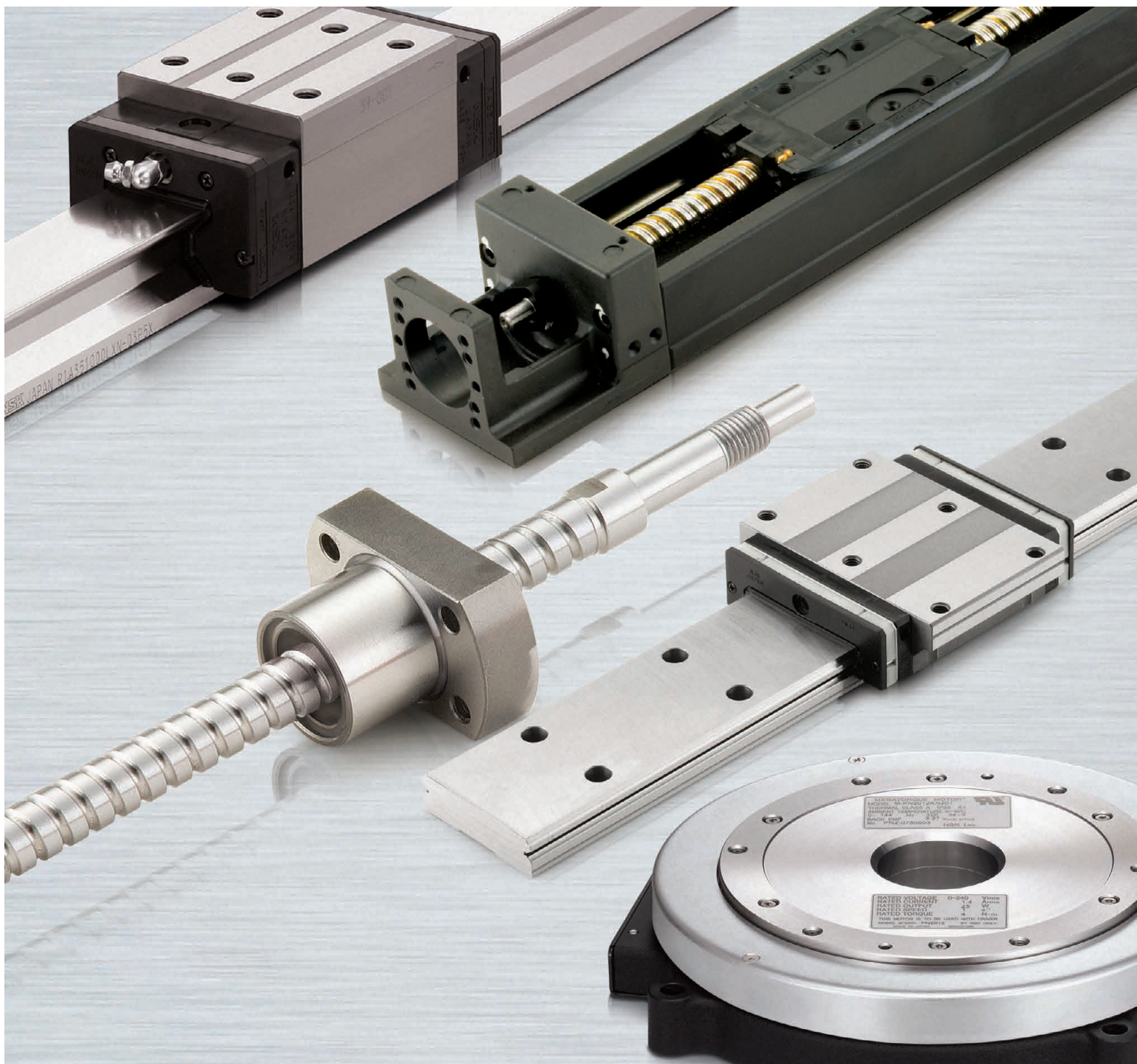
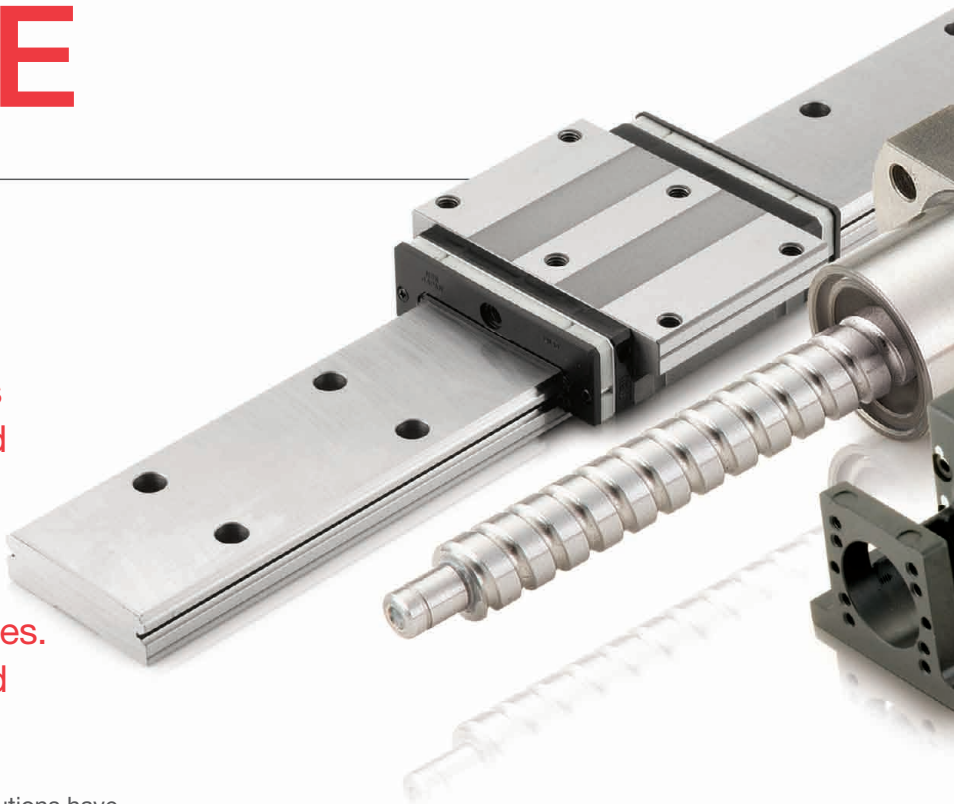


# NSK Linear and Mechatronics Product Capabilities

**MAXIMIZE**  
TIME, RESOURCES AND INNOVATION



## CORPORATE INFORMATION

The NSK Group is one of the world's leading manufacturers of motion and control products. A global company with sales of over \$6.5 billion, NSK employs over 24,000 employees at 62 ISO-certified manufacturing facilities. Our 129 sales operations are located in 27 countries around the globe.

With over 90 years of experience, NSK products and solutions have been chosen by leading brands around the world. As an industry innovator, NSK can help you lead the way by delivering high quality motion and control solutions. NSK conducts rigorous testing and uses only the world's highest quality steel to manufacture products, ensuring unsurpassed performance and reliability.

## DOMESTIC (NSK AMERICAS)

NSK manufactures and services innovative mechatronics and linear motion and control products in the U.S. NSK linear motion products can be found in many applications within the automotive, semiconductor, food and beverage, medical, machine tool and packaging industries.

To respond quickly and efficiently to the unique challenges of our customers, NSK distribution centers, manufacturing facilities and sales offices are strategically located throughout the Americas.

Customers can trust NSK to provide the highest quality mechatronics and linear motion products, total application solutions and world-class engineering support.

U.S. manufacturing gives NSK the flexibility to quickly respond to your needs – whether you require a next-day modification, or rush repair and maintenance services after the sale.

## DOMESTIC CAPABILITIES/PLANT INFORMATION

NSK's 75,000 sq. ft. manufacturing facility in Franklin, Indiana is dedicated to manufacturing precision products and serving the Americas markets. Certified to ISO 9001:2008 and ISO 14001:2004 standards, this state-of-the-art plant ensures shorter manufacturing lead times and quicker turnaround to meet the needs of customers from coast to coast.

## RESOURCES

[www.nskamericas.com](http://www.nskamericas.com) for engineering resources including CAD files, technical information, part numbering and more.

## Worldwide Sales Offices

<b>NSK Ltd. – Headquarters, Tokyo, Japan</b> Americas & Europe Department Asia Marketing & Sales Department	<a href="http://www.nsk.com">www.nsk.com</a> tel: 03-3779-7120 tel: 03-3779-7121	<b>Manila</b> tel: 02-759-6246	<b>Turkey:</b> NSK Bearings Middle East Trading Co., Ltd. Istanbul tel: 90-216-442-7106
<b>Africa</b> <b>South Africa:</b> NSK South Africa (Pty) Ltd. Johannesburg	tel: (011) 458 3600	<b>Singapore:</b> NSK International (Singapore) Pte Ltd. Singapore tel: (65) 273 0357	<b>United Kingdom:</b> NSK Bearings Europe Ltd. Peterlee, England NSK UK Ltd. Newark, England NSK Steering Systems Europe Ltd. Coventry, England
<b>Asia and Oceania</b> <b>Australia:</b> China:	<a href="http://www.nskaustralia.com.au">www.nskaustralia.com.au</a> NSK Hong Kong Ltd. Hong Kong Kunshan NSK Co., Ltd. Kunshan Guizhou HS NSK Bearings Co., Ltd. Anshun NSK (Shanghai) Trading Co., Ltd. Shanghai NSK representative office Beijing NSK representative office Shanghai NSK representative office Guangzhou NSK representative office Anshun	<b>Taiwan:</b> Taiwan NSK Precision Co., Ltd. Taipei tel: 02-2591-0656	tel: 0191-586-6111 tel: 0163-660-5123 tel: 024-76-588588
<b>India:</b> Rane NASTECH Ltd. Chennai NSK representative office Chennai	tel: 0520-7305654 tel: 0853-3521505 tel: 021-62099051 tel: 010-6590-8161 tel: 21-6209-9051 tel: 020-8732-0583 tel: 0853-3522522	<b>Thailand:</b> NSK Bearings (Thailand) Co., Ltd. Bangkok NSK Safety Technology (Thailand) Co., Ltd. Chonburi Siam NASTECH Co., Ltd. Chachoengsao	<b>North and South America</b> <b>NSK Americas, Inc. (American Headquarters)</b> Ann Arbor, Michigan, U.S.A. tel: 734-913-7500
<b>Indonesia:</b> P.T. NSK Bearings Manufacturing Indonesia Jakarta	tel: 044-4334732 tel: 021-898-0155	<b>France:</b> NSK France S.A. Paris tel: 01 30 57 39 39	<b>Argentina:</b> NSK Argentina SRL Buenos Aires tel: 011-4762-6556 <a href="http://www.br.nsk.com">www.br.nsk.com</a>
<b>Korea:</b> NSK Korea Co., Ltd. Seoul NSK Korea Co., Ltd., Changwon Plant Changwon	tel: 02-3287-0300 tel: 0551-287-6001	<b>Germany:</b> NSK Deutschland GmbH Düsseldorf NSK Steering Systems Europe Ltd. Stuttgart Neueweg Fertigung GmbH Munderkingen	<b>Brazil:</b> NSK Brasil Ltda. São Paulo tel: 011-3269-4700
<b>Malaysia:</b> NSK Bearings (Malaysia) Sdn. Bhd. Kuala Lumpur NSK Micro Precision (M) Sdn. Bhd. Kuala Lumpur New Zealand: NSK New Zealand Ltd. Auckland	tel: 03-7958-4396 tel: 03-961-6288 <a href="http://www.nsk-rhp.co.nz">www.nsk-rhp.co.nz</a>	<b>Italy:</b> NSK Italia S.P.A. Milano <b>Poland:</b> NSK Europe Ltd. Warsaw Liaison Office Warsaw NSK Iskra S.A. Kielce <b>Spain:</b> NSK Spain S.A. Barcelona	<b>Canada:</b> NSK Canada Inc. Toronto tel: 905-890-0740
<b>Philippines:</b> NSK representative office	tel: (09) 276-4992	<b>United States of America:</b> NSK Corporation Ann Arbor, Michigan Sales Offices: Ann Arbor, Michigan Santa Fe Springs, California Ann Arbor, Michigan NSK American Technical Center Franklin, Indiana San Jose, California	tel: 734-913-7500 tel: 734-913-7500 tel: 562-968-1000 tel: 734-913-7500 tel: 317-738-5038 tel: 408-944-9400 <a href="http://www.npa.nsk.com">www.npa.nsk.com</a>
			tel: 802-442-5448 tel: 305-477-0605

NSK Ltd. has a basic policy not to export any products or technology designated as controlled items by export-related laws. When exporting the products in this brochure, the laws of the exporting country must be observed. Specifications are subject to change without notice and without any obligation on the part of the manufacturer. Every care has been taken to ensure the accuracy of the data contained in this brochure, but no liability can be accepted for any loss or damage suffered through errors or omissions. We will gratefully acknowledge any additions or corrections.

Ann Arbor, MI

Research and Development  
Testing and Analysis

Franklin, IN

Domestic Manufacturing  
Engineering  
Design  
Marketing and Customer Services  
Distribution Center  
Training Facility

San Jose, CA

Integration Capabilities  
Design  
Training Facility



## LINEAR MOTION

### Linear Guides

- Size range – 5mm to 85 mm
- Rail lengths – up to 4m single piece
- Maintenance-free operation with optional K1™ Lubrication Units
- Interchangeable retained ball slides across all series available from stock
- Dynamic load capacity up to 340,000 N
- Wide range of accuracy and preload options
- Types of linear guides:
  - General application; interchangeable series – LH, LS and LW (wide) Series
  - High rigidity roller guide – RA and RB (low profile) Series
  - Miniature and miniature wide rail – PU/PE and LU/LE Series
- Materials – stainless steel and special high-carbon steel; special coatings available:
  - Armoloy – corrosion resistant
  - Low-temperature chrome plating

- Standard operating temperatures 0° to 80°C , up to 150°C with high-temp. features
- Accessories available – K1™ Lubrication Units, high performance seals, rail covers, rail caps, protector plates
- RoHS-compliant
- NSK has standard and custom solutions for demanding applications requiring:
  - High load/high rigidity/high-speed characteristics
  - High accuracy/smoothness
  - Special lubrications

#### Key Markets

- Machine Tool
- Medical
- Semiconductor
- Automotive
- General Industry
- Specialty Machinery

## ACCESSORIES



### K1™ LUBRICATION UNITS

Long term maintenance free lubrication unit available in: ball screws, linear guides, robot modules and Monocarriers.

### Ball Screws

- World's leading manufacturer of precision ground ball screws
- Shaft diameters – 4mm to 250mm
- Ball screw shaft lengths up to 14m
- Lead – .5mm to 100mm
- Accuracy – C0 to Ct10
- Preload – oversized balls (P-type), offset lead (Z-type) and double nut (D-type)
- Types of recirculation systems – tube type, deflector type, end cap type and tangential pickup
- Precision ground and rolled versions offering:
  - Low noise
  - High speed
  - Compact design
  - High load and rigidity

- Custom configured designs to meet the most demanding applications
- Materials – carbon steel, stainless steel; special coatings available:
  - Armoloy – corrosion resistant and added hardness
  - Low-temperature chrome plating
- Accessories:
  - Support units
  - K1™ Lubrication Units
  - High performance seals



### SEALS

V Groove, High Temp, High Speed, HP (High Performance)

## MECHATRONICS

### Monocarrier Actuators

- Easy-to-install ball screw/linear guide/support unit package
- Long life, maintenance free operation and corrosion resistant coating
- Types:
  - Lightweight type – MCM Series
  - Rigid type – MCH Series
  - Super high-load capacity roller type – Toughcarrier
- Lead – 1mm to 30mm
- Stroke – 50mm to 1000mm
- Accuracy – high and precision
- Materials – chrome plating; K1™ Lubrication Units are standard
- Accessories – covers, sensor units, motor mounts, combining brackets
- Custom designs available with multiple sliders, special leads and coatings

### Robot Modules

- Easily combined into multi-axis systems
- Completely sealed unit
- Maintenance-free operation with K1™ Lubrication Units
- High accuracy and repeatability
- Stroke – 100mm to 2000mm
- Lead – 10mm to 40mm
- Motor mounting positions – left, right or straight
- Motor types – NEMA 23, 34 and metric motors
- Use NSK ball screws, linear guides and Monocarrier actuators
- Small, medium and heavy load types available
- Accessories:
  - Motor mounting kits
  - Multi-axis combining brackets
  - Support slide
  - Module mounting plates
  - Limit sensor kits

### Megatorque™ (Direct Drive) Motors

- Direct drive technology – no gears
- Maintenance-free operation
- Small footprint, compact design
- Accurate, micron-level repeatability with no backlash
- Incorporates absolute positioning sensor with 2.62 million counts/revolution resolution
- Types:
  - Motor for high-speed positioning of medium/light loads – PS (outer rotor rotating)
  - Motor for positioning heavy loads; low profile – PN (inner rotor rotating)
- Through-hole design style provides ease of wiring and mounting
- Motor diameters – 100mm OD to 280mm OD
- Motor height – 35mm to 170mm
- Output torque ranges from 6 to 180 (Nm)
- Maximum rotational speed ranges from 2s<sup>-1</sup> to 10 s<sup>-1</sup>
- Accessories
  - Driver unit with connectors and mounting brackets as accessories
  - Cables – motors to drive unit
  - Handy terminal RS-232C communication terminal for inputting parameters to the driver unit

### GREASE

Clean room, food grade, high speed and high temperature

### SPECIAL COATINGS

Armoloy, Low-temperature chrome plating

## SPECIAL APPLICATIONS

### Special Environments

- Bearings, ball screws and linear guides with coatings for special environments
- Environments include corrosive, clean room, high temperature, non-magnetic, vacuum, water, acid
- Accessories
  - Clean room grease
  - Food/medical grade K1™ Lubrication Units
- Catalog reference
  - SPACEA bearings, ball screws and linear guides for special environments – E1258

### Integration/Custom Assemblies

- Domestic capabilities allow NSK to combine multiple components with core NSK products to create complete or large systems
- Examples include support unit installation, motor installation and multi-axis system assembly
- Contact NSK for more information