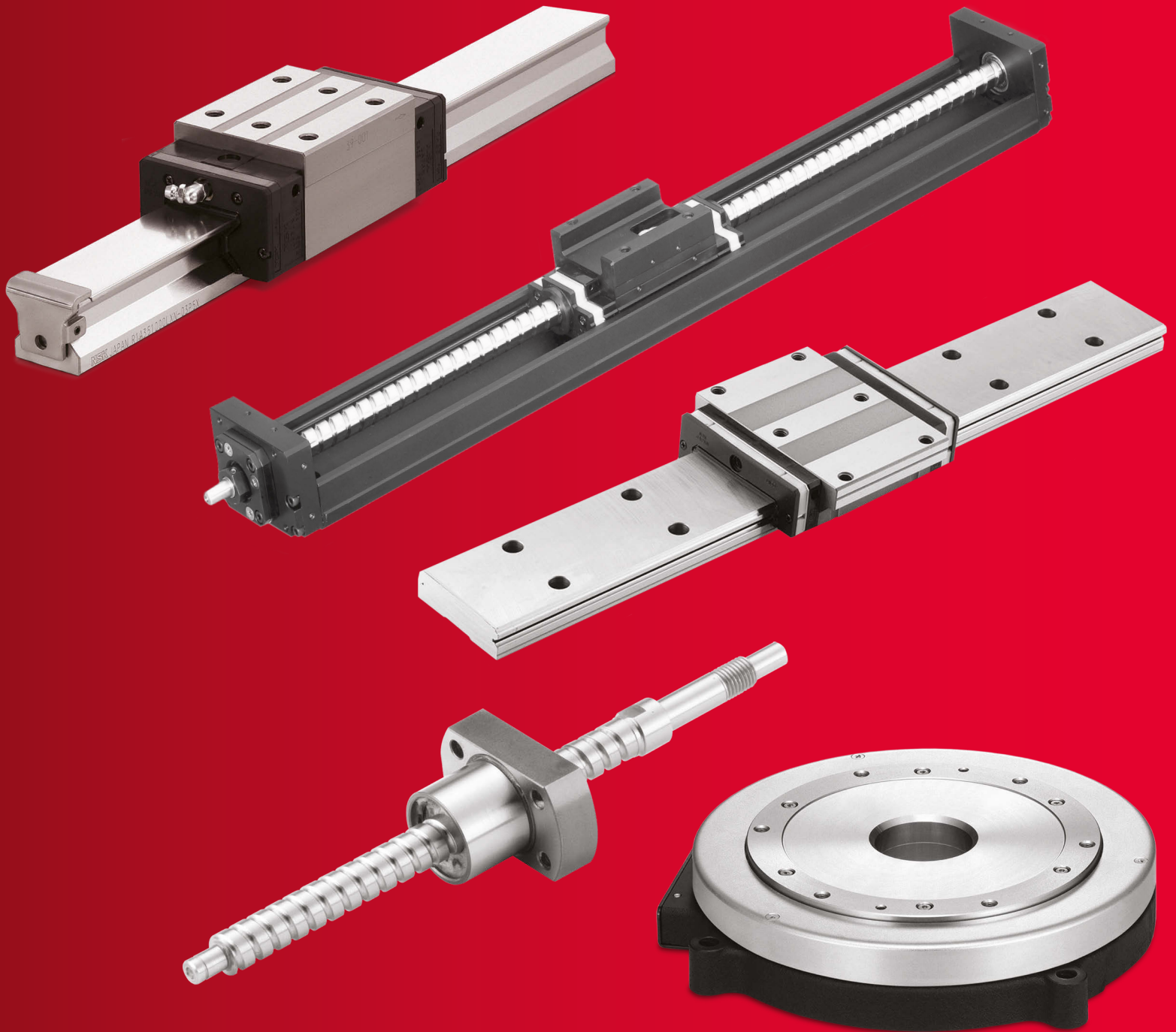




NSK LINEAR AND MECHATRONICS PRODUCT CAPABILITIES



NSK IN THE USA



ANN ARBOR, MI

- › NSK Americas Corporate Headquarters
- › Research & Development
- › Testing & Analysis
- › Engineering & Design
- › Marketing, Sales and Customer Service
- › Training Facility

FRANKLIN, IN

- › Domestic Manufacturing
- › Engineering & Design
- › Marketing, Sales and Customer Service
- › Distribution Center
- › Integration Capabilities
- › Training Facility

SAN JOSE, CA

- › Integration Capabilities
- › Engineering & Design
- › Marketing & Sales
- › Training Facility

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 over \$8.3 billion, NSK employs over 30,000 employees at 64 ISO-certified manufacturing facilities. Our 118 sales operations are located in 29 countries around the globe.

With over 100 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.

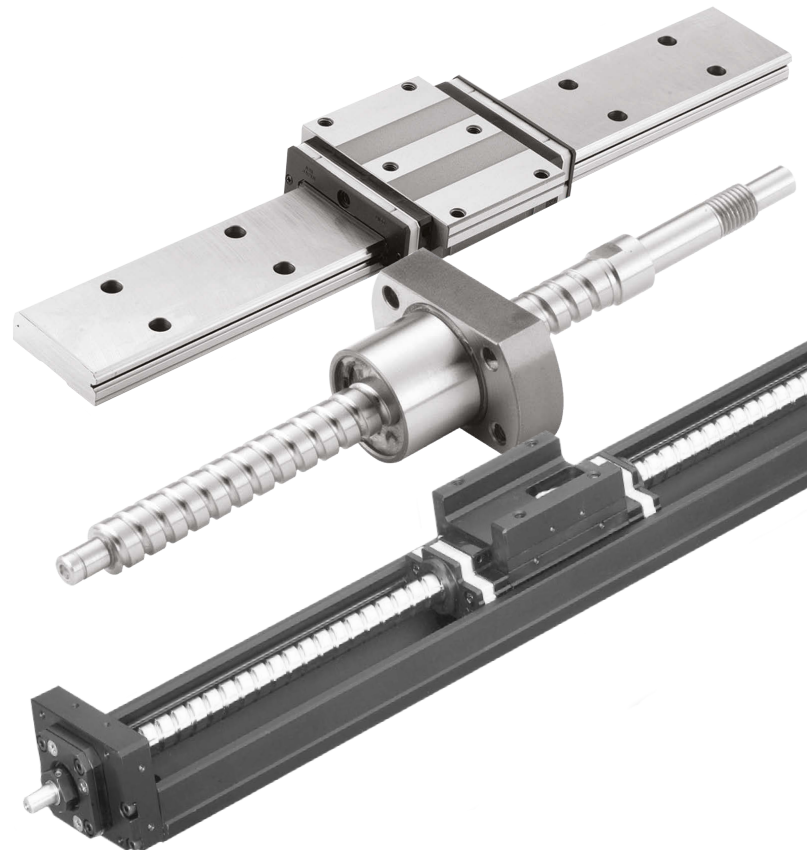
To respond quickly and efficiently to the unique challenges of our customers, NSK distribution centers, manufacturing facilities and sales offices are strategically located throughout the Americas.

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

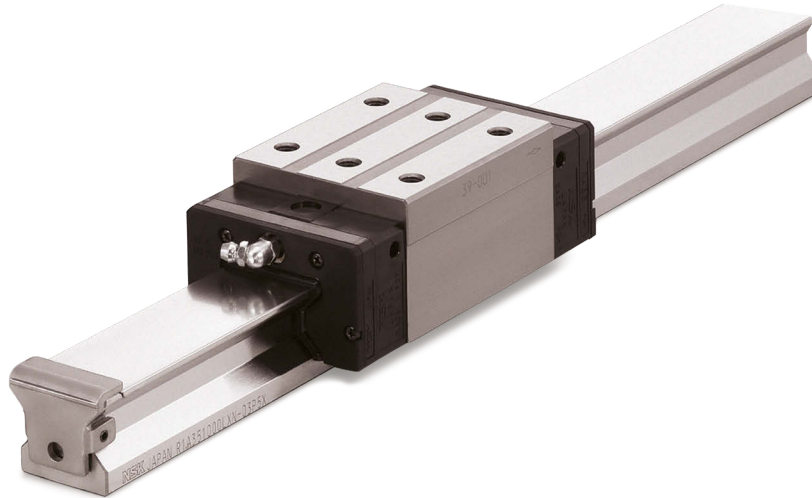
NSK's 77,950 sq. ft. manufacturing facility in Franklin, Indiana is dedicated to manufacturing precision products and serving the Americas markets. Certified to ISO 9001:2008 and ISO 14001:2004 standards, this state-of-the-art plant ensures shorter manufacturing lead times and quicker turnaround to meet the needs of customers from coast to coast.



RESOURCES

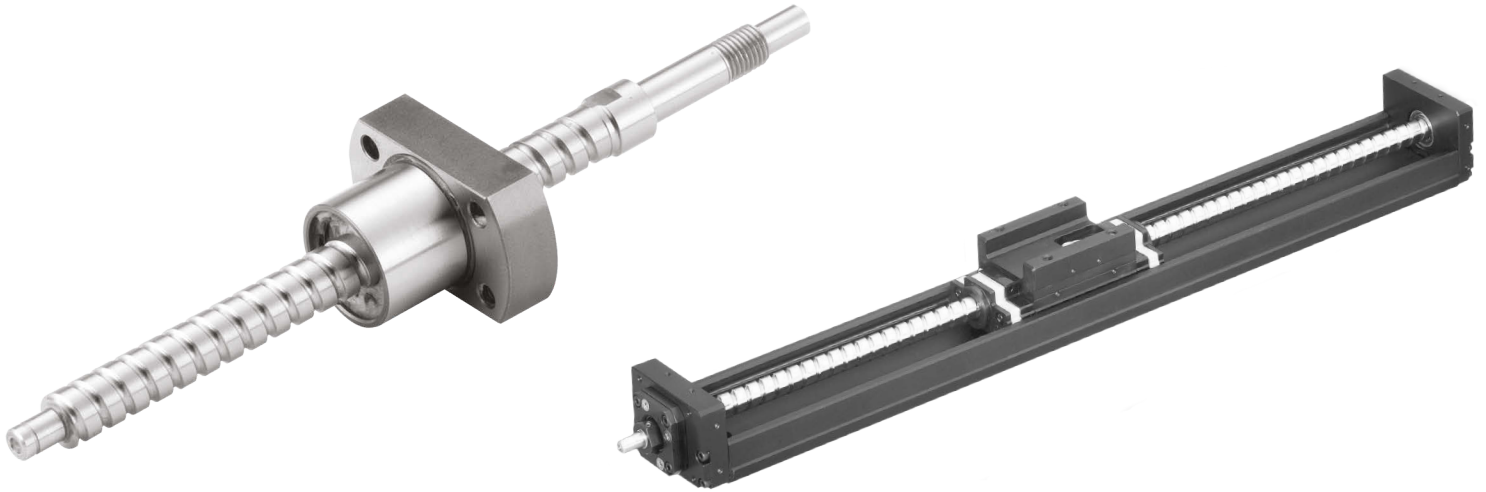
Visit www.nskautomation.com for engineering resources including CAD files, technical information, part numbering and more.

LINEAR MOTION



LINEAR GUIDES

- › Size range: 5 mm to 65 mm.
- › Rail lengths up to 4 m.
- › Interchangeable retained ball slides available from stock in select sizes.
- › Dynamic load capacity up to 340,000 N.
- › Wide range of accuracy and preload options.
- › Linear guide types:
 - General application types: NH, NS and LW (wide) Series
 - High rigidity roller type: RA and RB (low profile) Series
 - Miniature ball type: PU/PE and LU/LE Series
- › Material type:
 - Stainless steel
 - Carbon steel
 - Special heat treated steel for improved life in contaminated environments
- › Standard operating temperature: 0° to 80°C.
- › High temperature settings: up to 150°C.
- › Accessories available: K1™ or K1-L lubrication units, high-performance seals, rail covers, rail caps, and protector plates.
- › RoHS-compliant.
- › Standard and custom solutions for applications requiring:
 - High load, high rigidity, high speed, high accuracy/ smoothness and lubrication requirements



BALL SCREWS

- › World's leading manufacturer of precision ground ball screws.
- › Shaft diameter range: 4 mm to 200 mm.
- › Shaft length range: up to 13.5 m.
- › Lead range: 0.5 mm to 100 mm.
- › Accuracy: C0 to Ct10.
- › Preload options:
 - P type: oversized balls
 - Z type: offset lead
 - D type: double nut
- › Recirculation system types: tube, deflector, end cap, and tangential pickup.
- › Precision ground and rolled ball versions offer:
 - Low noise
 - High speed
 - Compact design
 - High load and rigidity
- › Material type:
 - Stainless steel
 - Carbon steel
- › Accessories available:
 - Support units
 - K1™ lubrication units
 - High-performance seals

MONOCARRIER™ ACTUATORS

- › Easy-to-install ball screw, linear guide and support units integrated into one structure.
- › Product benefits:
 - Long life
 - Maintenance-free operation
 - Corrosion-resistant coating
- › Product types:
 - Lightweight ball type: MCM and MCE (motorized) Series
 - Rigid ball type: MCH Series
 - Super high load capacity roller type: ToughCarrier™ (TCH) Series
- › Lead Range: 1 mm to 30 mm.
- › Stroke Range: 50 mm to 1200 mm.
- › Accuracy types: high and precision.
- › Material type: chrome-plated.
- › K1™ lubrication units are a standard feature.
- › Accessories available: covers, sensor units, motors, motor mounts, combining brackets and gantry plates.
- › Custom designs available.

MECHATRONICS



ROBOT MODULES

- › Integrated use of NSK ball screws, linear guides and Monocarrier™ actuators.
- › Easily combined into multi-axis systems.
- › Completely sealed unit.
- › Maintenance-free operation with K1™ lubrication units.
- › High accuracy and repeatability.
- › Stroke range: 100 mm to 2000 mm.
- › Lead range: 10 mm to 40 mm.
- › Motor mounting options: left, right or straight.
- › Motor type options: NEMA 23, 34 and metric motors.
- › Load types: small, medium, and heavy.
- › Accessories available:
 - Motor-mounting kits
 - Multi-axis combining brackets
 - Support slide
 - Module-mounting plates
 - Limit and home-sensor kits

MEGATORQUE™ MOTORS

- › Direct-drive technology.
- › Maintenance-free operation.
- › Compact design with through-hole.
- › Accurate, micron-level repeatability with no backlash.
- › Incorporates absolute positioning sensor with 2.62 million counts p/revolution.
- › Product types:
 - PS Series: high-speed positioning for light to medium loads
 - PN/Z Series: low profile for positioning heavy loads
- › Easy installation.
- › Motor height range: 35 mm to 170 mm.
- › Torque output range: 6 to 180 (Nm).
- › Maximum rotational speed: 10s⁻¹.
- › Accessories available:
 - Drive unit connectors and mounting brackets
 - RS-232C cable
 - RS-232C hand terminal



K1™ OR K1-L LUBRICATION UNITS

Long-term, maintenance-free lubrication unit available for ball screws, linear guides, robot modules and Monocarriers™.



SEALS

NSK offers a variety of seal options depending on your application. Choose from high-temperature, high-performance and/or contact seals. Contact NSK for more information.

SPECIAL APPLICATIONS

- › Special coatings can be applied to NSK bearings, ball screws, and linear guides.
- › Special environment types: corrosive, clean-room, high-temperature, non-magnetic, vacuum, water and acid.
- › Lubrication options:
 - Clean-room grease
 - Food or medical grade K1™ lubrication units
 - High-speed and high-temperature grease options
- › Refer to catalog E1258: SPACEA bearings, ball screws and linear guides for special environments.

INTEGRATION AND CUSTOM ASSEMBLIES

- › Domestic capabilities allow NSK to combine multiple components with core NSK products to create complete and large systems.
- › Custom assembly examples:
 - Support-unit installation
 - Motor installation
 - Multi-axis system assembly
- › Please contact NSK for more information regarding custom needs.



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