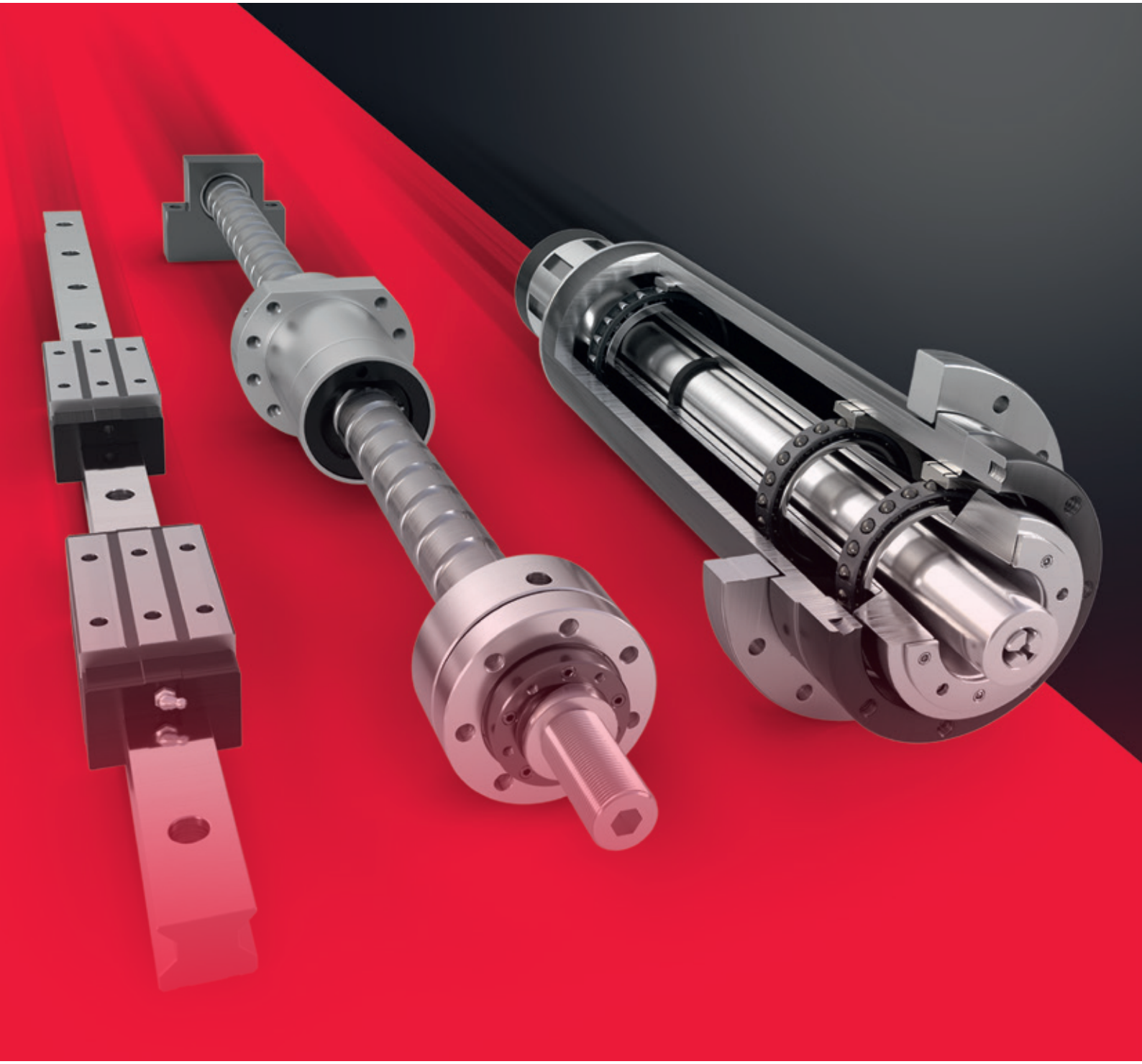
NSK

PRECISELY FORWARD
NSK LINEAR MOTION CONTROL



BRANDS OF **NSK EUROPE**

NSK RHP *bearings* PPL



THE NSK COMPANY

NSK commenced operations as the first Japanese manufacturer of rolling bearings back in 1916. Ever since, we have been continuously expanding and improving not only our product portfolio but also our range of services for various industrial sectors. In this context, we develop technologies in the fields of rolling bearings, linear systems, components for the automotive industry and mechatronic systems. Our research and production facilities in Europe, Americas and Asia are linked together in a global technology network. Here we concentrate not only on the development of new technologies, but also on the continuous optimisation of quality – at every process stage. Among other things, our research activities include product design, simulation applications using a variety of analytical systems and the development of different steels and lubricants for rolling bearings.

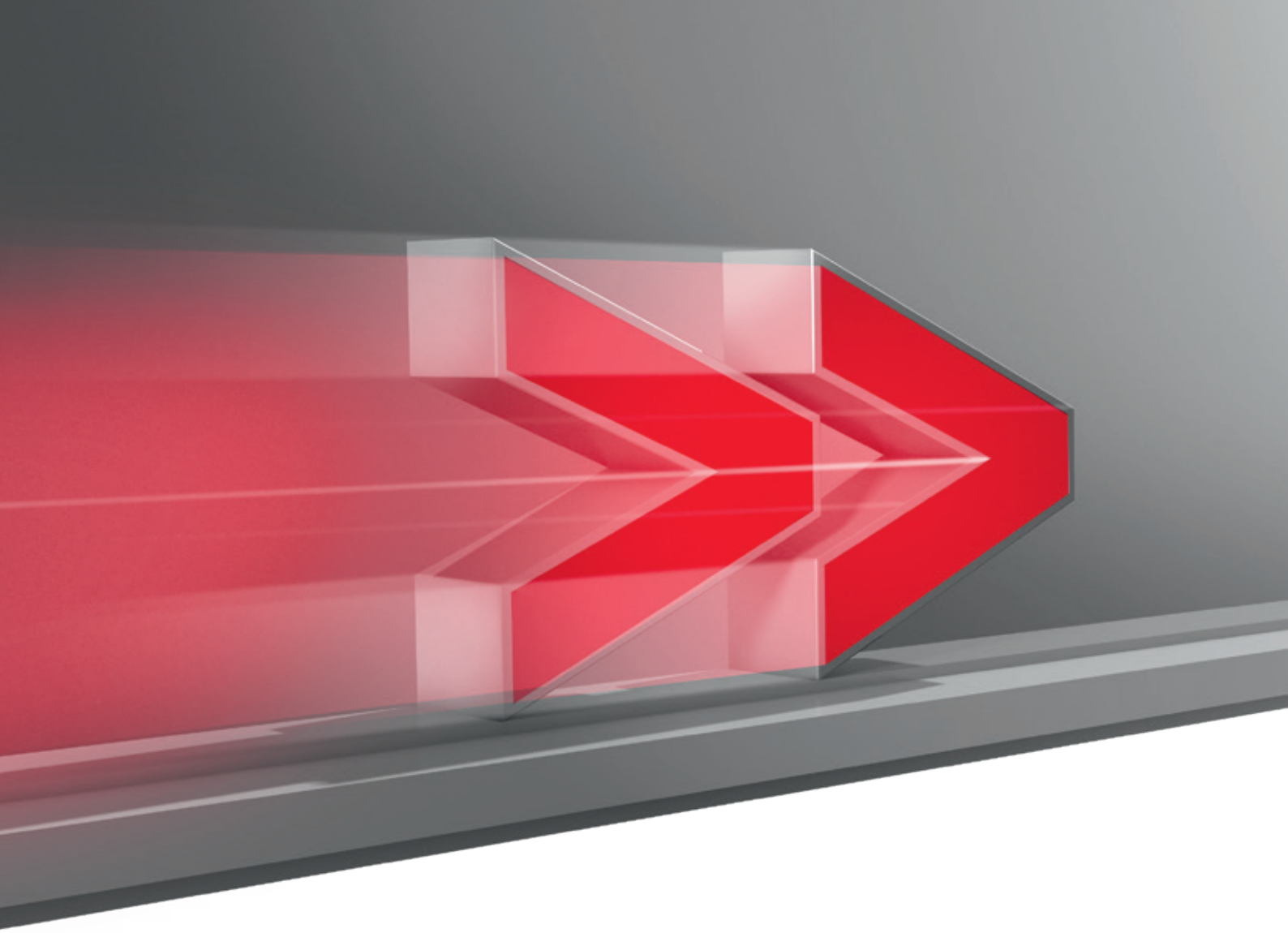
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PRECISELY FORWARD
NSK LINEAR MOTION CONTROL

With NSK you can be a crucial step ahead – faster, more efficient and more precise. With a partner at your side who has decades of industry experience and provides a complete range of premium products from a single source, you get customised rotating and linear solutions. NSK Linear Motion Control converts motion into industry-specific product solutions. From standard components to customised design, you get all your services from NSK. That saves costs and increases your efficiency. Set new benchmarks for efficiency and reliability for your machine – with NSK Linear Motion Control.

» OPTIMUM TECHNICAL SOLUTIONS

» INTEGRATED MOTION PACKAGE

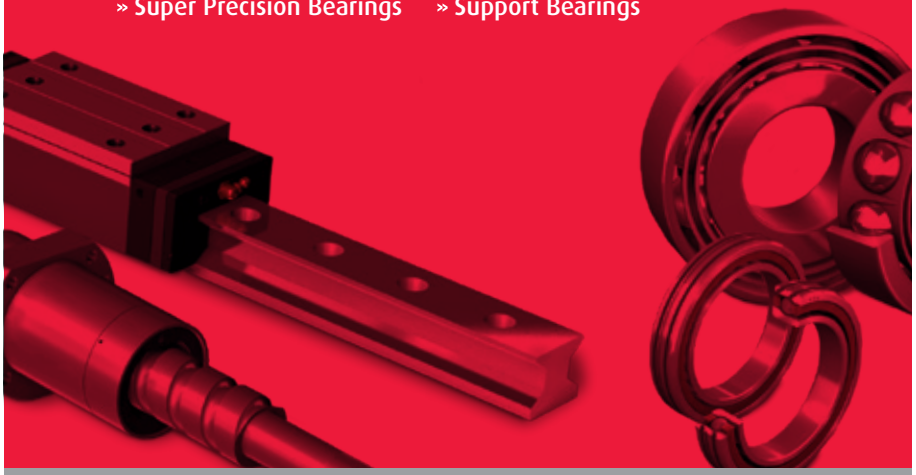
» HIGHEST QUALITY STANDARDS

» EXTENSIVE INDUSTRY EXPERTISE

A STEP AHEAD WITH PREMIUM PRODUCTS FROM A SINGLE SOURCE

PRODUCTS

» Ball Screws
» Super Precision Bearings
» Linear Guides
» Support Bearings



ENGINEERING

» Research & Development
» Analysis
» Tribology
» Calculation Tools
» Materials technology

SERVICE

» Global Customer Management
» Logistic concepts
» Training
» Failure analysis

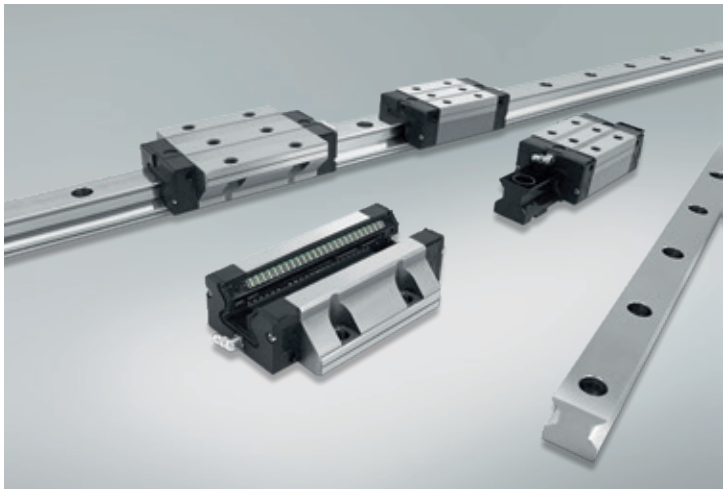
MACHINE TOOLS

The symbiosis of precision and maximum production output ensures a critical competitive advantage for state-of-the-art machine tool technology. From drilling and grinding to turning, bending and milling, a vast range of demands is placed on the machine components used. With NSK Linear Motion Control, you always get the ideal product for your motion – rotating or linear, all from one source. NSK quality components meet the special requirements for high speeds and acceleration while generating minimum noise. Whether the product is from our standard machine tool range or custom-developed, NSK Linear Motion Control is your answer for precise motion.



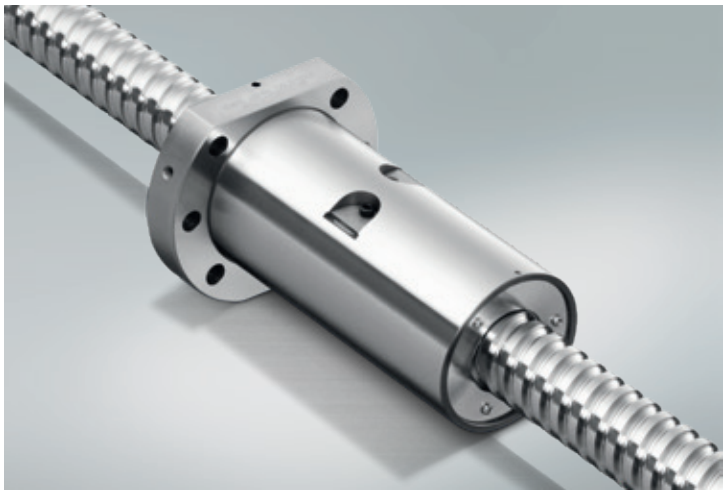
SUPER PRECISION BEARINGS

- Greatest precision and running smoothness – even at high rotational speeds
- Stable operation with maximum rigidity and low heat generation thanks to optimised internal bearing design
- Wide product range to meet any requirement in machine tool industry
- Optimised spindle performance thanks to detailed technical calculations



LINEAR GUIDES

- Outstanding running characteristics – friction-optimised, smooth and extremely accurate
- The highest load capacity and best rigidity values
- Large product range according to ISO standard
- Ideal option: K1 long-term lubrication unit for maintenance-free operation



BALL SCREWS

- Large product range – custom-made for the extremely high requirements in the machine tool industry
- The best performance values for fast pace and quick motion sequences
- The best sealing and protection from contamination ingress as well as good grease retention properties thanks to the new seal design
- Ongoing R&D for best capacity ratings, speed, running smoothness and acceleration, as well as low heat generation

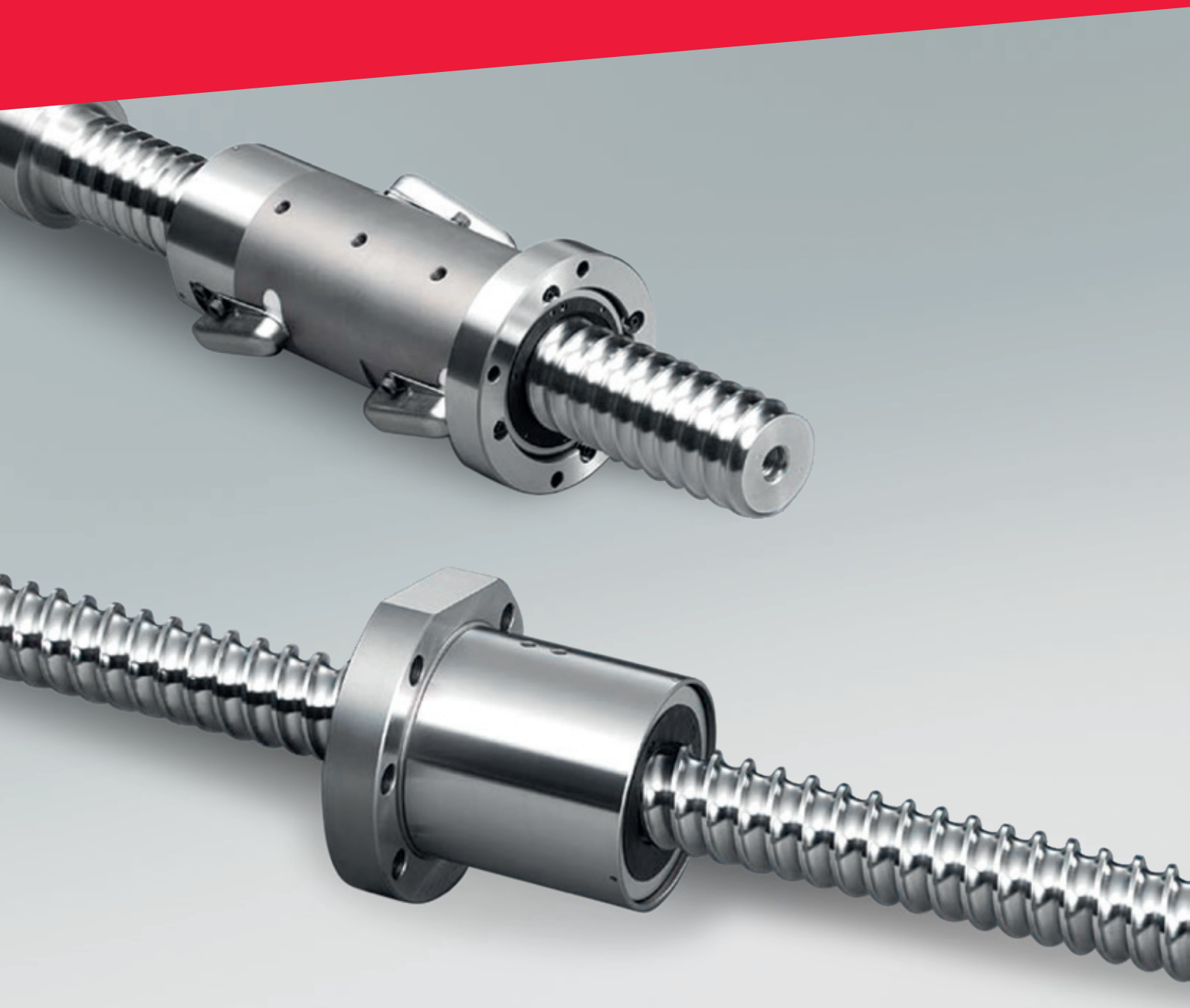


SUPPORT BEARINGS

- Specifically developed for the requirements of ball screws
- High precision and rigidity thanks to 60° contact angle
- Multiple-stage sealing mechanism to shield against particle ingress plus good grease retention capacity with low friction and heat generation
- Easy assembly due to predefined preloading and direct flange connection (BSF series) to the surrounding components including installation-ready delivery

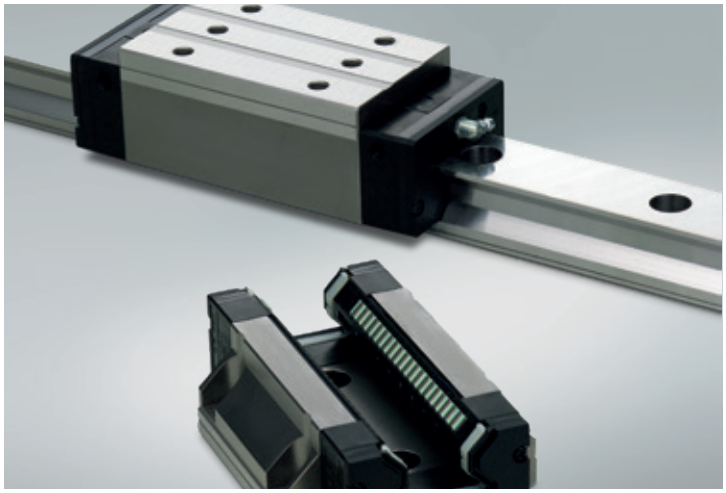
INJECTION MOULDING

The perfect interaction of precision and speed determines the success of a modern injection moulding machine. Where high temperatures and extreme pressure are daily conditions, precision is the guarantee for high-quality production. NSK Linear Motion Control allows you to boost the performance of your machines – without compromising quality. Thanks to our ball screw technology, you can noticeably improve the reliability, precision and efficiency of your electrical injection moulding machine compared to hydraulic drive systems.



BALL SCREWS

- More energy-saving, more efficient and cleaner than hydraulic drive systems due to high-performance seal
- High positioning accuracy
- Long product life thanks to high-quality materials
- Constant load distribution across the entire nut length
- Diverse application options thanks to maximum static capacity ratings and rotating speeds



LINEAR GUIDES

- Low-friction movement under heavy loads
- High load carrying capacity and rigidity even with changing loads
- Ideal with K1 long-term lubrication units for low-maintenance operation
- From especially economic standard components through to custom solutions



SUPPORT BEARINGS

- Compact construction according to DIN and ISO standards
- NSKHPS series enables high load carrying capacity
- Wide variety from angular contact ball bearings to roller bearings
- Pre-arranged and freely combinable universal bearings available

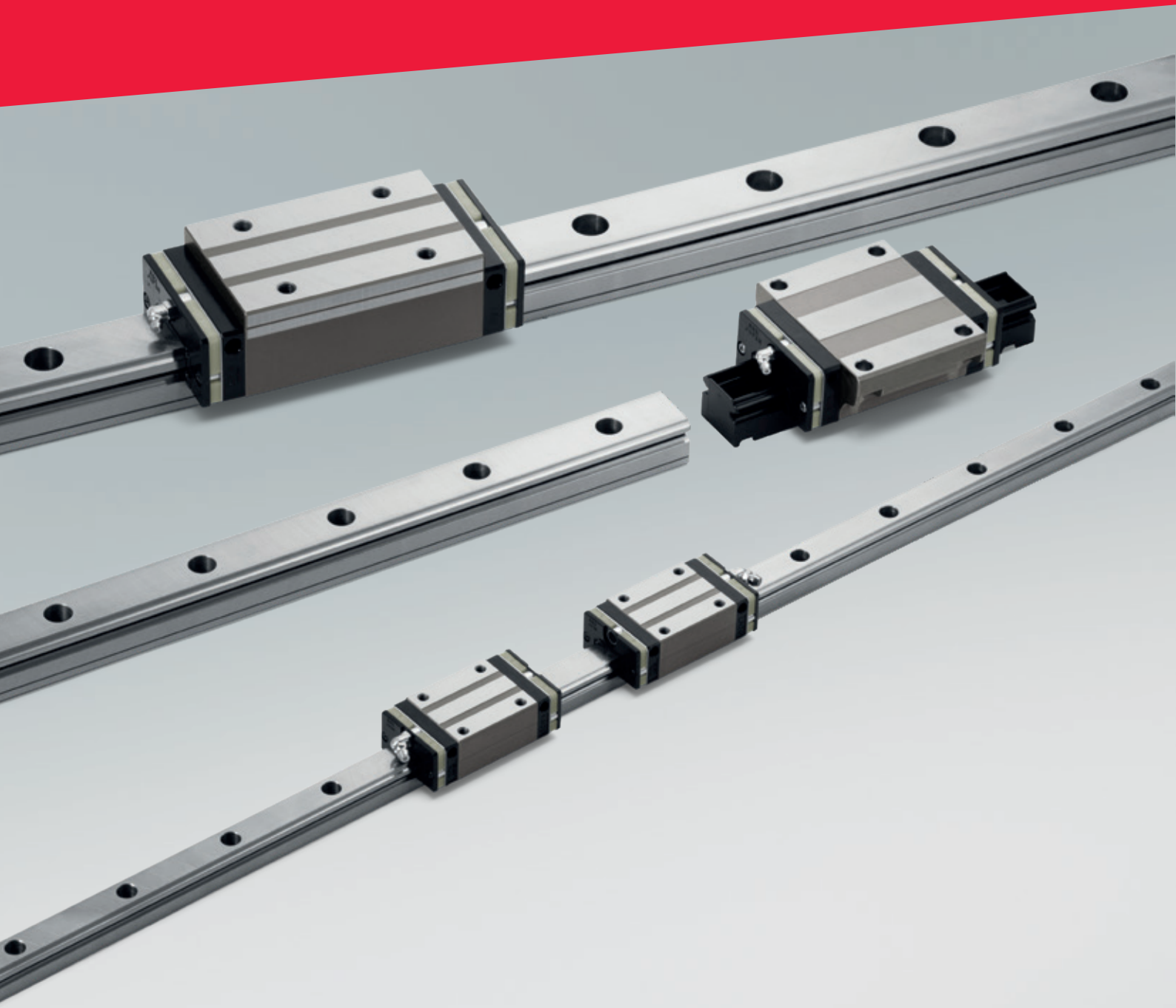


LUBRICATION UNIT K1

- Ensures long-term maintenance-free operation
- Long service life of components
- Applicable to all linear guides and almost all ball screw models

MEASURING MACHINES

Highly precise measurements with zero error tolerance are indispensable for systematic quality assurance. Where the tiniest errors may lead to enormous follow-up costs and production losses, utmost reliability in measurement technology is a must. With NSK Linear Motion Control – rotating or linear motion – your measuring machines are equipped with the highest-quality components all from one manufacturer. Properties such as high-speed running, low noise, absolute precision and accuracy are guaranteed in order to avoid production failures in advance.



LINEAR GUIDES

- High speed and positioning accuracy
- Smooth, zero-clearance movement and long product life
- High rigidity in all directions
- Modular system for the ideal combination of components as required



BALL SCREWS

- High running smoothness
- Minimal dynamic torque variation
- Large product range, from miniature to special ball screws
- High reliability and precision



SUPER PRECISION BEARINGS

- For special demands on running accuracy
- Minimal friction and low heat generation
- Long life thanks to the use of high-quality materials
- High precision and running accuracy



SUPPORT BEARINGS

- Specifically developed for the requirements of ball screws
- High precision and rigidity thanks to 60° contact angle
- Multiple-stage sealing system to shield against particle ingress plus good grease retention capacity with low friction and heat generation
- Easy assembly thanks to predefined preloading and direct flange connection (BSF series) to the surrounding components including installation-ready delivery

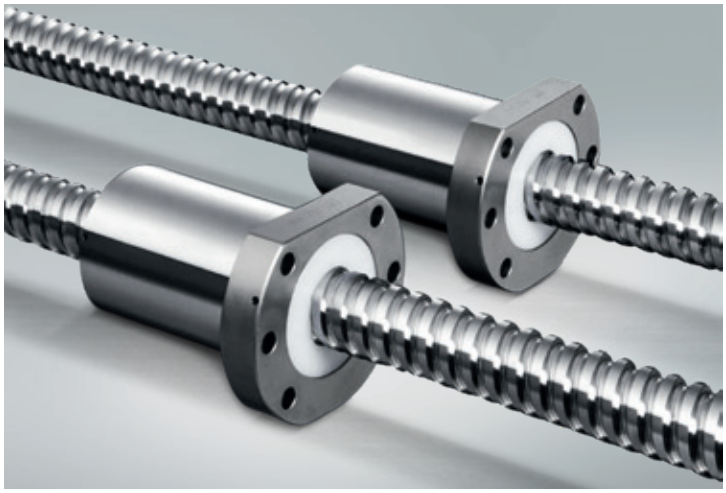
MEDICAL DEVICES

Wherever modern healthcare and medical technology are employed, high precision has become an indispensable factor. Reliability on the one hand and economical considerations on the other determine the needs of today's healthcare sector. The combination of efficiency and adequate care calls for equipment which ensures safety, speedy and uninterrupted diagnosing and treatment. With NSK Linear Motion Control you always get the ideal product for your medical equipment. Whether with rotating or linear motion for use in clean rooms or in everyday practice, NSK offers all the necessary components from one source.



LINEAR GUIDES

- From particularly economical standard components through to specially developed solutions
- Long life thanks to quality components
- Smooth running behaviour and high precision
- Maximum variety with extraordinary performance values in combination with utmost precision and extremely high load capacity ratings
- Ideal with long-term K1 lubrication unit for maintenance-free operation



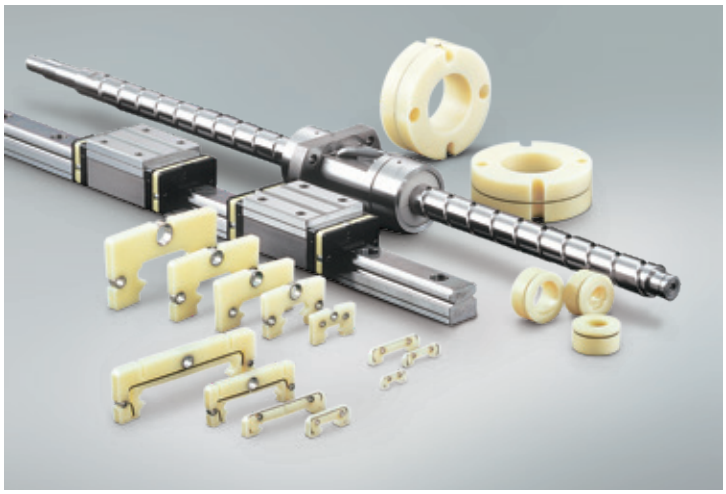
BALL SCREWS

- High operational reliability
- Extra durable and economical
- From standard components through to special ball screws for custom specific applications
- Customised lubricating options as well as maintenance-free, long-term K1 lubrication unit available



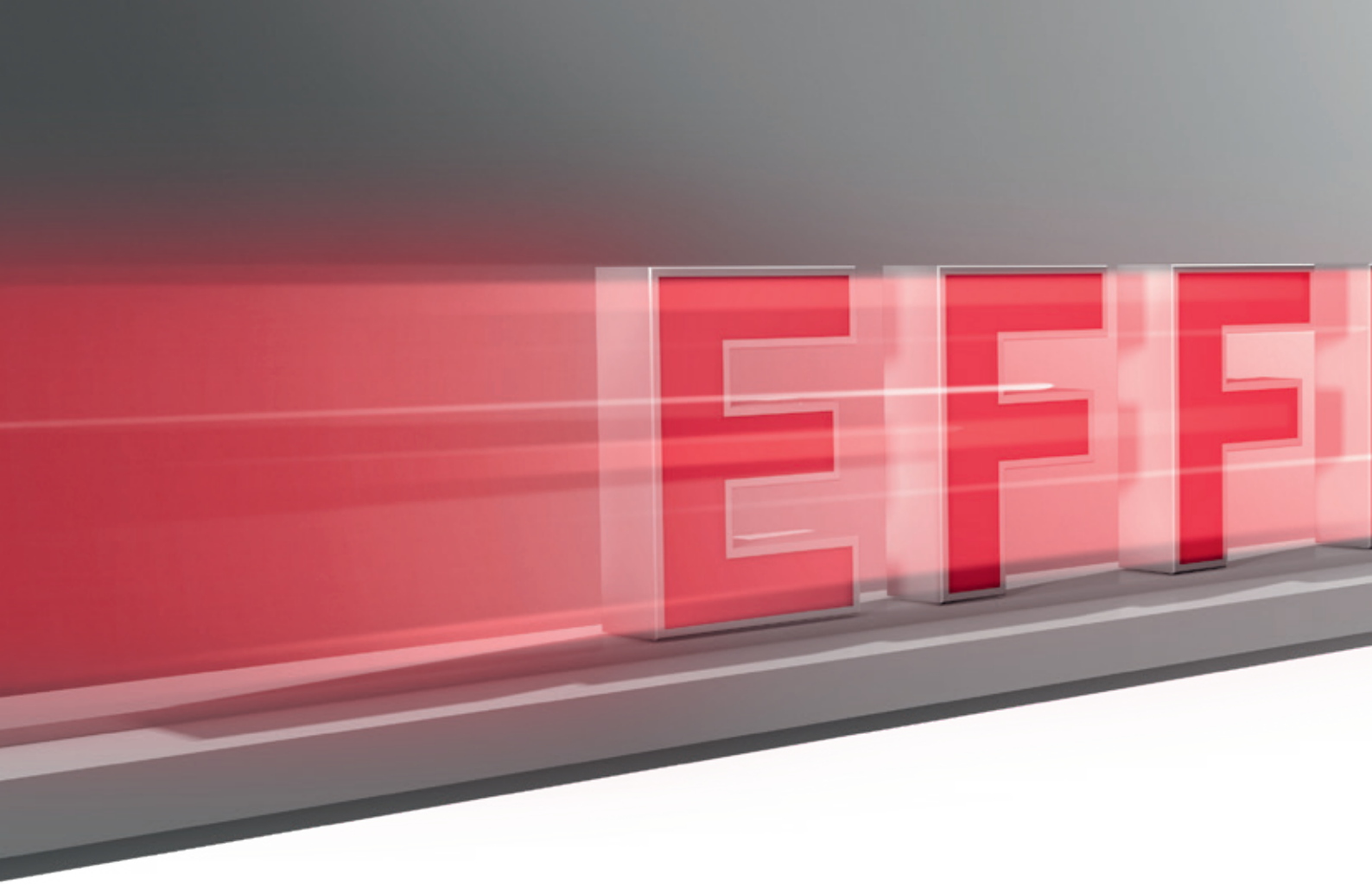
SUPPORT BEARINGS

- Specially developed for the requirements of ball screws
- High precision and rigidity thanks to 60° contact angle
- Multiple-stage sealing system to shield against particle ingress plus good grease retention capacity with low friction and heat generation
- Easy assembly thanks to predefined preloading and direct flange connection (BSF series) to the surrounding components including installation-ready delivery



SPACEA SERIES

- Specifically developed for extreme and particular environments such as clean rooms, vacuums, high temperatures
- Developed and produced according to individual customer requests
- Broad experience due to other special applications
- Special selection of materials available (non-magnetic, corrosion- and acid-resistant, grease-free etc.)



NSK SUPPORT – CUSTOMISED BENEFITS

For your customised rotating or linear solutions with NSK you can rely on the optimum interaction of a wide spectrum of products and a range of engineering and other added value services. To do so, we work closely with you as a partner and provide detailed industry expertise, intensive project management and comprehensive support, such as technical calculations, analysis and training. We aim to offer you the ideal motion solution anytime to give you a crucial step ahead among the market.

» ENGINEERING

» SERVICES



RESEARCH & DEVELOPMENT



- Product design
- Component analysis
- Applications simulation
- Material technologies

PROJECT MANAGEMENT



- Detailed calculation tools for
  - Contact pressure at ball contact point
  - Fatigue life
  - Grease recommendations
  - Heat generation
  - Inertia
  - Load distribution
  - Noise and vibration analysis
  - Nut, shaft and system stiffness
  - Preload and torque specifications
- Lubrication and seal designs
- Test centre
- Project Management

AFTER SALES



- Global customer service
- Logistic concepts
- Training
- Failure analysis/troubleshooting

NSK SALES OFFICES
EUROPE, MIDDLE EAST AND AFRICA

France
NSK France S.A.S.
Quartier de l'Europe
2, rue Georges Guynemer
78283 Guyancourt Cedex
Tel. +33 (0) 1 30573939
info-fr@nsk.com
nsk.com/eu-fr/

Germany, Austria, Benelux
Switzerland, Nordic
NSK Deutschland GmbH
Harkortstraße 15
40880 Ratingen
Tel. +49 (0) 2102 4810
info-de@nsk.com
nsk.com/eu-de/

Italy
NSK Italia S.p.A.
Via Garibaldi, 215
20024 Garbagnate
Milanese (MI)
Tel. +39 02 995 191
info-it@nsk.com
nsk.com/eu-it/

Middle East
NSK Bearings Gulf Trading Co.
JAFZA View 19, Floor 24 Office 2/3
Jebel Ali Downtown,
PO Box 262163
Dubai, UAE
Tel. +971 (0) 4 804 8205
info-me@nsk.com
nsk.com/eu-en/

Poland & CEE
NSK Polska Sp. z o.o.
Warsaw Branch
Ul. Migdałowa 4/73
02-796 Warszawa
Tel. +48 22 645 15 25
info-pl@nsk.com
nsk.com/eu-pl/

Romania
NSK Europe Limited Maidenhead
- Sucursala Ploiesti
Bdul Republicii, 178
100072 Ploiesti
Tel. +40 344 803 210
info-ro@nsk.com
nsk.com/eu-en/

South Africa
NSK South Africa (Pty) Ltd.
25 Galaxy Avenue
Linbro Business Park
Sandton 2146
Tel. +27 (011) 458 3600
nsk-sa@nsk.com
nsk.com/eu-en/

Spain
NSK Spain, S.A.
C/ Via Augusta 85, planta 3 A
08174 Sant Cugat del Vallés
Tel. +34 646 313 506
info-es@nsk.com
nsk.com/eu-es/

Turkey
NSK Rulmanları Orta Doğu Tic. Ltd. Şti.
Cevizli Mah. D-100 Güney Yan Yol
Kuriş Kule İş Merkezi No:2 Kat:4
Kartal - Istanbul
Tel. +90 216 5000 675
turkey@nsk.com
nsk.com/eu-tr/

UK
NSK UK Ltd.
Northern Road, Newark
Nottinghamshire NG24 2JF
Tel. +44 (0) 1636 605123
info-uk@nsk.com
nsk.com/eu-en/

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