IKO BEARINGS

THE WORLD IN MOTION

www.rolman.com
IKO brand products by Nippon Thompson, which continue to win praise across a wide variety of industries, are developed and manufactured by people constantly pursuing Innovation, developing highly technological Know-how, and striving to turn out products overflowing with Originality. These words — Innovation, Know-how, and Originality — capture our company creed and are the inspiration for our brand name, IKO.

Nippon Thompson developed needle roller bearings first time in Japan in using its own technology, and used that advanced technology as a foundation for entering into the field of linear motion rolling guides (Linear Way Series and Mechatronics Series). Currently, we are supporting the development of technology with the first-of-its-kind C-Lube Maintenance Free Series and a rich array of other creative products that respond to diversifying customer needs.

NEEDLE ROLLER BEARINGS
Needle Roller Bearings are the essential elements of machines and equipment in a broad range of industries.

LINEAR MOTION ROLLING GUIDES
A broad line-up of Linear Motion rolling guides, from the extremely small to the very large in size. C-Lube helps to protect the global environment.

PRECISION POSITIONING TABLES
Integrated precision manufacturing technologies and electronics
(Except contact separately – not included in this brochure)

NEEDLE ROLLER BEARING SERIES
Needle roller bearings are rotational motion bearings in which a thin needle-shaped roller is incorporated into a rolling element. They have a low cross-section height and high load capacity compared with ball bearings. Being small, needle roller bearings contribute to reducing overall machine size, and are thus widely used in various applications such as automobiles, motorcycles, printing presses, industrial robots and construction equipment.

RADIAL TYPE
Shell Type Needle Roller Bearings
○ Caged type
○ Grease retained full complement type
○ These bearings have a structure in which the needle rollers are accurately guided by the cage and thrust rings. Used in applications with high-speed rotation. The full complement type is suitable for heavy-load applications with low-speed rotation. Since these bearings are press-fitted into the housing, no fixtures for axial positioning are needed. They are ideal for use in mass-produced articles that require economy, and have a wide variety of applications.

Needle Roller Cages for General Use
○ High carbon steel cage type
○ Synthetic resin cage type
○ When combined with shafts and housing bores that are heat treated and accurately ground as raceway surfaces, Needle Roller Cages for General Use are particularly useful in small spaces. In addition, since they are lightweight and have high rigidity as well as a large lubricant holding capacity, they can withstand severe operating conditions such as high speed rotation and shock load, and they are used in a wide range of applications.

NEEDLE ROLLER CAGES FOR SMALL END
○ Caged type
○ Grease retained full complement type
○ These cages are available in metric series and inch series, both of which have the caged type and the full complement type. It is therefore possible to select a suitable bearing for use under various conditions such as heavy loads and high-speed or low-speed rotations. In addition, there are bearings with and without an inner ring. As the type without inner ring uses a shaft as the raceway surface, a compact design is possible.

NEEDLE ROLLER CAGES FOR ENGINE CONNECTING RODS
○ Needle Roller Cages for Big End
○ Needle Roller Cages for Small End
○ These bearings have superior performance proven in high performance engines of racing motor cycles, and are widely used in small motor vehicles, motor cycles, outboard marines, snow mobiles, high-speed compressors, etc. and also in general-purpose engines. Bearings for engine connecting rods are used under extremely severe and complex operation conditions such as heavy shock loads, high speeds, high temperatures and stringent lubrication.

COMBINED TYPE
Combined Type Needle Roller Bearings
○ Combined with Thrust Ball Bearings
○ Combined with Angular Contact Ball Bearings
○ Combined with Thrust Roller Bearings
○ Combined with Angular Contact Ball Bearings
○ These bearings are used when the load capacity of a single bearing is insufficient. It is particularly possible - eccentricity is 0.25 mm or less. It is suitable for applications such as pallet changer.

Cam Followers for Centralised Piping
○ Since cam follower is fixed to the stud, positioning in the radial direction against the opposing track surface can be conducted easily.
○ The amount of eccentricity is 0.4 mm - 1.5 mm.

C-Lube Cam Followers CF - FHG
○ This is a cam follower in which thermo-hardening type solid lubricant (C-Lube) is filled in the bearing space. C-Lube is a lubricant made by solidifying lots of lubrication oil and fine particles of high molecular polyolamide resin by thermal treatment, and suitable amount of this lubricant will seep out continuously to the track surface by the rotation of the bearing, and the lubricating performance of the bearings is maintained for a long period of time.

NEEDLE ROLLER BEARINGS
ROLLER BEARINGS

MINIATURE CAM FOLLOWERS
○ This is a miniature cam follower to which a thrust washer made of special synthetic resin is built into. It receives the axial load of the outer ring generated by the attachment errors. It is effective in preventing wear and friction of the sliding surface.

HEAVY DUTY TYPE CAM FOLLOWERS NUCF
○ This is a full complement roller bearing that has double row cylindrical rollers built into the outer ring. It is able to receive large radial load and a certain amount of axial load.

C-LUBE UNIT FOR CAM FOLLOWERS CL
○ New Concept! Track Surface is also made Maintenance-Free!!

ROLLER FOLLOWERS
○ Separable Roller Followers
○ Non-separable Roller Followers (High carbon steel, stainless steel)
○ Heavy Duty Type Roller Followers
○ Both crowned and cylindrical outer rings are available
○ Two types available - the caged type and the full complement type.
○ They are used widely for cam mechanisms and for linear motions of conveying equipment.

C-LUBE ROLLER FOLLOWERS NART ... JSG
○ These Roller Followers are lubricated with a thermosetting solid-type lubricant (C-Lube) which fills the inner space of the bearing.
○ They are extremely suitable for equipment or machinery, and small index equipment can be put to effective use.

C-LUBE ROLLER FOLLOWERS
○ Roller Followers
○ Separable Roller Followers
○ Separable Roller Followers (High carbon steel, stainless steel)
○ Non-separable Roller Followers
○ Heavy Duty Type Roller Followers
○ Both crowned and cylindrical outer rings are available
○ Two types available - the caged type and the full complement type.
○ They are used widely for cam mechanisms and for linear motions of conveying equipment.

C-Lube Unit for Cam Followers CL
○ New Concept! Track Surface is also made Maintenance-Free!!

SPHERICAL BUSHINGS
○ Steel-on-steel Spherical Bushings
○ Maintenance-free Spherical Bushings
○ Steel-on-steel Spherical Bushings
○ Crossed Roller Bearing is a bearing having cylindrical rollers disposed perpendicularly between inner and outer rings.

PILLO BALLS & L-BALLS
○ PILLOBALL Rod Ends have either male thread on the body, and a spherical inner ring of stainless steel, chrome, or special PTFE mesh on the sliding surface, and a spherical outer ring of which sliding surface has a hard chromium plating. Creep deformation due to compressive load is small, and wear resistance is superior.

NEEDLE ROLLER BEARINGS
○ CRBHTV is manufactured at a dedicated site and achieves cost reductions and shortened lead times from manufacture to delivery through revision of our Crossed Roller Bearing design and manufacturing processes to be a Crossed Roller Bearing boasting excellent cost performance. This product can contribute to equipment cost reductions or shorter delivery.

SLIM & SUPER SLIM TYPE CROSSED ROLLER BEARINGS CRSB & CRBT
○ CRBT are extremely compact bearings having cylindrical rollers disposed perpendicularly between inner and outer rings.

High Rigidity Type Crossed Roller Bearings
○ Both the inner ring and the outer ring have integrated structure (inseparable), and attachment holes are made to the inner ring and outer ring so attachment can be made easily. Furthermore, it is not easily affected by surrounding structures such as housing and pressure plate, therefore, a high rigidity and high accuracy rotation are realized.

Crossed Roller Bearings are realized.
C-Lube Roller Followers are Roller Followers with needle rollers incorporated in thick outer rings, designed for rotation of the outer ring. They are a maintenance-free product with bearing inner space filled with C-Lube, an IKO original thermosetting solid-type lubricant.

Capillary Lubricating Body
IKO C-Lube Unit for Cam Follower is a lubricating part attached to the cam follower. Since lubricating oil which is indispensable to the outside diameter surface of the cam follower outer ring and track surface is supplied, periodic oil supplying is not required. It realizes a long period maintenance free operation of the track surface.

C-Lube Unit
○ Reduced use of lubrication oil. Because regular lubrication is no longer required, the amount of lubrication oil used can be reduced. This allows the reduction of oiling work as well.
○ Ideal for applications where oil is undesirable. Because the lubrication oil is retained within the bearing inner space, there is no oil leakage and no contamination of the surroundings with oil splashes.
○ Reduced lubrication equipment cost. Because lubrication equipment is no longer required, equipment design and maintenance costs do not arise. As well, the space formerly occupied by lubrication equipment can be put to effective use.

Features
1. C-Lube Roller Followers are Roller Followers with needle rollers built into the outer ring, it is able to receive large radial load and a certain amount of axial load.

C-Lube Unit for Cam Followers
○ Non-separable Roller Followers
○ Heavy Duty Type Roller Followers
○ Both crowned and cylindrical outer rings are available
○ Two types available - the caged type and the full complement type.
○ They are widely used for cam mechanisms and for linear motions of conveying equipment.

C-Lube Roller Followers NART ... JSG
○ These Roller Followers are lubricated with a thermosetting solid-type lubricant (C-Lube) which fills the inner space of the bearing.
○ C-Lube is lubricant made of a lot of lubrication oil and fine particles of high molecular polypropylene that are melted by heat treatment, which oozes out onto the raceway in proper quantities as the bearing rotates, maintaining the lubrication performance.

MOUNTING HOLE TYPE HIGH RIGIDITY CROSSED ROLLER BEARINGS
○ Both the inner ring and the outer ring are made into an integrated structure (inseparable), and attachment errors hardly occur. It boasts high accuracy and high rigidity. Furthermore, since separators are built between the rollers, the revolution is smooth and it is also suitable for places where the revolution speed is comparatively high.

CROSSED ROLLER BEARINGS
○ Crossed Roller Bearings are bearings having cylindrical rollers disposed perpendicularly between inner and outer rings.

CRBT are extremely compact bearings having cylindrical rollers disposed perpendicularly between inner and outer rings.

By using cylindrical rollers whose elastic displacement due to load is smaller than steel balls, this type of crossed roller bearing can make the device compact and highly rigid comparing to ball bearings or taper roller bearings and the combination of ball bearings.

These bearings are widely used in the rotating parts of industrial robots, optical apparatus and medical equipment, etc., which contribute compactness and lightness.
The Linear Motion Rolling Guide Series is a range of machine parts that are indispensable for reducing linear motion friction in the positioning mechanisms of machinery. We supply a large range of products including the linear way and linear roller way rail guiding systems, and a ball spline-based shaft guiding system. Available sizes range from the world’s smallest track rail at just 1 mm wide, to a very large version which provides high rigidity and high-load capacity. The Linear Motion Rolling Guide Series is widely used in various fields ranging from the most advanced semiconductor manufacturing devices to large machine tools or construction equipment.

**Linear Motion Rolling Guides**

- **Roller Type Linear Motion Rolling Guides**
  - IKO original C-Lube technology provides high performance roller type linear motion rolling guide which achieves high rigidity and high-load capacity, despite its extra low profile and light weight. It realizes long term maintenance free as the slide unit has a built-in lubrication part C-Lube.
  - Linear Way MLML/MLF is a compact type linear motion rolling guide incorporating built-in lubricating parts, C-Lubes, in Linear Way ML. Long term maintenance free can be achieved.
  - Linear Way LWL/LWLF is a miniature type linear motion rolling guide incorporating two rows of large diameter steel balls arranged in four point contact with the raceways. Two rows of steel balls are arranged in four point contact with the raceways, so stable high accuracy and rigidity can be obtained in operations even under fluctuating loads with changing direction and magnitude or complex loads. A wide range of variations in shapes and sizes are available in this series. This is a compact type suitable for general applications.

- **Ball Type Linear Motion Rolling Guides**
  - Linear Way MV/MV is a high rigidity type linear motion rolling guide incorporating built-in lubricating parts, C-Lubes, in Linear Way ML. Long term maintenance free can be achieved.
  - Linear Way MLV is a high rigidity type linear motion rolling guide featuring two rows of large diameter steel balls arranged in four point contact with the raceways. Two rows of steel balls are arranged in four point contact with the raceways, so stable high accuracy and rigidity can be obtained in operations even under fluctuating loads with changing direction and magnitude or complex loads. A wide range of variations in shapes and sizes are available in this series. This is a compact type suitable for general applications.

- **Ball Spline**
  - Linear Ball Spline G is a compact linear motion rolling guide which achieves endless linear motion of an external cylinder along a spline shaft. With IKO original C-Lube technology, its performance makes the product different from others, providing superior cost performance for your machines. Maintenance free for 20,000 km or 5 years minimizes the amount of lubricant required and contributes to the global environmental protection.

**Linear Way LW**

- Linear Way LW incorporates two rows of large diameter steel balls in four point contact with the raceways and provides stable high accuracy and rigidity in operations even under fluctuating loads with changing direction and magnitude or complex loads.

- Linear Way LWH incorporates two rows of large diameter steel balls in four point contact with the raceways and provides stable high accuracy and rigidity in operations even under fluctuating loads with changing direction and magnitude or complex loads.

- Linear Way LWVH incorporates two rows of large diameter steel balls in four point contact with the raceways and provides stable high accuracy and rigidity in operations even under fluctuating loads with changing direction and magnitude or complex loads.

- Linear Way LW-ML/MML is a linear motion rolling guide incorporating built-in lubricating parts, C-Lubes, in Linear Way ML. Long term maintenance free can be achieved.

- Linear Way LW-MLV is a linear motion rolling guide incorporating built-in lubricating parts, C-Lubes, in Linear Way MLV. Long term maintenance free can be achieved.

- Linear Way LW-MH incorporates two rows of large diameter steel balls arranged in four point contact with the raceways, so stable high accuracy and rigidity can be obtained in operations even under fluctuating loads with changing direction and magnitude or complex loads. A wide range of variations in shapes and sizes are available in this series.

- Linear Way LW-VH is a linear motion rolling guide featuring a compact slide unit which performs endless linear motion along a track rail. Two rows of steel balls are arranged in four point contact with the raceways. This design ensures stable high accuracy and rigidity in operations even under fluctuating loads with changing direction and magnitude or complex loads. A wide range of variations in shapes and sizes are available in this series.

- Linear Way LW-MLVH incorporates two rows of large diameter steel balls in four point contact with the raceways and provides stable high accuracy and rigidity in operations even under fluctuating loads with changing direction and magnitude or complex loads.

www.rolman.com
The Precision Positioning Table Series has been created through a combination of precision machining technology and electronics. The result is a precision positioning table which consists of a direct-acting series, along with a ball screw or motor, incorporated between a bed and a slide table. The series ranges widely, from a module type table to a high-precision version. The Precision Positioning Table Series is used as the positioning mechanism for a variety of applications, from semiconductor manufacturing equipment or flat panel display manufacturing equipment, to precision equipment. Using this positioning table or electrical equipment for your control needs contributes to an overall reduction in the man-hours required for design and assembly.
Self-Lubrication for a Maintenance-Free Life

In the productivity-driven packaging industry, there are many possible sources of downtime. You can eliminate many of them by selecting failure-resistant linear motion components.

Despite the best of intentions, inconsistent, inadequate lubrication happens. And it’s one of the main causes of premature linear guide failure, which can bring packaging lines to a dead stop.

What’s more, the use of lubricants can be problematic in packaging applications, particularly in machines that come in direct contact with the packaged products. So it’s especially important to consider linear motion products that offer some sort of internal lubrication mechanism.

The C-Lube lubrication technology meets the twin goals of (1) the longest possible maintenance-free intervals, and (2) a compact design that adds as little as possible to the size of the bearing’s mechanical package. Offer- ing maintenance intervals of 20,000 km of operation, C-Lube integrates oil-impregnated lubricating elements entirely within the slider housing.

Packaging applications are highly sensitive to contamination. In large part, that sensitivity has to do with integrity of the packaged product, but it also has implications for productivity. With their fast line speeds, packaging lines can be brought to a halt if contaminants make their way into linear guides and contaminates of various kinds—such as cardboard particles—are all too common in packaging plants.

To keep contaminants at bay, you may sometimes need linear guides with sealing capabilities. Our C-Wiper offers the ultimate in protection against foreign matter and is available on many guides suitable for packaging applications. C-Wiper is a unique innovation, consisting of an oil impregnated rubber wiper that seals off the complete surface of the track rail, providing an excellent dust-proof protection against fine foreign matter. In addition, it incorporates scrapers and durable elastomer wiper on the ends and undersides of the slider.

Self-lubricating technologies also play an important role in preventing contamination—the less lubricant that needs to be applied to keep linear axes running smoothly, the less chance stray oil will make its way onto products or packages.

Clearance-Type Bearings can Help

Preloading linear bearings is common in applications that require maximum accuracy, precision and stiffness from every linear motion axis. Packaging machines, however, often have requirements that are easily met by clearance-type guides and motion stages.

With some clearance between the rail and rolling elements, guides will need less linear forces to move the slider at a given speed, which is a nice benefit when it comes to fast-moving packaging machines. The accuracy and precision trade-off will be negligible in most packaging applications. Many of our linear guides run with a pre-load for use in high-precision applications, but we do offer clearance-type linear motion devices.

Selecting linear bearings that self-lubricate, fight contamination and offer some clearance won’t solve all your downtime problems. But they will solve some of them by keeping your linear motion axes running smoothly for the long haul.

Reliable linear guides and positioning tables for fast, precise movement

Thanks to our C-Lube self-lubrication technology, our positioning tables and linear guides operate maintenance-free in automation applications. Our positioning table offerings also include high-load versions based on linear rails.

Technical Features

- Stainless steel and carbon steel
- C-lube self-lube technology
- Corrosion resistant surface treatments including black chrome
- C-wiper to protect from dust, metal chips and cutting fluid
- C-lube self-lube technology

Application Examples

- Machining centres
- CNC lathes
- Grinding machines
- Lens polishing machines

Reliable linear guides and positioning tables for fast, precise movement

Thanks to our C-Lube self-lubrication technology, our positioning tables and linear guides operate maintenance-free in automation applications. Our positioning table offerings also include high-load versions based on linear rails.

Technical Features

- Stainless steel and carbon steel
- C-lube self-lube technology
- Corrosion resistant surface treatments including black chrome
- C-wiper to protect from dust, metal chips and cutting fluid
- C-lube self-lube technology

Application Examples

- Blood testing, Lab automation, Detection instruments, Rodless cylinders, Imaging readers, Lab diagnostics, Medical imaging, Surgical robots
- Blood testing, Lab automation, Detection instruments, Rodless cylinders, Imaging readers, Lab diagnostics, Medical imaging, Surgical robots

Reliable linear guides and positioning tables for fast, precise movement

Thanks to our C-Lube self-lubrication technology, our positioning tables and linear guides operate maintenance-free in automation applications. Our positioning table offerings also include high-load versions based on linear rails.

Technical Features

- Stainless steel and carbon steel
- C-lube self-lube technology
- Corrosion resistant surface treatments including black chrome
- C-wiper to protect from dust, metal chips and cutting fluid
- C-lube self-lube technology

Application Examples

- Blood testing, Lab automation, Detection instruments, Rodless cylinders, Imaging readers, Lab diagnostics, Medical imaging, Surgical robots

Reliable linear guides and positioning tables for fast, precise movement

Thanks to our C-Lube self-lubrication technology, our positioning tables and linear guides operate maintenance-free in automation applications. Our positioning table offerings also include high-load versions based on linear rails.

Technical Features

- Stainless steel and carbon steel
- C-lube self-lube technology
- Corrosion resistant surface treatments including black chrome
- C-wiper to protect from dust, metal chips and cutting fluid
- C-lube self-lube technology

Application Examples

- Blood testing, Lab automation, Detection instruments, Rodless cylinders, Imaging readers, Lab diagnostics, Medical imaging, Surgical robots

Reliable linear guides and positioning tables for fast, precise movement

Thanks to our C-Lube self-lubrication technology, our positioning tables and linear guides operate maintenance-free in automation applications. Our positioning table offerings also include high-load versions based on linear rails.

Technical Features

- Stainless steel and carbon steel
- C-lube self-lube technology
- Corrosion resistant surface treatments including black chrome
- C-wiper to protect from dust, metal chips and cutting fluid
- C-lube self-lube technology

Application Examples

- Blood testing, Lab automation, Detection instruments, Rodless cylinders, Imaging readers, Lab diagnostics, Medical imaging, Surgical robots
ROLMAN WORLD
P.O.Box: 261069
Jebel Ali, Dubai
United Arab Emirates
Tel: +971 4 887 3700
Fax: +971 4 887 3701
sales@rolman.com

ROLMAN WORLD
P.O.Box: 40412
SYS 019 Sayer Building
Barwa Commercial Avenue
Industrial Area
Doha, Qatar
Tel: +974 4005 2450
Fax: +974 4001 6423
sales-qatar@rolman.com

BEARING WORLD CO.
Al Sinak
Baghdad, Iraq
Tel: +964 1 816 7427
hadinskiraq@gmail.com

BEARING WORLD & TRADE CO.
P.O.Box: 330480
389 Prince Hassan St.
Al Quesmeh, Amman, Jordan
Tel: +962 6 477 1115
Fax: +962 6 477 1113
yousef@bearingworldjo.com

BEARING WORKS TRADING CO.
P.O.Box: 255530
Owaidha Industrial Area,
Riyadh – 11353
Kingdom of Saudi Arabia
Tel: +966 11 213 5235
Fax: +966 11 213 6161
sales@bw-saudi.com

INTERNATIONAL BEARING HOUSE CO.
P.O.Box: 41583
Bab Makkah, Al Zahid Building
Jeddah – 21531
Kingdom of Saudi Arabia
Tel: +966 12 642 9620
Fax: +966 12 645 8113
sales@ibh-saudi.com

ROULEMENT MONDIAL
Boulevard Des Armes
Treichville, 06 BP 758 Abidjan 06
Cote d’Ivoire
Tel: +225 2124 6645 / 6650
sales-clv@rolman.com

ROULEMENT MONDIAL SARL
New Hankach Street,
Baouchriye, Dora,
Beirut, Lebanon
Tel: +961 76 994 811 / 76 580 757
sales-lb@rolman.com

ROULEMENT MONDIALE
TUNISIA
Zone industrielle Mégrine, Saint Gebain
Lot N°10, Tunisia
Tel : +216 79 297 602 / 603
Fax : +216 79 297 604
sales-tn@rolman.com

www.rolman.com