



products are available from: **MARYLAND METRICS**

phones: (410)358-3130 (800)638-1830 faxes: (410)358-3142 (800)872-9329

P.O.Box 261 Owings Mills, MD 21117 USA URL: <http://mdmetric.com> E-mail: sales@mdmetric.com

For special environment **Stainless Linear Motion Rolling Guide series**

CAT-5932

Flexibly applicable for various environments!



STAINL

Abundant types and variations for all needs

2000 mm stainless steel track rails are realized by vacuum heat treatment!



ESS

*Excellent
corrosion resistance!*

IKO

**Stainless Linear Motion
Rolling Guide series**

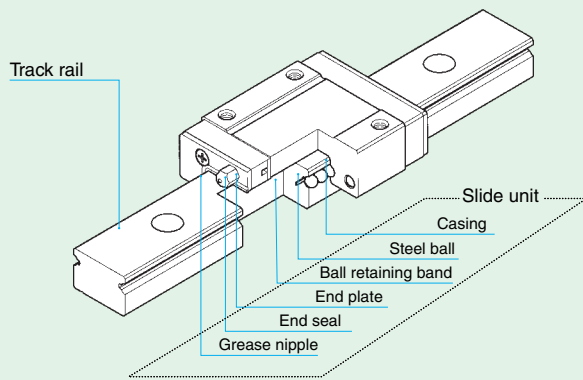


Stainless Linear Motion Rolling Guide

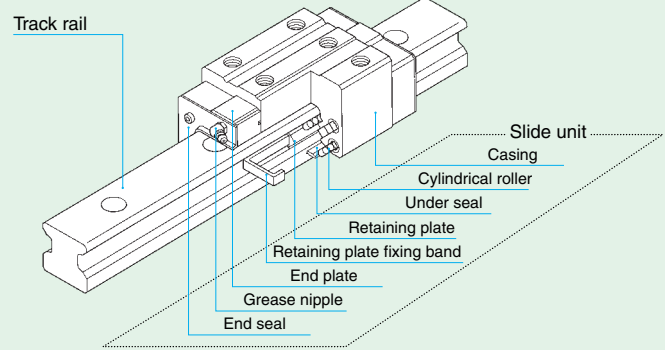
IKO Stainless Linear Motion Rolling Guide series is a series consisting of linear motion rolling guides in which stainless steel is used for the casing, track rail, steel balls and other steel components. The products of this series are more resistant to corrosion than the high carbon steel products and are most suitable for applications where the use of oil or grease (including rust preventive oil) should be avoided or kept to a minimum, or in an environment where water splashes. Stainless Linear Motion Rolling Guide series is widely used as a high performance linear motion rolling guide in machines and equipment operated in clean rooms and clean environments, such as medical equipment and semiconductor manufacturing equipment.

Abundant type and size variations !

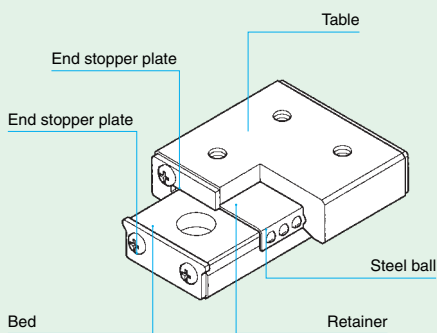
Stainless Linear Motion Rolling Guide series includes various types such as the rail guide type, shaft guide type, endless linear motion type, and limited linear motion type. Many sizes are prepared in each of these types for selection most suitable for each application in the diversified fields.



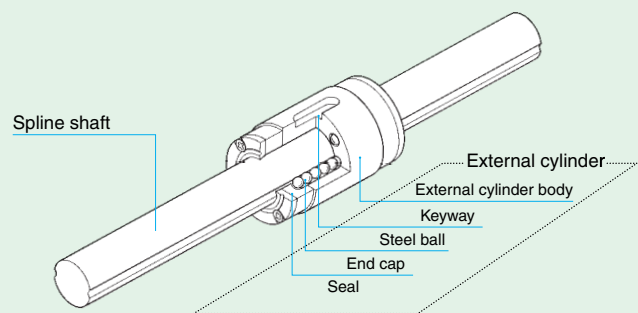
Linear Way L



Linear Roller Way Super X



High Rigidity Precision Linear Slide Unit



Linear Ball Spline G
(Spline Shaft in stainless steel)

Structure of Stainless Linear Motion Rolling Guide series (Typical Examples)

Although all data in this catalog has been carefully compiled to make the information as complete as possible, NIPPON THOMPSON CO., LTD. shall not be liable for any damages whatsoever, direct or indirect, based upon any information in this catalog. NIPPON THOMPSON CO., LTD. makes no warranty, either express or implied, including the implied warranty of merchantability or fitness for a particular purpose.

series is flexibly applicable for use in various environments.

Track rails with a maximum length of 2000 mm (*) are available!

The maximum length of stainless steel track rails is now extended to 2000 mm (*). A single track rail can be used for applications involving long strokes, for which butt-jointing track rails have been used.

*: The maximum length of track rails of Stainless Linear Motion Rolling Guide series differs depending on the types and sizes.

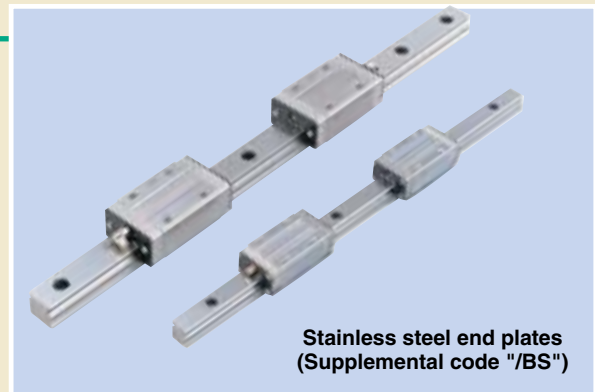
Various needs in special environments can be met by applying special specifications!

Many special specifications for special environment are applicable to Stainless Linear Motion Rolling Guide series. Needs in various operating environments can be met by combining these special specifications.

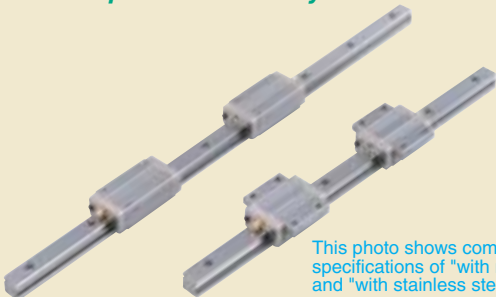
Stainless steel end plates

When the standard synthetic resin end plates are replaced with stainless steel end plates (supplemental code "/BS"), Linear Motion Rolling Guide can be used in a high vacuum environment. Higher heat resistance can also be achieved. Apply this specification in combination with the specification "with no end seals" (supplemental code "/N") or the specification "with seals for special environment" (supplemental code "/RE").

It is recommended to replace the standard grease with vacuum grease or high temperature grease.

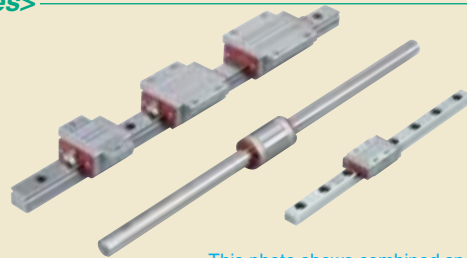


<Examples of assembly with stainless steel end plates>



This photo shows combined specifications of "with no end seals" (/N) and "with stainless steel end plates" (/BS).

No end seal (Supplemental code "/N")

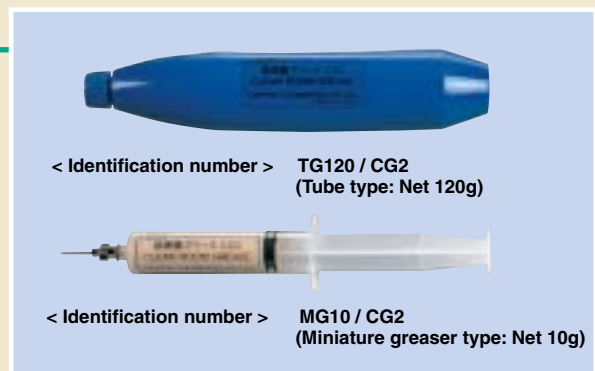


This photo shows combined specifications of "with seals for special environment" (/RE) and "with stainless steel end plates" (/BS).

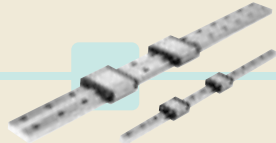
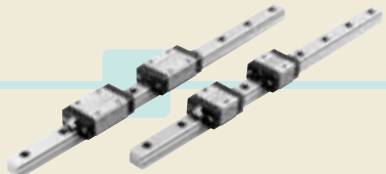
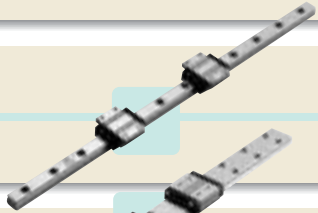

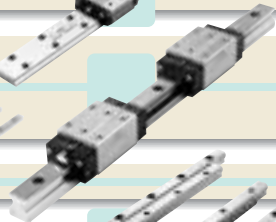
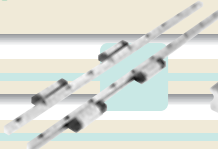
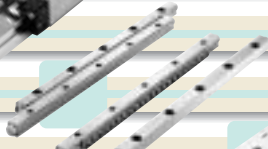

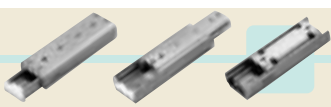
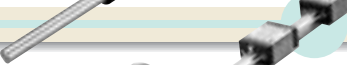


Seal for special environment (Supplemental code "/RE")

IKO Clean Environment Grease CG2

When Linear Motion Rolling Guide is used in a clean environment, pollution due to spattering of grease must be avoided. IKO Clean Environment Grease CG2 is a low dust generating grease consisting of a urea type thickener and synthetic base oil and keeps environmental pollution in clean rooms to a minimum. The slide unit can be supplied with pre-packed grease (supplemental code "/YCG").



Line-up and size variations of Stainless Linear Motion

Guide type	Series
Rail guide type	Interchangeable Linear Way L 
	Interchangeable Linear Way E 
	Interchangeable Linear Way H 
	Interchangeable Linear Way F 
	Interchangeable Linear Roller Way Super X 
	Linear Way LM 
	Crossed Roller Way 
	High Rigidity Precision Linear Slide Unit 
	Precision Linear Slide 
	Shaft guide type
Interchangeable Block type Linear Ball Spline 	
Linear Bushing 	
Miniature Linear Bushing 	

Note (1) : For the size 2, 3, 4, and 6 models, "B" is not attached to their model codes.

(2) : The size 8, 10, and 12 models can also be mounted from the lower side.

(3) : Interchangeable indicates that the series includes interchangeable specification models, of which slide units and track rails (spline shafts) are handled separately and can be combined as required.

Rolling Guide series

Shape	Model code	Length of slide unit (external cylinder)	Size													
			—	3	5	7	9	12	15	20	25					
Standard type	LWLC ...B ⁽¹⁾	Short	—	3	5	7	9	12	15	20	25					
	LWL ...B ⁽¹⁾	Standard	2	3	5	7	9	12	15	20	25					
	LWLG ...B	High rigidity long	—	—	—	7	9	12	15	20	25					
Wide rail type	LWLFC ...B ⁽¹⁾	Short	—	6	10	14	18	24	30	42						
	LWLF ...B ⁽¹⁾	Standard	4	6	10	14	18	24	30	42						
	LWLFG ...B	High rigidity long	—	—	—	14	18	24	30	42						
Flange type mounted from the lower side	LWEC ...SL	Short	15	20	25	30										
	LWE ...SL	Standard	15	20	25	30										
	LWEG ...SL	High rigidity long	15	20	25	30										
Flange type mounted from the upper side	LWETC ...SL	Short	15	20	25	30										
	LWET ...SL	Standard	15	20	25	30										
	LWETG ...SL	High rigidity long	15	20	25	30										
Block type mounted from the upper side	LWESC ...SL	Short	15	20	25	30										
	LWES ...SL	Standard	15	20	25	30										
	LWESG ...SL	High rigidity long	15	20	25	30										
Flange type mounted from the lower side	LWH ...SL	Standard	—	—	—	15	20	25	30							
Flange type mounted from the upper side ⁽²⁾	LWHT ...SL	Standard	8	10	12	15	20	25	30							
Block type mounted from the upper side	LWHD ...SL	Standard	8	10	12	—	—	—	—							
Compact block type mounted from the upper side	LWHS ...SL	Standard	—	—	—	15	20	25	30							
Block type mounted from the upper side	LWFS ...SL		33	37	42											
Block type mounted from the upper side	LRXDC ...SL	Short	12	15	20	25										
	LRXD ...SL	Standard	12	15	20	25										
	LRXDG ...SL	High rigidity long	12	15	20	25										
	LWLM		7	9	11											
	CRW ...SL		1	2	3	4	6									
	BWU		8	12	17	25	30	40	60							
Limited linear motion type	BSP ...SL		7	10	—	15	20	25								
Built-in rack & pinion type	BSPG ...SL		—	—	12	15	20	25								
Endless linear motion type	BSR ...SL		—	—	—	15	20	25								
	LSAG .../S (Spline shaft in stainless steel)		5	6	8	10	12	15	20	25	30					
	LSB ...SL		6	8	10											
	LM ...F		—	6	8	10	12	13	16	20	25	30	35	40	50	60
	LME ...F		5	—	8	—	12	—	16	20	25	30	—	40	50	60
	LMS ...F	Standard	3	4	5											
	LMSL ...F	High rigidity long	3	4	5											

Stainless Linear Way L

Model : LWL···B, LWLF···B

Stainless Linear Way L is a miniature and lightweight Linear Way. The ball retaining type slide units are easy to handle, because steel balls do not fall off.

The standard type LWL···B, and the wide rail type LWLF···B which is suitable for single row track rail arrangement are available. For each of these types, the short type, standard type, and high rigidity long type are also available.

From among abundant type and size variations, an optimal model can be selected for each application. Stainless Linear Way L is most suitable for miniature guide mechanisms in medical equipment, disk read devices, semiconductor manufacturing equipment, etc.



Stainless Linear Way E

Model : LWE···SL

Stainless Linear Way E is a new Linear Way with a compact slide unit. This series can be used to achieve space saving and design freedom with its abundant variations.

"Lower, narrower, and shorter" Compactness has been pursued in every dimension. The length of standard type slide unit is shortened to about 86% (average value in comparison with standard type Linear Way H). In addition, short type and high rigidity long type slide units are also available to meet diversified needs.

Stainless Linear Way E featuring high accuracy, large load capacity, and good load balance is widely used as linear motion rolling guides in machines and equipment.



Stainless Linear Way H

Model : LWH···SL

In the popular Linear Way series, Stainless Linear Way H is a high rigidity type that can support large complex loads. In addition to the standard flange type, various types such as the block type with a narrow width and the compact block type with a lower sectional height are also available.

Stainless Linear Way H, which provides stable and smooth linear motion with high accuracy, is widely used in machines and equipment such as machine tools, industrial robots, assemblers, and inspection equipment, and its excellent performance has been proved in the fields.



Stainless Linear Way F

Model : LWFS...SL

Stainless Linear Way F is a linear motion rolling guide, featuring a wide track rail along which a highly rigid slide unit performs endless linear motion. Owing to the simple two row design, large diameter steel balls are incorporated to receive loads in all directions with high load ratings. Furthermore, because of its wide rail structure, the distance between the load points under a moment load is large, so this guide has high moment load capacity and is also suitable for single row rail arrangement.

This series is most suitable for applications such as semiconductor manufacturing equipment, parts mounters, and medical equipment.



Stainless Linear Roller Way Super X

Model : LRXD...SL

Stainless Linear Roller Way Super X, which makes the most of the characteristics of rollers, features smooth motion, high reliability, and high accuracy. Four rows of cylindrical rollers are incorporated in a highly rigid casing with good balance, and the cylindrical rollers in each row are arranged not at right angles but in parallel to each other.

The mounting dimensions are the same as those of ball type (Linear Way H). So this guide can replace the ball type with little modifications of machines or equipment. Three types, namely short type, standard type, and high rigidity long type with the same sectional dimensions are available.



Linear Way LM

Model : LWLM

Linear Way LM is a compact linear motion rolling guide for endless linear motion, and consists of a set of track rail and slide member which forms the smallest unit of linear motion mechanism. The four point contact design has achieved a compact product, which can be mounted in a very small space. It can be easily adapted to the structure of machines and equipment, providing a high degree of freedom in machine design.

As stainless steel is used for components such as the track rail, bearing plate, and steel balls, Linear Way LM has excellent corrosion resistance and is most suitable for machines and equipment used in clean environments, for example, medical equipment, disk read devices, and semiconductor manufacturing equipment.



Stainless Crossed Roller Way

Model : CRW...SL

Stainless Crossed Roller Way is a linear motion rolling guide in which a roller cage is incorporated between two ways with V-shaped raceways. As the cylindrical rollers are alternately crossed, Stainless Crossed Roller Way can receive loads in any direction and can achieve very smooth linear motion with very high accuracy.

Stainless Crossed Roller Way is widely used as linear motion rolling guides requiring high travel accuracy and high reliability in precision measuring equipment, precision working machines, etc.



High Rigidity Precision Linear Slide Unit

Model : BWU

High Rigidity Precision Linear Slide Unit is a small-sized linear motion rolling guide of simple structure in which steel balls and a ball retainer are assembled between a solid table and a solid bed. Steel balls are arranged at uniform intervals by the ball retainer so that very quiet and smooth linear motion can be obtained without mutual contact of steel balls.

All components are made of stainless steel to give superior corrosion and heat resistance. So this series is most suitable for use as a linear motion rolling guide in medical equipment, semiconductor manufacturing equipment, vacuum devices, etc.



Precision Linear Slide

Model : BSP...SL, BSPG...SL, BSR...SL

Precision Linear Slide is a light weight and compact linear motion rolling guide, comprising a U-shaped table (or slide unit race) and bed (or track rail) made from stainless steel sheet by precision forming.

The advanced design of ball retainers and circulators combined with precise grinding of raceways minimizes noise and gives smooth motion with low frictional resistance. So superior positioning accuracy and response can be obtained during operation even for a very small feed motion.

Precision Linear Slide features high performance and durability, making this series suitable for measuring equipment, computer disk drives, IC manufacturing and inspection devices, etc.



Linear Ball Spline G (Spline shaft in stainless steel)

Model : LSAG.../S

Linear Ball Spline G is a very compact ball spline, featuring high rigidity and a small outer diameter of external cylinder. These features are achieved by adopting a two-row and four-point contact structure. External cylinders of both standard type (cylindrical shape) LSAG and flange type LSAGF are available. A high rigidity long type with a long external cylinder of the same sectional dimensions is also available for both of the standard type and the flange type. Two types of spline shafts, namely, solid shaft and hollow shaft, are available. The solid spline shaft in stainless steel is also available. This series is most suitable for applications that require smooth linear motion and accurate positioning in the direction of rotation.



Stainless Block type Linear Ball Spline

Model : LSB...SL

Stainless Block type Linear Ball Spline is a linear motion rolling guide of a new concept, in which a slide unit performs endless linear motion along a spline shaft. The slide unit provided with threaded mounting holes can be easily mounted on machines and equipment with bolts. Stainless Block type Linear Ball Spline is most suitable for applications that require smooth motion and accurate positioning in the direction of rotation.



Stainless Linear Bushing

Model : LM...F, LME...F

Stainless Linear Bushing is a high precision linear motion rolling guide that travels along a shaft to achieve endless linear motion. A linear motion rolling guide mechanism can be easily formed by combining the external cylinder with a general purpose cylindrical shaft which is heat treated and finished by grinding. In the external cylinder, a retainer, steel balls, etc. are compactly incorporated, and a stable linear motion with small frictional resistance can be obtained. Standard, adjustable clearance, and open types are available with and without seals, so that the best linear bushing for each application can be selected.



Stainless Miniature Linear Bushing

Model : LMS...F

Stainless Miniature Linear Bushing is a miniature type linear motion rolling guide which travels along a shaft to achieve endless linear motion. The shaft diameter is 3 to 5 mm. In the external cylinder of Stainless Miniature Linear Bushing, a retainer, steel balls, and stop rings are compactly incorporated, and precise positioning accuracy can be obtained. In addition to the standard type, the series includes the high rigidity long type having a long external cylinder with the same sectional dimensions. Stainless Miniature Linear Bushing is widely used for various applications in electronic devices, OA devices, inspection equipment, measuring equipment, etc.



products are available from: **MARYLAND METRICS**

phones: (410)358-3130 (800)638-1830 faxes: (410)358-3142 (800)872-9329

P.O.Box 261 Owings Mills, MD 21117 USA URL: <http://mdmetric.com> E-mail: sales@mdmetric.com