

IKO

C-Lube Linear Roller Way Super MX

MX

IKO Clean Lubrication



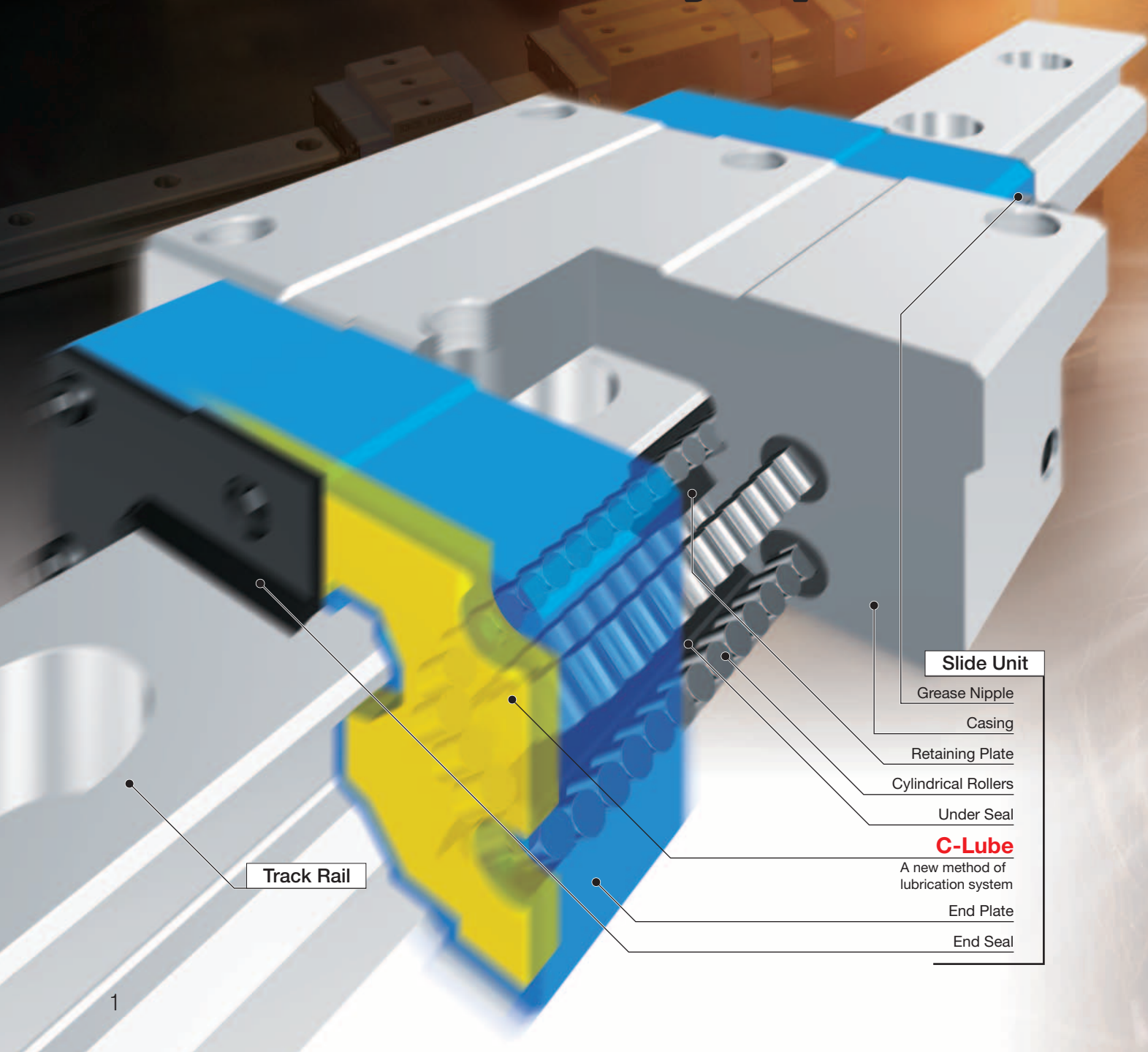
*Maintenance free for
20,000 km or 5 years*

POWER & CARE

POWER & CARE

IKO

C-Lube Linear Roller Way Super MX



IKO C-Lube Linear Roller Way Super MX is a high performance roller type linear motion rolling guide, featuring high reliability, high rigidity, high accuracy and smooth motion which are required from machine tools, semiconductor manufacturing and liquid crystal manufacturing equipments. Cylindrical rollers are incorporated as rolling elements in four rows, arranged in parallel to each other. Owing to its small elastic deformation, stable operation is ensured even under heavy or fluctuating loads. This series is also suitable for applications with vibration and shocks.

With **IKO** original C-Lube technology, its performance makes us different from others, providing superior cost performance for you machines. Maintenance free for 20,000 km or 5 years minimizes the amount of lubricant required and contributes to the global environment protection.

U.S. PATENT	No.
	5,800,064
	5,193,914
	5,564,188
	5,374,126
	5,622,433
	6,176,617
	5,967,667
	5,464,288

POWER

Roller Effect

Well-balanced structure with cylindrical rollers as rolling element brings you great load capacity, very high rigidity, superior running accuracy and excellent damping characteristics. C-Lube Linear Way Super MX is the best mechanical element for machine tool applications requiring high machining accuracy under high-speed cutting, heavy cutting with vibration and shocks, and precision grinding.

CARE

Maintenance free

Capillary system continuously supplies proper amount of lubrication oil to the cylindrical rollers keeping lubrication condition of the raceways well for long period of time allowing lubrication maintenance can be avoidable up to 20,000 km or 5 years.

Interchangeable

Interchangeable specification is available. Slide units and track rails can be supplied separately allowing them to be matched, replaced and added freely. This feature offers more freedom in designing machines, facilitating standardization and sudden changes of specifications.

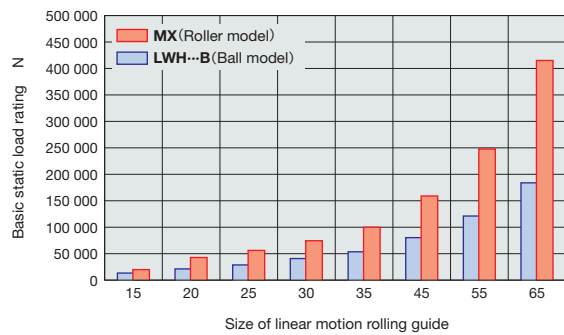
POWER

High rigidity and high load capacity

Super high load capacity

Cylindrical rollers give a larger contact area compared to steel balls, and higher load capacity is attainable. Incorporating a large number of cylindrical rollers, C-Lube Linear Roller Way Super MX has very high load ratings.

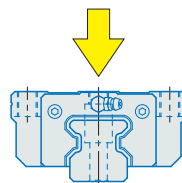
Comparison of basic static load ratings



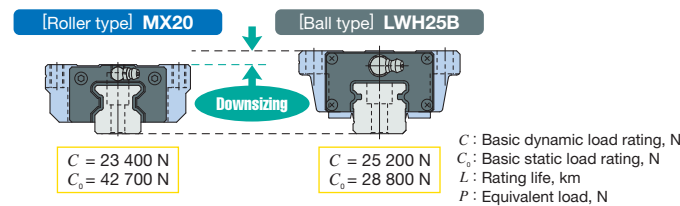
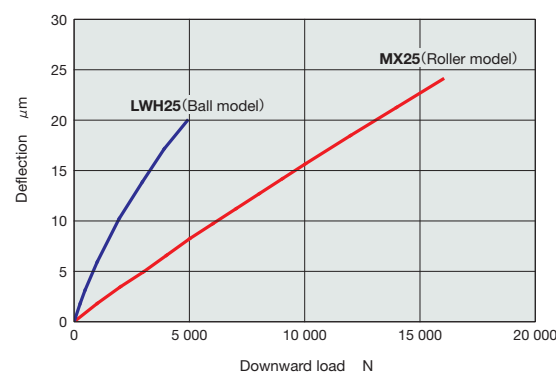
Super high rigidity

Rigidity of linear motion rolling guide has a large influence to the performance of machines or equipment in which they are assembled.

Very high rigidity of C-Lube Linear Roller Way Super MX is achieved owing to the excellent elastic deformation characteristics of cylindrical rollers which give smaller elastic deformation under load as compared with steel balls. In addition, a large number of cylindrical rollers are incorporated in the slide unit.



Elastic deformation characteristics of C-Lube Linear Roller Way Super MX



Roller type has longer life due to higher exponent even basic dynamic load rating is smaller.

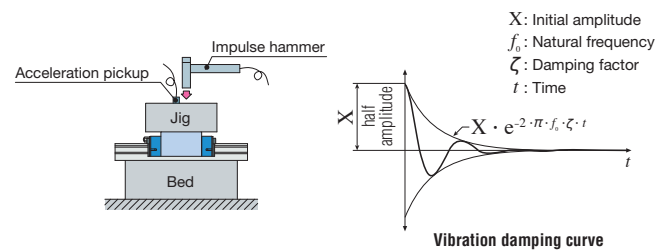
[Life calculation formula]

In case of the load 5000N

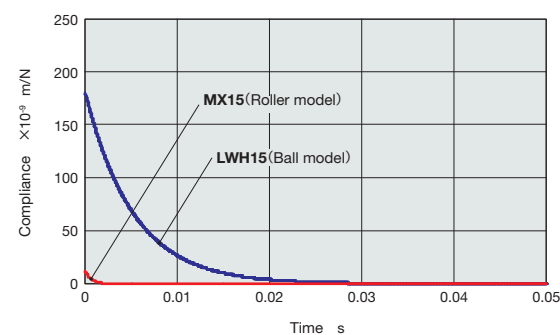
Roller type	Ball type
$L = 50 \left(\frac{C}{P} \right)^{10/3}$	$L = 50 \left(\frac{C}{P} \right)^3$
$L \approx 8\,500 \text{ km}$	$L \approx 5\,100 \text{ km}$

Excellent vibration damping characteristics

As compared with ball types in the same size, C-Lube Linear Roller Way Super MX has higher rigidity and gives much smaller deformation value under repeated fluctuating load. The natural frequency is high, and the vibration damping time can be very short.



Vibration damping curve under downward excitation (half amplitude)



In IKO C-Lube Linear Roller Way Super MX, four rows of cylindrical rollers are incorporated in a highly rigid casing with good balance, and the cylindrical rollers in each row are arranged in parallel to each other. Owing to its small elastic deformation, stable operation is ensured even under heavy or fluctuating loads. Smooth and quiet motion, high reliability, high rigidity and high running accuracy are realized.

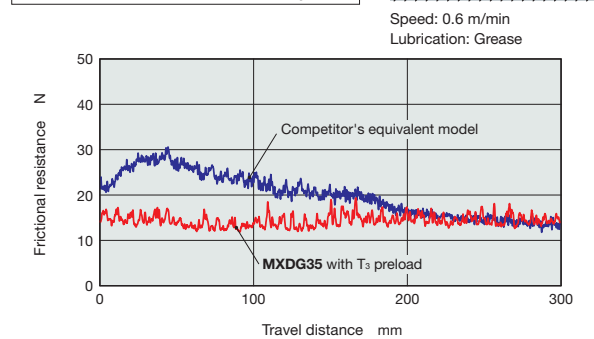
Accurate positioning with excellent friction characteristics

A unique roller retaining method is adopted, in which the end faces of cylindrical rollers are guided accurately by the retaining plate, so the skewing of cylindrical rollers is prevented and smooth motion is achieved.

As compared with the slide guides and ball type linear motion rolling guides, roller type has superior frictional characteristics and gives lower frictional resistance under preload. Good response to micro feeding and high positioning accuracy can be provided.

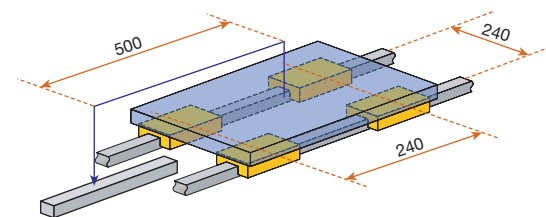
Saving driving power

Frictional resistance of MXDG35 with T3 preload



Low noise and high running performance

Smooth and quiet motion is achieved by adopting the optimum design based on the analysis of roller re-circulation behavior. Furthermore, as the number of load carrying cylindrical rollers is large, the minute fluctuating deflection during travel is minimized.



High tact

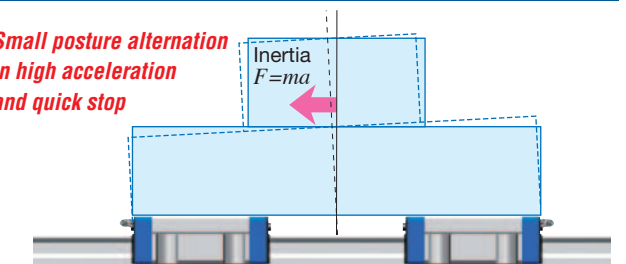
Quick positioning is possible by high rigidity and excellent vibration damping characteristics of roller type even with large inertia caused by the latest high tact positioning devices.

Superior accuracy in the operation

Runout in the operation

	unit: μm
MXDG35 T3 Preload	0.12
Other company's ultra high accuracy long type	0.12

Small posture alteration in high acceleration and quick stop



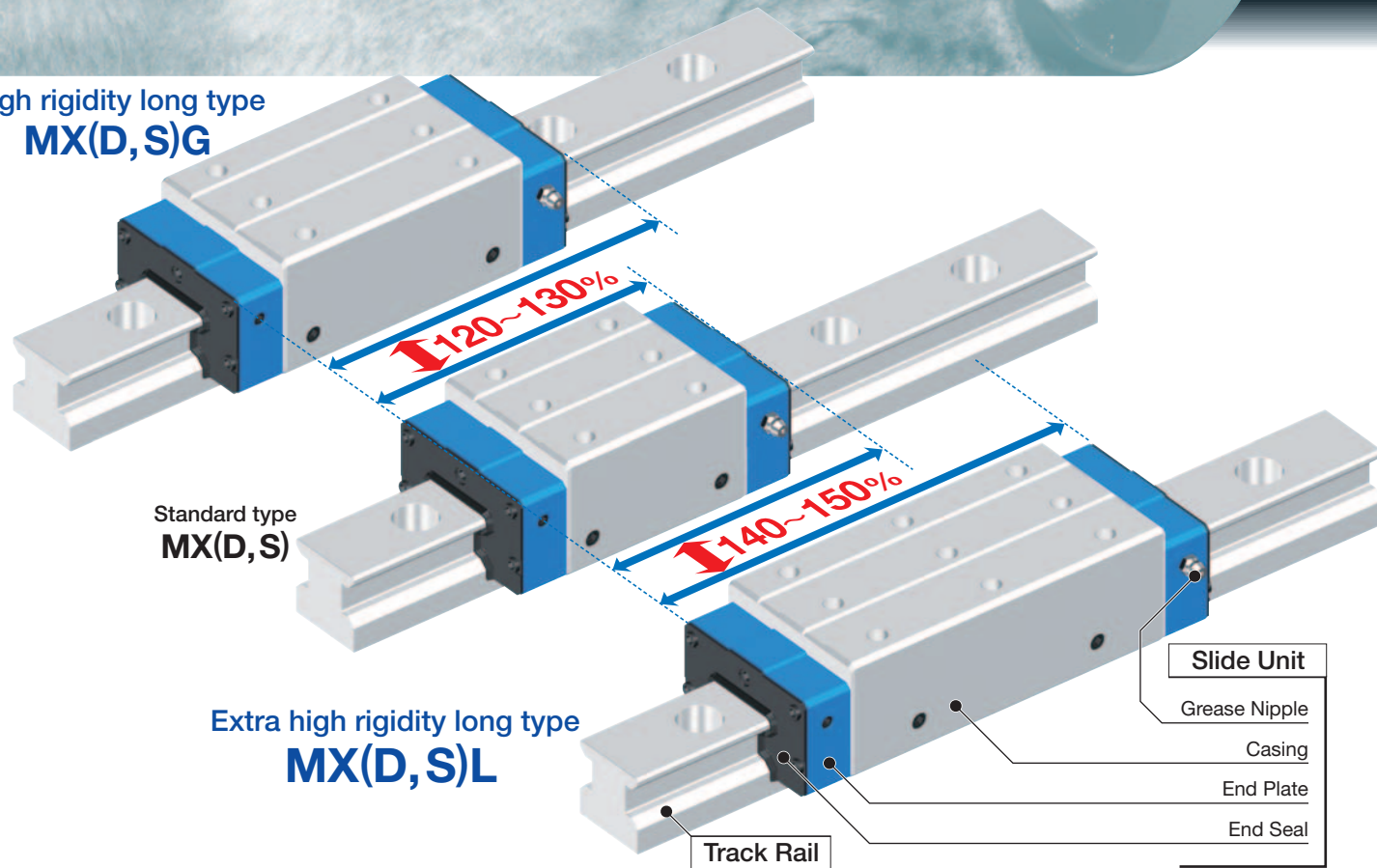
1N=0.102kgf=0.2248lbs.
1mm=0.03937inch

POWER

Extra high rigidity long type slide unit

New longer slide unit having the length 1.5 times of standard type is available.
Large quantity of cylindrical rollers contributes superior running accuracy and higher rigidity.

High rigidity long type
MX(D,S)G



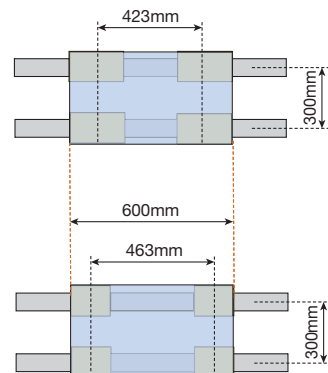
Standard type
MX(D,S)

Extra high rigidity long type
MX(D,S)L

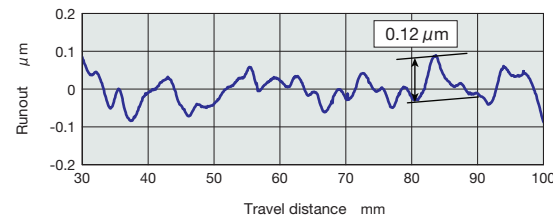
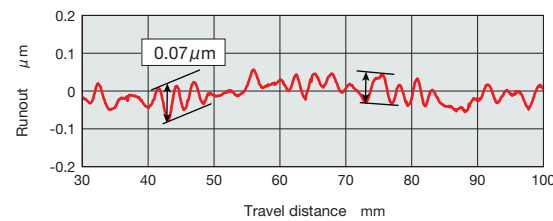
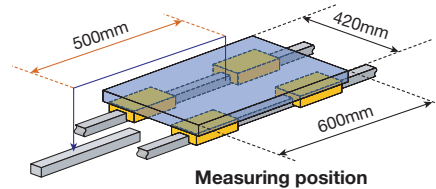
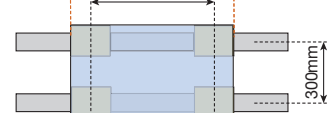
For higher running accuracy

Runout in the operation could be a half of high rigidity long type. Accurately and super fine positioning can be realized in your machine.

Test condition	
Product	Extra high rigidity long type MXDL45
Preload	T ₃



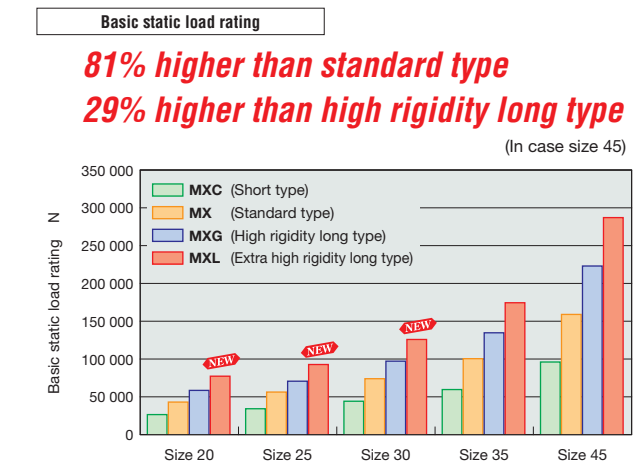
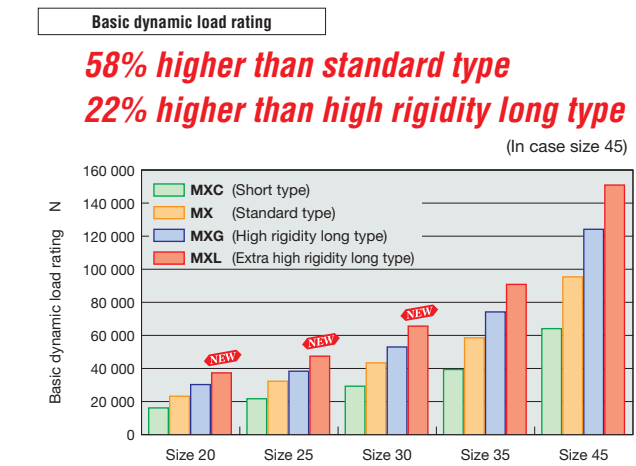
Test condition	
Product	High rigidity long type MXDG45
Preload	T ₃



Twice as better in accuracy

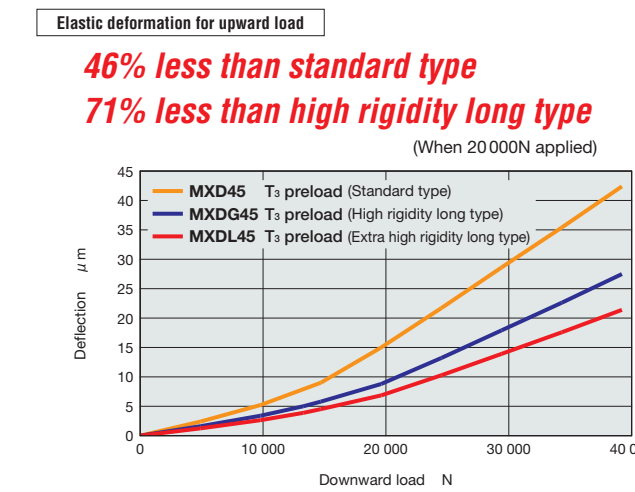
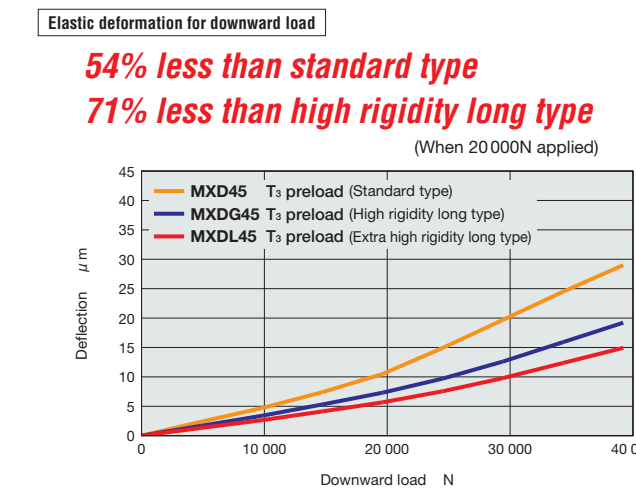
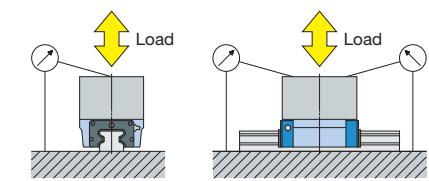
Upgrading of your machine ---- Load capacity

Basic dynamic load rating could be 22% higher and basic static load rating could be 30% higher. Longer machine life and increasing reliability of the machine are possible.



Upgrading of your machine ---- Rigidity

Displacement against load could be 71% smaller than high rigidity long type. It makes machine's rigidity higher and improvement in accuracy, also allows avoiding resonance.



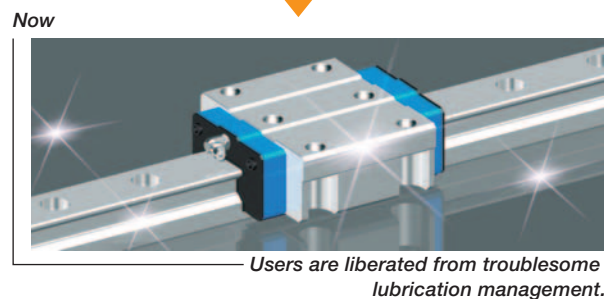
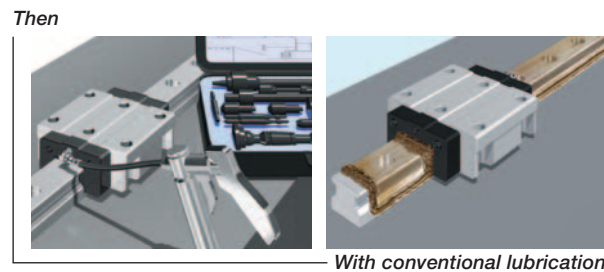
1N=0.102kgf=0.2248lbs.
1mm=0.03937inch

CARE

5 years or 20,000km of maintenance free

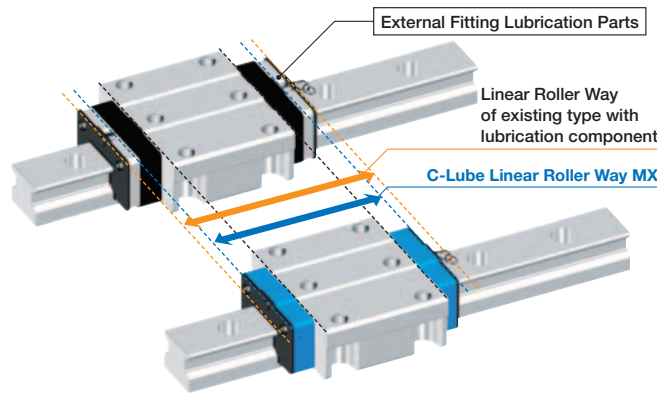
Maintenance free for saving-resources

Maintenance free has the ability to maintain lubrication for a long time, reducing the amount of labor required for troublesome lubrication maintenance. The capillary lubrication body continuously supplies lubricant for long period of time even after original grease inside is completely exhausted.



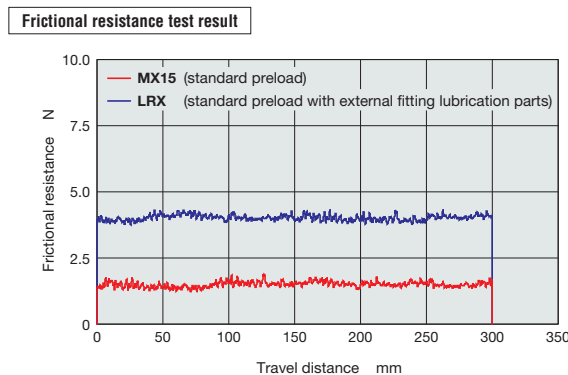
Compact design for miniaturization

Incorporating C-Lube, linear motion rolling guide provides light-weights and compact sizes. C-Lube Linear Roller Way MX, having no external parts, can replace standard linear way without changing the external dimensions and it does not sacrifice the allowable stroke length.

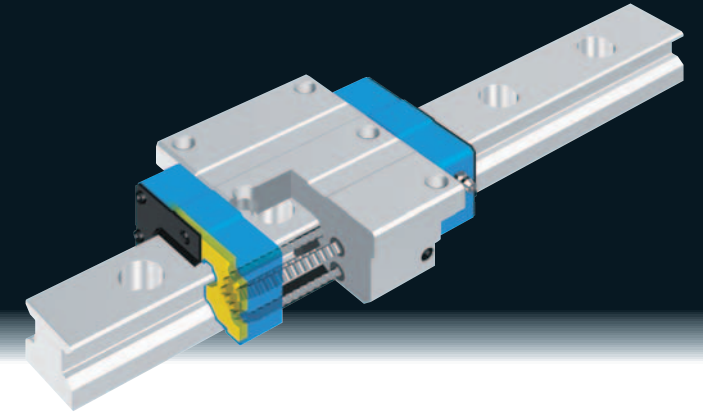


Smooth and light operation

C-Lube is not in contact with the track rail. This permits smooth and light motion without increasing the rolling resistance. So the loss of power in driving devices can be minimized. Compatibility of quick response is superior and it contributes to the accuracy improvement and saving driving energy.



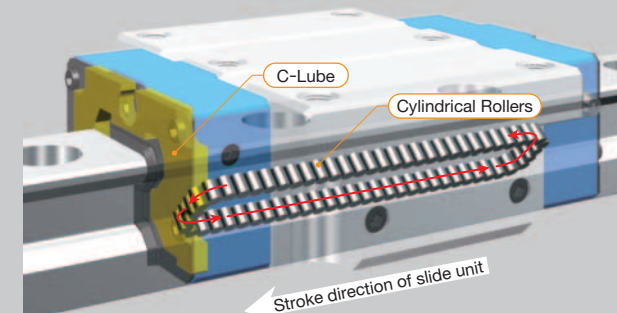
The Capillary system that **IKO** has developed is a new method of lubrication. The Lube-body is formed by sintering a fine resin powder to act as a reservoir and the open pores are impregnated with a large amount of lubrication oil. The capillary action gives the correct amount of lubrication on the rolling elements to protect the raceways for long periods.



Lubricant supply mechanism of C-Lube system

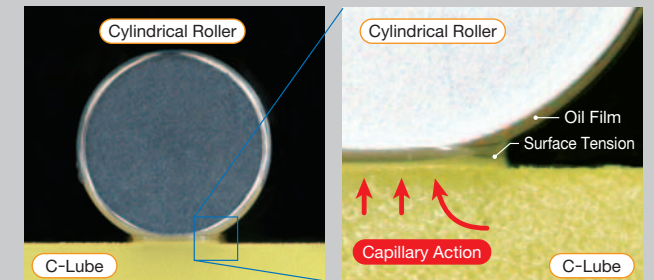
The circulation of the cylindrical rollers distributes lubricant.

Lubricant is supplied directly to the cylindrical rollers from C-Lube. As the cylindrical rollers circulate, the lubricant is distributed to the loading area through the rollers along the track rail. This results in adequate lubrication being properly maintained in the loading area for a long time.

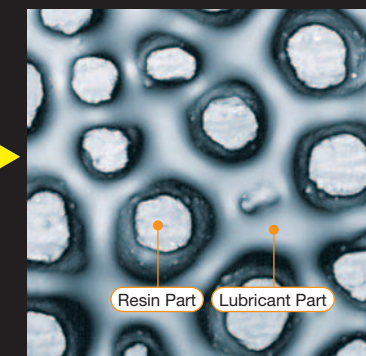


Lubricant is deposited directly to the surface of the cylindrical rollers.

The surface of C-Lube is always covered with the lubricant. Lubricant is continuously supplied to the surface of cylindrical rollers by surface tension in the contact of C-Lube surface and cylindrical rollers. New oil permeates automatically from the core of C-Lube to the raceway surfaces that come in contact with cylindrical rollers.



Before impregnating oil
Resin particles are strongly fusion bonded.



After impregnating oil
(Capillary lubrication structure)
Lubricant is retained in cavities amongst resin particles.

Capillary system **IKO** has developed is a new type lubrication. It is a porous resin Lube-body or plate with steel backing formed by sintering fine resin powder and impregnating a large amount of lubrication oil in its open pores. Capillary system always supplies proper amount of lubrication oil to the cylindrical rollers and lubrication condition of the raceway can be kept well for long period of time.

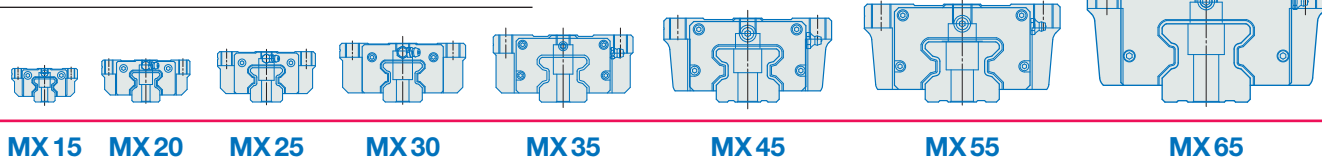
Ecology contributes to the global environment by conserving oil

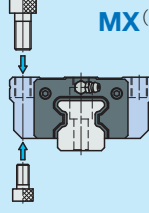
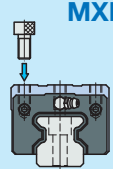
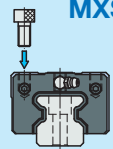
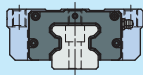

To accomplish this, C-Lube applies only the minimal amount of lubricant requires for the proper lubrication to the rolling parts. Since the oil consumption is small, C-Lube is able to maintain proper lubrication even in long-term operation.

CARE

Wide variation

Wide variation

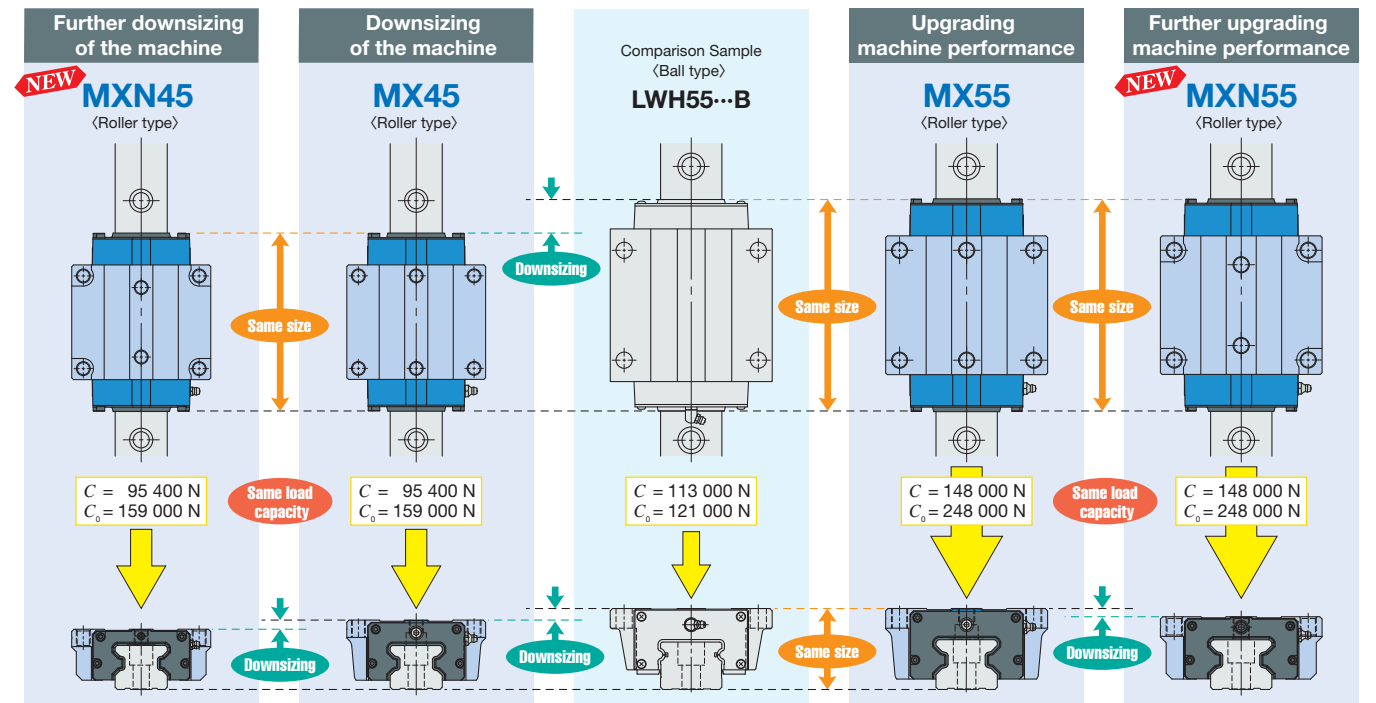


Shape of slide unit	Length of slide unit	Size								
		15	20	25	30	35	45	55	65	
Flange type, mounting from the top and bottom  MX^(*)	Short	○	○	○	○	○	○	○	○	○
	Standard	○	○	○	○	○	○	○	○	○
	High rigidity long	○	○	○	○	○	○	○	○	○
	Extra high rigidity long	—	NEW ○	○	○	○	○	○	○	—
Block type, mounting from top  MXD	Short	○	○	○	○	○	○	○	○	
	Standard	○	○	○	○	○	○	○	○	
	High rigidity long	○	○	○	○	○	○	○	○	
	Extra high rigidity long	—	NEW ○	○	○	○	○	○	—	
Compact block type, mounting from top  MXS	Short	○	○	○	○	—	—	—	—	
	Standard	○	○	○	○	—	—	—	—	
	High rigidity long	○	○	○	○	—	—	—	—	
	Extra high rigidity long	—	○	○	○	—	—	—	—	
Low section flange type, mounting from top  NEW MXN	Standard	—	—	—	—	○	○	○	—	
	High rigidity long	—	—	—	—	○	○	○	—	
Low section block type, mounting from top  NEW MXNS	Standard	—	—	—	—	○	○	○	—	
	High rigidity long	—	—	—	—	○	○	○	—	

Note (*): Size 20 (MX20, MXD20 and MXS20) can be mounted from top only. For mounting from bottom, MXH can be used, which have the same dimensions as those of above models.

Downsizing

Due to the great load capacity of the roller type compared with the ball type, C-Lube Linear Roller Way Super MX series enables downsizing of the linear motion rolling guide with its abundant variations. It also enables downsizing of the machines and devices.

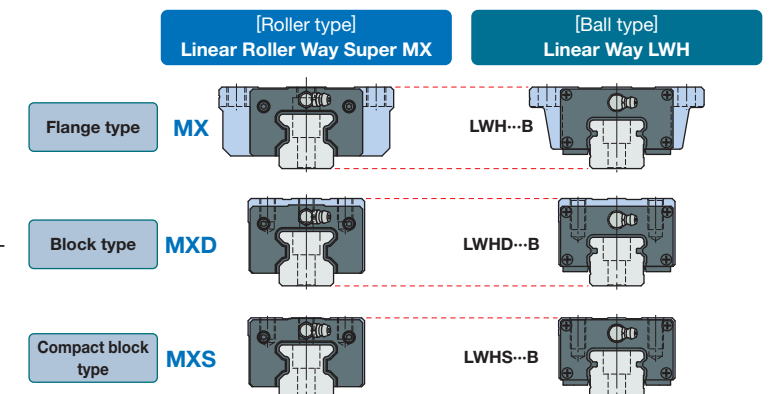


Dimensional interchangeability to the ball type

The mounting dimensions are the same as those of ball type Linear Way H. So this guide can replace the ball type without any change in mounting dimensions in the existing machines or equipment.

Due to the great load capacity of the roller type compared with the ball type, C-Lube Linear Roller Way Super MX enables downsizing of the linear motion rolling guide with its abundant variations. It also enables downsizing of the machines and devices.

Since the dimensional interchangeability to the ball type linear way, accuracy, rigidity and damping characteristic of the machine can be improved greatly by just replacing to C-Lube Linear Roller Way Super MX without any design change.



CARE

Interchangeable specification

The interchangeable specification is produced by **IKO** original precision manufacturing technology and the dimensional accuracy of both slide unit and track rail is strictly controlled to achieve the interchangeability of higher standard.

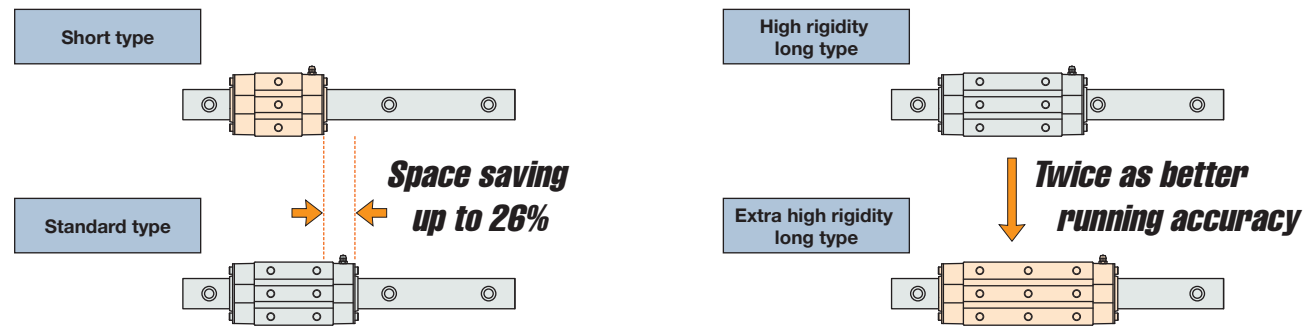
Requirements of ;

- Extending machine life and increase rigidity
- Improving machining accuracy
- Replace only the slide unit
- Increase the number of slide unit
- Replace the track rail
- Extend the length of track rail
- Stock only slide unit for back up

Interchangeable specification realizes ;

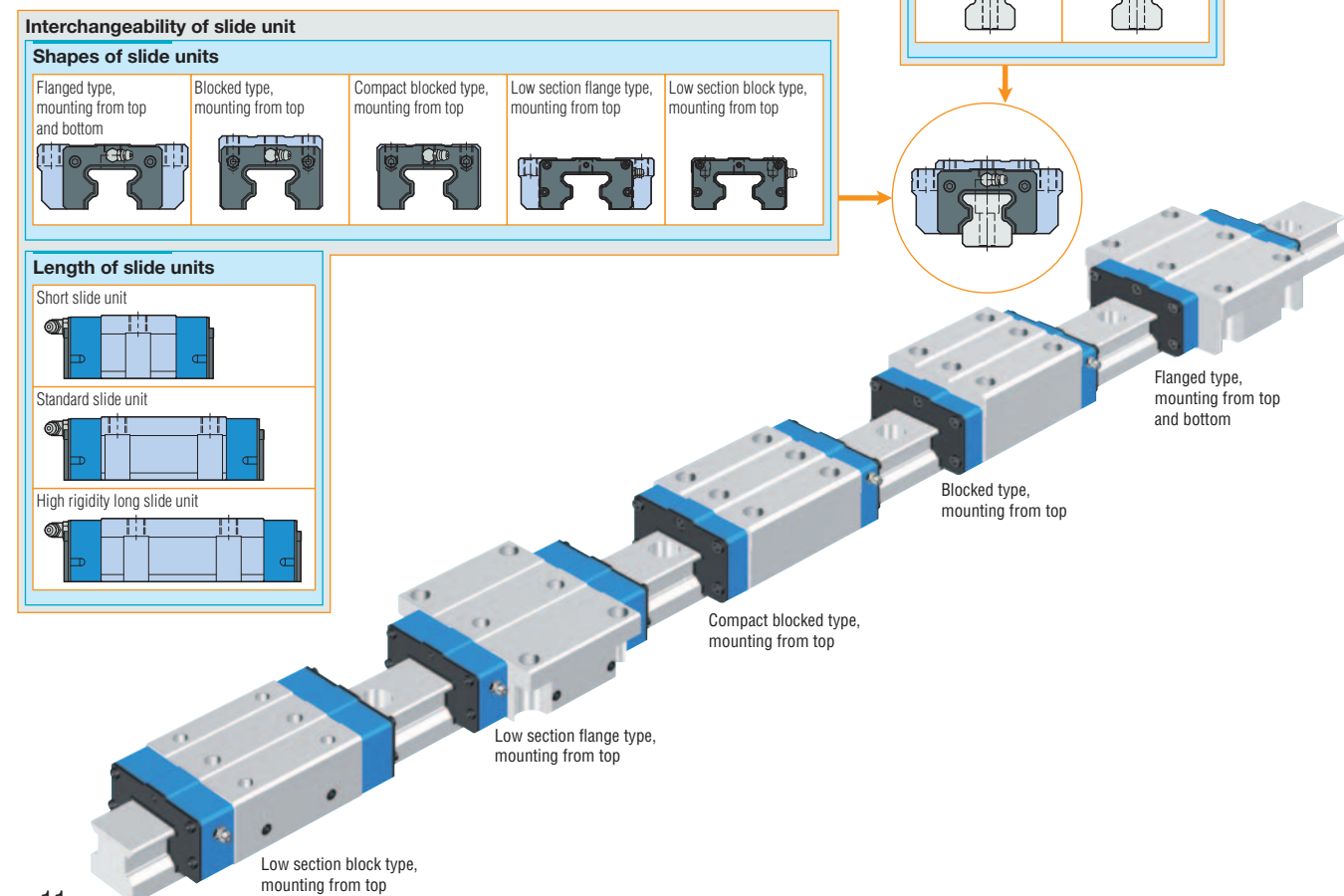
- Quick design change.
- Giving higher accuracy and changing preload.
- Slide unit and track rail can be supplied and handled individually.
- Slide unit in any shape with any accuracy or preload can be matched to a track rail.
- Slide unit and track rail can be stocked separately, which contributes to minimize inventory.

Slide units are available in four different lengths.



Interchangeability among types of slide unit

Various types of slide units with different sectional shapes and lengths are prepared. All of these slide units can be mounted on the same track rail freely as required.

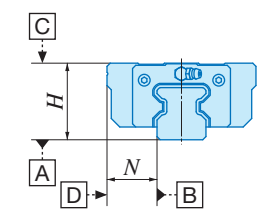


Interchangeability in accuracy

Two accuracy classes, High and Precision class are prepared and can be used for the application requiring high running accuracy. Furthermore, the height variation among multiple sets is also controlled with high level of accuracy, ensuring that these products can be used for parallel track rail arrangement.

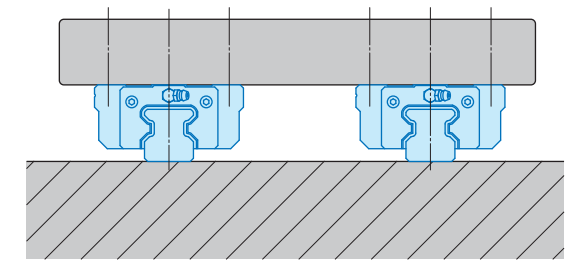
Two accuracy grades are available.

- Dimension H and N
- Dimensional variation of H and N among in the one set
- Parallelism in the operation of C surface to A surface
- Parallelism in the operation of D surface to B surface



Suitable for using in parallel.

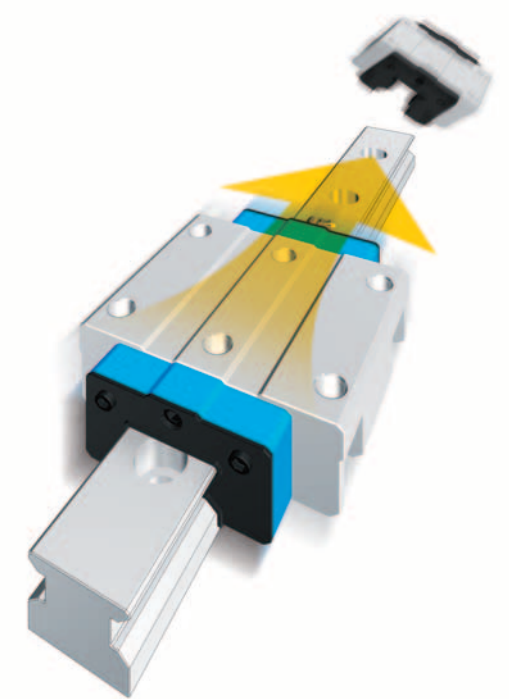
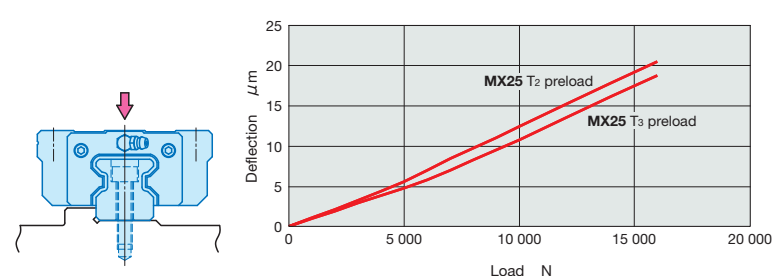
- Dimensional variation of H dimension for multiple assembled sets



Interchangeability in preload

High accuracy dimensional control owing to a simple structure has made it possible to realize the interchangeability in preloaded slide units. In the interchangeable specification products, several different amounts of preload types are prepared so that these products can be selected for the application requirement.

Slide unit with higher preload symbol offers greater rigidity.

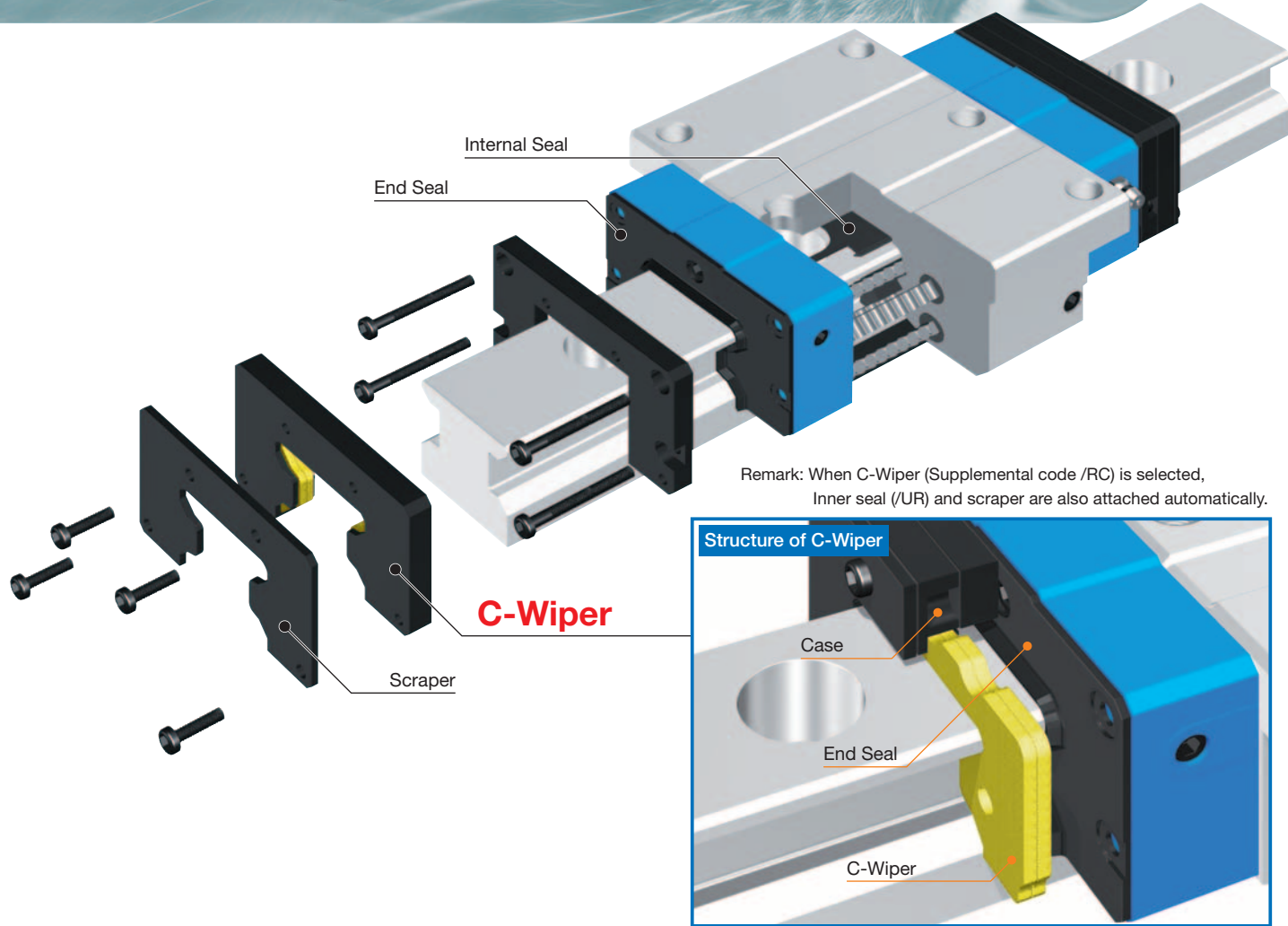


1N=0.102kgf=0.2248lbs.
1mm=0.03937inch

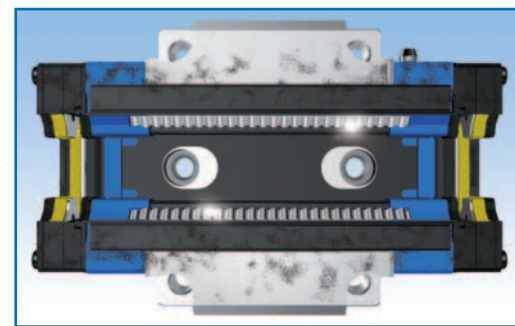
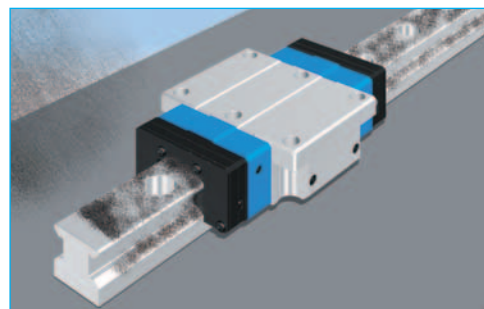
CARE

High performance new dust protective C-Wiper is newly available

C-Wiper is the superior dust protective component against cutting chips and/or coolant of machine tool, lathe and grinding machine. C-Wiper is always contacting to the top surface of track rail by its all wiping surface. Continuous dust protection performance provides better machine reliability under severe working condition.



Even in metal particles fly apart condition

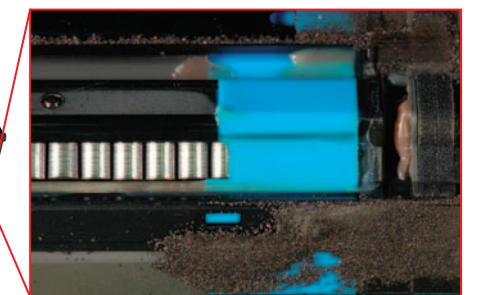
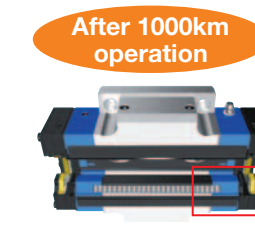
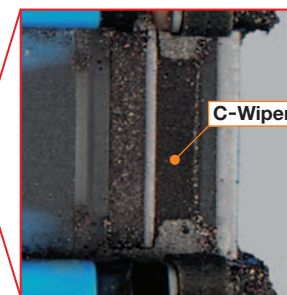
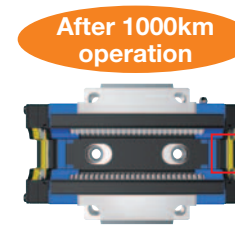
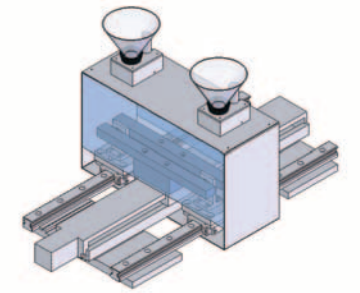


C-Wiper provides superior dust protection

Durability test result under fine particles

Test condition

Product	MX 35 T ₃ preload/FRC : C-Wiper specification
Operating speed	18 m/min
Travel length	500 mm
Dust condition	Fine metal particles Diameter of particle : 125 μm or less Hardness of particle : HRC40 to 50 Application amount : 1 g/hr (Total volume: 1 kg)

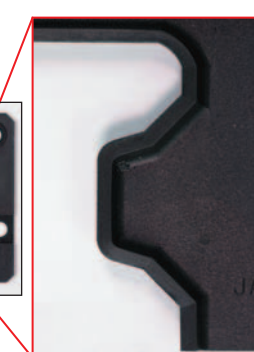
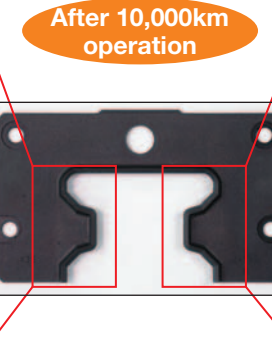
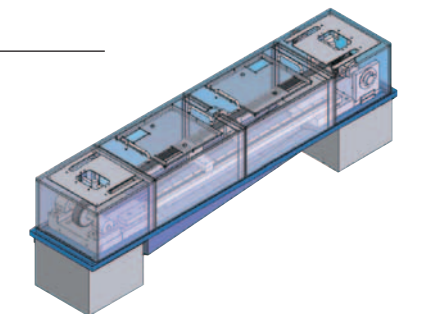


Steel particles inside of slide unit could be minimized.

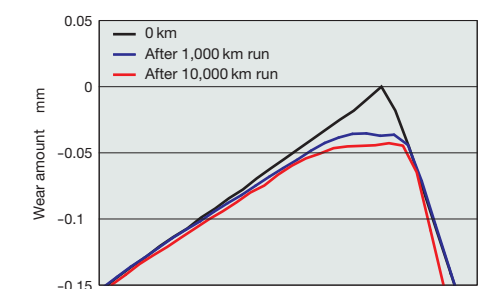
Durability test result under coolant mist

Test condition

Product	MX 35 T ₃ preload/FRC : C-Wiper specification
Operating speed	115.2 m/min
Travel length	300 mm
Coolant	Soluble type Diluting rate : ×20 Spraying amount : 5 cc



Wear amount of seal lip



No damage of End seal was found.

Identification number

The specification of C-Lube Linear Roller Way Super MX is identified by the identification number, which consists of model code, size, part code, preload symbol, classification symbol, interchangeable code and optional supplemental codes.

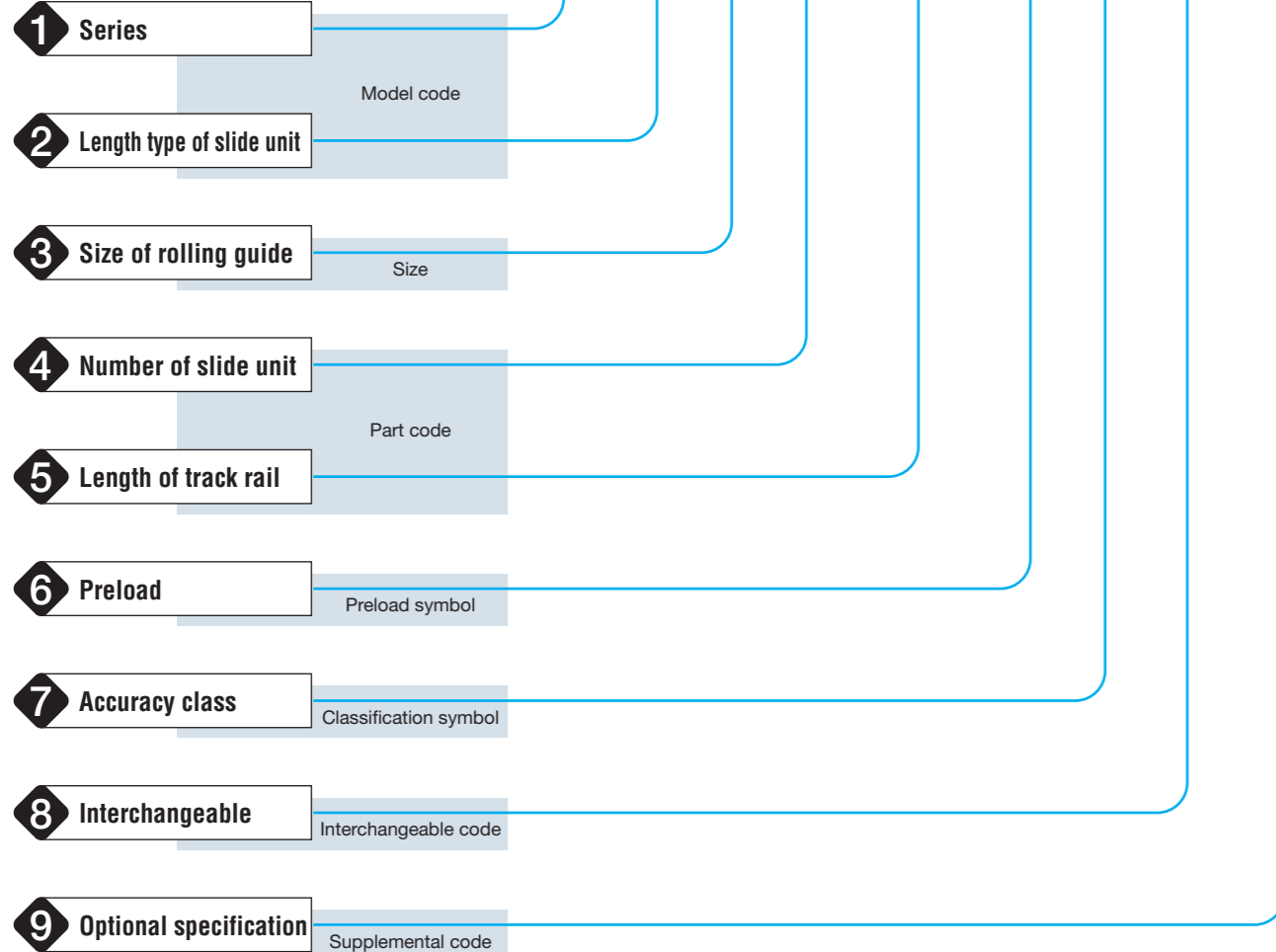
Examples of identification number

• Interchangeable specification

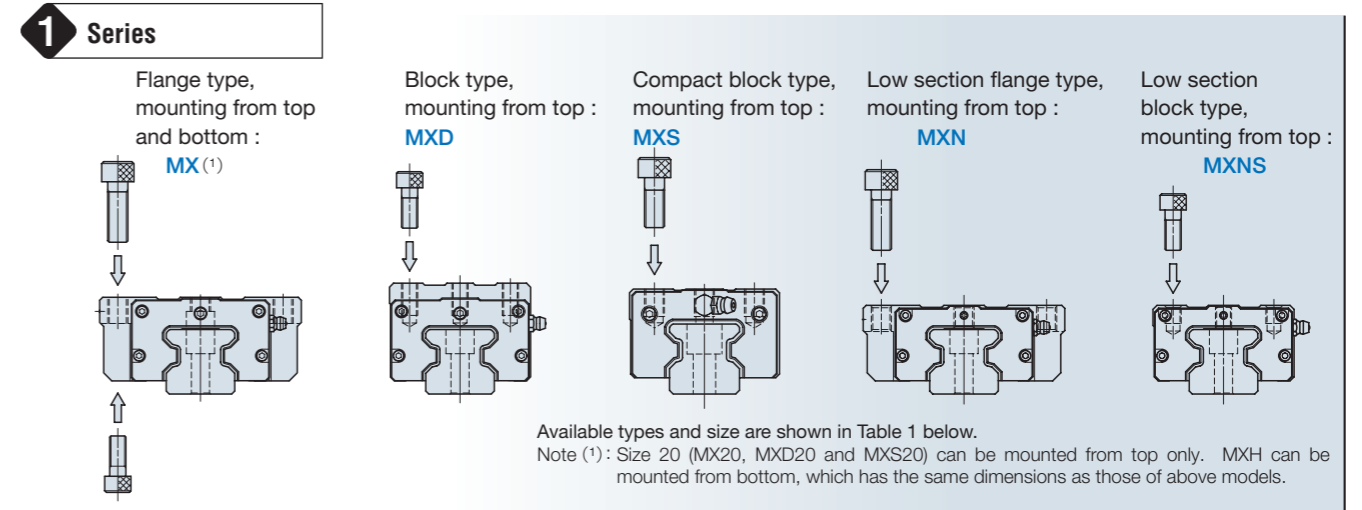
Slide unit only	<u>MX</u>	<u>G</u>	<u>15</u>	<u>C1</u>		<u>T₁</u>	<u>P</u>	<u>S2</u>	<u>/Z</u>
Track rail only ⁽¹⁾	<u>LRX</u>		<u>15</u>		<u>R240</u>		<u>P</u>	<u>S2</u>	<u>/F</u>
Slide unit and track rail matched set	<u>MX</u>	<u>G</u>	<u>15</u>	<u>C2</u>	<u>R240</u>	<u>T₁</u>	<u>P</u>	<u>S2</u>	<u>/FZ</u>

• Non-interchangeable specification

Matched set product	<u>MX</u>	<u>G</u>	<u>15</u>	<u>C2</u>	<u>R240</u>	<u>T₁</u>	<u>P</u>		<u>/FZ</u>
---------------------	-----------	----------	-----------	-----------	-------------	----------------------	----------	--	------------



Note (1): When ordering track rail only, model code should be changed as shown below.
 MX / MXD / MXS → LRX (Ex: LRX15R240HS2)



2 Length type of slide unit	Short	: C	Available types and size are shown in Table 1 below.
	Standard	: No symbol	
	High rigidity long	: G	
	Extra high rigidity long	: L	
3 Size of rolling guide	15, 20, 25, 30, 35, 45, 55, 65	Available types and size are shown in Table 1 below.	

Table 1 Types and sizes of C-Lube Linear Roller Way Super MX

Type	Mode code	Size								
		15	20	25	30	35	45	55	65	
Flange type, mounting from top and bottom	Short MXC	☆	☆ ⁽¹⁾	☆	☆	☆	☆	☆	☆	☆
	Standard MX	☆	☆ ⁽¹⁾	☆	☆	☆	☆	☆	☆	☆
	High rigidity long MXG	☆	☆ ⁽¹⁾	☆	☆	☆	☆	☆	☆	☆
	Extra high rigidity long MXL	—	○ ⁽¹⁾	○	○	○	○	—	—	—
Block type, mounting from top	Short MXDC	☆	☆	☆	☆	☆	☆	☆	☆	☆
	Standard MXD	☆	☆	☆	☆	☆	☆	☆	☆	☆
	High rigidity long MXDG	☆	☆	☆	☆	☆	☆	☆	☆	☆
	Extra high rigidity long MXDL	—	○	○	○	○	○	—	—	—
Compact Block type, mounting from top	Short MXSC	☆	☆	☆	☆	—	—	—	—	—
	Standard MXS	☆	☆	☆	☆	—	—	—	—	—
	High rigidity long MXSG	☆	☆	☆	☆	—	—	—	—	—
	Extra high rigidity long MXSL	—	○	○	○	—	—	—	—	—
Low section flange type, mounting from top	Standard MXN	—	—	—	—	☆	☆	☆	—	—
	High rigidity long MXNG	—	—	—	—	☆	☆	☆	—	—
Low section block type, mounting from top	Standard MXNS	—	—	—	—	☆	☆	☆	—	—
	High rigidity long MXNSG	—	—	—	—	☆	☆	☆	—	—

Note (1): MXC20, MX20, MXG20 and MXL20 can be mounted from top side only.
 For mounting from bottom, MXHC20, MXH20, MXHG20 and MXHL20 can be used.
 Remark: ☆ marks are also applicable for interchangeable specification.

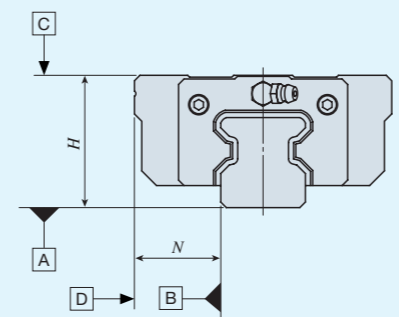
Identification number

4 Number of slide unit	Matched set product (with track rail) : C○ Slide unit only (Interchangeable series) : C1 (Ex : MX15C2R220H) (Ex : MX15C1HS2)	For a matched set, indicates the number of slide units assembled on one track rail. For an interchangeable slide unit only, "C1" can be indicated.
5 Length of track rail	Matched set product (with slide unit) : R○ Track rail only (Interchangeable series) : No symbol (Ex:MX15C2R220H) (Ex:LRX15R220H2)	Indicate the length of track rail in mm. For standard and maximum lengths, see "Track rail length" in Table 22 on page 34.
6 Preload	Standard : No symbol Light preload : T ₁ Medium preload : T ₂ Heavy preload : T ₃	Specify preload for a matched set or an interchangeable single slide unit. Details of preload amount and applicable sizes are shown in Table 3 on page 18.
7 Accuracy code	High class : H Precision class : P Super precision class : SP Ultra precision class : UP	Super precision class (SP) and Ultra precision class (UP) are applicable to Non-interchangeable products only. In the interchangeable specification, please combine the same accuracy codes on both slide unit and track rail. For details of accuracy, see Table 2 on page 18.
8 Interchangeable specification	Interchangeable : S2	In C-Lube Linear Roller Way, slide unit and track rail can be supplied separately by indicating interchangeable code S2.
9 Optional specifications	/A, /D, /E, /F, /GE, /HP, /I, /JO, /LO, /LFO, /MA, /MN, /N, /RCO, /T, /UR, /VO, /WO, /ZO	Applicable special specifications are shown in Table 5 on page 19. When a combination of several special specifications is required, arrange supplemental codes in alphabetical order. For detail of special specifications, see page 19 to 25.

Accuracy

Accuracy for the matched set of C-Lube Linear Roller Way Super MX are shown in Table 2.

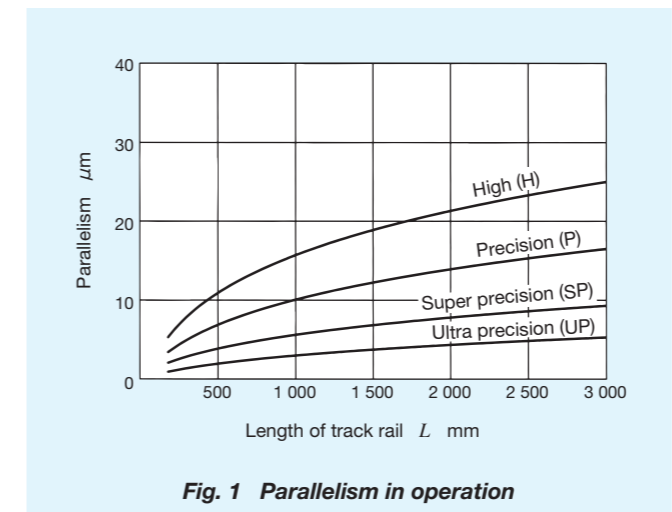
Table 2 Accuracy of C-Lube Linear Roller Way Super MX



Item	Classification (Symbol)	High (H)	Precision (P)	Super ⁽¹⁾ precision (SP)	Ultra ⁽¹⁾ precision (UP)
Dim. H Tolerance		±0.040	±0.020	±0.010	±0.008
Dim. N Tolerance		±0.050	±0.025	±0.015	±0.010
Dim. variation of H ⁽²⁾		0.015	0.007	0.005	0.003
Dim. variation of N ⁽²⁾		0.020	0.010	0.007	0.003
Dim. variation of H ⁽³⁾ for multiple sets		0.035	0.025	—	—
Parallelism in operation of C to A		Refer to Fig. 1			
Parallelism in operation of D to B		Refer to Fig. 1			

unit : mm

Note (1) : Applicable to Non-interchangeable specification.
 (2) : Dimensional variation of dimension means the size variation among the slide units mounted on the same track rail when the dimension H is measured at the same measuring position of track rail.
 (3) : Applicable to interchangeable specification
 Remark 1 : These values also apply to C-Lube Linear Roller Way Super MX Interchangeable series that has opposite reference surface arrangements.
 2 : Dimensional variation of dimension H for multiple sets means the variation of dimension H among multiple sets of arbitrarily chosen slide unit and track rail of C-Lube Linear Roller Way Super MX Interchangeable series.
 3 : All of above figures are applicable when the dimensions are measured at the center of each slide unit assembled with a track rail fixed onto a flat base.



Preload

Average amounts of preload for C-Lube Linear Roller Way Super MX series are shown in Table 3. Note that, for the slide unit of interchangeable specification, the preload amounts that can be specified are different depending on the size. Applicable preload class and size are shown in Table 4. In case high rigidity and/or damping characteristic might be required, the preload amount is recommended to be 1/2 of the external force.

Table 3 Preload amount

Preload class	Item Symbol	Preload amount N	Typical application
Standard preload	(No symbol)	0 ⁽¹⁾	• Smooth and precise motion
Light preload	T ₁	0.02 C ₀	• Minimum vibration • Loads equally balanced • Smooth and precise motion
Medium preload	T ₂	0.05 C ₀	• Medium vibration • Medium overhung load
Heavy preload	T ₃	0.08 C ₀	• Vibration and/or shocks • Large overhung load • Heavy cutting

Note (1) : Zero or minimal amount of preload.
 Remark : C₀ means the basic static load rating.

Table 4 Applicable preload class

Model code	Preload class and code			
	Standard (No symbol)	Light preload (T ₁)	Medium preload (T ₂)	Heavy preload (T ₃)
MX 15	☆	☆	☆	○
MX 20	☆	☆	☆	○
MX 25	○	☆	☆	○
MX 30	○	☆	☆	○
MX 35	○	○	☆	☆
MX 45	○	○	☆	☆
MX 55	○	○	☆	☆
MX 65	○	○	☆	☆

Remark 1 : ☆ marks are also applicable for interchangeable specification.
 2 : The table shows representative model numbers and is also applicable to all models in the same size.

Optional special specifications for the use under special environment

C-Lube Linear Roller Way Super MX with optional specifications shown in Table 5 are optionally available for various applications. When ordering, add any supplemental codes onto the identification number. If multiple optional specifications are required, indicate

the supplemental codes in alphabetical order. These optional items can be combined to achieve further improvement of performance. Please refer Table 6 for combination detail.

Table 5 Applicable optional specifications

Table with 6 columns: Specifications, Supplemental code, Interchangeable specification (Slide unit only, Track rail only, Set product), Non-interchangeable specification. Rows include options like /A (Butt jointing track rail), /D (Opposite reference surfaces arrangement), etc.

- Note (1): /RC includes Inner seal and Scraper. "/UR" and "/Z" are not necessary.
(2): Applicable to MX, MXG, MXH20 and MXHG20.
(3): Not applicable to size 55 and 65.
(4): Applicable to size 35, 45, 55 and 65.
(5): Not applicable to size 15 and 20.

Table 6 Combination of supplemental codes

Table with columns A-W and rows D-Z, showing compatibility matrices between supplemental codes using circles and stars.

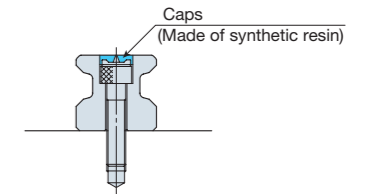
- Remark 1: O and ☆ marks indicate that the combination can be made.
2: ☆ marks are also applicable for interchangeable specification.
3: - marks indicate that the combination is not available.
4: If the combination of ☆ marks are required, please consult IKO.
5: If a combination of optional specifications is required, indicate the supplemental codes in alphabetical order.
6: /RC includes /UR and /Z as standard.

Butt jointing track rails /A



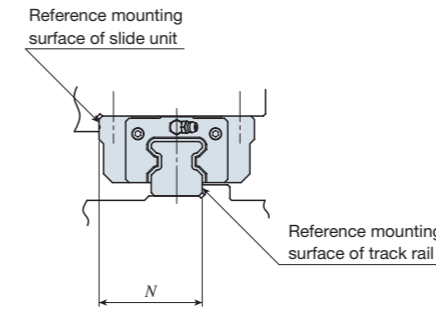
When the required length of non-interchangeable track rail exceeds the maximum length shown in Table 22.1 and 22.2 on page 34, two or more track rails can be used by butt jointing. For the length of each rails and the number of butt jointing track rails, please consult IKO.

Caps for rail mounting holes /F



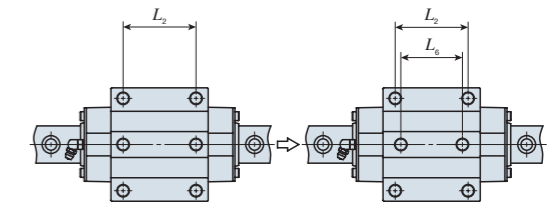
Specify to have customized caps for track rail mounting holes appended. These caps cover the track rail mounting holes to improve the sealing performance in the linear motion direction. Aluminum caps are also available. Consult IKO for further information.

Opposite reference surfaces arrangement /D



The reference mounting surface of track rail is made opposite to the standard side. The accuracy of dimension N including parallelism in operation is the same to that of standard specification.

Different pitch of slide unit middle row mounting holes /GE



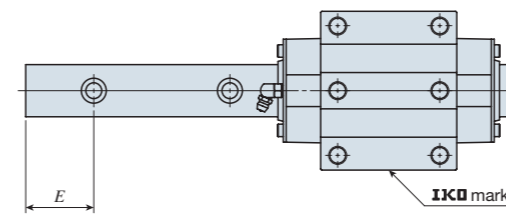
A specification with different pitch length between the two middle mounting holes of slide unit. For the dimension, see Table 7.

Table 7 Pitch of slide unit middle mounting holes (Supplemental code /GE)

Table with 3 columns: Model number, L2, L6. Lists models MX15 through MX65 with their corresponding dimensions in mm.

Note (1): Also applicable to MXH(G)20

Specified track rail mounting hole positions /E

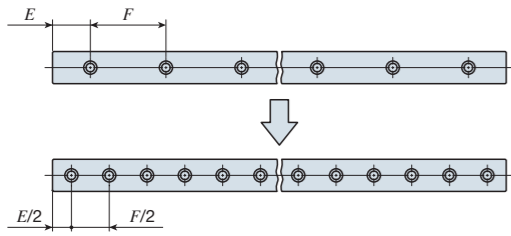


The position of the first mounting hole from left end of the track rail (dimension E) can be specified. When ordering, add the dimension (in mm) after "/E". Dimension E can be specified in a limited range. Consult IKO for further information.

Optional special specifications for the use under special environment

Half pitch of track rail mounting holes

/HP



The pitch of the track rail mounting holes can be 1/2 of the dimension F of standard rail. Track rail mounting bolts are appended in the same number as that of mounting holes.

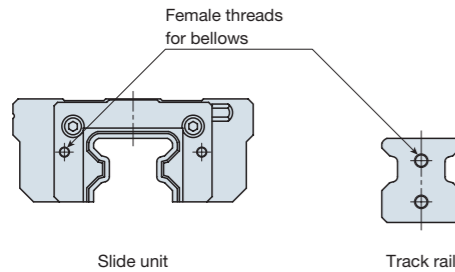
With inspection sheet

/I

This designates to attach an inspection sheet with the product that is recording dimensions H and N (See Accuracy), dimensional variations of H and N and parallelism in operation of the slide unit.

With female threads for bellow mounting

/J /JR /JL



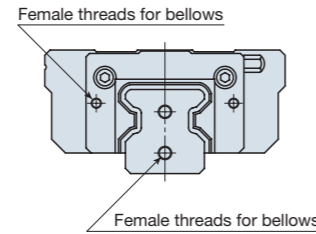
Female threads for mounting bellows are provided on the interchangeable slide unit or the interchangeable track rail. For details of related dimensions, see Table 8.1, 8.2 and 8.3 on page 22 to 24.

- ① /J Female threads are provided at both ends of the slide unit or the track rail.
- ② /JR Female threads are provided at the right end of the slide unit in sight of mark.
- ③ /JL Female threads are provided at the left end of the slide unit in sight of mark.

With female threads for bellow mounting

(for an assembled set)

/J /JJ /JR /JS /JJS

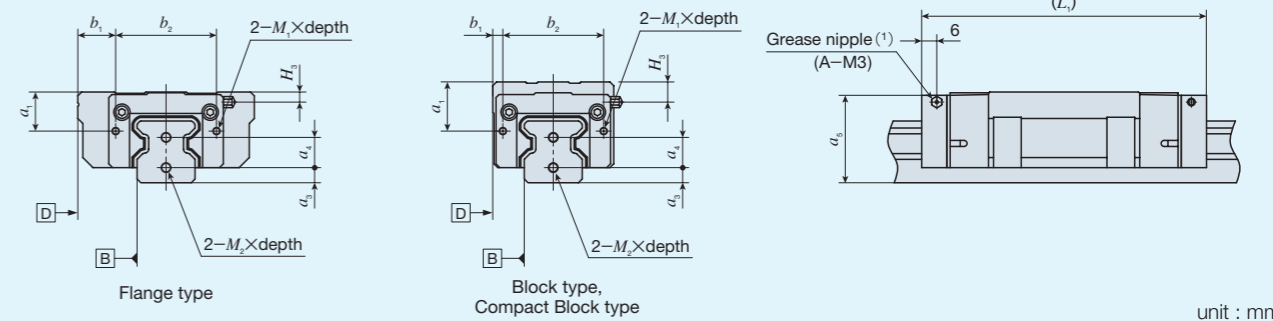


For an assembled set of interchangeable or non-interchangeable specification, female threads for mounting bellows are provided on the slide unit and the track rail. For details of related dimensions, see Table 8.1, 8.2 and 8.3 on page 22 to 24.

- ① /J Female threads are provided on both ends of the track rail and on the slide unit ends which are the closest to the track rail ends. (In case only one slide unit is assembled, female threads are provided on both ends.)
- ② /JJ Female threads are provided on both ends of the track rail and on all ends of all slide units. (Applicable when the number of slide units to be two or more. In case only one slide unit is assembled, indicate "/J".)
- ③ /JR Female threads are provided on both ends of the track rail.
- ④ /JS Female threads are provided on the slide unit ends which are the closest to the track rail ends. (In case only one slide unit is assembled, female threads are provided on both ends.)
- ⑤ /JJS Female threads are provided on all ends of all slide units. (Applicable when the number of slide units to be two or more. In case only one slide unit is assembled, indicate "/JS".)

Table 8.1 Female threads for bellow mounting (Supplemental code /J, /JJ)

Size 15 to 30



Model number	Slide unit					Track rail			
	a_1	b_1	b_2	$M_1 \times \text{depth}$	$L_1^{(2)}$	H_3	a_3	a_4	$M_2 \times \text{depth}$
MXC 15	10.5	10.5	26	M3 × 6	67	1	4	8	M3 × 6
MX 15					83				
MXG 15					99				
MXDC 15	14.5	4	36	M3 × 6	67	5	5	10	M4 × 8
MXD 15					83				
MXDG 15					99				
MXSC 15	10.5	4	40	M3 × 6	67	8	6	12	M4 × 8
MXS 15					83				
MXSG 15					99				
MXC 20	12	13.5	50	M3 × 6	81	2	7	14	M4 × 8
MX 20					101				
MXG 20					121				
MXDC 20	16	4	50	M3 × 6	143	6	7	14	M4 × 8
MXD 20					81				
MXDG 20					101				
MXDL 20	12	4	50	M3 × 6	121	2	7	14	M4 × 8
MXSC 20					143				
MXS 20					81				
MXSG 20	15.5	15	50	M3 × 6	101	4	7	14	M4 × 8
MXSL 20					121				
MXSL 20					143				
MXC 25	15.5	15	50	M3 × 6	89	4	7	14	M4 × 8
MX 25					113				
MXG 25					128				
MXDC 25	19.5	4	50	M3 × 6	152	8	7	14	M4 × 8
MXD 25					89				
MXDG 25					113				
MXDL 25	15.5	4	50	M3 × 6	128	4	7	14	M4 × 8
MXSC 25					152				
MXS 25					89				
MXSG 25	18.5	20	50	M3 × 6	113	4.8	7	14	M4 × 8
MXSL 25					128				
MXSL 25					149				
MXC 30	18.5	20	50	M3 × 6	100	7.8	7	14	M4 × 8
MX 30					128				
MXG 30					149				
MXDC 30	21.5	5	50	M3 × 6	177	4.8	7	14	M4 × 8
MXD 30					100				
MXDG 30					128				
MXDL 30	18.5	5	50	M3 × 6	149	4.8	7	14	M4 × 8
MXSC 30					177				
MXS 30					100				
MXSG 30	18.5	5	50	M3 × 6	128	4.8	7	14	M4 × 8
MXSL 30					149				
MXSL 30					177				

Note (1): The specification and mounting position of grease nipple are different from those of standard products.

(2): The values for the slide unit with female threads for bellow mounting at the both ends.

Remark: For grease nipple specification, see Table 17 on page 31.

For the size 15 and 20 of flange type and compact block type, the dimension a_1 is higher than H dimension. For details, consult for future information.

Optional special specifications for the use under special environment

Table 8.2 Female threads for bellow mounting (Supplemental code /J, /JJ)

Size 35 to 65

Model number	Slide unit								Track rail							
	a_1	a_2	b_1	b_2	b_3	b_4	$M_1 \times \text{depth}$	$L_1^{(1)}$	a_3	a_4	$M_2 \times \text{depth}$					
MXC 35	6	16	30	40	20	60	M3 × 6	99	8	16	M4 × 8					
MX 35								131								
MXG 35			159													
MXL 35			191													
MXDC 35	13	15	15	5	5	5	M3 × 6	99	8	16	M4 × 8					
MXD 35								131								
MXDG 35			159													
MXDL 35			191													
MXC 45	7	21	35	50	23	74	M4 × 8	123	10	19	M5 × 10					
MX 45								163								
MXG 45			203													
MXL 45			243													
MXDC 45	17	18	18	6	6	6	M4 × 8	123	10	19	M5 × 10					
MXD 45								163								
MXDG 45			203													
MXDL 45			243													
MXC 55	7	27	40	60	26	88	M4 × 8	145	10	24	M5 × 10					
MX 55								193								
MXG 55			247													
MXDC 55			145													
MXD 55	17	20	20	6	6	6	M4 × 8	193	10	24	M5 × 10					
MXDG 55								247								
MXC 65			8.7	37	47.5	75	31	108				M5 × 10	191	14	28	M6 × 12
MX 65													255			
MXG 65	319															
MXDC 65	191															
MXD 65	8.7	37	25.5	9	9	9	M5 × 10	255	14	28	M6 × 12					
MXDG 65								319								

unit : mm

Note (1) : The values are of the slide unit with female threads for bellow mounting at the both ends.

Table 8.3 Female threads for bellow mounting (Supplemental code /J, /JJ)

Model number	Slide unit								Track rail		
	$a_1^{(1)}$	a_2	b_1	b_2	b_3	b_4	$M_1 \times \text{depth}$	$L_1^{(2)}$	a_3	a_4	$M_2 \times \text{depth}$
MXN 35	2	16	30	40	20	60	M3 × 6	131	8	16	M4 × 8
MXNG 35								159			
MXNSG 35			131								
MXNSG 35			159								
MXN 45	1	21	35	50	23	74	M4 × 8	163	10	19	M5 × 10
MXNG 45								203			
MXNS 45			163								
MXNSG 45			203								
MXN 55	0	27	40	60	26	88	M4 × 8	193	10	24	M5 × 10
MXNG 55								247			
MXNS 55			193								
MXNSG 55			247								

unit : mm

Note (1) : Values a_1 are the dimension between C-surface (upper surface of slide unit) and the center of female thread.

(2) : The values for the slide unit with female threads for bellow mounting at the both ends.

Remark : The dimension a_3 is higher than H dimension.

For details, consult for future information. .

Optional special specifications for the use under special environment

Black chrome surface treatment

/LC /LR /LCR

A black permeable chrome film is formed to improve corrosion resistance.

- ① /LC Treatment is applied to the casing.
- ② /LR Treatment is applied to the track rail.
- ③ /LCR Treatment is applied to the casing and the track rail.

Fluorine black chrome surface treatment

/LFC /LFR /LFCR

After forming black permeable chrome film, the surface is coated with fluorine resin for further improvement in corrosion resistance. This treatment is also effective in preventing the adhesion of foreign substances on the surface.

- ① /LFC Treatment is applied to the casing.
- ② /LFR Treatment is applied to the track rail.
- ③ /LFCR Treatment is applied to the casing and the track rail.

With track rail mounting bolts

/MA

Track rail mounting bolts are not appended for the assembled set products (both interchangeable and non-interchangeable specifications). /MA designates to append the bolts according to the number of mounting holes. For size of bolts, please refer dimension tables.

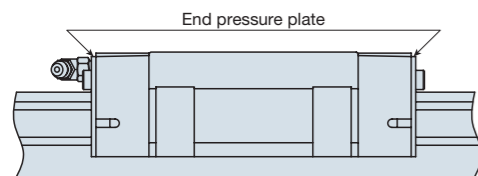
Without track rail mounting bolts

/MN

Track rail mounting bolts are not appended by /MN. This is applicable to interchangeable track rail only.

No end seal

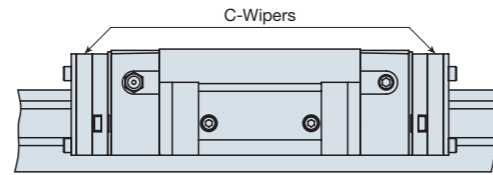
/N



End rubber seals at both ends of slide unit are replaced by steel end plates (not in contact with the track rail) to reduce frictional resistance. The under seals are not assembled in this case and this is not effective for dust protection.

C-Wipers

/RC /RCC

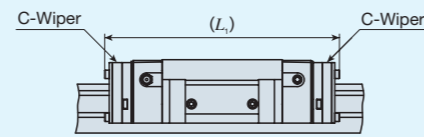


C-Wipers are attached on the slide unit for additional dust protection.

The slide unit with C-Wipers has also Inner Seal (/UR) and Scraper. Total lengths of slide unit with C-Wipers are shown in Table 9.

- ① /RC C-Wipers are provided at the ends of slide units which are closest to the end of the track rail. In case only one slide unit is assembled, C-Wipers are provided at the both ends of slide unit.
- ② /RCC C-Wipers are provided at both ends of all slide units. Applicable when the number of slide units to be two or more. In case one slide unit, indicate "/RC".

Table 9 Slide unit with C-Wipers (Supplemental code /RC)



unit : mm

Model number	L_1 (1)
MXC 35	123
MX 35	155
MXG 35	183
MXL 35	215
MXC 45	149
MX 45	189
MXG 45	229
MXL 45	269
MXC 55	172
MX 55	220
MXG 55	274
MXC 65	223
MX 65	287
MXG 65	351

Note (1): The values for the slide unit with C-Wipers at both ends.
Remark: The table shows representative model numbers only and is also applicable to all models in the same size.

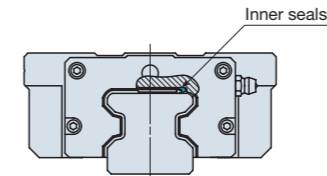
Butt-jointing interchangeable track rail

(for interchangeable specification)

/T

A special interchangeable track rail of which both ends are finished for butt jointing. Use the track rails having the same interchangeable code for butt jointing. For the butt jointing of non-interchangeable specification, indicate "butt-jointing track rail "/A".

Inner seals



/UR

Inner seals are provided inside of slide unit, where recirculation area is effectively protected from dust collected on upper surface of track rail.

With double end seals

(for interchangeable single slide unit)

/V /VR /VL

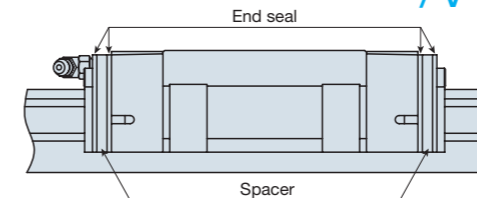
Double rubber end seals are provided on the interchangeable slide unit for more effective dust protection. For the total length of the slide unit with double end seals, see the Table 10.1 and 10.2.

- ① /V Double end seals are provided at both ends of the slide unit.
- ② /VR Double end seals are provided at the right end of the slide unit in sight of mark.
- ③ /VL Double end seals are provided at the left end of the slide unit in sight of mark.

With double end seals

(for assembled set)

/V /VV

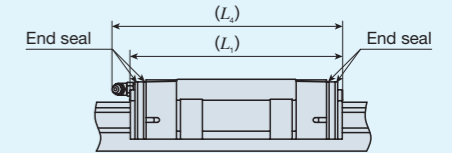


Double end seals are provided on the slide unit of assembled set of interchangeable specification or non-interchangeable (set) specification for more effective dust protection. For the total length of the slide unit with double end seals, see the Table 10.1 and 10.2.

- ① /V Double end seals are provided at the ends of slide units which are the closest to the ends of the track rail. (In case only one slide unit is assembled, double end seals are provided at both ends.)
- ② /VV Double end seals are provided at all ends of all slide units. (Applicable when the number of slide units to be two or more. In case only one slide unit is assembled, indicate "/V".)

Table 10.1 Slide unit with double end seals (Supplemental code /V, /VV)

Size 15 to 30



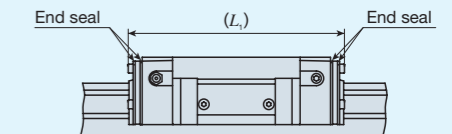
unit : mm

Model number	L_1 (1)	L_2 (1)
MXC 15	58	60
MX 15	74	76
MXG 15	90	92
MXC 20	73	83
MX 20	93	103
MXG 20	113	123
MXL 20	135	145
MXC 25	83	92
MX 25	107	116
MXG 25	122	131
MXL 25	146	155
MXC 30	93	106
MX 30	121	134
MXG 30	142	155
MXL 30	170	183

Note (1): The values for the slide unit with double end seals at both ends.
Remark: The table shows representative model numbers only and is also applicable to all models in the same size.

Table 10.2 Slide unit with double end seals (Supplemental code /V, /VV)

Size 35 to 65



unit : mm

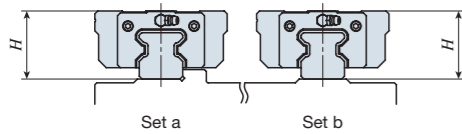
Model number	L_1 (1)
MXC 35	101
MX 35	133
MXG 35	161
MXL 35	193
MXC 45	127
MX 45	167
MXG 45	207
MXL 45	247
MXC 55	149
MX 55	197
MXG 55	251
MXC 65	192
MX 65	256
MXG 65	320

Note (1): The values for the slide unit with double end seals at both ends.
Remark: The table shows representative model numbers only and is also applicable to all models in the same size.

Optional special specifications for the use under special environment

Matched sets to be used as an assembled group

/W





For two or more assembly sets of C-Lube Linear Roller Way Super MX used on the same plane, the dimensional variation of H are kept within the specified range. The dimensional variation of dimension H in matched sets is the same as that of a single set. Indicate the number of sets after "/W".

With scrapers

(for interchangeable single slide unit)

/Z /ZR /ZL

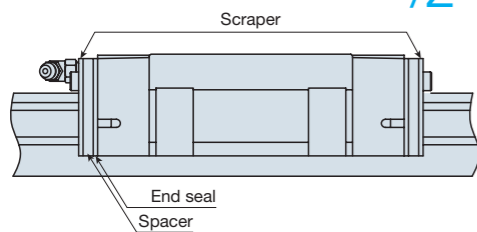
Metal scrapers are provided on the slide unit of interchangeable specification. Scrapers (non-contact type) are attached to effectively remove large particles of dust or foreign matters adhering to the track rail. For the total length of the slide unit with scrapers, see Table 11.1 and 11.2.

- ① /Z Scrapers are provided at both ends of the slide unit.
- ② /ZR A scraper is provided at the right end of the slide unit in sight of  mark.
- ③ /ZL A scraper is provided at the left end of the slide unit in sight of  mark.

With scrapers

(for assembled set)

/Z /ZZ



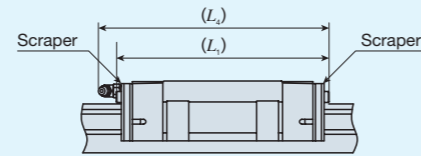
Metal scrapers are provided on the slide units of assembled set of interchangeable specification or non-interchangeable (set) specification.

Scrapers (non-contact type) are attached to effectively remove large particles of dust or foreign matters adhering to the track rail. For the total length of the slide unit with scrapers, see Table 11.1 and 11.2.

- ① /Z Scrapers are provided at the ends of slide units which are the closest to the ends of the track rail. (In case only one slide unit is assembled, scrapers are provided at both ends.)
- ② /ZZ Scrapers are provided at all ends of all slide units. (Applicable when the number of slide units to be two or more. In case only one slide unit is assembled, indicate "/Z".)

Table 11.1 Slide unit with scrapers (Supplemental code /Z, /ZZ)

Size 15 to 30



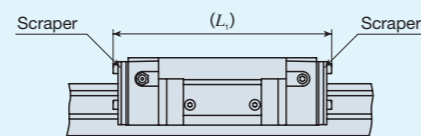
unit : mm

Model number	L_1 (1)	L_2 (1)
MXC 15	60	61
MX 15	76	77
MXG 15	92	93
MXC 20	75	84
MX 20	95	104
MXG 20	115	124
MXL 20	137	146
MXC 25	85	93
MX 25	109	117
MXG 25	124	132
MXL 25	148	156
MXC 30	96	107
MX 30	124	135
MXG 30	145	156
MXL 30	173	184

Note (1): The values are the slide unit lengths with scrapers at both ends.
Remark: The table shows representative model numbers and is also applicable to all models in the same size of MX series.

Table 11.2 Slide unit with scrapers (Supplemental code /Z, /ZZ)

Size 35 to 65



unit : mm

Model number	L_1 (1)
MXC 35	103
MX 35	135
MXG 35	163
MXL 35	195
MXC 45	129
MX 45	169
MXG 45	209
MXL 45	249
MXC 55	151
MX 55	199
MXG 55	253
MXC 65	194
MX 65	258
MXG 65	322

Note (1): The values are the slide unit lengths with scrapers at both ends.
Remark: The table shows representative model numbers and is also applicable to all models in the same size of MX series.

Load ratings and Life

Basic dynamic load rating C

Conforming to ISO 14728-1

The basic dynamic load rating is defined as a constant load both in direction and magnitude under which a group of identical C-Lube Linear Roller Way Super MX is individually operated and 90% of those in the group can travel 50×10^3 m free from material damage due to rolling contact fatigue.

Basic static load rating C_0

Conforming to ISO 14728-2

The basic static load rating is defined as a static load that gives a prescribed constant contact stress at the center of the contact area between rolling elements and raceways receiving the maximum load. Generally, the basic static load rating is used in combination with the static safety factor.

The static load ratings of C-Lube Linear Roller Way Super MX are designated for equal load capacity in downward load, upward load and lateral load.

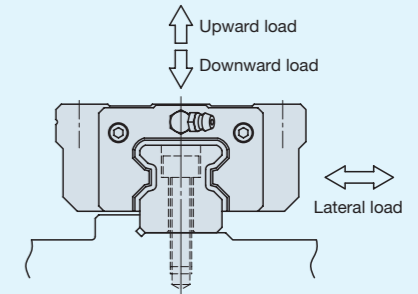


Fig. 2 Load directions

Static moment rating T_0, T_x, T_y

The static moment rating is defined as a static moment load (See Fig. 3) that gives a prescribed constant contact stress at the center of the contact area between rolling elements and raceways receiving the maximum load.

The static moment rating is used in combination with the static safety factor to give the limiting load for normal rolling motion. Generally, the basic static moment rating is used in combination with the static safety factor.

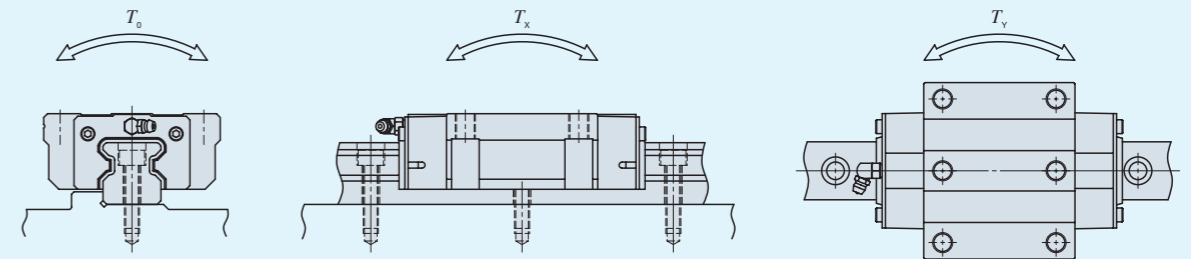


Fig. 3 Directions of static moment rating

Load ratings and Life

Life

The rating life of C-Lube Linear Roller Way Super MX series is obtained from the following calculation formula.

$$L = 50 \left(\frac{C}{P} \right)^{10/3} \quad (1)$$

where, L : Rating life, 10^3 m
 C : Basic dynamic load rating, N
 P : Equivalent load, N

If the stroke length and the number or strokes per minute are known, the life in hours must be corrected by the following formula.

$$L_h = \frac{10^6 L}{2Sn \times 60} \quad (2)$$

where, L_h : Rating life in hours, hours
 S : Stroke length, mm
 n_1 : Number of strokes per minute, cpm

Static safety factor

The static safety factor f_s of C-Lube Linear Roller Way Super MX series is given in the following formula, and general values of this factor are shown in Table 12.

$$f_s = \frac{C_0}{P_0} \quad (3)$$

where, f_s : Static safety factor
 C_0 : Basic static load rating, N
 P_0 : Static load, N

Table 12 Static safety factor

Operating conditions	f_s
Operation with vibration and/or shocks	4 ~ 6
High operating performance	3 ~ 5
Normal operation	2.5 ~ 3

Load factor

Actual loads applied to the linear motion rolling guide sometimes exceed the theoretically calculated load due to vibration and shocks caused by machine operation. The actual life is calculated considering the load factor.

Table 13 Load factor

Condition	f_w
Smooth operation free from vibration and/or shocks	1 ~ 1.2
Normal operation	1.2 ~ 1.5
Operation with shock loads	1.5 ~ 3

Dynamic equivalent load

When a load is applied in a direction other than that of the basic dynamic load rating of C-Lube Linear Roller Way Super MX complex load is applied, the dynamic equivalent load must be calculated to obtain the basic rating life.

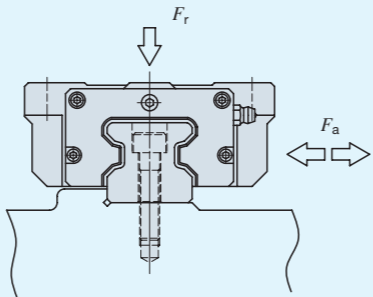
Obtain the downward and lateral conversion loads from the loads and moments in various directions.

$$F_{ro} = k_r |F_r| + \frac{C_0}{T_0} |M_0| + \frac{C_0}{T_x} |M_x| \quad (4)$$

$$F_{ao} = k_a |F_a| + \frac{C_0}{T_y} |M_y| \quad (5)$$

where, F_{ro} : Downward conversion load, N
 F_{ao} : Lateral conversion load, N
 F_r : Downward load, N
 F_a : Lateral load, N
 M_0 : Moment in the T_0 direction, N·m
 M_x : Moment in the T_x direction, N·m
 M_y : Moment in the T_y direction, N·m
 k_r, k_a : Conversion factors for load direction (See Table 14.)
 C_0 : Basic static load rating, N
 T_0 : Static moment rating in the T_0 direction, N·m
 T_x : Static moment rating in the T_x direction, N·m
 T_y : Static moment rating in the T_y direction, N·m

Table 14 Conversion factor for load direction



Condition	Conversion factor	
	k_r	k_a
$F_r \geq 0$	1	1
$F_r < 0$	1	

Obtain the dynamic equivalent load from the downward and lateral conversion loads.

$$P = XF_{ro} + YF_{ao} \quad (6)$$

where, P : Dynamic equivalent load, N
 X, Y : Dynamic equivalent load factor (See Table 15.)
 F_{ro} : Downward conversion load, N
 F_{ao} : Lateral conversion load, N

Table 15 Dynamic equivalent load factor

Conditions	X	Y
$ F_{ro} \geq F_{ao} $	1	0.6
$ F_{ro} < F_{ao} $	0.6	1

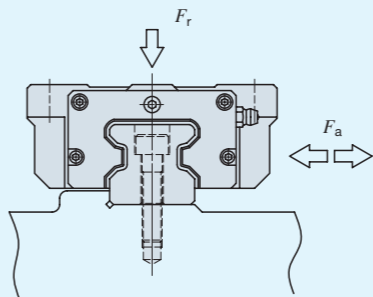
Static equivalent load

When a load is applied in a direction other than that of the basic static load rating of C-Lube Linear Roller Way Super MX complex load is applied, the static equivalent load must be calculated to obtain the static safety factor.

$$P_0 = k_{or} |F_r| + k_{oa} |F_a| + \frac{C_0}{T_0} |M_0| + \frac{C_0}{T_x} |M_x| + \frac{C_0}{T_y} |M_y| \quad (7)$$

where, P_0 : Static equivalent load, N
 F_r : Downward load, N
 F_a : Lateral load, N
 M_0 : Moment in the T_0 direction, N·m
 M_x : Moment in the T_x direction, N·m
 M_y : Moment in the T_y direction, N·m
 k_{or}, k_{oa} : Conversion factors for load direction (See Table 16.)
 C_0 : Basic static load rating, N
 T_0 : Static moment rating in the T_0 direction, N·m
 T_x : Static moment rating in the T_x direction, N·m
 T_y : Static moment rating in the T_y direction, N·m

Table 16 Conversion factor for load direction



Condition	Conversion factor	
	k_{or}	k_{oa}
$F_r \geq 0$	1	1
$F_r < 0$	1	

Lubrication and dust protection

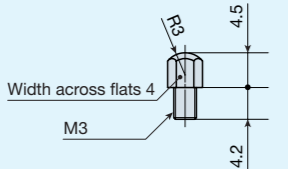
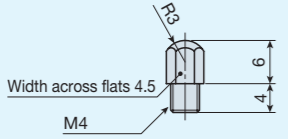
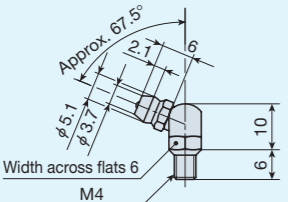
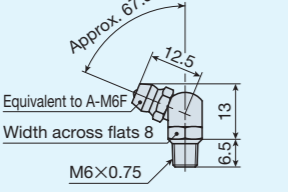
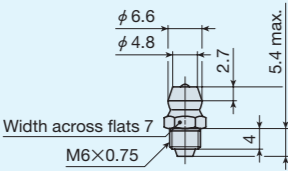
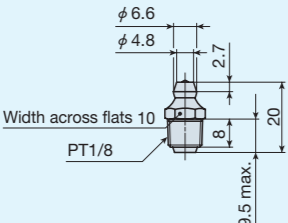
High quality lithium-soap base grease containing extreme pressure additive (ALVANIA EP grease 2 -Shell-) is pre-packed in C-Lube Linear Roller Way Super MX. Additionally, C-Lube (Capillary sleeve) a component part is placed in the cylindrical roller recirculation path, thereby extending the re-lubrication (greasing) interval time and maintenance work for a long period.


C-Lube Linear Roller Way Super MX is protected from dust by special rubber seals. But, if large amount of fine contaminants are present, or if large particles of foreign matters such as dust or chips may fall on the track rail, it is recommended to provide protective covers such as bellows for the entire linear motion mechanism. Bellows to match the dimensions of C-Lube Linear Way Super MX are optionally available. They are easy to mount and highly effective for dust protection. If required, consult IKO.

Grease nipples

Grease nipples shown in Table 17 are assembled to each slide unit of C-Lube Linear Roller Way Super MX.



Table 17 Grease nipple unit : mm





Model number	Grease nipple	
	Code	Shape and dimension
(1)	A-M3	
MX 15	A-M4	
MX 20 MX 25	B-M4	
MX 30	B-M6	
MX 35(2)	JIS 1	
MX 45 MX 55 MX 65	JIS 2	




Note (1): A-M3 is applicable to sizes 15, 20 and 25 with bellows.
 (2): In low section flange type and low section block type, thread size for grease nipple of front face is smaller than other threads thus, please consult  if grease nipple for front face is required.
 Remark: The table shows representative model numbers and is also applicable to all models in the same size.

Precautions for use

1 Mounting surface, reference mounting surface, and general mounting structure

To mount C-Lube Linear Roller Way Super MX, correctly fit the reference mounting surfaces  and  of the slide unit and the track rail to the reference mounting surfaces of the table and the bed, then fix them tightly. (See Fig. 4)

The reference mounting surfaces  and , also the mounting surfaces  and  of C-Lube Linear Way are accurately finished by grinding. Stable and high accuracy linear motion can be obtained by finishing the mating mounting surfaces of machines or equipment with high accuracy and correctly mounting the guide on these surfaces.

The slide unit reference mounting surface is always the side surface in opposite to the  mark. The track rail reference mounting surface can be identified by locating the  mark on the top surface of the track rail. The track rail reference mounting surface is the side surface above the  mark (in the direction of the arrow). (See Fig. 5)

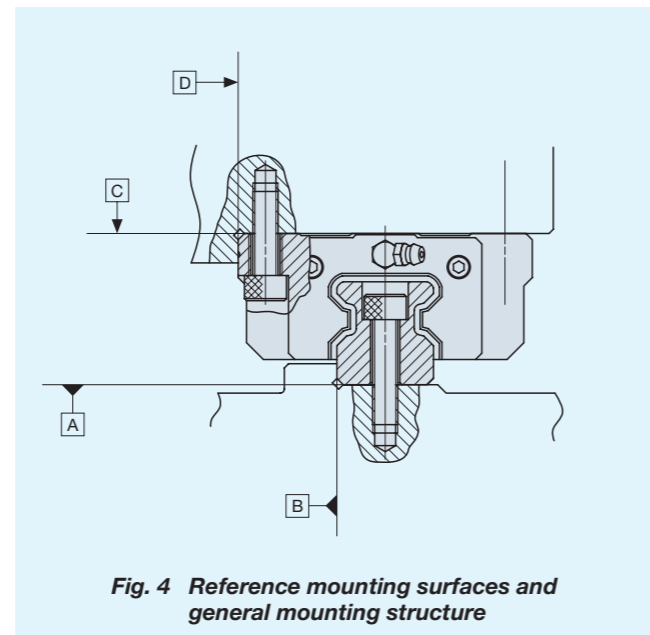


Fig. 4 Reference mounting surfaces and general mounting structure

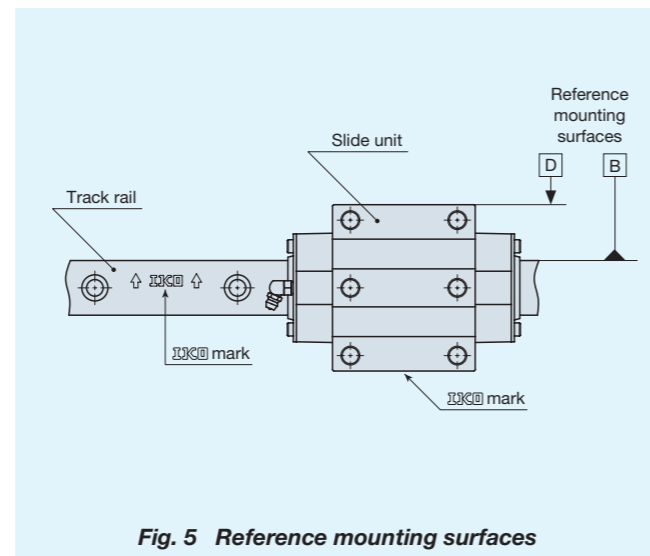


Fig. 5 Reference mounting surfaces

2 Fixing of slide unit

The slide unit is provided with one or two mounting thread holes in the middle of width (See Fig. 6) so that an applied load can be received with good load balance. When designing machines or equipment, ensure that these middle-mounting holes of the slide unit can be securely tightened to obtain maximum performance of the guide. It is recommended to secure the screwing depths shown in Table 18.1 and 18.2 for the slide unit of compact block type.

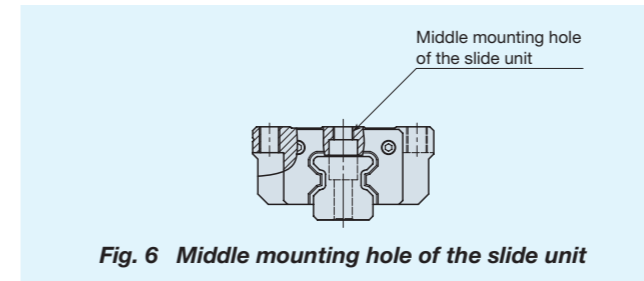


Fig. 6 Middle mounting hole of the slide unit

Table 18.1 Screwing depth of slide unit mounting holes for compact block type unit : mm

Model number	Recommended minimum depth
MXS 15	4.5
MXS 20	5.5
MXS 25	7
MXS 30	9

Remark: The table shows representative model numbers and is also applicable to all models in the same size.

Table 18.2 Screwing depth of slide unit mounting holes for low section block type unit : mm

Model number	Recommended minimum depth
MXNS 35	8.5
MXNS 45	10.5
MXNS 55	14

Remark: The table shows representative model numbers and is also applicable to all models in the same size of low section block type.

3 Corner radius and shoulder height of reference mounting surfaces

It is recommended to make a relieved fillet at the corner of the mating reference mounting surfaces as shown in Fig. 7. Otherwise, corner radius R is recommended shown in Table 19. Table 19 shows recommended shoulder heights and radius of the reference mounting surfaces.

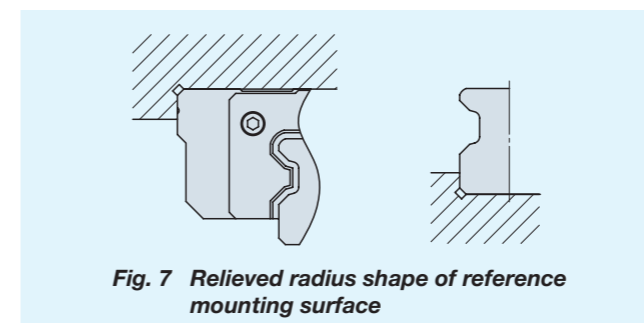
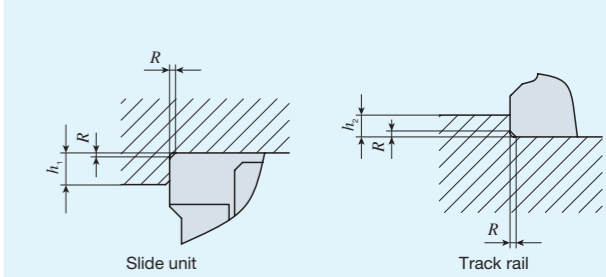


Fig. 7 Relieved radius shape of reference mounting surface

Table 19 Shoulder height and radius of the reference mounting surfaces



Model number	Slide unit Shoulder height h_1	Track rail Shoulder height h_2	Relieved radius R (max.)
MX 15	4	3	0.5
MX 20	5	4	0.5
MX 25	6	5	1
MX 30	8	5.5	1
MX 35	8	5.5	1
MX 45	8	7	1.5
MX 55	10	8	1.5
MX 65	10	10	1.5

Remark: The table shows representative model numbers but is applicable to all models of the same size.

4 Multiple slide units mounted in close distance

When using multiple slide units in close distance to each other, actual load may be greater than the calculated load depending on the mounting accuracy of the slide units on the mounting surfaces and the reference mounting surfaces of the machine. It is suggested, in such cases, to assume a greater load than the calculated load.

5 Operating temperature

The C-Lube Linear Roller Way Super MX must be operated below 80°C (maximum).

6 Cleaning

Do not wash C-Lube Linear Roller Way Super MX with organic solvent and/or white kerosene, which have the ability of removing fat, nor leave Linear Roller Way in contact with the above agents.

Mounting

1 When assembling two or more sets of C-Lube Linear Roller Way Super MX

- Interchangeable specification**
In case of an interchangeable specification product, assemble slide units and track rails with the same interchangeable code "S2".
- Non-interchangeable specification**
Use the assembly of slide unit(s) and track rail as delivered without changing the combination.
- Matched sets to be used as an assembled group**
Special specification products of matched sets (by supplemental code "/W") are delivered as a group in which dimensional variations are specially controlled. Mount them without mixing with those of another group.

2 Assembling a slide unit and a track rail

When assembling C-Lube Linear Roller Way Super MX, correctly fit the groove of the slide unit mounted on a steel ball holder to the groove of the track rail, and then move the slide unit gently from the dummy rail to the track rail in parallel direction. Cylindrical rollers are retained, so the slide unit can be separated freely from the track rail. However, the slide unit can be assembled on the track rail much easier by using provided dummy rail. Dummy rail is appended as an accessory to the interchangeable slide unit. Dummy rail is also appended to non-interchangeable specification product. Please use it when disassembling/assembling the slid unit.

3 Accuracy of mating mounting surfaces

Depending on the accuracy of mating mounting surfaces and assembling accuracy, a load greater than the calculated load may act on C-Lube Linear Roller Way Super MX. This will eventually give an adverse effect on the service life of C-Lube Linear Roller Way Super MX. Therefore, the accuracy must be carefully examined. The accuracy of mating mounting surfaces for track rail and slide unit and the assembling accuracy must be determined considering the operating conditions, required running accuracy and rigidity, etc. Also, the mounting structure must be examined to ensure accuracy and performance for the reliable use of a linear motion rolling guide. When multiple sets are mounted, the parallelism between the two mounting surfaces of machines must be prepared. General guide line is shown in Table 20. These values are also applicable to right angled mounting and back to back mounting .

Table 20 Parallelism between two mounting surfaces

unit : μm				
Class	High (H)	Precision (P)	Super precision (SP)	Ultra precision (UP)
Parallelism	30	20	10	6

4 Cleaning the mounting surfaces

When mounting C-Lube Linear Roller Way Super MX, firstly clean all the mounting and reference mounting surfaces. (See Fig. 8) Remove burrs and blemishes from the reference mounting surfaces and mounting surfaces of the machine using an oil-stone, etc., and then wipe the surfaces with clean cloth.

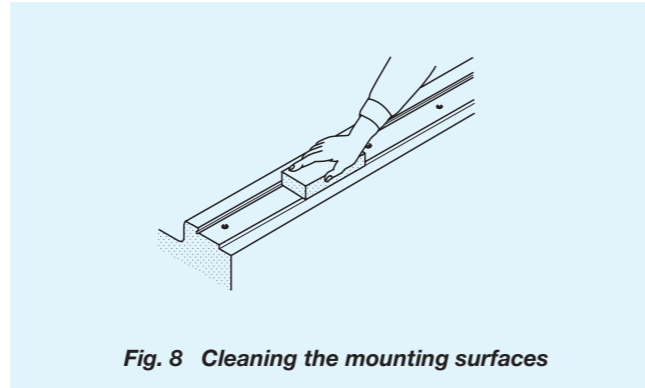


Fig. 8 Cleaning the mounting surfaces

5 Tightening torque values of mounting bolts

The standard torque values for C-Lube Linear Roller Way Super MX mounting bolts are shown in Table 21. When machines or equipment are subjected to serve vibration, shock, large fluctuating load or moment load, the bolts should be tightened with a torque 1.2 to 1.5 times higher than the standard torque values shown. When the mating member material is cast iron or aluminum, tightening torque should be lowered in accordance with the strength characteristics of the material.

Table 21 Tightening torque of mounting bolts

Bolt size	Tightening torque N·m Carbon steel bolt (Strength division 12.9)
M 4 × 0.7	4.0
M 5 × 0.8	7.9
M 6 × 1	13.3
M 8 × 1.25	32.0
M10 × 1.5	62.7
M12 × 1.75	108
M14 × 2	172
M16 × 2	263

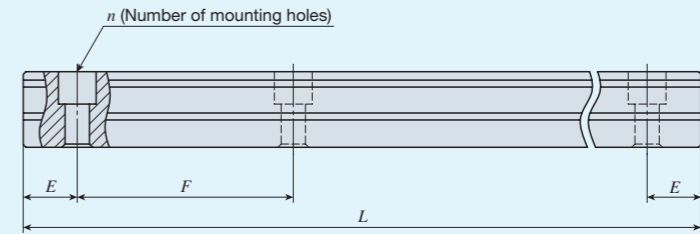
Remark : For tightening torque values for slide unit center mounting holes on size 15 to 35 of flange type (MXC, MX, MXG, MXL), 70% to 80% of the values in Table 21 are recommended.

Track rail lengths

Standard and maximum lengths of track rails are shown in Table 22.1 and 22.2. Track rails in different lengths are available upon request. Simply indicate the necessary length of track rail in millimeter (mm) in the identification number. In non-interchangeable specification, for track rails longer than the maximum length are shown in Table 22.1 and 22.2, butt-jointing

track rails are available upon request. In this case, indicate supplemental code "/A" in the identification number. E dimensions at both ends are the same unless otherwise specified. To change these dimensions, specify the specified rail mounting hole positions (supplemental code "/E") of optional special specification.

Table 22.1 Standard and maximum lengths of track rails



Model number		MX 15	MX 20	MX 25	MX 30	MX 35	MX 45	MX 55	MX 65
Standard length $L(n)$	Over (Incl.)	180 (3)	240 (4)	240 (4)	480 (6)	480 (6)	840 (8)	840 (7)	1 500 (10)
		240 (4)	480 (8)	480 (8)	640 (8)	640 (8)	1 050 (10)	1 200 (10)	1 950 (13)
		360 (6)	660 (11)	660 (11)	800 (10)	800 (10)	1 260 (12)	1 560 (13)	3 000 (20)
		480 (8)	840 (14)	840 (14)	1 040 (13)	1 040 (13)	1 470 (14)	1 920 (16)	
		660 (11)	1 020 (17)	1 020 (17)	1 200 (15)	1 200 (15)	1 995 (19)	3 000 (25)	
Mounting hole pitch F		60	60	60	80	80	105	120	150
E		30	30	30	40	40	52.5	60	75
Reference dimension $E^{(1)}$	Over (Incl.)	7	8	9	10	10	12.5	15	17
	Under	37	38	39	50	50	65	75	92
Maximum length $^{(2)}$		1 500 (1 980)	1 980 (3 000)	3 000 (3 960)	2 960 (4 000)	2 960 (4 000)	2 940 (3 990)	3 000 (3 960)	3 000 (3 900)

unit : mm

Note (1) : Not applicable to the track rail with female threads for bellow mounting. (Supplemental code /J)
 (2) : The track rails can be manufactured up to the maximum length shown in parentheses. If required, please consult for further information.
 Remark 1: The table shows representative model numbers and is also applicable to all models in the same size.
 2: In case of half pitch specification (/HP), see Table 22.2.

Table 22.2 Standard and maximum lengths of track rails (In case half pitch specification /HP)

Model number		MX15.../HP	MX20.../HP	MX25.../HP	MX30.../HP	MX35.../HP	MX45.../HP	MX55.../HP	MX65.../HP
Standard length $L(n)$	Over (Incl.)	180 (6)	240 (8)	480 (16)	480 (12)	480 (12)	840 (16)	840 (14)	1 500 (20)
		240 (8)	480 (16)	660 (22)	640 (16)	640 (16)	1 050 (20)	1 200 (20)	1 950 (26)
		360 (12)	660 (22)	840 (28)	800 (20)	800 (20)	1 260 (24)	1 560 (26)	3 000 (40)
		480 (16)	840 (28)	1 020 (34)	1 040 (26)	1 040 (26)	1 470 (28)	1 920 (32)	
		660 (22)	1 020 (34)	1 200 (40)	1 200 (30)	1 200 (30)	1 995 (38)	3 000 (50)	
Mounting hole pitch F		30	30	30	40	40	52.5	60	75
E		15	15	15	20	20	26.25	30	37.5
Reference dimension $E^{(1)}$	Over (Incl.)	7	8	9	10	10	12.5	15	17
	Under	22	23	24	30	30	38.75	45	54
Maximum length $^{(2)}$		1 500 (1 980)	1 980 (3 000)	3 000 (3 960)	2 960 (4 000)	2 960 (4 000)	2 940 (3 990)	3 000 (3 960)	3 000 (3 975)

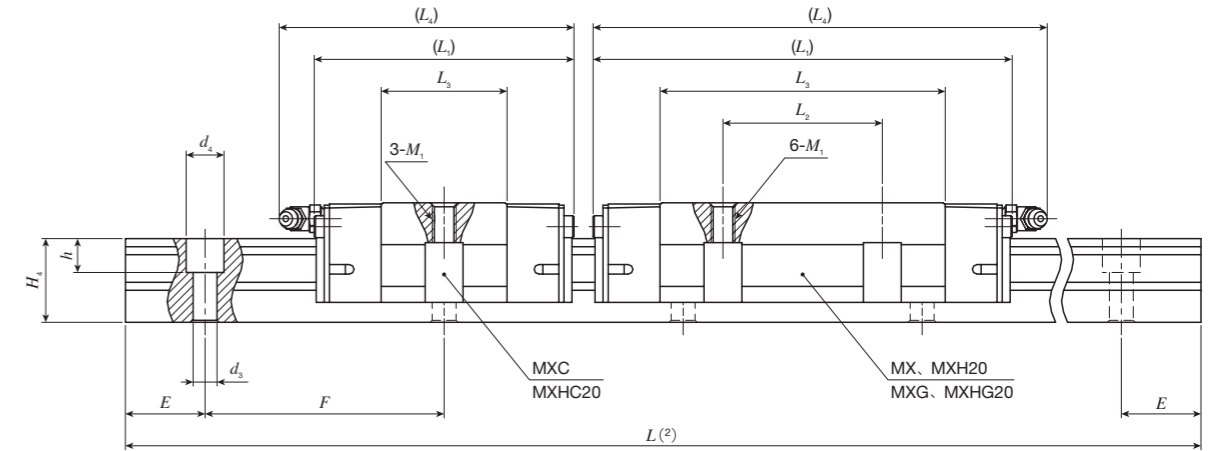
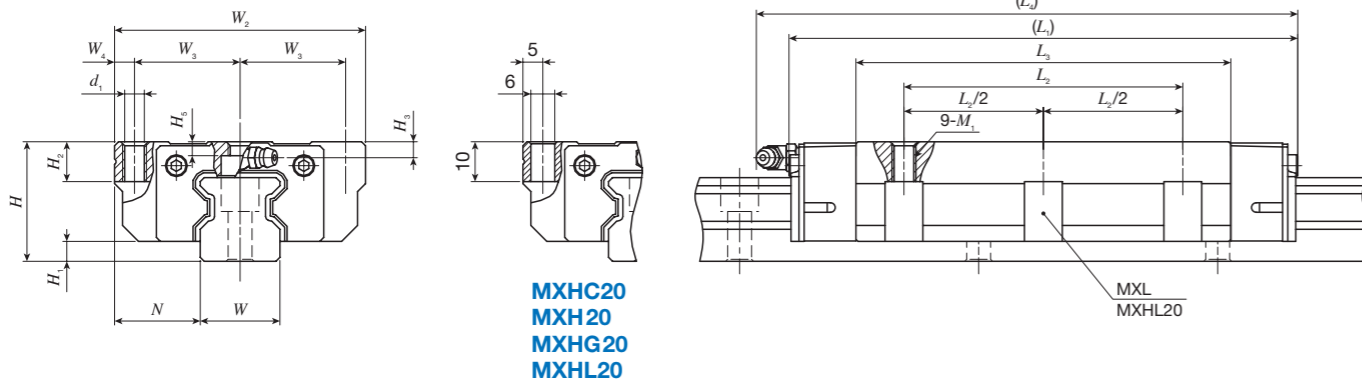
Note (1) : Not applicable to the track rail with female threads for bellow mounting. (Supplemental code /J)
 (2) : The track rails can be manufactured up to the maximum length shown in parentheses. If required, please consult for further information.
 Remark : The table shows representative model numbers and is also applicable to all models in the same size.

IKO G-Lube Linear Roller Way Super MX

Flange type, mounting from top and bottom

Short : MXC
Standard : MX

High rigidity long : MXG
Extra high rigidity long : MXL



Model number	Interchangeable	Mass (Reference)		Dimension of assembly mm			Dimension of slide unit mm										Dimension of track rail mm							Recommended ⁽³⁾ mounting bolt for track rail mm Bolt size × length	Basic ⁽⁴⁾ dynamic load rating C N	Basic ⁽⁴⁾ static load rating C ₀ N	Static moment rating ⁽⁴⁾			Model number		
		Slide unit kg	Track rail ⁽²⁾ kg/m	H	H ₁	N	W ₂	W ₃	W ₄	L ₁	L ₂	L ₃	L ₄	d ₁	M ₁	H ₂	H ₃	H ₅	W	H ₄	d ₃	d ₄	h				E	F	T ₀ N·m		T _x N·m	T _y N·m
MXC 15	☆	0.13	1.65	24	4	16	47	19	4.5	52	-	24	55	4.4	M 5	7	3.5	3	15	16.5	4.5	8	6	30	60	M4 × 16	7 730	12 000	113	50.6 457	50.6 457	MXC 15
MX 15	☆	0.20								68	30	40	71														11 500	20 000	188	136 942	136 942	MX 15
MXG 15	☆	0.28								84	56	87	14 900														28 000	263	262 1 590	262 1 590	MXG 15	
MXC 20⁽¹⁾	☆	0.29	2.73	30	5	21.5	63	26.5	5	66	-	31.6	74	-	M 6 ⁽¹⁾	10	4	3.5	20	21	6	9.5	8.5	30	60	M5 × 20	16 100	26 400	341	150 1 260	150 1 260	MXC 20⁽¹⁾
MX 20⁽¹⁾	☆	0.44								86	40	51.6	94														23 400	42 700	550	379 2 520	379 2 520	MX 20⁽¹⁾
MXG 20⁽¹⁾	☆	0.61								106	71.6	114	30 100														58 900	760	713 4 200	713 4 200	MXG 20⁽¹⁾	
MXL 20⁽¹⁾		0.80								128	70	94.1	136														37 200	77 200	996	1 210 6 560	1 210 6 560	MXL 20⁽¹⁾
MXC 25	☆	0.44	3.59	36	6	23.5	70	28.5	6.5	74	-	36	83	7	M 8	10	5	5	23	24.5	7	11	9	30	60	M6 × 25	21 600	33 800	500	213 1 810	213 1 810	MXC 25
MX 25	☆	0.67								98	45	60	107														32 100	56 300	833	573 3 800	573 3 800	MX 25
MXG 25	☆	0.84								113	75	122	38 200														70 300	1 040	885 5 380	885 5 380	MXG 25	
MXL 25		1.08								137	70	99	146														47 400	92 800	1 370	1 530 8 480	1 530 8 480	MXL 25
MXC 30	☆	0.78	5.01	42	6.5	31	90	36	9	85	-	42.4	95	8.5	M10	10	6.5	5.5	28	28	9	14	12	40	80	M8 × 28	29 200	44 600	808	329 2 740	329 2 740	MXC 30
MX 30	☆	1.20								113	52	70.4	123														43 400	74 400	1 350	883 5 780	883 5 780	MX 30
MXG 30	☆	1.58								134	91.4	144	53 200														96 700	1 750	1 470 8 740	1 470 8 740	MXG 30	
MXL 30		2.03								162	80	119.4	172														65 600	126 000	2 290	2 500 13 600	2 500 13 600	MXL 30

Note (1): MXC20, MX20, MXG20 and MXL20 can be mounted from the top only. For mounting from the bottom, use MXHC20, MXH20, MXHG20 and MXHL20 which have same dimensions as above model.

(2): Track rail length L are shown in Table 22.1 and 22.2 on page 34.

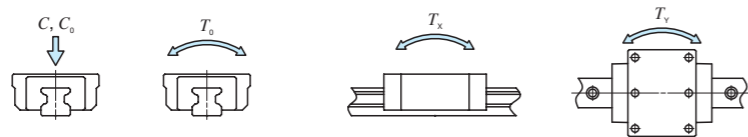
(3): Track rail mounting bolts are not appended. Hexagon socket bolts of JIS B 1176 strength division 12.9 or equivalent are recommended.

(4): The directions of basic dynamic load rating (C), basic static load rating (C₀) and static moment rating (T₀, T_x and T_y) are shown in the sketches below. The upper values in the T_x and T_y column apply to one slide unit, and the lower values apply to two units in close contact.

Remark 1: The mark ☆ indicates that interchangeable specification products are available.

2: For grease nipple specification, see Table 17 on page 31.

3: A grease nipple mounting threaded hole is provided on each end plate respectively.



1N≒0.102kgf

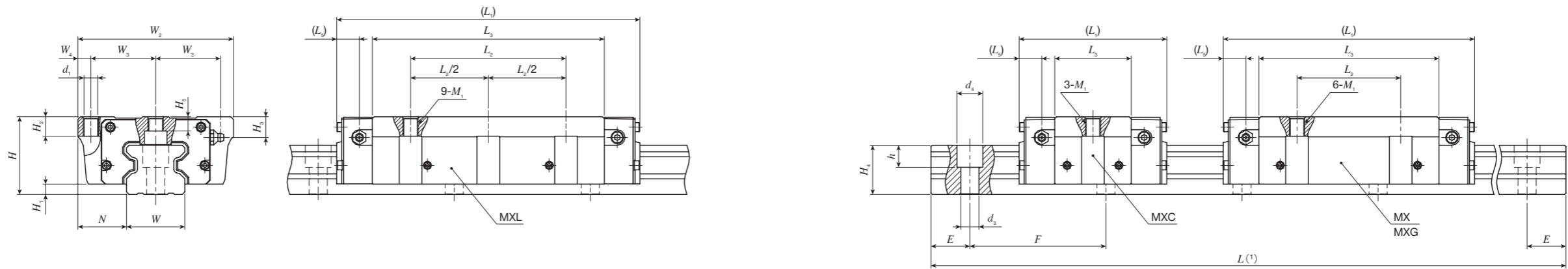
Example of identification number for assembled set

Model code	Size	Part code	Preload symbol	Class symbol	Interchangeable code	Supplemental code
MX G 25 C2 R840 T₁ P S2 /F						
Series MX Flange type, mounting from top and bottom	Length of slide unit C Short No symbol Standard G High rigidity long L Extra high rigidity long	Size 15, 20, 25, 30	Preload amount T ₁ Light preload T ₂ Medium preload T ₃ Heavy preload	Accuracy class H High P Precision SP Super precision UP Ultra precision	Interchangeable code S2 Interchangeable specification No symbol Non interchangeable specification	Special specification A, D, E, F, GE, HP, I, J, L, LF, MA, MN, N, T, V, W, Z
Number of slide unit (two units)		Length of track rail (840mm)				

IKO C-Lube Linear Roller Way Super MX

Flange type,
mounting from top and bottom

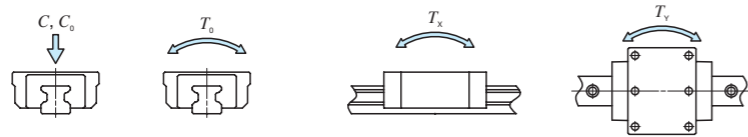
Short : MXC
Standard : MX
High rigidity long : MXG
Extra high rigidity long : MXL



Model number	Interchangeable	Mass (Reference)		Dimension of assembly mm			Dimension of slide unit mm										Dimension of track rail mm							Recommended ⁽²⁾ mounting bolt for track rail mm Bolt size × length	Basic ⁽³⁾ dynamic load rating C N	Basic ⁽³⁾ static load rating C ₀ N	Static moment rating ⁽³⁾			Model number		
		Slide unit kg	Track rail ⁽¹⁾ kg/m	H	H ₁	N	W ₂	W ₃	W ₄	L ₁	L ₂	L ₃	L ₅	d ₁	M ₁	H ₂	H ₃	H ₅	W	H ₄	d ₃	d ₄	h				E	F	T ₀ N·m		T _x N·m	T _y N·m
MXC 35	☆	1.13	6.88	48	6.5	33	100	41	9	92	-	46.6	12.7	8.5	M10	13	13	7	34	32	9	14	12	40	80	M 8×35	39 500	60 000	1 300	506 3 950	506 3 950	MXC 35
MX 35	☆	1.76								124	62	78.6															1 360 8 470	1 360 8 470	MX 35			
MXG 35	☆	2.41								152	106.6	2 440 13 800															2 440 13 800	MXG 35				
MXL 35		3.00								184	100	138.6															4 060 21 300	4 060 21 300	MXL 35			
MXC 45	☆	2.11	10.8	60	8	37.5	120	50	10	114	-	59	17.5	10.5	M12	15	16	11	45	38	14	20	17	52.5	105	M12×40	64 100	95 600	2 660	1 010 7 800	1 010 7 800	MXC 45
MX 45	☆	3.26								154	80	99															2 700 16 800	2 700 16 800	MX 45			
MXG 45	☆	4.60								194	139	5 220 29 000															5 220 29 000	MXG 45				
MXL 45		5.66								234	120	179															8 560 44 400	8 560 44 400	MXL 45			
MXC 55	☆	3.49	14.1	70	9	43.5	140	58	12	136	-	72	20	12.5	M14	17	16	14	53	43	16	23	20	60	120	M14×45	99 700	149 000	4 830	1 880 14 400	1 880 14 400	MXC 55
MX 55	☆	5.42								184	95	120															5 040 31 100	5 040 31 100	MX 55			
MXG 55	☆	7.93								238	174	10 400 57 000															10 400 57 000	MXG 55				
MXC 65	☆	7.18								180	-	95															4 200 32 200	4 200 32 200	MXC 65			
MX 65	☆	11.5	22.6	90	12	53.5	170	71	14	244	110	159	26.3	14.5	M16	23	18	18.5	63	56	18	26	22	75	150	M16×60	260 000	415 000	16 300	11 300 69 300	11 300 69 300	MX 65
MXG 65	☆	16.0								308	223	21 800 120 000															21 800 120 000	MXG 65				

Note (1): Track rail length L are shown in Table 22.1 and 22.2 on page 34.
 (2): Track rail mounting bolts are not appended. Hexagon socket bolts of JIS B 1176 strength division 12.9 or equivalent are recommended.
 (3): The directions of basic dynamic load rating (C), basic static load rating (C₀) and static moment rating (T₀, T_x and T_y) are shown in the sketches below.

The upper values in the T_x and T_y column apply to one slide unit, and the lower values apply to two units in close contact.
 Remark 1: The mark ☆ indicates that interchangeable specification products are available.
 2: For grease nipple specification, see Table 17 on page 31.
 3: Three female threaded holes for grease nipple are prepared on each end plate.



Example of identification number for assembled set

Model code	Size	Part code	Preload symbol	Class symbol	Interchangeable code	Supplemental code
MX	G	55 C2 R3000	T₁	P	S2	/F

Series
MX Flange type, mounting from top and bottom

Length of slide unit
C Short
No symbol Standard
G High rigidity long
L Extra high rigidity long

Size
35, 45, 55, 65

Number of slide unit (two units)

Preload amount
No symbol Standard
T₁ Light preload
T₂ Medium preload
T₃ Heavy preload

Accuracy class
H High
P Precision
SP Super precision
UP Ultra precision

Length of track rail (3000mm)

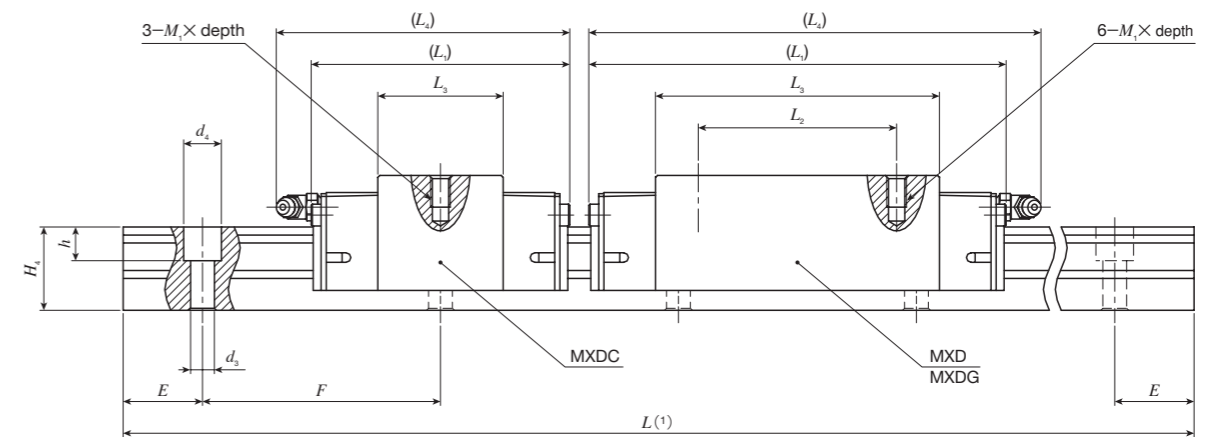
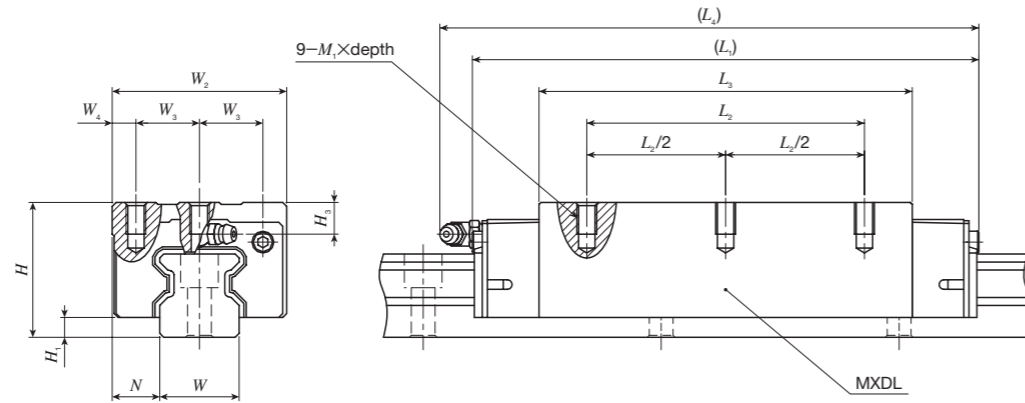
Special specification
A, D, E, F, GE, HP, I, J, L, LF, MA, MN, N, RC, T, UR, V, W, Z

Interchangeable code
S2 Interchangeable specification
No symbol Non interchangeable specification

IKO C-Lube Linear Roller Way Super MX

Block type, mounting from top

- Short : MXDC
- Standard : MXD
- High rigidity long : MXDG
- Extra high rigidity long : MXDL



Model number	Interchangeable	Mass (Reference)		Dimension of assembly mm			Dimension of slide unit mm							Dimension of track rail mm							Recommended ⁽²⁾ mounting bolt for track rail mm Bolt size x length	Basic ⁽³⁾ dynamic load rating C N	Basic ⁽³⁾ static load rating C ₀ N	Static moment rating ⁽³⁾			Model number		
		Slide unit kg	Track rail ⁽¹⁾ kg/m	H	H ₁	N	W ₂	W ₃	W ₄	L ₁	L ₂	L ₃	L ₄	M ₁ x depth	H ₃	W	H ₄	d ₃	d ₄	h				E	F	T ₀ N·m		T _x N·m	T _y N·m
MXDC 15	☆	0.13	1.65	28	4	9.5	34	13	4	52	-	24	55	M4 x 8	7.5	15	16.5	4.5	8	6	30	60	M4 x 16	7 730	12 000	113	50.6 457	50.6 457	MXDC 15
MXD 15	☆	0.19								68	26	40	71											11 500	20 000	188	136 942	136 942	MXD 15
MXDG 15	☆	0.26								84	56	87	14 900											28 000	263	262 1 590	262 1 590	MXDG 15	
MXDC 20	☆	0.25	2.73	34	5	12	44	16	6	66	-	31.6	74	M5 x 8	8	20	21	6	9.5	8.5	30	60	M5 x 20	16 100	26 400	341	150 1 260	150 1 260	MXDC 20
MXD 20	☆	0.38								86	36	51.6	94											23 400	42 700	550	379 2 520	379 2 520	MXD 20
MXDG 20	☆	0.52								106	50	71.6	114											30 100	58 900	760	713 4 200	713 4 200	MXDG 20
MXDL 20		0.67								128	70	94.1	136											37 200	77 200	996	1 210 6 560	1 210 6 560	MXDL 20
MXDC 25	☆	0.36	3.59	40	6	12.5	48	17.5	6.5	74	-	36	83	M6 x 12	9	23	24.5	7	11	9	30	60	M6 x 25	21 600	33 800	500	213 1 810	213 1 810	MXDC 25
MXD 25	☆	0.55								98	35	60	107											32 100	56 300	833	573 3 800	573 3 800	MXD 25
MXDG 25	☆	0.68								113	50	75	122											38 200	70 300	1 040	885 5 380	885 5 380	MXDG 25
MXDL 25		0.88								137	70	99	146											47 400	92 800	1 370	1 530 8 480	1 530 8 480	MXDL 25
MXDC 30	☆	0.60	5.01	45	6.5	16	60	20	10	85	-	42.4	95	M8 x 12	9.5	28	28	9	14	12	40	80	M8 x 28	29 200	44 600	808	329 2 740	329 2 740	MXDC 30
MXD 30	☆	0.92								113	40	70.4	123											43 400	74 400	1 350	883 5 780	883 5 780	MXD 30
MXDG 30	☆	1.18								134	60	91.4	144											53 200	96 700	1 750	1 470 8 740	1 470 8 740	MXDG 30
MXDL 30		1.52								162	80	119.4	172											65 600	126 000	2 290	2 500 13 600	2 500 13 600	MXDL 30

Note (1): Track rail length L are shown in Table 22.1 and 22.2 on page 34.

(2): Track rail mounting bolts are not appended. Hexagon socket bolts of JIS B 1176 strength division 12.9 or equivalent are recommended.

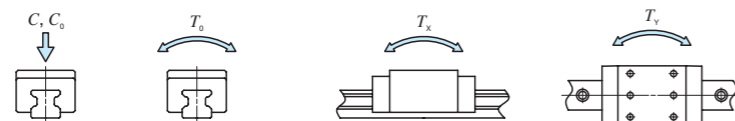
(3): The directions of basic dynamic load rating (C), basic static load rating (C₀) and static moment rating (T₀, T_x and T_y) are shown in the sketches below.

The upper values in the T_x and T_y column apply to one slide unit, and the lower values apply to two units in close contact.

Remark 1: The mark ☆ indicates that interchangeable specification products are available.

2: For grease nipple specification, see Table 17 on page 31.

3: A grease nipple mounting threaded hole is provided on each end plate respectively.



Example of identification number for assembled set

Model code	Size	Part code	Preload symbol	Class symbol	Interchangeable code	Supplemental code
MXD	G	25	C2	R840	T1	P
					S2	/F

Series
MXD Block type, mounting from top

Length of slide unit
C Short
No symbol Standard
G High rigidity long
L Extra high rigidity long

Size
15, 20, 25, 30

Number of slide unit (two units)

Preload amount
No symbol Standard
T1 Light preload
T2 Medium preload
T3 Heavy preload

Accuracy class
H High
P Precision
SP Super precision
UP Ultra precision

Length of track rail (840mm)

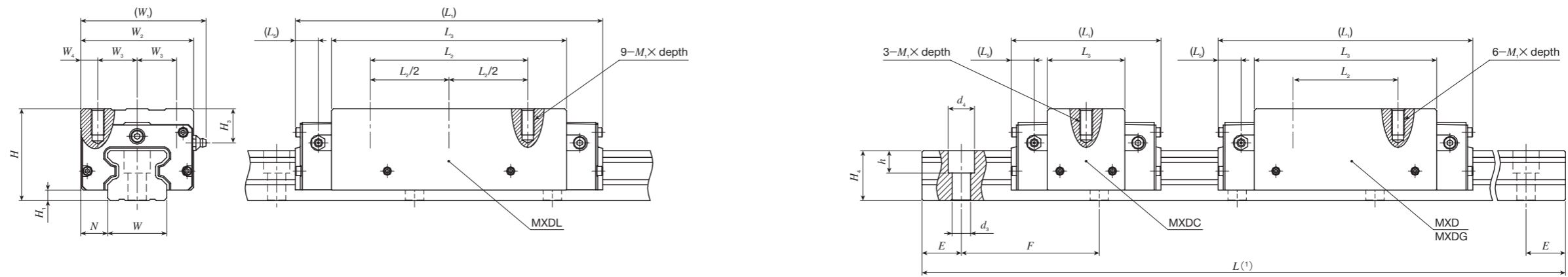
Special specification
A, D, E, F, GE, HP, I, J, L, LF, MA, MN, N, T, V, W, Z

Interchangeable code
S2 Interchangeable specification
No symbol Non interchangeable specification

IKO G-Lube Linear Roller Way Super MX

Block type, mounting from top

- Short : MXDC
- Standard : MXD
- High rigidity long : MXDG
- Extra high rigidity long : MXDL



Model number	Interchangeable	Mass (Reference)		Dimension of assembly mm			Dimension of slide unit mm										Dimension of track rail mm							Recommended ⁽²⁾ mounting bolt for track rail mm Bolt size x length	Basic ⁽³⁾ dynamic load rating C N	Basic ⁽³⁾ static load rating C ₀ N	Static moment rating ⁽³⁾			Model number
		Slide unit kg	Track rail ⁽¹⁾ kg/m	H	H ₁	N	W ₁	W ₂	W ₃	W ₄	L ₁	L ₂	L ₃	L ₅	M ₁ x depth	H ₃	W	H ₄	d ₃	d ₄	h	E	F				T ₀ N·m	T _x N·m	T _y N·m	
MXDC 35	☆	0.97	6.88	55	6.5	18	80	70	25	10	92	-	46.6	12.7	M 8 x 16	20	34	32	9	14	12	40	80	M 8 x 35	39 500	60 000	1 300	506 3 950	506 3 950	MXDC 35
MXD 35	☆	1.52									124	50	78.6												1 360 8 470	1 360 8 470	MXD 35			
MXDG 35	☆	2.02									152	72	106.6												2 440 13 800	2 440 13 800	MXDG 35			
MXDL 35		2.55									184	100	138.6												4 060 21 300	4 060 21 300	MXDL 35			
MXDC 45	☆	2.01	10.8	70	8	20.5	98	86	30	13	114	-	59	17.5	M10 x 20	26	45	38	14	20	17	52.5	105	M12 x 40	64 100	95 600	2 660	1 010 7 800	1 010 7 800	MXDC 45
MXD 45	☆	3.13									154	60	99												2 700 16 800	2 700 16 800	MXD 45			
MXDG 45	☆	4.29									194	80	139												5 220 29 000	5 220 29 000	MXDG 45			
MXDL 45		5.36									234	120	179												8 560 44 400	8 560 44 400	MXDL 45			
MXDC 55	☆	3.17	14.1	80	9	23.5	112	100	37.5	12.5	136	-	72	20	M12 x 25	26	53	43	16	23	20	60	120	M14 x 45	99 700	149 000	4 830	1 880 14 400	1 880 14 400	MXDC 55
MXD 55	☆	4.97									184	75	120												5 040 31 100	5 040 31 100	MXD 55			
MXDG 55	☆	7.06									238	95	174												10 400 57 000	10 400 57 000	MXDG 55			
MXDC 65	☆	5.52									180	-	95												4 200 32 200	4 200 32 200	MXDC 65			
MXD 65	☆	8.70	22.6	90	12	31.5	136	126	38	25	244	70	159	26.3	M16 x 25	18	63	56	18	26	22	75	150	M16 x 60	260 000	415 000	16 300	11 300 69 300	11 300 69 300	MXD 65
MXDG 65	☆	12.1									308	120	223												21 800 120 000	21 800 120 000	MXDG 65			

Note (1): Track rail length L are shown in Table 22.1 and 22.2 on page 34.

(2): Track rail mounting bolts are not appended. Hexagon socket bolts of JIS B 1176 strength division 12.9 or equivalent are recommended.

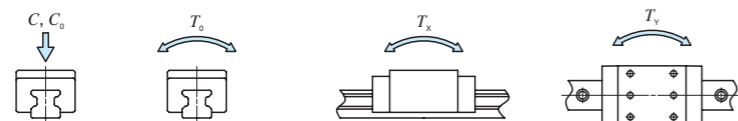
(3): The directions of basic dynamic load rating (C), basic static load rating (C₀) and static moment rating (T₀, T_x and T_y) are shown in the sketches below.

The upper values in the T_x and T_y column apply to one slide unit, and the lower values apply to two units in close contact.

Remark 1: The mark ☆ indicates that interchangeable specification products are available.

2: For grease nipple specification, see Table 17 on page 31.

3: Three female threaded holes for grease nipple are prepared on each end plate.



Example of identification number for assembled set

Model code	Size	Part code	Preload symbol	Class symbol	Interchangeable code	Supplemental code
MXD G	55	C2 R3000	T ₁	P	S2	/F

Series
MXD Block type, mounting from top

Length of slide unit
C Short
No symbol Standard
G High rigidity long
L Extra high rigidity long

Size
35, 45, 55, 65

Number of slide unit (two units)

Preload amount
No symbol Standard
T₁ Light preload
T₂ Medium preload
T₃ Heavy preload

Accuracy class
H High
P Precision
SP Super precision
UP Ultra precision

Length of track rail (3000mm)

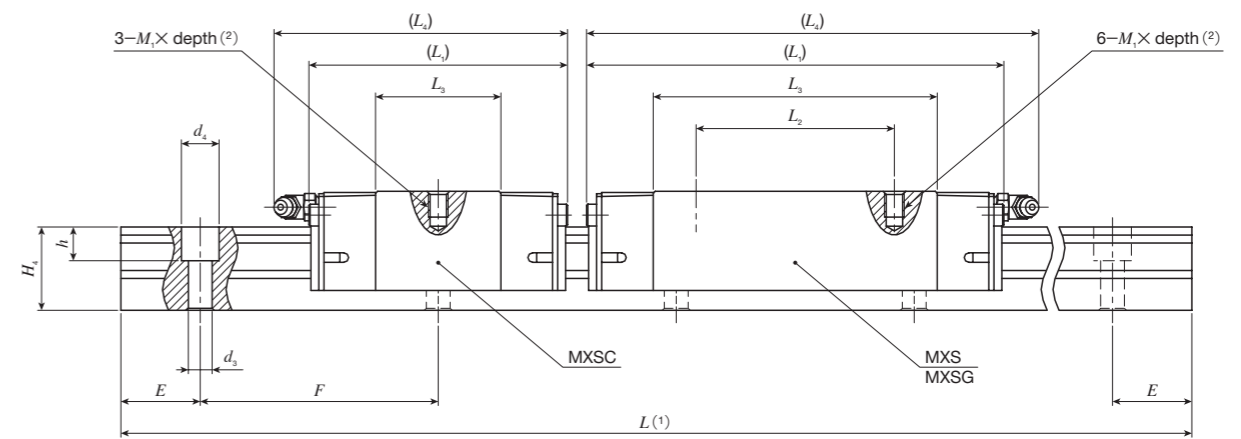
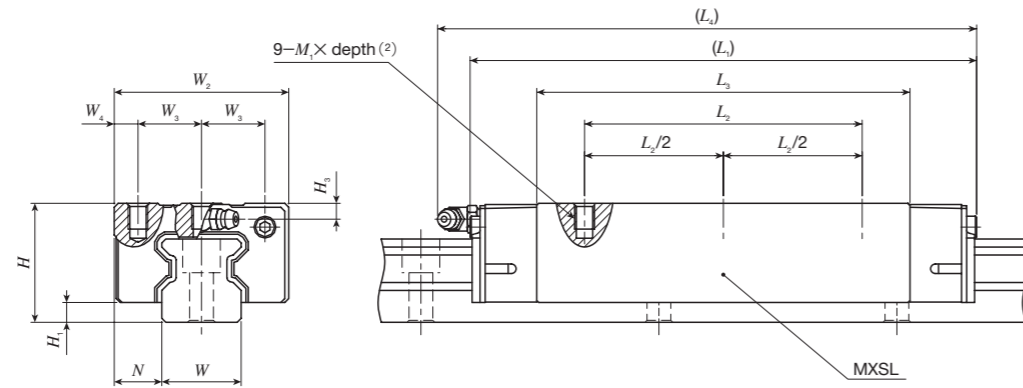
Special specification
A, D, E, F, GE, HP, I, J, L, LF, MA, MN, N, RC, T, UR, V, W, Z

Interchangeable code
S2 Interchangeable specification
No symbol Non interchangeable specification

IKO C-Lube Linear Roller Way Super MX

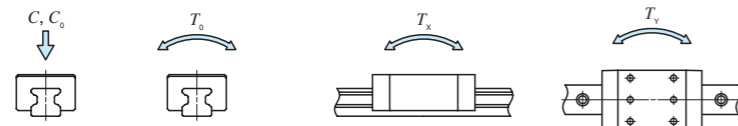
Compact block type, mounting from top

Short : MXSC
 Standard : MXS
 High rigidity long : MXSG
 Extra high rigidity long : MXSL



Model number	Interchangeable	Mass (Reference)		Dimension of assembly mm			Dimension of slide unit mm							Dimension of track rail mm							Recommended ⁽³⁾ mounting bolt for track rail mm Bolt size x length	Basic ⁽⁴⁾ dynamic load rating C N	Basic ⁽⁴⁾ static load rating C ₀ N	Static moment rating ⁽⁴⁾			Model number																
		Slide unit kg	Track rail ⁽¹⁾ kg/m	H	H ₁	N	W ₂	W ₃	W ₄	L ₁	L ₂	L ₃	L ₄	M ₁ x depth ⁽²⁾	H ₃	W	H ₄	d ₃	d ₄	h				E	F	T ₀ N·m		T _x N·m	T _y N·m														
MXSC 15	☆	0.099	1.65	24	4	9.5	34	13	4	52	-	24	55	M4 x 5.5	3.5	15	16.5	4.5	8	6	30	60	M4 x 16	7 730	12 000	113	50.6 457	50.6 457	MXSC 15														
MXS 15	☆	0.15		68	26	40	71	M5 x 6.5	4	20	21	6	9.5											8.5	30	60	M5 x 20	11 500	20 000	188	136 942	136 942	MXS 15										
MXSG 15	☆	0.21		84	56	56	87																					M6 x 9	5	23	24.5	7	11	9	30	60	M6 x 25	14 900	28 000	263	262 1 590	262 1 590	MXSG 15
MXSC 20	☆	0.21	2.73	30	5	12	44	16	6	66	-	31.6	74	M8 x 11	6.5	28	28	9	14	12	40	80	M8 x 28	16 100	26 400	341	150 1 260											150 1 260	MXSC 20				
MXS 20	☆	0.31		86	36	51.6	94	M6 x 25	5	23	24.5	7	11											9	30	60	M6 x 25	23 400	42 700	550	379 2 520	379 2 520	MXS 20										
MXSG 20	☆	0.42		106	50	71.6	114																					M6 x 9	5	23	24.5	7	11	9	30	60	M6 x 25	30 100	58 900	760	713 4 200	713 4 200	MXSG 20
MXSL 20	☆	0.55		128	70	94.1	136																															M6 x 9	5	23	24.5	7	11
MXSC 25	☆	0.30	3.59	36	6	12.5	48	17.5	6.5	74	-	36	83	M6 x 9	5	23	24.5	7	11	9	30	60	M6 x 25	21 600	33 800	500	213 1 810	213 1 810	MXSC 25														
MXS 25	☆	0.47		98	35	60	107	M6 x 9	5	23	24.5	7	11											9	30	60	M6 x 25	32 100	56 300	833	573 3 800	573 3 800	MXS 25										
MXSG 25	☆	0.57		113	50	75	122																					M6 x 9	5	23	24.5	7	11	9	30	60	M6 x 25	38 200	70 300	1 040	885 5 380	885 5 380	MXSG 25
MXSL 25	☆	0.74		137	70	99	146																															M6 x 9	5	23	24.5	7	11
MXSC 30	☆	0.54	5.01	42	6.5	16	60	20	10	85	-	42.4	95	M8 x 11	6.5	28	28	9	14	12	40	80	M8 x 28	29 200	44 600	808	329 2 740	329 2 740	MXSC 30														
MXS 30	☆	0.83		113	40	70.4	123	M8 x 11	6.5	28	28	9	14											12	40	80	M8 x 28	43 400	74 400	1 350	883 5 780	883 5 780	MXS 30										
MXSG 30	☆	1.05		134	60	91.4	144																					M8 x 11	6.5	28	28	9	14	12	40	80	M8 x 28	53 200	96 700	1 750	1 470 8 740	1 470 8 740	MXSG 30
MXSL 30	☆	1.37		162	80	119.4	172																															M8 x 11	6.5	28	28	9	14

Note (1): Track rail length L are shown in Table 22.1 and 22.2 on page 34.
 (2): Recommended screwing depth are shown in Table 18.1 on page 32.
 (3): Track rail mounting bolts are not appended. Hexagon socket bolts of JIS B 1176 strength division 12.9 or equivalent are recommended.
 (4): The directions of basic dynamic load rating (C), basic static load rating (C₀) and static moment rating (T₀, T_x and T_y) are shown in the sketches below.
 The upper values in the T_x and T_y column apply to one slide unit, and the lower values apply to two units in close contact.
 Remark 1: The mark ☆ indicates that interchangeable specification products are available.
 2: For grease nipple specification, see Table 17 on page 31.
 3: A grease nipple mounting threaded hole is provided on each end plate respectively.



Example of identification number for assembled set

Model code	Size	Part code	Preload symbol	Class symbol	Interchangeable code	Supplemental code
MXS	G	25	C2	R840	T1	P
					S2	/F

Series
MXS Compact block type, mounting from top

Length of slide unit
C Short
No symbol Standard
G High rigidity long
L Extra high rigidity long

Size
15, 20, 25, 30

Preload amount
No symbol Standard
T1 Light preload
T2 Medium preload
T3 Heavy preload

Accuracy class
H High
P Precision
SP Super precision
UP Ultra precision

Special specification
A, D, E, F, GE, HP, I, J, L, LF, MA, MN, N, T, V, W, Z

Interchangeable code
S2 Interchangeable specification
No symbol Non interchangeable specification

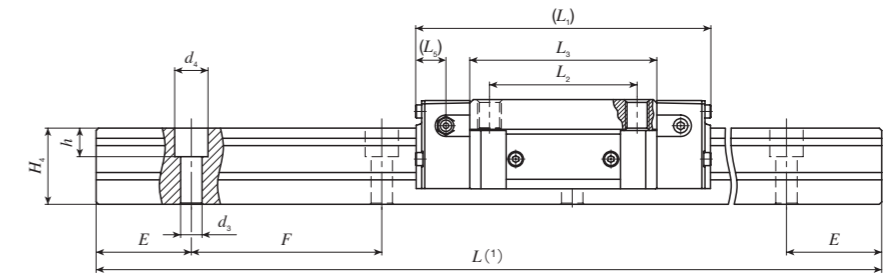
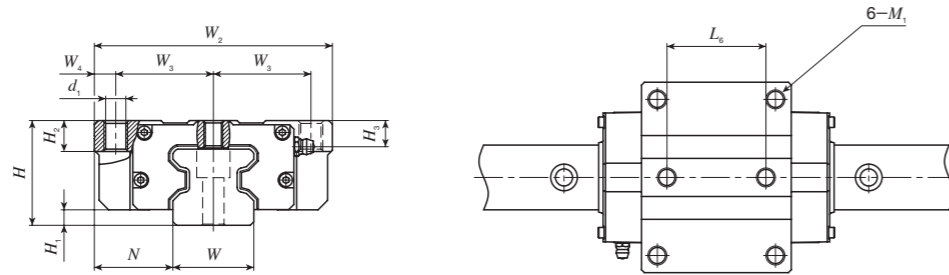
Number of slide unit (two units)

Length of track rail (840mm)

IKO C-Lube Linear Roller Way Super MX

Low section flange type, mounting from top

Standard : MXN
High rigidity long : MXNG



Model number	Interchangeable	Mass (Reference)		Dimension of assembly mm			Dimension of slide unit mm											Dimension of track rail mm						Recommended ⁽⁴⁾ mounting bolt for track rail mm Bolt size × length	Basic ⁽⁵⁾ dynamic load rating C N	Basic ⁽⁵⁾ static load rating C ₀ N	Static moment rating ⁽⁵⁾			Model number			
		Slide unit kg	Track rail ⁽¹⁾ kg/m	H	H ₁	N	W ₂	W ₃	W ₄	L ₁	L ₂	L ₃	L ₅	L ₆	d ₁ ⁽²⁾	M ₁	Maximum screwing depth ⁽³⁾	H ₂	H ₃	W	H ₄	d ₃	d ₄				h	E	F		T ₀ N·m	T _x N·m	T _y N·m
MXN 35	☆	1.55	6.88	44	6.5	33	100	41	9	124	62	78.6	12.7	52	8.5	M10	11	13	11	34	32	9	14	12	40	80	M 8 × 35	58 700	100 000	2 170	1 360 8 470	1 360 8 470	MXN 35
MXNG 35	☆	2.13								152		106.6																139	17.5	60	10.5	M12	13
MXN 45	☆	2.58	10.8	52	8	37.5	120	50	10	154	80	99	17.5	60	10.5	M12	13	15	13.5	45	38	14	20	17	52.5	105	M12 × 40	95 400	159 000	4 430	2 700 16 800	2 700 16 800	MXN 45
MXNG 45	☆	3.73								194		139																17.5	60	10.5	M12	13	15
MXN 55	☆	4.61	14.1	63	9	43.5	140	58	12	184	95	120	20	70	12.5	M14	19	17	16	53	43	16	23	20	60	120	M14 × 45	148 000	248 000	8 040	5 040 31 100	5 040 31 100	MXN 55
MXNG 55	☆	6.94								238		174																20	70	12.5	M14	19	17

Note (1): Track rail length L are shown in Table 22.1 and 22.2 on page 34.

(2): Not applicable to middle mounting holes of slide unit. Their mounting direction is only downward.

(3): It is recommended to secure actual screwing depth should not exceed the maximum screwing depth in the table.

(4): Track rail mounting bolts are not appended. Hexagon socket bolts of JIS B 1176 strength division 12.9 or equivalent are recommended.

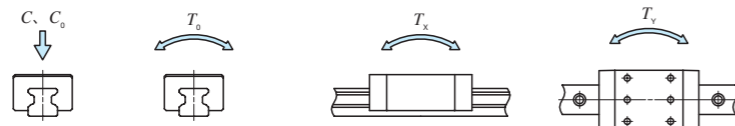
(5): The directions of basic dynamic load rating (C), basic static load rating (C₀) and static moment rating (T₀, T_x and T_y) are shown in the sketches below.

The upper values in the T_x and T_y column apply to one slide unit, and the lower values apply to two units in close contact.

Remark 1: The mark ☆ indicates that interchangeable specification products are available.

2: For grease nipple specification, see Table 17 on page 31.

3: In size 35 female threads for grease nipple are prepared on both side faces and front face of end plate. Thread size of front face is smaller than other threads thus, please consult if grease nipple for front face is required.



Example of identification number for assembled set

Model code	Size	Part code	Preload symbol	Class symbol	Interchangeable code	Supplemental code
MXN	G	55	C2	R3000	T ₂	P S1 /F

Series

MXN	Low section flange type, mounting from top
-----	--

Length of slide unit

No symbol	Standard
G	High rigidity long

Size

35, 45, 55

Number of slide unit (two units)

Preload amount

No symbol	Standard
T ₁	Light preload
T ₂	Medium preload
T ₃	Heavy preload

Accuracy class

H	High
P	Precision
SP	Super precision
UP	Ultra precision

Length of track rail (3000mm)

Special specification

A, D, E, F, HP, I, J, L, LF, MA, RC, T, UR, V, W, Z

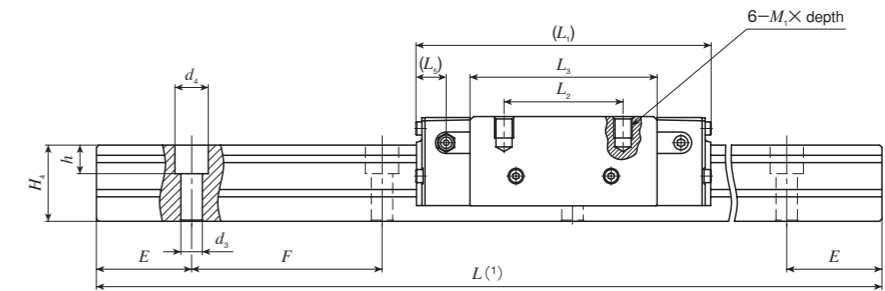
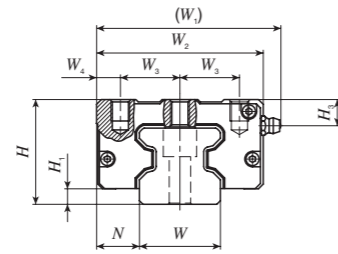
Interchangeable code

S2	Interchangeable specification
No symbol	Non interchangeable specification

IKO G-Lube Linear Roller Way Super MX

Low section block type,
mounting from top

Standard : MXNS
High rigidity long : MXNSG



Model number	Interchangeable	Mass (Reference)		Dimension of assembly mm			Dimension of slide unit mm										Dimension of track rail mm						Recommended ⁽³⁾ mounting bolt for track rail mm Bolt size x length	Basic ⁽⁴⁾ dynamic load rating C N	Basic ⁽⁴⁾ static load rating C ₀ N	Static moment rating ⁽⁴⁾			Model number		
		Slide unit kg	Track rail ⁽¹⁾ kg/m	H	H ₁	N	W ₁	W ₂	W ₃	W ₄	L ₁	L ₂	L ₃	L ₅	M ₁ x depth ⁽²⁾	Maximum screwing depth ⁽²⁾	H ₃	W	H ₄	d ₃	d ₄	h				E	F	T ₀ N·m		T _x N·m	T _y N·m
MXNS 35	☆	1.08	6.88	44	6.5	18	80	70	25	10	124	50	78.6	12.7	M 8 x 9	11	11	34	32	9	14	12	40	80	M 8 x 35	58 700	100 000	2 170	1 360	1 360	MXNS 35
MXNSG 35	☆	1.42									152	72	106.6													2 440	2 440	8 470	8 470	MXNSG 35	
MXNS 45	☆	1.84	10.8	52	8	20.5	96	86	30	13	154	60	99	17.5	M10 x 11	13	13.5	45	38	14	20	17	52.5	105	M12 x 40	95 400	159 000	4 430	2 700	2 700	MXNS 45
MXNSG 45	☆	2.58									194	80	139													5 220	5 220	16 800	16 800	MXNSG 45	
MXNS 55	☆	3.31	14.1	63	9	23.5	112	100	37.5	12.5	184	75	120	20	M12 x 15	19	16	53	43	16	23	20	60	120	M14 x 45	148 000	248 000	8 040	5 040	5 040	MXNS 55
MXNSG 55	☆	4.83									238	95	174													10 400	10 400	31 100	31 100	MXNSG 55	

Note (1): Track rail length L are shown in Table 22.1 and 22.2 on page 34.

(2): It is recommended to secure actual screw depth should not be exceed the maximum screwing depth in table 18.2 on page 32.

Especially the screwing depth of middle mounting threads in width direction should not be exceed maximum screwing depth in the table.

(3): Track rail mounting bolts are not appended. Hexagon socket bolts of JIS B 1176 strength division 12.9 or equivalent are recommended.

(4): The directions of basic dynamic load rating (C), basic static load rating (C₀) and static moment rating (T₀, T_x and T_y) are shown in the sketches below.

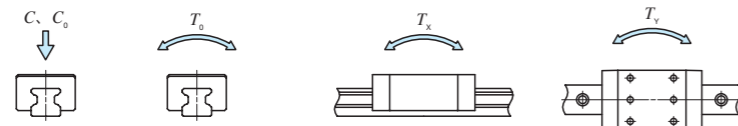
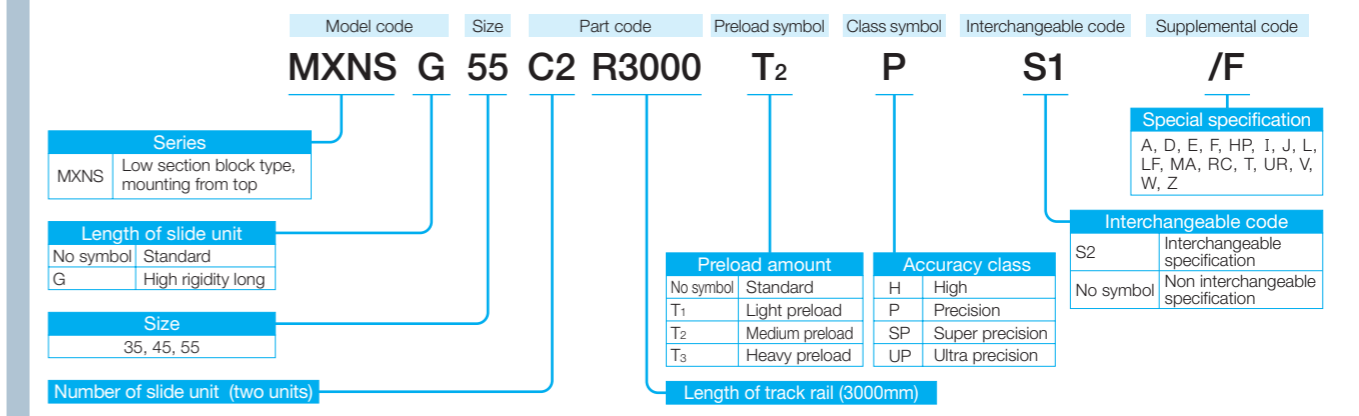
The upper values in the T_x and T_y column apply to one slide unit, and the lower values apply to two units in close contact.

Remark 1: The mark ☆ indicates that interchangeable specification products are available.

2: For grease nipple specification, see Table 17 on page 31.

3: In size 35 female threads for grease nipple are prepared on both side faces and front face of end plate. Thread size of front face is smaller than other threads thus, please consult if grease nipple for front face is required.

Example of identification number for assembled set



World Network of **IKO**



NIPPON THOMPSON CO., LTD.

Head office : 19-19 Takanawa 2-chome Minato-ku
Tokyo 108-8586, Japan
Phone : +81 (0)3-3448-5850
Fax : +81 (0)3-3447-7637
E-mail : ntt@ikonet.co.jp
URL : <http://www.ikont.co.jp/eg/>
Plant : Gifu, Kamakura

NIPPON THOMPSON CO., LTD.

ASEAN REPRESENTATIVE OFFICE
Level 8, #1 Silom Road, Silom
Bangrak, Bangkok
Thailand 10500
Phone: +66 (0)-2-231-8278
Fax: +66 (0)-2-231-8121
E-mail: ntar@ikonet.co.jp

IKO-THOMPSON (SHANGHAI) LTD.

Unit G, 23rd Floor, Zhao Feng World Trade Building
No.369, Jiang Su Road
Changning District, Shanghai 200050
People's Republic of China
Phone: +86 (0)21-5237-9100
Fax: +86 (0)21-5237-9095
E-mail: ntc@ikonet.co.jp

IKO INTERNATIONAL, INC.

<http://www.ikont.com/>

East coast

91 Walsh Drive
Parsippany, NJ 07054
U.S.A.
Phone: +1 973-402-0254
Toll Free: 1-800-922-0337
Fax: +1 973-402-0441
E-mail: eco@ikonet.co.jp

Midwest

500 East Thorndale Avenue
Wood Dale, IL 60191
U.S.A.
Phone: +1 630-766-6464
Toll Free: 1-800-323-6694
Fax: +1 630-766-6869
E-mail: mwo@ikonet.co.jp

West coast

20170 South Western Avenue
Torrance, CA 90501
U.S.A.
Phone: +1 310-609-3988
Toll Free: 1-800-252-3665
Fax: +1 310-609-3916
E-mail: wco@ikonet.co.jp

Southeast

2150 Boggs Road, Suite 100
Duluth, GA 30096
U.S.A.
Phone: +1 770-418-1904
Toll Free: 1-800-874-6445
Fax: +1 770-418-9403
E-mail: seo@ikonet.co.jp

Southwest

8105 N. Beltline Road
Suite 130, Irving, TX 75063
U.S.A.
Phone: +1 972-929-1515
Toll Free: 1-800-295-7886
Fax: +1 972-915-0060
E-mail: swo@ikonet.co.jp

NIPPON THOMPSON EUROPE B.V.

<http://www.ikont.eu/>

The Netherlands

Sheffieldstraat 35-39
3047 AN Rotterdam
The Netherlands
Phone: +31 (0)10-4626868
Fax: +31 (0)10-4626099
E-mail: nte@ikonet.co.jp

Germany

Mündelheimer Weg 56
40472 Düsseldorf
Germany
Phone: +49 (0)211-414061
Fax: +49 (0)211-427693
E-mail: ntd@ikonet.co.jp

Im Gewerbepark D 30
93059 Regensburg
Germany

Phone: +49 (0)941-206070
Fax: +49 (0)941-2060719
E-mail: ntdr@iko-nt.de

Gruben Str.95c
66540 Neunkirchen
Germany
Phone: +49 (0)6821-999-860
Fax: +49 (0)6821-999-8626
E-mail: ntdn@iko-nt.de

UK

2 Vincent Avenue, Crownhill
Milton Keynes Bucks MK8 0AB
United Kingdom
Phone: +44 (0)1908-566144
Fax: +44 (0)1908-565458
E-mail: sales@iko.co.uk

Spain

Autovia Madrid-Barcelona, Km. 43,700
Polig. Ind. AIDA, A-8, Ofic. 2, 1^a
19200-Azuqueca de Henares
Guadalajara, Spain
Phone: +34 949-263390
Fax: +34 949-263113
E-mail: nts@ikonet.co.jp

France

Roissypole Le Dôme
2 rue de La Haye
BP 15950 Tremblay en France
95733 Roissy C. D. G. Cedex
France
Phone: +33 (0)1-48165739
Fax: +33 (0)1-48165746
E-mail: ntf@ikonet.co.jp

Recognizing that conservation of the global environment is the top-priority challenge for the world's population, IKO will conduct its activities with consideration of the environment as a corporate social responsibility, reduce its negative impact on the environment, and help foster a rich global environment.

**ISO 9001 & 14001 Quality system
registration certificate**

