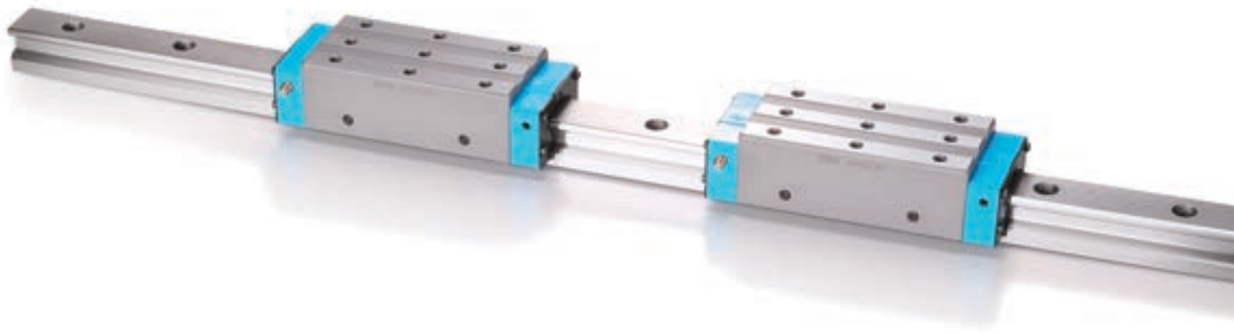


# LINEAR WAYS





Recognizing that conservation of the global environment is the top-priority challenge for the world's population, Nippon Thompson 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***

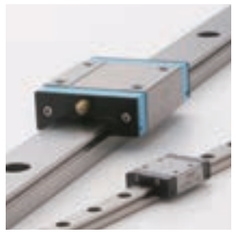
ISO 9001 Certified

ISO 14001 Certified

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# Good Environment and Good Quality



























IKO Linear Motion Rolling Guides are used with satisfactory results for various applications requiring precision positioning such as semi-conductor manufacturing equipment, large sized machine tools, industrial robots, and precision equipment.
In contrast to conventional rolling bearings used in rotating parts, Linear Motion Rolling Guides are the products applicable to plane sliding surfaces, and meet the increasing needs for linear motion and precision positioning in machines and equipment.
Linear Way and Linear Roller Way of Rail Guide Type, Linear Ball Spline of Shaft Guide Type, and other products, recognized for their high quality and excellent features, are available.

# LINEAR MOTION ROLLING GUIDE SERIES Full Lineup

## Linear Motion Rolling Guide Series General Catalog BLUE




Recorded in CAT-1604E

**Linear Way**

**Linear Roller Way**

## Linear Motion Rolling Guide Series General Catalog RED




Recorded in CAT-1605E

**Crossed Roller Way**

**Linear Slide Unit**

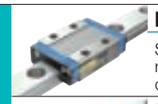
**Linear Ball Spline**

**Linear Bushing**

**Stroke Rotary Bushing**

**Roller Way & Flat Roller Cage**

### Rail Guide Type



**Ball Type Miniature Series**

Super small-size linear motion rolling guide produced by original small sizing technology

C-Lube Maintenance Free Series

**C-Lube Linear Way ML**

ML : Standard type
MLF : Wide type

**Linear Way L**

LWL : Standard type
LWLF : Wide type



**Ball Type Miniature Value Series**

Economical linear motion rolling guides without changing the superior performance of Ball Type Miniature Series

**C-Lube Linear Way MLV**

MLV



**Ball Type Low Profile/Light Weight Series**

Super low profile and super light weight linear motion rolling guides with high load capacity

**C-Lube Linear Way MV**

MV



**Ball Type Compact Series**

Versatile linear motion rolling guides pursuing compactness in every aspect

**C-Lube Linear Way ME**

ME : Flange type mounting from bottom
MET : Flange type mounting from top
MES : Block type mounting from top

**Linear Way E**

LWE : Flange type mounting from bottom
LWET : Flange type mounting from top
LWES : Block type mounting from top

**Low Decibel Linear Way E**

LWE ···Q : Flange type mounting from bottom
LWET ···Q : Flange type mounting from top
LWES ···Q : Block type mounting from top



**Ball Type High Rigidity Series**

High rigidity linear motion rolling guides designed to evenly support high load capacity by incorporating large-diameter balls

**C-Lube Linear Way MH**

MH : Flange type mounting from bottom
MHT : Flange type mounting from top
MHD : Block type mounting from top
MHS : Compact block type mounting from top

**Linear Way H**

LWH : Flange type mounting from bottom
LWHT : Flange type mounting from top
LWHD : Block type mounting from top
LWHS : Compact block type mounting from top
LWHY : Side mounting type



**Ball Type Wide Rail Type Series**

Linear motion rolling guide suitable to single-row use due to having resistance to across-the-width moment load by using a wide track rail

**Linear Way F**

LWFH : Flange type mounting from top / bottom
LWFF : Flange type mounting from top / bottom
LWFS : Block type mounting from top



**Ball Type U-Shaped Track Rail Series**

Linear motion rolling guide of high track rail rigidity with U-shaped track rail

**C-Lube Linear Way MUL**

MUL : Small type

**Linear Way U**

LWU ···B : Standard ball-retained type



**Roller Type**

Linear motion rolling guide that has achieved the highest level of performance in all characteristics utilizing the roller's superior characteristic

**C-Lube Linear Roller Way Super MX**

MX : Flange type mounting from top / bottom
MXD : Block type mounting from top
MXS : Compact block type mounting from top
MXN : Low profile flange type mounting from top / bottom
MXNS : Low profile block type mounting from top

**Linear Roller Way Super X**

LRX : Flange type mounting from top / bottom
LRXD : Block type mounting from top
LRXS : Compact block type mounting from top



**Roller Type**

Roller type linear motion rolling guide with cylindrical rollers in four-rows

**Linear Roller Way X**

LRWX : Block type mounting from top
LRWXH : Flange type mounting from bottom



**Module Type**

Minimum compact linear motion rolling guide with both a track rail and slide member provided

**Linear Way Module**

LWLM : Ball type small type
LRWM : Roller type

### Shaft Guide Type



**Crossed Roller Way**

Linear motion rolling guide incorporating a roller cage between two ways whose two V-shaped surfaces are used as track groove

**Anti-Creep Cage Crossed Roller Way**

CRWG

**Anti-Creep Cage Crossed Roller Way H**

CRWG···H

**Crossed Roller Way**

CRW : Standard type
CRWM : Module type

**Anti-Creep Cage Crossed Roller Way Unit**

CRWUG

**Crossed Roller Way Unit**

CRWU / CRWU···R / CRWU···RS



**Linear Slide Unit**

Light weight, small, and compact linear motion rolling guide that has achieved light and smooth motion

**High Rigidity Precision Linear Slide Unit**

BWU

**Precision Linear Slide Unit**

BSP : Limited linear motion type
BSPG : Built-in rack & pinion type
BSR : Endless linear motion type

**Linear Slide Unit**

BSU···A



**Linear Ball Spline**

Linear motion rolling guide capable of performing linear motion and torque transmission using an external cylinder along the spline shaft.

**C-Lube Linear Ball Spline MAG**

MAG : Standard type
MAGF : Flange type

**Linear Ball Spline G**

LSAG : Standard type
LSAGF : Flange type



**Linear Bushing**

A wide variety of linear motion rolling guides facilitating the rolling motion in bush guide portion

**Linear Bushing G**

LMG

**Linear Bushing**

LM / LME / LMB

**Miniature Linear Bushing**

LMS



**Stroke Rotary Bushing**

Linear motion rolling guide enabling the rolling motion and rotary and linear motion in axial direction

**Stroke Rotary Bushing**

ST : Ordinary type
ST···B : For heavy load

**Miniature Stroke Rotary Bushing**

STSI : Assembled set with a shaft
STS : Assembled set without a shaft

**Stroke Rotary Cage**

BG

### Flat Guide Type



**Roller Way & Flat Roller Cage**

High accuracy linear motion rolling guide providing high rigidity in load direction

**Roller Way**

RW / SR / GSN

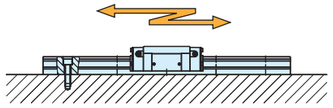
**Flat Roller Cage**

FT : Single row type
FTW···A : Double row angle type

# Types of Linear Motion Rolling Guides

## Rail Guide Type

The Rail Guide Type achieves linear motion along a rail. This product can receive a complex load and features high performance, excellent total balance and easy handling.



### Endless linear motion

**Linear Way**



**Linear Roller Way**



### Limited linear motion

**Crossed Roller Way**

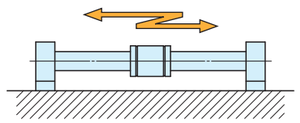


**Linear Slide Unit**



## Shaft Guide Type

The Shaft Guide Type achieves linear motion along a shaft. This product is easy to handle and suitable for relatively low load conditions. Some shaft guide products can achieve both rotation and reciprocating linear motion.



### Endless linear motion

**Linear Ball Spline**



**Linear Bushing**



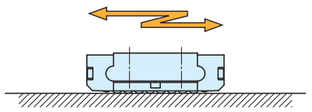
### Limited linear motion + rotation

**Stroke Rotary Bushing**



## Flat Guide Type

The Flat Guide Type achieves linear motion on a surface. This product can receive only a unidirectional load but feature high rigidity in the load direction.



### Endless linear motion

**Roller Way**



### Limited linear motion

**Flat Roller Cage**



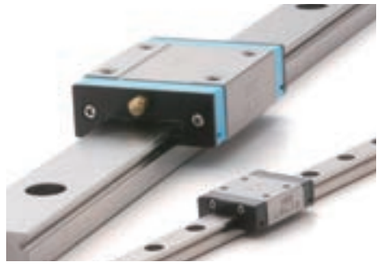


# Specifications of Linear Motion Rolling Guides

| | | | Type of rolling element | Type of motion | Load direction and load carrying capacity | Rigidity | Frictional characteristic | Ease of mounting | General applications | Item-listed catalog |
|---|---|---|---|---|---|---|---|---|---|---|
| Rail Guide Type | Endless linear motion | Linear Way | Ball | Endless linear motion | Complex load, medium to heavy load | ○ | ○ | ◎ | • NC machine tool<br>• Precision working machine<br>• Robot<br>• Transfer machine | BLUE |
| | | Linear Roller Way | Roller | Endless linear motion | Complex load, heavy to extra-heavy load | ◎ | ○ | ◎ | • Heavy duty machine tool<br>• Large working machine<br>• High-rigidity robot | BLUE |
| | Limited linear motion | Crossed Roller Way | Roller | Limited linear motion | Complex load, medium load | ○ | ◎ | ◎ | • Precision working machine<br>• Electronic parts assembling machine<br>• Precision measuring instrument | RED |
| | | Linear Slide Unit | Ball | Limited linear motion | Complex load, light to medium load | △ | ◎ | ◎ | • Electronic parts assembling machine | RED |
| Shaft Guide Type | Endless linear motion | Linear Ball Spline | Ball | Endless linear motion | Complex load, medium to heavy load | ○ | ○ | ○ | • Robot<br>• Testing and inspection equipment<br>• Transfer machine | RED |
| | | Linear Bushing | Ball | Endless linear motion | Radial load, light load | △ | ○ | ○ | • Packaging machine<br>• Measuring instrument<br>• Medical instrument | RED |
| | Limited linear motion + rotation | Stroke Rotary Bushing | Ball | Limited linear motion + rotation | Radial load, light load | △ | ◎ | ○ | • Printing press<br>• Press die set<br>• Precision measuring instrument | RED |
| Flat Guide Type | Endless linear motion | Roller Way | Roller | Endless linear motion | Unidirectional load, extra-heavy load | ◎ | ○ | △ | • NC machine tool<br>• Precision working machine | RED |
| | Limited linear motion | Flat Roller Cage | Roller | Limited linear motion | Unidirectional load, extra-heavy load | ◎ | ◎ | ○ | • Precision working machine<br>• Optical measuring instrument | RED |

Code description ◎Excellent ○Good △Fair

# LINEAR MOTION ROLLING GUIDE SERIES BLUE INDEX



**Ball Type Miniature Series**
## C-Lube Linear Way ML
**Linear Way L / Micro Linear Way L**

ML | LWL

Super small-size linear motion rolling guide produced by original small sizing technology

Ⅱ-5



**Ball Type Miniature Value Series**
## C-Lube Linear Way MLV

MLV

Economical linear motion rolling guides without changing the superior performance of Ball Type Miniature Series

Ⅱ-41



**Ball Type Low Profile/Light Weight Series**
## C-Lube Linear Way MV

MV

Super low profile and super light weight linear motion rolling guides with high load capacity

Ⅱ-51



**Ball Type Compact Series**
## C-Lube Linear Way ME
**Linear Way E / Low Decibel Linear Way E**

ME | LWE

Versatile linear motion rolling guides pursuing compactness in every aspect

Ⅱ-63



**Ball Type High Rigidity Series**
## C-Lube Linear Way MH
**Linear Way H**

MH | LWH

High rigidity linear motion rolling guides designed to evenly support high load capacity by incorporating large-diameter balls

Ⅱ-89

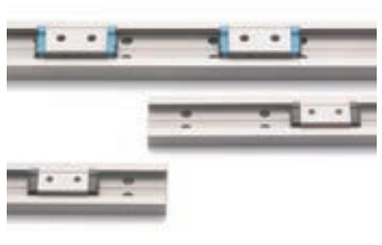


**Ball Type Wide Type Series**
## Linear Way F

LWFS | LWFF | LWFH

Linear motion rolling guide suitable to single-row use due to having resistance to across-the-width moment load by using a wide track rail

Ⅱ-135



**Ball Type U-Shaped Track Rail Series**
## C-Lube Linear Way MUL
**Linear Way U**

MUL | LWU

Linear motion rolling guide of high track rail rigidity with U-shaped track rail

Ⅱ-157



**Roller Type**
## C-Lube Linear Roller Way Super MX
**Linear Roller Way Super X**

MX | LRX

Linear motion rolling guide that has achieved the highest level of performance in all characteristics utilizing the roller's superior characteristic

Ⅱ-171



**Roller Type**
## Linear Roller Way X

LRWX

Roller type linear motion rolling guide with cylindrical rollers in four-rows

Ⅱ-219



**Module Type**
## Linear Way Module

LWLM | LRWM

Minimum compact linear motion rolling guide with both a track rail and slide member provided

Ⅱ-233




## IKO Gentle to The Earth

Nippon Thompson Co., Ltd. is working to develop global environment-friendly products.
It is committed to developing products that make its customer's machinery and equipment more reliable, thereby contributing to preserving the global environment.
This development stance manifests well in the keyword **"Oil Minimum"**.

Oil Minimum
IKO Gentle to The Earth

## Our pursuit of Oil Minimum has led to the creation of IKO's proprietary family of lubricating parts as "C-Lube".

"C-Lube" minimizes usage of lubrication oil and supplies the optimal amount of lubrication oil for long period of time. So it realizes long term maintenance free and contributes to the global environment preservation.

IKO C-Lube Maintenance-free™

## The "Interchangeable" is a result of our consideration to the environment and radical pursuit of elimination of material and inventory waste.

Interchangeable is a collective name of **"systems of products selection from users' perspective"** which allows free interchange and replacement totally retaining the accuracy and preload of slide units and track rails.

## The integration of maintenance free and advanced interchangeable system with C-Lube is the "Free & Interchangeable".

Oil Minimum
IKO Gentle to The Earth

# Eco-friendly specification

# Reducing usage of lubrication oil

IKO C-Lube Maintenance-free™

U.S. PATENTED

**C-Lube Linear Way ML**
No. 7677804 7252435 6729761 6712511

**C-Lube Linear Way MLV**
No. 8465206

**C-Lube Linear Way MV**
No. 6712511 6729761

**C-Lube Linear Way ME**
No. 7748905 7677804 6729761 6712511

**C-Lube Linear Way MH**
No. 7832929 6712511 7762723 7748905 7677804 6729761

**C-Lube Linear Way MUL**
No. 5435649

**Linear Way L**
No. 7258486 6517244 6176617 6082899 5967667

**Linear Way E**
No. 7677804 6176617 5967667

**Linear Way H**
No. 7677804 6082899 6517244 5967667 6461045 5622433 6250805 6176617

**Linear Way F**
No. 6176617 5967667

**Linear Way U**
No. 6880975 6176617 6851857 6082899 6517244 5967667 6461045 6309107

**C-Lube Linear Roller Way Super MX**
No. 8403563 7950852 8403562 7927016 8123408 7862234 8113714 7832930 8033730 7997800
No. 8585288 7458721 8506166 7458720 8206036 5800064 8113714 7780356 7534042

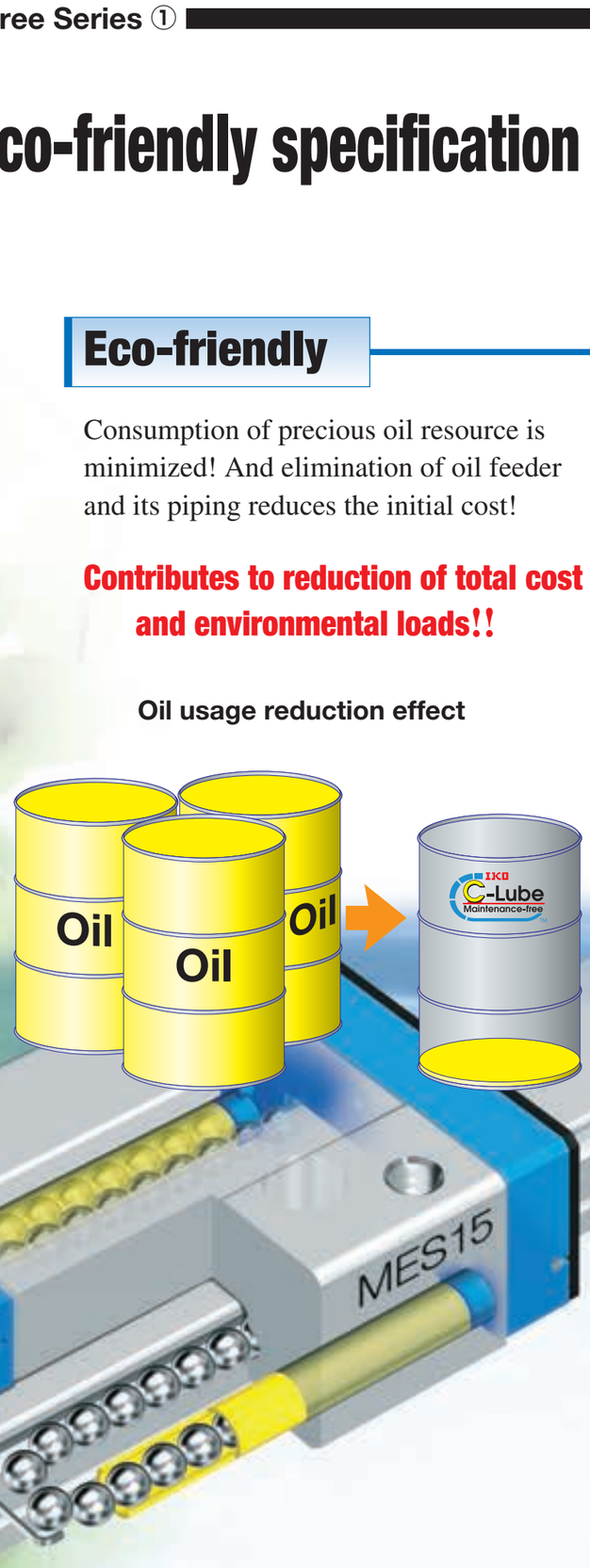
**Linear Roller Way Super X**
No. 7832930 6766897 6461045 7458721 7458720 6176617
No. 7341378 5622433 5967667 5464288 5800064

## Eco-friendly

Consumption of precious oil resource is minimized! And elimination of oil feeder and its piping reduces the initial cost!

**Contributes to reduction of total cost and environmental loads!!**

**Oil usage reduction effect**

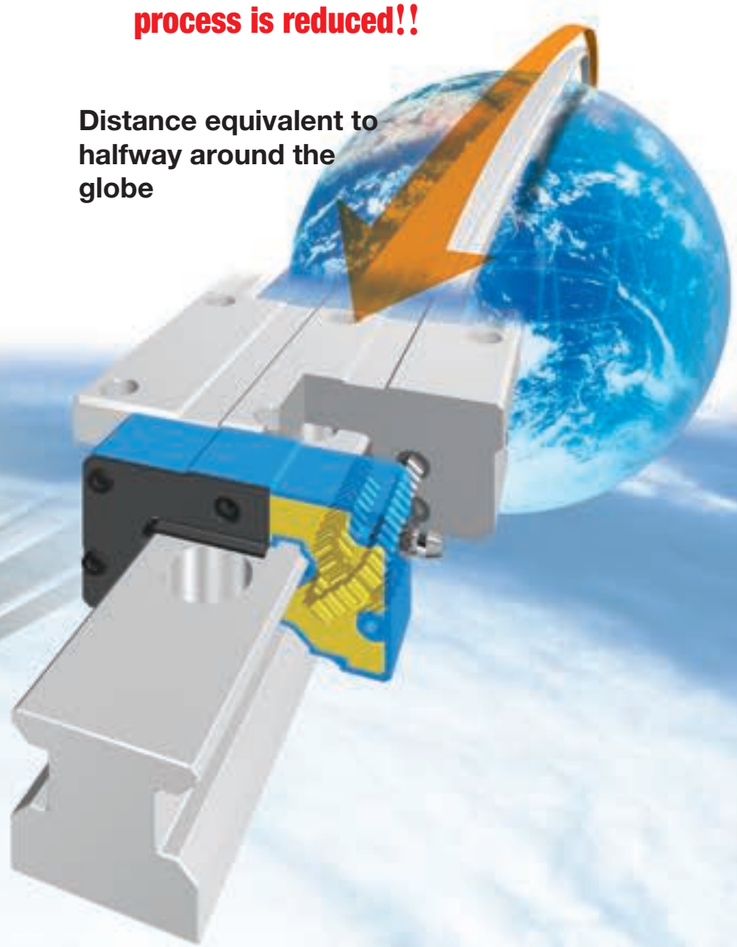



## Maintenance free

Endures running over 20,000 km without oil feeding!

**Troublesome lubrication maintenance process is reduced!!**

**Distance equivalent to halfway around the globe**



## Compactness

The space consuming oil feeder is eliminated to save the space!

**Freedom of machine designing is expanded for user!!**

**Efficient use of space**



Oil Minimum
IKO Gentle to The Earth

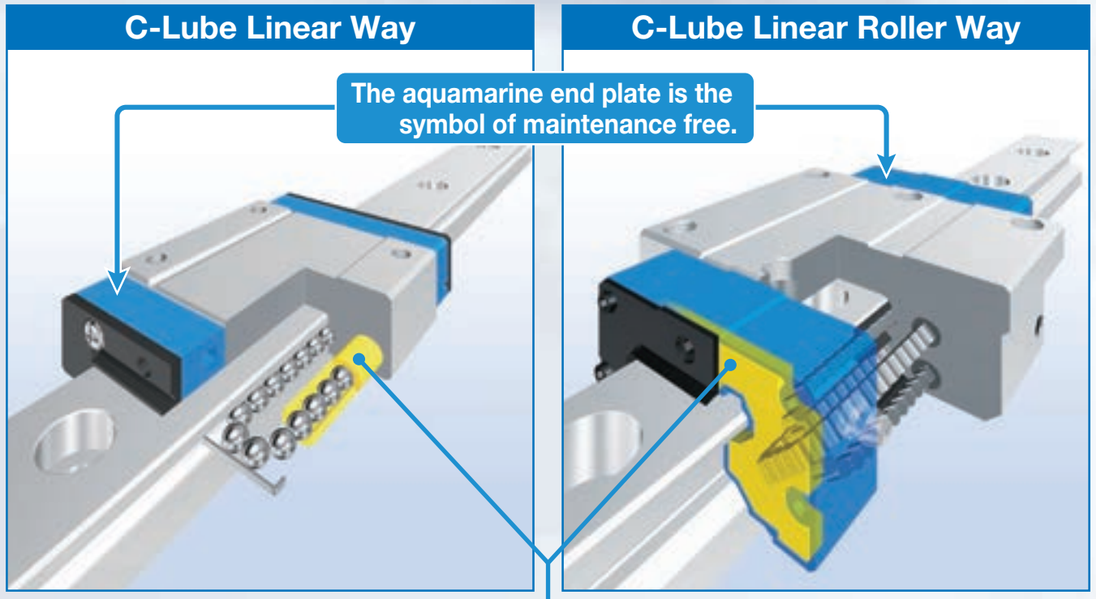
## Features of C-Lube Linear Way and C-Lube Linear Roller Way

# Original and world's first structure with [C-Lube]

### C-Lube Linear Way

### C-Lube Linear Roller Way

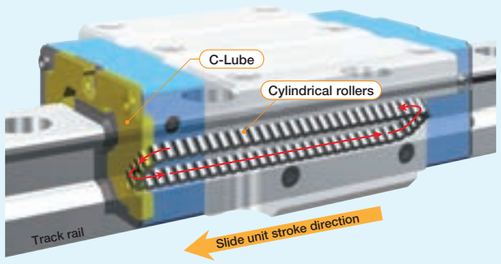
The aquamarine end plate is the symbol of maintenance free.



### C-Lube integrated

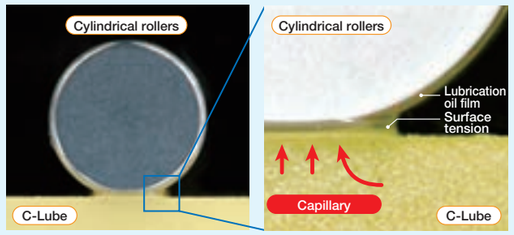
#### Lubrication oil is carried through circulation of rolling elements

The lubrication oil is supplied directly to the rolling elements, not to the track rail.
When rolling elements make contact with the capillary lubricating element integrated with the circulation path of slide unit rolling elements, the lubrication oil is supplied to surfaces of rolling elements and carried to the loading area through circulation of rolling elements.
This results in adequate lubrication oil being properly maintained in the loading area and lubrication performance will last for a long time.




#### Lubrication oil is directly supplied to surfaces of the rolling elements

The surface of capillary lubricating element is always covered with the lubrication oil.
Lubrication oil is continuously supplied to the surface of rolling elements by surface tension in the contact of capillary lubricating element surface and rolling elements.
On the surface of capillary lubricating element with which the rolling elements make contact, new lubrication oil is always supplied from the other sections.






# Long term maintenance free is realized with oil impregnated with C-Lube only !!

IKO C-Lube Maintenance-free™

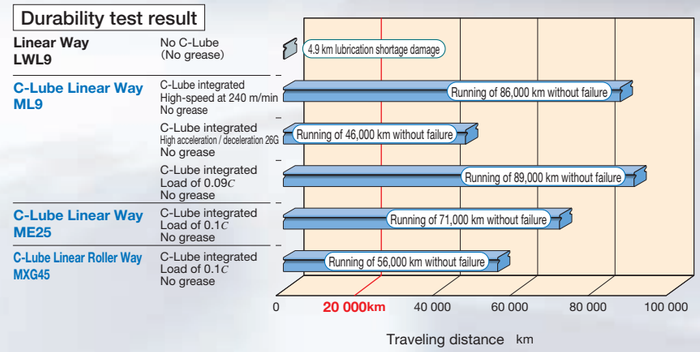
## Maintenance free

This endures running over 20,000 km without oil feeding with lubrication oil in the C-Lube only.
Furthermore, grease is pre-packed in the slide unit so long term maintenance free can be realized.

*Maintenance free is achieved until the end of device life*[*1]*!*

*1. Typical device life is assumed. Re-greasing may be necessary depending on use conditions.

Durability test result

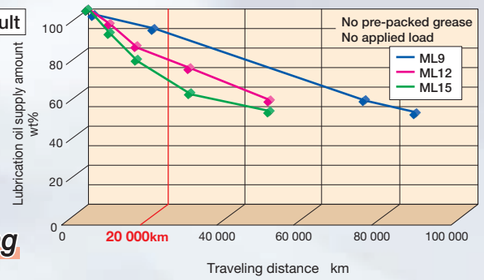



## Eco-friendly

As lubrication oil in C-Lube is supplied by the amount necessary to maintain lubrication performance of the rolling guide, the consumption of lubrication oil is reduced and lubrication performance is maintained even when it run for a long period.

*Eco-friendly specification reducing usage of lubrication oil!*

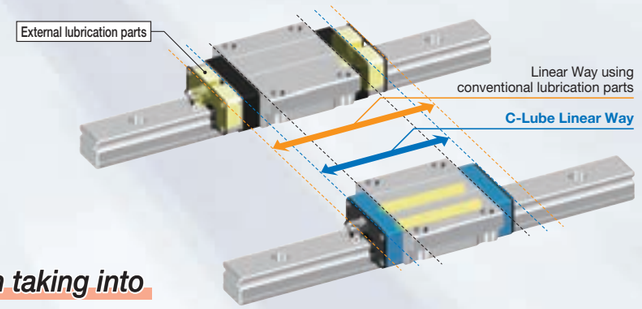
Oil supply test result




## Compact

As C-Lube Linear Way and C-Lube Linear Roller Way are integrated with lubrication part C-Lube, their slide units are not long unlike types with external lubrication parts.
Replacement of conventional parts is easy free from constraints of mounting space and stroke length.

*Compact design taking into account compactness!*

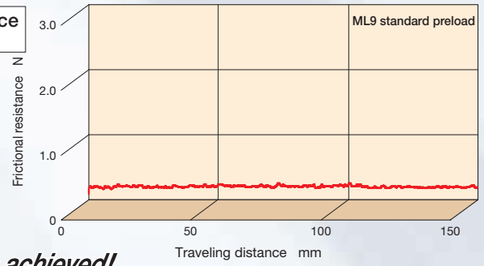



## Smooth

C-Lube Linear Way and C-Lube Linear Roller Way do not generate slide resistance unlike lubrication parts external to the slide unit that make contact with the track rail.
Driving force follow-up property is superior and energy is saved by improvement of accuracy and reduction of friction loss.

*Light and smooth motion is achieved!*

Frictional resistance test result

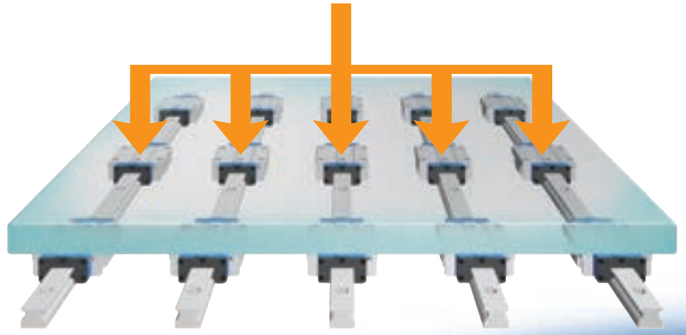


# Ultimate Interchangeable system by radical pursuit of elimination of any waste

## Accuracy interchangeability

Three accuracy classes are available!
Height variation can be controlled with multiple assembled sets!

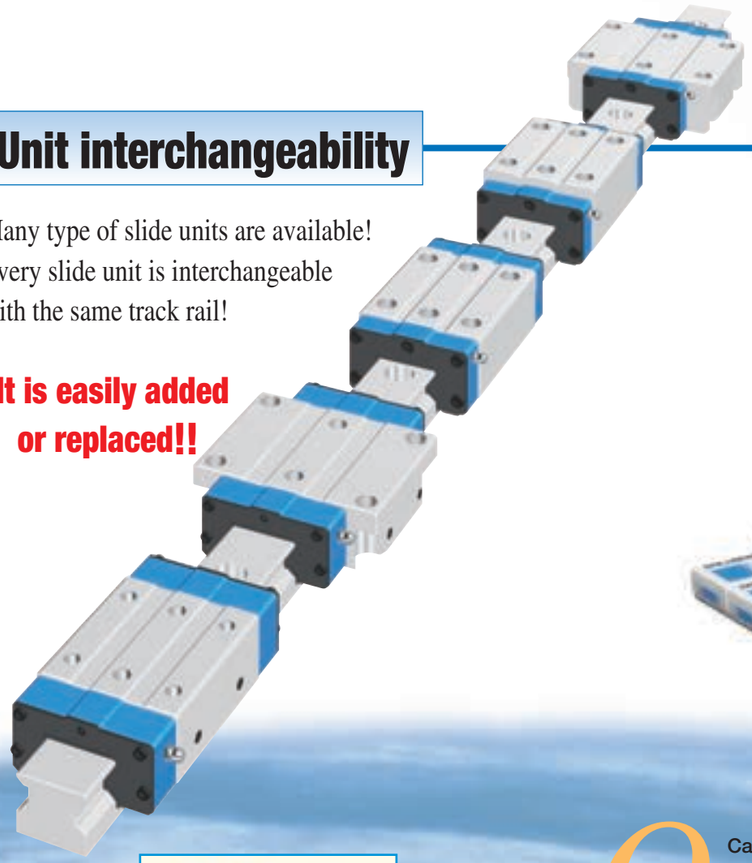
**High accuracy of the device can be maintained in the multiple-use environment!!**



## Unit interchangeability

Many type of slide units are available!
Every slide unit is interchangeable with the same track rail!

**It is easily added or replaced!!**



## Short delivery products

Separate delivery of slide unit and track rail!

**You may order what you need by any quantity at any time!!**



**Q** I dropped the Linear Way unit by mistake, and the unit is damaged. Can I replace it?

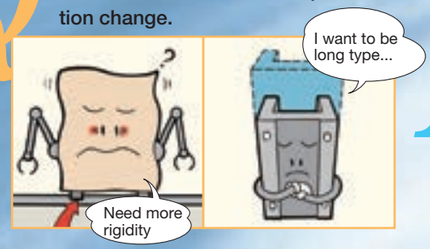



**A** **Unit interchangeability**

If you use Linear Way of Interchangeable specification, you may need to replace only slide unit.

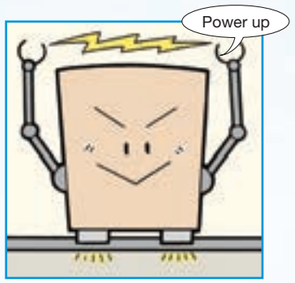



**Q** I need to increase the rigidity of the unit because of sudden specification change.



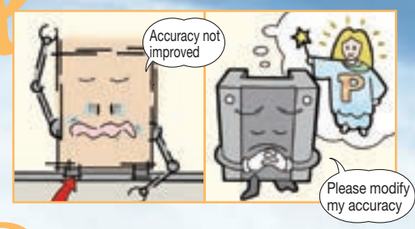

**A** **Unit interchangeability**

The rigidity can be improved easily by increasing the unit length.



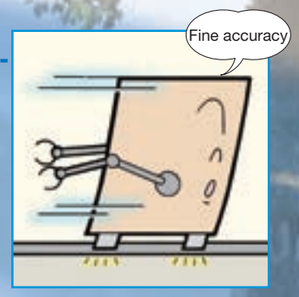



**Q** Calculated accuracy cannot be achieved after assembly of the device?




**A** **Accuracy interchangeability, preload interchangeability**

How do you like to use accuracy higher by one class or higher preload type?
As accuracy of the interchangeable products is controlled strictly by parts, setting can be modified.




**Q** I carelessly forgot to arrange some parts, but I need them urgently. Can it be delivered soon?




**A** **Short delivery available**

Interchangeable parts are available for short delivery, they can be delivered quickly with our perfect inventory system.
Slide unit and track rail can be ordered individually.



IKO Features of Interchangeable Specification ②

**Free combination is enabled for model, accuracy, preload!!**

## Ultimate interchangeable system

# Interchangeable specification

Interchangeable specification has realized the incomparable high interchangeability by severely managing the dimensions of slide unit and track rail with the background of unique high processing technology.
This feature allows independent handling of slide unit and track rail, thus allowing you to select free combination and to order any products for any volume at any necessary time.

**Requirements of ;**

- Wish to improve the rigidity and life of machines
- Wish to improve the accuracy of machines
- Wish to replace the slide unit immediately
- The number of slide units is in short
- Wish to replace the track rail immediately
- The length of track rail is not sufficient
- Wish to store only the slide units in stock for emergency

Help

**Interchangeable specification realizes ;**

- Wish to prepare for a sudden design change
- Wish to select freely the combination of high accuracy and preload
- Slide unit and track rail are separately handled
- Free combination of slide unit and track rail can be selected
- Compactness-independent storing of slide units and track rails

Sorted out

Select the products as many as you wish.

Slide unit + Track rail = Set condition



## Unit interchangeability

A wide variety of slide unit models with different sectional shape and length are provided, for free replacement on the same track rail.

**Interchangeability of track rail**

Track rail

| High carbon steel-made track rail | Stainless steel-made track rail | Butt-jointing track rails |
|---|---|---|

**Interchangeability of slide unit**

Slide unit shape

| Flange type mounting from bottom | Flange type mounting from top | Block type mounting from top | Compact block type mounting from top |
|---|---|---|---|

Length of slide unit

| Short unit | Standard unit | Long unit |
|---|---|---|

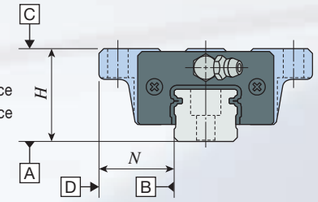
*Free selection is possible for slide units and track rails!*

## Accuracy interchangeability

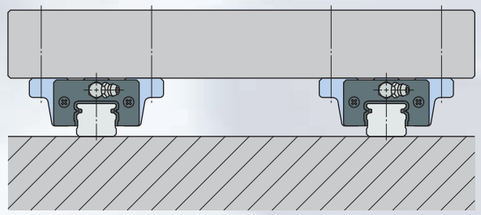
Three accuracy classes of Ordinary, High and Precision class are provided, to support even high traveling accuracy purposes. In addition, as height variation of multiple assembled sets is managed with high accuracy, you may use parallel track rails at ease.

**Standard setting up to precision**

- Tolerances of dimensions $H$ and $N$
- Variation of dimensions $H$ and $N$ in 1 set
- Parallelism in operation of the C surface to A surface
- Parallelism in operation of the D surface to B surface




*It allows the accuracy improvement of units without design changes!*



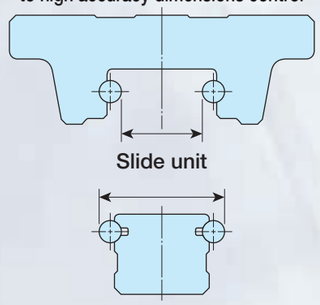
**Corresponding to parallel arrangement of multiple assembled sets as standard**

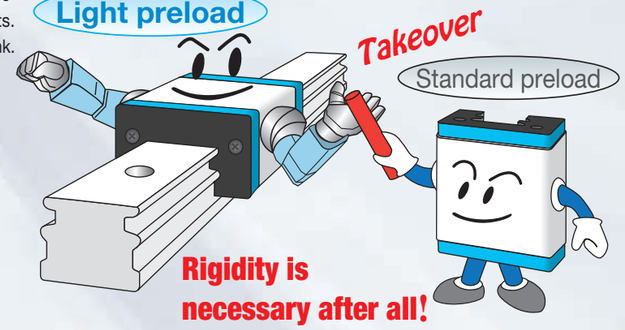
- Variation of dimensions $H$ of multiple assembled sets is specified

## Preload interchangeability

The high accuracy dimensions management utilizing the simple structure achieved the interchangeability of preloaded slide units. It supports the applications requiring the rigidity of one higher rank.

**High preload setting is possible thanks to high accuracy dimensions control**

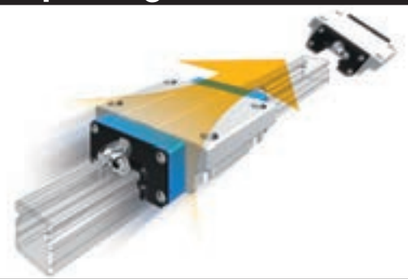



*It allows the rigidity improvement of units without design changes!*

## Maintenance free is achieved only by replacing the slide unit!

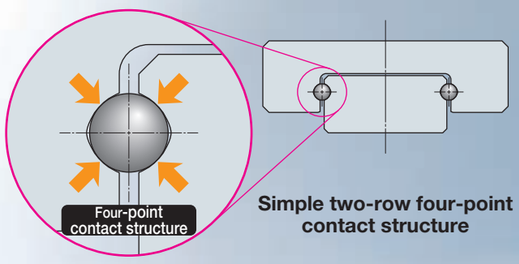
By replacing the interchangeable Linear Way or Linear Roller Way slide unit with C-Lube Linear Way or C-Lube Linear Roller Way slide unit, maintenance free is achieved while using the same track rail.



# IKO's excellent features realized by a simple structure by four-points contact in two-row raceways

## Two-row four-point contact type simple structure

IKO adopts two-row four-point contact type for every Linear Way series. Thanks to our design know how and production technologies having been fostered for long time, high accuracy and smooth motion are realized in the micro series.
In addition, load in every direction can be received evenly and therefore stable high accuracy and rigidity can be achieved even in applications where load has variable direction and size or complex load is applied.

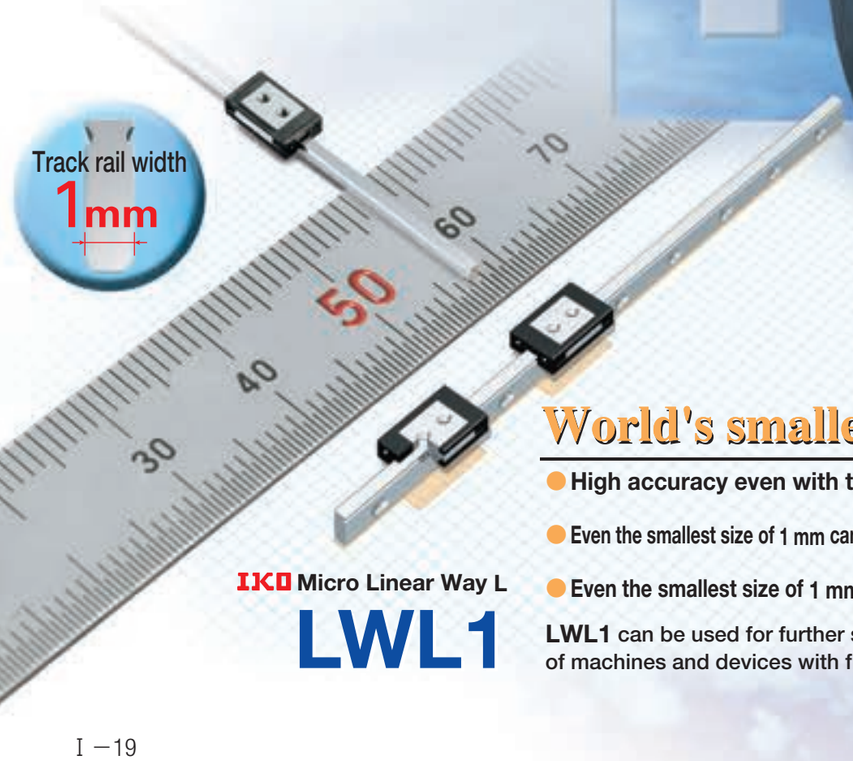



Simple two-row four-point contact structure

**Essential for micro sizing!**

## Micro Linear Way L realized by simple structure

Micro Linear Way L for further needs of miniaturization produced by original small sizing technology.
Wide variety of track rail width from 1 mm to 6 mm is available and high accuracy of micro positioning mechanism is realized.




IKO Micro Linear Way L
**LWL1**

**World's smallest size!**

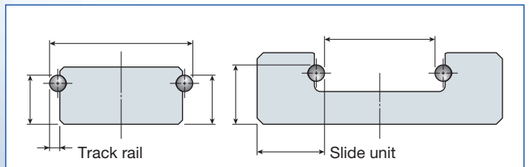
- **High accuracy even with the smallest size of 1 mm*!**
  *Track rail width of 1 mm
- **Even the smallest size of 1 mm can be securely mounted and fixed**!**
  **Tapped rail specification
- **Even the smallest size of 1 mm can ensure stable operation!**

**LWL1** can be used for further super miniaturization of machines and devices with free-minded thinking.

## Interchangeable

The simple structure of four-contact in two-row raceway yields small manufacturing errors or accuracy measurement errors, allowing the maintenance of each raceway in the high dimensions accuracy.

**This technology realizes interchangeable specification and high interchangeable system in every series!**




Measurement of way accuracy

As the ball is stabilized during track groove measurement, measurement of high accuracy and precise preload management are possible.

## Variety of models and size variations

A wide variety of models and sizes, such as super miniature size of only 1 mm track rail width, is provided for your selection to meet each requirement.

| Series | | Model | Size | Track rail width Min | Max |
|---|---|---|---|---|---|
| C-Lube Linear Way ML | ML | 20 models | 15 sizes | 3 ~ | 42 mm |
| Linear Way L | LWL | 22 models | 19 sizes | 1 ~ | 42 mm |
| C-Lube Linear Way MLV | MLV | 1 model | 3 sizes | 7 ~ | 12 mm |
| C-Lube Linear Way MV | MV | 1 model | 3 sizes | 20 ~ | 30 mm |
| C-Lube Linear Way ME | ME | 18 models | 6 sizes | 15 ~ | 45 mm |
| Linear Way E | LWE | 21 models | 6 sizes | 15 ~ | 45 mm |
| C-Lube Linear Way MH | MH | 17 models | 9 sizes | 8 ~ | 45 mm |
| Linear Way H | LWH | 19 models | 11 sizes | 8 ~ | 65 mm |
| Linear Way F | LWF | 4 models | 7 sizes | 33 ~ | 90 mm |
| C-Lube Linear Way MUL | MUL | 1 model | 2 sizes | 25 ~ | 30 mm |
| Linear Way U | LWU | 1 model | 4 sizes | 40 ~ | 86 mm |



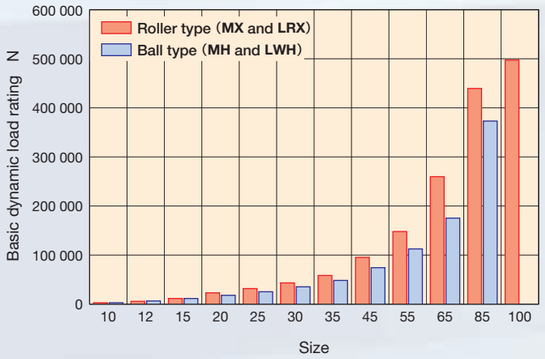
1N=0.102kgf=0.2248lbs.
1mm=0.03937inch

# Ultimate high performance produced by world's first roller guide structure of IKO

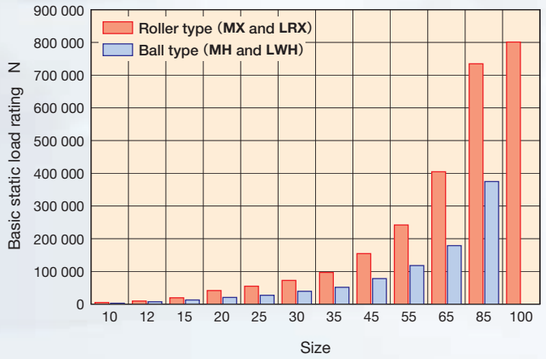
## Super high load capacity

The Linear Roller Way Super X has a large contact area with the way and a number of cylindrical rollers with excellent load capacity, which allows to achieve larger load rating.

Comparison of basic dynamic load rating



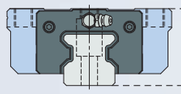

Comparison of basic static load rating




*Size smaller by one size than the ball type can be used!*

## Long life

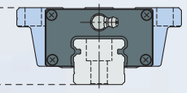
《Roller Type》 **MXG45**



Same size

$C$ = 124 000 N
$C_0$ = 223 000 N

《Ball Type》 **MHG45**



$C$ = 95 200 N
$C_0$ = 114 000 N

$C$ : Basic dynamic load rating N
$C_0$ : Basic static load rating N
$L$ : Life km
$P$ : Applied load N

**Roller type has large basic dynamic load rating $C$ and long life due to the different "index"!**

【Life calculation example】

Applied load
In case of 10000 N

Roller Type

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

$L \fallingdotseq 220\,000$ km

Ball Type

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

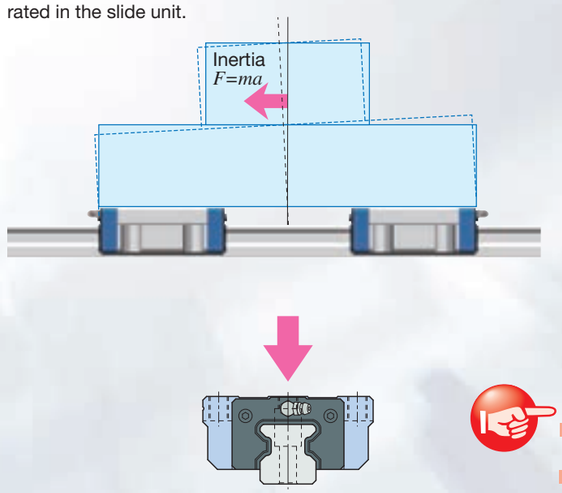
$L \fallingdotseq 43\,000$ km

*Significant increase!*

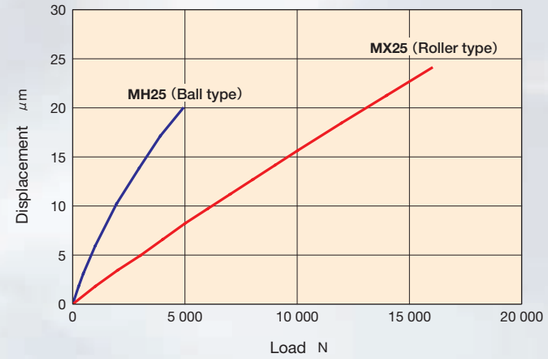


## Super high rigidity

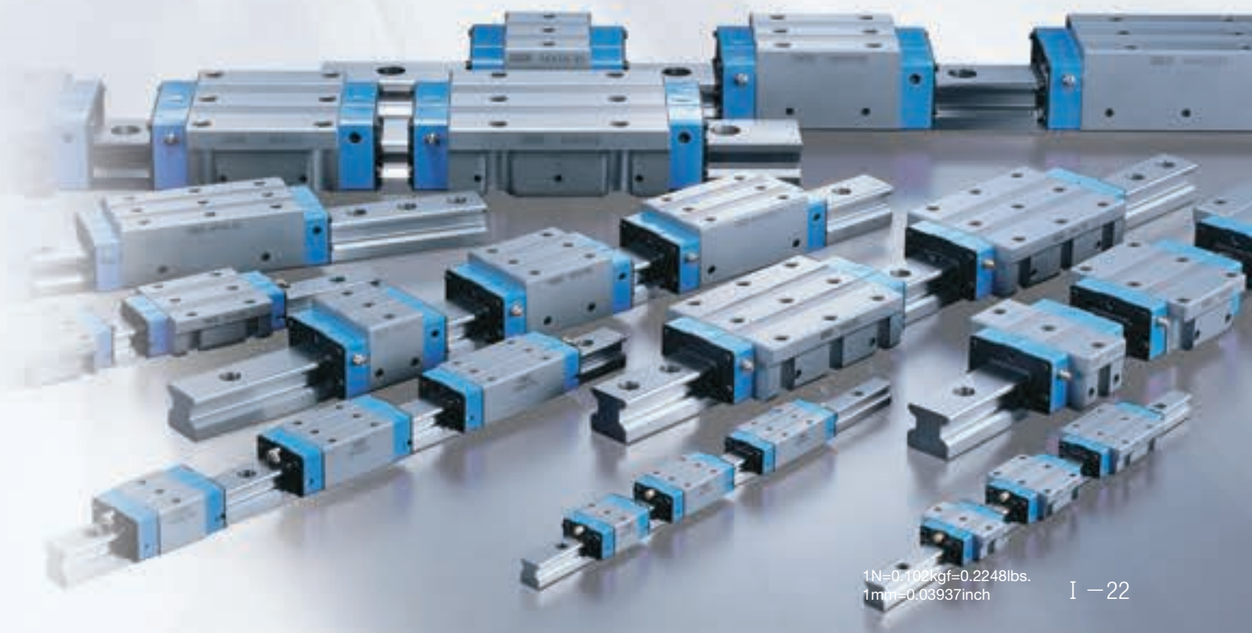
The rigidity of linear motion rolling guide significantly affects properties of machines and devices to be incorporated.
The Linear Roller Way Super X achieves high rigidity as a number of small cylindrical rollers with smaller elastic deformation relative to load than that of balls are incorporated in the slide unit.




Comparison of elastic deformation



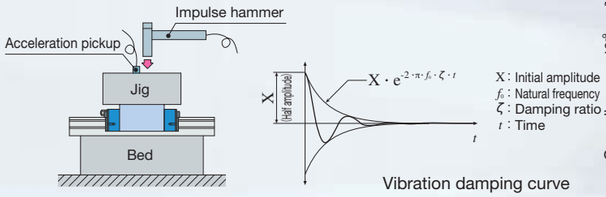

*Well-balanced high rigidity is realized in every direction!*



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

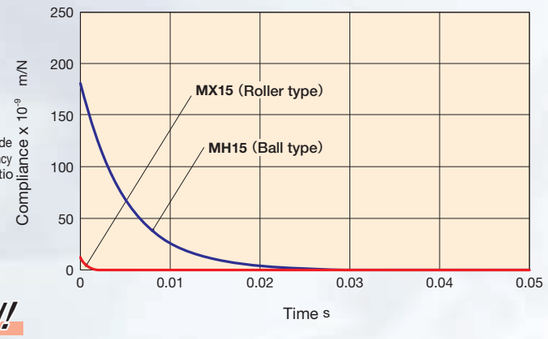
## Vibration characteristics

The Linear Roller Way Super X has high rigidity relative to ball types of the same size, so deformation amount is low relative to repeated fluctuating load, natural frequency is high and vibration damping time is short.




Vibration damping curve

Vibration damping curve in downward vibration (Half amplitude)



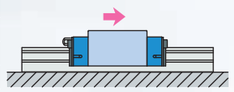

*Positioning time can be shortened!*

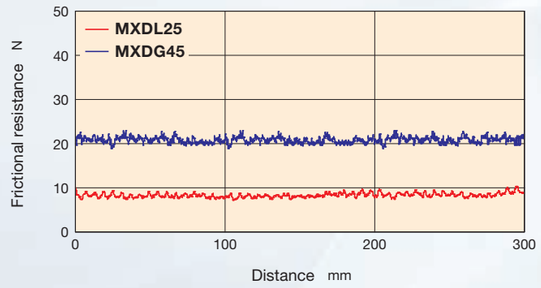
## Allows accurate positioning with excellent frictional characteristic

The Linear Roller Way Super X prevents skew of cylindrical roller and achieves smooth motion by adopting unique retaining method to accurately guide cylindrical roller ends with retaining plate.
The Linear Roller Way Super X has good response characteristics to micro-feeding and allows for accurate positioning, thanks to small frictional resistance against preload and load and excellent frictional characteristics relative to plain guides and ball type linear motion rolling guide.

**MXDL25 and MXDG45 $T_3$ preload frictional resistance**

| | |
|---|---|
| Test portion | Extra long unit **MXDL25**<br>Long unit **MXDG45** |
| Preload | $T_3$ preload |
| Velocity | 0.6 m/min |
| Lubrication | C-Lube integrated, with grease |






*High follow-up property is ensured even for micro-feeding!*

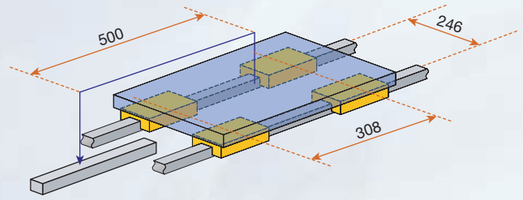
## High running accuracy

Optimal design based on analysis of re-circulation behavior of cylindrical roller circulation realizes smooth and quiet motion. In addition, load is applied to many cylindrical rollers and therefore the micro deflection during running is minimized. Extra long unit is optimal for applications requiring higher running accuracy. (For more information, see page I-29)

**Deflection amount during running**

unit: μm

| | |
|---|---|
| **MXDG30 $T_3$ preload** | 0.12 |

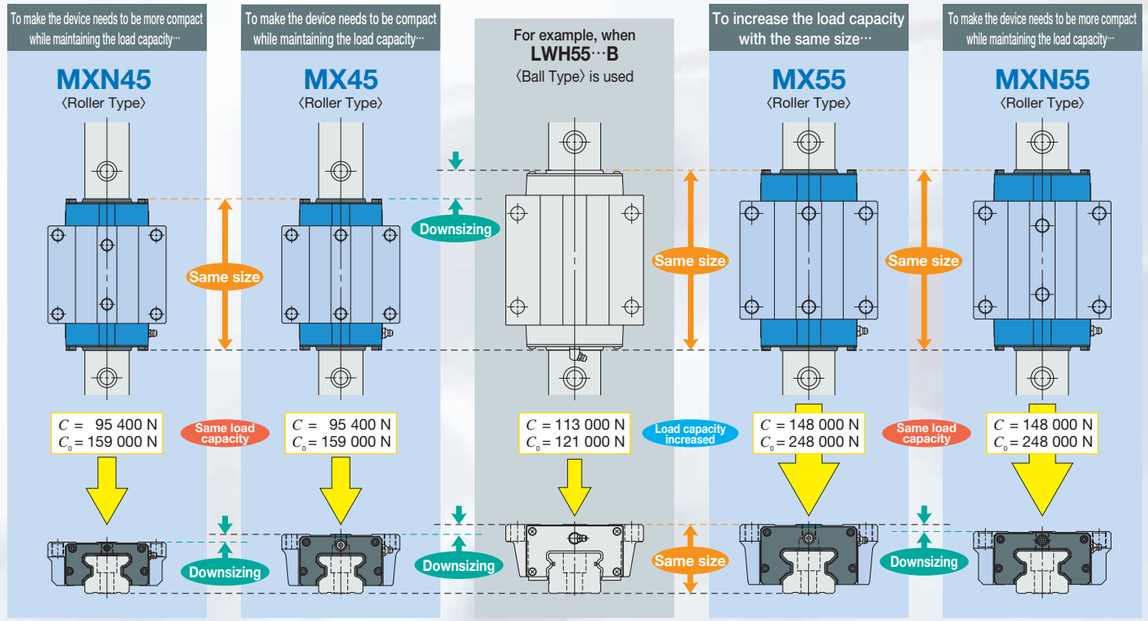



*Stable running accuracy is achieved!*



## Corresponding to compactification

Roller type with significantly higher load capacity than the ball type. The Linear Roller Way Super X allows for downsizing from many size variations for compactification of devices.

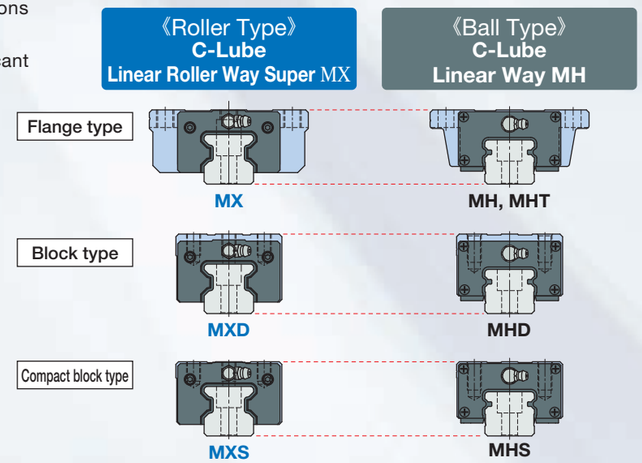



*Downsizing and increased load capacity!*

*Roller type with large increase of load capacity!*

## Compatible ball type and mounting dimensions

The Linear Roller Way Super X has mounting dimensions compatible with the ball type Linear Way H.
Replacement with roller type is possible without significant design change to machine or device.




*Downsizing and increased load capacity are possible!*

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

# A variety of models and size variations

## Ball Type Miniature Series



### C-Lube Linear Way ML
### C-Lube Linear Way MLV
### Linear Way L

Thanks to the structure with two rows of balls to contact with the way at four points, stable accuracy and rigidity can be achieved even in applications where load has variable direction and size or complex load is applied, despite its very small body.



### Micro Linear Way L

As the lineup of track rail width from 1 mm to 6 mm is available, you can select an optimal product for the specifications of your machine and device. For LWL1, world's smallest size is realized: track rail width of 1 mm, slide unit width of 4 mm and assembly height of 2.5 mm.

Standard type
**ML**
**LWL**



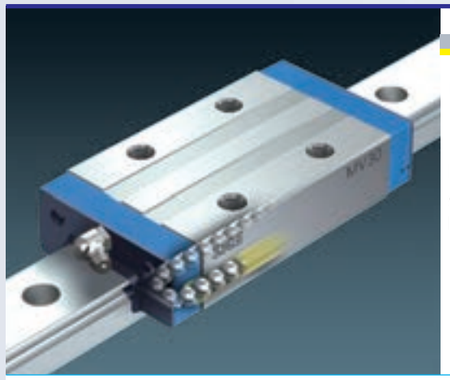
Wide type
**MLF**
**LWLF**



| Length of slide unit | |
|---|---|
| C | Short |
| No symbol | Standard |
| G | Long |
| L | Extra long |

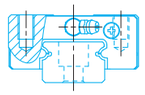
| Size | |
|---|---|
| Standard type | 1, 2, 3, 5, 7, 9, 12, 15, 20, 25 |
| Wide type | 2, 4, 6, 10, 14, 18, 24, 30, 42 |

## Ball Type Low Profile/Light Weight Series

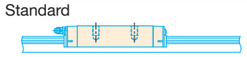


### C-Lube Linear Way MV

Despite its extra low profile and extra light weight, this linear motion rolling guide has the maximum load rating among the ball types while achieving high load capacity.



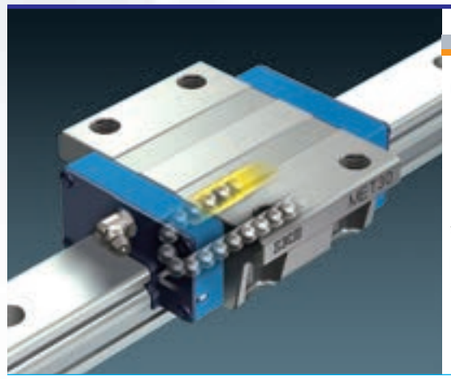
| Length of slide unit | |
|---|---|
| Standard | |



| Size |
|---|
| 20, 25, 30 |



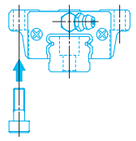
## Ball Type Compact Series



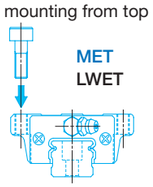
### C-Lube Linear Way ME
### Linear Way E
### Low Decibel Linear Way E

Versatile linear motion rolling guide that has achieved utility pursuing compactness in every aspect. Low decibel types with resin separator to prevent direct contact between balls are also available.

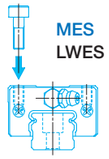
Flange type mounting from bottom
**ME**
**LWE**



Flange type mounting from top
**MET**
**LWET**



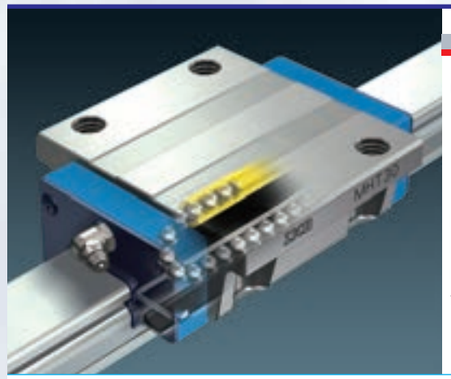
Block type mounting from top
**MES**
**LWES**



| Length of slide unit | |
|---|---|
| C | Short |
| No symbol | Standard |
| G | Long |

| Size |
|---|
| 15, 20, 25, 30, 35, 45 |

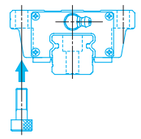
## Ball Type High Rigidity Series



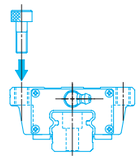
### C-Lube Linear Way MH
### Linear Way H

High rigidity linear motion rolling guides designed to evenly support high load capacity by incorporating large-diameter balls. Stable accuracy and rigidity can be achieved even in applications where load with variable direction and size and complex load are applied.

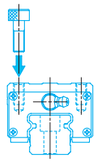
Flange type mounting from bottom
**MH**
**LWH**



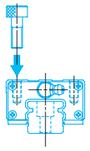
Flange type mounting from top (1)
**MHT**
**LWHT**



Block type mounting from top
**MHD**
**LWHD**



Compact block type mounting from top
**MHS**
**LWHS**



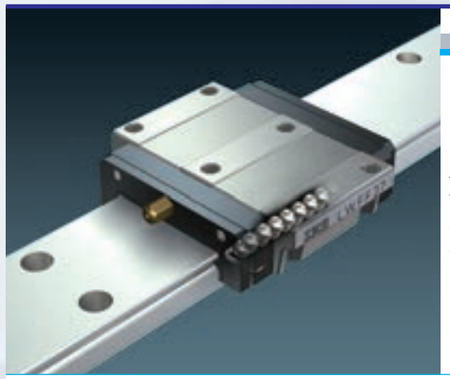
Note (1) Some models may be mounted from bottom.

| Length of slide unit | |
|---|---|
| C | Short |
| No symbol | Standard |
| G | Long |

| Size |
|---|
| 8, 10, 12, 15, 20, 25, 30, 35, 45, 55, 65 |

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

## A variety of models and size variations

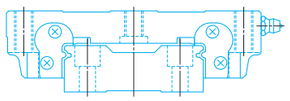


### Ball Type Wide Type Series

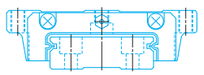
## Linear Way F

As wide track rail is used and the distance between the load points is long, this is a linear motion rolling guide suitable to single-row use due to the structure resistant to across-the-width moment load. It is also resistant to complex load.

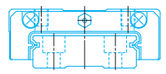
Flange type
mounting from top / bottom
**LWFH**



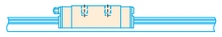
Flange type
mounting from top / bottom
**LWFF**



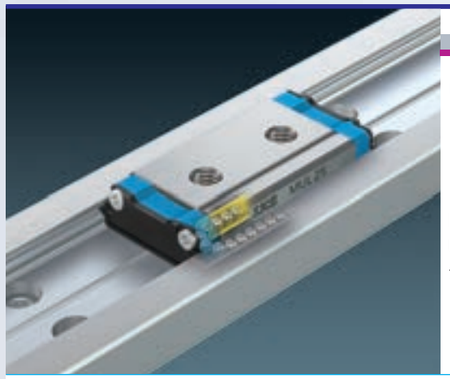
Block type
mounting from top
**LWFS**



| Length of slide unit | |
|---|---|
| No symbol | Standard |



| Size | |
|---|---|
| LWFH | 40,60,90 |
| LWFF | 33,37,42,69 |
| LWFS | 33,37,42 |

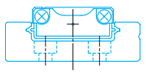


### Ball Type U-Shaped Track Rail Series

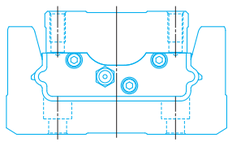
## C-Lube Linear Way MUL
## Linear Way U

Linear motion rolling guide of the structure with way inside the track rail of U-shaped section and slide unit therein. With the U-shaped track rail, rigidity against the track rail moment load and torsion is significantly improved.

Small type
**MUL**



Standard type
**LWU**



| Length of slide unit | |
|---|---|
| No symbol | Standard |



| Size | |
|---|---|
| MUL | 25, 30 |
| LWU | 40, 50, 60, 86 |



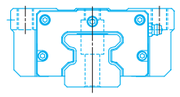


### Roller Type

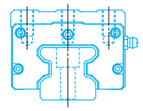
## C-Lube Linear Roller Way Super MX
## Linear Roller Way Super X

Linear motion rolling guide that has achieved the highest level of performance in all characteristics utilizing the roller's superior characteristic, such as rigidity, load capacity, running accuracy and vibration damping property. With extra long unit with the maximum slide unit length, load capacity and rigidity are improved and running performance with super high accuracy is realized.

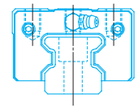
Flange type
mounting from top / bottom
**MX**(1)
**LRX**(1)



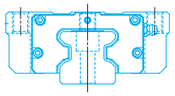
Block type
mounting from top
**MXD**
**LRXD**



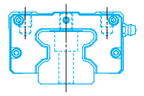
Compact block type
mounting from top
**MXS**
**LRXS**



Low profile flange type
mounting from top
**MXN**

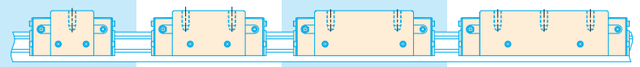


Low profile block type
mounting from top
**MXNS**



Note (1) Size 20 series allows only for mounting from top and model mounting from bottom is MXH and LRXH.

| Length of slide unit | | | |
|---|---|---|---|
| C | No symbol | G | L |
| Short | Standard | Long | Extra long |



| Size |
|---|
| 10, 12, 15, 20, 25, 30, 35, 45, 55, 65, 85, 100 |

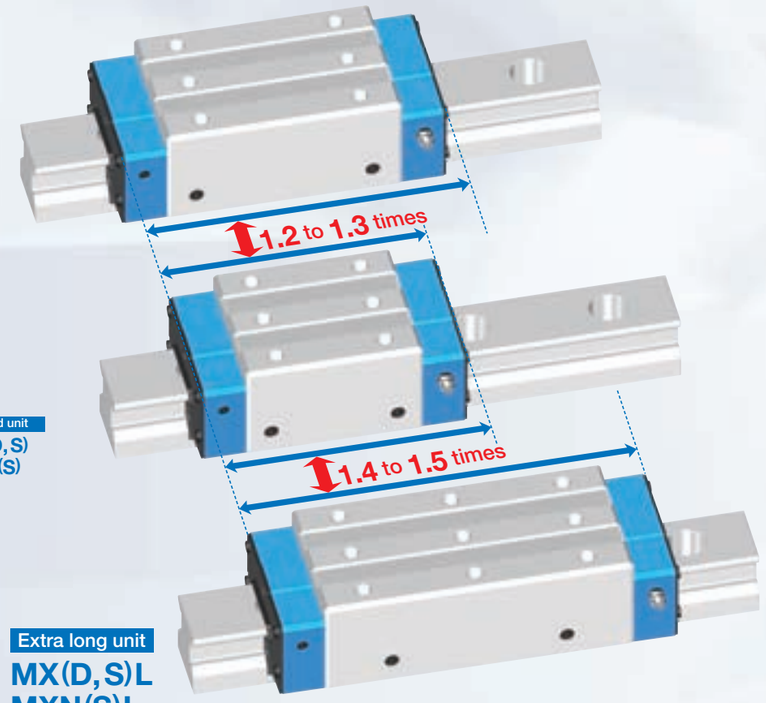



1N=0.102kgf=0.2248lbs.
1mm=0.03937inch

# Features of extra long unit

## C-Lube Linear Roller Way Super MX

Length of slide unit is **1.4** to **1.5** times longer than that of standard unit

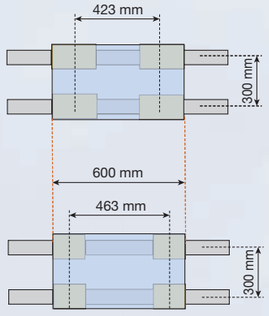



## Super accurate feeding mechanism is realized

As running accuracy is as low as a half of that of long unit, feeding mechanism with super high accuracy can be realized.

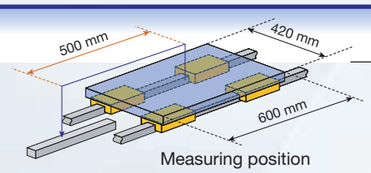
**Test conditions**

| | |
|---|---|
| Test portion | Extra long unit **MXDL45** |
| Preload | $T_3$ preload |

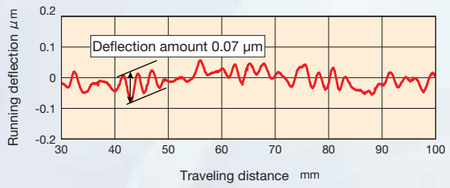


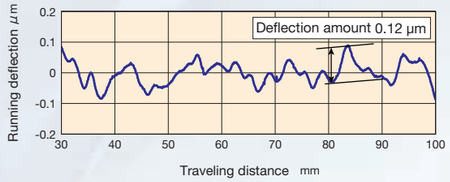

**Test conditions**

| | |
|---|---|
| Test portion | Long unit **MXDG45** |
| Preload | $T_3$ preload |




Measuring position




***High accuracy running performance is realized without major change of machine or device design (1)!***

Note (1) Position of the slide unit mounting hole is changed.



## *Further improvement of running accuracy*

## *Load capacity and rigidity are significantly improved!!*

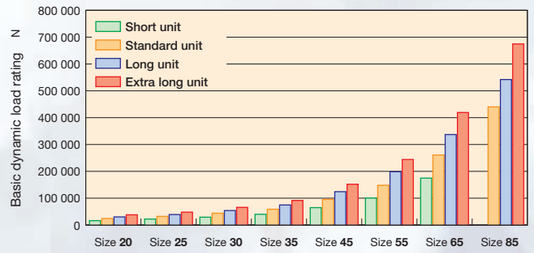
### Load capacity of machine or device is improved

As its basic dynamic load rating and basic static load rating are larger than those of Long type by 122% and 129%, respectively, life and margin safety of machine or device are improved.

Comparison of basic dynamic load rating

***Increased to 158% relative to standard unit!***
***Increased to 122% relative to long unit!***

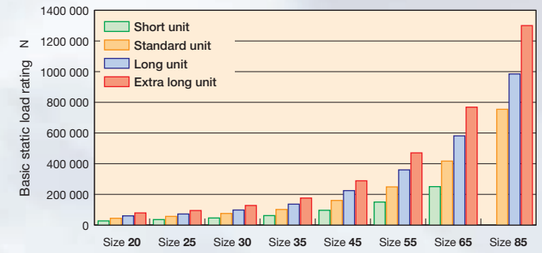
(In case of MXL45)




Comparison of basic static load rating

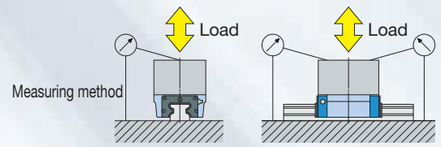
***Increased to 181% relative to standard unit!***
***Increased to 129% relative to long unit!***

(In case of MXL45)




### Contributing to improvement of machine or device rigidity

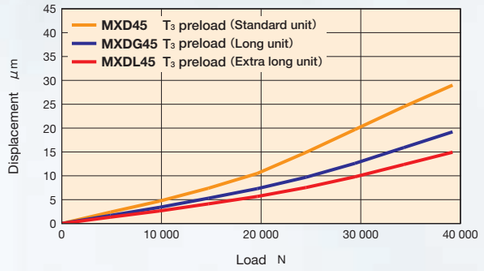
Elastic deformation relative to load is small in comparison with long unit, device rigidity is improved, accuracy is improved, and resonance can be avoided.




Comparison of elastic deformation under downward load

***Rigidity increased to 155% relative to standard unit!***
***Rigidity increased to 117% relative to long unit!***

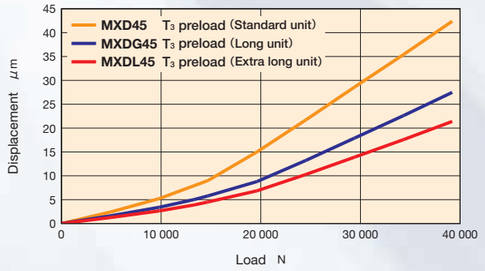
(With displacement of 10 μm for Size 45)




Comparison of elastic deformation under upward load

***Rigidity increased to 152% relative to standard unit!***
***Rigidity increased to 113% relative to long unit!***

(With displacement of 10 μm for Size 45)




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

# C-Lube Linear Roller Way Super MX

# MX MASTER GRADE

## Introducing the low fluctuation specifiication product, for superb high-precision feed!

The C-Lube Linear Roller Way Super MX low fluctuation specifiication MX Master Grade has special precision processing on the roller raceway surface, significantly reducing fluctuation compared to the standard extra long unit and thus making it the ideal product for ultra-precision working machine shaft guides, which require high-precision, high-quality machining.




IKO C-Lube Maintenance-free™

## Applicable products

| | |
|---|---|
| Series | C-Lube Linear Roller Way Super MX |
| Supported models | MXL、MXDL、MXSL、MXNL、MXNSL |
| Size | 30·35·45·55 |

MX Master Grade (low fluctuation specifiications) is a special order product; if needed please contact IKO.

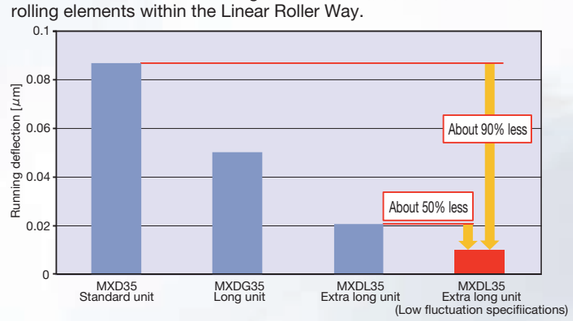


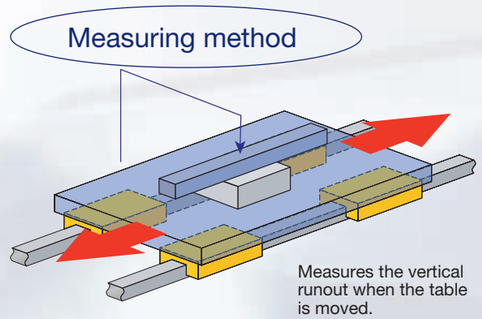
## Features

### 1 Special raceway processing suppresses miniscule running deflection and significantly reduces pulsation compared to standard extra long units.

### Fluctuation comparison data

Pulsation: Refers to the running deflection related to movement of the rolling elements within the Linear Roller Way.



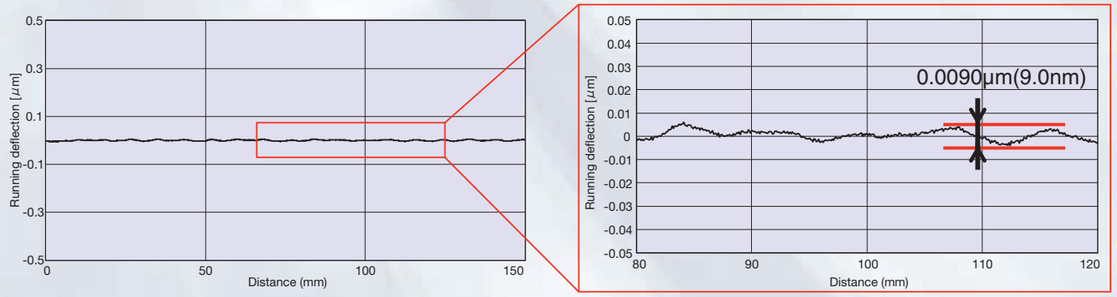




**Super low fluctuation is achieved!**

**About 50%** less fluctuation compared with the standard extra long unit!

### 2 Low fluctuation makes it ideal for ultra-precision working machine shaft guides, which require high-precision, high-quality machining.

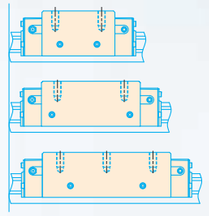
### Fluctuation data




The **running deflection value** is within **0.0090μm(9.0nm)** in actual measurement!

Improve machining quality with the use of MX Master Grade!

### 3 The extra long unit contributes to improved load capacity and rigidity in mechanical equipment.



Standard

Long

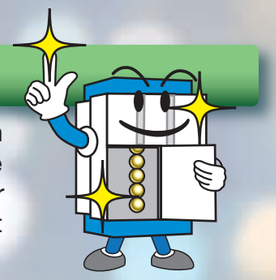
**Extra long**

Elastic deformation relative to load is low in comparison with the standard and long types, device rigidity is improved, accuracy is improved, and resonance can be avoided.

# IKO's unique ideas and experiences are utilized to explore new world for special environment applications.

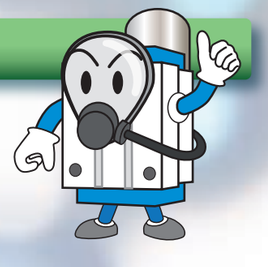
IKO Linear Way and Linear Roller Way are available for various special environment by using different materials and grease, surface treatment and dust protection measures, etc. Typical application fields and major countermeasures are described below.

## Clean Environment



When the Linear Way or Linear Roller Way is used in clean environment such as a clean room, it is required that the environment is not polluted by dust-generation by the Linear Way or Linear Roller Way and it must have excellent rust prevention property as rust prevention oil cannot be used.

## Vacuum Environment



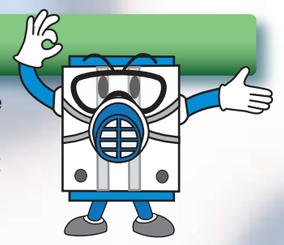
When the Linear Way or Linear Roller Way is used in vacuum environment, it is required that the gas discharged from the Linear Way or Linear Roller Way does not pollute the environment or reduce the degree of vacuum, and it must have excellent rust prevention property as rust prevention oil cannot be used.

## Heat Resistance Measures



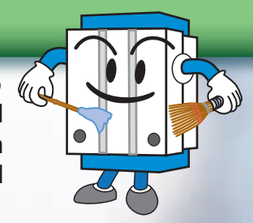
When the Linear Way is used in an environment where temperature is higher than usual, heat resistance of synthetic resin components and metal parts will be an issue.

## Dust Protection



If dust such as metal or wooden chips get into the way of the Linear Way or Linear Roller Way, reduction of life and accuracy may be caused. Therefore, measures to prevent foreign substances from entering into the way are necessary.

## Spatter Protection



Spatter of welding, etc. is so hot that it adheres to components. Foreign substances adhering to the track rail firmly cannot be fully removed by normal dust protection measures, so measures to avoid adherence and enhanced foreign substances removal measures are necessary.

### Clean

- ○ LCL Linear Way and Linear Roller Way
- ○ Precision cleaning and clean packaging
- ○ Stainless Linear Way and Linear Roller Way
- ● Black chrome surface treatment
- ● Specified grease (CG2 or CGL grease)
- ◇ Fluorine grease

### Corrosion resistance

- ○ Hybrid C-Lube Linear Way L
- ○ Non-magnetic stainless Linear Roller Way Super X
- ○ Stainless Linear Way and Linear Roller Way
- ● Black chrome surface treatment

### Vacuum

- ○ LCL Linear Way and Linear Roller Way
- ○ Precision cleaning and clean packaging
- ● No end seal
- ● Stainless steel end plate
- ◇ Fluorine grease

### Heat resistance

- ● Stainless steel end plate
- ● Special environment seal
- ◇ High temperature grease

### Foreign substances (wood chips and metal powder, etc.)

- ○ Linear Way H Ultra seal specification
- ○ Track rail mounting from bottom
- ● Double end seals
- ● Scrapers
- ● C-Wiper
- ● Caps for rail mounting holes
- ● Rail cover plate for track rail
- ● Rail cover sheet
- ● Female threads for bellows
- ● Specific bellows

### Spatter

- ● Scrapers
- ● Caps for rail mounting holes (aluminum alloy)
- ● Rail cover sheet
- ● Fluorine black chrome surface treatment
- ● Stainless steel end plate

○ **Linear motion rolling guide series for special environment :**
Collective name of linear motion rolling guide series models corresponding to special environment.

● **Special specification for special environment :**
Special specification corresponding to special environment by combination of linear motion rolling guide series.

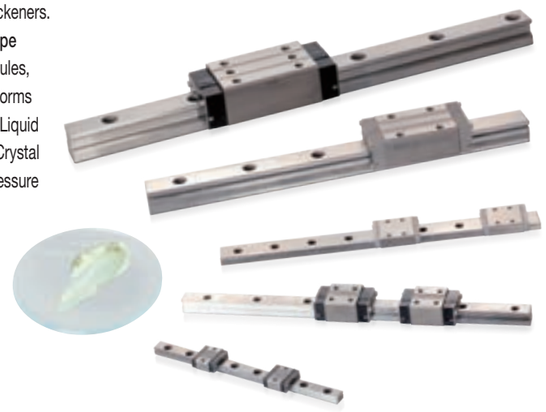
◇ **Lubricant :**
Lubricant suitable for each special environment can be selected.

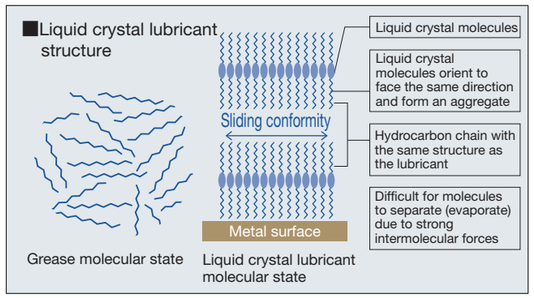
# LCL Linear Way and Linear Roller Way

Neither grease nor oil

## World's first Liquid Crystal Lubricant

Liquid Crystal Lubricants are completely different from greases composed of base oils and thickeners. **Liquid Crystal Lubricants are composed only of liquid crystal compounds, forming a new type of lubricant never seen before.** Conventional grease base oils lubricate using dissimilar molecules, causing difficulties with adhesion to metal surfaces and evaporation. Liquid Crystal Lubricant forms molecular aggregates, improving adhesion to metal surfaces and minimizing evaporation. The Liquid Crystal Lubricant used in the LCL Linear Way and Linear Roller Way is the world's first Liquid Crystal Lubricant for bearings, achieving excellent lubrication functionality even under high contact pressure during rolling contact and successfully creating revolutionary new functions.






## Features

### Superior load durability

Long-term durability exceeds 70 times that of fluorine grease at room temperature and atmospheric pressure.
2 to 6 times greater durability than other types of grease, even in high-temperature environments.

### Superior low dust-generation properties

Dust generation is less than 1/10 of lithium soap based grease.

### Excellent outgas properties

The outgassing characteristics in high vacuum environments show excellent performance even even at high temperatures.

### Minimizes lubricant evaporation

Zero mass loss even at 100˚C. Liquid crystal lubricants have no loss due to evaporation.

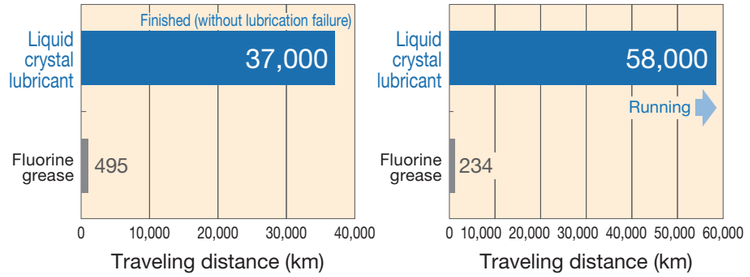
### Light and smooth sliding

The rolling resistance is lower than that of fluorine grease or lithium soap-based grease.



## Performance

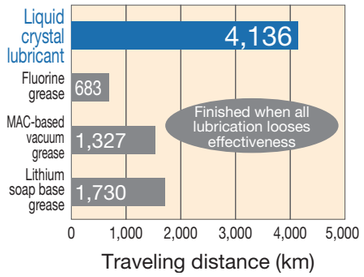
### Load durability (room temperature)




| Test conditions ① | Model number: LWL9···B<br>Speed: 1m/s Load: 181N |
|---|---|

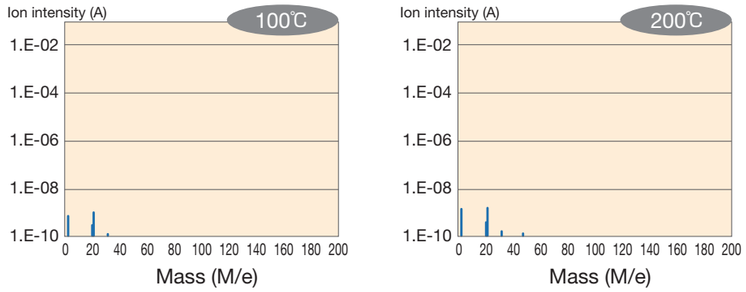
| Test conditions ② | Model number: LRXD20SL<br>Speed: 1m/s Load: 2340N |
|---|---|

### Load durability (high temperature)



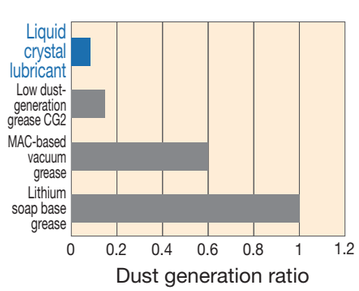

| Test conditions | Model number: LWLF18···B Speed: 1m/s Temperature: 120℃<br>Load: 114N Evaluation: Traveling distance until lubrication failure |
|---|---|

### Outgas properties



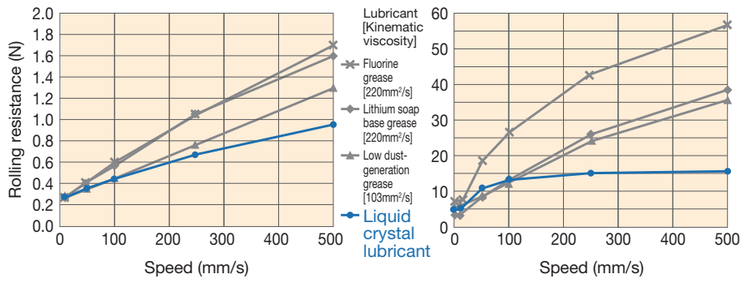

| Measuring conditions | Vacuum level: $10^{-5}$Pa Conditions: Liquid crystal lubricant only |
|---|---|

### Low dust-generation properties




| Test conditions | Model number: LWL9···B/N Load: 80N Speed: 1m/s<br>Evaluation time: 30 hrs Measured particle size: 0.5μm or more |
|---|---|

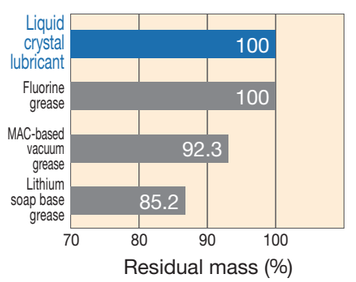
### Rolling resistance




| Test conditions | Model number: LWL9···B/N |
|---|---|

| Test conditions | Model number: LRXSG20 |
|---|---|

### Evaporation characteristics




| Test conditions | Environment: Open atmosphere<br>Temperature: 100℃ Time: 770 hours |
|---|---|

● Applicable products

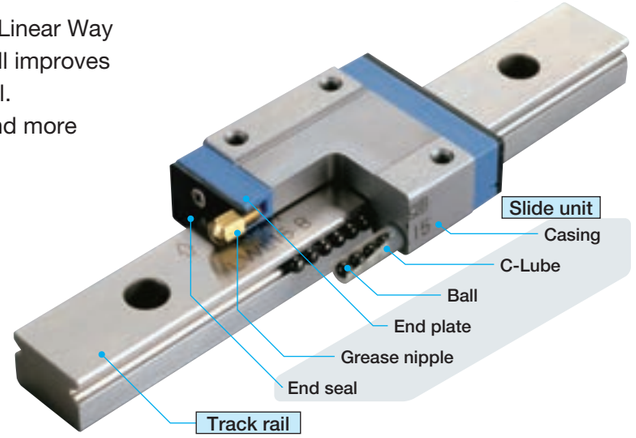
| Compatible series | ・Linear Way L Series<br>・Linear Way E Series<br>・Linear Way H Series<br>・Linear Way F Series<br>・Linear Roller Way Super X Series |
|---|---|

Remark 1. Applicable for stainless steel models from each series.
Remark 2. LCL Linear Ways and Linear Roller Ways are individually made to order. If needed, please contact IKO.

# Hybrid C-Lube Linear Way ML

ML…/HB

While maintenance free performance of C-Lube Linear Way ML is maintained, the silicon nitride ceramics ball improves high-speed performance and reduces noise level. Ceramics has more resistance to deformation and more rigidity than bearing steel and stainless steel.




■ Standard specification

| | |
|---|---|
| Casing | Martensitic stainless steel |
| Track rail | Martensitic stainless steel |
| Ball | Silicon nitride ceramics |
| C-Lube | Capillary lubricating element (Porous resin) |

## Features

**Superior high-speed performance ••• More than three times durability**

**Noise reduction •••••••••• Noise reduction by about 4.5 dB**

**High rigidity •••••••••• Displacement volume reduced by about 10%**

**Superior abrasion resistance ••• Preload reduction volume is about one fourth**

※ All of the above based on comparison with our C-Lube Linear Way ML

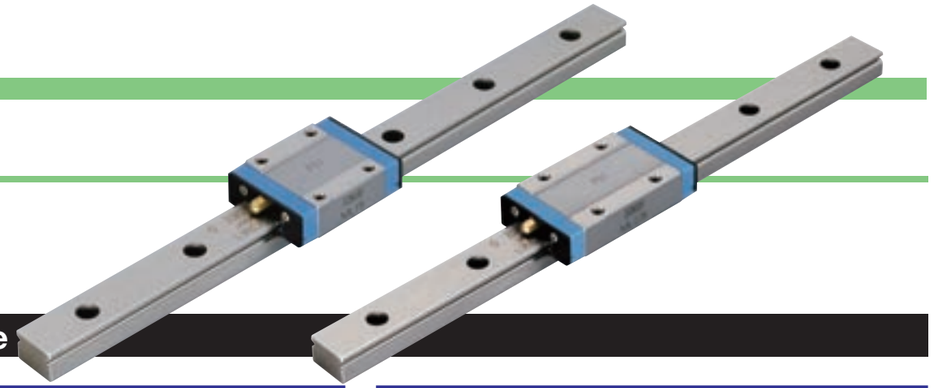
+

**Maintenance free**
Achieved long term maintenance free

**Eco-friendly**
Minimized lubrication oil consumption

**Compact**
Integral lubrication parts

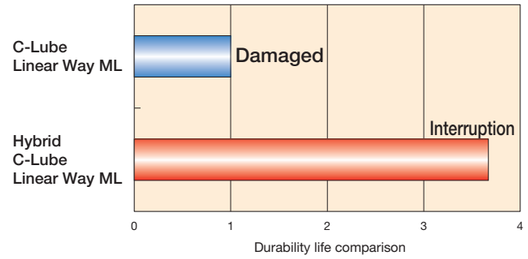
**Smooth**
Excellent sliding characteristic



## Performance

### More than three times durability

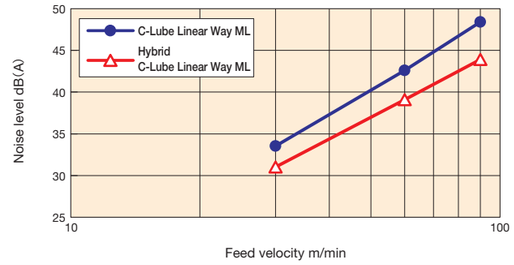
High-speed performance




Test conditions Model : ML12 Velocity: 300 m/min Acceleration: 40 G

### Noise reduction by about 4.5 dB

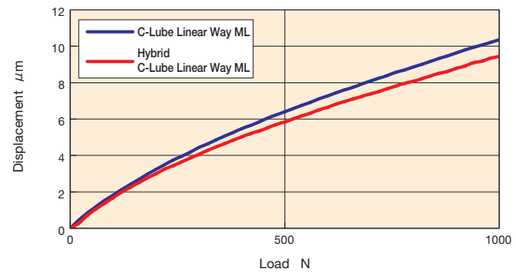
Low decibel




Test conditions Model : ML12 Measurement velocity: 30, 60, 90 m/min

### Small deformation of rolling elements and excellent rigidity

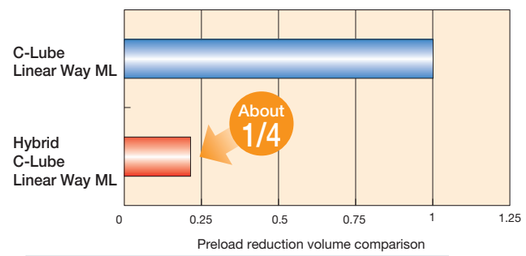
High rigidity




Test conditions Model : ML12 Preload: Standard Preload Load direction: Downward

### Low preload reduction volume and accuracy maintained after operation

Abrasion resistance

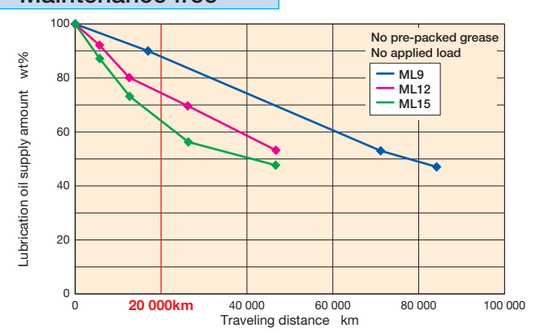



Test conditions Model : ML12 Velocity: 300 m/min
Acceleration: 40 G Traveling distance: 13,000 km

## Basic performance of C-Lube Linear Way

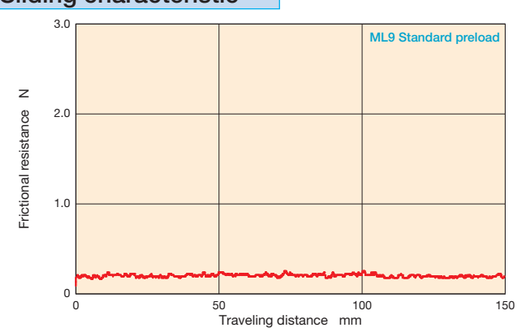
### Achieved long term maintenance free

Maintenance free




### Achieved light and smooth sliding

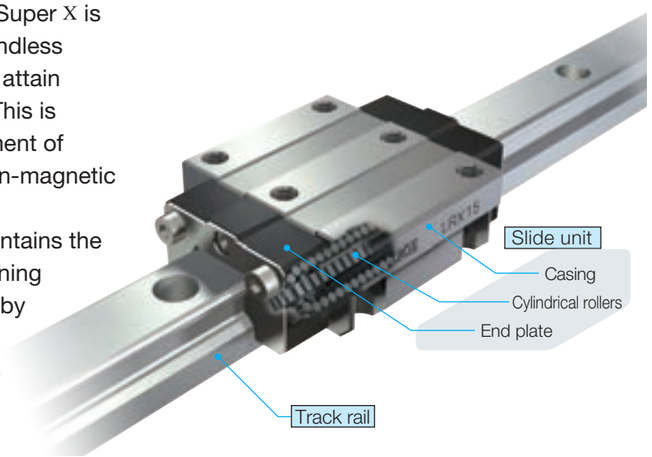
Sliding characteristic



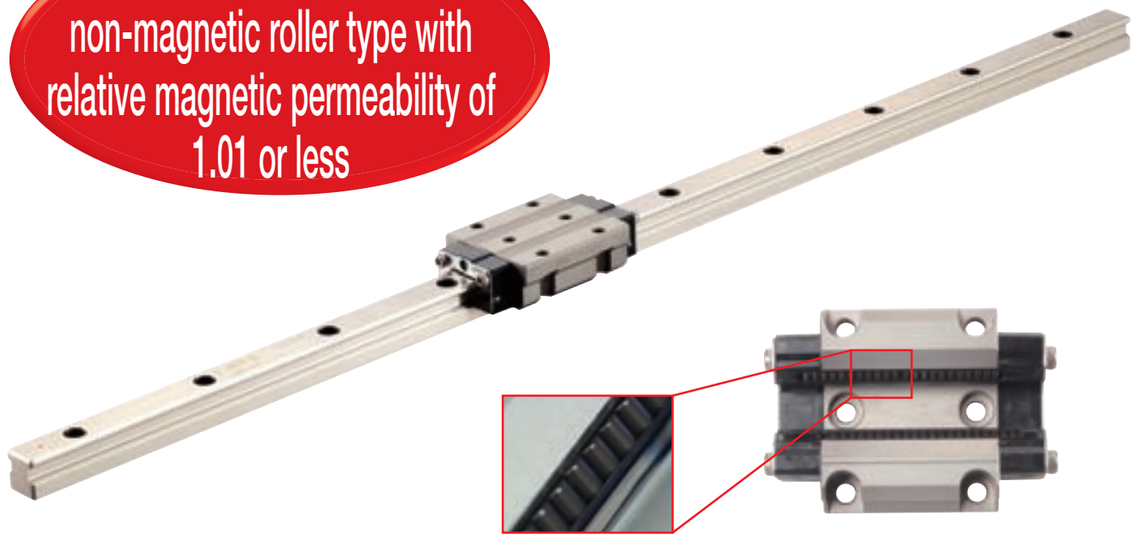

1N=0.102kgf=0.2248lbs.
1mm=0.03937inch

# Non-magnetic stainless Linear Roller Way Super X

The non-magnetic stainless Linear Roller Way Super X is the world's first non-magnetic stainless steel endless motion roller type linear motion rolling guide to attain relative magnetic permeability of 1.01 or less. This is accomplished through the dedicated development of silicon nitride ceramic cylindrical rollers and non-magnetic stainless steel casings and track rails.
Despite being non-magnetic material it still maintains the superior vibration characteristics, excellent running accuracy, and friction characteristics provided by the Linear Roller Way Super X. This allows for accurate and rapid positioning in environments affected by minimal magnetism.




The world's first non-magnetic roller type with relative magnetic permeability of 1.01 or less



## Features

### World first for roller types

The first non-magnetic specifications ever realized in the world for endless motion roller type linear motion rolling guides

### Relative magnetic permeability 1.01 or less

Allows for accurate and rapid positioning in environments affected by minimal magnetism

### High corrosion resistance

Optimal for use in clean environment thanks to non-magnetic stainless steel

### High running accuracy

The superb vibration characteristics of roller type linear motion rolling guides allow superior running accuracy

## Non-magnetic stainless steel characteristics

| Material name / Characteristics | Non-magnetic stainless steel | Silicon nitride ceramics |
|---|---|---|
| Relative magnetic permeability (1) | 1.01 or less (1.005) | 1 (0.999991) |
| Electric conductivity | ○ | × |
| Hardness (HV) | 380~450 | 1400~1600 |
| Linear expansion coefficient ($\times 10^{-6}$/°C) | 19.0 (20~400°C) | 3.2 (20~400°C) |
| Specific gravity (g/cm) | 7.9 | 3.2 |
| Main ingredients | Fe, Mn, Cr | $Si_3N_4$ |
| Cost | ○ | △ |
| Remarks | — | Good corrosion resistance |

Note(1) ( ) is only an example of the measurement value.

## Selection of lubricant

By setting appropriate lubricants such as vacuum grease and low dust-generating grease, any operating environment can be supported.

**●Applicable products**

| | |
|---|---|
| Series | Linear Roller Way Super X |
| Main model | LRX15, LRXD15, LRXS15 |

For detailed specifications or manufacturing information, please contact IKO.

**■Main component materials**

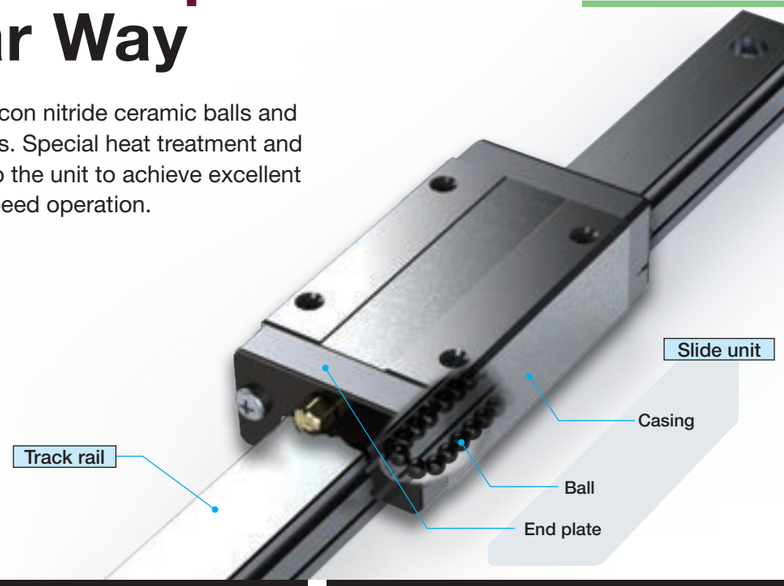
| | |
|---|---|
| Casing | Non-magnetic stainless steel |
| Track rail | Non-magnetic stainless steel |
| Cylindrical roller | Silicon nitride ceramics |
| End plate | Engineering plastic |

Ball types can also be manufactured upon request.
For detailed information, please contact IKO.

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

# High-speed specification Linear Way

Components include silicon nitride ceramic balls and stainless steel end plates. Special heat treatment and machining are applied to the unit to achieve excellent durability during high-speed operation.




## Features

### Superior high-speed durability

Over 5 times more durable than the conventional high-speed type Linear Way when operated at the maximum speed exceeding 360m/min.

### Easily interchangeable

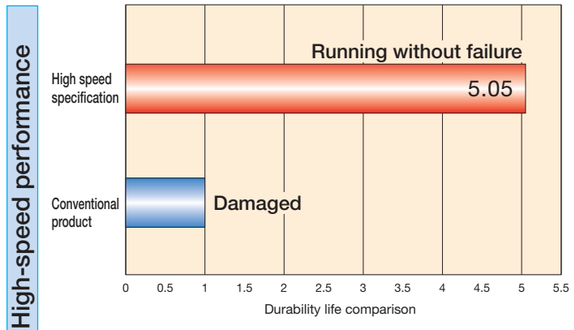
Since the dimensions of each component are the same as the standard product, no additional machining is required for mounting. In addition, there is no contact or interference with other components.

### Superior low dust-generation properties

Changing the lubricant from grease to liquid crystal lubricant (see page Ⅰ-35) can improve low dust-generation properties.

## Performance

### More than five times more durable




| Test conditions | Model number: LWESG15 Maximum speed: 375m/min<br>Acceleration: 6G |
|---|---|

●Main component materials

| | |
|---|---|
| Casing | High carbon steel |
| End plate | Stainless steel |
| Track rail | Stainless steel |
| Ball | Silicon nitride ceramics |
| Grease | Lithium soap-based grease<br>*Can be changed to liquid crystal lubricant with lower dust generation. |

Remark 1. For detailed specifications or manufacturing information, please contact IKO.





# Precision cleaning and clean packaging specifications

Suitable for assembly, inspection, and packaging in precision cleaning and cleanliness-controlled environments. Operation is performed under an ISO 14644-1 (Cleanliness Class 6) environment, which is suitable for packaging products used in clean environments and high-vacuum environment facilities.
Effective when used with our stainless steel products with high rust prevention capability (page Ⅰ-43) and our liquid crystal lubricants with superior low dust-generation properties (page Ⅰ-35).

Supports all processes from assembly to packaging in a clean environment!





## Features

### High level of cleanliness

Supports operations in a clean environment that complies with ISO standards.
Since assembly, inspection, and packaging are all performed in the same clean room, there is no risk of contamination between processes, resulting in a high level of cleanliness.

### Various packaging options

We use special packaging materials that generate less dust. We can also provide special packaging to meet your specific requirements. Contact IKO for more information.

### Simplified receiving process

Since products are packaged in a clean environment, additional cleaning is not required. After unpacking, the products can be mounted directly into the equipment used in a vacuum environment.

## Performance

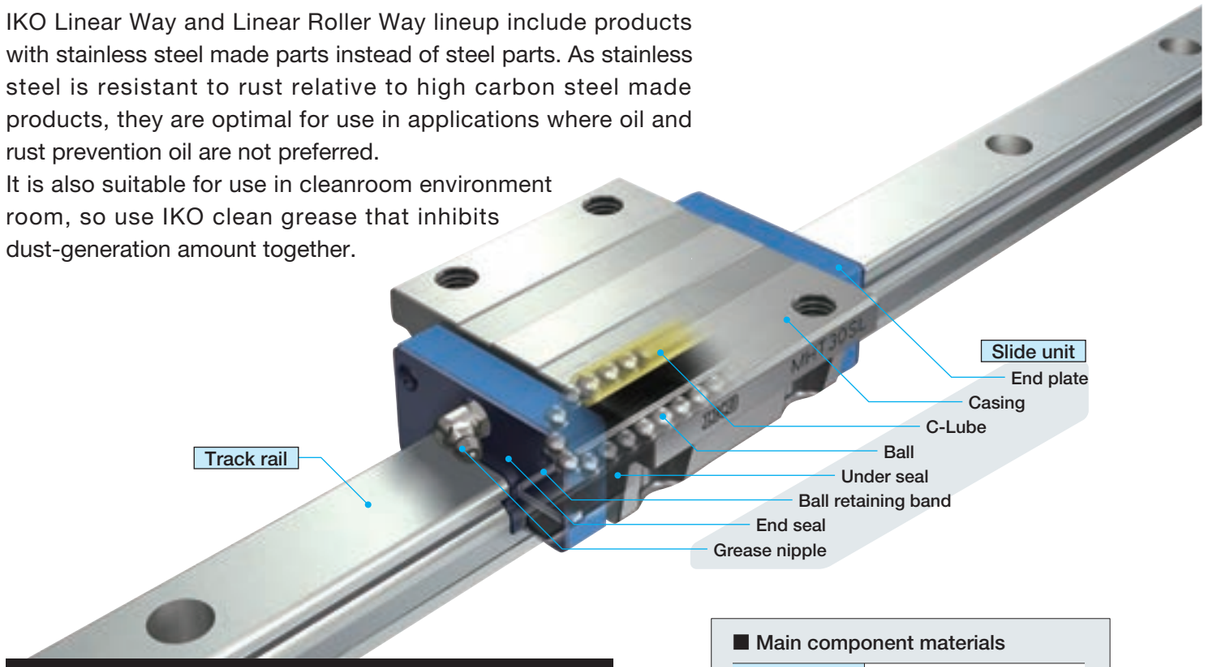
- After precision cleaning of each part, assembly, inspection, and packaging are performed in a clean room.
- Products are double-packaged using special packaging bags. Oxygen absorbers can be prepacked if necessary.
- Prepacked grease can be selected from clean environment/vacuum lubricant and liquid crystal lubricant.
- Rust prevention oil is not applied after cleaning.

Remark 1. For detailed specifications or manufacturing information, please contact IKO.
Remark 2. Some types of grease and lubricant cannot be sealed in a clean room.
Remark 3. Since rust prevention oil is not applied, please mount products into the equipment immediately after unpacking.

# Stainless Linear Way and Linear Roller Way

## A variety of stainless steel series

IKO Linear Way and Linear Roller Way lineup include products with stainless steel made parts instead of steel parts. As stainless steel is resistant to rust relative to high carbon steel made products, they are optimal for use in applications where oil and rust prevention oil are not preferred.
It is also suitable for use in cleanroom environment room, so use IKO clean grease that inhibits dust-generation amount together.




■ Main component materials

| | |
|---|---|
| Casing | Martensitic stainless steel |
| Track rail | Martensitic stainless steel |
| Ball | Martensitic stainless steel |
| Ball retaining band | Stainless steel |
| End plate | Engineering plastic |
| End seal | Stainless steel + Synthetic rubber |
| Grease nipple | Brass |

## Series name

### Linear Way

**Ball Type Miniature Series**

C-Lube Linear Way ML
C-Lube Linear Way MLV
Linear Way L
Micro Linear Way L

**Ball Type Compact Series**

C-Lube Linear Way ME
Linear Way E

**Ball Type High Rigidity Series**

C-Lube Linear Way MH
Linear Way H

**Ball Type Wide Type Series**

Linear Way F

**Ball Type U-Shaped Track Rail Series**

C-Lube Linear Way MUL

### Linear Roller Way

**Roller Type**

C-Lube Linear Roller Way Super MX
Linear Roller Way Super X

## Combination with special specification corresponds to use in special environment!

### Rust prevention

#### Black chrome surface treatment /L

Black chrome surface treatment on the track rail and slide unit improves rust prevention capacity.

#### Fluorine black chrome surface treatment /LF

Coating of fluorinated resin is applied over the black chrome surface treatment to prevent foreign substances from sticking and improve the rust prevention capacity.

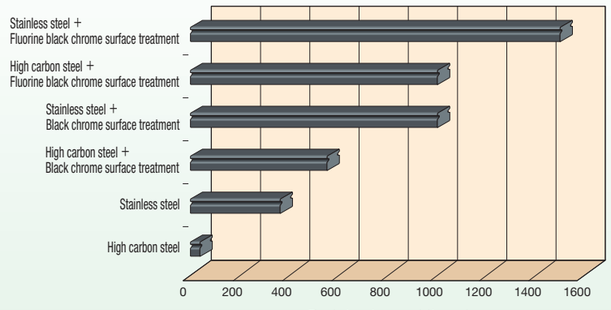


### Black chrome surface treatment

**Features**

1. Thin film
2. Uniform film
3. Excellent rust prevention capacity
4. Low temperature processing to prevent distortion

Corrosion resistance comparison based on humidity cabinet test*




Test conditions Temperature 50℃, Relative humidity 95%RH

*An example from internal evaluation testing.



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

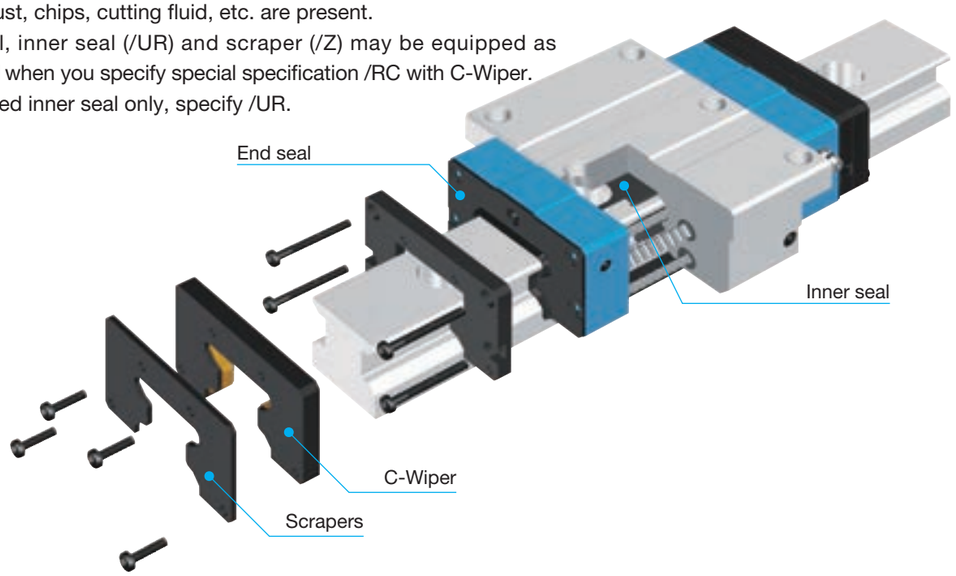
# Special specification for special environment

IKO Linear Way and Linear Roller Way lineup include following special specifications to correspond to various special environments.

## Dust protection

### C-Wiper /RC

A lubricated C-Wiper can be installed on the outside of the end seal. It can be used for a long period of time because it enhances the dustproof effect and suppresses the increase in frictional resistance even in harsh environments where dust, chips, cutting fluid, etc. are present.
End seal, inner seal (/UR) and scraper (/Z) may be equipped as standard when you specify special specification /RC with C-Wiper.
If you need inner seal only, specify /UR.




**Applicable C-Wiper size**

| Model | Length of slide unit | Model code | Size | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 12 | 15 | 20 | 25 | 30 | 35 | 45 | 55 | 65 |
| Flange type mounting from top / bottom | Short | MXC | – | – | ○(1) | ○ | ○ | ○ | ○ | ○ | ○ |
| | Standard | MX | – | – | ○(1) | ○ | ○ | ○ | ○ | ○ | ○ |
| | Long | MXG | – | – | ○(1) | ○ | ○ | ○ | ○ | ○ | ○ |
| | Extra long | MXL | – | – | ○(1) | ○ | ○ | ○ | ○ | ○ | ○ |
| Block type mounting from top | Short | MXDC | – | – | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | Standard | MXD | – | – | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | Long | MXDG | – | – | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | Extra long | MXDL | – | – | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Compact block type mounting from top | Short | MXSC | – | – | ○ | ○ | ○ | – | – | – | – |
| | Standard | MXS | – | – | ○ | ○ | ○ | ○ | ○ | ○ | – |
| | Long | MXSG | – | – | ○ | ○ | ○ | ○ | ○ | ○ | – |
| | Extra long | MXSL | – | – | ○ | ○ | ○ | – | – | – | – |
| Low profile flange type mounting from top | Standard | MXN | – | – | – | – | ○ | ○ | ○ | ○ | – |
| | Long | MXNG | – | – | – | – | ○ | ○ | ○ | ○ | – |
| | Extra long | MXNL | – | – | – | – | ○ | ○ | ○ | ○ | – |
| Low profile block type mounting from top | Standard | MXNS | – | – | – | – | ○ | ○ | ○ | ○ | – |
| | Long | MXNSG | – | – | – | – | ○ | ○ | ○ | ○ | – |
| | Extra long | MXNSL | – | – | – | – | ○ | ○ | ○ | ○ | – |

Note (1) Also applicable to models mounting from bottom (MXHC20, MXH20, MXHG20, MXHL20).



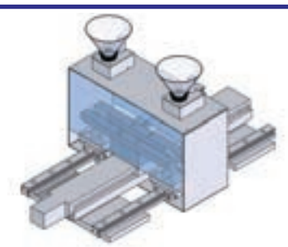
## Dust protection

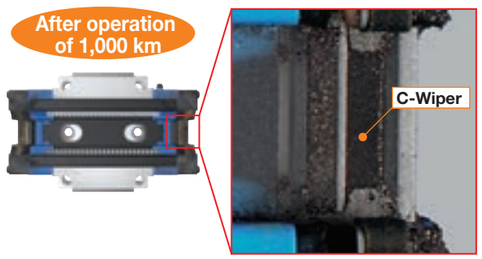
### *Durability test result backing excellent dust protection effect of [C-Wiper]!*

#### Durability test in environment with foreign substances

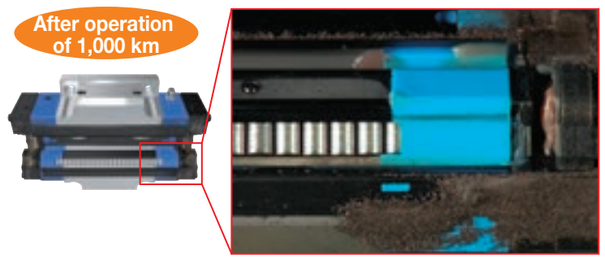
Test conditions

| | |
|---|---|
| Test portion | **MX35** T3 preload / caps for rail mounting holes and C-Wiper included |
| Maximum velocity | 18 m/min |
| Stroke length | 500 mm |
| Foreign substances | Fine metal chips<br>Particle diameter lower than 125 μm<br>Hardness 40 ~ 50HRC<br>Application dose 1 g/hr (total dose: 1 kg) |






***Only few foreign substances may get into the slide unit.***

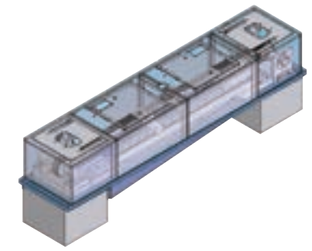


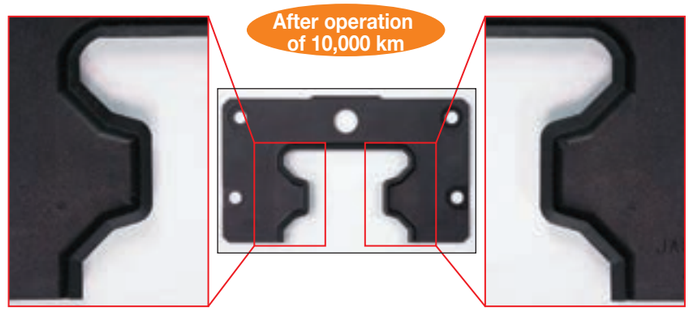

***Only few foreign substances get into the way!***

#### Durability test in coolant mist environment

Test conditions

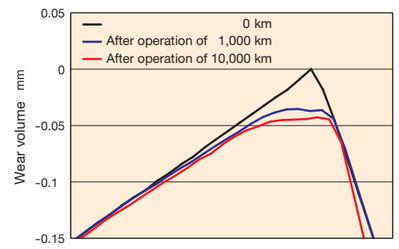
| | |
|---|---|
| Test portion | **MX35** T3 preload / caps for rail mounting holes and C-Wiper included |
| Maximum velocity | 115.2 m/min |
| Stroke length | 300 mm |
| Coolant | Soluble type<br>Dilute strength 20 times<br>Spray amount 5 cc/hr |






***End seal is not damaged.***

Wear condition of end seal lip tip




***Wear on the end seal is negligible!***

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

## Special specification for special environment

### Dust protection

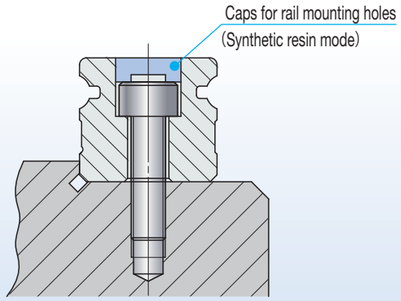
## Rail cover sheet

Rail cover sheet that consists of steel plate and adhesive tape and fastened to the dedicated track rail with groove on the track rail prevents foreign substances from entering into the slide unit.



## Caps for rail mounting holes /F

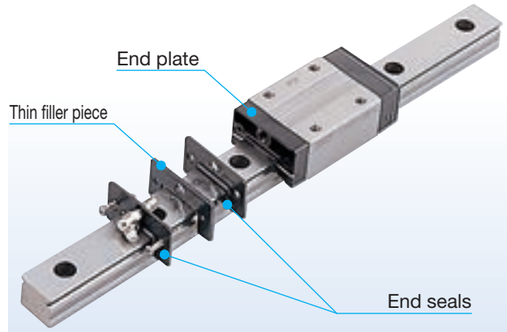
Caps for rail mounting holes close the track rail mounting holes to prevent foreign substances from entering into the slide unit.
Contact IKO for aluminum alloy caps for rail mounting holes.




### Dust protection

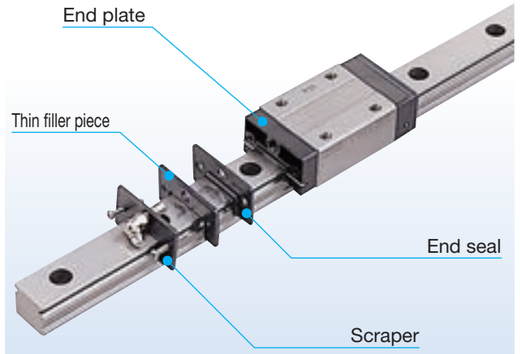
## Double end seals /V

Double end seals improve the dust protection property further.




## Scraper /Z

Mounted to the outside of end seal, it may remove large foreign substances adhering to the track rail.



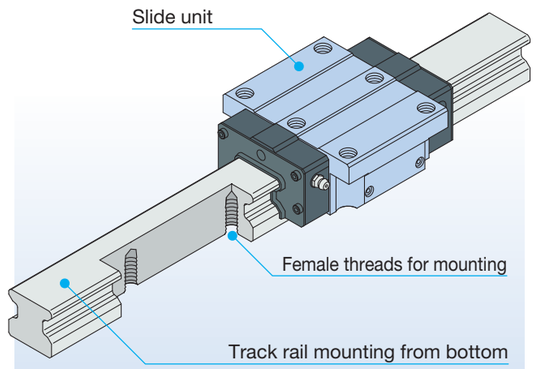

## Rail cover plate /PS

Rail cover plate totally covers the upper surface of the track rail to prevent foreign substances from entering into the track rail.



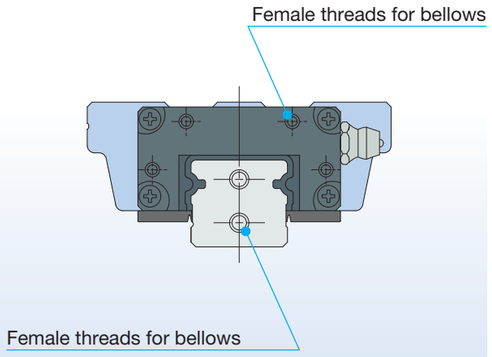
## Track rail mounting from bottom

This is the specification that track rail is fixed from the mounting surface side. As there are no mounting holes on the track rail upper surface, adherence with the seal is superior and better dust protection effect is achieved.



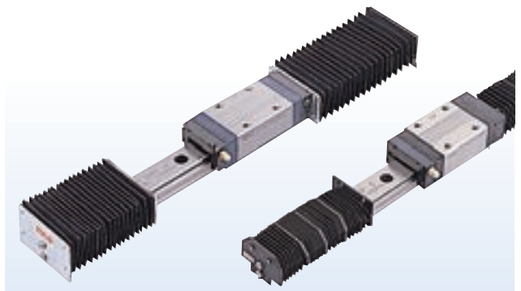

## Female threads for bellows /J

Female threads for bellows are prepared on the slide unit and track rail ends.




## Specific bellows

Dust protection cover over the exposed part of the track rail.

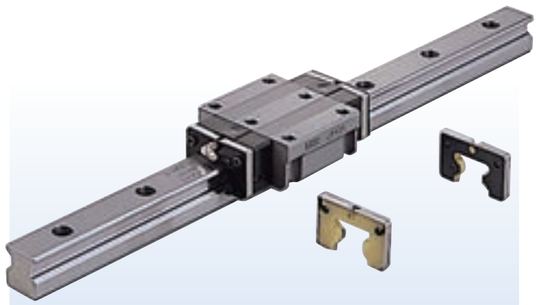


# Special specification for special environment

## Lubrication

### With C-Lube plate /Q

Lubrication parts to substantially reduce the need for lubrication management, i.e. grease job.

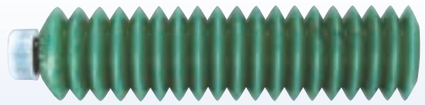


### Low Dust-Generation Grease for Clean Environment CGL /YCL

For this grease, mixed soap is used as thickener and synthetic oil and low pour point mineral oil are mixed with base oil, so it has excellent low dust generating performance, rolling resistance, lubrication, and rust prevention property.

Bellows cartridge (80 g)

JG80 /CGL



With miniature greaser (2.5 ml)

MG2.5B /CGL

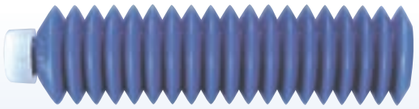


### Low Dust-Generation Grease for Clean Environment CG2 /YCG

For this grease, urea is used as thickener and synthetic oil is used as base oil, so it has excellent low dust generating performance, operating temperature range, lubrication property, rust prevention property and oxidation stability.

Bellows cartridge (80 g)

JG80 /CG2



With miniature greaser (2.5 ml)

MG2.5B /CG2



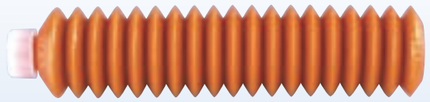
MG10 /CG2 with 10 ml are also available.

### Anti-Fretting Corrosion Grease AF2 /YAF

Grease with excellent fretting-proof corrosion property.

Bellows cartridge (80 g)

JG80 /AF2



With miniature greaser (2.5 ml)

MG2.5B /AF2



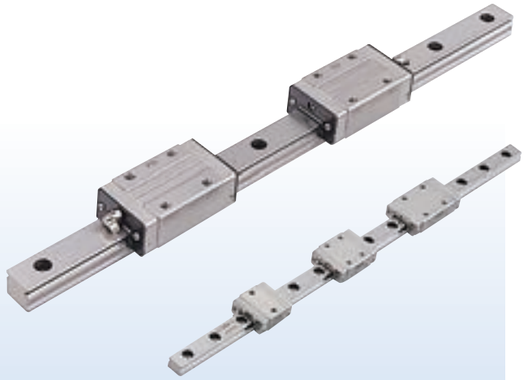
### Other special grease

For special grease for vacuum or high temperature, please contact IKO.

## Others

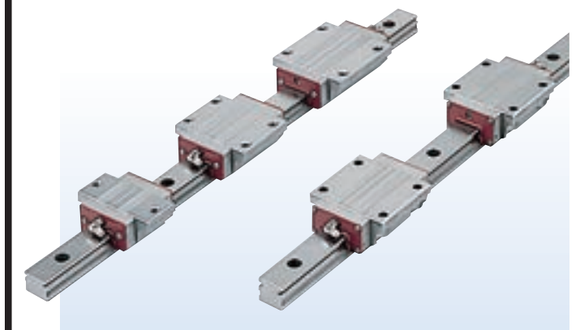
### Stainless steel end plate /BS

End plate is changed to stainless steel.



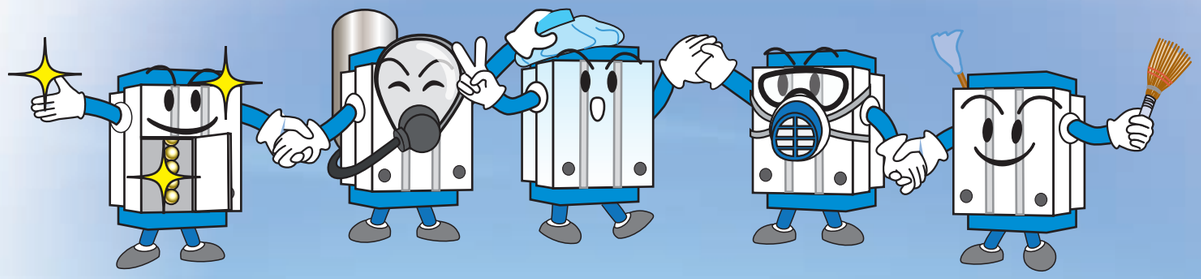
### Special environment seal /RE

The end and under seals are replaced with end seals for special environment that can be used at high temperatures. When it is used in high temperature environment, stainless steel end plate (/BS) and high temperature grease should be combined.



The photo shows a combination of special environment seal (/RE) and stainless steel end plate (/BS).

## IKO can offer products for special environment!



If needed, please contact IKO.




IKO C-Lube Maintenance-free™



## Explanation and Dimension Table for Respective Product Series

### Rail Guide Type


● C-Lube Linear Way ML
Linear Way L
Explanation ····· Ⅱ-5
Dimension Table ····· Ⅱ-23

● C-Lube Linear Way MLV
Explanation ····· Ⅱ-41
Dimension Table ····· Ⅱ-47

● C-Lube Linear Way MV
Explanation ····· Ⅱ-51
Dimension Table ····· Ⅱ-59

● C-Lube Linear Way ME
Linear Way E
Explanation ····· Ⅱ-63
Dimension Table ····· Ⅱ-75

● C-Lube Linear Way MH
Linear Way H
Explanation ····· Ⅱ-89
Dimension Table ····· Ⅱ-107

● Linear Way F
Explanation ····· Ⅱ-135
Dimension Table ····· Ⅱ-149

● C-Lube Linear Way MUL
Linear Way U
Explanation ····· Ⅱ-157
Dimension Table ····· Ⅱ-167

● C-Lube Linear Roller Way Super MX
Linear Roller Way Super X
Explanation ····· Ⅱ-171
Dimension Table ····· Ⅱ-191

● Linear Roller Way X
Explanation ····· Ⅱ-219
Dimension Table ····· Ⅱ-227

● Linear Way Module
Explanation ····· Ⅱ-233
Dimension Table ····· Ⅱ-241


## General Explanation


● General Explanation ····· Ⅲ-2

# C-Lube Linear Way ML
# Linear Way L

# C-Lube Linear Way ML

# ML

C-Lube Maintenance-free™

long term maintenance free supported!




Linear Way L

# LWL

## Points

### 1 Extremely small size realized by simple structure

For details ➔ P.I-19

Super small-size linear motion rolling guide produced by two-row four-point contact simple structure and original small sizing technology. The track rail width of LWL1, the smallest size, is only 1mm.

### 2 Wide range of variations for your needs

For details ➔ P.I-25

The slide unit shape can be selected from two types, the standard type and the wide type suited for single-row track rail uses, and there are four types with different lengths of slide unit with same section. Furthermore, the track rail has the variation of standard type and tapped rail type with the screw thread implanted, allowing you to select an optimal product for the specifications of your machine and device.

### 3 Ball retained type for easy operation

The slide unit of ball retained type incorporates the ball retaining band, which prevents the ball from dropping down when the slide unit is removed from the track rail. This safety structure brings you an easy operation to the machines / equipment.

### 4 Stainless steel selections for excellent corrosion resistance

For details ➔ P.I-43

Stainless steel highly corrosion-resistant is used as the basic specification, so that the products are suitable for applications where rust prevention oil is not preferred, such as in cleanroom environment. High carbon steel products suited to general purposes are also provided.

### 5 Widely supports special environment uses

For details ➔ P.I-33

C-Lube Linear Way ML for special environment uses are provided as a series. Increasingly varied special environment uses are supported, such as by high-speed / low-noise specifications by combining silicon nitride ceramics and low dust-generation specifications.





# Identification Number and Specification

## Example of an identification number

The specifications of ML(F) and LWL(F) series are indicated by the identification number. Indicate the identification number, consisting of a model code, dimensions, a part code, a material code, a preload symbol, a classification symbol, an interchangeable code, and any supplemental codes for each specification to apply.

| | 1 | 2 | 4 | 5 | 6 | 3 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Non-interchangeable specification** | | | | | | | | | | | |
| Assembled set | ML | C | 12 | C1 | R200 | | | $T_1$ | P | | /U |
| **Interchangeable specification** | | | | | | | | | | | |
| Single slide unit | ML | C | 12 | C1 | | | | $T_1$ | P | S1 | /U |
| Single track rail (1) | LWL | | 12 | | R200 | B | | | P | S1 | |
| Assembled set | ML | C | 12 | C1 | R200 | | | $T_1$ | P | S1 | /U |

1 Model
2 Length of slide unit
3 Structure
→ Model code Page Ⅱ－7

4 Size
→ Dimensions Page Ⅱ－7

5 Number of slide units
6 Length of track rail
→ Part code Page Ⅱ－7

7 Material type
→ Material code Page Ⅱ－7

8 Preload amount
→ Preload symbol Page Ⅱ－13

9 Accuracy class
→ Classification symbol Page Ⅱ－14

10 Interchangeable
→ Interchangeable code Page Ⅱ－15

11 Special specification
→ Supplemental code Page Ⅱ－15

Note (1) Indicate "LWL…B" or "LWLF…B" for the model code of the single track rail regardless of the series and the combination of slide unit models.

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

# Identification Number and Specification — Model · Length of Slide Unit ·

## 1 Model

C-Lube Linear Way ML (ML(F) series)
Standard type : ML
Wide type : MLF

Linear way L (1) (LWL (F) series)
Standard type : LWL
Wide type : LWLF

For applicable models and sizes, see Table 2.1 and Table 2.2.
Indicate "LWL···B" or "LWLF···B" for the model code of the single track rail regardless of the series and the combination of slide unit models.

Note (1) This model has no built-in C-Lube.

## 2 Length of slide unit

Short : C
Standard : No symbol
Long : G
Extra long : L

For applicable models and sizes, see Table 2.1 and Table 2.2.

## 3 Structure

*Table 1.1 Structure of ML and LWL*

| Model | Types and sizes of track rails | | | Structure | |
|---|---|---|---|---|---|
| ML | Standard rail specification | | Size: 5～25 | Ball retained type | : No symbol |
| | Tapped rail specification | | Size: 3 | Ball non-retained type | : No symbol |
| | | | Size: 5, 7, 9 | Ball retained type | : N |
| LWL | Standard rail specification | | | Ball retained type | : B |
| | Tapped rail specification | Mounting from bottom | Size: 2, 3 | Ball non-retained type | : No symbol |
| | | | Size: 5, 7, 9 | Ball retained type | : N |
| | | Mounting from lateral | Size: 1 | Ball non-retained type | : Y |
| | Solid rail specification | | Size: 1 | Ball non-retained type | : No symbol |

*Table 1.2 Structure of MLF and LWLF*

| Model | Types of track rails | | Structure | |
|---|---|---|---|---|
| MLF | Standard rail specification | Size: 6 | Ball non-retained type | : No symbol |
| | | Size: 10～42 | Ball retained type | |
| | Tapped rail specification | Size: 6 | Ball non-retained type | : N |
| | | Size: 10～18 | Ball retained type | |
| LWLF | Standard rail specification | Size: 4, 6 | Ball non-retained type | : No symbol |
| | | Size: 10～42 | Ball retained type | : B |
| | Tapped rail specification | Size: 2 | Ball non-retained type | : No symbol |
| | | Size: 6 | Ball non-retained type | : N |
| | | Size: 10～18 | Ball retained type | |

For applicable models and sizes, see Table 2.1 and Table 2.2.

## 4 Size

Standard type 1, 2, 3, 5, 7, 9, 12, 15, 20, 25
Wide type 2, 4, 6, 10, 14, 18, 24, 30, 42

For applicable models and sizes, see Table 2.1 and Table 2.2.

## 5 Number of slide units

: C○

For an assembled set, indicates the number of slide units assembled on a track rail. For a single slide unit, only "C1" is specified.

## 6 Length of track rail

: R○

Indicate the length of track rail in mm.
For standard and maximum lengths, see Table 3.1, Table 3.2, and Table 3.3.

## 7 Material type

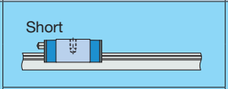
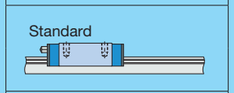
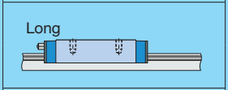
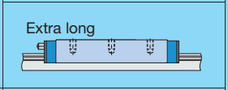
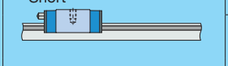
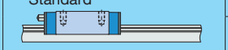
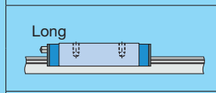
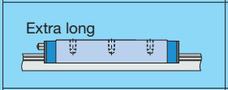
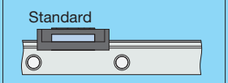
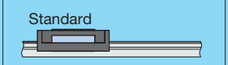
Stainless steel made : No symbol
High carbon steel made : CS

For applicable models and sizes, see Table 2.1 and Table 2.2.



## Structure · Size · Number of Slide Unit · Length of Track Rail · Material Type —

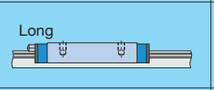
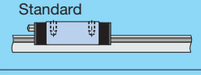
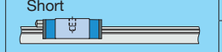
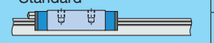
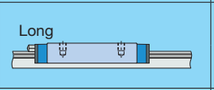
*Table 2.1 Models and sizes of standard type ML(F) and LWL(F) series*

| Types of track rails | Material type | Length of slide unit | Structure | Model | Size 1 | 2 | 3 | 5 | 7 | 9 | 12 | 15 | 20 | 25 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Standard rail specification  | Stainless steel made | Short  | Ball retained type | MLC | – | – | – | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | | | | LWLC···B | – | – | – | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | | Standard  | | ML | – | – | – | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | | | | LWL···B | – | – | – | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | | Long  | | MLG | – | – | – | – | ○ | ○ | ○ | ○ | ○ | ○ |
| | | | | LWLG···B | – | – | – | – | ○ | ○ | ○ | ○ | ○ | ○ |
| | | Extra long  | | MLL | – | – | – | – | – | ○ | ○ | ○ | – | – |
| | High carbon steel made | Standard  | | LWL···BCS | – | – | – | – | – | ○ | ○ | ○ | ○ | – |
| Tapped rail specification Mounting from bottom  | Stainless steel made | Short  | Ball non-retained type | MLC | – | – | ○ | – | – | – | – | – | – | – |
| | | | | LWLC | – | – | ○ | – | – | – | – | – | – | – |
| | | | Ball retained type | MLC···N | – | – | – | ○ | ○ | ○ | – | – | – | – |
| | | | | LWLC···N | – | – | – | ○ | ○ | ○ | – | – | – | – |
| | | Standard  | Ball non-retained type | ML | – | – | ○ | – | – | – | – | – | – | – |
| | | | | LWL | – | ○ | ○ | – | – | – | – | – | – | – |
| | | | Ball retained type | ML···N | – | – | – | ○ | ○ | ○ | – | – | – | – |
| | | | | LWL···N | – | – | – | ○ | ○ | ○ | – | – | – | – |
| | | Long  | Ball retained type | MLG···N | – | – | – | – | ○ | ○ | – | – | – | – |
| | | | | LWLG···N | – | – | – | – | ○ | ○ | – | – | – | – |
| | | Extra long  | Ball retained type | MLL···N | – | – | – | – | – | ○ | – | – | – | – |
| Tapped rail specification Mounting from lateral  | | Standard  | Ball non-retained type | LWL···Y | ○ | – | – | – | – | – | – | – | – | – |
| Solid rail specification  | | Standard  | Ball non-retained type | LWL | ○ | – | – | – | – | – | – | – | – | – |

Remark: For the models indicated in ▭, the interchangeable specification is available.

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

*Table 2.2 Models and sizes of wide type ML(F) and LWL(F) series*

| Types of track rails | Material type | Length of slide unit | Structure | Model | Size 2 | 4 | 6 | 10 | 14 | 18 | 24 | 30 | 42 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Standard rail specification  | Stainless steel made | Short  | Ball retained type | MLFC | – | – | – | ○ | ○ | ○ | ○ | ○ | ○ |
| | | | | LWLFC···B | – | – | – | ○ | ○ | ○ | ○ | ○ | ○ |
| | | | Ball non-retained type | MLFC | – | – | ○ | – | – | – | – | – | – |
| | | | | LWLFC | – | – | ○ | – | – | – | – | – | – |
| | | Standard  | Ball retained type | MLF | – | – | – | ○ | ○ | ○ | ○ | ○ | ○ |
| | | | | LWLF···B | – | – | – | ○ | ○ | ○ | ○ | ○ | ○ |
| | | | Ball non-retained type | MLF | – | – | ○ | – | – | – | – | – | – |
| | | | | LWLF | – | ○ | ○ | – | – | – | – | – | – |
| | | Long  | Ball retained type | MLFG | – | – | – | – | ○ | ○ | ○ | ○ | ○ |
| | | | | LWLFG···B | – | – | – | – | ○ | ○ | ○ | ○ | ○ |
| | High carbon steel made | Standard  | Ball retained type | LWLF···BCS | – | – | – | – | – | ○ | ○ | ○ | ○ |
| Tapped rail specification Mounting from bottom  | Stainless steel made | Short  | Ball retained type | MLFC···N | – | – | – | ○ | ○ | ○ | – | – | – |
| | | | | LWLFC···N | – | – | – | ○ | ○ | ○ | – | – | – |
| | | | Ball non-retained type | MLFC···N | – | – | ○ | – | – | – | – | – | – |
| | | | | LWLFC···N | – | – | ○ | – | – | – | – | – | – |
| | | Standard  | Ball retained type | MLF···N | – | – | – | ○ | ○ | ○ | – | – | – |
| | | | | LWLF···N | – | – | – | ○ | ○ | ○ | – | – | – |
| | | | Ball non-retained type | MLF···N | – | – | ○ | – | – | – | – | – | – |
| | | | | LWLF···N | – | – | ○ | – | – | – | – | – | – |
| | | Long  | Ball retained type | MLFG···N | – | – | – | – | ○ | ○ | – | – | – |
| | | | | LWLFG···N | – | – | – | – | ○ | ○ | – | – | – |
| | | Standard  | Ball non-retained type | LWLF | ○ | – | – | – | – | – | – | – | – |

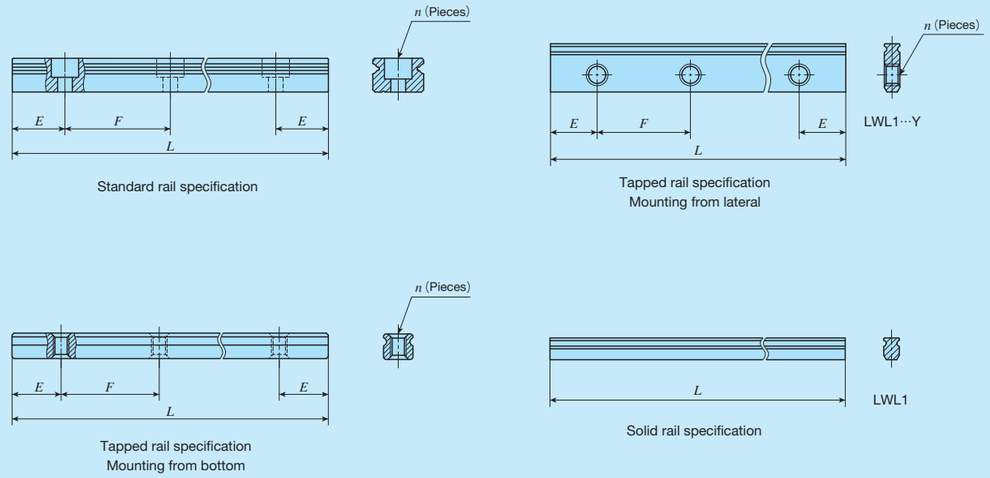
Remark: For the models indicated in ▭, the interchangeable specification is available.







*Table 3.1 Standard and maximum length of stainless steel track rail (Standard type)*




unit: mm

| Item \ Identification number | LWL1···Y | LWL1 | LWL2 | ML 3 LWL3 | ML 5 (4) LWL5···B (4) | ML 7 (4) LWL7···B (4) |
|---|---|---|---|---|---|---|
| Standard length $L$ ($n$) | 18 ( 3)<br>30 ( 5)<br>42 ( 7) | 18 (–)<br>30 (–)<br>42 (–) | 32 ( 4)<br>40 ( 5)<br>56 ( 7)<br>80 (10) | 30 ( 3)<br>40 ( 4)<br>60 ( 6)<br>80 ( 8)<br>100 (10) | 60 ( 4)<br>90 ( 6)<br>105 ( 7)<br>120 ( 8)<br>150 (10) | 60 ( 4)<br>90 ( 6)<br>120 ( 8)<br>150 (10)<br>180 (12)<br>240 (16) |
| Pitch of mounting holes $F$ | 6 | – | 8 | 10 | 15 | 15 |
| $E$ | 3 | – | 4 | 5 | 7.5 | 7.5 |
| Standard $E$ dimensions (1) or higher | 2.5 | – | 2.5 | 3 | 4 | 4.5 |
| Standard $E$ dimensions (1) below | 5.5 | – | 6.5 | 8 | 11.5 | 12 |
| Maximum length (2) | 102 | 102 | 104<br>(200) | 150<br>(300) | 210<br>(510) | 300<br>(990) |
| Maximum number of butt-jointing track rail (3) | – | – | – | – | 5 | 7 |
| Maximum length of butt-jointing track rail (3) | – | – | – | – | 915 | 1 905 |

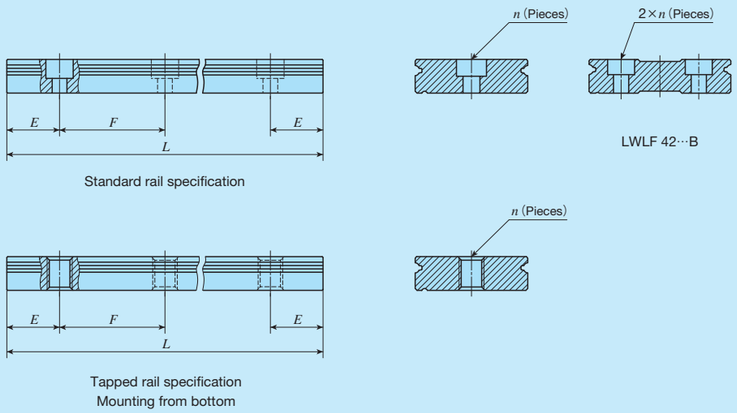
| Item \ Identification number | ML 9 (4) LWL9···B (4) | ML 12 LWL12···B | ML 15 LWL15···B | ML 20 LWL20···B | ML 25 LWL25···B |
|---|---|---|---|---|---|
| Standard length $L$ ($n$) | 60 ( 3)<br>80 ( 4)<br>120 ( 6)<br>160 ( 8)<br>220 (11)<br>280 (14) | 100 ( 4)<br>150 ( 6)<br>200 ( 8)<br>275 (11)<br>350 (14)<br>475 (19) | 160 ( 4)<br>240 ( 6)<br>320 ( 8)<br>440 (11)<br>560 (14)<br>680 (17) | 180 ( 3)<br>240 ( 4)<br>360 ( 6)<br>480 ( 8)<br>660 (11)<br>840 (14) | 240 ( 4)<br>300 ( 5)<br>360 ( 6)<br>480 ( 8)<br>660 (11)<br>900 (15) |
| Pitch of mounting holes $F$ | 20 | 25 | 40 | 60 | 60 |
| $E$ | 10 | 12.5 | 20 | 30 | 30 |
| Standard $E$ dimensions (1) or higher | 4.5 | 5 | 5.5 | 8 | 9 |
| Standard $E$ dimensions (1) below | 14.5 | 17.5 | 25.5 | 38 | 39 |
| Maximum length (2) | 860<br>(1 200) | 1 000<br>(1 450) | 1 000<br>(1 480) | 960<br>(1 800) | 960<br>(1 800) |
| Maximum number of butt-jointing track rail (3) | 2 | 2 | 2 | 2 | 2 |
| Maximum length of butt-jointing track rail (3) | 1 660 | 1 925 | 1 880 | 1 740 | 1 740 |

Notes (1) Not applicable to track rail with stopper pins (supplemental code "/S").
(2) Length up to the value in ( ) can be produced. If needed, please contact IKO.
(3) Not applicable to interchangeable specifications or tapped rail specifications.
(4) Also applicable to tapped rail specification.

Remarks 1. A typical identification number is indicated, but is applied to all models of the same size.
2. Indicate "LWL···B" for the model code of the single track rail regardless of the series and the combination of slide unit models.
3. If not directed, $E$ dimensions for both ends will be the same within the range of standard $E$ dimensions. To change the dimensions, indicate the specified rail mounting hole positions "/E" of special specification. For more information, see page Ⅲ－30.

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

*Table 3.2 Standard and maximum length of stainless steel track rail (Wide type)*




unit: mm

| Item \ Identification number | LWLF2 | LWLF4 | MLF 6 (4) LWLF6 (4) | MLF 10 (4) LWLF10···B (4) | MLF 14 (4) LWLF14···B (4) |
|---|---|---|---|---|---|
| Standard length $L$ ($n$) | 18 ( 3)<br>30 ( 5)<br>42 ( 7)<br>54 ( 9) | 40 ( 4)<br>60 ( 6)<br>70 ( 7)<br>80 ( 8)<br>100 (10) | 60 ( 4)<br>90 ( 6)<br>105 ( 7)<br>120 ( 8)<br>150 (10) | 60 ( 3)<br>80 ( 4)<br>120 ( 6)<br>160 ( 8)<br>220 (11)<br>280 (14) | 90 ( 3)<br>120 ( 4)<br>150 ( 5)<br>180 ( 6)<br>240 ( 8)<br>300 (10) |
| Pitch of mounting holes $F$ | 6 | 10 | 15 | 20 | 30 |
| $E$ | 3 | 5 | 7.5 | 10 | 15 |
| Standard $E$ dimensions (1) or higher | 2.5 | 3.5 | 4.5 | 4.5 | 5.5 |
| Standard $E$ dimensions (1) below | 5.5 | 8.5 | 12 | 14.5 | 20.5 |
| Maximum length (2) | 102 | 180<br>(300) | 240<br>(300) | 300<br>(500) | 300<br>(990) |
| Maximum number of butt-jointing track rail (3) | – | – | – | 7 | 8 |
| Maximum length of butt-jointing track rail (3) | – | – | – | 1 840 | 1 950 |

| Item \ Identification number | MLF 18 (4) LWLF18···B (4) | MLF 24 LWLF24···B | MLF 30 LWLF30···B | MLF 42 LWLF42···B |
|---|---|---|---|---|
| Standard length $L$ ($n$) | 90 ( 3)<br>120 ( 4)<br>150 ( 5)<br>180 ( 6)<br>240 ( 8)<br>300 (10) | 120 ( 3)<br>160 ( 4)<br>240 ( 6)<br>320 ( 8)<br>400 (10)<br>480 (12) | 160 ( 4)<br>240 ( 6)<br>320 ( 8)<br>440 (11)<br>560 (14)<br>680 (17) | 160 ( 4)<br>240 ( 6)<br>320 ( 8)<br>440 (11)<br>560 (14)<br>680 (17) |
| Pitch of mounting holes $F$ | 30 | 40 | 40 | 40 |
| $E$ | 15 | 20 | 20 | 20 |
| Standard $E$ dimensions (1) or higher | 5.5 | 6.5 | 6.5 | 6.5 |
| Standard $E$ dimensions (1) below | 20.5 | 26.5 | 26.5 | 26.5 |
| Maximum length (2) | 690<br>(1 860) | 680<br>(1 960) | 680<br>(2 000) | 680<br>(2 000) |
| Maximum number of butt-jointing track rail (3) | 3 | 3 | 3 | 3 |
| Maximum length of butt-jointing track rail (3) | 1 920 | 1 840 | 1 840 | 1 840 |

Notes (1) Not applicable to track rail with stopper pins (supplemental code "/S").
(2) Length up to the value in ( ) can be produced. If needed, please contact IKO.
(3) Not applicable to interchangeable specifications or tapped rail specifications.
(4) Also applicable to tapped rail specification.

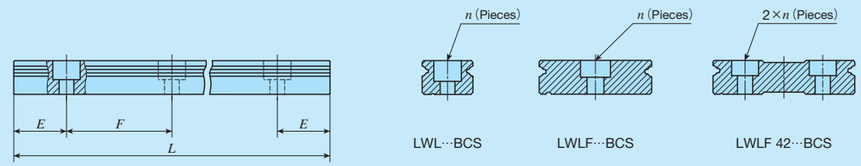
Remarks 1. A typical identification number is indicated, but is applied to all models of the same size.
2. Indicate "LWLF···B" for the model code of the single track rail regardless of the series and the combination of slide unit models.
3. If not directed, $E$ dimensions for both ends will be the same within the range of standard $E$ dimensions. To change the dimensions, indicate the specified rail mounting hole positions "/E" of special specification. For more information, see page Ⅲ−30.







*Table 3.3 Standard and maximum length of high carbon steel track rail (Standard type, Wide type)*




unit: mm

| Item \ Identification number | LWL 9···BCS | LWL12···BCS | LWL15···BCS | LWL20···BCS |
|---|---|---|---|---|
| Standard length $L$ ($n$) | 80 ( 4)<br>160 ( 8)<br>220 (11)<br>280 (14)<br>380 (19)<br>500 (25)<br>600 (30) | 100 ( 4)<br>200 ( 8)<br>275 (11)<br>350 (14)<br>475 (19)<br>600 (24)<br>700 (28) | 160 ( 4)<br>320 ( 8)<br>440 (11)<br>560 (14)<br>680 (17)<br>800 (20)<br>920 (23) | 180 ( 3)<br>240 ( 4)<br>360 ( 6)<br>480 ( 8)<br>660 (11)<br>900 (15)<br>1 020 (17) |
| Pitch of mounting holes $F$ | 20 | 25 | 40 | 60 |
| $E$ | 10 | 12.5 | 20 | 30 |
| Standard $E$ dimensions (1) or higher | 4.5 | 5 | 5.5 | 8 |
| Standard $E$ dimensions (1) below | 14.5 | 17.5 | 25.5 | 38 |
| Maximum length | 1 000 | 1 500 | 1 520 | 1 560 |

| Item \ Identification number | LWLF18···BCS | LWLF24···BCS | LWLF30···BCS | LWLF42···BCS |
|---|---|---|---|---|
| Standard length $L$ ($n$) | 90 ( 3)<br>180 ( 6)<br>240 ( 8)<br>300 (10)<br>420 (14)<br>510 (17)<br>600 (20) | 120 ( 3)<br>240 ( 6)<br>320 ( 8)<br>400 (10)<br>600 (15)<br>720 (18)<br>800 (20) | 160 ( 4)<br>320 ( 8)<br>440 (11)<br>560 (14)<br>680 (17)<br>800 (20)<br>920 (23) | 160 ( 4)<br>320 ( 8)<br>440 (11)<br>560 (14)<br>680 (17)<br>800 (20)<br>920 (23) |
| Pitch of mounting holes $F$ | 30 | 40 | 40 | 40 |
| $E$ | 15 | 20 | 20 | 20 |
| Standard $E$ dimensions (1) or higher | 5.5 | 6.5 | 6.5 | 6.5 |
| Standard $E$ dimensions (1) below | 20.5 | 26.5 | 26.5 | 26.5 |
| Maximum length | 1 500 | 1 520 | 1 600 | 1 600 |

Note (1) Not applicable to track rail with stopper pins (supplemental code "/S").

Remarks 1. A typical identification number is indicated, but is applied to all models of the same size.
2. If not directed, $E$ dimensions for both ends will be the same within the range of standard $E$ dimensions. To change the dimensions, indicate the specified rail mounting hole positions "/E" of special specification. For more information, see page Ⅲ−30.

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

## 8 Preload amount

| | | |
|---|---|---|
| Clearance | : $T_0$ | Specify this item for an assembled set or a single slide unit. |
| Standard | : No symbol | For details of the preload amount, see Table 4. |
| Light preload | : $T_1$ | For applicable preload types, see Table 5.1 and Table 5.2. |

***Table 4 Preload amount***

| Item / Preload type | Preload symbol | Preload amount N | Operational conditions |
|---|---|---|---|
| Clearance | $T_0$ | 0 (1) | · Very light motion |
| Standard | (No symbol) | 0 (2) | · Light and precise motion |
| Light preload | $T_1$ | 0.02 $C_0$ | · Almost no vibrations<br>· Load is evenly balanced<br>· Light and precise motion |

Notes (1) There is zero or subtle clearance.
(2) Indicates zero or minimal amount of preload.
Remark: $C_0$ indicates the basic static load rating.

***Table 5.1 Application of preload (Standard type)***

| Size | Preload type (preload symbol) | | |
|---|---|---|---|
| | Clearance ($T_0$) | Standard (No symbol) | Light preload ($T_1$) |
| 1 | ○ | – | – |
| 2 | ○ | – | – |
| 3 | ○ | – | – |
| 5 | ○ | ○ | – |
| 7 | ○(1) | ○ | ○(1) |
| 9 | ○(1) | ○ | ○(1) |
| 12 | ○(1) | ○ | ○(1) |
| 15 | ○(1) | ○ | ○(1) |
| 20 | ○ | ○ | ○ |
| 25 | ○ | ○ | ○ |

Note (1) Not applicable when /HB is specified.
Remark: The mark ▭ indicates that interchangeable specification products are available.

***Table 5.2 Application of preload (Wide type)***

| Size | Preload type (preload symbol) | | |
|---|---|---|---|
| | Clearance ($T_0$) | Standard (No symbol) | Light preload ($T_1$) |
| 2 | ○ | – | – |
| 4 | ○ | – | – |
| 6 | ○ | – | – |
| 10 | ○ | ○ | – |
| 14 | ○ | ○ | ○ |
| 18 | ○ | ○ | ○ |
| 24 | ○ | ○ | ○ |
| 30 | ○ | ○ | ○ |
| 42 | ○ | ○ | ○ |

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



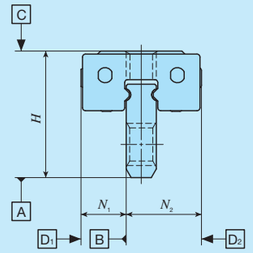




## 9 Accuracy class

| | | |
|---|---|---|
| High | : H | For interchangeable specification products, assemble a slide unit and a track rail of the same accuracy class. |
| Precision | : P | Size 1 series have "No symbols." |
| | | For the details of accuracy class, see Table 6.1 and 6.2. |

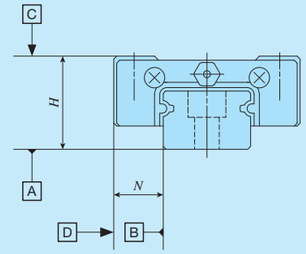
***Table 6.1 Tolerance and allowable values (Series of size 1)***




unit: mm

| Item | Tolerance |
|---|---|
| Dim. $H$ tolerance | ±0.020 |
| Dim. $N_1$ and Dim. $N_2$ tolerance | ±0.025 |

***Table 6.2 Tolerance and allowance (Series of size 2 or larger excluding LWLF2)***




unit: mm

| Item / Class (classification symbol) | High (H) | Precision (P) |
|---|---|---|
| Dim. $H$ tolerance | ±0.020 | ±0.010 |
| Dim. $N$ tolerance | ±0.025 | ±0.015 |
| Dim. variation of $H$ (1) | 0.015 | 0.007 |
| Dim. variation of $N$ (1) | 0.020 | 0.010 |
| Dim. variation of $H$ for multiple assembled sets (2) | 0.030 | 0.020 |
| Parallelism in operation of the slide unit C surface to A surface | See Fig. 1 | |
| Parallelism in operation of the slide unit D surface to B surface | See Fig. 1 | |

Notes (1) It means the size variation between slide units mounted on the same track rail.
(2) Applicable to the interchangeable specification.

***Table 6.3 Tolerance and allowance (LWLF 2)***




unit: mm

| Item / Class (classification symbol) | High (H) | Precision (P) |
|---|---|---|
| Dim. $H$ tolerance | ±0.020 | ±0.010 |
| Dim. $N_1$ and Dim. $N_2$ tolerance | ±0.025 | ±0.015 |
| Dim. variation of $H$ (1) | 0.015 | 0.007 |
| Dim. variation of $N$ (1) | 0.020 | 0.010 |
| Parallelism in operation of the slide unit C surface to A surface | See Fig. 1 (If the track rail length is less than 60mm, the value will be the same as 60mm.) | |
| Parallelism in operation of the slide unit D surface to B surface | See Fig. 1 (If the track rail length is less than 60mm, the value will be the same as 60mm.) | |

Note (1) It means the size variation between slide units mounted on the same track rail.

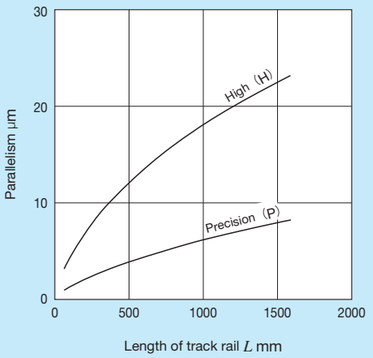



***Fig. 1 Parallelism in operation (Series of size 2 or higher)***

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

## 10 Interchangeable

S1 specification : S1
S2 specification : S2
Non-interchangeable specification : No symbol

This is specified for the interchangeable specifications. Assemble a track rail and a slide unit with the same interchangeable code. When using in combination with different interchangeable codes, please contact IKO. Note that the combination of interchangeable codes will not have any effect on accuracy.
For applicable models and sizes, see Table 2.1 and Table 2.2.
"No symbol" is indicated for non-interchangeable specification.

## 11 Special specification

/A, /BS, /D, /E, /HB, /I, /LR, /MN, /N, /Q, /RE, /S, /U, /W○, /Y○

For applicable special specifications, see Tables 7.1, 7.2, 7.3, and 7.4.
For combination of multiple special specifications, see Table 8.
For details of special specification, see page Ⅲ−29.

*Table 7.1 Application of special specifications (Interchangeable specification, single slide unit)*

| Special specification | Supplemental code | Size | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 5 | 7 | 9 | 12 | 15 | 20 | 25 |
| | | – | 4 | 6 | 10 | 14 | 18 | 24 | 30 | 42 | – |
| No end seal | /N | – | – | – | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| With C-Lube plate (1) | /Q | – | – | – | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Under seal | /U | – | – | – | × | × | ○ | ○ | ○ | ○ | ○ |

Note (1) Applicable to LWL(F) series.

*Table 7.2 Application of special specifications (Interchangeable specification, single track rail)*

| Special specification | Supplemental code | Size | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 5 | 7 | 9 | 12 | 15 | 20 | 25 |
| | | – | 4 | 6 | 10 | 14 | 18 | 24 | 30 | 42 | – |
| Specified rail mounting hole positions | /E | – | – | – | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Without track rail mounting bolt | /MN | – | – | – | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

*Table 7.3 Application of special specifications (Interchangeable specification, assembled set)*

| Special specification | Supplemental code | Size | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 5 | 7 | 9 | 12 | 15 | 20 | 25 |
| | | – | 4 | 6 | 10 | 14 | 18 | 24 | 30 | 42 | – |
| Opposite reference surfaces arrangement | /D | – | – | – | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Specified rail mounting hole positions | /E | – | – | – | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Without track rail mounting bolt (1) | /MN | – | – | – | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| No end seal | /N | – | – | – | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| With C-Lube plate (2) | /Q | – | – | – | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Under seal | /U | – | – | – | × | × | ○ | ○ | ○ | ○ | ○ |

Notes (1) Not applicable to tapped rail specification.
(2) Applicable to LWL(F) series.







*Table 7.4 Application of special specifications (Non-interchangeable specification, standard type)*

| Special specification | Supplemental code | Size | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 | 2 | 3 | 5 | 7 | 9 | 12 | 15 | 20 | 25 |
| Butt-jointing track rails (1) (2) | /A | × | × | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Stainless steel end plate (3) | /BS | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | × |
| Opposite reference surfaces arrangement | /D | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Specified rail mounting hole positions | /E | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Hybrid C-Lube Linear Way (4) | /HB | × | × | × | × | ○ | ○ | ○ | ○ | × | × |
| Inspection sheet | /I | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Black chrome surface treatment (track rail) (2) | /LR | × | × | × | × | ○ | ○ | ○ | ○ | ○ | ○ |
| Without track rail mounting bolt (2) | /MN | × | × | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| No end seal | /N | × | × | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| With C-Lube plate (3) | /Q | × | × | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Special environment seal (3) | /RE | × | × | × | ○ | ○ | ○ | ○ | ○ | ○ | × |
| Track rail with stopper pins | /S | × | × | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Under seal | /U | × | × | × | × | × | ○ | ○ | ○ | ○ | ○ |
| A group of multiple assembled sets | /W○ | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Specified grease (5) | /Y○ | × | ○(6) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Notes (1) Not applicable to high carbon steel made products.
(2) Not applicable to tapped rail specification.
(3) Applicable to LWL series.
(4) Applicable only to ML.
(5) ML series is applicable only to /YCG.
(6) Applicable only to /YNG.

*Table 7.5 Application of special specifications (Non-interchangeable specification, wide type)*

| Special specification | Supplemental code | Size | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 2 | 4 | 6 | 10 | 14 | 18 | 24 | 30 | 42 |
| Butt-jointing track rails (1) (2) | /A | × | × | × | ○ | ○ | ○ | ○ | ○ | ○ |
| Stainless steel end plate (3) | /BS | × | × | × | ○ | ○ | ○ | ○ | ○ | ○ |
| Opposite reference surfaces arrangement | /D | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Specified rail mounting hole positions | /E | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Inspection sheet | /I | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Black chrome surface treatment (track rail) (2) | /LR | × | × | × | × | ○ | ○ | ○ | ○ | ○ |
| Without track rail mounting bolt (2) | /MN | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| No end seal | /N | × | × | × | ○ | ○ | ○ | ○ | ○ | ○ |
| With C-Lube plate (3) | /Q | × | × | × | ○ | ○ | ○ | ○ | ○ | ○ |
| Special environment seal (3) | /RE | × | × | × | ○ | ○ | ○ | ○ | ○ | ○ |
| Track rail with stopper pins | /S | × | × | × | ○ | ○ | ○ | ○ | ○ | ○ |
| Under seal | /U | × | × | × | × | × | ○ | ○ | ○ | ○ |
| A group of multiple assembled sets | /W○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Specified grease (4) | /Y○ | × | ○(5) | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Notes (1) Not applicable to high carbon steel made products.
(2) Not applicable to tapped rail specification.
(3) Applicable to LWLF series.
(4) MLF series is applicable only to /YCG.
(5) Applicable only to /YNG.

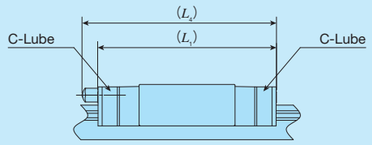
*Table 8 Combination of supplemental codes*

| | A | BS | D | E | HB | I | LR | MN | N | Q | RE | S | U | W |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BS | ○ | | | | | | | | | | | | | |
| D | ○ | ○ | | | | | | | | | | | | |
| E | – | ○ | – | | | | | | | | | | | |
| HB | ○ | – | ○ | ○ | | | | | | | | | | |
| I | ○ | ○ | ○ | ○ | ○ | | | | | | | | | |
| LR | – | ○ | ○ | ○ | ○ | ○ | | | | | | | | |
| MN | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | |
| N | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | |
| Q | ○ | ○ | ○ | ○ | – | ○ | ○ | ○ | ○ | | | | | |
| RE | ○ | ○ | ○ | ○ | – | ○ | ○ | ○ | – | ○ | | | | |
| S | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | |
| U | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | ○ | – | ○ | | |
| W | ○ | ○ | ○ | – | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| Y | ○ | ○ | ○ | ○ | ○(1) | ○ | ○ | ○ | ○ | – | ○ | ○ | ○ | ○ |

Note (1) Applicable only to YCG (Low Dust-Generation Grease for Clean Environment CG2).
Remarks 1. The combination of "−" shown in the table is not available.
2. When using multiple types for combination, please indicate by arranging the symbols in alphabetical order.

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

*Table 9 Dimension of slide unit with C-Lube plate (Supplemental code /Q)*




unit: mm

| Identification number | $L_1$ | $L_4$ | Identification number | $L_1$ | $L_4$ |
|---|---|---|---|---|---|
| LWLC 5···B | 22 | – | LWLFC 10···B | 26.5 | – |
| LWL 5···B | 25 | – | LWLF 10···B | 30.5 | – |
| LWLC 7···B | 27 | – | LWLFC 14···B | 30.5 | – |
| LWL 7···B | 31.5 | – | LWLF 14···B | 39.5 | – |
| LWLG 7···B | 39 | – | LWLFG 14···B | 50 | – |
| LWLC 9···B | 30 | – | LWLFC 18···B | 34.5 | – |
| LWL 9···B | 39 | – | LWLF 18···B | 46.5 | – |
| LWLG 9···B | 49 | – | LWLFG 18···B | 58.5 | – |
| LWLC 12···B | 33 | – | LWLFC 24···B | 38.5 | – |
| LWL 12···B | 42 | – | LWLF 24···B | 52 | – |
| LWLG 12···B | 52 | – | LWLFG 24···B | 67 | – |
| LWLC 15···B | 42 | 47 | LWLFC 30···B | 45.5 | 50 |
| LWL 15···B | 52 | 57 | LWLF 30···B | 59.5 | 64 |
| LWLG 15···B | 67 | 72 | LWLFG 30···B | 78.5 | 83 |
| LWLC 20···B | 48 | 53 | LWLFC 42···B | 51.5 | 56 |
| LWL 20···B | 60 | 65 | LWLF 42···B | 65 | 70 |
| LWLG 20···B | 78 | 83 | LWLFG 42···B | 84.5 | 89 |
| LWLC 25···B | 63.5 | 74 | | | |
| LWL 25···B | 87.5 | 98 | | | |
| LWLG 25···B | 107.5 | 117 | | | |

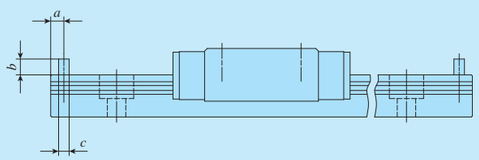
Remarks 1. The dimensions of the slide unit with C-Lube at both ends are indicated.
2. A typical identification number is indicated, but is applied to all LWL(F) series models of the same size.

*Table 10 Load rating / static moment rating of Hybrid C-Lube Linear Way (Supplemental code /HB)*

| Identification number | $C$ N | $C_0$ N | $T_0$ N·m | $T_x$(1) N·m | $T_Y$(1) N·m |
|---|---|---|---|---|---|
| MLC 7···/HB | 937 | 965 | 3.5 | 1.6<br>12.6 | 1.3<br>10.6 |
| ML 7···/HB | 1 330 | 1 610 | 5.9 | 4.0<br>23.9 | 3.3<br>20.1 |
| MLG 7···/HB | 1 690 | 2 250 | 8.2 | 7.5<br>43.1 | 6.3<br>36.2 |
| MLC 9···/HB | 1 180 | 1 260 | 5.9 | 2.4<br>18.2 | 2.1<br>15.3 |
| ML 9···/HB | 1 810 | 2 340 | 10.9 | 7.7<br>43.4 | 6.5<br>36.4 |
| MLG 9···/HB | 2 370 | 3 420 | 15.9 | 15.9<br>83.6 | 13.4<br>70.1 |
| MLL 9···/HB | 2 870 | 4 500 | 20.9 | 27.1<br>134 | 22.7<br>112 |
| MLC 12···/HB | 2 210 | 2 030 | 12.6 | 4.5<br>35.5 | 3.8<br>29.8 |
| ML 12···/HB | 3 330 | 3 650 | 22.6 | 13.1<br>79.2 | 11.0<br>66.4 |
| MLG 12···/HB | 4 310 | 5 270 | 32.7 | 26.0<br>143 | 21.9<br>120 |
| MLL 12···/HB | 5 820 | 8 110 | 50.3 | 59.3<br>288 | 49.8<br>242 |
| MLC 15···/HB | 3 490 | 3 310 | 25.5 | 9.9<br>71.8 | 8.3<br>60.3 |
| ML 15···/HB | 4 980 | 5 520 | 42.5 | 25.3<br>146 | 21.2<br>122 |
| MLG 15···/HB | 6 620 | 8 280 | 63.7 | 54.3<br>288 | 45.5<br>241 |
| MLL 15···/HB | 8 370 | 11 600 | 89.2 | 104<br>497 | 86.9<br>417 |

Note (1) The upper values of $T_x$ and $T_y$ are for one slide unit and the lower values are for two slide units in close contact.

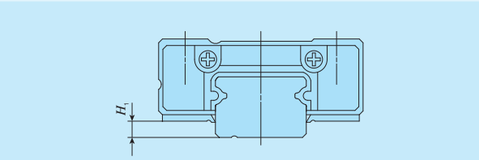
*Table 11 Dimension of track rail with stopper pins (Supplemental code /S)*




unit: mm

| Size | | $a$ | $b$ | $c$ |
|---|---|---|---|---|
| 5 | – | 2 | 2 | 1.6 |
| 7 | – | 2.5 | 2.5 | 2 |
| 9 | – | | 3 | |
| – | 10 | | 2 | 1.6 |
| 12 | – | | 3 | 2 |
| – | 14 | | | |
| 15 | – | | 4 | |
| – | 18 | | 3 | |
| 20 | – | | 5 | |
| – | 24 | | 3 | |
| 25 | – | 3.5 | 5 | |
| – | 30 | 2.5 | 4 | |
| – | 42 | | 5 | |

*Table 12 $H_1$ dimension with under seal (Supplemental code /U)*




unit: mm

| Size | | $H_1$ |
|---|---|---|
| 9 | – | 1 |
| 12 | – | 2 |
| 15 | – | 3 |
| – | 18 | 2 |
| 20 | – | 4 |
| – | 24 | 2 |
| 25 | – | 5(1) |
| – | 30 | 2 |
| – | 42 | 3 |

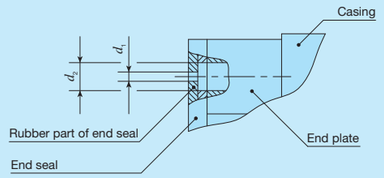
Note (1) The dimensions are the same as those before mounting of under seal.



# Lubrication

Lithium-soap base grease (MULTEMP PS No.2 [KYODO YUSHI CO., LTD.]) is pre-packed in ML(F) and LWL(F) series. Additionally, ML(F) series has C-Lube placed in the recirculation part of balls, so that the interval for reapplicating lubricant can be extended and maintenance works such as grease job can be reduced significantly.
ML(F) series and LWL(F) series have grease nipple or oil hole as indicated in Table 14. Since the Size 1, 2, 3, 4 and 6 series do not have an oil hole, apply grease directly to the raceway part of the track rail for re-greasing. Supply nozzles fit to each shapes of grease nipple and dedicated supplying equipment (miniature greasers) fit to oil holes are also available. For order of these parts for lubrication, see Table 13 and Table 14.1 on Page Ⅲ−23, and Table 15 on page Ⅲ−24.

*Table 13 Oil hole specifications*




unit: mm

| Size | | $d_1$ | $d_2$ |
|---|---|---|---|
| 5 | 10 | 0.5 | 1.1 |
| 7 | 14 | | 1.2 |
| 9 | 18 | | 1.5 |
| 12 | 24 | | 2 |

*Table 14 Parts for lubrication*

| Size | | Grease nipple type (1) | Applicable supply nozzle type | Bolt size of female threads for piping |
|---|---|---|---|---|
| 5, 7, 9, 12 | 10, 14, 18, 24 | Oil hole | Miniature greaser MG10B/MT2 | – |
| 15, 20 | 30, 42 | A-M3 | A-5120V A-5240V<br>B-5120V B-5240V | |
| 25 | – | B-M4 | A-8120V<br>B-8120V | M4 |

Note (1) For grease nipple specification, see Table 14.1 on page Ⅲ−23.
Remark: Stainless steel grease nipple is also available. If needed, please contact IKO.

# Dust Protection

The slide units of ML(F) series and LWL(F) series are equipped with end seals as standard for dust protection. However, if large amount of contaminant or dust are floating, or if large particles of foreign substances such as chips or sand may adhere to the track rail, it is recommended to attach a protective cover to the linear motion mechanism.
No end seal is provided for size 1, 2, 3, 4 or 6 series. For applications in the environment not clean enough, cover the entire unit with a protective case, etc. to prevent harmful foreign substances such as dust and particles from outside to enter.



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

# Precaution for Use

### ❶ Mounting surface, reference mounting surface and general mounting structure

When mounting the ML(F) series and LWL(F) series, properly align the reference mounting surfaces B and D (D1 or D2)of the track rail and slide unit with the reference mounting surface of the table and bed and fix them. (See Fig. 2)

Reference mounting surfaces B and D (D1 or D2) and mounting surfaces A and C are precisely ground. By machining the mounting surface of the mating member, such as machine or device, to high accuracy and mounting them properly, stable linear motion with high accuracy is obtained.

The LWL1···Y track rail has the mounting structure in the lateral direction. Two types of mounting structures are available (as shown in Fig. 3.1 and Fig. 3.2).

The reference mounting surfaces of the slide unit LWL1 (Y) and LWLF2 are located at both the left and right sides (D1 and D2). (See Fig. 5.1)

Excluding LWL1 (Y) and LWLF2, the reference mounting surface of the slide unit is on the opposite side of the IKO mark. (See Fig. 5.2)

The reference mounting surface of the track rail, with the exception of LWL1 (Y), is identified by locating the IKO mark on the top surface of the track rail. It is the side surface above the mark (in the direction of the arrow). (See Fig. 5.1 and Fig. 5.2)

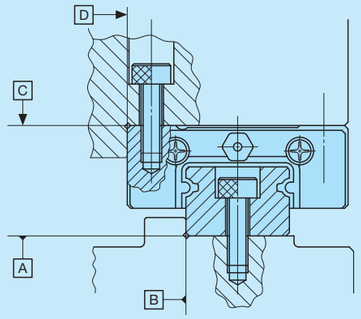



*Fig. 2 Reference mounting surface and typical mounting structure*

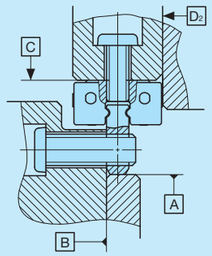



*Fig. 3.1 Reference mounting surface of LWL1···Y and typical mounting structure ①*

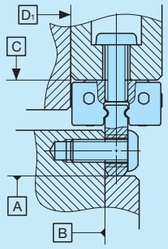



*Fig. 3.2 Reference mounting surface of LWL1···Y and typical mounting structure ②*

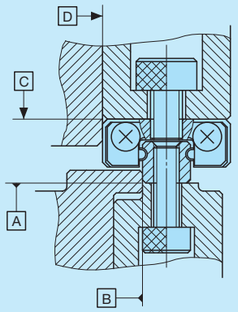



*Fig. 4 Reference mounting surface of size 2, 3, 4 and 6 series and typical mounting structure*

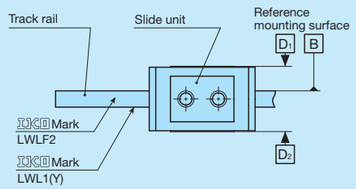



*Fig. 5.1 Reference mounting surface of LWL1 (Y) and LWLF2*

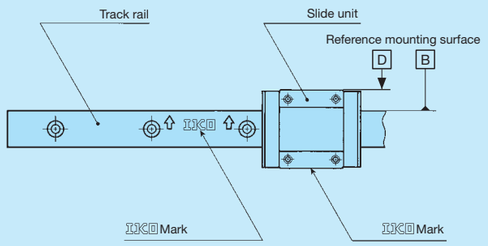



*Fig. 5.2 Reference mounting surface of products other than LWL1 (Y) and LWLF2*

### ❷ Mounting screws for slide unit

To mount a slide unit, tightly fasten the bolt against female thread of slide unit.

The female thread is created through holes of the slide unit for size 1 series, and also through holes for the slide unit and track rail for size 2, 3, 4 and 6 series. When the fixing thread depth of the mounting screw goes too deep, it can interfere with the track rail and impact the running accuracy or product life so that the fixing thread depth should be within the screwing depth specified in the dimension table.

Also prepare the small screws dedicated to precision devices (head diameter 1.8 mm or smaller) for the mounting bolt of slide unit of size 1 and LWLF2.

### ❸ Mounting screws for track rail

In the size 2 and 3 series and tapped rail specifications, track rail mounting bolts are not appended. Prepare mounting bolts whose fixing thread depth is less than $H_4$ in dimension table.

### ❹ Shoulder height and corner radius of the reference mounting surface

For the opposite corner of the mating reference mounting, it is recommended to have relieved fillet as indicated in Fig. 6 Recommended value for the shoulder height on the mating side is indicated in Table 16.

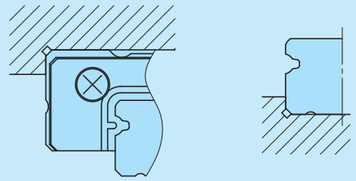


*Fig. 6 Corner of the mating reference mounting*

### ❺ Tightening torque for fixing screw

Typical tightening torque for mounting ML(F) series and LWL(F) series to the steel mating member material is indicated in Table 15. When vibration and shock of the machine or device are large, fluctuating load is large, or moment load is applied, fix it by using the torque 1.2 to 1.5 times larger than the value indicated in the table as necessary. If the mating member material is cast iron or aluminum alloy, reduce the tightening torque depending on the strength characteristics of the mating member material.

*Table 15 Tightening torque for fixing screw*

| Bolt size | Tightening torque N · m | |
|---|---|---|
| | Stainless steel-made screw | High carbon steel-made screw |
| M1 ×0.25 | 0.04 | – |
| M1.4×0.3 | 0.10 | – |
| M1.6×0.35 | 0.15 | – |
| M2 ×0.4 | 0.31 | – |
| M2.5×0.45 | 0.62 | – |
| M3 ×0.5 | 1.1 | 1.3 |
| M4 ×0.7 | 2.5 | 2.9 |
| M5 ×0.8 | 5.0 | 5.7 |
| M6 ×1 | 8.5 | – |

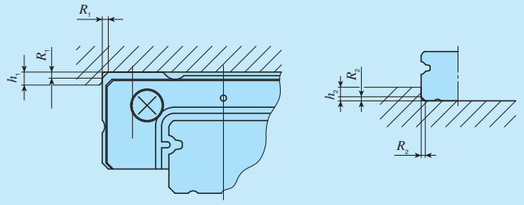
Remarks 1. The tightening torque is calculated based on strength division 8.8 and property division A2-70.
2. It is recommended that the tightening torque of slide unit mounting holes for series size 1 is to be 70 to 80 % of the values in the table.
3. For the tightening torque of cross-recessed pan head screws for precision equipment, see Table 22 on page III-38.





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

***Table 16 Shoulder height and corner radius of the reference mounting surface***




Mounting part of slide unit　　Mounting part of track rail

unit: mm

| Identification number | | Mounting part of slide unit | | Mounting part of track rail | |
|---|---|---|---|---|---|
| | | Shoulder height $h_1$ | Corner radius $R_1$ (Maximum) | Shoulder height (1) $h_2$ | Corner radius $R_2$ (Maximum) |
| – | LWL 1···Y | 1.3 | – | 2 | – |
| – | LWL 1 | | | – | |
| – | LWL 2 | 1 | 0.1 | 0.5 | 0.05 |
| ML 3 | LWL 3 | 1.2 | 0.15 | 0.8 | 0.1 |
| ML 5 | LWL 5···B | 2 | 0.3 | 0.8 | 0.2 |
| ML 7 | LWL 7···B | 2.5 | 0.2 | 1.2 | 0.2 |
| ML 9 | LWL 9···B | 3 | 0.2 | 1.5 | 0.2 |
| – | LWL 9···BCS | | 0.4 | | |
| ML 12 | LWL 12···B | 4 | 0.2 | 2.5 | 0.2 |
| – | LWL 12···BCS | | 0.4 | | |
| ML 15 | LWL 15···B | 4.5 | 0.2 | 3 | 0.2 |
| – | LWL 15···BCS | | 0.4 | | |
| ML 20 | LWL 20···B | 5 | 0.2 | 4 | 0.2 |
| – | LWL 20···BCS | | 0.4 | | |
| ML 25 | LWL 25···B | 6.5 | 0.7 | 4 | 0.7 |
| – | LWLF 2 | 1.3 | – | – | – |
| – | LWLF 4 | 1.5 | 0.1 | 0.8 | 0.1 |
| MLF 6 | LWLF 6 | 2 | 0.1 | 0.8 | 0.1 |
| MLF 10 | LWLF 10···B | 2 | 0.3 | 1.2 | 0.2 |
| MLF 14 | LWLF 14···B | 2.5 | 0.2 | 1.2 | 0.2 |
| MLF 18 | LWLF 18···B | 3 | 0.2 | 2.5 | 0.2 |
| – | LWLF 18···BCS | | 0.4 | | |
| MLF 24 | LWLF 24···B | 4 | 0.2 | 2.5 | 0.2 |
| – | LWLF 24···BCS | | 0.4 | | |
| MLF 30 | LWLF 30···B | 4.5 | 0.2 | 2.5 | 0.2 |
| – | LWLF 30···BCS | | 0.4 | | |
| MLF 42 | LWLF 42···B | 5 | 0.2 | 3 | 0.2 |
| – | LWLF 42···BCS | | 0.4 | | |

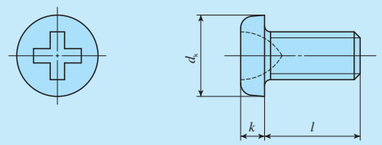
Note (1) For models with under seals (supplemental code "/U"), it is recommended to use the values 1mm smaller than the values in the table. However for the models of size 9 with under seal, 0.8 mm is recommended.
Remark: A typical identification number is indicated, but is applied to all models of the same size.



# Track rail mounting bolts for slide unit and tapped rail specification

For LWL(F) series, track rail mounting bolts for slide unit and tapped rail specification shown in Table 17 and Table 18 are available. If these parts are necessary, please contact IKO. Note that the dimensions are different from those of the appended track rail mounting bolts listed on pages II-24 to II-38.

***Table 17 Cross-recessed pan head screw for precision equipment***

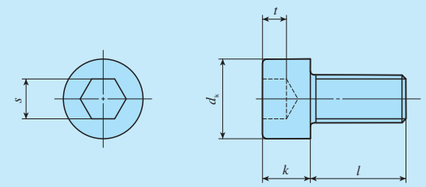



unit: mm

| Bolt size ($d$) | Pitch of screw $P$ | $d_k$ | $k$ | $l$ |
|---|---|---|---|---|
| M1 | 0.25 | 1.8 | 0.45 | 3, 4, 5 |
| M1.4 (1) | 0.3 | 2.5 | 0.8 | 2.5, 3, 4 |
| M1.6 | 0.35 | 2.8 | 0.85 | 4, 5, 6 |
| M2 (1) | 0.4 | 3.5 | 1 | 3, 4, 5 |

Note (1) Based on Camera & Imaging Products Association CIPA AD-003-2020 cross recessed head screw for precision equipment (No. 0 small screw). The type is Class 3.

***Table 18 Hexagon socket head bolt***




unit: mm

| Bolt size ($d$) | Pitch of screw $P$ | $d_k$ | $k$ | $s$ | $t$ | $l$ |
|---|---|---|---|---|---|---|
| M1.4 | 0.3 | 2.6 | 1.4 | 1.3 | 0.6 | 2.5, 3, 4 |
| M1.6 (1) | 0.35 | 3 | 1.6 | 1.5 | 0.7 | 4, 5, 6 |
| M2 (1) | 0.4 | 3.8 | 2 | 1.5 | 1 | 3, 4, 5 |

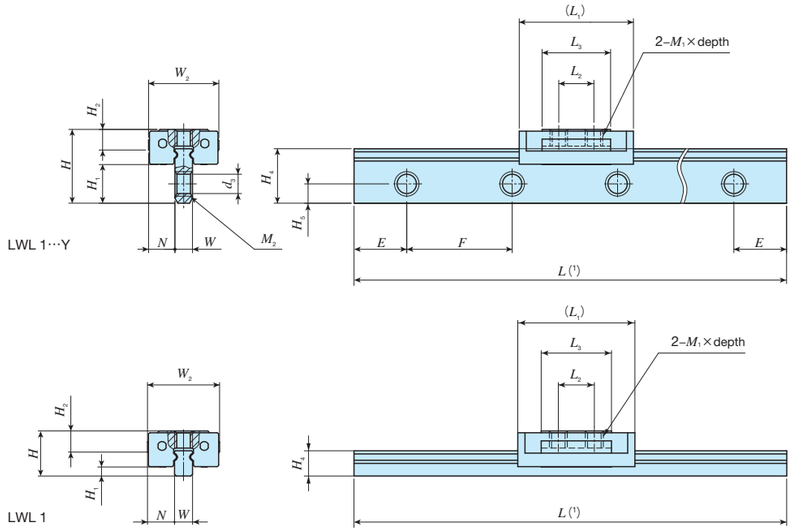
Note (1) Based on hexagon socket head bolts equivalent to JIS B 1176.

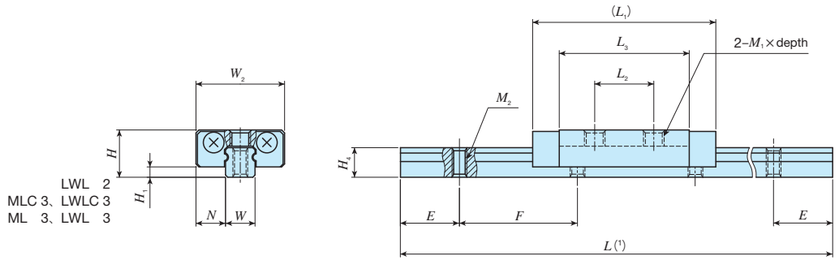


1N=0.102kgf=0.2248lbs.
1mm=0.03937inch

# IKO C-Lube Linear Way ML

| Standard type | | | | | |
|---|---|---|---|---|---|
| Shape | ML • LWL | | | | |
| Size | 1 | 2 | 3 | 5 | 7 |
| | 9 | 12 | 15 | 20 | 25 |

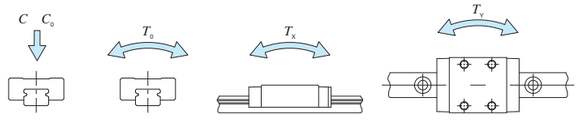



| Identification number | | Interchangeable | Mass (Ref.) g | | Dimensions of assembly mm | | | Dimensions of slide unit mm | | | | | | | Dimensions of track rail mm | | | | | | | Mounting bolt for track rail (2) mm | Basic dynamic load rating (5) | Basic static load rating (5) | Static moment rating (5) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ML series | LWL series (No C-Lube) | | Slide unit | Track rail (per 100 mm) | $H$ | $H_1$ | $N$ | $W_2$ | $L_1$ | $L_2$ | $L_3$ | $M_1$×depth | $H_2$ | | $W$ | $H_4$ | $H_5$ | $M_2$ | $d_3$ | $E$ | $F$ | Bolt size× $\ell$ | $C$ | $C_0$ | $T_0$ | $T_X$ | $T_Y$ |
| | | | | | | | | | | | | | | | | | | | | | | | N | N | N·m | N·m | N·m |
| – | LWL 1···Y | – | 0.16 | 2.1 | 4.2 | 2.2 | 1.5 | 4 | 6.5 | 2 | 3.9 | M1 ×0.9 | 1.2 | | 1 | 3.1 | 1.1 | M1.4 Through | 1.1 | 3 | 6 | Cross-recessed pan head screw for precision equipment (Class 1) M1× $\ell$ or M1.4× $\ell$ (3) | 66.8 | 113 | 0.06 | 0.07<br>0.47 | 0.09<br>0.56 |
| – | LWL 1 | – | | 1.0 | 2.5 | 0.5 | | | | | | | | | | 1.4 | – | – | – | – | – | – | | | | | |
| – | LWL 2 | – | 0.9 | 2.8 | 3.2 | 0.7 | 2 | 6 | 12.5 | 4 | 8.8 | M1.4×1.1 | – | | 2 | 2 | – | M1 Through | – | 4 | 8 | Cross-recessed pan head screw for precision equipment (Class 1) M1 × $\ell$ (4) | 211 | 381 | 0.42 | 0.54<br>2.9 | 0.64<br>3.5 |
| MLC 3 | | – | 0.9 | 5.3 | 4 | 1 | 2.5 | 8 | 10.5 | 3.5 | 7 | M1.6×1.3 | – | | 3 | 2.6 | – | M1.6 Through | – | 5 | 10 | Cross-recessed pan head screw for precision equipment M1.6× $\ell$ (4) | 272 | 406 | 0.65 | 0.49<br>2.7 | 0.58<br>3.2 |
| | LWLC 3 | – | 1.0 | | | | | | 11.5 | | 6.7 | | | | | | | | | | | | 251 | 361 | 0.58 | 0.39<br>2.7 | 0.47<br>3.2 |
| ML 3 | | – | 1.3 | | | | | | 14.5 | 5.5 | 11 | M2 ×1.3 | | | | | | | | | | | 371 | 632 | 1.0 | 1.1<br>5.6 | 1.3<br>6.6 |
| | LWL 3 | – | 1.6 | | | | | | 15.5 | | 10.7 | | | | | | | | | | | | 353 | 587 | 0.94 | 0.98<br>5.6 | 1.2<br>6.7 |

Notes (1) Track rail lengths $L$ are shown in Table 3.1 on page Ⅱ−10.
(2) Track rail mounting bolts are not appended.
(3) Prepare screws according to mounting structure.
(4) Choose screws whose dimension allow fixing thread depth into track rail $\ell$ to be less than $H_4$.
(5) The direction of basic dynamic load rating ($C$), basic static load rating ($C_0$), and static moment rating ($T_0$, $T_X$, $T_Y$) are shown in the sketches below.
The upper values of $T_X$ and $T_Y$ are for one slide unit and the lower values are for two slide units in close contact.

Remarks 1. Metal parts are made of stainless steel.
2. Do not disassemble a slide unit from the track rail because steel balls are not retained. No end seal is attached.
3. The specification of small size mounting bolts (M2 and less) are show on page Ⅱ−22. If needed, please contact IKO.




**Example of identification number of assembled set**

| Model code | | Dimensions | Part code | | Model code | Preload symbol | Classification symbol | Supplemental code |
|---|---|---|---|---|---|---|---|---|
| LWL | | 2 | C2 | R80 | | T0 | P | /D |
| ① | ② | ③ | ④ | ⑤ | ① | ⑥ | ⑦ | ⑧ |

① Model

| | |
|---|---|
| ML | Standard type |
| LWL | |
| LWL···Y | |

② Length of slide unit

| | |
|---|---|
| C | Short |
| No symbol | Standard |

③ Size: 1, 2, 3

④ Number of slide unit (2)

⑤ Length of track rail (80 mm)

⑥ Preload amount

| | |
|---|---|
| T0 | Clearance |

⑦ Accuracy class

| | |
|---|---|
| No symbol | Ordinary |
| H | High |
| P | Precision |

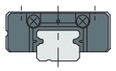
⑧ Special specification: BS, D, E, I , W, Y



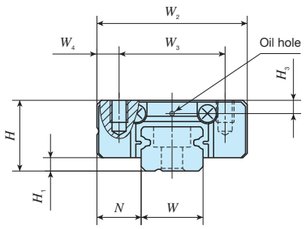
1N=0.102kgf=0.2248lbs.
1mm=0.03937inch

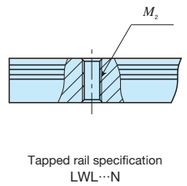
**Standard type**

Shape: **ML • LWL**

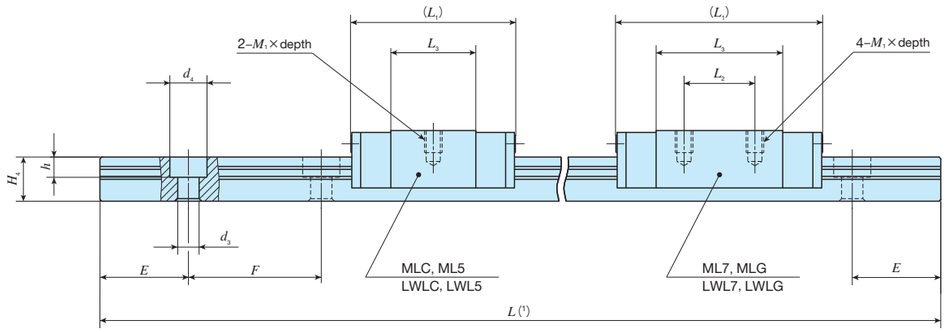


| Size | 1 | 2 | 3 | 5 | 7 |
|---|---|---|---|---|---|
| | 9 | 12 | 15 | 20 | 25 |



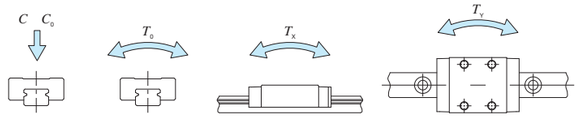

Tapped rail specification
LWL···N




| Identification number | | Interchangeable | Mass (Ref.) g | | Dimensions of assembly mm | | | Dimensions of slide unit mm | | | | | | | | Dimensions of track rail mm | | | | | | | Appended mounting bolt for track rail (2) mm | Basic dynamic load rating (4) | Basic static load rating (4) | Static moment rating (4) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ML series | LWL series (No C-Lube) | | Slide unit | Track rail (per 100 mm) | $H$ | $H_1$ | $N$ | $W_2$ | $W_3$ | $W_4$ | $L_1$ | $L_2$ | $L_3$ | $M_1$×depth | $H_3$ | $W$ | $H_4$ | $M_2$ | $d_3$ | $d_4$ | $h$ | $E$ | $F$ | Bolt size× $\ell$ | $C$ N | $C_0$ N | $T_0$ N·m | $T_X$ N·m | $T_Y$ N·m |
| MLC 5 | LWLC 5···B | ○ | 3.4 | 12 | 6 | 1 | 3.5 | 12 | 8 | 2 | 16 | – | 9.6 | M2×1.5 | 1.2 | 5 | 3.7 | – | 2.4 | 3.6 | 0.8 | 7.5 | 15 | Cross-recessed pan head screw for precision equipment (Class 1) M2×6 | 562 | 841 | 2.2 | 1.4<br>8.5 | 1.2<br>7.2 |
| MLC 5···N* | LWLC 5···N* | – | | 13 | | | | | | | | | | | | | | M2.5 Through | – | – | – | | | M2.5× $\ell$ (3) (Not appended) | | | | | |
| ML 5 | | ○ | 4.3 | 12 | | | | | | | 19 | | 12.6 | | | | | – | 2.4 | 3.6 | 0.8 | | | Cross-recessed pan head screw for precision equipment (Class 1) M2×6 | 676 | 1 090 | 2.9 | 2.3<br>12.8 | 1.9<br>10.8 |
| | LWL 5···B | ○ | 4.4 | | | | | | | | | | | | | | | | | | | | | | | | | |
| ML 5···N* | | – | 4.3 | 13 | | | | | | | | | | | | | | M2.5 Through | – | – | – | | | M2.5× $\ell$ (3) (Not appended) | | | | | |
| | LWL 5···N* | – | 4.4 | | | | | | | | | | | | | | | | | | | | | | | | | |
| MLC 7 | | ○ | 6.7 | 22 | 8 | 1.5 | 5 | 17 | 12 | 2.5 | 19 | – | 9.6 | M2×2.5 | 1.5 | 7 | 5 | – | 2.4 | 4.2 | 2.3 | 7.5 | 15 | Hexagon socket head bolt M2×6 | 937 | 1 140 | 4.1 | 1.8<br>14.9 | 1.5<br>12.5 |
| | LWLC 7···B | ○ | 7.1 | | | | | | | | | | | | | | | | | | | | | | | | | |
| MLC 7···N* | | – | 6.7 | 24 | | | | | | | | | | | | | | M3 Through | – | – | – | | | M3× $\ell$ (3) (Not appended) | | | | | |
| | LWLC 7···N* | – | 7.1 | | | | | | | | | | | | | | | | | | | | | | | | | |
| ML 7 | | ○ | 9.1 | 22 | | | | | | | 23.5 | 8 | 14.3 | | | | | – | 2.4 | 4.2 | 2.3 | | | Hexagon socket head bolt M2×6 | 1 330 | 1 890 | 6.9 | 4.7<br>28.2 | 3.9<br>23.6 |
| | LWL 7···B | ○ | 10 | | | | | | | | | | | | | | | | | | | | | | | | | |
| ML 7···N* | | – | 9.1 | 24 | | | | | | | | | | | | | | M3 Through | – | – | – | | | M3× $\ell$ (3) (Not appended) | | | | | |
| | LWL 7···N* | – | 10 | | | | | | | | | | | | | | | | | | | | | | | | | |
| MLG 7 | | ○ | 13 | 22 | | | | | | | 31 | 12 | 21.6 | | | | | – | 2.4 | 4.2 | 2.3 | | | Hexagon socket head bolt M2×6 | 1 690 | 2 650 | 9.7 | 8.8<br>50.7 | 7.4<br>42.5 |
| | LWLG 7···B | ○ | 14 | | | | | | | | | | | | | | | | | | | | | | | | | |
| MLG 7···N* | | – | 13 | 24 | | | | | | | | | | | | | | M3 Through | – | – | – | | | M3× $\ell$ (3) (Not appended) | | | | | |
| | LWLG 7···N* | – | 14 | | | | | | | | | | | | | | | | | | | | | | | | | |

Notes (1) Track rail lengths $L$ are shown in Table 3.1 on page Ⅱ−10.
(2) The appended mounting bolts are hexagon socket head bolts equivalent to JIS B 1176 or CIPA AD-003-2020 cross recessed head screw for precision equipment (No. 0 small screw).
(3) Choose screws whose dimension allow fixing thread depth into track rail $\ell$ to be less than $H_4$.
(4) The direction of basic dynamic load rating ($C$), basic static load rating ($C_0$), and static moment rating ($T_0$, $T_X$, $T_Y$) are shown in the sketches below.
The upper values of $T_X$ and $T_Y$ are for one slide unit and the lower values are for two slide units in close contact.
If hybrid C-Lube Linear Way specification (supplemental code "/HB") is selected in MLC7, ML7, and MLG7, see Table 10 on page Ⅱ−17.

Remarks 1. The specification of oil hole is shown in Table 13 on page Ⅱ−18.
2. The identification numbers with * are our semi-standard items.




**Example of identification number of assembled set**

| Model code | Dimensions | Part code | | | Model code | Preload symbol | Classification symbol | Interchangeable code | Supplemental code |
|---|---|---|---|---|---|---|---|---|---|
| ML | C | 7 | C2 | R120 | | T1 | P | | /D |
| ① | ② | ③ | ④ | ⑤ | ① | ⑥ | ⑦ | ⑧ | ⑨ |

① Model

| | |
|---|---|
| ML | Standard type |
| LWL···B | |
| LWL···N | |

② Length of slide unit

| | |
|---|---|
| C | Short |
| No symbol | Standard |
| G | Long |

③ Size: 5, 7

④ Number of slide unit (2)

⑤ Length of track rail (120 mm)

⑥ Preload amount

| | |
|---|---|
| T0 | Clearance |
| No symbol | Standard |
| T1 | Light preload |

⑦ Accuracy class

| | |
|---|---|
| H | High |
| P | Precision |

⑧ Interchangeable

| | |
|---|---|
| No symbol | Non-interchangeable specification |
| S1 | S1 specification |
| S2 | S2 specification |

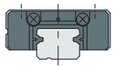
⑨ Special specification: A, BS, D, E, HB, Ⅰ, LR MN, N, Q, RE, S, W, Y



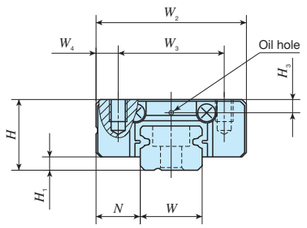
1N=0.102kgf=0.2248lbs.
1mm=0.03937inch

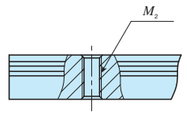
**Standard type**

Shape: **ML • LWL**

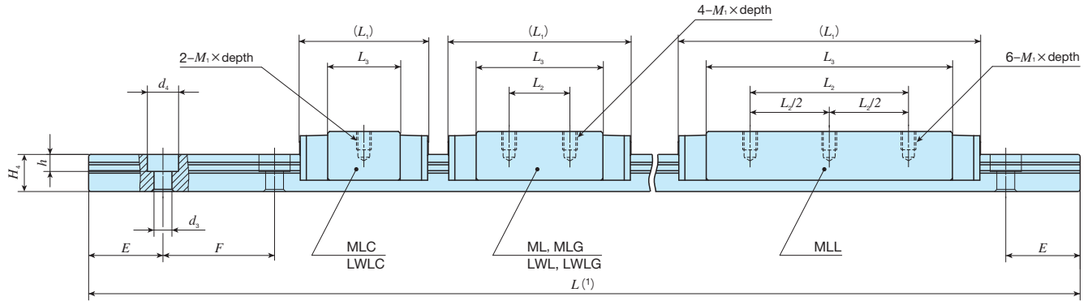


| Size | 1 | 2 | 3 | 5 | 7 |
|---|---|---|---|---|---|
| | 9 | 12 | 15 | 20 | 25 |



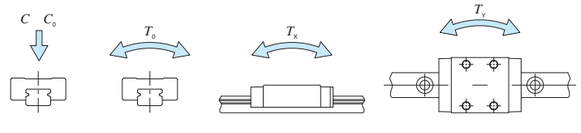

Tapped rail specification
LWL···N




| Identification number | | Interchangeable | Mass (Ref.) g | | Dimensions of assembly mm | | | Dimensions of slide unit mm | | | | | | | | Dimensions of track rail mm | | | | | | | | Appended mounting bolt for track rail (2) mm | Basic dynamic load rating (4) | Basic static load rating (4) | Static moment rating (4) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ML series | LWL series (No C-Lube) | | Slide unit | Track rail (per 100 mm) | $H$ | $H_1$ | $N$ | $W_2$ | $W_3$ | $W_4$ | $L_1$ | $L_2$ | $L_3$ | $M_1$×depth | $H_3$ | $W$ | $H_4$ | $M_2$ | $d_3$ | $d_4$ | $h$ | $E$ | $F$ | Bolt size× $\ell$ | $C$ N | $C_0$ N | $T_0$ N·m | $T_X$ N·m | $T_Y$ N·m |
| MLC 9 | LWLC 9···B | ○ | 11 | 35 | 10 | 2 | 5.5 | 20 | 15 | 2.5 | 21.5 | – | 11.9 | M3×3 | 2.2 | 9 | 6 | – | 3.5 | 6 | 3.5 | 10 | 20 | M3×8 | 1 180 | 1 480 | 6.9 | 2.9<br>21.4 | 2.4<br>18.0 |
| MLC 9···N* | LWLC 9···N* | – | 11 | 37 | | | | | | | | | | | | | | M4 Through | – | – | – | | | M4× $\ell$ (3) (Not appended) | | | | | |
| ML 9 | | ○ | 18 | 35 | | | | | | | 30 | 10 | 20.8 | | | | | – | 3.5 | 6 | 3.5 | | | M3×8 | 1 810 | 2 760 | 12.8 | 9.1<br>51.1 | 7.6<br>42.9 |
| | LWL 9···B | ○ | 19 | | | | | | | | | | | | | | | | | | | | | | | | | |
| – | LWL 9···BCS | ○ | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ML 9···N* | | – | 18 | 37 | | | | | | | | | | | | | | M4 Through | – | – | – | | | M4× $\ell$ (3) (Not appended) | | | | | |
| | LWL 9···N* | – | 19 | | | | | | | | | | | | | | | | | | | | | | | | | |
| MLG 9 | | ○ | 26 | 35 | | | | | | | 40.5 | 15 | 30.9 | | | | | – | 3.5 | 6 | 3.5 | | | M3×8 | 2 370 | 4 030 | 18.7 | 18.7<br>98.3 | 15.7<br>82.5 |
| | LWLG 9···B | ○ | 28 | | | | | | | | | | | | | | | | | | | | | | | | | |
| MLG 9···N* | | – | 26 | 37 | | | | | | | | | | | | | | M4 Through | – | – | – | | | M4× $\ell$ (3) (Not appended) | | | | | |
| | LWLG 9···N* | – | 28 | | | | | | | | | | | | | | | | | | | | | | | | | |
| MLL 9 | – | ○ | 34 | 35 | | | | | | | 50 | 26 | 40.4 | | | | | – | 3.5 | 6 | 3.5 | | | M3×8 | 2 870 | 5 300 | 24.6 | 31.9<br>157 | 26.7<br>132 |
| MLL 9···N* | – | – | | 37 | | | | | | | | | | | | | | M4 Through | – | – | – | | | M4× $\ell$ (3) (Not appended) | | | | | |
| MLC 12 | LWLC 12···B | ○ | 22 | 65 | 13 | 3 | 7.5 | 27 | 20 | 3.5 | 25 | – | 13 | M3×3.5 | 2.7 | 12 | 8 | – | 3.5 | 6.5 | 4.5 | 12.5 | 25 | M3×8 | 2 210 | 2 380 | 14.8 | 5.3<br>41.7 | 4.5<br>35.0 |
| ML 12 | | ○ | 34 | | | | | | | | 34 | 15 | 21.6 | | | | | | | | | | | | 3 330 | 4 290 | 26.6 | 15.4<br>93.1 | 12.9<br>78.2 |
| | LWL 12···B | ○ | 35 | | | | | | | | | | | | | | | | | | | | | | | | | |
| – | LWL 12···BCS | ○ | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MLG 12 | | ○ | 48 | | | | | | | | 44 | 20 | 32 | | | | | | | | | | | | 4 310 | 6 200 | 38.4 | 30.6<br>168 | 25.7<br>141 |
| | LWLG 12···B | ○ | 51 | | | | | | | | | | | | | | | | | | | | | | | | | |
| MLL 12 | – | ○ | 70 | | | | | | | | 59.5 | 30 | 47.3 | | | | | | | | | | | | 5 820 | 9 540 | 59.1 | 69.8<br>339 | 58.6<br>285 |

Notes (1) Track rail lengths $L$ are shown in Table 3.1 on page Ⅱ−10 and Table 3.3 on page Ⅱ−12.
(2) The appended track rail mounting bolts are hexagon socket head bolts equivalent to JIS B 1176. For stainless steel model, stainless steel bolts are appended.
(3) Choose screws whose dimension allow fixing thread depth into track rail $\ell$ to be less than $H_4$.
(4) The direction of basic dynamic load rating ($C$), basic static load rating ($C_0$), and static moment rating ($T_0$, $T_X$, $T_Y$) are shown in the sketches below.
The upper values of $T_X$ and $T_Y$ are for one slide unit and the lower values are for two slide units in close contact.
If hybrid C-Lube Linear Way specification (supplemental code "/HB") is selected in ML series, see Table 10 on page Ⅱ−17.

Remarks 1. The specification of oil hole is shown in Table 13 on page Ⅱ−18.
2. The identification numbers with * are our semi-standard items.




**Example of identification number of assembled set**

| Model code | Dimensions | Part code | Model code | Material code | Preload symbol | Classification symbol | Interchangeable code | Supplemental code |
|---|---|---|---|---|---|---|---|---|
| ML | G 9 | C2 | R160 | | | T1 | P | | /D |
| ① | ② ③ | ④ | ⑤ | 1 | 6 | ⑦ | ⑧ | ⑨ | ⑩ |

① Model

| | |
|---|---|
| ML | Standard type |
| LWL···B | |
| LWL···N | |

② Length of slide unit

| | |
|---|---|
| C | Short |
| No symbol | Standard |
| G | Long |
| L | Extra high rigidity long |

③ Size: 9, 12

④ Number of slide unit (2)

⑤ Length of track rail (160 mm)

⑥ Material type

| | |
|---|---|
| No symbol | Stainless steel made |
| CS | High carbon steel made |

⑦ Preload amount

| | |
|---|---|
| T0 | Clearance |
| No symbol | Standard |
| T1 | Light preload |

⑧ Accuracy class

| | |
|---|---|
| H | High |
| P | Precision |

⑨ Interchangeable

| | |
|---|---|
| No symbol | Non-interchangeable specification |
| S1 | S1 specification |
| S2 | S2 specification |

⑩ Special specification: A, BS, D, E, HB, Ⅰ, LR, MN N, Q, RE, S, U, W, Y



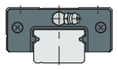
1N=0.102kgf=0.2248lbs.
1mm=0.03937inch

# IKO C-Lube Linear Way ML

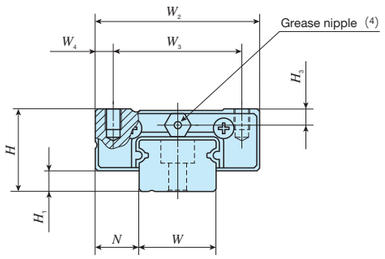


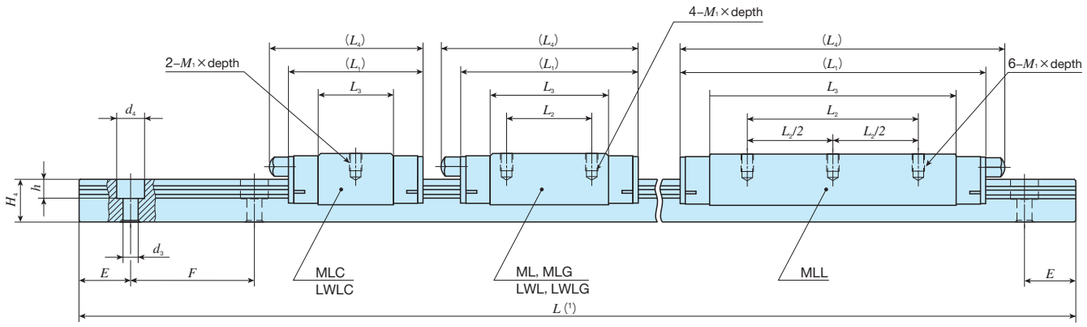
**Standard type**

Shape: **ML • LWL**



| Size | 1 | 2 | 3 | 5 | 7 |
|---|---|---|---|---|---|
| | 9 | 12 | 15 | 20 | 25 |



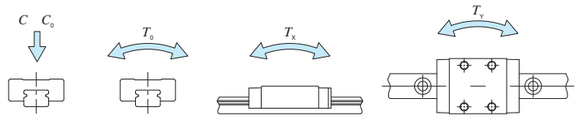

| Identification number | | Interchangeable | Mass (Ref.) g | | Dimensions of assembly mm | | | Dimensions of slide unit mm | | | | | | | | | Dimensions of track rail mm | | | | | | | | Appended mounting bolt for track rail (2) mm | Basic dynamic load rating (3) | Basic static load rating (3) | Static moment rating (3) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ML series | LWL series (No C-Lube) | | Slide unit | Track rail (per 100 mm) | $H$ | $H_1$ | $N$ | $W_2$ | $W_3$ | $W_4$ | $L_1$ | $L_2$ | $L_3$ | $L_4$ | $M_1$×depth | $H_3$ | $W$ | $H_4$ | $d_3$ | $d_4$ | $h$ | $E$ | $F$ | Bolt size× $\ell$ | $C$ N | $C_0$ N | $T_0$ N·m | $T_X$ N·m | $T_Y$ N·m |
| MLC 15 | | ○ | 43 | 107 | 16 | 4 | 8.5 | 32 | 25 | 3.5 | 32 | – | 17.8 | 37 | M3×4 | 3.1 | 15 | 10 | 3.5 | 6.5 | 4.5 | 20 | 40 | M3×10 | 3 490 | 3 890 | 30.0 | 11.7<br>84.5 | 9.8<br>70.9 |
| | LWLC 15···B | ○ | 42 | | | | | | | | | | 17.7 | | | | | | | | | | | | | | | | |
| ML 15 | | ○ | 63 | | | | | | | | 42 | 20 | 27.9 | 47 | | | | | | | | | | | 4 980 | 6 490 | 50.0 | 29.7<br>172 | 24.9<br>144 |
| | LWL 15···B | ○ | 64 | | | | | | | | | | 27.8 | | | | | | | | | | | | | | | | |
| – | LWL 15···BCS | ○ | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MLG 15 | | ○ | 93 | | | | | | | | 57 | 25 | 42.8 | 62 | | | | | | | | | | | 6 620 | 9 740 | 75.0 | 63.9<br>338 | 53.6<br>284 |
| | LWLG 15···B | ○ | 95 | | | | | | | | | | 42.7 | | | | | | | | | | | | | | | | |
| MLL 15 | – | ○ | 122 | | | | | | | | 72 | 40 | 57.7 | 76 | | | | | | | | | | | 8 370 | 13 600 | 105 | 122<br>585 | 102<br>491 |
| MLC 20 | LWLC 20···B | ○ | 89 | 156 | 20 | 5 | 10 | 40 | 30 | 5 | 38 | – | 22.3 | 43 | M4×6 | 4.2 | 20 | 11 | 6 | 9.5 | 5.5 | 30 | 60 | M5×14 | 4 580 | 5 300 | 54.0 | 19.4<br>134 | 16.3<br>112 |
| ML 20 | | ○ | 130 | | | | | | | | 50 | 25 | 34.6 | 55 | | | | | | | | | | | 6 650 | 9 080 | 92.6 | 52.7<br>280 | 44.2<br>235 |
| | LWL 20···B | ○ | 133 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| – | LWL 20···BCS | ○ | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MLG 20 | | ○ | 189 | | | | | | | | 68 | 30 | 52.3 | 73 | | | | | | | | | | | 8 510 | 12 900 | 131 | 102<br>529 | 85.7<br>444 |
| | LWLG 20···B | ○ | 196 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MLC 25 | | ○ | 189 | 243 | 25 | 5 | 12.5 | 48 | 35 | 6.5 | 54.5 | – | 31.9 | 64 | M6×7 | 5 | 23 | 15 | 7 | 11.0 | 9.0 | 30 | 60 | M6×16 | 9 120 | 10 600 | 128 | 57.4<br>376 | 48.1<br>316 |
| | LWLC 25···B | ○ | 190 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ML 25 | | ○ | 305 | | | | | | | | 78 | 35 | 55.7 | 88 | | | | | | | | | | | 13 500 | 18 500 | 223 | 163<br>887 | 137<br>744 |
| | LWL 25···B | ○ | 310 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MLG 25 | | ○ | 405 | | | | | | | | 98 | 40 | 75.5 | 108 | | | | | | | | | | | 16 700 | 25 200 | 303 | 293<br>1 480 | 246<br>1 240 |
| | LWLG 25···B | ○ | 413 | | | | | | | | | | | | | | | | | | | | | | | | | | |

Notes (1) Track rail lengths $L$ are shown in Table 3.1 on page Ⅱ−10 and Table 3.3 on page Ⅱ−12.

(2) The appended track rail mounting bolts are hexagon socket head bolts equivalent to JIS B 1176. For stainless steel model, stainless steel bolts are appended.

(3) The direction of basic dynamic load rating ($C$), basic static load rating ($C_0$), and static moment rating ($T_0$, $T_X$, $T_Y$) are shown in the sketches below.
The upper values of $T_X$ and $T_Y$ are for one slide unit and the lower values are for two slide units in close contact.
If hybrid C-Lube Linear Way specification (supplemental code "/HB") is selected in MLC15, ML15, MLG15, and MLL15, see Table 10 on page Ⅱ−17.

(4) The shapes of grease nipple vary by size. The specifications are shown in Table 14 on page Ⅱ—18.




**Example of identification number of assembled set**

| Model code | Dimensions | Part code | | Model code | Material code | Preload symbol | Classification symbol | Interchangeable code | Supplemental code |
|---|---|---|---|---|---|---|---|---|---|
| ML | G | 15 | C2 | R320 | | | T1 | P | | /D |
| ① | ② | ③ | ④ | ⑤ | ① | ⑥ | ⑦ | ⑧ | ⑨ | ⑩ |

① Model

| | |
|---|---|
| ML | Standard type |
| LWL···B | |

② Length of slide unit

| | |
|---|---|
| C | Short |
| No symbol | Standard |
| G | Long |
| L | Extra high rigidity long |

③ Size: 15, 20, 25

④ Number of slide unit (2)

⑤ Length of track rail (320 mm)

⑥ Material type

| | |
|---|---|
| No symbol | Stainless steel made |
| CS | High carbon steel made |

⑦ Preload amount

| | |
|---|---|
| T0 | Clearance |
| No symbol | Standard |
| T1 | Light preload |

⑧ Accuracy class

| | |
|---|---|
| H | High |
| P | Precision |

⑨ Interchangeable

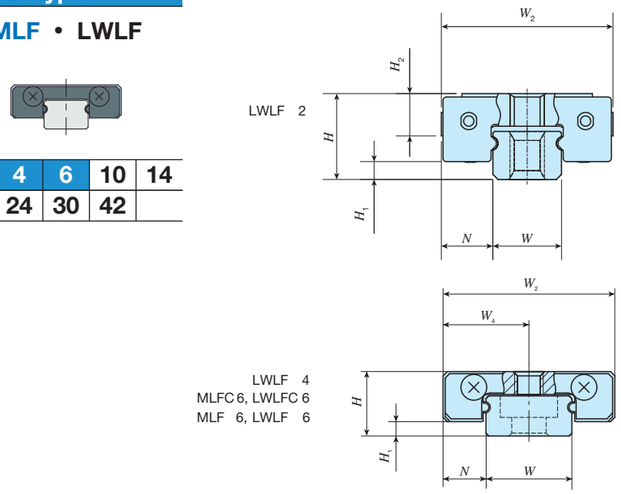
| | |
|---|---|
| No symbol | Non-interchangeable specification |
| S1 | S1 specification |
| S2 | S2 specification |

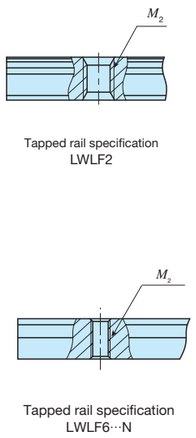
⑩ Special specification: A, BS, D, E, HB, Ⅰ, LR, MN N, Q, RE, S, U, W, Y

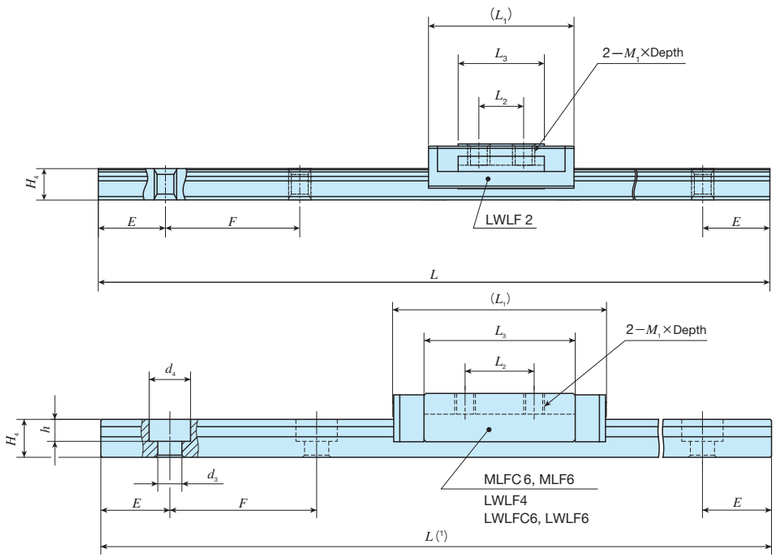


1N=0.102kgf=0.2248lbs.
1mm=0.03937inch

| Wide type | | | | | |
|---|---|---|---|---|---|
| Shape | MLF • LWLF | | | | |
| Size | 2 | 4 | 6 | 10 | 14 |
| | 18 | 24 | 30 | 42 | |

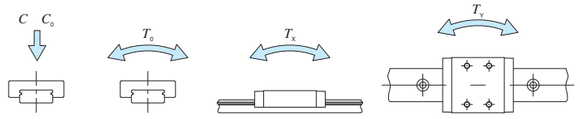



| Identification number | | Interchangeable | Mass (Ref.) g | | Dimensions of assembly mm | | | Dimensions of slide unit mm | | | | | | | | | Dimensions of track rail mm | | | | | | | | Appended mounting bolt for track rail mm | Basic dynamic load rating (4) | Basic static load rating (4) | Static moment rating (4) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MLF series | LWLF series (No C-Lube) | | Slide unit | Track rail (per 100 mm) | $H$ | $H_1$ | $N$ | $W_2$ | $W_3$ | $W_4$ | $L_1$ | $L_2$ | $L_3$ | $M_1$×depth | $H_2$ | $H_3$ | $W$ | $H_4$ | $M_2$ | $d_3$ | $d_4$ | $h$ | $E$ | $F$ | Bolt size× $\ell$ | $C$ N | $C_0$ N | $T_0$ N·m | $T_X$ N·m | $T_Y$ N·m |
| – | LWLF 2(2) | – | 0.21 | 2 | 2.5 | 0.5 | 1.5 | 5 | – | – | 6.5 | 2 | 3.9 | M1 × 0.9 | 1.2 | – | 2 | 1.4 | M1 Through | – | – | – | 3 | 6 | M1× $\ell$ (3) (Not appended) | 66.8 | 113 | 0.12 | 0.07<br>0.47 | 0.09<br>0.56 |
| – | LWLF 4(2) | – | 2.1 | 6.8 | 4 | 1 | 3 | 10 | – | 5 | 17 | 6.5 | 11.9 | M2 × 1.3 | – | – | 4 | 2.6 | – | 1.8 | 2.8 | 0.75 | 5 | 10 | Cross-recessed pan head screw for precision equipment (Class 1) M1.6×5 | 390 | 677 | 1.4 | 1.3<br>7.1 | 1.5<br>8.4 |
| MLFC 6(2) | | – | 2.1 | 13 | 4.5 | 1 | 3 | 12 | – | 6 | 15 | 4.5 | 9.8 | M2 × 1.6 | – | – | 6 | 2.8 | – | 2.4 | 4 | 1.5 | 7.5 | 15 | Cross-recessed pan head screw for precision equipment (Class 3) M2×4 | 334 | 542 | 1.7 | 0.84<br>5.1 | 1.0<br>6.1 |
| | LWLFC 6(2) | – | 2.4 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MLFC 6···N(2)* | | – | 2.1 | 12 | | | | | | | | | | | | | | | M3 Through | – | – | – | | | M3× $\ell$ (3) (Not appended) | | | | | |
| | LWLFC 6···N(2)* | – | 2.4 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MLF 6(2) | | – | 3.1 | 13 | | | | | | | 20 | 8 | 14.6 | | | | | | – | 2.4 | 4 | 1.5 | | | Cross-recessed pan head screw for precision equipment (Class 3) M2×4 | 443 | 813 | 2.5 | 1.8<br>9.9 | 2.2<br>11.8 |
| | LWLF 6(2) | – | 3.4 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MLF 6···N(2)* | | – | 3.1 | 12 | | | | | | | | | | | | | | | M3 Through | – | – | – | | | M3× $\ell$ (3) (Not appended) | | | | | |
| | LWLF 6···N(2)* | – | 3.4 | | | | | | | | | | | | | | | | | | | | | | | | | | |

Notes (1) Track rail lengths $L$ are shown in Table 3.2 on page Ⅱ−11.
(2) Steel balls are not retained. No end seal is attached.
(3) Choose screws whose dimension allow fixing thread depth into track rail $\ell$ to be less than $H_4$.
(4) The direction of basic dynamic load rating ($C$), basic static load rating ($C_0$), and static moment rating ($T_0$, $T_X$, $T_Y$) are shown in the sketches below.
The upper values of $T_X$ and $T_Y$ are for one slide unit and the lower values are for two slide units in close contact.
Remarks 1. The identification numbers with * are our semi-standard items.
2. There is no oil hole on the slide unit.




1N≒0.102kgf

## Example of identification number of assembled set

| Model code | | Dimensions | Part code | | Model code | Preload symbol | Classification symbol | Interchangeable code | Supplemental code |
|---|---|---|---|---|---|---|---|---|---|
| MLF | C | 6 | C2 | R120 | | T0 | P | | /D |
| ① | ② | ③ | ④ | ⑤ | ① | ⑥ | ⑦ | ⑧ | ⑨ |

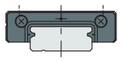
① Model: MLF, LWLF, LWLF···N — Wide type
② Length of slide unit: C — Short; No symbol — Standard
③ Size: 2, 4, 6, 10
④ Number of slide unit (2)
⑤ Length of track rail (120 mm)
⑥ Preload amount: T0 — Clearance; No symbol — Standard
⑦ Accuracy class: H — High; P — Precision
⑧ Interchangeable: No symbol — Non-interchangeable specification; S1 — S1 specification; S2 — S2 specification
⑨ Special specification: A, BS, D, E, I, MN, N, Q, RE, S, W, Y



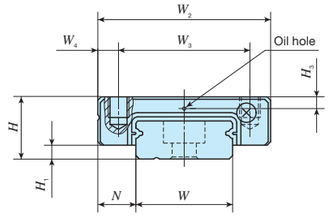
1N=0.102kgf=0.2248lbs.
1mm=0.03937inch

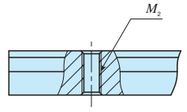
**Wide type**

Shape: **MLF • LWLF**

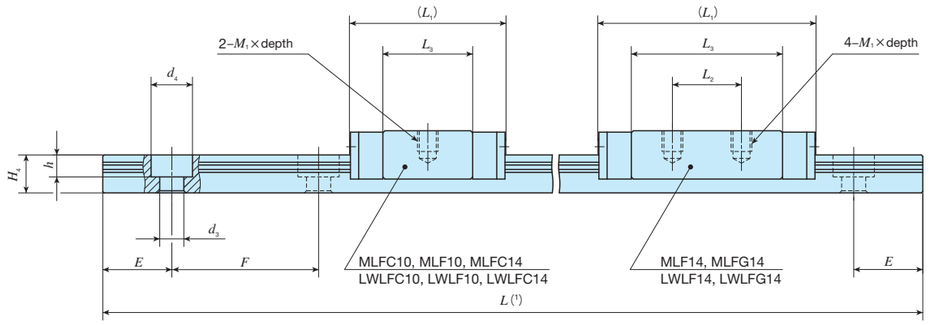


| Size | 2 | 4 | 6 | 10 | 14 |
|---|---|---|---|---|---|
| | 18 | 24 | 30 | 42 | |




Tapped rail specification
LWLF···N

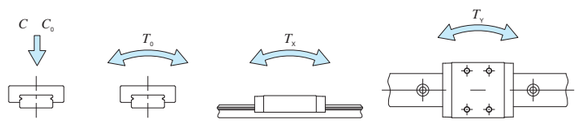



| Identification number: MLF series | Identification number: LWLF series (No C-Lube) | Interchangeable | Mass (Ref.) g: Slide unit | Mass (Ref.) g: Track rail (per 100 mm) | Dimensions of assembly mm: $H$ | $H_1$ | $N$ | Dimensions of slide unit mm: $W_2$ | $W_3$ | $W_4$ | $L_1$ | $L_2$ | $L_3$ | $M_1$×depth | $H_3$ | Dimensions of track rail mm: $W$ | $H_4$ | $M_2$ | $d_3$ | $d_4$ | $h$ | $E$ | $F$ | Appended mounting bolt for track rail (2) mm: Bolt size× $\ell$ | Basic dynamic load rating (4): $C$ N | Basic static load rating (4): $C_0$ N | Static moment rating (4): $T_0$ N·m | $T_X$ N·m | $T_Y$ N·m |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MLFC 10 | | ○ | 6.1 | 28 | 6.5 | 1.5 | 3.5 | 17 | 13 | 2 | 20.5 | – | 13.6 | M2.5×1.5 | 1.3 | 10 | 4 | – | 2.9 | 4.8 | 1.6 | 10 | 20 | Cross-recessed pan head screw for precision equipment (Class 3) M2.5×7 | 712 | 1 180 | 6.1 | 2.6<br>14.9 | 2.2<br>12.5 |
| | LWLFC 10···B | ○ | 5.9 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MLFC 10···N* | | – | 6.1 | 29 | | | | | | | | | | | | | | M3 Through | – | – | – | | | M3× $\ell$ (3) (Not appended) | | | | | |
| | LWLFC 10···N* | – | 5.9 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MLF 10 | | ○ | 7.6 | 28 | | | | | | | 24.5 | | 17.6 | | | | | – | 2.9 | 4.8 | 1.6 | | | Cross-recessed pan head screw for precision equipment (Class 3) M2.5×7 | 849 | 1 510 | 7.8 | 4.2<br>22.4 | 3.5<br>18.8 |
| | LWLF 10···B | ○ | 7.5 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MLF 10···N* | | – | 7.6 | 29 | | | | | | | | | | | | | | M3 Through | – | – | – | | | M3× $\ell$ (3) (Not appended) | | | | | |
| | LWLF 10···N* | – | 7.5 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MLFC 14 | LWLFC 14···B | ○ | 13 | 54 | 9 | 2 | 5.5 | 25 | 19 | 3 | 22.5 | – | 13 | M3 ×3 | 1.7 | 14 | 5.5 | – | 3.5 | 6 | 3.2 | 15 | 30 | M3×8 | 1 240 | 1 700 | 12.2 | 3.8<br>24.6 | 3.2<br>20.7 |
| MLFC 14···N* | LWLFC 14···N* | – | | 56 | | | | | | | | | | | | | | M4 Through | – | – | – | | | M4× $\ell$ (3) (Not appended) | | | | | |
| MLF 14 | | ○ | 20 | 54 | | | | | | | 31.5 | 10 | 22 | | | | | – | 3.5 | 6 | 3.2 | | | M3×8 | 1 770 | 2 840 | 20.3 | 10.1<br>54.7 | 8.4<br>45.9 |
| | LWLF 14···B | ○ | 21 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MLF 14···N* | | – | 20 | 56 | | | | | | | | | | | | | | M4 Through | – | – | – | | | M4× $\ell$ (3) (Not appended) | | | | | |
| | LWLF 14···N* | – | 21 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MLFG 14 | | ○ | 29 | 54 | | | | | | | 42 | 19 | 32.5 | | | | | – | 3.5 | 6 | 3.2 | | | M3×8 | 2 320 | 4 160 | 29.8 | 21.0<br>104 | 17.6<br>87.6 |
| | LWLFG 14···B | ○ | 31 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MLFG 14···N* | | – | 29 | 56 | | | | | | | | | | | | | | M4 Through | – | – | – | | | M4× $\ell$ (3) (Not appended) | | | | | |
| | LWLFG 14···N* | – | 31 | | | | | | | | | | | | | | | | | | | | | | | | | | |

1N≒0.102kgf

Notes (1) Track rail lengths $L$ are shown in Table 3.2 on page Ⅱ−11.
(2) The appended track rail mounting bolts are hexagon socket head bolts equivalent to JIS B 1176.
(3) Choose screws whose dimension allow fixing thread depth into track rail $\ell$ to be less than $H_4$.
(4) The direction of basic dynamic load rating ($C$), basic static load rating ($C_0$), and static moment rating ($T_0$, $T_X$, $T_Y$) are shown in the sketches below.
The upper values of $T_X$ and $T_Y$ are for one slide unit and the lower values are for two slide units in close contact.

Remarks 1. The specification of oil hole is shown in Table 13 on page Ⅱ−18.
2. The identification numbers with * are our semi-standard items.




**Example of identification number of assembled set**

| Model code | Dimensions | Part code | | Model code | Preload symbol | Classification symbol | Interchangeable code | Supplemental code |
|---|---|---|---|---|---|---|---|---|
| MLF | G | 14 | C2 | R240 | | T1 | P | | /D |
| ① | ② | ③ | ④ | ⑤ | ① | ⑥ | ⑦ | ⑧ | ⑨ |

① Model

| | |
|---|---|
| MLF | Wide type |
| LWLF···B | |
| LWLF···N | |

② Length of slide unit

| | |
|---|---|
| C | Short |
| No symbol | Standard |
| G | Long |

③ Size: 10, 14

④ Number of slide unit (2)

⑤ Length of track rail (240 mm)

⑥ Preload amount

| | |
|---|---|
| T0 | Clearance |
| No symbol | Standard |
| T1 | Light preload |

⑦ Accuracy class

| | |
|---|---|
| H | High |
| P | Precision |

⑧ Interchangeable

| | |
|---|---|
| No symbol | Non-interchangeable specification |
| S1 | S1 specification |
| S2 | S2 specification |

⑨ Special specification: A, BS, D, E, I, LR, MN, N, Q, RE, S, W, Y

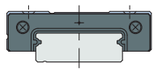


1N=0.102kgf=0.2248lbs.
1mm=0.03937inch

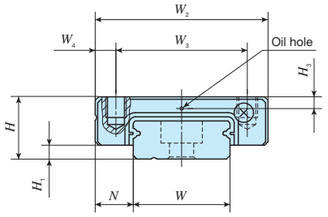
**Wide type**

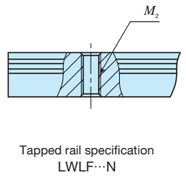
**MLF • LWLF**

Shape

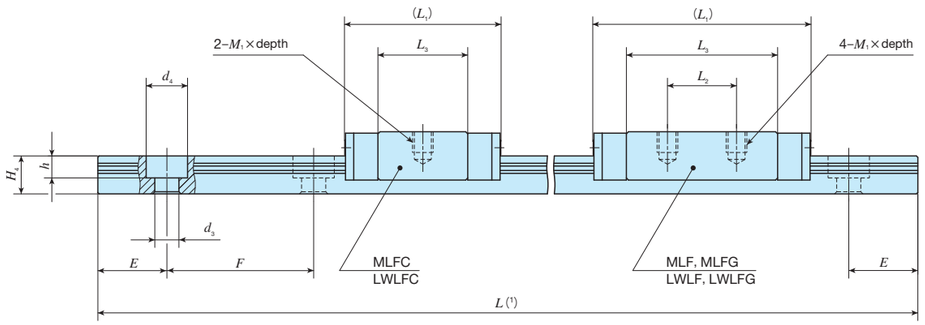


| Size | | | | | |
|---|---|---|---|---|---|
| 2 | 4 | 6 | 10 | 14 | |
| **18** | **24** | 30 | 42 | | |



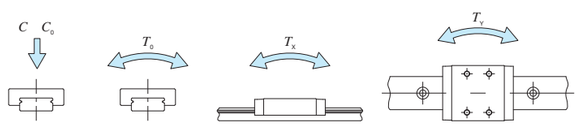

Tapped rail specification
LWLF···N




| Identification number | | Interchangeable | Mass (Ref.) g | | Dimensions of assembly mm | | | Dimensions of slide unit mm | | | | | | | | Dimensions of track rail mm | | | | | | | | Appended mounting bolt for track rail (2) mm | Basic dynamic load rating (4) | Basic static load rating (4) | Static moment rating (4) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MLF series | LWLF series (No C-Lube) | | Slide unit | Track rail (per 100 mm) | $H$ | $H_1$ | $N$ | $W_2$ | $W_3$ | $W_4$ | $L_1$ | $L_2$ | $L_3$ | $M_1$×depth | $H_3$ | $W$ | $H_4$ | $M_2$ | $d_3$ | $d_4$ | $h$ | $E$ | $F$ | Bolt size× $\ell$ | $C$ N | $C_0$ N | $T_0$ N·m | $T_x$ N·m | $T_y$ N·m |
| MLFC 18 | LWLFC 18···B | ○ | 26 | 90 | 12 | 3 | 6 | 30 | 21 | 4.5 | 26.5 | – | 16.6 | M3×3 | 2.5 | 18 | 7 | – | 3.5 | 6.5 | 4.5 | 15 | 30 | M3×8 | 1 510 | 2 120 | 19.4 | 5.5<br>35.9 | 4.7<br>30.1 |
| MLFC 18···N* | LWLFC 18···N* | – | 26 | 92 | | | | | | | | | | | | | | M4 Through | – | – | – | | | M4× $\ell$ (3) (Not appended) | | | | | |
| MLF 18 | | ○ | 42 | 90 | | | | | | | 38.5 | 12 | 28.6 | | | | | – | 3.5 | 6.5 | 4.5 | | | M3×8 | 2 280 | 3 810 | 34.9 | 16.9<br>88.8 | 14.2<br>74.5 |
| | LWLF 18···B | ○ | 44 | | | | | | | | | | | | | | | | | | | | | | | | | |
| – | LWLF 18···BCS | ○ | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MLF 18···N* | | – | 42 | 92 | | | | | | | | | | | | | | M4 Through | – | – | – | | | M4× $\ell$ (3) (Not appended) | | | | | |
| | LWLF 18···N* | – | 44 | | | | | | | | | | | | | | | | | | | | | | | | | |
| MLFG 18 | | ○ | 59 | 90 | | | | | 23 | 3.5 | 50.5 | 24 | 40.4 | | | | | – | 3.5 | 6.5 | 4.5 | | | M3×8 | 2 870 | 5 300 | 48.5 | 31.9<br>159 | 26.7<br>134 |
| | LWLFG 18···B | ○ | 61 | | | | | | | | | | | | | | | | | | | | | | | | | |
| MLFG 18···N* | | – | 59 | 92 | | | | | | | | | | | | | | M4 Through | – | – | – | | | M4× $\ell$ (3) (Not appended) | | | | | |
| | LWLFG 18···N* | – | 61 | | | | | | | | | | | | | | | | | | | | | | | | | |
| MLFC 24 | | ○ | 46 | 139 | 14 | 3 | 8 | 40 | 28 | 6 | 30.5 | – | 17.7 | M3×3.5 | 3.2 | 24 | 8 | – | 4.5 | 8 | 4.5 | 20 | 40 | M4×10 | 2 800 | 3 340 | 40.7 | 9.7<br>67.6 | 8.2<br>56.8 |
| | LWLFC 24···B | ○ | 45 | | | | | | | | | | | | | | | | | | | | | | | | | |
| MLF 24 | | ○ | 74 | | | | | | | | 44 | 15 | 31 | | | | | | | | | | | | 4 310 | 6 200 | 75.6 | 30.6<br>168 | 25.7<br>141 |
| | LWLF 24···B | ○ | 76 | | | | | | | | | | | | | | | | | | | | | | | | | |
| – | LWLF 24···BCS | ○ | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MLFG 24 | | ○ | 108 | | | | | | | | 59 | 28 | 46.3 | | | | | | | | | | | | 5 620 | 9 060 | 111 | 63.3<br>321 | 53.1<br>270 |
| | LWLFG 24···B | ○ | 111 | | | | | | | | | | | | | | | | | | | | | | | | | |

Notes (1) Track rail lengths $L$ are shown in Table 3.2 on page Ⅱ−11 and Table 3.3 on page Ⅱ−12.
(2) The appended track rail mounting bolts are hexagon socket head bolts equivalent to JIS B 1176. For stainless steel model, stainless steel bolts are appended.
(3) Choose screws whose dimension allow fixing thread depth into track rail $\ell$ to be less than $H_4$.
(4) The direction of basic dynamic load rating ($C$), basic static load rating ($C_0$), and static moment rating ($T_0$, $T_x$, $T_y$) are shown in the sketches below.
The upper values of $T_x$ and $T_y$ are for one slide unit and the lower values are for two slide units in close contact.

Remarks 1. The specification of oil hole is shown in Table 13 on page Ⅱ−18.
2. The identification numbers with * are our semi-standard items.




**Example of identification number of assembled set**

| Model code | Dimensions | Part code | | Model code | Material code | Preload symbol | Classification symbol | Interchangeable code | Supplemental code |
|---|---|---|---|---|---|---|---|---|---|
| MLF | G | 18 | C2 | R300 | | | T1 | P | | /D |
| ① | ② | ③ | ④ | ⑤ | ① | ⑥ | ⑦ | ⑧ | ⑨ | ⑩ |

① Model

| | |
|---|---|
| MLF | Wide type |
| LWLF···B | |
| LWLF···N | |

② Length of slide unit

| | |
|---|---|
| C | Short |
| No symbol | Standard |
| G | Long |

③ Size: 18, 24

④ Number of slide unit (2)

⑤ Length of track rail (300 mm)

⑥ Material type

| | |
|---|---|
| No symbol | Stainless steel made |
| CS | High carbon steel made |

⑦ Preload amount

| | |
|---|---|
| T0 | Clearance |
| No symbol | Standard |
| T1 | Light preload |

⑧ Accuracy class

| | |
|---|---|
| H | High |
| P | Precision |

⑨ Interchangeable

| | |
|---|---|
| No symbol | Non-interchangeable specification |
| S1 | S1 specification |
| S2 | S2 specification |

⑩ Special specification: A, BS, D, E, I, LR, MN, N, Q, RE, S, U, W, Y

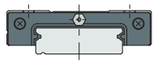


1N=0.102kgf=0.2248lbs.
1mm=0.03937inch

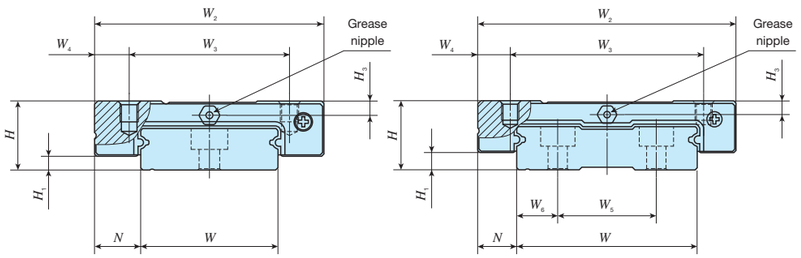
**Wide type**

**MLF • LWLF**

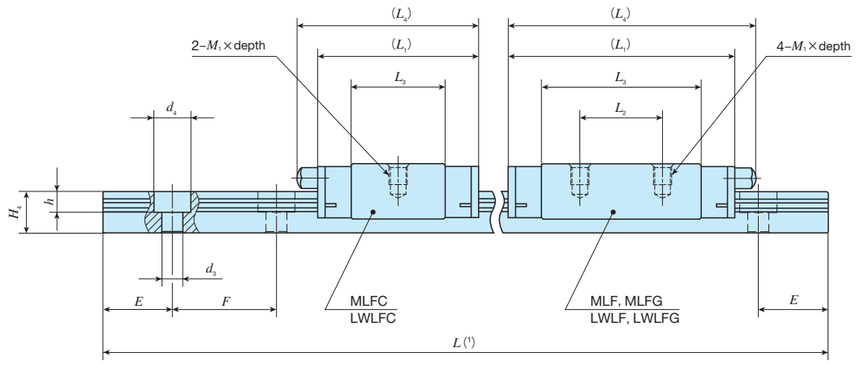
Shape



| Size | 2 | 4 | 6 | 10 | 14 |
|---|---|---|---|---|---|
| | 18 | 24 | 30 | 42 | |

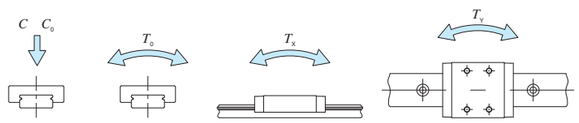



MLFC 42, LWLFC 42
MLF 42, LWLF 42
MLFG 42, LWLFG 42




| Identification number | | Interchangeable | Mass (Ref.) g | | Dimensions of assembly mm | | | Dimensions of slide unit mm | | | | | | | | | Dimensions of track rail mm | | | | | | | | | Appended mounting bolt for track rail (2) mm | Basic dynamic load rating (3) | Basic static load rating (3) | Static moment rating (3) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MLF series | LWLF series (No C-Lube) | | Slide unit | Track rail (per 100 mm) | $H$ | $H_1$ | $N$ | $W_2$ | $W_3$ | $W_4$ | $L_1$ | $L_2$ | $L_3$ | $L_4$ | $M_1$×depth | $H_3$ | $W$ | $H_4$ | $W_5$ | $W_6$ | $d_3$ | $d_4$ | $h$ | $E$ | $F$ | Bolt size× $\ell$ | $C$ | $C_0$ | $T_0$ | $T_x$ | $T_y$ |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | N | N | N·m | N·m | N·m |
| MLFC 30 | LWLFC 30···B | ○ | 70 | 198 | 15 | 3 | 10 | 50 | 35 | 7.5 | 35.5 | – | 20.5 | 40 | M4×4.5 | 3.1 | 30 | 9 | – | – | 4.5 | 8 | 4.5 | 20 | 40 | M4×12 | 3 890 | 4 540 | 69.1 | 15.4<br>107 | 13.0<br>89.9 |
| MLF 30 | | ○ | 111 | | | | | | | | 49.5 | 18 | 34.8 | 54 | | | | | | | | | | | | | 5 970 | 8 440 | 128 | 48.7<br>256 | 40.8<br>215 |
| | LWLF 30···B | ○ | 112 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| – | LWLF 30···BCS | ○ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MLFG 30 | | ○ | 167 | | | | | | | | 68.5 | 35 | 53.8 | 73 | | | | | | | | | | | | | 7 810 | 12 300 | 187 | 100<br>508 | 84.3<br>426 |
| | LWLFG 30···B | ○ | 170 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MLFC 42 | | ○ | 95 | 294 | 16 | 4 | 9 | 60 | 45 | 7.5 | 41.5 | – | 25.7 | 46 | M4×4.5 | 3.2 | 42 | 10 | 23 | 9.5 | 4.5 | 8 | 4.5 | 20 | 40 | M4×12 | 5 440 | 6 810 | 144 | 30.8<br>180 | 25.8<br>151 |
| | LWLFC 42···B | ○ | | | | | | | | | | | 25.3 | | | | | | | | | | | | | | 5 030 | 6 050 | 128 | 24.8<br>164 | 20.8<br>137 |
| MLF 42 | | ○ | 138 | | | | | | | | 55 | 20 | 39.4 | 60 | | | | | | | | | | | | | 7 050 | 9 840 | 209 | 61.3<br>333 | 51.4<br>280 |
| | LWLF 42···B | ○ | 140 | | | | | | | | | | 39 | | | | | | | | | | | | | | | | | | |
| – | LWLF 42···BCS | ○ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MLFG 42 | | ○ | 200 | | | | | | | | 74.5 | 35 | 58.7 | 79 | | | | | | | | | | | | | 9 520 | 15 100 | 321 | 140<br>674 | 117<br>565 |
| | LWLFG 42···B | ○ | 204 | | | | | | | | | | 58.3 | | | | | | | | | | | | | | 9 200 | 14 400 | 305 | 126<br>644 | 106<br>541 |

Notes (1) Track rail lengths $L$ are shown in Table 3.2 on page Ⅱ−11 and Table 3.3 on page Ⅱ−12.
(2) The appended track rail mounting bolts are hexagon socket head bolts equivalent to JIS B 1176. For stainless steel model, stainless steel bolts are appended.
(3) The direction of basic dynamic load rating ($C$), basic static load rating ($C_0$), and static moment rating ($T_0$, $T_x$, $T_y$) are shown in the sketches below.
The upper values of $T_x$ and $T_y$ are for one slide unit and the lower values are for two slide units in close contact.
Remark: The specifications of grease nipple are shown in Table 14 on page Ⅱ−18.




**Example of identification number of assembled set**

| Model code | Dimensions | Part code | | Model code | Material code | Preload symbol | Classification symbol | Interchangeable code | Supplemental code |
|---|---|---|---|---|---|---|---|---|---|
| MLF | G | 42 | C2 | R320 | | | T1 | P | | /D |
| ① | ② | ③ | ④ | ⑤ | ① | ⑥ | ⑦ | ⑧ | ⑨ | ⑩ |

① Model

| | |
|---|---|
| MLF | Wide type |
| LWLF···B | |

② Length of slide unit

| | |
|---|---|
| C | Short |
| No symbol | Standard |
| G | Long |

③ Size: 30, 42

④ Number of slide unit (2)

⑤ Length of track rail (320 mm)

⑥ Material type

| | |
|---|---|
| No symbol | Stainless steel made |
| CS | High carbon steel made |

⑦ Preload amount

| | |
|---|---|
| T0 | Clearance |
| No symbol | Standard |
| T1 | Light preload |

⑧ Accuracy class

| | |
|---|---|
| H | High |
| P | Precision |

⑨ Interchangeable

| | |
|---|---|
| No symbol | Non-interchangeable specification |
| S1 | S1 specification |
| S2 | S2 specification |

⑩ Special specification: A, BS, D, E, Ⅰ, LR, MN N, Q, RE, S, U, W, Y



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

# C-Lube Linear Way MLV

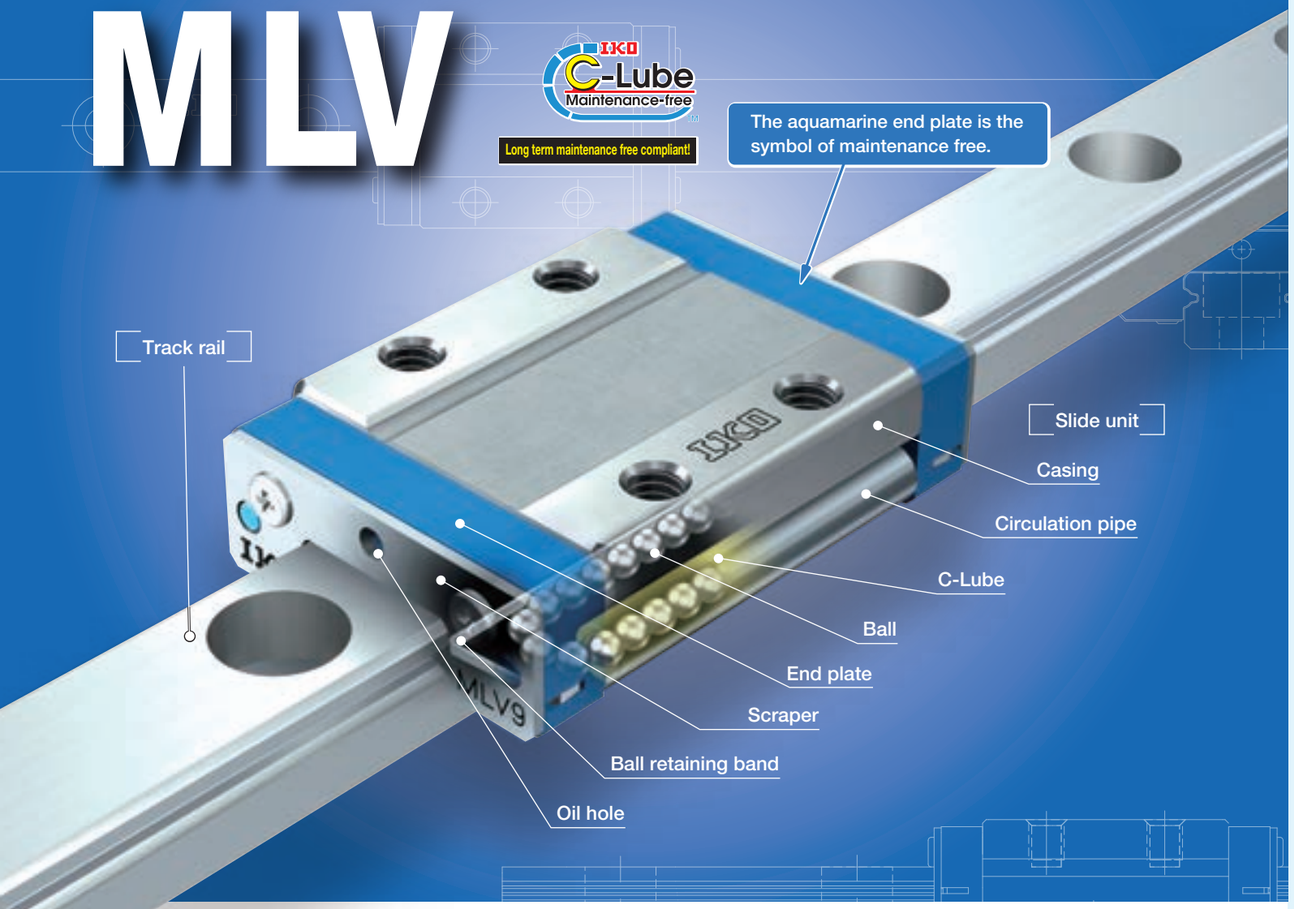




# C-Lube Linear Way MLV

# MLV

Long term maintenance free compliant!




## Points

### 1 Extremely small size realized by simple structure

For details P.I-19

Super small-size linear motion rolling guide produced by two-row four-point contact simple structure and original small sizing technology.

### 2 Long term maintenance free

For details P.I-11

The built-in "C-Lube", the capillary lubricating element, in the ball circulation pipes of the slide unit makes it long term maintenance free.
Lubrication oil is continuously supplied to the surface of rolling elements by surface tension in the contact of the capillary lubricating element surface and rolling elements.

### 3 Cost performance

Preserving the basic performance of C-Lube Linear Way ML as is, lower cost has been achieved by reviewing the structure including the ball recirculation part.

### 4 Ball retained type for easy operation

The slide unit incorporates the ball retaining band, which prevents the ball from dropping down when the slide unit is removed from the track rail. This safety structure brings you an easy operation to the machines/equipment.

### 5 Stainless steel selections for excellent corrosion resistance

For details P.I-43

Stainless steel highly corrosion-resistant is used as the basic specification, so that the products are suitable for applications where rust prevention oil is not preferred, such as in cleanroom environment.



# Identification Number and Specification

## Example of an Identification Number

The specifications of the MLV series are indicated by the identification number. Indicate the identification number, consisting of a model code, dimensions, a part code, a classification symbol, and any supplemental codes for each specification to apply.

| Non-interchangeable specification | 1 | 2 | 3 | 4 | 5 | 6 |
|---|---|---|---|---|---|---|
| Assembled set | MLV | 9 | C1 | R160 | H | /US |

**1 Model** — Model code — Page Ⅱ－43

**2 Size** — Dimensions — Page Ⅱ－43

**3 Number of slide units** — Part code — Page Ⅱ－43

**4 Length of track rail** — Part code — Page Ⅱ－43

**5 Accuracy class** — Classification symbol — Page Ⅱ－44

**6 Special specification** — Supplemental code — Page Ⅱ－44

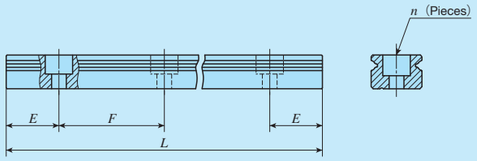


1N=0.102kgf=0.2248lbs.
1mm=0.03937inch

# Identification Number and Specification — Model · Size · Number of Slide Unit · Length of Track Rail —

| | | | |
|---|---|---|---|
| **1 Model** | C-Lube Linear Way MLV (MLV series) | : MLV | |
| **2 Size** | 7, 9, 12 | | |
| **3 Number of slide units** | | : C○ | Indicates the number of slide units assembled on a track rail. |
| **4 Length of track rail** | | : R○ | Indicate the length of track rail in mm. For standard and maximum lengths, see Table 1. |

***Table 1 Standard and maximum lengths of track rail***




unit: mm

| Item \ Identification number | MLV 7 | MLV 9 | MLV 12 |
|---|---|---|---|
| Standard length $L$ ($n$) | 60 ( 4)<br>90 ( 6)<br>120 ( 8)<br>150 (10)<br>180 (12)<br>240 (16) | 60 ( 3)<br>80 ( 4)<br>120 ( 6)<br>160 ( 8)<br>220 (11)<br>280 (14) | 100 ( 4)<br>150 ( 6)<br>200 ( 8)<br>275 (11)<br>350 (14)<br>475 (19) |
| Pitch of mounting holes $F$ | 15 | 20 | 25 |
| $E$ | 7.5 | 10 | 12.5 |
| Standard $E$ dimensions or higher | 4.5 | 4.5 | 5 |
| Standard $E$ dimensions below | 12 | 14.5 | 17.5 |
| Maximum length | 300 | 860 | 1 000 |

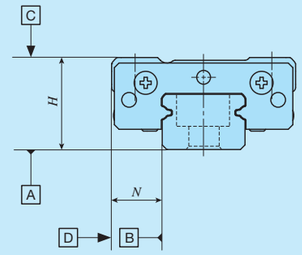
Remark: If not directed, $E$ dimensions for both ends will be the same within the range of standard $E$ dimensions. To change the dimensions, indicate the specified rail mounting hole positions "/E" of special specification. For more information, see page Ⅲ−30.



# —Accuracy Class · Special Specification—

| | | | |
|---|---|---|---|
| **5 Accuracy class** | High | : H | For details of accuracy class, see Table 2. |

***Table 2 Tolerance and allowance***




Unit: mm

| Item \ Class (Classification symbol) | High (H) |
|---|---|
| Dim. $H$ tolerance | ±0.020 |
| Dim. $N$ tolerance | ±0.025 |
| Dim. variation of $H$ (1) | 0.015 |
| Dim. variation of $N$ (1) | 0.020 |
| Parallelism in operation of the slide unit C surface to A surface | See Fig. 1. |
| Parallelism in operation of the slide unit D surface to B surface | See Fig. 1. |

Note (1) It means the size variation between slide units mounted on the same track rail.

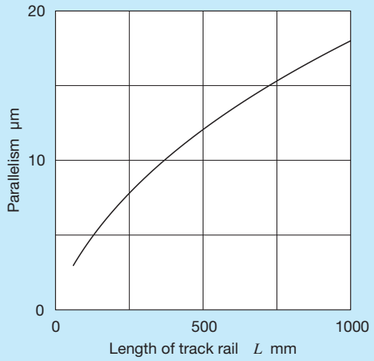



***Fig. 1 Parallelism in operation***

| | | | |
|---|---|---|---|
| **6 Special specification** | /D, /E, /MN, /US, /W○, /YCG | | For applicable special specifications, see Table 3. For combination of multiple special specifications, see Table 4. For details of special specifications, see page Ⅲ−29. |

***Table 3 Application of special specifications***

| Special specification | Supplemental code | Size 7 | Size 9 | Size 12 |
|---|---|---|---|---|
| Opposite reference surfaces arrangement | /D | ○ | ○ | ○ |
| Specified rail mounting hole positions | /E | ○ | ○ | ○ |
| Without track rail mounting bolt | /MN | ○ | ○ | ○ |
| End seal | /US | ○ | ○ | ○ |
| A group of multiple assembled sets | /W○ | ○ | ○ | ○ |
| Specified grease (Low Dust-Generation Grease for Clean Environment CG2) | /YCG | ○ | ○ | ○ |

***Table 4 Combination of supplemental codes***

| | | | | | |
|---|---|---|---|---|---|
| E | – | | | | |
| MN | ○ | ○ | | | |
| US | ○ | ○ | ○ | | |
| W | ○ | – | ○ | ○ | |
| YCG | ○ | ○ | ○ | ○ | ○ |
| | D | E | MN | US | W |

Remarks: 1. The combination of "−" shown in the table is not available.
2. When using multiple types for combination, please indicate by arranging the symbols in alphabetical order.

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

# Preload

Preload for the MLV series is adjusted to have subtle clearance or minimal amount of preload.

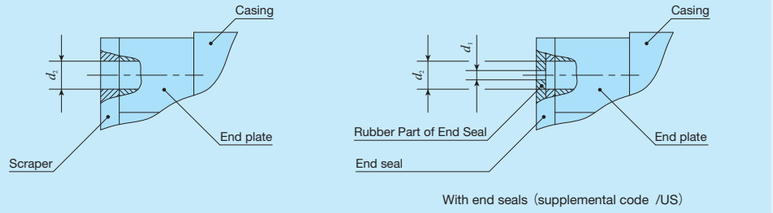
# Lubrication

Lithium-soap base grease (MULTEMP PS No.2 [KYODO YUSHI CO., LTD.]) is pre-packed in MLV series. Additionally, MLV series has C-Lube placed in the recirculation part of balls, so that the interval for reapplicating lubricant can be extended and maintenance works such as grease job can be reduced significantly.
MLV series have an oil hole. (See Table 5)
Dedicated supplying equipment (miniature greasers) fit to oil holes are also available (MG10B/MT2). To order these parts, see Table 13 on Page Ⅲ-23.

# Dust Protection

No end seal is provided for the MLV series. For applications in other than clean environment, cover the whole unit with a protective case, etc. to prevent harmful foreign substances such as dust and particles from entering.
We can also attach end seals (supplemental code "/US") on both sides of the slide unit. If needed, indicate the supplemental code.
Even with the use of the end seals to prevent dust from entering, if large amount of contaminants or dust are floating, or if large particles of foreign substances such as chips or sand may adhere to the track rail, it is recommended to attach a protective cover to the linear motion mechanism.

***Table 5 Oil hole specifications***




unit: mm

| Size | $d_1$ | $d_2$ |
|---|---|---|
| 7 | 0.5 | 1.2 |
| 9 | | 1.5 |
| 12 | | 2 |



# Precaution for Use

### ❶ Handling

A strong grip on the circulation pipes of the MLV series slide unit, will distort the circulation path, which may affect the operating performance; handle with care.

### ❷ Mounting surface, reference mounting surface and typical mounting structure

When mounting the MLV series, properly align the reference mounting surfaces B and D of the track rail and the slide unit with the reference mounting surface of the table and the bed and fix them. (See Fig.2)
The reference mounting surfaces B and D and mounting surfaces A and C are precisely ground. Machining the mounting surface of the table and bed, such as machine or device, to high accuracy and mounting them properly will ensure stable linear motion with high accuracy.
Reference mounting surface of the slide unit is the upper surface when you see the IKO mark on the C surface in normal position. The track rail reference mounting surface is identified by locating the IKO mark on the top surface of the track rail. It is the side surface above the mark (in the direction the arrow point). (See Fig.3)

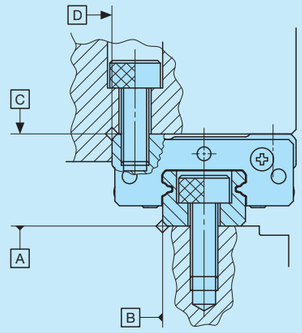



***Fig. 2 Reference mounting surface and typical mounting structure***

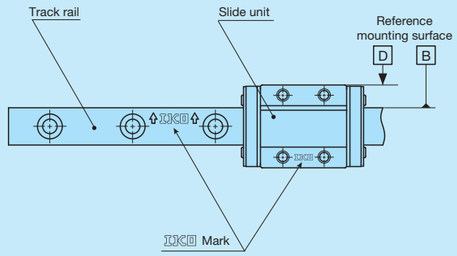



***Fig. 3 Reference mounting surface***

### ❸ Shoulder height and corner radius of the reference mounting surface

For the opposite corner of the mating reference mounting, it is recommended to have relieved fillet as indicated in Fig. 4. Recommended value for the shoulder height on the mating side is indicated in Table 6.

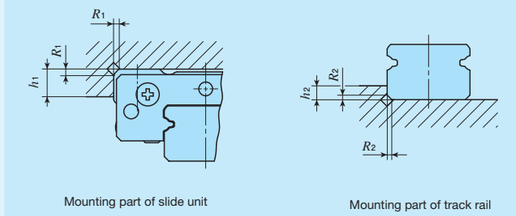



***Fig. 4 Corner of the mating reference mounting***

***Table 6 Shoulder height and corner radius of the reference mounting surface***

| Size | Mounting part of slide unit | | Mounting part of track rail | |
|---|---|---|---|---|
| | Shoulder height $h_1$ | Corner radius $R_1$ (maximum) | Shoulder height $h_2$ | Corner radius $R_2$ (maximum) |
| 7 | 2.5 | 0.2 | 1.2 | 0.2 |
| 9 | 3 | 0.2 | 1.5 | 0.2 |
| 12 | 4 | 0.2 | 2.5 | 0.2 |

### ❹ Tightening torque for fixing screw

Typical tightening torque for mounting of the MLV series to the steel mating member material is indicated in Table 7. When vibration and shock of the machine or device are large, fluctuating load is large, or moment load is applied, fix it by using the torque 1.2 to 1.5 times larger than the value indicated in the table as necessary. If the mating member material is cast iron or aluminum alloy, reduce the tightening torque depending on the strength characteristics of the mating member material.

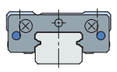
***Table 7 Tightening torque for fixing screw***

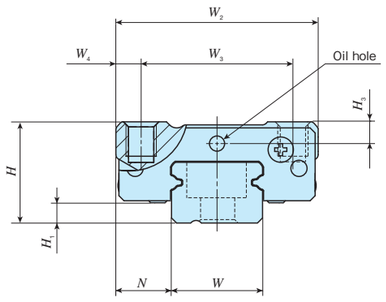
| Bolt size | Tightening torque N・m |
|---|---|
| | Stainless steel-made screw |
| M2×0.4 | 0.31 |
| M3×0.5 | 1.1 |

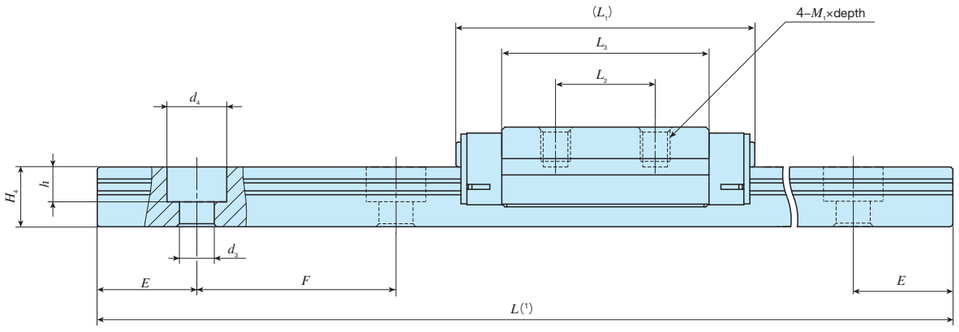
Remark: The tightening torque is calculated based on the property division A2-70.



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

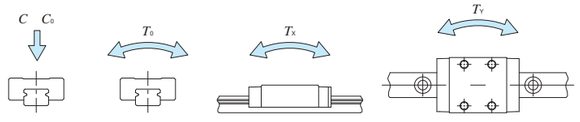
| Standard type | | | |
|---|---|---|---|
| Shape | MLV  | | |
| Size | 7 | 9 | 12 |




| Identification number | Mass (Ref.) g | | Dimensions of assembly mm | | | Dimensions of slide unit mm | | | | | | | | | Dimensions of track rail mm | | | | | | | Appended mounting bolt for track rail (2) mm | Basic dynamic load rating (3) | Basic static load rating (3) | Static moment rating (3) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Slide unit | Track rail (Per 100 mm) | $H$ | $H_1$ | $N$ | $W_2$ | $W_3$ | $W_4$ | $L_1$ | $L_2$ | $L_3$ | $M_1$×depth | $H_3$ | | $W$ | $H_4$ | $d_3$ | $d_4$ | $h$ | $E$ | $F$ | Bolt size× $\ell$ | $C$ N | $C_0$ N | $T_0$ N·m | $T_X$ N·m | $T_Y$ N·m |
| MLV 7 | 8.4 | 22 | 8 | 1.5 | 5 | 17 | 12 | 2.5 | 23.5 | 8 | 14.3 | M2×2 | 1.5 | | 7 | 5 | 2.4 | 4.2 | 2.3 | 7.5 | 15 | M2×6 | 1 330 | 1 890 | 6.9 | 4.7<br>28.2 | 3.9<br>23.6 |
| MLV 9 | 17 | 35 | 10 | 2 | 5.5 | 20 | 15 | 2.5 | 30 | 10 | 20.8 | M3×3 | 2.2 | | 9 | 6 | 3.5 | 6 | 3.5 | 10 | 20 | M3×8 | 1 810 | 2 760 | 12.8 | 9.1<br>51.1 | 7.6<br>42.9 |
| MLV 12 | 31 | 65 | 13 | 3 | 7.5 | 27 | 20 | 3.5 | 34 | 15 | 21.6 | M3×3.5 | 2.7 | | 12 | 8 | 3.5 | 6.5 | 4.5 | 12.5 | 25 | M3×8 | 3 330 | 4 290 | 26.6 | 15.4<br>93.1 | 12.9<br>78.2 |

Notes (1) Track rail lengths $L$ are shown in Table 1 on page Ⅱ−43.
(2) The appended track rail mounting bolts are stainless steel hexagon socket head bolts equivalent to JIS B 1176.
(3) The direction of basic dynamic load rating ($C$), basic static load rating ($C_0$), and static moment rating ($T_0$, $T_X$, $T_Y$) are shown in the sketches below.
The upper values of $T_X$ and $T_Y$ are for one slide unit and the lower values are for two slide units in close contact.
Remark: The specification of oil holes is shown in Table 5 on page Ⅱ−45.








**Example of identification number of assembled set**

| Model code | Dimensions | Part code | | Classification symbol | Supplemental code |
|---|---|---|---|---|---|
| MLV | 7 | C2 | R120 | H | /US |
| ① | ② | ③ | ④ | ⑤ | ⑥ |

① Model
MLV: C-Lube Linear Way MLV

② Size
7, 9, 12

③ Number of slide units (2)

④ Length of Track Rail (120mm)

⑤ Accuracy class
H: High

⑥ Special specification
D, E, MN, US, W, YCG

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

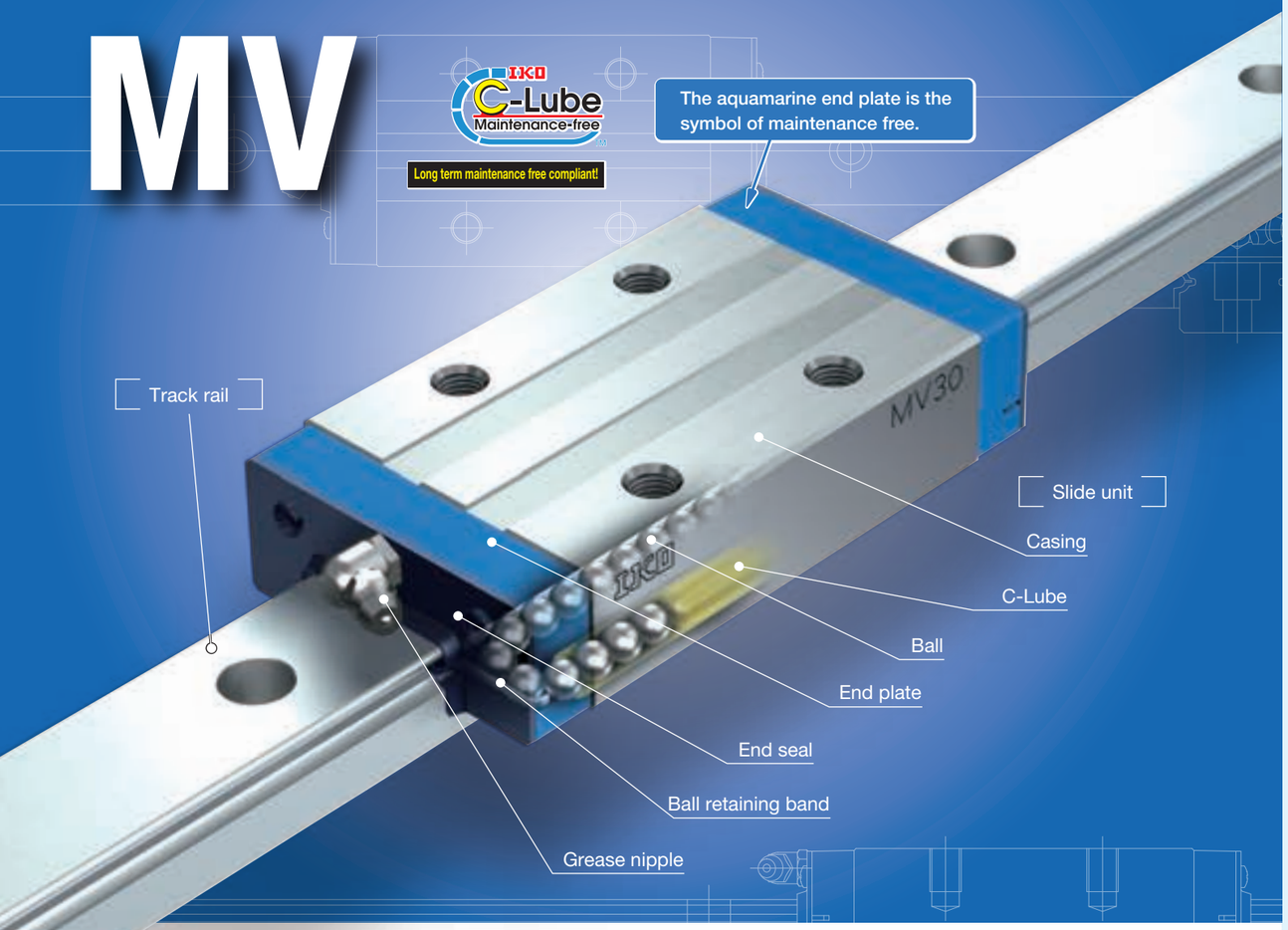
# C-Lube Linear Way MV





# C-Lube Linear Way MV

# MV




## *Points*

### 1 Ultimate ball type linear motion rolling guide pursuing extra low profile and extra light weight

For details ➔ P.I-19

A linear motion rolling guide with extra low profile and extra light weight, achieved only because of the simple mechanism of two-row four-point contact structure.

### 2 High load capacity

Despite its extra low profile and extra light weight, it has the maximum load rating among the ball types and contributes to long life and increases safety of machine or device.

### 3 Long term maintenance free

For details ➔ P.I-11

The built-in "C-Lube", the capillary lubricating element, in the ball circulation paths of the slide unit makes it long term maintenance free.
Lubrication oil is continuously supplied to the surface of rolling elements by surface tension in the contact of the capillary lubricating element surface and rolling elements.

### 4 Ball retained type for easy operation

The slide unit incorporates the ball retaining band, which prevents the ball from dropping down when the slide unit is removed from the track rail. This safety structure brings you an easy operation to the machines/equipment.



# Designation of Identification Number and Specification

## Example of an Identification Number

The specifications of the MV series are indicated by the identification number.
Indicate the identification number, consisting of a model code, dimensions, a part code, a preload symbol, a classification symbol, and any supplemental codes for each specification to apply.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|---|
| Assembled set | MV | 20 | C1 | R1000 | $T_1$ | P | /FU |

1 **Model** — Model code — Page Ⅱ－53

2 **Size** — Dimensions — Page Ⅱ－53

3 **Number of slide units** — Part code — Page Ⅱ－53

4 **Length of track rail** — Part code — Page Ⅱ－53

5 **Preload amount** — Preload symbol — Page Ⅱ－53

6 **Accuracy class** — Classification symbol — Page Ⅱ－54

7 **Special specification** — Supplemental code — Page Ⅱ－55



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

# Identification Number and Specification – Model · Size · Number of Slide Unit · Length of Track Rail · Preload amount –

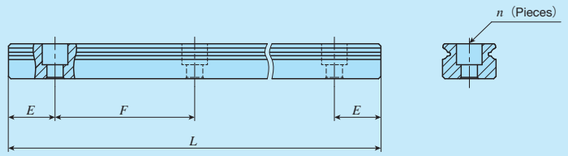
**1 Model**
C-Lube Linear Way MV : MV
(MV series)

**2 Size**
20, 25, 30

**3 Number of slide units** : C○
Indicates the number of slide units assembled on a track rail.

**4 Length of track rail** : R○
Indicate the length of track rail in mm.
For standard and maximum lengths, see Table 1.

*Table 1 Standard and maximum lengths of track rail*




unit: mm

| Item \ Identification number | MV 20 | MV 25 | MV 30 |
|---|---|---|---|
| Standard length $L$ ($n$) | 220 ( 4)<br>280 ( 5)<br>340 ( 6)<br>460 ( 8)<br>640 (11)<br>820 (14)<br>1 000 (17)<br>1 240 (21) | 220 ( 4)<br>280 ( 5)<br>340 ( 6)<br>460 ( 8)<br>640 (11)<br>820 (14)<br>1 000 (17)<br>1 240 (21)<br>1 600 (27) | 280 ( 4)<br>440 ( 6)<br>600 ( 8)<br>760 (10)<br>1 000 (13)<br>1 240 (16)<br>1 640 (21)<br>2 040 (26)<br>2 520 (32)<br>3 000 (38) |
| Pitch of mounting holes $F$ | 60 | 60 | 80 |
| $E$ | 20 | 20 | 20 |
| Standard $E$ dimensions or higher | 8 | 9 | 9 |
| Standard $E$ dimensions below | 38 | 39 | 49 |
| Maximum length (1) | 2 200<br>(2 980) | 2 980 | 3 000 |

Note (1) Length up to the value in ( ) can be produced. If needed, please contact IKO.
Remark: If not directed, $E$ dimensions for both ends will be the same within the range of $E$ reference dimensions. To change the dimensions, indicate the specified rail mounting hole positions "/E" of special specification. For more information, see page Ⅲ−30.

**5 Preload amount**
Clearance : Tc
Standard : No symbol
Light preload : T1
For details of the preload amount, see Table 2.

*Table 2 Preload amount*

| Item / Preload type | Preload symbol | Preload amount N | Operational conditions |
|---|---|---|---|
| Clearance | Tc | 0(1) | · Very light motion<br>· To absorb slight errors |
| Standard | (No symbol) | 0(2) | · Light and precise motion |
| Light preload | T1 | 0.02$C_0$ | · Almost no vibrations<br>· Load is evenly balanced<br>· Light and precise motion |

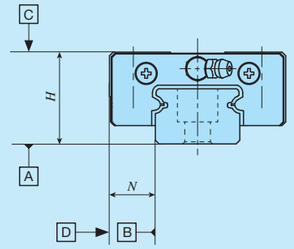
Notes (1) Clearance of about 10 μm
(2) Indicates zero or minimal amount of preload.
Remark: $C_0$ indicates the basic static load rating.



## –Accuracy Class–

**6 Accuracy class**
Ordinary : No symbol
High : H
Precision : P
Super precision : SP
For details of accuracy class, see Table 3.
For applicable combinations of accuracy class and preload amount, see Table 4.

*Table 3 Tolerance and allowance*




unit: mm

| Item \ Class (Classification symbol) | Ordinary (No symbol) | High (H) | Precision (P) | Super precision (SP) |
|---|---|---|---|---|
| Dim. $H$ tolerance | ±0.080 | ±0.040 | ±0.020 | ±0.010 |
| Dim. $N$ tolerance | ±0.100 | ±0.050 | ±0.025 | ±0.015 |
| Dim. variation of $H$ (1) | 0.025 | 0.015 | 0.007 | 0.005 |
| Dim. variation of $N$ (1) | 0.030 | 0.020 | 0.010 | 0.007 |
| Parallelism in operation of the slide unit C surface to A surface | See Fig. 1. | | | |
| Parallelism in operation of the slide unit D surface to B surface | See Fig. 1. | | | |

Note (1) It means the size variation between slide units mounted on the same track rail.

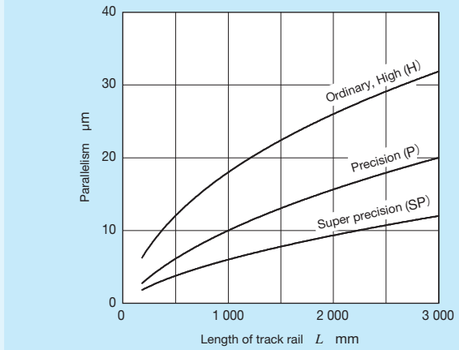



*Fig. 1 Parallelism in operation*

*Table 4 Combination of accuracy class and preload*

| Item (preload symbol) \ Classification (Classification symbol) | Ordinary (No symbol) | High (H) | Precision (P) | Super precision (SP) |
|---|---|---|---|---|
| Clearance (Tc) | ○ | – | – | – |
| Standard (no symbol) | ○ | ○ | ○ | ○ |
| Light preload (T1) | – | ○ | ○ | ○ |



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

## 7 Special specification

/A, /D, /E, /F, /I, /L○, /LF○, /MA, /N, /U, /V○, /W○, /YCG, /Z○

For applicable special specifications, see Table 5.
For combination of multiple special specifications, see Table 6.
For details of special specifications, see page Ⅲ−29.

*Table 5 Application of special specifications*

| Special specification | Supplemental code |
|---|---|
| Butt-jointing track rails | /A |
| Opposite reference surfaces arrangement | /D |
| Specified rail mounting hole positions | /E |
| Caps for rail mounting holes | /F |
| Inspection sheet | /I |
| Black chrome surface treatment | /L○ |
| Fluorine black chrome surface treatment | /LF○ |
| With track rail mounting bolt | /MA |
| No seal | /N |
| Under seal | /U |
| Double seals | /V○ |
| A group of multiple assembled sets | /W○ |
| Specified grease (IKO Low Dust-Generation Grease for Clean Environment CG2) | /YCG |
| Scraper | /Z○ |

*Table 6 Combination of supplemental codes*

| | A | D | E | F | I | L | LF | MA | N | U | V | W | YCG |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| D | ○ | | | | | | | | | | | | |
| E | − | − | | | | | | | | | | | |
| F | ○ | ○ | ○ | | | | | | | | | | |
| I | ○ | ○ | ○ | ○ | | | | | | | | | |
| L | ○ | ○ | ○ | ○ | ○ | | | | | | | | |
| LF | ○ | ○ | ○ | ○ | ○ | − | | | | | | | |
| MA | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | |
| N | ○ | ○ | ○ | − | ○ | ○ | ○ | ○ | | | | | |
| U | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | − | | | | |
| V | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | − | ○ | | | |
| W | ○ | ○ | − | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | |
| YCG | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | |
| Z | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | − | ○ | ○ | ○ | ○ |

Remarks: 1. The combination of "−" shown in the table is not available.
2. When using multiple types for combination, please indicate by arranging the symbols in alphabetical order.



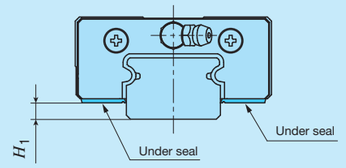


*Table 7 Track rail mounting bolt size (Supplemental code /MA)*

| Size | Bolt size for track rail |
|---|---|
| 20 | M5×14 |
| 25 | M6×20 |
| 30 | M6×20 |

Remark: Hexagon socket head bolts equivalent to JIS B 1176.

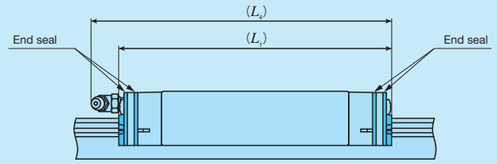
*Table 8 $H_1$ dimension with under seal (Supplemental code: /U)*




unit: mm

| Size | $H_1$ |
|---|---|
| 20 | 4 |
| 25 | 4 |
| 30 | 4.5 |

*Table 9 Dimension of slide unit with double end seals (Supplemental code /V /VV)*

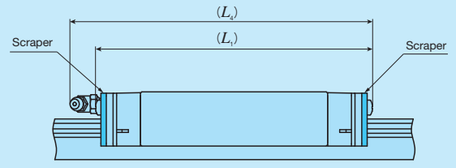



unit: mm

| Size | $L_1$ | $L_4$ |
|---|---|---|
| 20 | 81 | 83 |
| 25 | 101 | 111 |
| 30 | 125 | 141 |

Remark: The dimensions of the slide unit with double end seals at both ends are indicated.

*Table 10 Dimension of slide unit with scrapers (Supplemental code: /Z /ZZ)*




unit: mm

| Size | $L_1$ | $L_4$ |
|---|---|---|
| 20 | 82 | 84 |
| 25 | 103 | 112 |
| 30 | 127 | 142 |

Remark: The dimensions of the slide unit with scraper at both ends are indicated.

MV

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

# Lubrication

Lithium-soap base grease with extreme-pressure additive (Alvania EP grease 2 [Shell Lubricants Japan K.K.]) is pre-packed in MV series. Additionally, MV series has C-Lube placed in the recirculation part of balls, so that the interval for reapplicating lubricant can be extended and maintenance works such as grease job can be reduced significantly.
MV series has grease nipple as indicated in Table 11. Supply nozzles fit to each shapes of grease nipple are also available. When these parts are desired, see Tables 14.1 and 14.2 on page Ⅲ-23 and Table 15 on page Ⅲ-24 to order.

# Dust Protection

MV Series slide units are equipped with end seals as standard for dust protection. However, if there is a great deal of contaminants or dust floating, or if large particles of foreign substances such as cutting chips or sand may adhere to the track rail, it is recommended to mount a protective cover on the linear motion mechanism.
It is also effective to use special options such as caps for rail mounting holes, under seals, double end seals and scrapers, depending on the use environment.

***Table 11 Parts for lubrication***

| Size | Grease nipple type (1) | Applicable supply nozzle type | Bolt size of female threads for piping |
|---|---|---|---|
| 20 | A-M3 | A-5120V A-5240V<br>B-5120V B-5240V | – |
| 25 | B-M4 | A-8120V B-8120V | M4 |
| 30 | B-M6 | Grease gun available on the market | M6 |

Note (1) For grease nipple specification, see Table 14.1 and 14.2 on page Ⅲ－23.
Remark: Stainless steel grease nipple is also available. If needed, please contact IKO.



# Precaution for Use

### ❶ Mounting surface, reference mounting surface and typical mounting structure

When mounting the MV series, properly align the reference mounting surface B and D of the track rail and slide unit with the reference mounting surface of the table and bed and fix them. (See Fig.2)
The reference mounting surfaces B and D and mounting surfaces A and C are precisely ground. Machining the mounting surface of the table and bed, such as machine or device, to high accuracy and mounting them properly will ensure stable linear motion with high accuracy.
Reference mounting surface of the slide unit is the opposite side of the IKO mark. The track rail reference mounting surface is identified by locating the IKO mark on the top surface of the track rail. It is the side surface above the mark (in the direction of the arrow). (See Fig.3)

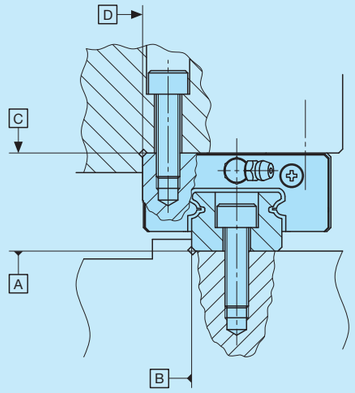



***Fig. 2 Reference mounting surface and typical mounting structure***

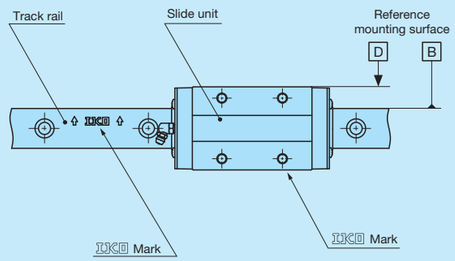



***Fig. 3 Reference mounting surface***

### ❷ Shoulder height and corner radius of the reference mounting surface

For the opposite corner of the mating reference mounting, it is recommended to have relieved fillet as indicated in Fig.4. Recommended value for the shoulder height and corner radius on the mating side is indicated in Table 12.

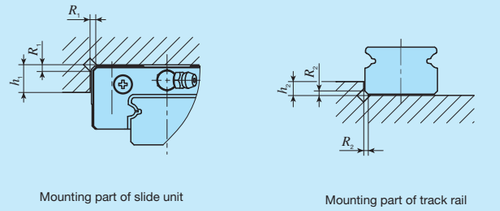



***Fig. 4 Corner of the mating reference mounting***

***Table 12 Shoulder height and corner radius of the reference mounting surface***

| Size | Mounting part of slide unit | | Mounting part of track rail | |
|---|---|---|---|---|
| | Shoulder height $h_1$ | Corner radius $R_1$ (maximum) | Shoulder height $h_2$ | Corner radius $R_2$ (maximum) |
| 20 | 5 | 0.2 | 3 | 0.5 |
| 25 | 5 | 0.5 | 3 | 0.5 |
| 30 | 5 | 0.5 | 3 | 0.5 |

### ❸ Tightening torque for fixing screw

Typical tightening torque for mounting of the MV series to the steel mating member material is indicated in Table 13. When vibration and shock of the machine or device are large, fluctuating load is large, or moment load is applied, fix it by using the torque 1.2 to 1.5 times larger than the value indicated in the table as necessary. If the mating member material is cast iron or aluminum alloy, reduce the tightening torque depending on the strength characteristics of the mating member material.

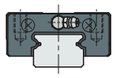
***Table 13 Tightening torque for fixing screw***

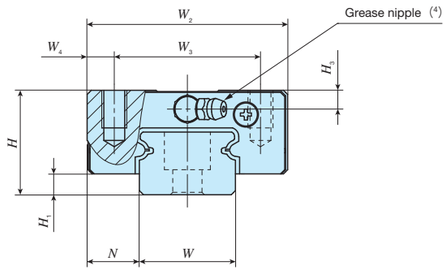
| Bolt size | Tightening torque N・m | |
|---|---|---|
| | High carbon steel-made screw | Stainless steel-made screw |
| M5×0.8 | 8.0 | 5.0 |
| M6×1 | 13.6 | 8.5 |
| M8×1.25 | 32.7 | 20.4 |

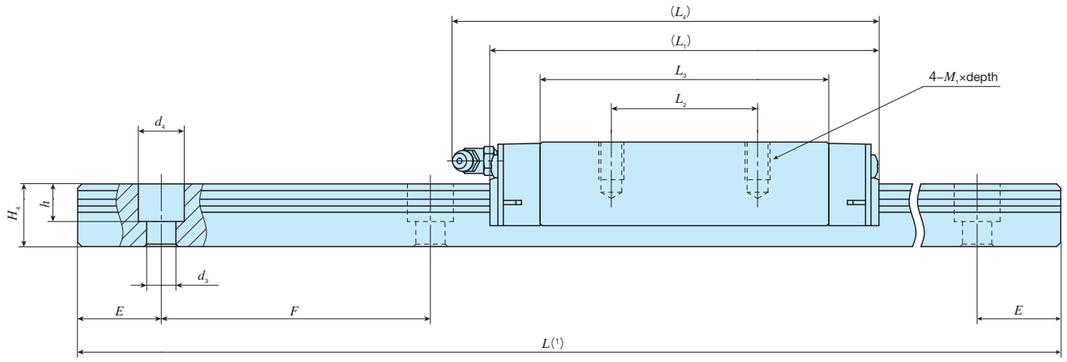
Remark: The tightening torque is calculated based on strength division 12.9 and property division A2-70.

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

# IKO C-Lube Linear Way MV

| Standard type | | | |
|---|---|---|---|
| Shape | MV  | | |
| Size | 20 | 25 | 30 |

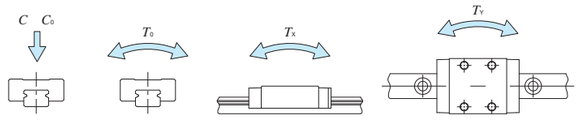



| Identification number | Mass (Ref.) | | Dimensions of assembly mm | | | Dimensions of slide unit mm | | | | | | | | | Dimensions of track rail mm | | | | | | | Appended mounting bolt for track rail (2) mm | Basic dynamic load rating (3) | Basic static load rating (3) | Static moment rating (3) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Slide unit kg | Track rail kg/m | $H$ | $H_1$ | $N$ | $W_2$ | $W_3$ | $W_4$ | $L_1$ | $L_2$ | $L_3$ | $L_4$ | $M_1$×depth | $H_3$ | $W$ | $H_4$ | $d_3$ | $d_4$ | $h$ | $E$ | $F$ | Bolt size× $\ell$ | $C$ N | $C_0$ N | $T_0$ N·m | $T_X$ N·m | $T_Y$ N·m |
| MV 20 | 0.18 | 1.66 | 20 | 5 | 11 | 42 | 32 | 5 | 73 | 32 | 51.2 | 76 | M5×6 | 3.5 | 20 | 12 | 6 | 9.5 | 8.5 | 20 | 60 | M5×14 | 19 600 | 25 600 | 138 | 115<br>624 | 102<br>555 |
| MV 25 | 0.36 | 2.37 | 25 | 5 | 12.5 | 48 | 35 | 6.5 | 94 | 35 | 69.1 | 103 | M6×9 | 4.5 | 23 | 15 | 7 | 11 | 9 | 20 | 60 | M6×20 | 31 900 | 42 500 | 264 | 260<br>1 320 | 230<br>1 170 |
| MV 30 | 0.72 | 3.33 | 30 | 6 | 16 | 60 | 40 | 10 | 116 | 40 | 86.6 | 126 | M8×11 | 5 | 28 | 17 | 7 | 11 | 9 | 20 | 80 | M6×20 | 46 300 | 61 800 | 468 | 467<br>2 350 | 414<br>2 090 |

Notes (1) Track rail lengths $L$ are shown in Table 1 on page Ⅱ−53.
(2) Track rail mounting bolts are not appended. Hexagon socket head bolts of JIS B 1176 with strength division 12.9 are recommended.
(3) The direction of basic dynamic load rating ($C$), basic static load rating ($C_0$), and static moment rating ($T_0$, $T_X$, $T_Y$) are shown in the sketches below. The upper values of $T_X$ and $T_Y$ are for one slide unit and the lower values are for two slide units in close contact.
(4) For specifications of grease nipple, see Table 11 on page Ⅱ−57.

1N=0.102 kgf




## Example of identification number of assembled set

| Model code | Dimensions | Part code | | Preload symbol | Classification symbol | Supplemental code |
|---|---|---|---|---|---|---|
| MV | 25 | C2 | R1000 | T1 | SP | /FU |
| ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |

**① Model**

| | |
|---|---|
| MV | C-Lube Linear Way MV |

**② Size**
20, 25, 30

**③ Number of slide units (2)**

**④ Length of Track Rail (1000mm)**

**⑤ Preload amount**

| | |
|---|---|
| TC | Clearance |
| No symbol | Standard |
| T1 | Light preload |

**⑥ Accuracy class**

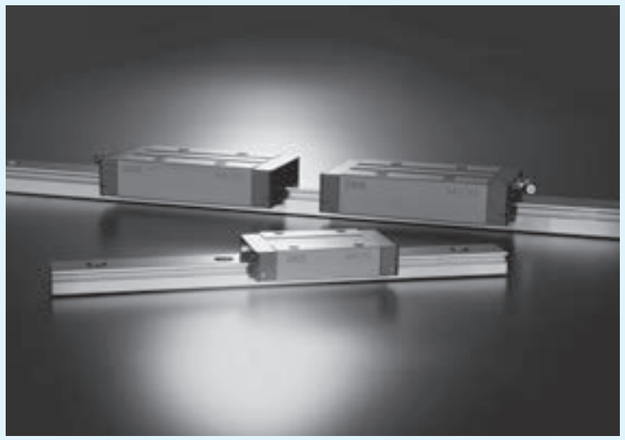
| | |
|---|---|
| No symbol | Ordinary |
| H | High |
| P | Precision |
| SP | Super precision |

**⑦ Special specification**
A, D, E, F, I, L, LF, MA, N, U, V, W, YCG, Z

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

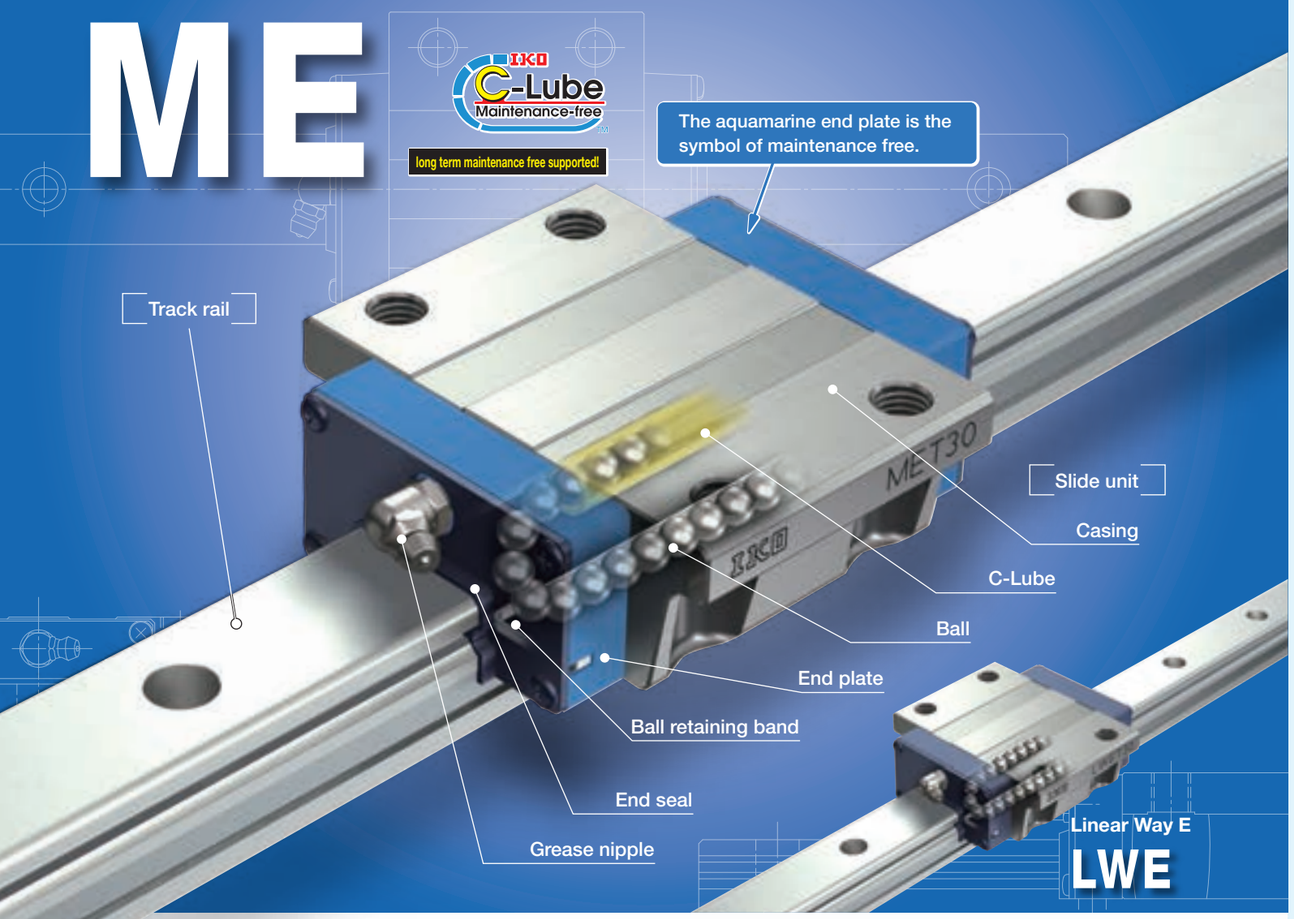
# C-Lube Linear Way ME
# Linear Way E





# C-Lube Linear Way ME

# ME




## Points

### Compact and versatile series with utility

1

Versatile linear motion rolling guide that has achieved utility pursuing compactness in every aspect.

### Wide range of variations for your needs

For details P.I-26

2

As two shapes of slide unit, flange type and block type (with small width) and 3 types with different slide unit length with same section are available, you can select an optimal product for the specifications of your machine and device.

### Stainless steel selections superior in corrosion resistance are listed on lineup.

For details P.I-43

3

Products made of stainless steel are highly resistant to corrosion, so that they are suitable for applications where rust prevention oil is not preferred, such as in cleanroom environment.

### Achieved smooth and quiet motion Low Decibel Linear Way E

4

Due to resin separator built-in balls, Low Decibel Linear Way E achieved smooth and quiet motion by eliminating of direct contact of balls each other. This feature reduces noise level in factory and contributes to a human-friendly environment.



# Identification Number and Specification

## Example of an identification number

The specifications of ME and LWE (···Q) series are indicated by the identification number. Indicate the identification number, consisting of a model code, dimensions, a part code, a material code, a preload symbol, a classification symbol, an interchangeable code, and any supplemental codes for each specification to apply.

| | 1 | 2 | 3 | 4 | 5 | 1 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Non-interchangeable specification** | | | | | | | | | | | |
| Assembled set | ME | C | 20 | C1 | R1000 | | | $T_1$ | P | | /FU |
| **Interchangeable specification** | | | | | | | | | | | |
| Single slide unit | ME | C | 20 | C1 | | | | $T_1$ | P | S1 | /U |
| Single track rail (1) | LWE | | 20 | | R1000 | | | | P | S1 | /F |
| Assembled set | ME | C | 20 | C1 | R1000 | | | $T_1$ | P | S1 | /FU |

1 **Model** — Model code Page Ⅱ－65

2 **Length of slide unit** — Model code Page Ⅱ－65

3 **Size** — Dimensions Page Ⅱ－65

4 **Number of slide units** — Part code Page Ⅱ－65

5 **Length of track rail** — Part code Page Ⅱ－65

6 **Material type** — Material code Page Ⅱ－65

7 **Preload amount** — Preload symbol Page Ⅱ－68

8 **Accuracy class** — Classification symbol Page Ⅱ－68

9 **Interchangeable** — Interchangeable code Page Ⅱ－69

10 **Special specification** — Supplemental code Page Ⅱ－69

Note (1) Indicate "LWE" for the model code of the single track rail regardless of the series and the combination of slide unit model.



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

# Identification Number and Specification —Model · Length of Slide Unit · Size ·

## 1 Model

| | | |
|---|---|---|
| C-Lube Linear Way ME (ME series) | Flange type mounting from bottom | : ME |
| | Flange type mounting from top | : MET |
| | Block type mounting from top | : MES |
| Linear Way E (1) (LWE series) | Flange type mounting from bottom | : LWE |
| | Flange type mounting from top | : LWET |
| | Block type mounting from top | : LWES |
| Low Decibel Linear Way E (1) (LWE···Q series) | Flange type mounting from bottom | : LWE···Q |
| | Flange type mounting from top | : LWET···Q |
| | Block type mounting from top | : LWES···Q |

For applicable models and sizes, see Table 1.
Indicate "LWE" for the model code of single track rail regardless of the series and the slide unit model to be combined.

Note (1) This model has no built-in C-Lube.

## 2 Length of slide unit

| | | |
|---|---|---|
| Short | : C | For applicable models and sizes, see Table 1. |
| Standard | : No symbol | |
| Long | : G | |

## 3 Size

15,20,25,30,35,45 — For applicable models and sizes, see Table 1.

## 4 Number of slide units

: C○ — For an assembled set, indicates the number of slide units assembled on a track rail. For a single slide unit, only "C1" is specified.

## 5 Length of track rail

: R○ — Indicate the length of track rail in mm. For standard and maximum lengths, see Tables 2.1 and 2.2.

## 6 Material type

| | | |
|---|---|---|
| High carbon steel made | : No symbol | For applicable models and sizes, see Table 1. |
| Stainless steel made (2) | : SL | |

Note (2) Mount a standard grease nipple (brass) on the stainless steel type, too.
Stainless steel grease nipple is also available. If needed, please contact IKO.



# Number of Slide Unit · Length of Track Rail · Material—

*Table 1 Models and sizes of ME and LWE (···Q) series*

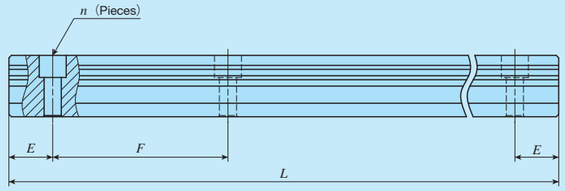
| Material | Shape | Slide unit Length | Model | Size 15 | 20 | 25 | 30 | 35 | 45 |
|---|---|---|---|---|---|---|---|---|---|
| High carbon steel made | Flange type mounting from bottom | Short | MEC | ○ | ○ | ○ | ○ | ○ | – |
| | | | LWEC | ○ | ○ | ○ | ○ | ○ | – |
| | | Standard | ME | ○ | ○ | ○ | ○ | ○ | ○ |
| | | | LWE | ○ | ○ | ○ | ○ | ○ | ○ |
| | | | LWE···Q | ○ | ○ | ○ | ○ | ○ | – |
| | | Long | MEG | ○ | ○ | ○ | ○ | – | – |
| | | | LWEG | ○ | ○ | ○ | ○ | – | – |
| | Flange type mounting from top | Short | METC | ○ | ○ | ○ | ○ | ○ | – |
| | | | LWETC | ○ | ○ | ○ | ○ | ○ | – |
| | | Standard | MET | ○ | ○ | ○ | ○ | ○ | ○ |
| | | | LWET | ○ | ○ | ○ | ○ | ○ | ○ |
| | | | LWET···Q | ○ | ○ | ○ | ○ | ○ | – |
| | | Long | METG | ○ | ○ | ○ | ○ | – | – |
| | | | LWETG | ○ | ○ | ○ | ○ | – | – |
| | Block type mounting from top | Short | MESC | ○ | ○ | ○ | ○ | ○ | – |
| | | | LWESC | ○ | ○ | ○ | ○ | ○ | – |
| | | Standard | MES | ○ | ○ | ○ | ○ | ○ | ○ |
| | | | LWES | ○ | ○ | ○ | ○ | ○ | ○ |
| | | | LWES···Q | ○ | ○ | ○ | ○ | ○ | – |
| | | Long | MESG | ○ | ○ | ○ | ○ | – | – |
| | | | LWESG | ○ | ○ | ○ | ○ | – | – |
| Stainless steel made | Flange type mounting from bottom | Short | MEC···SL | ○ | ○ | ○ | ○ | – | – |
| | | | LWEC···SL | ○ | ○ | ○ | ○ | – | – |
| | | Standard | ME···SL | ○ | ○ | ○ | ○ | – | – |
| | | | LWE···SL | ○ | ○ | ○ | ○ | – | – |
| | | Long | MEG···SL | ○ | ○ | ○ | ○ | – | – |
| | | | LWEG···SL | ○ | ○ | ○ | ○ | – | – |
| | Flange type mounting from top | Short | METC···SL | ○ | ○ | ○ | ○ | – | – |
| | | | LWETC···SL | ○ | ○ | ○ | ○ | – | – |
| | | Standard | MET···SL | ○ | ○ | ○ | ○ | – | – |
| | | | LWET···SL | ○ | ○ | ○ | ○ | – | – |
| | | Long | METG···SL | ○ | ○ | ○ | ○ | – | – |
| | | | LWETG···SL | ○ | ○ | ○ | ○ | – | – |
| | Block type mounting from top | Short | MESC···SL | ○ | ○ | ○ | ○ | – | – |
| | | | LWESC···SL | ○ | ○ | ○ | ○ | – | – |
| | | Standard | MES···SL | ○ | ○ | ○ | ○ | – | – |
| | | | LWES···SL | ○ | ○ | ○ | ○ | – | – |
| | | Long | MESG···SL | ○ | ○ | ○ | ○ | – | – |
| | | | LWESG···SL | ○ | ○ | ○ | ○ | – | – |

Remark: For the models indicated in ▭, the interchangeable specification is available.

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

## —Length of Track Rail—

***Table 2.1 Standard and maximum lengths of high carbon steel track rails***




unit: mm

| Item \ Identification number | ME 15<br>LWE 15<br>LWE 15···Q | ME 20<br>LWE 20<br>LWE 20···Q | ME 25<br>LWE 25<br>LWE 25···Q | ME 30<br>LWE 30<br>LWE 30···Q | ME 35<br>LWE 35<br>LWE 35···Q | ME 45<br>LWE 45 |
|---|---|---|---|---|---|---|
| Standard length $L$ ($n$) | 160 ( 3)<br>220 ( 4)<br>280 ( 5)<br>340 ( 6)<br>460 ( 8)<br>640 (11)<br>820 (14) | 220 ( 4)<br>280 ( 5)<br>340 ( 6)<br>460 ( 8)<br>640 (11)<br>820 (14)<br>1 000 (17)<br>1 240 (21) | 220 ( 4)<br>280 ( 5)<br>340 ( 6)<br>460 ( 8)<br>640 (11)<br>820 (14)<br>1 000 (17)<br>1 240 (21)<br>1 600 (27) | 280 ( 4)<br>440 ( 6)<br>600 ( 8)<br>760 (10)<br>1 000 (13)<br>1 240 (16)<br>1 640 (21)<br>2 040 (26)<br>2 520 (32)<br>3 000 (38) | 280 ( 4)<br>440 ( 6)<br>600 ( 8)<br>760 (10)<br>1 000 (13)<br>1 240 (16)<br>1 640 (21)<br>2 040 (26)<br>2 520 (32)<br>3 000 (38) | 570 ( 6)<br>885 ( 9)<br>1 200 (12)<br>1 620 (16)<br>2 040 (20)<br>2 460 (24)<br>2 985 (29) |
| Pitch of mounting holes $F$ | 60 | 60 | 60 | 80 | 80 | 105 |
| $E$ (1) | 20 | 20 | 20 | 20 | 20 | 22.5 |
| Standard $E$ dimensions (2) or higher | 6 | 8 | 9 | 9 | 10 | 12 |
| Standard $E$ dimensions (2) below | 36 | 38 | 39 | 49 | 50 | 64.5 |
| Maximum length (3) | 1 600<br>(2 980) | 2 200<br>(2 980) | 2 980<br>(4 000) | 3 000<br>(3 960) | 3 000<br>(3 960) | 2 985<br>(3 930) |

Notes (1) When specifying a butt-jointing track rail (supplemental code "/T"), pay attention to the $E$ dimension at the butt-jointing part.
(2) Not applicable to the track rail with female threads for bellows (supplemental code "/J").
(3) Length up to the value in ( ) can be produced. If needed, please contact IKO. The values in ( ) is not applicable to LWE···Q series.

Remarks 1. A typical identification number is indicated, but is applied to all models of the same size.
2. Indicate "LWE" for the model code of single track rail regardless of the series and the slide unit model to be combined.
3. If not directed, $E$ dimensions for both ends will be the same within the range of standard $E$ dimensions. To change the dimensions, indicate the specified rail mounting hole positions "/E" of special specification. For more information, see page Ⅲ−30.

***Table 2.2 Standard and maximum lengths of stainless steel track rails*** unit: mm

| Item \ Identification number | ME 15···SL<br>LWE 15···SL | ME 20···SL<br>LWE 20···SL | ME 25···SL<br>LWE 25···SL | ME 30···SL<br>LWE 30···SL |
|---|---|---|---|---|
| Standard length $L$ ($n$) | 160 ( 3)<br>220 ( 4)<br>280 ( 5)<br>340 ( 6)<br>460 ( 8)<br>640 (11)<br>820 (14) | 220 ( 4)<br>280 ( 5)<br>340 ( 6)<br>460 ( 8)<br>640 (11)<br>820 (14)<br>1 000 (17) | 220 ( 4)<br>280 ( 5)<br>340 ( 6)<br>460 ( 8)<br>640 (11)<br>820 (14)<br>1 000 (17) | 280 ( 4)<br>440 ( 6)<br>600 ( 8)<br>760 (10)<br>1 000 (13) |
| Pitch of mounting holes $F$ | 60 | 60 | 60 | 80 |
| $E$ (1) | 20 | 20 | 20 | 20 |
| Standard $E$ dimensions (2) or higher | 6 | 8 | 9 | 9 |
| Standard $E$ dimensions (2) below | 36 | 38 | 39 | 49 |
| Maximum length (3) | 1 200<br>(1 600) | 1 200<br>(1 960) | 1 200<br>(1 960) | 1 200<br>(1 960) |

Notes (1) When specifying a butt-jointing track rail (supplemental code "/T"), pay attention to the $E$ dimension at the butt-jointing part.
(2) Not applicable to the track rail with female threads for bellows (supplemental code "/J").
(3) Length up to the value in ( ) can be produced. If needed, please contact IKO.

Remarks 1. A typical identification number is indicated, but is applied to all models of the same size.
2. Indicate "LWE" for the model code of single track rail regardless of the series and the slide unit model to be combined.
3. If not directed, $E$ dimensions for both ends will be the same within the range of standard $E$ dimensions, excluding standard length L(n). To change the dimensions, indicate the specified rail mounting hole positions "/E" of special specification. For more information, see page Ⅲ-30.



## —Preload Amount · Accuracy Class—

### 7 Preload amount

| | | |
|---|---|---|
| Clearance | : Tc | Specify this item for an assembled set or a single slide unit. |
| Standard | : No symbol | For details of the preload amount, see Table 3. |
| Light preload | : T1 | For applicable combinations of accuracy class and preload amount, see Table 4. |
| Medium preload | : T2 | |

### 8 Accuracy class

| | | |
|---|---|---|
| Ordinary | : No symbol | For interchangeable specification products, assemble a slide unit and a track rail of the same accuracy class. |
| High | : H | For details of accuracy class, see Table 5. |
| Precision | : P | For applicable combinations of accuracy class and preload amount, see Table 4. |
| Super precision | : SP | |

***Table 3 Preload amount***

| Preload type \ Item | Preload symbol | Preload amount N | Operational conditions |
|---|---|---|---|
| Clearance | Tc | 0 (1) | · Very light motion<br>· To absorb slight errors |
| Standard | (No symbol) | 0 (2) | · Light and precise motion |
| Light preload | T1 | 0.02$C_0$ | · Almost no vibrations<br>· Load is evenly balanced<br>· Light and precise motion |
| Medium preload | T2 | 0.05$C_0$ | · Medium vibration<br>· Medium overhung load |

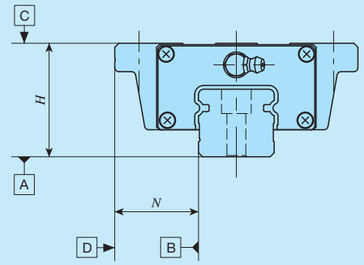
Notes (1) Clearance of about 10 $\mu$m
(2) Indicates zero or minimal amount of preload
Remark: $C_0$ indicates the basic static load rating.

***Table 4 Combination of accuracy class and preload***

| Preload type (preload symbol) \ Classification (classification symbol) | Ordinary (No symbol) | High (H) | Precision (P) | Super precision (SP) |
|---|---|---|---|---|
| Clearance (Tc) (1) | ○ | – | – | – |
| Standard (no symbol) | ○ | ○ | ○ | ○ |
| Light preload (T1) | – | ○ | ○ | ○ |
| Medium preload (T2) (1) | – | ○ | ○ | ○ |

Note (1) Not applicable to LWE···Q series.
Remark: The mark ▭ indicates that interchangeable specification products are available.

***Table 5 Tolerance and allowance***




unit: mm

| Item \ Class (classification symbol) | Ordinary (No symbol) | High (H) | Precision (P) | Super precision (SP) |
|---|---|---|---|---|
| Dim. $H$ tolerance | ±0.080 | ±0.040 | ±0.020 | ±0.010 |
| Dim. $N$ tolerance | ±0.100 | ±0.050 | ±0.025 | ±0.015 |
| Dim. variation of $H$ (1) | 0.025 | 0.015 | 0.007 | 0.005 |
| Dim. variation of $N$ (1) | 0.030 | 0.020 | 0.010 | 0.007 |
| Dim. variation of $H$ for multiple assembled sets (2) | 0.045 | 0.035 | 0.025 | – |
| Parallelism in operation of the slide unit C surface to A surface | See Fig. 1. | | | |
| Parallelism in operation of the slide unit D surface to B surface | See Fig. 1. | | | |

Notes (1) It means the size variation between slide units mounted on the same track rail.
(2) Applicable to the interchangeable specification.

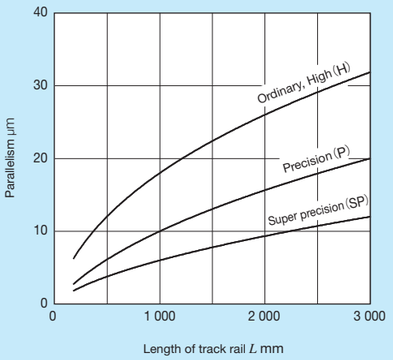



***Fig. 1 Parallelism in operation***

ME・LWE

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

## 9 Interchangeable

| | | |
|---|---|---|
| S1 specification | : S1 | This is specified for the interchangeable specifications. Assemble a track rail and a slide unit with the same interchangeable code. When using in combination with different interchangeable codes, please contact IKO. Note that the combination of interchangeable codes will not have any effect on accuracy. For applicable models and sizes, see Table 1. "No symbol" is indicated for non-interchangeable specification. |
| S2 specification | : S2 | |
| Non-interchangeable specification | : No symbol | |

## 10 Special specification

/A, /BS, /D, /E, /F, /I, /J○, /L○, /LF○, /MA, /M4, /N, /Q, /RE, /T, /U, /V○, /W○, /Y○, /Z○

For applicable special specifications, see Tables 6.1, 6.2, 6.3, and 6.4.
For combination of multiple special specifications, see Table 7.
For details of special specifications, see page Ⅲ—29.

***Table 6.1 Application of special specifications (Interchangeable specification, single slide unit)***

| Special specification | Supplemental code | Size | | | | | |
|---|---|---|---|---|---|---|---|
| | | 15 | 20 | 25 | 30 | 35 | 45 |
| Female threads for bellows (1) | /J○ | ○ | ○ | ○ | ○ | ○ | ○ |
| No end seal | /N | ○ | ○ | ○ | ○ | ○ | ○ |
| With C-Lube plate (2) | /Q | ○ | ○ | ○ | ○ | ○ | ○ |
| Special environment seal (2) | /RE | ○ | ○ | ○ | ○ | × | × |
| Under seal | /U | ○ | ○ | ○ | ○ | ○ | ○ |
| Double end seals | /V○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Scrapers | /Z○ | ○ | ○ | ○ | ○ | ○ | ○ |

Notes (1) Not applicable to stainless steel made products.
(2) Applicable to LWE series.

***Table 6.2 Application of special specifications (Interchangeable specification, single track rail)***

| Special specification | Supplemental code | Size | | | | | |
|---|---|---|---|---|---|---|---|
| | | 15 | 20 | 25 | 30 | 35 | 45 |
| Specified rail mounting hole positions | /E | ○ | ○ | ○ | ○ | ○ | ○ |
| Caps for rail mounting holes | /F | ○ | ○ | ○ | ○ | ○ | ○ |
| Female threads for bellows (1) | /J | ○ | ○ | ○ | ○ | ○ | ○ |
| Black chrome surface treatment | /LR | ○ | ○ | ○ | ○ | ○ | ○ |
| With track rail mounting bolt | /MA | ○ | ○ | ○ | ○ | ○ | ○ |
| Changed size of mounting holes | /M4 | ○ | × | × | × | × | × |
| Butt-jointing track rails | /T | ○ | ○ | ○ | ○ | ○ | ○ |

Note (1) Not applicable to stainless steel made products.

***Table 6.3 Application of special specifications (Interchangeable specification, assembled set)***

| Special specification | Supplemental code | Size | | | | | |
|---|---|---|---|---|---|---|---|
| | | 15 | 20 | 25 | 30 | 35 | 45 |
| Stainless steel end plate (1) | /BS | ○ | ○ | ○ | ○ | × | × |
| Opposite reference surfaces arrangement | /D | ○ | ○ | ○ | ○ | ○ | ○ |
| Specified rail mounting hole positions | /E | ○ | ○ | ○ | ○ | ○ | ○ |
| Caps for rail mounting holes | /F | ○ | ○ | ○ | ○ | ○ | ○ |
| Female threads for bellows (2) | /J○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Black chrome surface treatment | /L○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Fluorine black chrome surface treatment | /LF○ | ○ | ○ | ○ | ○ | ○ | ○ |
| With track rail mounting bolt | /MA | ○ | ○ | ○ | ○ | ○ | ○ |
| Changed size of mounting holes | /M4 | ○ | × | × | × | × | × |
| No end seal | /N | ○ | ○ | ○ | ○ | ○ | ○ |
| With C-Lube plate (1) | /Q | ○ | ○ | ○ | ○ | ○ | ○ |
| Special environment seal (1) | /RE | ○ | ○ | ○ | ○ | × | × |
| Butt-jointing track rails | /T | ○ | ○ | ○ | ○ | ○ | ○ |
| Under seal | /U | ○ | ○ | ○ | ○ | ○ | ○ |
| Double end seals | /V○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Specified grease (3) | /Y○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Scrapers | /Z○ | ○ | ○ | ○ | ○ | ○ | ○ |

Notes (1) Applicable to LWE series.
(2) Not applicable to stainless steel made products.
(3) ME series is applicable only to /YCG.





***Table 6.4 Application of special specifications (Non-interchangeable specification)***

| Special specification | Supplemental code | Size | | | | | |
|---|---|---|---|---|---|---|---|
| | | 15 | 20 | 25 | 30 | 35 | 45 |
| Butt-jointing track rails (1) | /A | ○ | ○ | ○ | ○ | ○ | ○ |
| Stainless steel end plate (2) | /BS | ○ | ○ | ○ | ○ | × | × |
| Opposite reference surfaces arrangement | /D | ○ | ○ | ○ | ○ | ○ | ○ |
| Specified rail mounting hole positions | /E | ○ | ○ | ○ | ○ | ○ | ○ |
| Caps for rail mounting holes | /F | ○ | ○ | ○ | ○ | ○ | ○ |
| Inspection sheet | /I | ○ | ○ | ○ | ○ | ○ | ○ |
| Female threads for bellows | /J○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Black chrome surface treatment | /L○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Fluorine black chrome surface treatment | /LF○ | ○ | ○ | ○ | ○ | ○ | ○ |
| With track rail mounting bolt | /MA | ○ | ○ | ○ | ○ | ○ | ○ |
| Changed size of mounting holes | /M4 | ○ | × | × | × | × | × |
| No end seal (1) | /N | ○ | ○ | ○ | ○ | ○ | ○ |
| With C-Lube plate (3) | /Q | ○ | ○ | ○ | ○ | ○ | ○ |
| Special environment seal (2) | /RE | ○ | ○ | ○ | ○ | × | × |
| Under seal (1) | /U | ○ | ○ | ○ | ○ | ○ | ○ |
| Double end seals | /V○ | ○ | ○ | ○ | ○ | ○ | ○ |
| A group of multiple assembled sets | /W○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Specified grease (4) | /Y○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Scrapers | /Z○ | ○ | ○ | ○ | ○ | ○ | ○ |

Notes (1) Not applicable to LWE···Q series.
(2) Applicable to LWE series.
(3) Applicable to LWE (···Q) series.
(4) ME series is applicable only to /YCG.

***Table 7 Combination of supplemental codes***

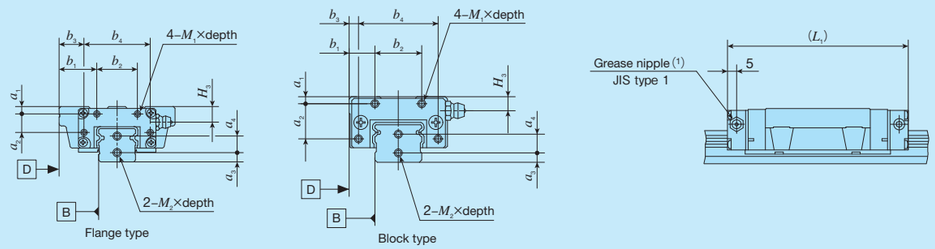
| | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BS | ○ | | | | | | | | | | | | | | | | | |
| D | ○ | ○ | | | | | | | | | | | | | | | | |
| E | – | ○ | – | | | | | | | | | | | | | | | |
| F | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | |
| I | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | |
| J | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | |
| L | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | |
| LF | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | | | | | | | | | |
| MA | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | |
| M4 | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○(1) | | | | | | | | |
| N | ○ | ○ | ○ | ○ | – | ○ | – | ○ | ○ | ○ | ○ | | | | | | | |
| Q | ○ | ○ | ○ | ○ | ○ | ○ | – | ○ | ○ | ○ | ○ | ○ | | | | | | |
| RE | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | ○ | | | | | |
| T | – | ○ | ○ | ○ | ○ | – | – | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | |
| U | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | ○ | ○ | ○ | | | |
| V | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | ○ | ○ | – | – | ○ | ○ | ○ | | |
| W | ○ | ○ | ○ | – | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | ○ | ○ | |
| Y | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | ○ | ○ | ○ | ○ | ○ |
| Z | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | ○ | ○ | – | – | ○ | ○ | ○ | ● | ○ | ○ |
| | A | BS | D | E | F | I | J | L | LF | MA | M4 | N | Q | RE | T | U | V | W | Y |

Note (1) When combining "/MA" and "/M4", indicate "/MA4".
Remarks 1. The combination of "—" shown in the table is not available.
2. Contact IKO for the combination of the interchangeable specification marked with ●.
3. When using multiple types for combination, please indicate by arranging the symbols in alphabetical order.



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

### *Table 8 Dimension of female threads for bellows (Supplemental code Single unit: /J Assembled set: /J /JJ)*




unit: mm

| Identification number | | | Slide unit | | | | | | | | Track Rail | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | $a_1$ | $a_2$ | $b_1$ | $b_2$ | $b_3$ | $b_4$ | $M_1$×depth | $L_1$(2) | $H_3$ | $a_3$ | $a_4$ | $M_2$×depth |
| ME(T)C 15 | LWE(T)C 15 | – | 3 | 12 | 18 | 16 | 12 | 28 | M3×6 | 58 | 5.7 | 4 | 7 | M3× 6 |
| ME(T) 15 | LWE(T) 15 | LWE(T)15···Q | | | | | | | | 74 | | | | |
| ME(T)G 15 | LWE(T)G 15 | – | | | | | | | | 87 | | | | |
| MESC 15 | LWESC 15 | – | | | 9 | | 3 | | | 58 | | | | |
| MES 15 | LWES 15 | LWES 15···Q | | | | | | | | 74 | | | | |
| MESG 15 | LWESG 15 | – | | | | | | | | 87 | | | | |
| ME(T)C 20 | LWE(T)C 20 | – | 3 | 15 | 19.5 | 20 | 12.5 | 34 | M3×6 | 64 | 6 | 4 | 8 | M3× 6 |
| ME(T) 20 | LWE(T) 20 | LWE(T)20···Q | | | | | | | | 83 | | | | |
| ME(T)G 20 | LWE(T)G 20 | – | | | | | | | | 99 | | | | |
| MESC 20 | LWESC 20 | – | | | 11 | | 4 | | | 64 | | | | |
| MES 20 | LWES 20 | LWES 20···Q | | | | | | | | 83 | | | | |
| MESG 20 | LWESG 20 | – | | | | | | | | 99 | | | | |
| ME(T)C 25 | LWE(T)C 25 | – | 3.5 | 17 | 23.5 | 26 | 16.5 | 40 | M3×6 | 76 | 7 | 5 | 9 | M4× 8 |
| ME(T) 25 | LWE(T) 25 | LWE(T)25···Q | | | | | | | | 100 | | | | |
| ME(T)G 25 | LWE(T)G 25 | – | | | | | | | | 119 | | | | |
| MESC 25 | LWESC 25 | – | | | 11 | | 4 | | | 76 | | | | |
| MES 25 | LWES 25 | LWES 25···Q | | | | | | | | 100 | | | | |
| MESG 25 | LWESG 25 | – | | | | | | | | 119 | | | | |
| ME(T)C 30 | LWE(T)C 30 | – | 5 | 17 | 28 | 34 | 20 | 50 | M3×6 | 83 | 11 | 6 | 14 | M4× 8 |
| ME(T) 30 | LWE(T) 30 | – | | | | | | | | 112 | | | | |
| – | – | LWE(T)30···Q | | 20 | 25 | 40 | | | | 111 | 10 | | | |
| ME(T)G 30 | LWE(T)G 30 | – | | 17 | 28 | 34 | | | | 144 | 11 | | | |
| MESC 30 | LWESC 30 | – | | 17 | 13 | 34 | 5 | | | 83 | 11 | | | |
| MES 30 | LWES 30 | – | | | | | | | | 112 | | | | |
| – | – | LWES 30···Q | | 20 | 10 | 40 | | | | 111 | 10 | | | |
| MESG 30 | LWESG 30 | – | | 17 | 13 | 34 | | | | 144 | 11 | | | |
| ME(T)C 35 | LWE(T)C 35 | – | 6 | 20 | 30 | 40 | 20 | 60 | M3×6 | 93 | 13 | 7 | 15 | M4× 8 |
| ME(T) 35 | LWE(T) 35 | – | | | | | | | | 126 | | | | |
| – | – | LWE(T)35···Q | | | | | | | | 125 | 11 | | | |
| MESC 35 | LWESC 35 | – | | | 15 | | 5 | | | 93 | 13 | | | |
| MES 35 | LWES 35 | – | | | | | | | | 126 | | | | |
| – | – | LWES 35···Q | | | | | | | | 125 | 11 | | | |
| ME(T) 45 | LWE(T) 45 | – | 7 | 26 | 35 | 50 | 23 | 74 | M4×8 | 138 | 15 | 8 | 19 | M5×10 |
| MES 45 | LWES 45 | – | | | 18 | | 6 | | | | | | | |

Notes (1) The specification and mounting positions of grease nipple are different from those of the standard specification product. Provided grease nipple for size 15 models is NPB2 type (special specification).
For details of dimensions, please contact IKO.
(2) Dimensions of the specification that female threads for bellows are fitted to both ends of the slide unit are indicated.
Remark: This is also applicable to stainless steel models of the same size.



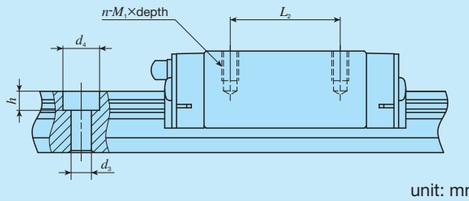


### *Table 9 Track rail mounting bolt size (Supplemental code /MA)*

| Size | Bolt size for track rail |
|---|---|
| 15 | M 3×16<br>M 4×16(1) |
| 20 | M 5×16 |
| 25 | M 6×20 |
| 30 | M 6×25 |
| 35 | M 8×30 |
| 45 | M10×35 |

Note (1) Applicable to the track rail of supplemental code "/M4" of special specification.
Remarks 1. Hexagon socket head bolts equivalent to JIS B 1176
2. For stainless steel model, stainless steel made bolts are appended.

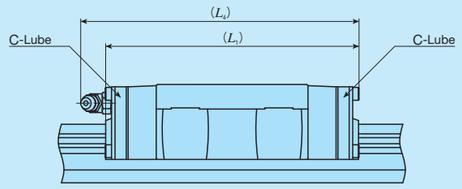
### *Table 10 Changed dimensions of mounting holes (Supplemental code /M4)*



unit: mm

| Size | $d_3$ | $d_4$ | $h$ |
|---|---|---|---|
| 15 | 4.5 | 8 | 6 |

### *Table 11 Dimension of slide unit with C-Lube plate (Supplemental code /Q)*

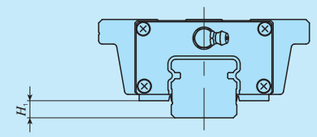



unit: mm

| Identification number | | $L_1$ | $L_4$ |
|---|---|---|---|
| LWEC 15 | – | 52 | 55 |
| LWE 15 | – | 68 | 71 |
| – | LWE15···Q | | 70 |
| LWEG 15 | – | 81 | 83 |
| LWEC 20 | – | 58 | 70 |
| LWE 20 | LWE20···Q | 78 | 90 |
| LWEG 20 | – | 94 | 105 |
| LWEC 25 | – | 70 | 82 |
| LWE 25 | LWE25···Q | 94 | 106 |
| LWEG 25 | – | 113 | 125 |
| LWEC 30 | – | 80 | 91 |
| LWE 30 | LWE30···Q | 109 | 119 |
| LWEG 30 | – | 141 | 151 |
| LWEC 35 | – | 90 | 102 |
| LWE 35 | – | 123 | 135 |
| – | LWE35···Q | 124 | |
| LWE 45 | – | 138 | 148 |

Remarks 1. The dimensions of the slide unit with C-Lube at both ends are indicated.
2. A typical identification number is indicated, but is applied to all LWE (···Q) series models of the same size.

### *Table 12 $H_1$ dimension with under seal (Supplemental code /U)*



unit: mm

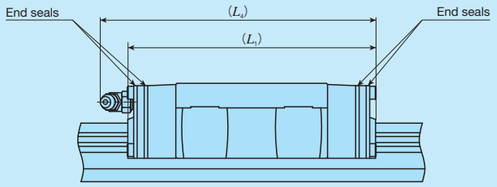
| Identification number | | $H_1$ |
|---|---|---|
| ME 15 | LWE 15 | 5 |
| ME 20 | LWE 20 | 5 |
| ME 25 | LWE 25 | 6 |
| ME 30 | | 9 |
| | LWE 30 | 7 |
| | LWEC 30 | 8.5 |
| ME 35 | | 10 |
| | LWE 35 | 8 |
| | LWEC 35 | 9.5 |
| ME 45 | | 13 |
| | LWE 45 | 14 |

Remarks 1. A typical identification number is indicated, but is applied to all models of the same size.
2. LWE 30 and LWE 35 have different $H_1$ dimensions only when the slide unit length is short.



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

***Table 13 Dimension of slide unit with double end seals (Supplemental code Single unit: /V Assembled set: /V /VV)***

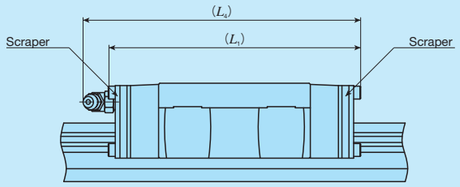



unit: mm

| Identification number | | | $L_1$ | $L_4$ |
|---|---|---|---|---|
| MEC 15 | LWEC 15 | – | 48 | 50 |
| ME 15 | LWE 15 | LWE15···Q | 64 | 66 |
| MEG 15 | LWEG 15 | – | 76 | 78 |
| MEC 20 | LWEC 20 | – | 54 | 68 |
| ME 20 | LWE 20 | LWE20···Q | 73 | 87 |
| MEG 20 | LWEG 20 | – | 89 | 103 |
| MEC 25 | LWEC 25 | – | 67 | 80 |
| ME 25 | LWE 25 | LWE25···Q | 91 | 104 |
| MEG 25 | LWEG 25 | – | 110 | 123 |
| MEC 30 | LWEC 30 | – | 78 | 89 |
| ME 30 | LWE 30 | LWE30···Q | 107 | 118 |
| MEG 30 | LWEG 30 | – | 138 | 150 |
| MEC 35 | LWEC 35 | – | 88 | 101 |
| ME 35 | LWE 35 | LWE35···Q | 121 | 134 |
| ME 45 | LWE 45 | – | 137 | 148 |

Remarks 1. The dimensions of the slide unit with double end seals at both ends are indicated.
2. A typical identification number is indicated, but is applied to all models of the same size.

***Table 14 Dimension of slide unit with scrapers (Supplemental code Single unit: /Z Assembled set: /Z /ZZ)***




unit: mm

| Identification number | | | $L_1$ | $L_4$ |
|---|---|---|---|---|
| MEC 15 | LWEC 15 | – | 48 | 50 |
| ME 15 | LWE 15 | LWE15···Q | 64 | 66 |
| MEG 15 | LWEG 15 | – | 77 | 79 |
| MEC 20 | LWEC 20 | – | 55 | 69 |
| ME 20 | LWE 20 | LWE20···Q | 75 | 88 |
| MEG 20 | LWEG 20 | – | 91 | 104 |
| MEC 25 | LWEC 25 | – | 69 | 81 |
| ME 25 | LWE 25 | LWE25···Q | 93 | 105 |
| MEG 25 | LWEG 25 | – | 112 | 124 |
| MEC 30 | LWEC 30 | – | 79 | 90 |
| ME 30 | LWE 30 | – | 108 | 119 |
| – | – | LWE30···Q | 109 | |
| MEG 30 | LWEG 30 | – | 140 | 151 |
| MEC 35 | LWEC 35 | – | 89 | 101 |
| ME 35 | LWE 35 | – | 122 | 134 |
| – | – | LWE35···Q | 123 | 135 |
| ME 45 | LWE 45 | – | 138 | 148 |

Remarks 1. The dimensions of the slide unit with scraper at both ends are indicated.
2. A typical identification number is indicated, but is applied to all models of the same size.

# Lubrication

Lithium-soap base grease with extreme-pressure additive (Alvania EP grease 2 [Shell Lubricants Japan K.K.]) is pre-packed in ME and LWE (···Q) series. Additionally, ME series has C-Lube placed in the recirculation part of balls, so that the interval for reapplicating lubricant can be extended and maintenance works such as grease job can be reduced significantly.
ME and LWE (···Q) series have grease nipple as indicated in Table 15. Supply nozzles fit to each shapes of grease nipple are also available. For order of these parts for lubrication, see Table 14.1 on page Ⅲ−23 and Table 15 on page Ⅲ−24.

# Dust Protection

The slide units of ME and LWE (···Q) series are equipped with end seals as standard for dust protection. However, if large amount of contaminant or dust are floating, or if large particles of foreign substances such as chips or sand may adhere to the track rail, it is recommended to cover the whole unit with bellows or telescope type shield, etc.
ME series and LWE (···Q) series are provided with specific bellows. The bellows are easy to mount and provide excellent dust protection. If needed, please refer to Ⅲ−26 for ordering.

***Table 15 Parts for lubrication***

| Size | Grease nipple type (1) | Applicable supply nozzle type | Bolt size of female threads for piping |
|---|---|---|---|
| 15 | A-M4 | A-5120V A-5240V B-5120V B-5240V | M4 |
| 20 | B-M6 | Grease gun available on the market | M6 |
| 25 | | | |
| 30 | | | |
| 35 | JIS type 4 | | PT1/8 |
| 45 | | | |

Note (1) For grease nipple specification, see Tables 14.1 and 14.2 on page Ⅲ−23.
Remark: Stainless steel grease nipple is also available. If needed, please contact IKO.



# Precaution for Use

### ❶ Mounting surface, reference mounting surface, and typical mounting structure

When mounting the ME and LWE (···Q) series, properly align the reference mounting surface B and D of the track rail and slide unit with the reference mounting surface of the table and bed and fix them. (See Fig. 2)
The reference mounting surfaces B and D and mounting surfaces A and C are precisely ground. Machining the mounting surface of the table and bed, such as machine or device, to high accuracy and mounting them properly will ensure stable linear motion with high accuracy.
Reference mounting surface of the slide unit is the opposite side of the IKO mark. The track rail reference mounting surface is identified by locating the IKO mark on the top surface of the track rail. It is the side surface above the mark (in the direction of the arrow). (See Fig. 3.)

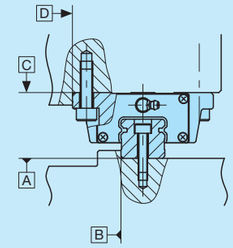



***Fig. 2 Reference mounting surface and typical mounting structure***

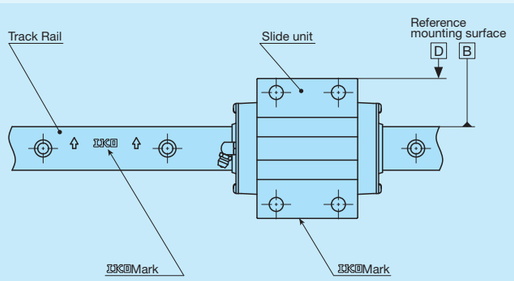



***Fig. 3 Reference mounting surface***

### ❷ Shoulder height and corner radius of the reference mounting surface

For the opposite corner of the mating reference mounting, it is recommended to have relieved fillet as indicated in Fig. 4. Recommended value for the shoulder height on the mating side is indicated in Table 17.

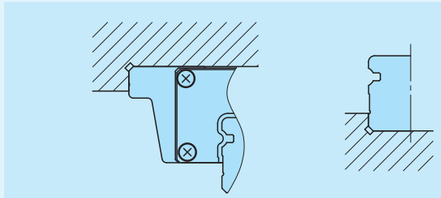


***Fig. 4 Corner of the mating reference mounting***

### ❸ Tightening torque for fixing screw

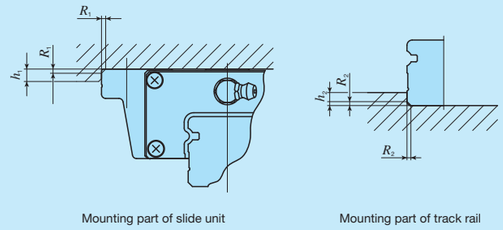
Typical tightening torque for mounting of the ME and LWE (···Q) series to the steel mating member material is indicated in Table 16. When vibration and shock of the machine or device are large, fluctuating load is large, or moment load is applied, fix it by using the torque 1.2 to 1.5 times larger than the value indicated in the table as necessary. If the mating member material is cast iron or aluminum alloy, reduce the tightening torque depending on the strength characteristics of the mating member material.

***Table 16 Tightening torque for fixing screw***

| Bolt size | Tightening torque N·m | |
|---|---|---|
| | High carbon steel-made screw | Stainless steel-made screw |
| M 3×0.5 | 1.8 | 1.1 |
| M 4×0.7 | 4.1 | 2.5 |
| M 5×0.8 | 8.0 | 5.0 |
| M 6×1 | 13.6 | 8.5 |
| M 8×1.25 | 32.7 | 20.4 |
| M10×1.5 | 63.9 | 40 |
| M12×1.75 | 110 | – |

Remark: The tightening torque is calculated based on strength division 12.9 and property division A2-70.

***Table 17 Shoulder height and corner radius of the reference mounting surface***




unit: mm

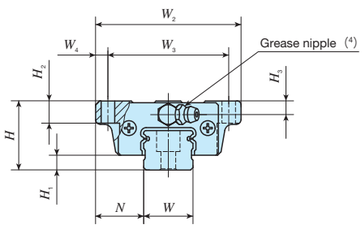
| Size | Mounting part of slide unit | | Mounting part of track rail | |
|---|---|---|---|---|
| | Shoulder height $h_1$ | Corner radius $R_1$ (maximum) | Shoulder height $h_2$ | Corner radius $R_2$ (maximum) |
| 15 | 4 | 1 (0.5) (1) | 3 | 0.5 |
| 20 | 5 | 1 (0.5) (1) | 3 | 0.5 |
| 25 | 6 | 1 | 4 | 1 |
| 30 | 8 | 1 | 5 | 1 |
| 35 | 8 | 1 | 6 | 1 |
| 45 | 8 | 1.5 | 7 | 1.5 |

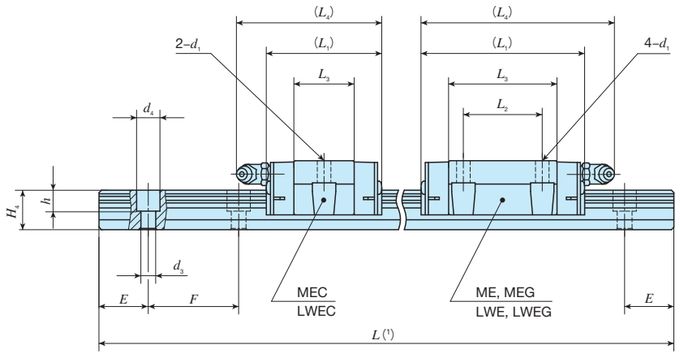
Note (1) The values in ( ) are applied to MES and LWES (···Q).

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

**Flange type mounting from bottom**

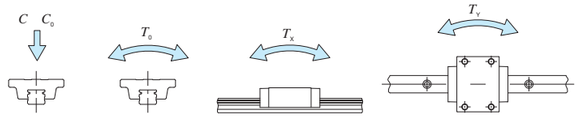
| Shape | ME · LWE | | |
|---|---|---|---|
| Size | 15 | 20 | 25 |
| | 30 | 35 | 45 |




| Identification number | | Interchangeable | Mass (Ref.) | | Dimensions of assembly mm | | | Dimensions of slide unit mm | | | | | | | | | | Dimensions of track rail mm | | | | | | | Recommended mounting bolt for track rail (2) mm | Basic dynamic load rating (3) | Basic static load rating (3) | Static moment rating (3) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ME series | LWE series (No C-Lube) | | Slide unit kg | Track rail kg/m | $H$ | $H_1$ | $N$ | $W_2$ | $W_3$ | $W_4$ | $L_1$ | $L_2$ | $L_3$ | $L_4$ | $d_1$ | | $H_2$ | $H_3$ | $W$ | $H_4$ | $d_3$ | $d_4$ | $h$ | $E$ | $F$ | Bolt size× $\ell$ | $C$ N | $C_0$ N | $T_0$ N·m | $T_X$ N·m | $T_Y$ N·m |
| MEC 15 | LWEC 15 | ○ | 0.11 | 1.57 | 24 | 5.8 | 18.5 | 52 | 41 | 5.5 | 41 | – | 22.4 | 45 | 4.5 | | 7 | 4.5 | 15 | 14.5 | 3.6 (4.5) | 6.5 (8 ) | 4.5 (6 ) | 20 | 60 | M3×16 (M4×16) | 5 240 | 5 480 | 43.8 | 21.3 149 | 21.3 149 |
| MEC 15···SL | LWEC 15···SL | ○ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ME 15 | LWE 15 | ○ | 0.18 | | | | | | | | 57 | 26 | 38.4 | 61 | | | | | | | | | | | | | 7 640 | 9 390 | 75.1 | 57.6 333 | 57.6 333 |
| ME 15···SL | LWE 15···SL | ○ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| – | LWE 15···Q | – | | | | 5 | | | | | | | 38.3 | | | | | | | | | | | | | | 6 550 | 8 610 | 68.9 | 53.0 307 | 53.0 307 |
| MEG 15 | LWEG 15 | ○ | 0.24 | | | 5.8 | | | | | 70 | 36 | 51.1 | 73 | | | | | | | | | | | | | 9 340 | 12 500 | 100 | 99.5 533 | 99.5 533 |
| MEG 15···SL | LWEG 15···SL | ○ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MEC 20 | | ○ | 0.18 | 2.28 | 28 | 6 | 19.5 | 59 | 49 | 5 | 47 | – | 24.7 | 58 | 5.5 | | 9 | 5.5 | 20 | 16 | 6 | 9.5 | 8.5 | 20 | 60 | M5×16 | 7 580 | 7 340 | 78.9 | 31.5 235 | 31.5 235 |
| | LWEC 20 | ○ | | | | | | | | | | | 24.5 | | | | | | | | | | | | | | 7 570 | | | | |
| MEC 20···SL | | ○ | | | | | | | | | | | 24.7 | | | | | | | | | | | | | | 7 580 | | | | |
| | LWEC 20···SL | ○ | | | | | | | | | | | 24.5 | | | | | | | | | | | | | | 7 570 | | | | |
| ME 20 | | ○ | 0.30 | | | | | 67 | 32 | | 44.2 | 78 | | | | | | | | | | | | | | 11 600 | 13 400 | 145 | 95.6 566 | 95.6 566 |
| | LWE 20 | ○ | | | | | | | | | 44 | | | | | | | | | | | | | | | | | | | | |
| ME 20···SL | | ○ | | | | | | | | | 44.2 | | | | | | | | | | | | | | | | | | | | |
| | LWE 20···SL | ○ | | | | | | | | | 44 | | | | | | | | | | | | | | | | | | | | |
| – | LWE 20···Q | – | | | | 5 | | | | | | | | | | | | | | | | | | | | | 10 500 | | | 100 562 | 100 562 |
| MEG 20 | | ○ | 0.40 | | | 6 | | 83 | 45 | | 60.1 | 94 | | | | | | | | | | | | | | 14 400 | 18 300 | 197 | 172 930 | 172 930 |
| | LWEG 20 | ○ | | | | | | | | | 59.9 | | | | | | | | | | | | | | | | | | | | |
| MEG 20···SL | | ○ | | | | | | | | | 60.1 | | | | | | | | | | | | | | | | | | | | |
| | LWEG 20···SL | ○ | | | | | | | | | 59.9 | | | | | | | | | | | | | | | | | | | | |

Notes (1) Track rail lengths $L$ are shown in Tables 2.1 and 2.2 on page Ⅱ−67.
(2) Track rail mounting bolts are not appended. Hexagon socket head bolts of JIS B 1176 with strength division 12.9 are recommended.
(3) The direction of basic dynamic load rating ($C$), basic static load rating ($C_0$), and static moment rating ($T_0$, $T_X$, $T_Y$) are shown in the sketches below. The upper values of $T_X$ and $T_Y$ are for one slide unit and the lower values are for two slide units in close contact.
(4) The shapes of grease nipple vary by size. The specifications are shown in Table 15 on page Ⅱ−73.
Remark: The value in ( ) represents dimensions when the track rail mounting hole dimension is set for M4 holes. Indicate the identification number with /M4 at the end.




**Example of identification number of assembled set**

| Model code | Dimensions | Part code | | Model code | Material code | Preload symbol | Classification symbol | Interchangeable code | Supplemental code |
|---|---|---|---|---|---|---|---|---|---|
| ME | G | 15 | C2 | R340 | | | T1 | P | | /U |
| ① | ② | ③ | ④ | ⑤ | ① | ⑥ | ⑦ | ⑧ | ⑨ | ⑩ |

| ① Model | |
|---|---|
| ME | Flange type mounting from bottom |
| LWE | |
| LWE···Q | |

| ② Length of slide unit | |
|---|---|
| C | Short |
| No symbol | Standard |
| G | Long |

| ③ Size |
|---|
| 15, 20 |

| ④ Number of slide unit (2) |
|---|

| ⑤ Length of track rail (340 mm) |
|---|

| ⑥ Material type | |
|---|---|
| No symbol | High carbon steel made |
| SL | Stainless steel made |

| ⑦ Preload amount | |
|---|---|
| $T_C$ | Clearance |
| No symbol | Standard |
| $T_1$ | Light preload |
| $T_2$ | Medium preload |

| ⑧ Accuracy class | |
|---|---|
| No symbol | Ordinary |
| H | High |
| P | Precision |
| SP | Super precision |

| ⑨ Interchangeable | |
|---|---|
| No symbol | Non-interchangeable specification |
| S1 | S1 specification |
| S2 | S2 specification |

| ⑩ Special specification |
|---|
| A, BS, D, E, F, Ⅰ, J, L, LF, MA M4, N, Q, RE, T, U, V, W, Y, Z |

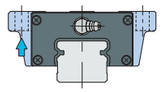




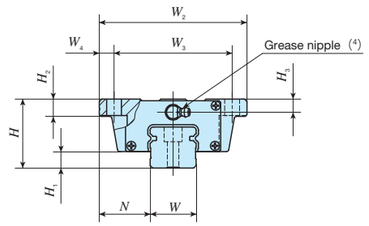
1N=0.102kgf=0.2248lbs.
1mm=0.03937inch

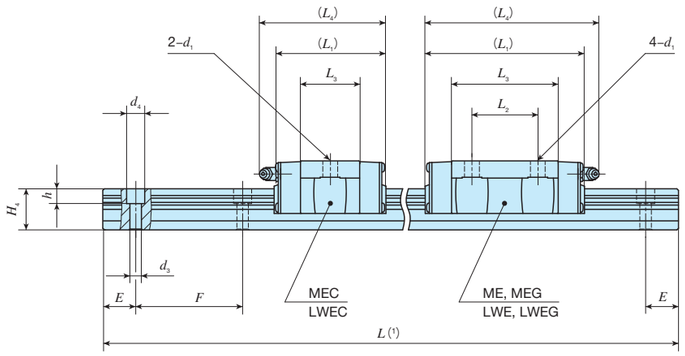
**Flange type mounting from bottom**

Shape: **ME · LWE**



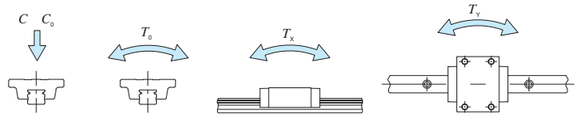
| Size | | | |
|---|---|---|---|
| 15 | 20 | 25 | |
| 30 | 35 | 45 | |




| Identification number | | Interchangeable | Mass (Ref.) | | Dimensions of assembly mm | | | Dimensions of slide unit mm | | | | | | | | | | Dimensions of track rail mm | | | | | | | Recommended mounting bolt for track rail (2) mm | Basic dynamic load rating (3) | Basic static load rating (3) | Static moment rating (3) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ME series | LWE series (No C-Lube) | | Slide unit kg | Track rail kg/m | $H$ | $H_1$ | $N$ | $W_2$ | $W_3$ | $W_4$ | $L_1$ | $L_2$ | $L_3$ | $L_4$ | $d_1$ | | $H_2$ | $H_3$ | $W$ | $H_4$ | $d_3$ | $d_4$ | $h$ | $E$ | $F$ | Bolt size × ℓ | $C$ N | $C_0$ N | $T_0$ N·m | $T_X$ N·m | $T_Y$ N·m |
| MEC 25 | LWEC 25 | ○ | 0.33 | 3.09 | 33 | 7 | 25 | 73 | 60 | 6.5 | 59 | – | 32 | 70 | 7 | | 10 | 6.5 | 23 | 19 | 7 | 11 | 9 | 20 | 60 | M 6×20 | 12 400 | 12 300 | 153 | 71.8 / 480 | 71.8 / 480 |
| MEC 25···SL | LWEC 25···SL | ○ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ME 25 | LWE 25 | ○ | 0.56 | | | | | | | | 83 | 35 | 56 | 94 | | | | | | | | | | | | | 18 100 | 21 100 | 262 | 195 / 1 090 | 195 / 1 090 |
| ME 25···SL | LWE 25···SL | ○ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| – | LWE 25···Q | – | | | | 6 | | | | | | | | | | | | | | | | | | | | | 15 500 | 19 400 | 240 | 175 / 1 010 | 175 / 1 010 |
| MEG 25 | LWEG 25 | ○ | 0.73 | | | 7 | | | | | 102 | 50 | 75 | 113 | | | | | | | | | | | | | 22 200 | 28 200 | 349 | 336 / 1 740 | 336 / 1 740 |
| MEG 25···SL | LWEG 25···SL | ○ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MEC 30 | LWEC 30 | ○ | 0.58 | 5.09 | 42 | 10 | 31 | 90 | 72 | 9 | 68 | – | 36 | 78 | 9 | | 10 | 8 | 28 | 25 | 7 | 11 | 9 | 20 | 80 | M 6×25 | 20 600 | 18 800 | 287 | 129 / 855 | 129 / 855 |
| MEC 30···SL | LWEC 30···SL | ○ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ME 30 | LWE 30 | ○ | 0.99 | | | | | | | | 97 | 40 | 64.8 | 107 | | | | | | | | | | | | | 29 500 | 31 300 | 479 | 328 / 1 920 | 328 / 1 920 |
| ME 30···SL | LWE 30···SL | ○ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| – | LWE 30···Q | – | 0.97 | 5.04 | | | | | | | 96 | | | 106 | | | | | | | | | | | | | 21 600 | 26 400 | 398 | 278 / 1 580 | 278 / 1 580 |
| MEG 30 | LWEG 30 | ○ | 1.50 | 5.09 | | | | | | | 129 | 60 | 96.5 | 139 | | | | | | | | | | | | | 39 200 | 47 000 | 718 | 704 / 3 690 | 704 / 3 690 |
| MEG 30···SL | LWEG 30···SL | ○ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MEC 35 | LWEC 35 | ○ | 0.84 | 6.85 | 48 | 11 | 33 | 100 | 82 | 9 | 78 | – | 41.6 | 90 | 9 | | 13 | 10 | 34 | 28 | 9 | 14 | 12 | 20 | 80 | M 8×30 | 29 900 | 26 800 | 412 | 176 / 1 190 | 162 / 1 100 |
| ME 35 | LWE 35 | ○ | 1.52 | | | | | | | | 111 | 50 | 74.6 | 123 | | | | | | | | | | | | | 42 900 | 44 700 | 686 | 448 / 2 660 | 412 / 2 450 |
| – | LWE 35···Q | – | 1.53 | 6.84 | | | | | | | 110 | | 76.6 | 122 | | | | | | | | | | | | | 30 500 | 37 600 | 687 | 482 / 2 550 | 482 / 2 550 |
| ME 45 | LWE 45 | ○ | 2.46 | 11.2 | 60 | 14 | 37.5 | 120 | 100 | 10 | 125 | 60 | 81.4 | 136 | 11 | | 15 | 13 | 45 | 34 | 11 | 17.5 | 14 | 22.5 | 105 | M10×35 | 61 100 | 60 200 | 1 210 | 672 / 4 070 | 618 / 3 750 |

Notes (1) Track rail lengths $L$ are shown in Tables 2.1 and 2.2 on page Ⅱ−67.
(2) Track rail mounting bolts are not appended. Hexagon socket head bolts of JIS B 1176 with strength division 12.9 are recommended.
(3) The direction of basic dynamic load rating ($C$), basic static load rating ($C_0$), and static moment rating ($T_0$, $T_X$, $T_Y$) are shown in the sketches below. The upper values of $T_X$ and $T_Y$ are for one slide unit and the lower values are for two slide units in close contact.
(4) The shapes of grease nipple vary by size. The specifications are shown in Table 15 on page Ⅱ−73.




**Example of identification number of assembled set**

| Model code | Dimensions | Part code | Model code | Material code | Preload symbol | Classification symbol | Interchangeable code | Supplemental code |
|---|---|---|---|---|---|---|---|---|
| ME | G | 30 | C2 | R440 | | | T1 | P | | /U |
| ① | ② | ③ | ④ | ⑤ | ① | ⑥ | ⑦ | ⑧ | ⑨ | ⑩ |

① Model

| | |
|---|---|
| ME | Flange type mounting from bottom |
| LWE | |
| LWE···Q | |

② Length of slide unit

| | |
|---|---|
| C | Short |
| No symbol | Standard |
| G | Long |

③ Size: 25, 30, 35, 45

④ Number of slide unit (2)

⑤ Length of track rail (440 mm)

⑥ Material type

| | |
|---|---|
| No symbol | High carbon steel made |
| SL | Stainless steel made |

⑦ Preload amount

| | |
|---|---|
| $T_C$ | Clearance |
| No symbol | Standard |
| $T_1$ | Light preload |
| $T_2$ | Medium preload |

⑥ Accuracy class

| | |
|---|---|
| No symbol | Ordinary |
| H | High |
| P | Precision |
| SP | Super precision |

⑨ Interchangeable

| | |
|---|---|
| No symbol | Non-interchangeable specification |
| S1 | S1 specification |
| S2 | S2 specification |

⑩ Special specification: A, BS, D, E, F, Ⅰ, J, L, LF, MA, N, Q, RE, T, U, V, W, Y, Z

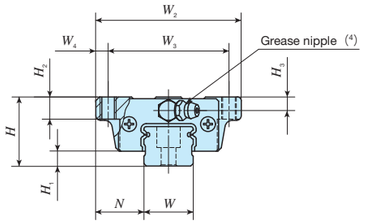


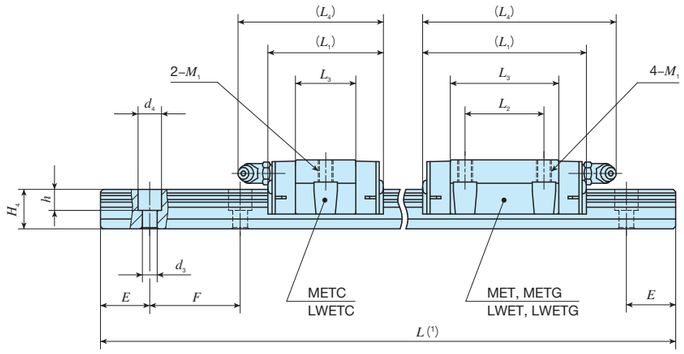


1N=0.102kgf=0.2248lbs.
1mm=0.03937inch

**Flange type mounting from top**

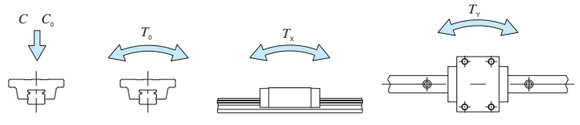
| Shape | MET · LWET | | |
|---|---|---|---|
| Size | 15 | 20 | 25 |
| | 30 | 35 | 45 |




| Identification number | | Interchangeable | Mass (Ref.) | | Dimensions of assembly mm | | | Dimensions of slide unit mm | | | | | | | | | | Dimensions of track rail mm | | | | | | | Recommended mounting bolt for track rail (2) mm | Basic dynamic load rating (3) | Basic static load rating (3) | Static moment rating (3) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ME series | LWE series (No C-Lube) | | Slide unit kg | Track rail kg/m | $H$ | $H_1$ | $N$ | $W_2$ | $W_3$ | $W_4$ | $L_1$ | $L_2$ | $L_3$ | $L_4$ | $M_1$ | | $H_2$ | $H_3$ | $W$ | $H_4$ | $d_3$ | $d_4$ | $h$ | $E$ | $F$ | Bolt size× $\ell$ | $C$ N | $C_0$ N | $T_0$ N·m | $T_X$ N·m | $T_Y$ N·m |
| METC 15 | LWETC 15 | ○ | 0.11 | 1.57 | 24 | 5.8 | 18.5 | 52 | 41 | 5.5 | 41 | – | 22.4 | 45 | M5 | | 7 | 4.5 | 15 | 14.5 | 3.6 (4.5) | 6.5 (8 ) | 4.5 (6 ) | 20 | 60 | M3×16 (M4×16) | 5 240 | 5 480 | 43.8 | 21.3 / 149 | 21.3 / 149 |
| METC 15···SL | LWETC 15···SL | ○ | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MET 15 | LWET 15 | ○ | 0.18 | | | | | | | | 57 | 26 | 38.4 | 61 | | | | | | | | | | | | | 7 640 | 9 390 | 75.1 | 57.6 / 333 | 57.6 / 333 |
| MET 15···SL | LWET 15···SL | ○ | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| – | LWET 15···Q | – | | | | 5 | | | | | | | 38.3 | | | | | | | | | | | | | | 6 550 | 8 610 | 68.9 | 53.0 / 307 | 53.0 / 307 |
| METG 15 | LWETG 15 | ○ | 0.24 | | | 5.8 | | | | | 70 | 36 | 51.1 | 73 | | | | | | | | | | | | | 9 340 | 12 500 | 100 | 99.5 / 533 | 99.5 / 533 |
| METG 15···SL | LWETG 15···SL | ○ | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| METC 20 | | ○ | 0.18 | 2.28 | 28 | 6 | 19.5 | 59 | 49 | 5 | 47 | – | 24.7 | 58 | M6 | | 9 | 5.5 | 20 | 16 | 6 | 9.5 | 8.5 | 20 | 60 | M5×16 | 7 580 | 7 340 | 78.9 | 31.5 / 235 | 31.5 / 235 |
| | LWETC 20 | ○ | | | | | | | | | | | 24.5 | | | | | | | | | | | | | | 7 570 | | | | |
| METC 20···SL | | ○ | | | | | | | | | | | 24.7 | | | | | | | | | | | | | | 7 580 | | | | |
| | LWETC 20···SL | ○ | | | | | | | | | | | 24.5 | | | | | | | | | | | | | | 7 570 | | | | |
| MET 20 | | ○ | 0.30 | | | | | | | | 67 | 32 | 44.2 | 78 | | | | | | | | | | | | | 11 600 | 13 400 | 145 | 95.6 / 566 | 95.6 / 566 |
| | LWET 20 | ○ | | | | | | | | | | | 44 | | | | | | | | | | | | | | | | | | |
| MET 20···SL | | ○ | | | | | | | | | | | 44.2 | | | | | | | | | | | | | | | | | | |
| | LWET 20···SL | ○ | | | | | | | | | | | 44 | | | | | | | | | | | | | | | | | | |
| – | LWET 20···Q | – | | | | 5 | | | | | | | | | | | | | | | | | | | | | 10 500 | | | 100 / 562 | 100 / 562 |
| METG 20 | | ○ | 0.40 | | | 6 | | | | | 83 | 45 | 60.1 | 94 | | | | | | | | | | | | | 14 400 | 18 300 | 197 | 172 / 930 | 172 / 930 |
| | LWETG 20 | ○ | | | | | | | | | | | 59.9 | | | | | | | | | | | | | | | | | | |
| METG 20···SL | | ○ | | | | | | | | | | | 60.1 | | | | | | | | | | | | | | | | | | |
| | LWETG 20···SL | ○ | | | | | | | | | | | 59.9 | | | | | | | | | | | | | | | | | | |

Notes (1) Track rail lengths $L$ are shown in Tables 2.1 and 2.2 on page Ⅱ−67.
(2) Track rail mounting bolts are not appended. Hexagon socket head bolts of JIS B 1176 with strength division 12.9 are recommended.
(3) The direction of basic dynamic load rating ($C$), basic static load rating ($C_0$), and static moment rating ($T_0$, $T_X$, $T_Y$) are shown in the sketches below. The upper values of $T_X$ and $T_Y$ are for one slide unit and the lower values are for two slide units in close contact.
(4) The shapes of grease nipple vary by size. The specifications are shown in Table 15 on page Ⅱ−73.
Remark: The value in ( ) represents dimensions when the track rail mounting hole dimension is set for M4 holes. Indicate the identification number with /M4 at the end.




**Example of identification number of assembled set**

| Model code | Dimensions | Part code | | Model code | Material code | Preload symbol | Classification symbol | Interchangeable code | Supplemental code |
|---|---|---|---|---|---|---|---|---|---|
| MET | G | 15 | C2 | R340 | | | T1 | P | | /U |
| ① | ② | ③ | ④ | ⑤ | ① | ⑥ | ⑦ | ⑧ | ⑨ | ⑩ |

**① Model**

| | |
|---|---|
| MET | Flange type mounting from top |
| LWET | |
| LWET···Q | |

**② Length of slide unit**

| | |
|---|---|
| C | Short |
| No symbol | Standard |
| G | Long |

**③ Size**: 15, 20

**④ Number of slide unit (2)**

**⑤ Length of track rail (340 mm)**

**⑥ Material type**

| | |
|---|---|
| No symbol | High carbon steel made |
| SL | Stainless steel made |

**⑦ Preload amount**

| | |
|---|---|
| $T_C$ | Clearance |
| No symbol | Standard |
| $T_1$ | Light preload |
| $T_2$ | Medium preload |

**⑧ Accuracy class**

| | |
|---|---|
| No symbol | Ordinary |
| H | High |
| P | Precision |
| SP | Super precision |

**⑨ Interchangeable**

| | |
|---|---|
| No symbol | Non-interchangeable specification |
| S1 | S1 specification |
| S2 | S2 specification |

**⑩ Special specification**: A, BS, D, E, F, I , J, L, LF, MA M4, N, Q, RE, T, U, V, W, Y, Z



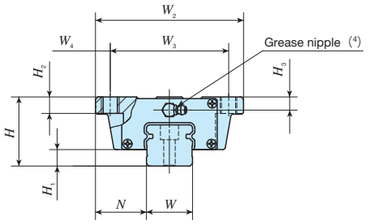


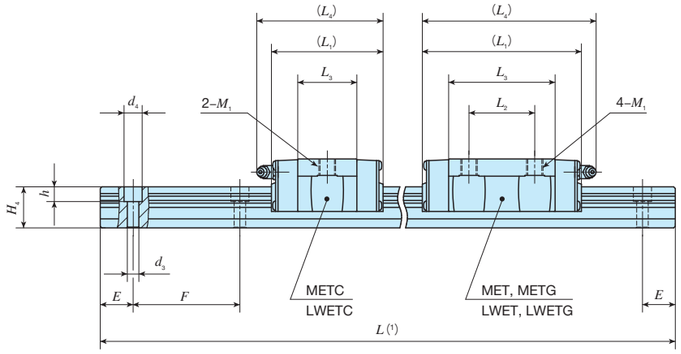
1N=0.102kgf=0.2248lbs.
1mm=0.03937inch

# IKO C-Lube Linear Way ME

**Flange type mounting from top**

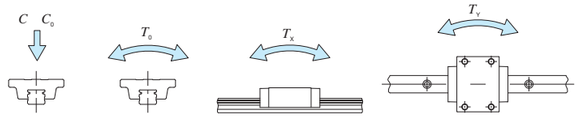
| Shape | MET · LWET |
|---|---|
| Size | 15 · 20 · 25 · 30 · 35 · 45 |




| Identification number | | Interchangeable | Mass (Ref.) | | Dimensions of assembly mm | | | Dimensions of slide unit mm | | | | | | | | | | Dimensions of track rail mm | | | | | | | Recommended mounting bolt for track rail (2) mm | Basic dynamic load rating (3) | Basic static load rating (3) | Static moment rating (3) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ME series | LWE series (No C-Lube) | | Slide unit kg | Track rail kg/m | $H$ | $H_1$ | $N$ | $W_2$ | $W_3$ | $W_4$ | $L_1$ | $L_2$ | $L_3$ | $L_4$ | $M_1$ | | $H_2$ | $H_3$ | $W$ | $H_4$ | $d_3$ | $d_4$ | $h$ | $E$ | $F$ | Bolt size× $\ell$ | $C$ N | $C_0$ N | $T_0$ N·m | $T_X$ N·m | $T_Y$ N·m |
| METC 25 | LWETC 25 | ○ | 0.33 | 3.09 | 33 | 7 | 25 | 73 | 60 | 6.5 | 59 | – | 32 | 70 | M 8 | | 10 | 6.5 | 23 | 19 | 7 | 11 | 9 | 20 | 60 | M 6×20 | 12 400 | 12 300 | 153 | 71.8 / 480 | 71.8 / 480 |
| METC 25···SL | LWETC 25···SL | ○ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MET 25 | LWET 25 | ○ | 0.56 | | | | | | | | 83 | 35 | 56 | 94 | | | | | | | | | | | | | 18 100 | 21 100 | 262 | 195 / 1 090 | 195 / 1 090 |
| MET 25···SL | LWET 25···SL | ○ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| – | LWET 25···Q | – | | | | 6 | | | | | | | | | | | | | | | | | | | | | 15 500 | 19 400 | 240 | 175 / 1 010 | 175 / 1 010 |
| METG 25 | LWETG 25 | ○ | 0.73 | | | 7 | | | | | 102 | 50 | 75 | 113 | | | | | | | | | | | | | 22 200 | 28 200 | 349 | 336 / 1 740 | 336 / 1 740 |
| METG 25···SL | LWETG 25···SL | ○ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| METC 30 | LWETC 30 | ○ | 0.58 | 5.09 | 42 | 10 | 31 | 90 | 72 | 9 | 68 | – | 36 | 78 | M10 | | 10 | 8 | 28 | 25 | 7 | 11 | 9 | 20 | 80 | M 6×25 | 20 600 | 18 800 | 287 | 129 / 855 | 129 / 855 |
| METC 30···SL | LWETC 30···SL | ○ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MET 30 | LWET 30 | ○ | 0.99 | | | | | | | | 97 | 40 | 64.8 | 107 | | | | | | | | | | | | | 29 500 | 31 300 | 479 | 328 / 1 920 | 328 / 1 920 |
| MET 30···SL | LWET 30···SL | ○ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| – | LWET 30···Q | – | 0.97 | 5.04 | | | | | | | 96 | | | 106 | | | | | | | | | | | | | 21 600 | 26 400 | 398 | 278 / 1 580 | 278 / 1 580 |
| METG 30 | LWETG 30 | ○ | 1.50 | 5.09 | | | | | | | 129 | 60 | 96.5 | 139 | | | | | | | | | | | | | 39 200 | 47 000 | 718 | 704 / 3 690 | 704 / 3 690 |
| METG 30···SL | LWETG 30···SL | ○ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| METC 35 | LWETC 35 | ○ | 0.84 | 6.85 | 48 | 11 | 33 | 100 | 82 | 9 | 78 | – | 41.6 | 90 | M10 | | 13 | 10 | 34 | 28 | 9 | 14 | 12 | 20 | 80 | M 8×30 | 29 900 | 26 800 | 412 | 176 / 1 190 | 162 / 1 100 |
| MET 35 | LWET 35 | ○ | 1.52 | | | | | | | | 111 | 50 | 74.6 | 123 | | | | | | | | | | | | | 42 900 | 44 700 | 686 | 448 / 2 660 | 412 / 2 450 |
| – | LWET 35···Q | – | 1.53 | 6.84 | | | | | | | 110 | | 76.6 | 122 | | | | | | | | | | | | | 30 500 | 37 600 | 687 | 482 / 2 550 | 482 / 2 550 |
| MET 45 | LWET 45 | ○ | 2.46 | 11.2 | 60 | 14 | 37.5 | 120 | 100 | 10 | 125 | 60 | 81.4 | 136 | M12 | | 15 | 13 | 45 | 34 | 11 | 17.5 | 14 | 22.5 | 105 | M10×35 | 61 100 | 60 200 | 1 210 | 672 / 4 070 | 618 / 3 750 |

Notes (1) Track rail lengths $L$ are shown in Tables 2.1 and 2.2 on page Ⅱ−67.
(2) Track rail mounting bolts are not appended. Hexagon socket head bolts of JIS B 1176 with strength division 12.9 are recommended.
(3) The direction of basic dynamic load rating ($C$), basic static load rating ($C_0$), and static moment rating ($T_0$, $T_X$, $T_Y$) are shown in the sketches below. The upper values of $T_X$ and $T_Y$ are for one slide unit and the lower values are for two slide units in close contact.
(4) The shapes of grease nipple vary by size. The specifications are shown in Table 15 on page Ⅱ−73.




**Example of identification number of assembled set**

| Model code | Dimensions | Part code | Model code | Material code | Preload symbol | Classification symbol | Interchangeable code | Supplemental code |
|---|---|---|---|---|---|---|---|---|
| MET | G | 30 | C2 | R440 | | | T1 | P | | /U |
| ① | ② | ③ | ④ | ⑤ | ① | ⑥ | ⑦ | ⑧ | ⑨ | ⑩ |

① Model

| | |
|---|---|
| MET | Flange type mounting from top |
| LWET | |
| LWET···Q | |

② Length of slide unit

| | |
|---|---|
| C | Short |
| No symbol | Standard |
| G | Long |

③ Size: 25, 30, 35, 45

④ Number of slide unit (2)

⑤ Length of track rail (440 mm)

⑥ Material type

| | |
|---|---|
| No symbol | High carbon steel made |
| SL | Stainless steel made |

⑦ Preload amount

| | |
|---|---|
| $T_C$ | Clearance |
| No symbol | Standard |
| $T_1$ | Light preload |
| $T_2$ | Medium preload |

⑧ Accuracy class

| | |
|---|---|
| No symbol | Ordinary |
| H | High |
| P | Precision |
| SP | Super precision |

⑨ Interchangeable

| | |
|---|---|
| No symbol | Non-interchangeable specification |
| S1 | S1 specification |
| S2 | S2 specification |

⑩ Special specification: A, BS, D, E, F, I , J, L, LF, MA N, Q, RE, T, U, V, W, Y, Z

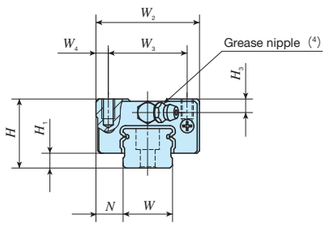


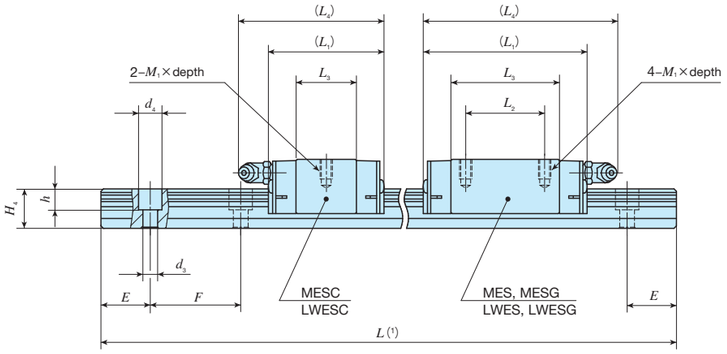


1N=0.102kgf=0.2248lbs.
1mm=0.03937inch

**Block type mounting from top**

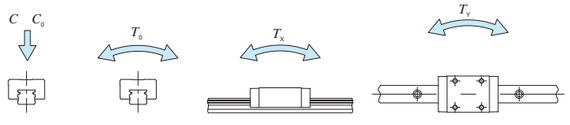
| Shape | MES · LWES | | |
|---|---|---|---|
| Size | 15 | 20 | 25 |
| | 30 | 35 | 45 |




| Identification number | | Interchangeable | Mass (Ref.) | | Dimensions of assembly mm | | | Dimensions of slide unit mm | | | | | | | | | Dimensions of track rail mm | | | | | | | Recommended mounting bolt for track rail (2) mm | Basic dynamic load rating (3) | Basic static load rating (3) | Static moment rating (3) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ME series | LWE series (No C-Lube) | | Slide unit kg | Track rail kg/m | $H$ | $H_1$ | $N$ | $W_2$ | $W_3$ | $W_4$ | $L_1$ | $L_2$ | $L_3$ | $L_4$ | $M_1$×depth | $H_3$ | $W$ | $H_4$ | $d_3$ | $d_4$ | $h$ | $E$ | $F$ | Bolt size× $\ell$ | $C$ N | $C_0$ N | $T_0$ N·m | $T_X$ N·m | $T_Y$ N·m |
| MESC 15 | LWESC 15 | ○ | 0.09 | 1.57 | 24 | 5.8 | 9.5 | 34 | 26 | 4 | 41 | – | 22.4 | 45 | M4×7 | 4.5 | 15 | 14.5 | 3.6 (4.5) | 6.5 (8 ) | 4.5 (6 ) | 20 | 60 | M3×16 (M4×16) | 5 240 | 5 480 | 43.8 | 21.3 149 | 21.3 149 |
| MESC 15···SL | LWESC 15···SL | ○ | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MES 15 | LWES 15 | ○ | 0.14 | | | | | | | | 57 | 26 | 38.4 | 61 | | | | | | | | | | | 7 640 | 9 390 | 75.1 | 57.6 333 | 57.6 333 |
| MES 15···SL | LWES 15···SL | ○ | | | | | | | | | | | | | | | | | | | | | | | | | | |
| – | LWES 15···Q | – | | | | 5 | | | | | | | 38.3 | | | | | | | | | | | | 6 550 | 8 610 | 68.9 | 53.0 307 | 53.0 307 |
| MESG 15 | LWESG 15 | ○ | 0.18 | | | 5.8 | | | | | 70 | 36 | 51.1 | 73 | | | | | | | | | | | 9 340 | 12 500 | 100 | 99.5 533 | 99.5 533 |
| MESG 15···SL | LWESG 15···SL | ○ | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MESC 20 | | ○ | 0.15 | 2.28 | 28 | 6 | 11 | 42 | 32 | 5 | 47 | – | 24.7 | 58 | M5×8 | 5.5 | 20 | 16 | 6 | 9.5 | 8.5 | 20 | 60 | M5×16 | 7 580 | 7 340 | 78.9 | 31.5 235 | 31.5 235 |
| | LWESC 20 | ○ | | | | | | | | | | | 24.5 | | | | | | | | | | | | 7 570 | | | | |
| MESC 20···SL | | ○ | | | | | | | | | | | 24.7 | | | | | | | | | | | | 7 580 | | | | |
| | LWESC 20···SL | ○ | | | | | | | | | | | 24.5 | | | | | | | | | | | | 7 570 | | | | |
| MES 20 | | ○ | 0.25 | | | | | | | | 67 | 32 | 44.2 | 78 | | | | | | | | | | | 11 600 | 13 400 | 145 | 95.6 566 | 95.6 566 |
| | LWES 20 | ○ | | | | | | | | | | | 44 | | | | | | | | | | | | | | | | |
| MES 20···SL | | ○ | | | | | | | | | | | 44.2 | | | | | | | | | | | | | | | | |
| | LWES 20···SL | ○ | | | | | | | | | | | 44 | | | | | | | | | | | | | | | | |
| – | LWES 20···Q | – | | | | 5 | | | | | | | | | | | | | | | | | | | 10 500 | | | 100 562 | 100 562 |
| MESG 20 | | ○ | 0.33 | | | 6 | | | | | 83 | 45 | 60.1 | 94 | | | | | | | | | | | 14 400 | 18 300 | 197 | 172 930 | 172 930 |
| | LWESG 20 | ○ | | | | | | | | | | | 59.9 | | | | | | | | | | | | | | | | |
| MESG 20···SL | | ○ | | | | | | | | | | | 60.1 | | | | | | | | | | | | | | | | |
| | LWESG 20···SL | ○ | | | | | | | | | | | 59.9 | | | | | | | | | | | | | | | | |

Notes (1) Track rail lengths $L$ are shown in Tables 2.1 and 2.2 on page Ⅱ−67.
(2) Track rail mounting bolts are not appended. Hexagon socket head bolts of JIS B 1176 with strength division 12.9 are recommended.
(3) The direction of basic dynamic load rating ($C$), basic static load rating ($C_0$), and static moment rating ($T_0$, $T_X$, $T_Y$) are shown in the sketches below. The upper values of $T_X$ and $T_Y$ are for one slide unit and the lower values are for two slide units in close contact.
(4) The shapes of grease nipple vary by size. The specifications are shown in Table 15 on page Ⅱ−73.
Remark: The value in ( ) represents dimensions when the track rail mounting hole dimension is set for M4 holes. Indicate the identification number with /M4 at the end.




**Example of identification number of assembled set**

| Model code | Dimensions | Part code | | Model code | Material code | Preload symbol | Classification symbol | Interchangeable code | Supplemental code |
|---|---|---|---|---|---|---|---|---|---|
| MES | G | 15 | C2 | R340 | | | T1 | P | | /U |
| ① | ② | ③ | ④ | ⑤ | ① | ⑥ | ⑦ | ⑧ | ⑨ | ⑩ |

① Model

| | |
|---|---|
| MES | Block type mounting from top |
| LWES | |
| LWES···Q | |

② Length of slide unit

| | |
|---|---|
| C | Short |
| No symbol | Standard |
| G | Long |

③ Size: 15, 20

④ Number of slide unit (2)

⑤ Length of track rail (340 mm)

⑥ Material type

| | |
|---|---|
| No symbol | High carbon steel made |
| SL | Stainless steel made |

⑦ Preload amount

| | |
|---|---|
| $T_C$ | Clearance |
| No symbol | Standard |
| $T_1$ | Light preload |
| $T_2$ | Medium preload |

⑧ Accuracy class

| | |
|---|---|
| No symbol | Ordinary |
| H | High |
| P | Precision |
| SP | Super precision |

⑨ Interchangeable

| | |
|---|---|
| No symbol | Non-interchangeable specification |
| S1 | S1 specification |
| S2 | S2 specification |

⑩ Special specification: A, BS, D, E, F, Ⅰ, J, L, LF, MA M4, N, Q, RE, T, U, V, W, Y, Z



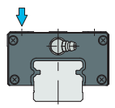


1N=0.102kgf=0.2248lbs.
1mm=0.03937inch

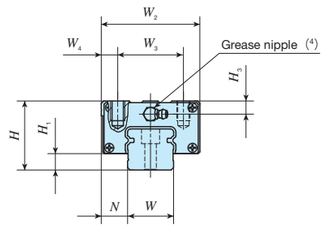
# IKO C-Lube Linear Way ME

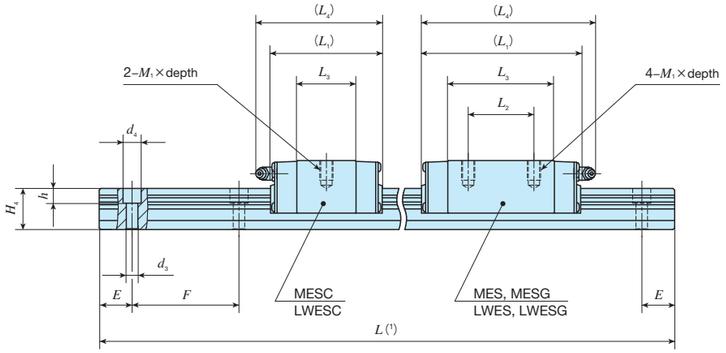
**Block type mounting from top**

Shape: **MES · LWES**



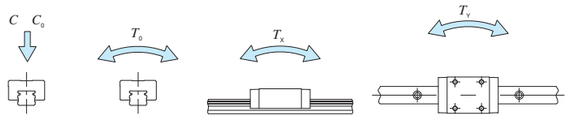
| Size | | | |
|---|---|---|---|
| 15 | 20 | 25 | |
| 30 | 35 | 45 | |




| Identification number | | Interchangeable | Mass (Ref.) | | Dimensions of assembly mm | | | Dimensions of slide unit mm | | | | | | | | Dimensions of track rail mm | | | | | | | | Recommended mounting bolt for track rail (2) mm | Basic dynamic load rating (3) | Basic static load rating (3) | Static moment rating (3) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ME series | LWE series (No C-Lube) | | Slide unit kg | Track rail kg/m | $H$ | $H_1$ | $N$ | $W_2$ | $W_3$ | $W_4$ | $L_1$ | $L_2$ | $L_3$ | $L_4$ | $M_1$×depth | $H_3$ | $W$ | $H_4$ | $d_3$ | $d_4$ | $h$ | $E$ | $F$ | Bolt size× $\ell$ | $C$ N | $C_0$ N | $T_0$ N·m | $T_X$ N·m | $T_Y$ N·m |
| MESC 25 | LWESC 25 | ○ | 0.26 | 3.09 | 33 | 7 | 12.5 | 48 | 35 | 6.5 | 59 | – | 32 | 70 | M 6×9 | 6.5 | 23 | 19 | 7 | 11 | 9 | 20 | 60 | M 6×20 | 12 400 | 12 300 | 153 | 71.8<br>480 | 71.8<br>480 |
| MESC 25···SL | LWESC 25···SL | ○ | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MES 25 | LWES 25 | ○ | 0.43 | | | | | | | | 83 | 35 | 56 | 94 | | | | | | | | | | | 18 100 | 21 100 | 262 | 195<br>1 090 | 195<br>1 090 |
| MES 25···SL | LWES 25···SL | ○ | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| – | LWES 25···Q | – | | | | 6 | | | | | | | | | | | | | | | | | | | 15 500 | 19 400 | 240 | 175<br>1 010 | 175<br>1 010 |
| MESG 25 | LWESG 25 | ○ | 0.55 | | | 7 | | | | | 102 | 50 | 75 | 113 | | | | | | | | | | | 22 200 | 28 200 | 349 | 336<br>1 740 | 336<br>1 740 |
| MESG 25···SL | LWESG 25···SL | ○ | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MESC 30 | LWESC 30 | ○ | 0.46 | 5.09 | 42 | 10 | 16 | 60 | 40 | 10 | 68 | – | 36 | 78 | M 8×12 | 8 | 28 | 25 | 7 | 11 | 9 | 20 | 80 | M 6×25 | 20 600 | 18 800 | 287 | 129<br>855 | 129<br>855 |
| MESC 30···SL | LWESC 30···SL | ○ | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MES 30 | LWES 30 | ○ | 0.78 | | | | | | | | 97 | 40 | 64.8 | 107 | | | | | | | | | | | 29 500 | 31 300 | 479 | 328<br>1 920 | 328<br>1920 |
| MES 30···SL | LWES 30···SL | ○ | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| – | LWES 30···Q | – | 0.75 | 5.04 | | | | | | | 96 | | | 106 | | | | | | | | | | | 21 600 | 26 400 | 398 | 278<br>1 580 | 278<br>1 580 |
| MESG 30 | LWESG 30 | ○ | 1.13 | 5.09 | | | | | | | 129 | 60 | 96.5 | 139 | | | | | | | | | | | 39 200 | 47 000 | 718 | 704<br>3 690 | 704<br>3 690 |
| MESG 30···SL | LWESG 30···SL | ○ | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MESC 35 | LWESC 35 | ○ | 0.67 | 6.85 | 48 | 11 | 18 | 70 | 50 | 10 | 78 | – | 41.6 | 90 | M 8×12 | 10 | 34 | 28 | 9 | 14 | 12 | 20 | 80 | M 8×30 | 29 900 | 26 800 | 412 | 176<br>1 190 | 162<br>1 100 |
| MES 35 | LWES 35 | ○ | 1.21 | | | | | | | | 111 | 50 | 74.6 | 123 | | | | | | | | | | | 42 900 | 44 700 | 686 | 448<br>2 660 | 412<br>2 450 |
| – | LWES 35···Q | – | 1.20 | 6.84 | | | | | | | 110 | | 76.6 | 122 | | | | | | | | | | | 30 500 | 37 600 | 687 | 482<br>2 550 | 482<br>2 550 |
| MES 45 | LWES 45 | ○ | 2.05 | 11.2 | 60 | 14 | 20.5 | 86 | 60 | 13 | 125 | 60 | 81.4 | 136 | M10×15 | 13 | 45 | 34 | 11 | 17.5 | 14 | 22.5 | 105 | M10×35 | 61 100 | 60 200 | 1 210 | 672<br>4 070 | 618<br>3 750 |

Notes (1) Track rail lengths $L$ are shown in Tables 2.1 and 2.2 on page Ⅱ−67.
(2) Track rail mounting bolts are not appended. Hexagon socket head bolts of JIS B 1176 with strength division 12.9 are recommended.
(3) The direction of basic dynamic load rating ($C$), basic static load rating ($C_0$), and static moment rating ($T_0$, $T_X$, $T_Y$) are shown in the sketches below. The upper values of $T_X$ and $T_Y$ are for one slide unit and the lower values are for two slide units in close contact.
(4) The shapes of grease nipple vary by size. The specifications are shown in Table 15 on page Ⅱ−73.




**Example of identification number of assembled set**

| Model code | Dimensions | Part code | Model code | Material code | Preload symbol | Classification symbol | Interchangeable code | Supplemental code |
|---|---|---|---|---|---|---|---|---|
| MES | G | 30 | C2 | R440 | | | T1 | P | | /U |
| ① | ② | ③ | ④ | ⑤ | ① | ⑥ | ⑦ | ⑧ | ⑨ | ⑩ |

① Model

| | |
|---|---|
| MES | Block type mounting from top |
| LWES | |
| LWES···Q | |

② Length of slide unit

| | |
|---|---|
| C | Short |
| No symbol | Standard |
| G | Long |

③ Size: 25, 30, 35, 45

④ Number of slide unit (2)

⑤ Length of track rail (440 mm)

⑥ Material type

| | |
|---|---|
| No symbol | High carbon steel made |
| SL | Stainless steel made |

⑦ Preload amount

| | |
|---|---|
| $T_C$ | Clearance |
| No symbol | Standard |
| $T_1$ | Light preload |
| $T_2$ | Medium preload |

⑧ Accuracy class

| | |
|---|---|
| No symbol | Ordinary |
| H | High |
| P | Precision |
| SP | Super precision |

⑨ Interchangeable

| | |
|---|---|
| No symbol | Non-interchangeable specification |
| S1 | S1 specification |
| S2 | S2 specification |

⑩ Special specification: A, BS, D, E, F, Ⅰ, J, L, LF, MA, N, Q, RE, T, U, V, W, Y, Z





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

# C-Lube Linear Way MH
# Linear Way H



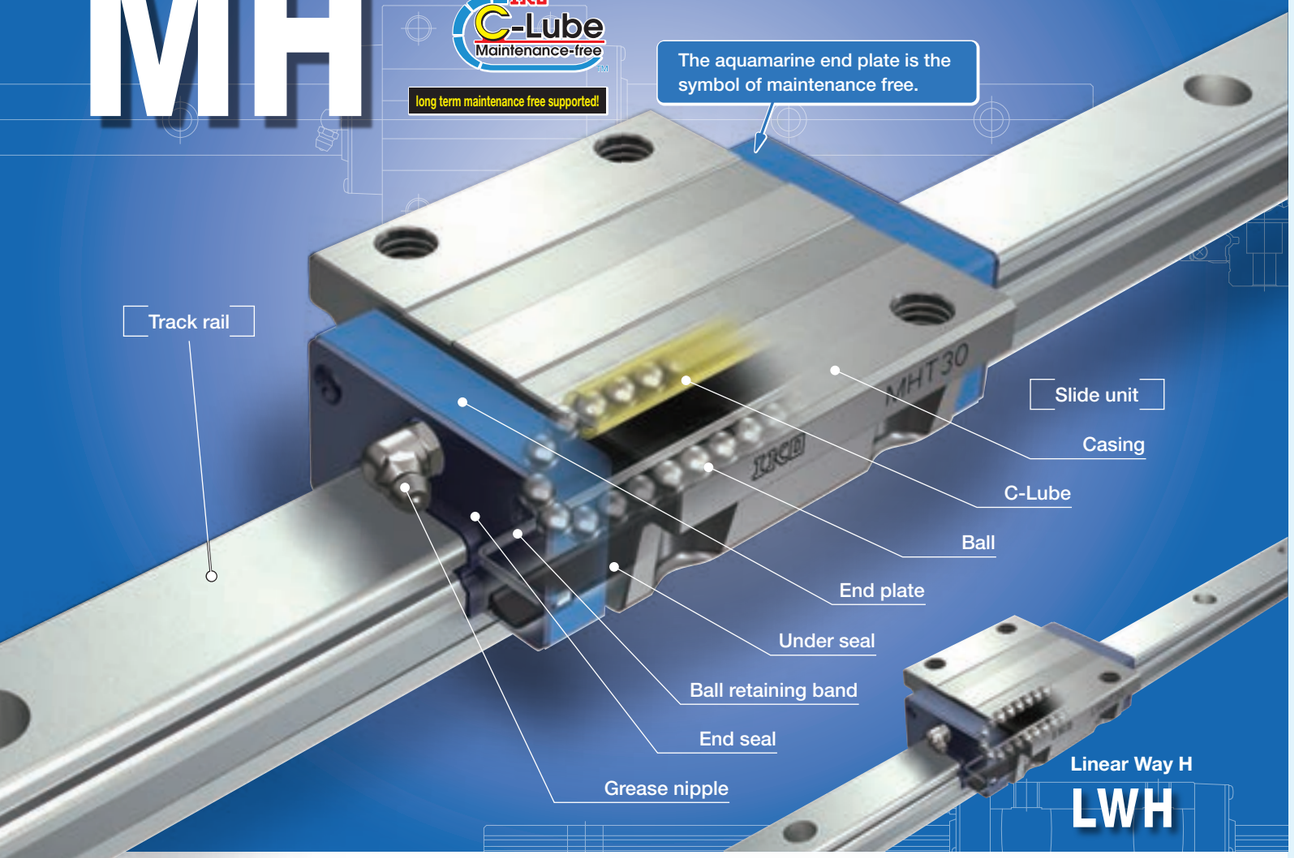


# C-Lube Linear Way MH

# MH

C-Lube Maintenance-free

long term maintenance free supported!




## Points

### High rigidity series with the largest-class load rating among ball types

1 High rigidity linear motion rolling guides designed to evenly support high load capacity by incorporating large-diameter balls.

### Wide range of variations for your needs For details P.I-26

2 As the lineup of 5 types of slide unit shape including the flange type, block type with small width and side mounting type, etc., and 3 types with different slide unit length with same section are available, you can select an optimal product for the specifications of your machine and device.

### Stainless steels selections superior in corrosion resistance are listed on lineup. For details P.I-43

3 Products made of stainless steel are highly resistant to corrosion, so that they are suitable for applications where rust prevention oil is not preferred, such as in cleanroom environment.

### Series of ultra seal specification for excellent dust protection performance

4 Products of ultra seal specifications have excellent dust protection performance thanks to the combination of the dedicated track rail finished with total ground and slide unit with end seal and under seal of special shapes. Special specification with inner seal further improves dust protection property of the ball circulation section against foreign substances from the upper surface of the track rail.



# Identification Number and Specification

## Example of an identification number

The specifications of MH and LWH series are indicated by the identification number. Indicate the identification number, consisting of a model code, dimensions, a part code, a dust protection code, a material code, a preload symbol, a classification symbol, an interchangeable code, and any supplemental codes for each specification to apply.

| | 1 | 2 | 3 | 4 | 5 | 1 | 6 | 7 | 8 | 9 | 10 | 11 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Non-interchangeable specification** | | | | | | | | | | | | |
| Assembled set | MHT | G | 20 | C1 | R840 | | | | T1 | P | | /FV |
| **Interchangeable specification** | | | | | | | | | | | | |
| Single slide unit | MHT | G | 20 | C1 | | | | | T1 | P | S1 | /V |
| Single track rail (1) | LWH | | 20 | | R840 | B | | | | P | S1 | /F |
| Assembled set | MHT | G | 20 | C1 | R840 | | | | T1 | P | S1 | /FV |

1 **Model** — Model code: Page Ⅱ—91, Page Ⅱ—92

2 **Length of slide unit**

3 **Size** — Dimensions: Page Ⅱ—92

4 **Number of slide units** — Part code: Page Ⅱ—92, Page Ⅱ—93

5 **Length of track rail**

6 **Dust protection specification** — Dust protection code: Page Ⅱ—94

7 **Material type** — Material code: Page Ⅱ—96

8 **Preload amount** — Preload symbol: Page Ⅱ—96

9 **Accuracy class** — Classification symbol: Page Ⅱ—97

10 **Interchangeable** — Interchangeable code: Page Ⅱ—98

11 **Special specification** — Supplemental code: Page Ⅱ—99

Note (1) Indicate "LWH···B" or "LWH" for the model code of the single track rail regardless of the series and the combination of slide unit models.



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

# Identification Number and Specification — Model —

## 1 Model

| | | |
|---|---|---|
| C-Lube Linear Way MH (MH series) | Flange type mounting from bottom | : MH |
| | Flange type mounting from top (2) | : MHT |
| | Block type mounting from top | : MHD |
| | Compact block type mounting from top | : MHS |
| Linear Way H (1) (LWH series) | Flange type mounting from bottom | : LWH (···B) |
| | Flange type mounting from top (2) | : LWHT (···B) |
| | Block type mounting from top | : LWHD (···B) |
| | Compact block type mounting from top | : LWHS (···B) |
| | Side mounting type | : LWHY |

For applicable models and sizes, see Table 1.1 and Table 1.2.
Indicate "LWH···B" or "LWH" for the model code of the single track rail regardless of the series and the combination of slide unit models.

Notes (1) This model has no built-in C-Lube.
(2) Some models may be mounted upward.

*Table 1.1 Models and sizes of MH and LWH series*

| Material | Shape | Length of slide unit | Model | Size 8 | 10 | 12 | 15 | 20 | 25 | 30 | 35 | 45 | 55 | 65 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| High carbon steel made | Flange type mounting from bottom | Standard | MH | – | – | – | ○ | ○ | ○ | ○ | ○ | ○ | – | – |
| | | | LWH···B | – | – | – | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | | | MH···M (U) | – | – | – | – | – | ○ | ○ | – | – | – | – |
| | | | LWH···M (U) | – | – | – | ○ | ○ | ○ | ○ | ○ | ○ | – | – |
| | | Long | MHG | – | – | – | – | ○ | ○ | ○ | ○ | ○ | – | – |
| | | | LWHG | – | – | – | – | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | Flange type mounting from top | Standard | MHT | – | – | ○(1) | ○ | ○ | ○ | ○ | ○ | ○ | – | – |
| | | | LWHT···B | – | – | ○(1)(2) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | | | MHT···M (U) | – | – | – | – | – | ○ | ○ | – | – | – | – |
| | | | LWHT···M (U) | – | – | – | ○ | ○ | ○ | ○ | ○ | ○ | – | – |
| | | Long | MHTG | – | – | – | ○(1) | ○ | ○ | ○ | ○ | ○ | – | – |
| | | | LWHTG | – | – | – | – | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| | Block type mounting from top | Standard | MHD | – | – | ○ | ○ | – | ○ | ○ | ○ | ○ | – | – |
| | | | LWHD···B | – | – | ○(2) | ○ | – | ○ | ○ | ○ | ○ | ○ | ○ |
| | | | MHD···M (U) | – | – | – | – | – | ○ | ○ | – | – | – | – |
| | | | LWHD···M (U) | – | – | – | ○ | – | ○ | ○ | ○ | ○ | – | – |
| | | Long | MHDG | – | – | – | – | – | ○ | ○ | ○ | ○ | – | – |
| | | | LWHDG | – | – | – | – | – | ○ | ○ | ○ | ○ | ○ | ○ |
| | Compact block type mounting from top | Standard | MHS | – | – | – | ○ | ○ | ○ | ○ | – | – | – | – |
| | | | LWHS···B | – | – | – | ○ | ○ | ○ | ○ | – | – | – | – |
| | | | MHS···M (U) | – | – | – | – | – | ○ | ○ | – | – | – | – |
| | | | LWHS···M (U) | – | – | – | ○ | ○ | ○ | ○ | – | – | – | – |
| | | Long | MHSG | – | – | – | ○ | ○ | ○ | ○ | – | – | – | – |
| | | | LWHSG | – | – | – | – | ○ | ○ | ○ | – | – | – | – |
| | Side mounting type | Standard | LWHY | – | – | – | ○ | ○ | ○ | ○ | ○ | ○ | – | – |

Notes (1) This may be mounted upward.
(2) "···B" is not included in the model code.
Remark: For the models indicated in ▭, the interchangeable specification is available.



# — Length of Slide Unit · Size · Number of Slide Unit —

## 2 Length of slide unit

| | | |
|---|---|---|
| Short | : C | For applicable models and sizes, see Table 1.1 and Table 1.2. |
| Standard | : No symbol | |
| Long | : G | |

## 3 Size

8, 10, 12, 15, 20, 25, 30, 35, 45, 55, 65

For applicable models and sizes, see Table 1.1 and Table 1.2.

## 4 Number of slide units

: C○

For an assembled set, indicates the number of slide units assembled on a track rail. For a single slide unit, only "C1" is specified.

*Table 1.2 Models and sizes of MH and LWH series*

| Material | Shape | Slide unit Length | Model | Size 8 | 10 | 12 | 15 | 20 | 25 | 30 | 35 | 45 | 55 | 65 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Stainless steel made | Flange type mounting from bottom | Standard | LWH···SL | – | – | – | ○ | ○ | ○ | ○ | – | – | – | – |
| | Flange type mounting from top | Standard | MHT···SL | ○(1) | ○(1) | ○(1) | ○ | ○ | ○ | ○ | – | – | – | – |
| | | | LWHT···SL | ○(1) | ○(1) | ○(1) | ○ | ○ | ○ | ○ | – | – | – | – |
| | Block type mounting from top | Short | MHDC···SL | ○ | ○ | ○ | – | – | – | – | – | – | – | – |
| | | | LWHDC···SL | ○ | ○ | ○ | – | – | – | – | – | – | – | – |
| | | Standard | MHD···SL | ○ | ○ | ○ | – | – | – | – | – | – | – | – |
| | | | LWHD···SL | ○ | ○ | ○ | – | – | – | – | – | – | – | – |
| | | Long | MHDG···SL | ○ | ○ | ○ | – | – | – | – | – | – | – | – |
| | | | LWHDG···SL | ○ | ○ | ○ | – | – | – | – | – | – | – | – |
| | Compact block type mounting from top | Standard | MHS···SL | – | – | – | ○ | ○ | ○ | ○ | – | – | – | – |
| | | | LWHS···SL | – | – | – | ○ | ○ | ○ | ○ | – | – | – | – |

Note (1) This may be mounted upward.
Remark: For the models indicated in ▭, the interchangeable specification is available.

MH · LWH

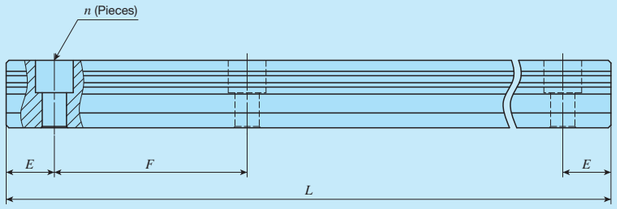
1N=0.102kgf=0.2248lbs.
1mm=0.03937inch

## 5 Length of track rail

: R○

Indicate the length of track rail in mm.
For standard and maximum length, see Table 2.1 and Table 2.2.

### Table 2.1 Standard and maximum length of high carbon steel track rail




unit: mm

| Item \ Identification number | MH 12<br>LWH12 | MH 15<br>LWH15···B | MH 20<br>LWH20···B | MH 25<br>LWH25···B | MH 30<br>LWH30···B |
|---|---|---|---|---|---|
| Standard length $L$ ($n$) | 80 ( 2)<br>160 ( 4)<br>240 ( 6)<br>320 ( 8)<br>400 (10)<br>480 (12)<br>560 (14)<br>640 (16)<br>720 (18) | 180 ( 3)<br>240 ( 4)<br>360 ( 6)<br>480 ( 8)<br>660 (11)<br>900 (15)<br>1 200 (20) | 240 ( 4)<br>480 ( 8)<br>660 (11)<br>840 (14)<br>1 020 (17)<br>1 200 (20)<br>1 500 (25) | 240 ( 4)<br>480 ( 8)<br>660 (11)<br>840 (14)<br>1 020 (17)<br>1 200 (20)<br>1 500 (25)<br>1 980 (33) | 480 ( 6)<br>640 ( 8)<br>800 (10)<br>1 040 (13)<br>1 200 (15)<br>1 520 (19)<br>2 000 (25) |
| Pitch of mounting holes $F$ | 40 | 60 | 60 | 60 | 80 |
| $E$ | 20 | 30 | 30 | 30 | 40 |
| Standard $E$ dimensions (1) or higher | 5.5 | 7 | 8 | 9 | 10 |
| Standard $E$ dimensions (1) below | 25.5 | 37 | 38 | 39 | 50 |
| Maximum length (2) | 1 480 | 1 500<br>(3 000) | 1 980<br>(3 000) | 3 000<br>(3 960) | 2 960<br>(4 000) |

| Item \ Identification number | MH 35<br>LWH35···B | MH 45<br>LWH45···B | LWH55···B | LWH65···B |
|---|---|---|---|---|
| Standard length $L$ ($n$) | 480 ( 6)<br>640 ( 8)<br>800 (10)<br>1 040 (13)<br>1 200 (15)<br>1 520 (19) | 840 ( 8)<br>1 050 (10)<br>1 260 (12)<br>1 470 (14)<br>1 995 (19) | 840 ( 7)<br>1 200 (10)<br>1 560 (13)<br>1 920 (16)<br>3 000 (25) | 1 500 (10)<br>1 950 (13)<br>3 000 (20) |
| Pitch of mounting holes $F$ | 80 | 105 | 120 | 150 |
| $E$ | 40 | 52.5 | 60 | 75 |
| Standard $E$ dimensions (1) or higher | 10 | 12.5 | 15 | 17 |
| Standard $E$ dimensions (1) below | 50 | 65 | 75 | 92 |
| Maximum length (2) | 2 960<br>(4 000) | 2 940<br>(3 990) | 3 000<br>(3 960) | 3 000<br>(3 900) |

Notes (1) This does not apply to female threads for bellows (supplemental code "/J").
(2) Length up to the value in ( ) can be produced. If needed, please contact IKO.
Remarks 1. A typical identification number is indicated, but is applied to all models of the same size.
2. Indicate "LWH" for series of size 12 or "LWH···B" for series of size 15 or above for the model code of the single track rail regardless of the series and the combination of slide unit models.
3. For ultra seal specification, refer to Table 2.3 and Table 2.4.
4. If not directed, $E$ dimensions for both ends will be the same within the range of standard $E$ dimensions. To change the dimensions, indicate the specified rail mounting hole positions "/E" of special specification. For more information, see page Ⅲ−30.

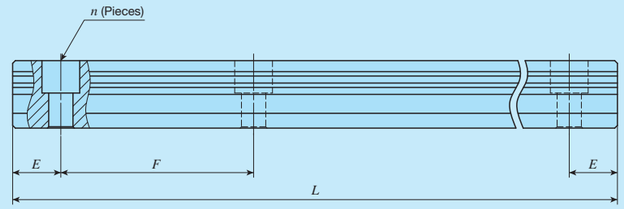




## 6 Dust protection specification

| | | |
|---|---|---|
| Standard specification | : No symbol | For applicable models and sizes, see Table 1.1 and Table 1.2. |
| Ultra seal specification | : M | Each specification of ultra seal specification with track rail mounting from bottom is in compliance to the ultra seal specification. |
| Ultra seal specification with track rail mounting from bottom | : MU | Ultra seal specification with track rail mounting from bottom applies to products to fix the track rail on the mounting surface side by pressing in the aluminum alloy caps for rail mounting holes to the mounting hole of the track rail in advance. As the upper surface of the track rail is flat, adhesion to the seal is high and dust protection effect is improved further. |
| | | For track rail specifications, see Table 2.3 and Table 2.4. |

### Table 2.2 Standard and maximum length of stainless steel track rail




unit: mm

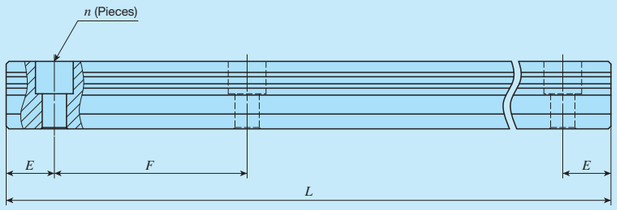
| Item \ Identification number | MH 8···SL<br>LWH8···SL | MH 10···SL<br>LWH10···SL | MH 12···SL<br>LWH12···SL | MH 15···SL<br>LWH15···SL | MH 20···SL<br>LWH20···SL | MH 25···SL<br>LWH25···SL | MH 30···SL<br>LWH30···SL |
|---|---|---|---|---|---|---|---|
| Standard length $L$ ($n$) | 40 ( 2)<br>80 ( 4)<br>120 ( 6)<br>160 ( 8)<br>200 (10)<br>240 (12)<br>280 (14) | 50 ( 2)<br>100 ( 4)<br>150 ( 6)<br>200 ( 8)<br>250 (10)<br>300 (12)<br>350 (14)<br>400 (16)<br>450 (18)<br>500 (20) | 80 ( 2)<br>160 ( 4)<br>240 ( 6)<br>320 ( 8)<br>400 (10)<br>480 (12)<br>560 (14)<br>640 (16)<br>720 (18) | 180 ( 3)<br>240 ( 4)<br>360 ( 6)<br>480 ( 8)<br>660 (11) | 240 ( 4)<br>480 ( 8)<br>660 (11)<br>840 (14) | 240 ( 4)<br>480 ( 8)<br>660 (11)<br>840 (14) | 480 ( 6)<br>640 ( 8)<br>800 (10)<br>1 040 (13) |
| Pitch of mounting holes $F$ | 20 | 25 | 40 | 60 | 60 | 60 | 80 |
| $E$ | 10 | 12.5 | 20 | 30 | 30 | 30 | 40 |
| Standard $E$ dimensions (1) or higher | 4.5 | 5 | 5.5 | 7 | 8 | 9 | 10 |
| Standard $E$ dimensions (1) below | 14.5 | 17.5 | 25.5 | 37 | 38 | 39 | 50 |
| Maximum length (2) | 480<br>(1 000) | 850<br>(1 000) | 1 000<br>(1 480) | 1 200<br>(1 500) | 1 200<br>(1 980) | 1 200<br>(1 980) | 1 200<br>(2 000) |

Notes (1) This does not apply to female threads for bellows (supplemental code "/J").
(2) Length up to the value in ( ) can be produced. If needed, please contact IKO.
Remarks 1. A typical identification number is indicated, but is applied to all models of the same size.
2. Indicate "LWH" for the model code of the single track rail regardless of the series and the combination of slide unit models.
3. If not directed, $E$ dimensions for both ends will be the same within the range of standard $E$ dimensions. To change the dimensions, indicate the specified rail mounting hole positions "/E" of special specification. For more information, see page Ⅲ−30.



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

***Table 2.3 Standard and maximum length of ultra seal specification high carbon steel track rail***

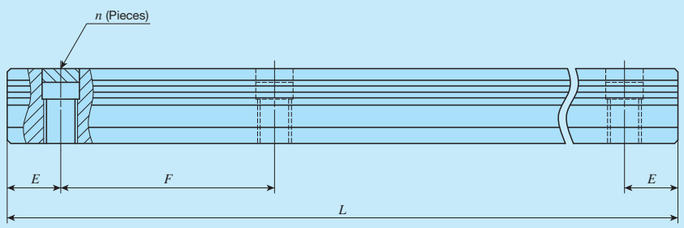



unit: mm

| Item \ Identification number | LWH15···M | LWH20···M | MH 25···M LWH25···M | MH 30···M LWH30···M | LWH35···M | LWH45···M |
|---|---|---|---|---|---|---|
| Standard length $L$ ($n$) | 180 ( 3)<br>240 ( 4)<br>360 ( 6)<br>480 ( 8)<br>660 (11) | 240 ( 4)<br>480 ( 8)<br>660 (11)<br>840 (14)<br>1 020 (17)<br>1 200 (20)<br>1 500 (25) | 240 ( 4)<br>480 ( 8)<br>660 (11)<br>840 (14)<br>1 020 (17)<br>1 200 (20)<br>1 500 (25) | 480 ( 6)<br>640 ( 8)<br>800 (10)<br>1 040 (13)<br>1 200 (15)<br>1 520 (19) | 480 ( 6)<br>640 ( 8)<br>800 (10)<br>1 040 (13)<br>1 200 (15)<br>1 520 (19) | 840 ( 8)<br>1 050 (10)<br>1 260 (12)<br>1 470 (14)<br>1 995 (19) |
| Pitch of mounting holes $F$ | 60 | 60 | 60 | 80 | 80 | 105 |
| $E$ | 30 | 30 | 30 | 40 | 40 | 52.5 |
| Standard $E$ dimensions (1) or higher | 7 | 8 | 9 | 10 | 10 | 12.5 |
| Standard $E$ dimensions (1) below | 37 | 38 | 39 | 50 | 50 | 65 |
| Maximum length | 1 500 | 1 980 | 3 000 | 2 960 | 2 960 | 2 940 |
| Maximum number of butt-jointing track rails | 3 | 3 | 3 | 3 | 3 | 3 |
| Maximum length of butt-jointing track rail | 4 200 | 5 640 | 8 700 | 8 480 | 8 480 | 8 295 |

Note (1) This does not apply to female threads for bellows (supplemental code "/J").
Remarks 1. A typical identification number is indicated, but is applied to all models of the same size.
2. If not directed, $E$ dimensions for both ends will be the same within the range of standard $E$ dimensions. To change the dimensions, indicate the specified rail mounting hole positions "/E" of special specification. For more information, see page Ⅲ—30.

***Table 2.4 Standard and maximum length of ultra seal specification with track rail mounting from bottom***




unit: mm

| Item \ Identification number | LWH15···MU | LWH20···MU | MH 25···MU LWH25···MU | MH 30···MU LWH30···MU | LWH35···MU | LWH45···MU |
|---|---|---|---|---|---|---|
| Standard length $L$ ($n$) | 180 ( 3)<br>240 ( 4)<br>360 ( 6)<br>480 ( 8)<br>660 (11) | 240 ( 4)<br>480 ( 8)<br>660 (11)<br>840 (14)<br>1 020 (17)<br>1 200 (20)<br>1 500 (25) | 240 ( 4)<br>480 ( 8)<br>660 (11)<br>840 (14)<br>1 020 (17)<br>1 200 (20)<br>1 500 (25) | 480 ( 6)<br>640 ( 8)<br>800 (10)<br>1 040 (13)<br>1 200 (15)<br>1 520 (19) | 480 ( 6)<br>640 ( 8)<br>800 (10)<br>1 040 (13)<br>1 200 (15)<br>1 520 (19) | 840 ( 8)<br>1 050 (10)<br>1 260 (12)<br>1 470 (14)<br>1 995 (19) |
| Pitch of mounting holes $F$ | 60 | 60 | 60 | 80 | 80 | 105 |
| $E$ | 30 | 30 | 30 | 40 | 40 | 52.5 |
| Standard $E$ dimensions (1) or higher | 7 | 8 | 9 | 10 | 10 | 12.5 |
| Standard $E$ dimensions (1) below | 37 | 38 | 39 | 50 | 50 | 65 |
| Maximum length | 1 500 | 1 980 | 3 000 | 2 960 | 2 960 | 2 940 |
| Maximum number of butt-jointing track rails | 3 | 3 | 3 | 3 | 3 | 3 |
| Maximum length of butt-jointing track rail | 4 200 | 5 640 | 8 700 | 8 480 | 8 480 | 8 295 |

Note (1) This does not apply to female threads for bellows (supplemental code "/J").
Remarks 1. A typical identification number is indicated, but is applied to all models of the same size.
2. Track rail mounting bolt is not included.
3. If not directed, $E$ dimensions for both ends will be the same within the range of standard $E$ dimensions. To change the dimensions, indicate the specified rail mounting hole positions "/E" of special specification. For more information, see page Ⅲ—30.





**7 Material type**

| | | |
|---|---|---|
| High carbon steel made | : No symbol | For applicable models and sizes, see Table 1.1 and Table 1.2. |
| Stainless steel made (1) | : SL | |

Note (1) Mount a standard grease nipple (brass) on the stainless steel type, too. Stainless steel grease nipple is also available. If needed, please contact IKO.

**8 Preload amount**

| | | |
|---|---|---|
| Clearance | : $T_0$ | Specify this item for an assembled set or a single slide unit. |
| Standard | : No symbol | For details of the preload amount, see Table 3. |
| Light preload | : $T_1$ | For applicable preload types, see Table 4. |
| Medium preload | : $T_2$ | |
| Heavy preload | : $T_3$ | |

***Table 3 Preload amount***

| Item / Preload type | Preload symbol | Preload amount N | Operational conditions |
|---|---|---|---|
| Clearance | $T_0$ | 0 (2) | ・Very light motion |
| Standard | (No symbol) | 0 (3) | ・Light and precise motion |
| Light preload | $T_1$ | $0.02C_0$ | ・Almost no vibrations<br>・Load is evenly balanced<br>・Light and precise motion |
| Medium preload | $T_2$ | $0.05C_0$ | ・Medium vibration<br>・Medium overhung load |
| Heavy preload | $T_3$ | $0.08C_0$ | ・Operation with vibration and/or shock<br>・Overhanging load applied<br>・Heavy cutting |

Notes (2) There is zero or subtle clearance.
(3) Indicates zero or minimal amount of preload.
Remark: $C_0$ indicates the basic static load rating.

***Table 4 Application of preload***

| Size | Preload type (preload symbol) | | | | |
|---|---|---|---|---|---|
| | Clearance ($T_0$) | Standard (No symbol) | Light preload ($T_1$) | Medium preload ($T_2$) | Heavy preload ($T_3$) |
| 8 | ○ | ○ | ○ | – | – |
| 10 | ○ | ○ | ○ | – | – |
| 12 | ○ | ○ | ○ | – | – |
| 15 | – | ○ | ○ | ○ | ○ |
| 20 | – | ○ | ○ | ○ | ○ |
| 25 | – | ○ | ○ | ○ | ○ |
| 30 | – | ○ | ○ | ○ | ○ |
| 35 | – | ○ | ○ | ○ | ○ |
| 45 | – | ○ | ○ | ○ | ○ |
| 55 | – | ○ | ○ | ○ | ○ |
| 65 | – | ○ | ○ | ○ | ○ |

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

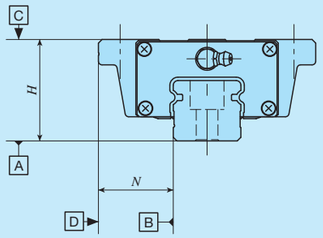


1N=0.102kgf=0.2248lbs.
1mm=0.03937inch

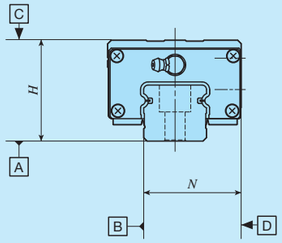
## 9 Accuracy class

| | | |
|---|---|---|
| High | : H | For interchangeable specification products, assemble a slide unit and a track rail of the same accuracy class. For details of accuracy class, see Table 5.1 and Table 5.2. For applicable accuracy class, see Table 6. |
| Precision | : P | |
| Super precision | : SP | |

***Table 5.1 Tolerance and allowance (Series of size 15 or higher)***




Flange type, block type, and compact block type




Side mounting type

unit: mm

| Item \ Class (classification symbol) | High (H) | Precision (P) | Super precision (SP) |
|---|---|---|---|
| Dim. $H$ tolerance | ±0.040 | ±0.020 | ±0.010 |
| Dim. $N$ tolerance | ±0.050 | ±0.025 | ±0.015 |
| Dim. variation of $H$ (1) | 0.015 | 0.007 | 0.005 |
| Dim. variation of $N$ (1) | 0.020 | 0.010 | 0.007 |
| Dim. variation of $H$ for multiple assembled sets (2) | 0.035 | 0.025 | – |
| Slide unit against the A surface Parallelism during running on the C surface | See Fig. 1.1 | | |
| Slide unit against the B surface Parallelism during running on the D surface | See Fig. 1.1 | | |

Notes (1) It means the size variation between slide units mounted on the same track rail.
(2) Applicable to the interchangeable specifications.

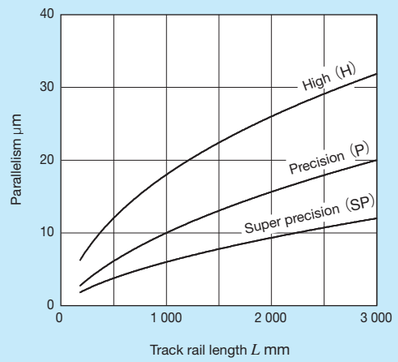
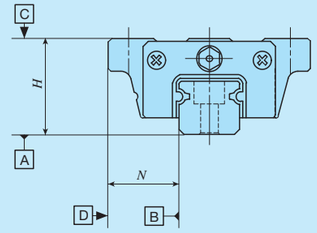



***Fig. 1.1 Parallelism in operation (series of Size 15 or higher)***





***Table 5.2 Tolerance and allowance (Series of size 8 to 12)***




unit: mm

| Item \ Class (classification symbol) | High (H) | Precision (P) |
|---|---|---|
| Dim. $H$ tolerance | ±0.020 | ±0.010 |
| Dim. $N$ tolerance | ±0.025 | ±0.015 |
| Dim. variation of $H$ (1) | 0.015 | 0.007 |
| Dim. variation of $N$ (1) | 0.020 | 0.010 |
| Dim. variation of $H$ for multiple assembled sets (2) | 0.030 | 0.020 |
| Parallelism in operation of the slide unit C surface to A surface | See Fig. 1.2 | |
| Parallelism in operation of the slide unit D surface to B surface | See Fig. 1.2 | |

Notes (1) It means the size variation between slide units mounted on the same track rail.
(2) Applicable to the interchangeable specifications.

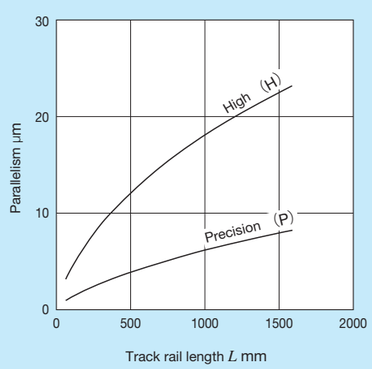



***Fig. 1.2 Parallelism in operation (Series of size 8 to 12)***

***Table 6 Application of accuracy class***

| Size | Class (classification symbol) High (H) | Precision (P) | Super precision (SP) |
|---|---|---|---|
| 8 | ○ | ○ | – |
| 10 | ○ | ○ | – |
| 12 | ○ | ○ | – |
| 15 | ○ | ○ | ○ |
| 20 | ○ | ○ | ○ |
| 25 | ○ | ○ | ○ |
| 30 | ○ | ○ | ○ |
| 35 | ○ | ○ | ○ |
| 45 | ○ | ○ | ○ |
| 55 | ○ | ○ | ○ |
| 65 | ○ | ○ | ○ |

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

## 10 Interchangeable

| | | |
|---|---|---|
| S1 specification | : S1 | This is specified for the interchangeable specifications. Assemble a track rail and a slide unit with the same interchangeable code. When using in combination with different interchangeable codes, please contact IKO. Note that the combination of interchangeable codes will not have any effect on accuracy. For applicable models and sizes, see Table 1.1 and Table 1.2. "No symbol" is indicated for non-interchangeable specification. |
| S2 specification | : S2 | |
| Non-interchangeable specification | : No symbol | |



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

**11 Special specification**

/A, /BS, /D, /E, /F, /I, /J○, /L○, /LF○, /MA, /MN, /N, /PS, /Q, /RE, /T, /U, /UR, /V○, /W○, /Y○, /Z○

For applicable special specifications, see Table 7.1, Table 7.2, Table 7.3, and Table 7.4.
For combination of multiple special specifications, see Table 8.
For details of special specification, see page Ⅲ−29.

*Table 7.1 Application of special specifications (Interchangeable specification and slide unit specification)*

| Special specification | Supplemental code | Size | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 8 | 10 | 12 | 15 | 20 | 25 | 30 | 35 | 45 | 55 | 65 |
| Stainless steel end plate (1) | /BS | × | × | × | ○ | ○ | ○ | ○ | × | × | × | × |
| Female threads for bellows (2) | /J○ | × | × | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| No end seal | /N | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| With C-Lube plate (1) | /Q | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Special environment seal (1) | /RE | × | × | × | ○ | ○ | ○ | ○ | × | × | × | × |
| Under seal | /U | ○ | ○ | ○ | ×(3) | ×(3) | ×(3) | ×(3) | ×(3) | ×(3) | ×(3) | ×(3) |
| Double end seals | /V○ | × | × | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Scrapers | /Z○ | × | × | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Notes (1) Applicable to LWH series.
(2) Not applicable to stainless steel made products.
(3) Attached as standard.

*Table 7.2 Application of special specifications (Interchangeable specification and track rail specification)*

| Special specification | Supplemental code | Size | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 8 | 10 | 12 | 15 | 20 | 25 | 30 | 35 | 45 | 55 | 65 |
| Specified rail mounting hole positions | /E | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Caps for rail mounting holes | /F | × | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Female threads for bellows (1) | /J | × | × | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Black chrome surface treatment | /LR | × | × | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Without track rail mounting bolt | /MN | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Butt-jointing track rails | /T | × | × | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Note (1) Not applicable to stainless steel made products.

*Table 7.3 Application of special specifications (Interchangeable specification and assembled set)*

| Special specification | Supplemental code | Size | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 8 | 10 | 12 | 15 | 20 | 25 | 30 | 35 | 45 | 55 | 65 |
| Stainless steel end plate (1) | /BS | × | × | × | ○ | ○ | ○ | ○ | × | × | × | × |
| Opposite reference surfaces arrangement | /D | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Specified rail mounting hole positions | /E | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Caps for rail mounting holes | /F | × | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Female threads for bellows (2) | /J○ | × | × | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Black chrome surface treatment | /L○ | × | × | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Fluorine black chrome surface treatment | /LF○ | × | × | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| With track rail mounting bolt (3) | /MA | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | × | × |
| Without track rail mounting bolt (1) | /MN | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| No end seal | /N | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| With C-Lube plate (1) | /Q | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Special environment seal (1) | /RE | × | × | × | ○ | ○ | ○ | ○ | × | × | × | × |
| Butt-jointing track rails | /T | × | × | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Under seal | /U | ○ | ○ | ○ | ×(5) | ×(5) | ×(5) | ×(5) | ×(5) | ×(5) | ×(5) | ×(5) |
| Double end seals | /V○ | × | × | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Specified grease (4) | /Y○ | × | × | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Scrapers | /Z○ | × | × | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Notes (1) Applicable to LWH series.
(2) Not applicable to stainless steel made products.
(3) Applicable to MH series.
(4) MH series is applicable only to /YCG.
(5) Attached as standard.





*Table 7.4 Application of special specifications (Non-interchangeable specification)*

| Special specification | Supplemental code | Size | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 8 | 10 | 12 | 15 | 20 | 25 | 30 | 35 | 45 | 55 | 65 |
| Butt-jointing track rails | /A | ○ | ○ | ○(1) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Stainless steel end plate (2) (3) | /BS | × | × | × | ○ | ○ | ○ | ○ | × | × | × | × |
| Opposite reference surfaces arrangement (3) | /D | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Specified rail mounting hole positions | /E | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Caps for rail mounting holes (4) | /F | × | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Inspection sheet | /I | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Female threads for bellows (3) | /J○ | × | × | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Black chrome surface treatment | /L○ | ○(5) | ○(5) | ○(5) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Fluorine black chrome surface treatment | /LF○ | × | × | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| With track rail mounting bolt (6) | /MA | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | × | × |
| Without track rail mounting bolt (2) (4) | /MN | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| No end seal (7) | /N | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Rail cover plate for track rail (7) (8) | /PS | × | × | × | × | × | ○ | ○ | ○ | ○ | ○ | ○ |
| With C-Lube plate (2) (3) (7) | /Q | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Special environment seal (2) (7) | /RE | × | × | × | ○ | ○ | ○ | ○ | × | × | × | × |
| Under seal | /U | ○ | ○ | ○ | ×(9) | ×(9) | ×(9) | ×(9) | ×(9) | ×(9) | ×(9) | ×(9) |
| Inner seal (10) | /UR | × | × | × | × | × | ○ | ○ | × | × | × | × |
| Double end seals | /V○ | × | × | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| A pair of multiple assembled sets (3) | /W○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Specified grease (11) | /Y○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Scrapers | /Z○ | × | × | × | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Notes (1) Not applicable to high carbon steel made products.
(2) Applicable to LWH series.
(3) This does not apply to side mounting type (LWHY).
(4) This does not apply to ultra seal specification with track rail mounting from bottom (LWH···MU).
(5) Applicable only to "LR".
(6) Applicable to MH series.
(7) This does not apply to ultra seal specification (LWH···M) and ultra seal specification with track rail mounting from bottom (LWH···MU).
(8) Not applicable to stainless steel made products.
(9) Attached as standard.
(10) Applicable only to MH···M(U).
(11) MH series is applicable only to /YCG.

*Table 8 Combination of supplemental codes*

| | A | BS | D | E | F | I | J | L | LF | MA | MN | N | PS | Q | RE | T | U | UR | V | W | Y |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BS | ○ | | | | | | | | | | | | | | | | | | | | |
| D | ○ | ○ | | | | | | | | | | | | | | | | | | | |
| E | – | ○ | – | | | | | | | | | | | | | | | | | | |
| F | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | | | | |
| I | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | | | |
| J | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | | |
| L | ○(1) | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | | | |
| LF | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | | | | | | | | | | | | |
| MA | ○ | – | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | | |
| MN | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | | | | | | | | | | |
| N | ○ | ○ | ○ | ○ | – | ○ | – | ○ | ○ | ○ | ○ | | | | | | | | | | |
| PS | – | ○ | ○ | ○ | – | ○ | – | – | – | ○ | ○ | – | | | | | | | | | |
| Q | ○ | ○ | ○ | ○ | ○ | ○ | – | ○ | ○ | – | ○ | ○ | ○ | | | | | | | | |
| RE | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | ○ | – | – | ○ | | | | | | | |
| T | – | ○ | ○ | ○ | ○ | – | – | ○ | ○ | ○ | ○ | ○ | – | ○ | ○ | | | | | | |
| U | ○ | – | ○ | ○ | ○ | ○ | – | ○ | – | ○ | ○ | – | – | ○ | – | – | | | | | |
| UR | – | – | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | – | – | – | – | – | – | | | | |
| V | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | ○ | ○ | – | ○ | – | ○ | ○ | – | ○ | | | |
| W | ○ | ○ | ○ | – | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | ○ | ○ | ○ | | |
| Y | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | ○ | ○ | ○ | ○ | – | ○ | ○ | ○ | – | ○ | ○ | |
| Z | ○ | ○ | ○ | ○ | ○ | ○ | ● | ○ | ○ | ○ | ○ | – | – | – | ○ | ○ | – | ○ | ● | ○ | ○ |

Note (1) Contact IKO for the case of size 8 to 12.
Remarks 1. The combination of "−" shown in the table is not available.
2. Contact IKO for the combination of the interchangeable specification marked with ●.
3. When using multiple types for combination, please indicate by arranging the symbols in alphabetical order.



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

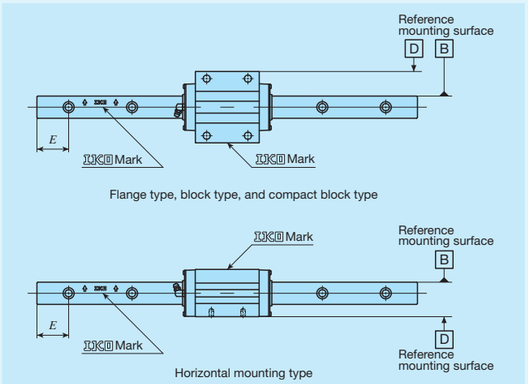
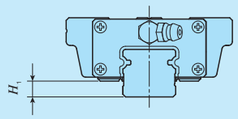



*Fig. 2 Specified rail mounting hole positions (Supplemental code /E)*

Remark: For details of specified rail mounting hole positions (supplemental code /E), see page Ⅲ−30.

***Table 9 $H_1$ dimensions of stainless steel end plate (Supplemental code /BS)***

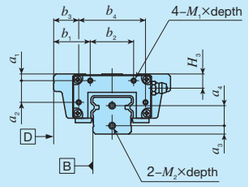


unit: mm

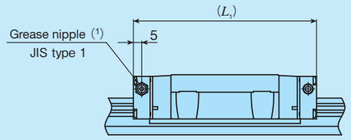
| Identification number | $H_1$ |
|---|---|
| LWH 20 | 5 |

Remarks 1. Stainless steel end plate is not applicable to LWHY (lateral mounted type).
2. A typical identification number is shown, but it is applied to the LWH series size 20. The $H_1$ dimension of the semi-standard product is the same as the standard seal, even if the stainless steel end plate is applied.

***Table 10.1 Dimension of female threads for bellows (Supplemental code Single unit: /J Assembled set: /J /JJ)***




Flange type




unit: mm

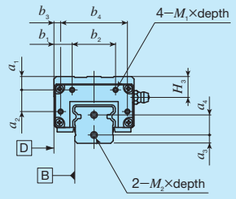
| Identification number | | Slide unit | | | | | | | | | Track rail | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $a_1$ | $a_2$ | $b_1$ | $b_2$ | $b_3$ | $b_4$ | $M_1$×depth | $L_1$(2) | $H_3$ | $a_3$ | $a_4$ | $M_2$×depth |
| MH(T) 15 | LWH(T) 15···B | 3 | 7 | 15.5 | 16 | 9.5 | 28 | M3× 6 | 83 | 6.5 | 4 | 8 | M3× 6 |
| – | LWH(T) 15···M | | | | | | | | 86 | | | | |
| MHTG 15 | – | | | | | | | | 99 | | | | |
| MH(T) 20 | LWH(T) 20···B | 4 | 10 | 20.5 | 22 | 13.5 | 36 | M3× 6 | 99 | 8.5 | 5 | 9 | M4× 8 |
| – | LWH(T) 20···M(U) | | | | | | | | 103 | | | | |
| MH(T)G 20 | LWH(T)G 20 | | | | | | | | 128 | | | | |
| MH(T) 25 | LWH(T) 25···B | 4 | 13 | 22 | 26 | 15 | 40 | M3× 6 | 110 | 8.5 | 5 | 12 | M4× 8 |
| MH(T) 25···M(U) | LWH(T) 25···M(U) | | | | | | | | 115 | | | | |
| MH(T)G 25 | LWH(T)G 25 | | | | | | | | 133 | | | | |
| MH(T) 30 | LWH(T) 30···B | 5 | 17 | 28 | 34 | 20 | 50 | M3× 6 | 128 | 11 | 6 | 14 | M4× 8 |
| MH (T) 30···M (U) | LWH(T) 30···M(U) | | | | | | | | 133 | | | | |
| MH(T)G 30 | LWH(T)G 30 | | | | | | | | 154 | | | | |
| MH(T) 35 | LWH(T) 35···B | 6 | 20 | 30 | 40 | 20 | 60 | M3× 6 | 137 | 13 | 7 | 15 | M4× 8 |
| – | LWH(T) 35···M(U) | | | | | | | | 143 | | | | |
| MH(T)G 35 | LWH(T)G 35 | | | | | | | | 165 | | | | |
| MH(T) 45 | LWH(T) 45···B | 7 | 26 | 35 | 50 | 23 | 74 | M4× 8 | 160 | 15 | 8 | 19 | M5×10 |
| – | LWH(T) 45···M(U) | | | | | | | | 167 | | | | |
| MH(T)G 45 | LWH(T)G 45 | | | | | | | | 203 | | | | |
| – | LWH(T) 55···B | 7 | 32 | 40 | 60 | 27 | 86 | M4× 8 | 196 | 17 | 8 | 25 | M5×10 |
| – | LWH(T)G 55 | | | | | | | | 248 | | | | |
| – | LWH(T) 65···B | 10 | 46 | 50 | 70 | 32 | 106 | M5×10 | 240 | 20 | 10 | 28 | M6×12 |
| – | LWH(T)G 65 | | | | | | | | 314 | | | | |

Notes (1) The specification and mounting positions of grease nipple are different from those of the standard specification product. Provided grease nipple for size 15 models is NPB2 type (special specification). For details of dimensions, contact IKO.
(2) Dimensions of the specification that female threads for bellows are fitted to both ends of the slide unit are indicated.
Remark: This is also applicable to stainless steel models of the same size.

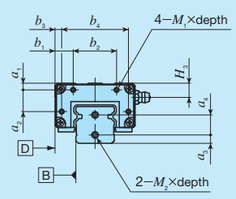




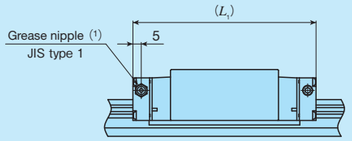
***Table 10.2 Dimension of female threads for bellows (Supplemental code Single unit: /J Assembled set: /J /JJ)***




Block type




Compact block type




unit: mm

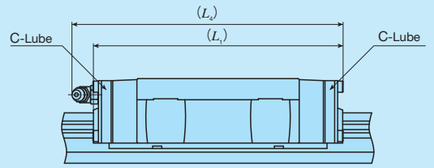
| Identification number | | Slide unit | | | | | | | | | Track rail | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | $a_1$ | $a_2$ | $b_1$ | $b_2$ | $b_3$ | $b_4$ | $M_1$×depth | $L_1$(2) | $H_3$ | $a_3$ | $a_4$ | $M_2$×depth |
| MHD 15 | LWHD 15···B | 7 | 7 | 9 | 16 | 3 | 28 | M3× 6 | 83 | 10.5 | 4 | 8 | M3× 6 |
| – | LWHD 15···M | | | | | | | | 86 | | | | |
| MHS 15 | LWHS 15···B | 3 | 7 | 9 | 16 | 3 | 28 | M3× 6 | 83 | 6.5 | 4 | 8 | M3× 6 |
| – | LWHS 15···M(U) | | | | | | | | 86 | | | | |
| MHSG 15 | – | | | | | | | | 99 | | | | |
| MHS 20 | LWHS 20···B | 4 | 10 | 11 | 22 | 4 | 36 | M3× 6 | 99 | 8.5 | 5 | 9 | M4× 8 |
| – | LWHS 20···M(U) | | | | | | | | 103 | | | | |
| MHSG 20 | LWHSG 20 | | | | | | | | 128 | | | | |
| MHD 25 | LWHD 25···B | 8 | 13 | 11 | 26 | 4 | 40 | M3× 6 | 110 | 12.5 | 5 | 12 | M4× 8 |
| MHD 25···M(U) | LWHD 25···M(U) | | | | | | | | 115 | | | | |
| MHDG 25 | LWHDG 25 | | | | | | | | 133 | | | | |
| MHS 25 | LWHS 25···B | 4 | 13 | 11 | 26 | 4 | 40 | M3× 6 | 110 | 8.5 | 5 | 12 | M4× 8 |
| MHS 25···M(U) | LWHS 25···M(U) | | | | | | | | 115 | | | | |
| MHSG 25 | LWHSG 25 | | | | | | | | 133 | | | | |
| MHD 30 | LWHD 30···B | 8 | 17 | 13 | 34 | 5 | 50 | M3× 6 | 128 | 14 | 6 | 14 | M4× 8 |
| MHD 30···M(U) | LWHD 30···M(U) | | | | | | | | 133 | | | | |
| MHDG 30 | LWHDG 30 | | | | | | | | 154 | | | | |
| MHS 30 | LWHS 30···B | 5 | 17 | 13 | 34 | 5 | 50 | M3× 6 | 128 | 11 | 6 | 14 | M4× 8 |
| MHS 30···M(U) | LWHS 30···M(U) | | | | | | | | 133 | | | | |
| MHSG 30 | LWHSG 30 | | | | | | | | 154 | | | | |
| MHD 35 | LWHD 35···B | 13 | 20 | 15 | 40 | 5 | 60 | M3× 6 | 137 | 20 | 7 | 15 | M4× 8 |
| – | LWHD 35···M(U) | | | | | | | | 143 | | | | |
| MHDG 35 | LWHDG 35 | | | | | | | | 165 | | | | |
| MHD 45 | LWHD 45···B | 17 | 26 | 18 | 50 | 6 | 74 | M4× 8 | 160 | 25 | 8 | 19 | M5×10 |
| – | LWHD 45···M(U) | | | | | | | | 167 | | | | |
| MHDG 45 | LWHDG 45 | | | | | | | | 203 | | | | |
| – | LWHD 55···B | 17 | 32 | 20 | 60 | 7 | 86 | M4× 8 | 196 | 27 | 8 | 25 | M5×10 |
| – | LWHDG 55 | | | | | | | | 248 | | | | |
| – | LWHD 65···B | 10 | 46 | 28 | 70 | 10 | 106 | M5×10 | 240 | 20 | 10 | 28 | M6×12 |
| – | LWHDG 65 | | | | | | | | 314 | | | | |

Notes (1) The specification and mounting positions of grease nipple are different from those of the standard specification product. Provided grease nipple for size 15 models is NPB2 type (special specification). For details of dimensions, contact IKO.
(2) Dimensions of the specification that female threads for bellows are fitted to both ends of the slide unit are indicated.
Remark: This is also applicable to stainless steel models of the same size.



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

***Table 11 Dimension of slide unit with C-Lube plate (Supplemental code /Q)***

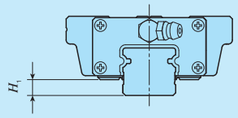



unit: mm

| Identification number | $L_1$ | $L_4$ |
|---|---|---|
| LWHDC 8···SL | 26 | – |
| LWHT 8···SL | 32 | – |
| LWHD 8···SL | | |
| LWHDG 8···SL | 38.5 | – |
| LWHDC 10···SL | 34 | – |
| LWHT 10···SL | 42 | – |
| LWHD 10···SL | | |
| LWHDG 10···SL | 50 | – |
| LWHDC 12···SL | 44 | 48 |
| LWHT 12 | 56 | 60 |
| LWHD 12 | | |
| LWHDG 12···SL | 68 | 72 |
| LWH 15···B | 75 | 78 |
| LWH 20···B | 92 | 105 |
| LWHG 20 | 121 | 134 |
| LWH 25···B | 105 | 116 |
| LWHG 25 | 127 | 139 |
| LWH 30···B | 125 | 135 |
| LWHG 30 | 151 | 161 |
| LWH 35···B | 134 | 146 |
| LWHG 35 | 162 | 174 |
| LWH 45···B | 160 | 170 |
| LWHG 45 | 203 | 214 |
| LWH 55···B | 196 | 207 |
| LWHG 55 | 248 | 258 |
| LWH 65···B | 246 | 253 |
| LWHG 65 | 321 | 328 |

Remarks 1. The dimensions of the slide unit with C-Lube at both ends are indicated.
2. A typical identification number is indicated, but is applied to all LWH series models of the same size.

***Table 12.1 $H_1$ dimensions of special environment seal (Supplemental code /RE)***

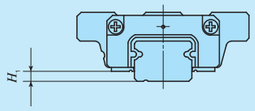



unit: mm

| Identification number | $H_1$ |
|---|---|
| LWH 20 | 5.5 |

Remarks 1. A typical identification number is shown, but it is applied to the LWH series size 20. However, semi-standard products other than LWHY (lateral mounted type) are not applicable.
2. The $H_1$ dimension in the identification number, other than the above, is the same as the standard seal.

***Table 12.2 $H_1$ dimension with under seal (Supplemental code /U)***

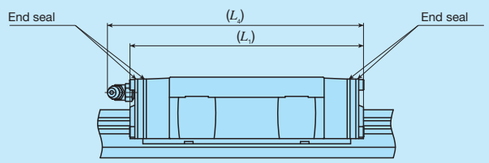



unit: mm

| Size | $H_1$ |
|---|---|
| 8 | 1.5 |
| 10 | 1.8 |
| 12 | 3.2 (1) |

Note (1) The dimensions are the same as those before mounting of under seal.

***Table 13 Dimension of slide unit with double end seals (Supplemental code Single unit: /V Assembled set: /V /VV)***




unit: mm

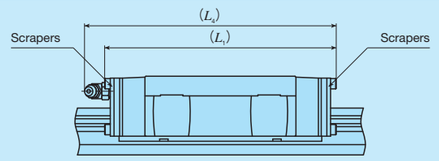
| Identification number | | $L_1$ | $L_4$ |
|---|---|---|---|
| MH 15 | LWH 15···B | 72 | 77 |
| – | LWH 15···M(U) | 71 | 76 |
| MHTG 15 | – | 88 | 93 |
| MH 20 | LWH 20···B | 91 | 104 |
| – | LWH 20···M(U) | 90 | 103 |
| MHG 20 | LWHG 20 | 119 | 133 |
| MH 25 | LWH 25···B | 104 | 116 |
| MH 25···M(U) | LWH 25···M(U) | 103 | 115 |
| MHG 25 | LWHG 25 | 127 | 139 |
| MH 30 | LWH 30···B | 122 | 134 |
| MH 30···M(U) | LWH 30···M(U) | 121 | |
| MHG 30 | LWHG 30 | 148 | 160 |
| MH 35 | LWH 35···B | 133 | 146 |
| – | LWH 35···M(U) | | |
| MHG 35 | LWHG 35 | 161 | 173 |
| MH 45 | LWH 45···B | 159 | 170 |
| – | LWH 45···M(U) | 158 | |
| MHG 45 | LWHG 45 | 202 | 213 |
| – | LWH 55···B | 195 | 206 |
| – | LWHG 55 | 247 | 258 |
| – | LWH 65···B | 241 | 251 |
| – | LWHG 65 | 316 | 325 |

Remarks 1. The dimensions of the slide unit with double end seals at both ends are indicated.
2. A typical identification number is indicated, but is applied to all models of the same size.





***Table 14 Dimension of slide unit with scrapers (Supplemental code Single unit: /Z Assembled set: /Z /ZZ)***




unit: mm

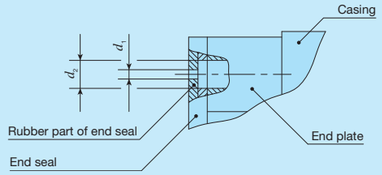
| Identification number | | $L_1$ | $L_4$ |
|---|---|---|---|
| MH 15 | LWH 15···B | 73 | 75 |
| – | LWH 15···M(U) | 72 | 74 |
| MHTG 15 | – | 89 | 91 |
| MH 20 | LWH 20···B | 91 | 104 |
| – | LWH 20···M(U) | 90 | 100 |
| MHG 20 | LWHG 20 | 119 | 133 |
| MH 25 | LWH 25···B | 104 | 116 |
| MH 25···M(U) | LWH 25···M(U) | 103 | 112 |
| MHG 25 | LWHG 25 | 126 | 138 |
| MH 30 | LWH 30···B | 124 | 135 |
| MH 30···M(U) | LWH 30···M(U) | 123 | 131 |
| MHG 30 | LWHG 30 | 150 | 161 |
| MH 35 | LWH 35···B | 133 | 146 |
| – | LWH 35···M(U) | | |
| MHG 35 | LWHG 35 | 161 | 174 |
| MH 45 | LWH 45···B | 160 | 170 |
| – | LWH 45···M(U) | 159 | |
| MHG 45 | LWHG 45 | 203 | 214 |
| – | LWH 55···B | 196 | 207 |
| – | LWHG 55 | 248 | 258 |
| – | LWH 65···B | 242 | 251 |
| – | LWHG 65 | 317 | 326 |

Remarks 1. The dimensions of the slide unit with scraper at both ends are indicated.
2. A typical identification number is indicated, but is applied to all models of the same size.

# Lubrication

In the series of size 8 to 12 of MH series and LWH series, lithium-soap base grease (MULTEMP PS No.2, KYODO YUSHI) is pre-packed, and in the series of size 15 to 65, lithium-soap base grease with extreme-pressure additive (Alvania EP grease 2, [Shell Lubricants Japan K.K.]) is pre-packed. Additionally, MH series has C-Lube placed in the recirculation part of balls, so that the interval for reapplicating lubricant can be extended and maintenance works such as grease job can be reduced significantly.
MH series and LWH series have grease nipple or oil hole as indicated in Table 16. Supply nozzles fit to each shapes of grease nipple and dedicated supplying equipment (miniature greasers) fit to oil holes are also available. For order of these parts for lubrication, see Table 13 and Table 14.1 on Page Ⅲ—23, and Table 15 on page Ⅲ—24.

***Table 15 Oil hole specifications***




unit: mm

| Size | $d_1$ | $d_2$ |
|---|---|---|
| 8 | 0.5 | 1.5 |
| 10 | | |

***Table 16 Parts for lubrication***

| Size | Grease nipple type (1) | Applicable supply nozzle type | Bolt size of female threads for piping |
|---|---|---|---|
| 8 | Oil hole | Miniature greaser MG10B/MT2 | – |
| 10 | | | |
| 12 | A-M3 | A-5120V A-5240V B-5120V B-5240V | – |
| 15 | A-M4 | | M4 |
| 20 | B-M6 | Grease gun available on the market | M6 |
| 25 | | | |
| 30 | | | |
| 35 | JIS type 4 | | PT1/8 |
| 45 | | | |
| 55 | | | |
| 65 | | | |

Note (1) For grease nipple specification, see Table 14.1 and Table 14.2 on page Ⅲ—23.
Remark: Stainless steel grease nipple is also available. If needed, please contact IKO.



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

# Dust Protection

The slide units of MH series and LWH series are equipped with end seals and under seals as standard for dust protection. However, if large amount of contaminant or dust are floating, or if large particles of foreign substances such as chips or sand may adhere to the track rail, it is recommended to cover the whole unit with bellows or telescope type shield, etc.
MH series and LWH series are provided with specific bellows. The bellows are easy to mount and provide excellent dust protection. If needed, please refer to Ⅲ−26 for ordering.
And, track rail mounting from bottom with no mounting hole on the upper surface of the track rail (Figure 3) is also available. If needed, contact IKO.

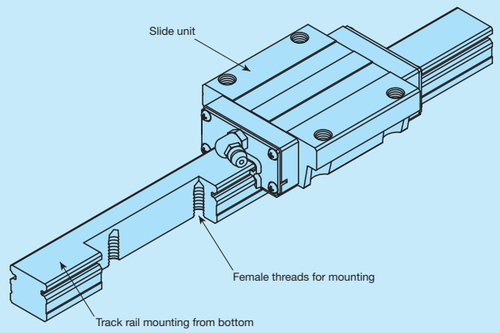



*Fig. 3 Track rail mounting from bottom specification*

# Precaution for Use

### ❶ Mounting surface, reference mounting surface and typical mounting structure

When mounting the MH series and LWH series, properly align the reference mounting surfaces B and D of the track rail and slide unit with the reference mounting surface of the table and bed and fix them. (See Fig. 4.)
The reference mounting surfaces B and D and mounting surfaces A and C are precisely ground. Machining the mounting surface of the table and bed, such as machine or device, to high accuracy and mounting them properly will ensure stable linear motion with high accuracy.
Reference mounting surface of the slide unit is the opposite side of the IKO mark. The track rail reference mounting surface is identified by locating the IKO mark on the top surface of the track rail. It is the side surface above the mark (in the direction of the arrow). (See Fig. 5.)

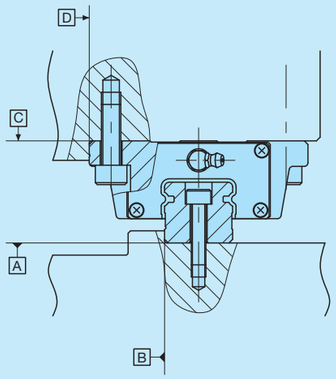



*Fig. 4 Reference mounting surface and typical mounting structure*

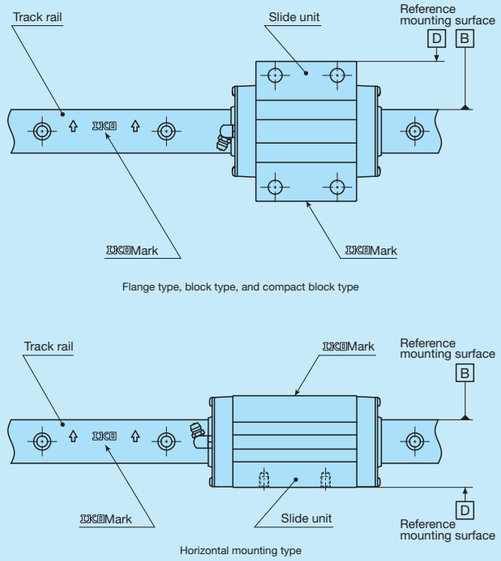



*Fig. 5 Reference mounting surface*

### ❷ Shoulder height and corner radius of the reference mounting surface

For the opposite corner of the mating reference mounting, it is recommended to have relieved fillet as indicated in Fig. 6. Recommended value for the shoulder height and corner radius on the mating side is indicated in Table 17.

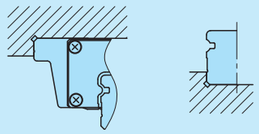
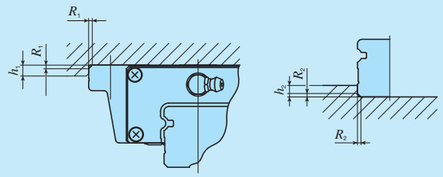


*Fig. 6 Corner of the mating reference mounting*

*Table 17 Shoulder height and corner radius of the reference mounting surface*




unit: mm

| Size | Mounting part of slide unit | | Mounting part of track rail | |
|---|---|---|---|---|
| | Shoulder height $h_1$ | Corner radius $R_1$ (Maximum) | Shoulder height $h_2$ | Corner radius $R_2$ (Maximum) |
| 8 | 3.5(4)(1) | 0.5 | 1.6(2) | 0.2 |
| 10 | 4.5(5)(1) | 0.5 | 1.9(2) | 0.2 |
| 12 | 6 | 0.5 | 2.7(2) | 0.7 |
| 15 | 4 | 0.5 | 3 | 0.5 |
| 20 | 5 | 0.5 | 3 | 0.5 |
| 25 | 6 | 1 | 4 | 1 |
| 30 | 8 | 1 | 5 | 1 |
| 35 | 8 | 1 | 6 | 1 |
| 45 | 8 | 1.5 | 7 | 1.5 |
| 55 | 10 | 1.5 | 8 | 1.5 |
| 65 | 10 | 1.5 | 10 | 1.5 |

Notes (1) The values in ( ) are applied to MHD and LWHD.
(2) For models with under seals (supplemental code "/U"), it is recommended to use the values 0.6 mm smaller than the values in the table.

### ❸ Tightening torque for fixing screw

Typical tightening torque for mounting of the MH series and LWH series to the steel mating member material is indicated in Table 18. When vibration and shock of the machine or device are large, fluctuating load is large, or moment load is applied, fix it by using the torque 1.2 to 1.5 times larger than the value indicated in the table as necessary. If the mating member material is cast iron or aluminum alloy, reduce the tightening torque depending on the strength characteristics of the mating member material.

*Table 18 Tightening torque for fixing screw*

| Bolt size | Tightening torque N・m | | |
|---|---|---|---|
| | High carbon steel-made screw | | Stainless steel-made screw |
| | Size: 12 | Size: 15 to 65 | |
| M 1.6×0.35 | – | – | 0.15 |
| M 2 ×0.4 | – | – | 0.31 |
| M 2.3×0.4 | – | – | 0.49 |
| M 2.6×0.45 | – | – | 0.70 |
| M 3 ×0.5 | 1.3 | – | 1.1 |
| M 4 ×0.7 | 2.9 | 4.1 | 2.5 |
| M 5 ×0.8 | – | 8.0 | 5.0 |
| M 6 ×1 | – | 13.6 | 8.5 |
| M 8 ×1.25 | – | 32.7 | 20.4 |
| M10 ×1.5 | – | 63.9 | 40.0 |
| M12 ×1.75 | – | 110 | – |
| M14 ×2 | – | 175 | – |
| M16 ×2 | – | 268 | – |

Remark: The tightening torque is calculated based on strength division 8.8 for high carbon steel bolts in product size 12, strength division 12.9 for carbon steel bolts in product size 15 to 65, and property division A2-70 for stainless steel bolts.



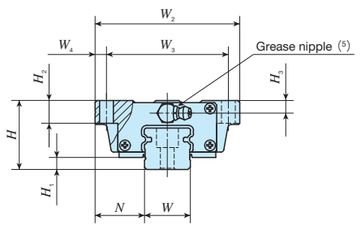


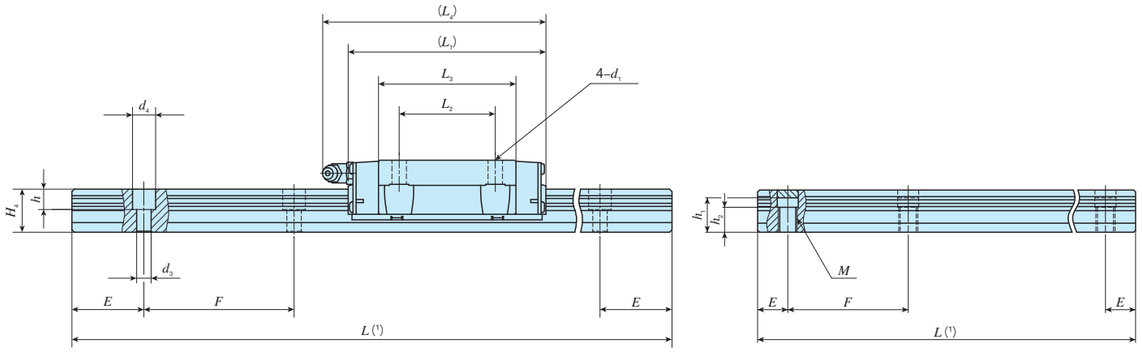
1N=0.102kgf=0.2248lbs.
1mm=0.03937inch

# IKO C-Lube Linear Way MH

**Flange type mounting from bottom**

| Shape | MH · LWH |
|---|---|
| Size | 15 · 20 · 25 · 30 · 35 · 45 · 55 · 65 |

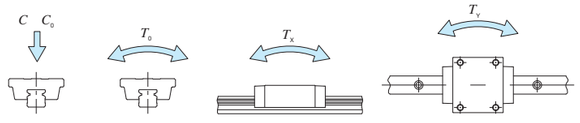



Ultra seal specification with track rail mounting from bottom

| Identification number: MH series | Identification number: LWH series (No C-Lube) | Interchangeable | Mass (Ref.): Slide unit kg | Mass (Ref.): Track rail kg/m | Dimensions of assembly mm: $H$ | $H_1$ | $N$ | Dimensions of slide unit mm: $W_2$ | $W_3$ | $W_4$ | $L_1$ | $L_2$ | $L_3$ | $L_4$ | $d_1$ | $H_2$ | $H_3$ | Dimensions of track rail mm: $W$ | $H_4$ | $d_3$ | $d_4$ | $h$ | $M$ | $h_1$ (2) | $h_2$ | $E$ | $F$ | Appended mounting bolt for track rail (3) mm: Bolt size× $\ell$ | Basic dynamic load rating (4): $C$ N | Basic static load rating (4): $C_0$ N | Static moment rating (4): $T_0$ N·m | $T_X$ N·m | $T_Y$ N·m |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MH 15 | | ○ | 0.22 | 1.47 | 24 | 4.5 | 16 | 47 | 38 | 4.5 | 66 | 30 | 44.2 | 69 | 4.5 | 7 | 4.5 | 15 | 15 | 4.5 | 8 | 6 | – | – | – | 30 | 60 | M4×16 | 11 600 | 13 400 | 112 | 95.6 / 556 | 95.6 / 556 |
| | LWH 15…B | ○ | | | | | | | | | | | 44.6 | | | | | | | | | | | | | | | | | | | | |
| – | LWH 15…SL | ○ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| – | LWH 15…M* | – | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| – | LWH 15…MU* | – | | | | | | | | | | | | | | | | | | – | – | – | M 6 | 12 | 9 | | | – | | | | | |
| MH 20 | | ○ | 0.48 | 2.56 | 30 | 6 | 21.5 | 63 | 53 | 5 | 83 | 40 | 56 | 94 | 6 | 10 | 5.5 | 20 | 18 | 6 | 9.5 | 8.5 | – | – | – | 30 | 60 | M5×18 | 18 100 | 21 100 | 232 | 195 / 1 090 | 195 / 1 090 |
| | LWH 20…B | ○ | | | | | | | | | | | 57.2 | | | | | | | | | | | | | | | | | | | | |
| – | LWH 20…SL | ○ | | | | 5 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| – | LWH 20…M* | – | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| – | LWH 20…MU* | – | | | | | | | | | | | | | | | | | | – | – | – | M 8 | 13.5 | 9.5 | | | – | | | | | |
| MHG 20 | | ○ | 0.71 | | | 6 | | | | | 112 | | 84.8 | 122 | | | | | | 6 | 9.5 | 8.5 | – | – | – | | | M5×18 | 24 100 | 31 700 | 349 | 421 / 2 140 | 421 / 2 140 |
| | LWHG 20 | ○ | | | | | | | | | | | 86 | | | | | | | | | | | | | | | | | | | | |
| MH 25 | | ○ | 0.70 | 3.50 | 36 | 8 | 23.5 | 70 | 57 | 6.5 | 95 | 45 | 63.9 | 105 | 7 | 10 | 6.5 | 23 | 22 | 7 | 11 | 9 | – | – | – | 30 | 60 | M6×22 | 25 200 | 28 800 | 362 | 309 / 1 690 | 309 / 1 690 |
| | LWH 25…B | ○ | | | | 6.5 | | | | | | | 64.7 | | | | | | | | | | | | | | | | | | | | |
| – | LWH 25…SL | ○ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MH 25…M* | | – | | | | | | | | | | | 63.9 | | | | | | | | | | | | | | | | | | | | |
| | LWH 25…M* | – | | | | | | | | | | | 64.7 | | | | | | | | | | | | | | | | | | | | |
| MH 25…MU* | | – | | | | | | | | | | | 63.9 | | | | | | | | | | | | | | | | | | | | |
| | LWH 25…MU* | – | | | | | | | | | | | 64.7 | | | | | | | – | – | – | M10 | 18 | 13 | | | – | | | | | |
| MHG 25 | | ○ | 0.93 | | | 8 | | | | | 118 | | 86.6 | 128 | | | | | | 7 | 11 | 9 | – | – | – | | | M6×22 | 30 800 | 38 300 | 483 | 533 / 2 740 | 533 / 2 740 |
| | LWHG 25 | ○ | | | | 6.5 | | | | | | | 87.4 | | | | | | | | | | | | | | | | | | | | |

Notes (1) Track rail lengths $L$ are shown in Table 2.1 on page Ⅱ−93, Table 2.2 on page Ⅱ−94, and Tables 2.3 and 2.4 on page Ⅱ−95.
(2) Choose bolts whose dimension allow fixing thread depth into track rail to be less than $h_1$.
(3) The appended track rail mounting bolts are hexagon socket head bolts equivalent to JIS B 1176. For stainless steel model, stainless steel bolts are appended.
In an assembled set of MH series and LWH…MU model, track rail mounting bolts are not appended.
(4) The direction of basic dynamic load rating ($C$), basic static load rating ($C_0$), and static moment rating ($T_0$, $T_X$, $T_Y$) are shown in the sketches below. The upper values of $T_X$ and $T_Y$ are for one slide unit and the lower values are for two slide units in close contact.
(5) The shapes of grease nipple vary by size. The specifications are shown in Table 16 on page Ⅱ−104.
Remark: The identification numbers with * are our semi-standard items.




**Example of identification number of assembled set**

| Model code | Dimensions | Part code | Model code | Dust protection code | Material code | Preload symbol | Classification symbol | Interchangeable code | Supplemental code |
|---|---|---|---|---|---|---|---|---|---|
| MH | G | 20 | C2 | R480 | | | T1 | P | | /V |
| ① | ② | ③ | ④ | ⑤ | ① | ⑥ | ⑦ | ⑧ | ⑨ | ⑩ | ⑪ |

① Model
| | |
|---|---|
| MH | Flange type mounting from bottom |
| LWH(…B) | |

② Length of slide unit
| | |
|---|---|
| No symbol | Standard |
| G | Long |

③ Size: 15, 20, 25

④ Number of slide unit (2)

⑤ Length of track rail (480 mm)

⑥ Dust protection code
| | |
|---|---|
| No symbol | Standard specification |
| M | Ultra seal specification |
| MU | Ultra seal specification with track rail mounting from bottom |

⑦ Material type
| | |
|---|---|
| No symbol | High carbon steel made |
| SL | Stainless steel made |

⑧ Preload amount
| | |
|---|---|
| No symbol | Standard |
| T1 | Light preload |
| T2 | Medium preload |
| T3 | Heavy preload |

⑨ Accuracy class
| | |
|---|---|
| H | High |
| P | Precision |
| SP | Super precision |

⑩ Interchangeable
| | |
|---|---|
| No symbol | Non-interchangeable specification |
| S1 | S1 specification |
| S2 | S2 specification |

⑪ Special specification
A, BS, D, E, F, I , J, L, LF, MA
MN, N, PS, Q, RE, T, UR, V, W, Y, Z





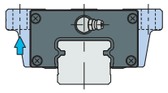
1N=0.102kgf=0.2248lbs.
1mm=0.03937inch

# IKO C-Lube Linear Way MH

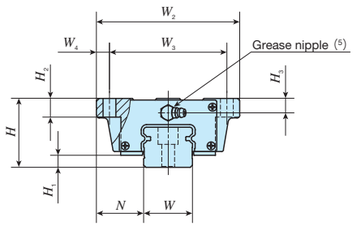
**Flange type mounting from bottom**

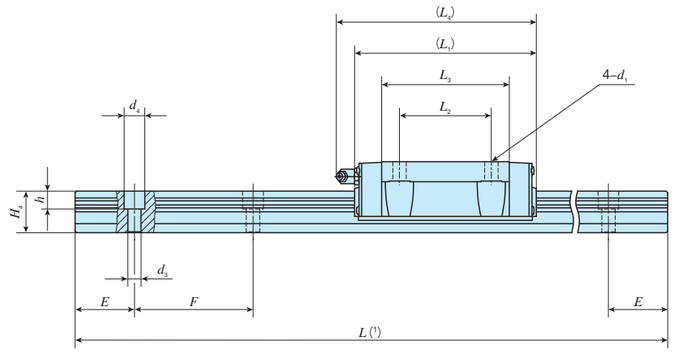
**MH · LWH**

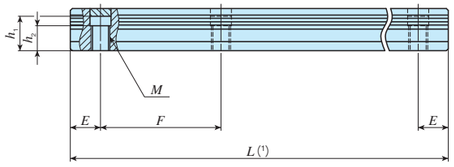
Shape



Size: 15, 20, 25, 30, 35, 45, 55, 65



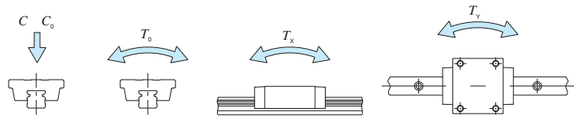




Ultra seal specification with track rail mounting from bottom

| Identification number: MH series | Identification number: LWH series (No C-Lube) | Interchangeable | Mass (Ref.): Slide unit kg | Mass (Ref.): Track rail kg/m | Dimensions of assembly mm: H | H1 | N | Dimensions of slide unit mm: W2 | W3 | W4 | L1 | L2 | L3 | L4 | d1 | H2 | H3 | Dimensions of track rail mm: W | H4 | d3 | d4 | h | M | h1 (2) | h2 | E | F | Appended mounting bolt for track rail (3) mm: Bolt size × ℓ | Basic dynamic load rating (4): C N | Basic static load rating (4): C0 N | Static moment rating (4): T0 N·m | Tx N·m | TY N·m |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MH 30 | | ○ | 1.28 | 4.82 | 42 | 9 | 31 | 90 | 72 | 9 | 113 | 52 | 80.6 | 123 | 9 | 10 | 8 | 28 | 25 | 9 | 14 | 12 | – | – | – | 40 | 80 | M 8×28 | 35 400 | 40 700 | 623 | 536<br>2 820 | 536<br>2 820 |
| | LWH 30···B | ○ | | | | 7 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| – | LWH 30···SL | ○ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MH 30···M* | | – | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | LWH 30···M* | – | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MH 30···MU* | | – | | | | | | | | | | | | | | | | | | 9 | – | – | – | M12 | 20 | 13 | | | – | | | | |
| | LWH 30···MU* | – | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MHG 30 | | ○ | 1.69 | | | 9 | | | | | 139 | | 106.6 | 149 | | | | | | 9 | 14 | 12 | – | – | – | | | M 8×28 | 42 700 | 53 200 | 814 | 894<br>4 460 | 894<br>4 460 |
| | LWHG 30 | ○ | | | | 7 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MH 35 | | ○ | 1.79 | 6.85 | 48 | 10 | 33 | 100 | 82 | 9 | 123 | 62 | 86.2 | 135 | 9 | 13 | 10 | 34 | 28 | 9 | 14 | 12 | – | – | – | 40 | 80 | M 8×28 | 48 700 | 53 700 | 823 | 631<br>3 480 | 579<br>3 190 |
| | LWH 35···B | ○ | | | | 8 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| – | LWH 35···M* | – | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| – | LWH 35···MU* | – | | | | | | | | | | | | | | | | | | – | – | – | M12 | 23 | 16 | | | – | | | | |
| MHG 35 | | ○ | 2.35 | | | 10 | | | | | 151 | | 114 | 163 | | | | | | 9 | 14 | 12 | – | – | – | | | M 8×28 | 59 500 | 71 600 | 1 100 | 1 090<br>5 570 | 1 000<br>5 110 |
| | LWHG 35 | ○ | | | | 8 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MH 45 | | ○ | 3.17 | 10.7 | 60 | 13 | 37.5 | 120 | 100 | 10 | 147 | 80 | 103.4 | 158 | 11 | 15 | 13 | 45 | 34 | 14 | 20 | 17 | – | – | – | 52.5 | 105 | M12×35 | 74 600 | 80 200 | 1 610 | 1 150<br>6 190 | 1 060<br>5 690 |
| | LWH 45···B | ○ | | | | 14 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| – | LWH 45···M* | – | | | | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| – | LWH 45···MU* | – | | | | | | | | | | | | | | | | | | – | – | – | M16 | 29 | 17 | | | – | | | | |
| MHG 45 | | ○ | 4.34 | | | 13 | | | | | 190 | | 146.6 | 201 | | | | | | 14 | 20 | 17 | – | – | – | | | M12×35 | 95 200 | 114 000 | 2 280 | 2 240<br>11 100 | 2 050<br>10 200 |
| | LWHG 45 | ○ | | | | 14 | | | | | | | | | | | | | | | | | | | | | | | | | | |

Notes (1) Track rail lengths $L$ are shown in Table 2.1 on page Ⅱ−93, Table 2.2 on page Ⅱ−94, and Tables 2.3 and 2.4 on page Ⅱ−95.
(2) Choose bolts whose dimension allow fixing thread depth into track rail to be less than $h_1$.
(3) The appended track rail mounting bolts are hexagon socket head bolts equivalent to JIS B 1176. For stainless steel model, stainless steel bolts are appended.
In an assembled set of MH series and LWH···MU model, track rail mounting bolts are not appended.
(4) The direction of basic dynamic load rating ($C$), basic static load rating ($C_0$), and static moment rating ($T_0$, $T_X$, $T_Y$) are shown in the sketches below. The upper values of $T_X$ and $T_Y$ are for one slide unit and the lower values are for two slide units in close contact.
(5) The shapes of grease nipple vary by size. The specifications are shown in Table 16 on page Ⅱ−104.

Remark: The identification numbers with * are our semi-standard items.




## Example of identification number of assembled set

| Model code | Dimensions | Part code | | | Model code | Dust protection code | Material code | Preload symbol | Classification symbol | Interchangeable code | Supplemental code |
|---|---|---|---|---|---|---|---|---|---|---|---|
| MH | G | 35 | C2 | R800 | | | | T1 | P | | /V |
| ① | ② | ③ | ④ | ⑤ | ① | ⑥ | ⑦ | ⑧ | ⑨ | ⑩ | ⑪ |

① Model

| | |
|---|---|
| MH | Flange type mounting from bottom |
| LWH(···B) | |

② Length of slide unit

| | |
|---|---|
| No symbol | Standard |
| G | Long |

③ Size: 30, 35, 45

④ Number of slide unit (2)

⑤ Length of track rail (800 mm)

⑥ Dust protection code

| | |
|---|---|
| No symbol | Standard specification |
| M | Ultra seal specification |
| MU | Ultra seal specification with track rail mounting from bottom |

⑦ Material type

| | |
|---|---|
| No symbol | High carbon steel made |
| SL | Stainless steel made |

⑧ Preload amount

| | |
|---|---|
| No symbol | Standard |
| T1 | Light preload |
| T2 | Medium preload |
| T3 | Heavy preload |

⑨ Accuracy class

| | |
|---|---|
| H | High |
| P | Precision |
| SP | Super precision |

⑩ Interchangeable

| | |
|---|---|
| No symbol | Non-interchangeable specification |
| S1 | S1 specification |
| S2 | S2 specification |

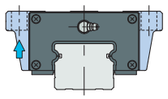
⑪ Special specification: A, BS, D, E, F, I , J, L, LF, MA MN, N, PS, Q, RE, T, UR, V, W, Y, Z

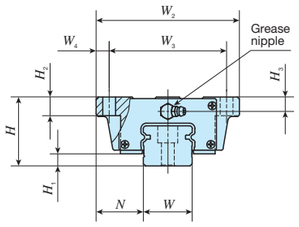
MH · LWH

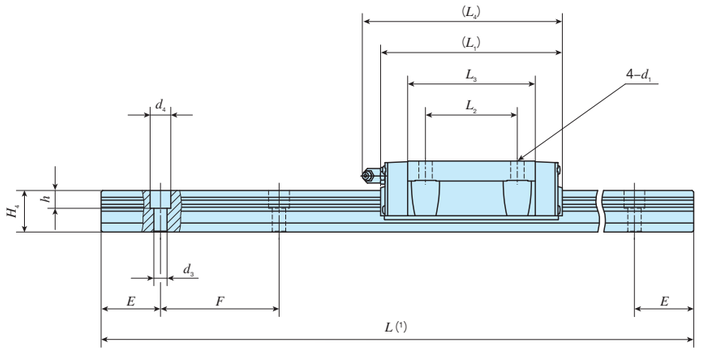


1N=0.102kgf=0.2248lbs.
1mm=0.03937inch

**Flange type mounting from bottom**

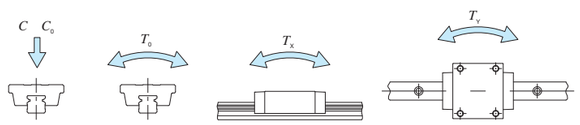
| Shape | LWH | | | |
|---|---|---|---|---|
| |  | | | |
| Size | 15 | 20 | 25 | 30 |
| | 35 | 45 | 55 | 65 |




| Identification number | | Interchangeable | Mass (Ref.) | | Dimensions of assembly mm | | | Dimensions of slide unit mm | | | | | | | | | | Dimensions of track rail mm | | | | | | | Appended mounting bolt for track rail (2) mm | Basic dynamic load rating (3) | Basic static load rating (3) | Static moment rating (3) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MH series | LWH series (No C-Lube) | | Slide unit kg | Track rail kg/m | $H$ | $H_1$ | $N$ | $W_2$ | $W_3$ | $W_4$ | $L_1$ | $L_2$ | $L_3$ | $L_4$ | $d_1$ | $H_2$ | | $H_3$ | $H_5$ | $W$ | $H_4$ | $d_3$ | $d_4$ | $h$ | $E$ | $F$ | Bolt size× $\ell$ | $C$ N | $C_0$ N | $T_0$ N·m | $T_X$ N·m | $T_Y$ N·m |
| – | LWH 55···B | ○ | 5.30 | 15.5 | 70 | 17 | 43.5 | 140 | 116 | 12 | 183 | 95 | 132 | 194 | 14 | 17 | | 14 | – | 53 | 41 | 16 | 23 | 20 | 60 | 120 | M14×45 | 113 000 | 121 000 | 2 870 | 2 210<br>11 600 | 2 030<br>10 600 |
| – | LWHG 55 | ○ | 7.40 | | | | | | | | 235 | | 183.6 | 246 | | | | | | | | | | | | | 142 000 | 168 000 | 3 970 | 4 120<br>20 200 | 3 780<br>18 500 |
| – | LWH 65···B | ○ | 12.3 | 22.2 | 90 | 18 | 53.5 | 170 | 142 | 14 | 229 | 110 | 164 | 239 | 16 | 23 | | 20 | – | 63 | 48 | 18 | 26 | 22 | 75 | 150 | M16×50 | 176 000 | 184 000 | 5 180 | 4 130<br>22 000 | 3 790<br>20 200 |
| – | LWHG 65 | ○ | 17.6 | | | | | | | | 303 | | 238.8 | 313 | | | | | | | | | | | | | 229 000 | 269 000 | 7 560 | 8 530<br>41 500 | 7 810<br>38 100 |

Notes (1) Track rail lengths $L$ are shown in Table 2.1 on page Ⅱ−93.
(2) The appended track rail mounting bolts are hexagon socket head bolts equivalent to JIS B 1176.
(3) The direction of basic dynamic load rating ($C$), basic static load rating ($C_0$), and static moment rating ($T_0$, $T_X$, $T_Y$) are shown in the sketches below. The upper values of $T_X$ and $T_Y$ are for one slide unit and the lower values are for two slide units in close contact.
Remark: The specifications of grease nipple are shown in Table 16 on page Ⅱ−104.




**Example of identification number of assembled set**

| Model code | | Dimensions | Part code | | Model code | Preload symbol | Classification symbol | Interchangeable code | Supplemental code |
|---|---|---|---|---|---|---|---|---|---|
| LWH | G | 55 | C2 | R1200 | | T1 | P | | /V |
| ① | ② | ③ | ④ | ⑤ | ① | ⑥ | ⑦ | ⑧ | ⑨ |

① Model

| | |
|---|---|
| LWH(···B) | Flange type mounting from bottom |

② Length of slide unit

| | |
|---|---|
| No symbol | Standard |
| G | Long |

③ Size

| |
|---|
| 55, 65 |

④ Number of slide unit (2)

⑤ Length of track rail (1,200 mm)

⑥ Preload amount

| | |
|---|---|
| No symbol | Standard |
| T1 | Light preload |
| T2 | Medium preload |
| T3 | Heavy preload |

⑦ Accuracy class

| | |
|---|---|
| H | High |
| P | Precision |
| SP | Super precision |

⑧ Interchangeable

| | |
|---|---|
| No symbol | Non-interchangeable specification |
| S1 | S1 specification |
| S2 | S2 specification |

⑨ Special specification

A, D, E, F, Ⅰ, J, L, LF, MN
N, PS, Q, T, V, W, Y, Z

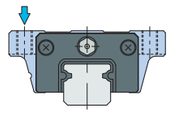




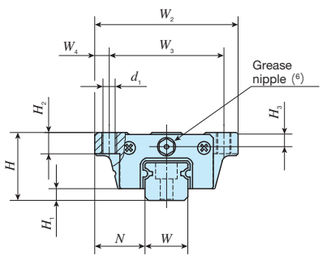
1N=0.102kgf=0.2248lbs.
1mm=0.03937inch

**Flange type mounting from top**

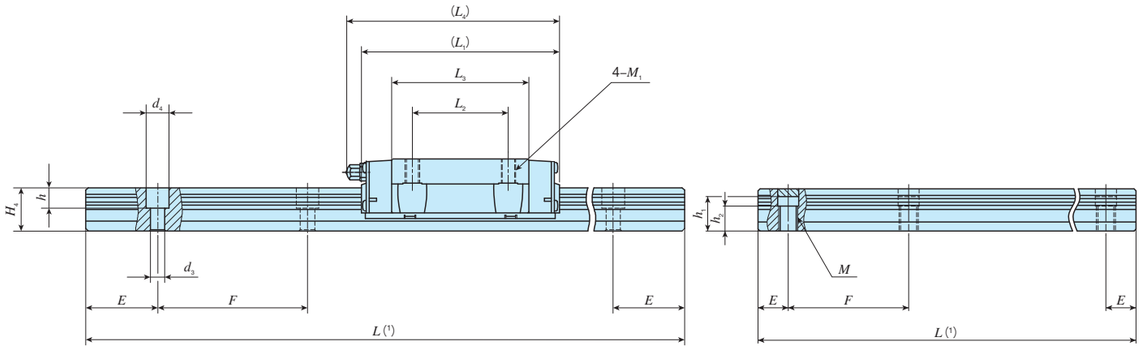
Shape: **MHT · LWHT**



Size: 8 | 10 | 12 | 15 | 20 | 25 | 30 | 35 | 45 | 55 | 65



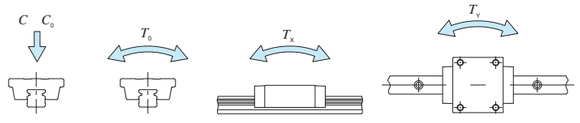

MHT 8 ···SL, LWHT 8 ···SL
MHT 10 ···SL, LWHT 10 ···SL
MHT 12 (···SL) , LWHT 12 (···SL)
MHTG 15




Ultra seal specification with track rail mounting from bottom

| Identification number | | Interchangeable | Mass (Ref.) | | Dimensions of assembly mm | | | Dimensions of slide unit mm | | | | | | | | | | | Dimensions of track rail mm | | | | | | | | | | Appended mounting bolt for track rail (4) mm | Basic dynamic load rating (5) | Basic static load rating (5) | Static moment rating (5) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MH series | LWH series (No C-Lube) | | Slide unit kg | Track rail kg/m | $H$ | $H_1$ | $N$ | $W_2$ | $W_3$ | $W_4$ | $L_1$ | $L_2$ | $L_3$ | $L_4$ | $d_1$ (2) | $M_1$ | $H_2$ | $H_3$ | | $W$ | $H_4$ | $d_3$ | $d_4$ | $h$ | $M$ | $h_1$ (3) | $h_2$ | $E$ | $F$ | Bolt size× $\ell$ | $C$ N | $C_0$ N | $T_0$ N·m | $T_X$ N·m | $T_Y$ N·m |
| MHT 8···SL | LWHT 8···SL | ○ | 0.015 | 0.32 | 10 | 2.1 | 8 | 24 | 19 | 2.5 | 24 | 10 | 15.3 | – | 1.9 | M2.3 | 3.5 | 2 | | 8 | 6 | 2.4 | 4.2 | 2.3 | – | – | – | 10 | 20 | M2× 8 | 1 510 | 2 120 | 8.8 | 5.5<br>32.0 | 4.7<br>26.9 |
| MHT 10···SL | | ○ | 0.031 | 0.47 | 12 | 2.4 | 10 | 30 | 24 | 3 | 32 | 12 | 21.4 | – | 2.6 | M3 | 4.5 | 2.5 | | 10 | 7 | 3.5 | 6 | 3.5 | – | – | – | 12.5 | 25 | M3× 8 | 2 640 | 3 700 | 19.2 | 13.3<br>73.8 | 11.1<br>61.9 |
| | LWHT 10···SL | ○ | 0.032 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MHT 12 | | ○ | 0.108 | 0.86 | 19 | 3.2 | 14 | 40 | 32 | 4 | 46 | 15 | 31.6 | 50 | 3.4 | M4 | 6 | 4 | | 12 | 10.5 | 3.5 | 6 | 4.5 | – | – | – | 20 | 40 | M3×12 | 6 260 | 8 330 | 51.6 | 44.7<br>237 | 37.5<br>199 |
| | LWHT 12 | ○ | 0.11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MHT 12···SL | | ○ | 0.108 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | LWHT 12···SL | ○ | 0.11 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MHT 15 | | ○ | 0.22 | 1.47 | 24 | 4.5 | 16 | 47 | 38 | 4.5 | 66 | 30 | 44.2 | 69 | – | M5 | 7 | 4.5 | | 15 | 15 | 4.5 | 8 | 6 | – | – | – | 30 | 60 | M4×16 | 11 600 | 13 400 | 112 | 95.6<br>556 | 95.6<br>556 |
| | LWHT 15···B | ○ | | | | | | | | | | | 44.6 | | | | | | | | | | | | | | | | | | | | |
| MHT 15···SL | | ○ | | | | | | | | | | | 44.2 | | | | | | | | | | | | | | | | | | | | |
| | LWHT 15···SL | ○ | | | | | | | | | | | 44.6 | | | | | | | | | | | | | | | | | | | | |
| – | LWHT 15···M* | – | | | | | | | | | | | | | | | | | | | | – | – | – | M6 | 12 | 9 | | – | | | | |
| – | LWHT 15···MU* | – | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MHTG 15 | – | ○ | 0.29 | | | | | | | | 82 | | 60.1 | 85 | 4.4 | | | | | | | 4.5 | 8 | 6 | – | – | – | | M4×16 | 14 400 | 18 300 | 153 | 172<br>918 | 172<br>918 |

Notes (1) Track rail lengths $L$ are shown in Table 2.1 on page Ⅱ−93, Table 2.2 on page Ⅱ−94, and Tables 2.3 and 2.4 on page Ⅱ−95.
(2) Series of size 8 to 12 and MHTG15 can also be mounted in upward direction.
(3) Choose bolts whose dimension allow fixing thread depth into track rail to be less than $h_1$.
(4) The appended track rail mounting bolts are hexagon socket head bolts equivalent to JIS B 1176. For stainless steel model, stainless steel bolts are appended.
In an assembled set of MH series and LWHT···MU model, track rail mounting bolts are not appended.
(5) The direction of basic dynamic load rating ($C$), basic static load rating ($C_0$), and static moment rating ($T_0$, $T_X$, $T_Y$) are shown in the sketches below. The upper values of $T_X$ and $T_Y$ are for one slide unit and the lower values are for two slide units in close contact.
(6) Series of size 8 and 10 are provided with an oil hole. The specifications of oil holes are shown in Table 15 on page Ⅱ−104.
The shapes of grease nipples of size 12 and 15 vary by size. The specifications are shown in Table 16 on page Ⅱ−104.
Remark: The identification numbers with * are our semi-standard items.




**Example of identification number of assembled set**

| Model code | Dimensions | Part code | Model code | Dust protection code | Material code | Preload symbol | Classification symbol | Interchangeable code | Supplemental code |
|---|---|---|---|---|---|---|---|---|---|
| MHT | G | 15 | C2 | R900 | | | | T1 | P | | /V |
| ① | ② | ③ | ④ | ⑤ | ① | ⑥ | ⑦ | ⑧ | ⑨ | ⑩ | ⑪ |

① Model

| | |
|---|---|
| MHT | Flange type mounting from top |
| LWHT(···B) | |

② Length of slide unit

| | |
|---|---|
| No symbol | Standard |
| G | Long |

③ Size: 8, 10, 12, 15

④ Number of slide unit (2)

⑤ Length of track rail (900 mm)

⑥ Dust protection code

| | |
|---|---|
| No symbol | Standard specification |
| M | Ultra seal specification |
| MU | Ultra seal specification with track rail mounting from bottom |

⑦ Material type

| | |
|---|---|
| No symbol | High carbon steel made |
| SL | Stainless steel made |

⑧ Preload amount

| | |
|---|---|
| T0 | Clearance |
| No symbol | Standard |
| T1 | Light preload |
| T2 | Medium preload |
| T3 | Heavy preload |

⑨ Accuracy class

| | |
|---|---|
| H | High |
| P | Precision |
| SP | Super precision |

⑩ Interchangeable

| | |
|---|---|
| No symbol | Non-interchangeable specification |
| S1 | S1 specification |
| S2 | S2 specification |

⑪ Special specification: A, BS, D, E, F, I , J, L, LF, MA MN, N, Q, RE, T, U, V, W, Y, Z

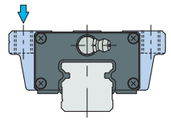


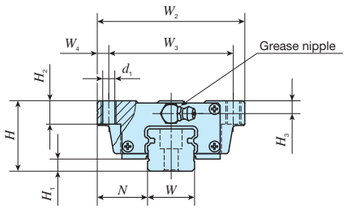


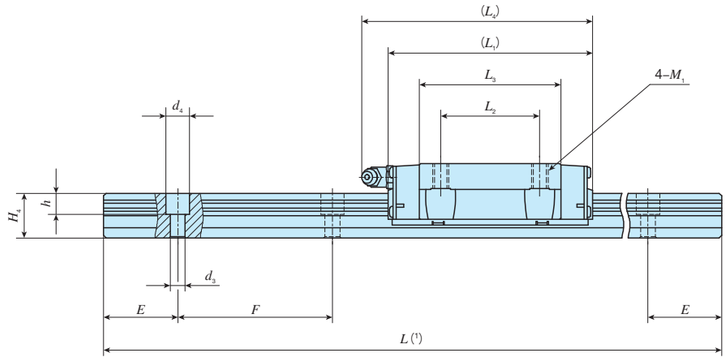
1N=0.102kgf=0.2248lbs.
1mm=0.03937inch

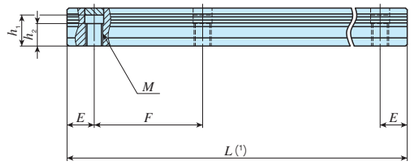
# IKO C-Lube Linear Way MH

**Flange type mounting from top**

| Shape | MHT · LWHT  |
|---|---|
| Size | 8 10 12 15 **20** **25**<br>30 35 45 55 65 |



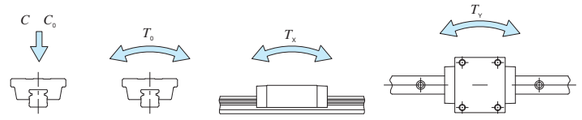

Ultra seal specification with track rail mounting from bottom

| Identification number: MH series | Identification number: LWH series (No C-Lube) | Interchangeable | Mass (Ref.): Slide unit kg | Mass (Ref.): Track rail kg/m | Dimensions of assembly mm: $H$ | $H_1$ | $N$ | Dimensions of slide unit mm: $W_2$ | $W_3$ | $W_4$ | $L_1$ | $L_2$ | $L_3$ | $L_4$ | $d_1$ | $M_1$ | $H_2$ | $H_3$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MHT 20 | | ○ | 0.48 | 2.56 | 30 | 6 | 21.5 | 63 | 53 | 5 | 83 | 40 | 56 | 94 | – | M6 | 10 | 5.5 |
| | LWHT 20···B | ○ | | | | | | | | | | | 57.2 | | | | | |
| MHT 20···SL | | ○ | | | | | | | | | | | 56 | | | | | |
| | LWHT 20···SL | ○ | | | | | | | | | | | 57.2 | | | | | |
| – | LWHT 20···M* | – | | | | 5 | | | | | | | | | | | | |
| – | LWHT 20···MU* | – | | | | | | | | | | | | | | | | |
| MHTG 20 | | ○ | 0.71 | | | 6 | | | | | 112 | | 84.8 | 122 | | | | |
| | LWHTG 20 | ○ | | | | | | | | | | | 86 | | | | | |
| MHT 25 | | ○ | 0.70 | 3.50 | 36 | 8 | 23.5 | 70 | 57 | 6.5 | 95 | 45 | 63.9 | 105 | – | M8 | 10 | 6.5 |
| | LWHT 25···B | ○ | | | | 6.5 | | | | | | | 64.7 | | | | | |
| MHT 25···SL | | ○ | | | | 8 | | | | | | | 63.9 | | | | | |
| | LWHT 25···SL | ○ | | | | | | | | | | | 64.7 | | | | | |
| MHT 25···M* | | – | | | | 6.5 | | | | | | | 63.9 | | | | | |
| | LWHT 25···M* | – | | | | | | | | | | | 64.7 | | | | | |
| MHT 25···MU* | | – | | | | | | | | | | | 63.9 | | | | | |
| | LWHT 25···MU* | – | | | | | | | | | | | 64.7 | | | | | |
| MHTG 25 | | ○ | 0.93 | | | 8 | | | | | 118 | | 86.6 | 128 | | | | |
| | LWHTG 25 | ○ | | | | 6.5 | | | | | | | 87.4 | | | | | |

| Dimensions of track rail mm: $W$ | $H_4$ | $d_3$ | $d_4$ | $h$ | $M$ | $h_1$ (2) | $h_2$ | $E$ | $F$ | Appended mounting bolt for track rail (3) mm: Bolt size× $\ell$ | Basic dynamic load rating (4) $C$ N | Basic static load rating (4) $C_0$ N | Static moment rating (4): $T_0$ N·m | $T_X$ N·m | $T_Y$ N·m |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 20 | 18 | 6 | 9.5 | 8.5 | – | – | – | 30 | 60 | M5×18 | 18 100 | 21 100 | 232 | 195<br>1 090 | 195<br>1 090 |
| | | – | – | – | M 8 | 13.5 | 9.5 | | | – | | | | | |
| | | 6 | 9.5 | 8.5 | – | – | – | | | M5×18 | 24 100 | 31 700 | 349 | 421<br>2 140 | 421<br>2 140 |
| 23 | 22 | 7 | 11 | 9 | – | – | – | 30 | 60 | M6×22 | 25 200 | 28 800 | 362 | 309<br>1 690 | 309<br>1 690 |
| | | – | – | – | M10 | 18 | 13 | | | – | | | | | |
| | | 7 | 11 | 9 | – | – | – | | | M6×22 | 30 800 | 38 300 | 483 | 533<br>2 740 | 533<br>2 740 |

Notes (1) Track rail lengths $L$ are shown in Table 2.1 on page Ⅱ−93, Table 2.2 on page Ⅱ−94, and Tables 2.3 and 2.4 on page Ⅱ−95.
(2) Choose bolts whose dimension allow fixing thread depth into track rail to be less than $h_1$.
(3) The appended track rail mounting bolts are hexagon socket head bolts equivalent to JIS B 1176. For stainless steel model, stainless steel bolts are appended.
In an assembled set of MH series and LWHT···MU model, track rail mounting bolts are not appended.
(4) The direction of basic dynamic load rating ($C$), basic static load rating ($C_0$), and static moment rating ($T_0$, $T_X$, $T_Y$) are shown in the sketches below. The upper values of $T_X$ and $T_Y$ are for one slide unit and the lower values are for two slide units in close contact.

Remarks 1. The specifications of grease nipple are shown in Table 16 on page Ⅱ−104.
2. The identification numbers with * are our semi-standard items.




**Example of identification number of assembled set**

| Model code | Dimensions | Part code | Model code | Dust protection code | Material code | Preload symbol | Classification symbol | Interchangeable code | Supplemental code |
|---|---|---|---|---|---|---|---|---|---|
| MHT | G | 25 | C2 | R840 | | | T1 | P | | /V |
| ① | ② | ③ | ④ | ⑤ | ① | ⑥ | ⑦ | ⑧ | ⑨ | ⑩ | ⑪ |

① Model
MHT, LWHT(···B): Flange type mounting from top

② Length of slide unit
No symbol: Standard
G: Long

③ Size
20, 25

④ Number of slide unit (2)

⑤ Length of track rail (840 mm)

⑥ Dust protection code
No symbol: Standard specification
M: Ultra seal specification
MU: Ultra seal specification with track rail mounting from bottom

⑦ Material type
No symbol: High carbon steel made
SL: Stainless steel made

⑧ Preload amount
No symbol: Standard
T1: Light preload
T2: Medium preload
T3: Heavy preload

⑨ Accuracy class
H: High
P: Precision
SP: Super precision

⑩ Interchangeable
No symbol: Non-interchangeable specification
S1: S1 specification
S2: S2 specification

⑪ Special specification
A, BS, D, E, F, I, J, L, LF, MA
MN, N, PS, Q, RE, T, UR, V, W, Y, Z

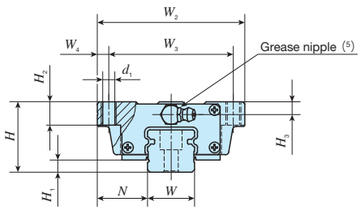


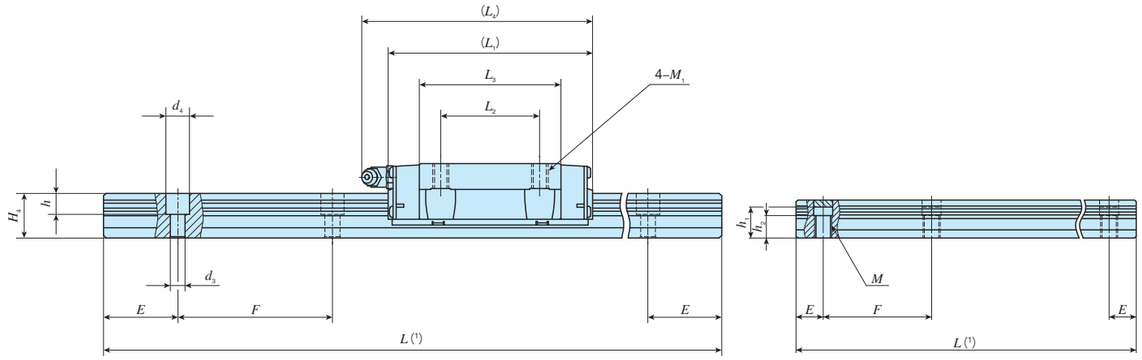


1N=0.102kgf=0.2248lbs.
1mm=0.03937inch

**Flange type mounting from top**

| Shape | MHT · LWHT |
|---|---|
| Size | 8 · 10 · 12 · 15 · 20 · 25 · 30 · 35 · 45 · 55 · 65 |

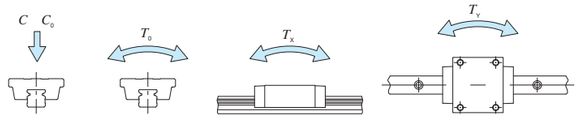



Ultra seal specification with track rail mounting from bottom

| Identification number: MH series | Identification number: LWH series (No C-Lube) | Interchangeable | Mass (Ref.): Slide unit kg | Mass (Ref.): Track rail kg/m | Dimensions of assembly mm: H | H1 | N | Dimensions of slide unit mm: W2 | W3 | W4 | L1 | L2 | L3 | L4 | d1 | M1 | H2 | H3 | Dimensions of track rail mm: W | H4 | d3 | d4 | h | M | h1 (2) | h2 | E | F | Appended mounting bolt for track rail (3) mm: Bolt size× ℓ | Basic dynamic load rating (4): C N | Basic static load rating (4): C0 N | Static moment rating (4): T0 N·m | TX N·m | TY N·m |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MHT 30 | | ○ | 1.28 | 4.82 | 42 | 9 | 31 | 90 | 72 | 9 | 113 | 52 | 80.6 | 123 | – | M10 | 10 | 8 | 28 | 25 | 9 | 14 | 12 | – | – | – | 40 | 80 | M 8×28 | 35 400 | 40 700 | 623 | 536<br>2 820 | 536<br>2 820 |
| | LWHT 30···B | ○ | | | | 7 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MHT 30···SL | | ○ | | | | 9 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | LWHT 30···SL | ○ | | | | 7 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MHT 30···M* | | – | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | LWHT 30···M* | – | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MHT 30···MU* | | – | | | | | | | | | | | | | | | | | | | – | – | – | M12 | 20 | 13 | | | – | | | |
| | LWHT 30···MU* | – | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MHTG 30 | | ○ | 1.69 | | | 9 | | | | | 139 | | 106.6 | 149 | | | | | | | 9 | 14 | 12 | – | – | – | | | M 8×28 | 42 700 | 53 200 | 814 | 894<br>4 460 | 894<br>4 460 |
| | LWHTG30 | ○ | | | | 7 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MHT 35 | | ○ | 1.79 | 6.85 | 48 | 10 | 33 | 100 | 82 | 9 | 123 | 62 | 86.2 | 135 | – | M10 | 13 | 10 | 34 | 28 | 9 | 14 | 12 | – | – | – | 40 | 80 | M 8×28 | 48 700 | 53 700 | 823 | 631<br>3 480 | 579<br>3 190 |
| | LWHT 35···B | ○ | | | | 8 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| – | LWHT 35···M* | – | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| – | LWHT 35···MU* | – | | | | | | | | | | | | | | | | | | | – | – | – | M12 | 23 | 16 | | | – | | | |
| MHTG 35 | | ○ | 2.35 | | | 10 | | | | | 151 | | 114 | 163 | | | | | | | 9 | 14 | 12 | – | – | – | | | M 8×28 | 59 500 | 71 600 | 1 100 | 1 090<br>5 570 | 1 000<br>5 110 |
| | LWHTG35 | ○ | | | | 8 | | | | | | | | | | | | | | | | | | | | | | | | | | |

Notes (1) Track rail lengths $L$ are shown in Table 2.1 on page Ⅱ−93, Table 2.2 on page Ⅱ−94, and Tables 2.3 and 2.4 on page Ⅱ−95.
(2) Choose bolts whose dimension allow fixing thread depth into track rail to be less than $h_1$.
(3) The appended track rail mounting bolts are hexagon socket head bolts equivalent to JIS B 1176. For stainless steel model, stainless steel bolts are appended.
In an assembled set of MH series and LWHT···MU model, track rail mounting bolts are not appended.
(4) The direction of basic dynamic load rating ($C$), basic static load rating ($C_0$), and static moment rating ($T_0$, $T_X$, $T_Y$) are shown in the sketches below. The upper values of $T_X$ and $T_Y$ are for one slide unit and the lower values are for two slide units in close contact.
(5) The shapes of grease nipple vary by size. The specifications are shown in Table 16 on page Ⅱ−104.
Remark: The identification numbers with * are our semi-standard items.




**Example of identification number of assembled set**

| Model code | Dimensions | Part code | Model code | Dust protection code | Material code | Preload symbol | Classification symbol | Interchangeable code | Supplemental code |
|---|---|---|---|---|---|---|---|---|---|
| MHT | G | 35 | C2 | R1040 | | | T1 | P | | /V |
| ① | ② | ③ | ④ | ⑤ | ① | ⑥ | ⑦ | ⑧ | ⑨ | ⑩ | ⑪ |

① Model

| | |
|---|---|
| MHT | Flange type mounting from top |
| LWHT (···B) | |

② Length of slide unit

| | |
|---|---|
| No symbol | Standard |
| G | Long |

③ Size: 30, 35

④ Number of slide unit (2)

⑤ Length of track rail (1,040 mm)

⑥ Dust protection code

| | |
|---|---|
| No symbol | Standard specification |
| M | Ultra seal specification |
| MU | Ultra seal specification with track rail mounting from bottom |

⑦ Material type

| | |
|---|---|
| No symbol | High carbon steel made |
| SL | Stainless steel made |

⑧ Preload amount

| | |
|---|---|
| No symbol | Standard |
| T1 | Light preload |
| T2 | Medium preload |
| T3 | Heavy preload |

⑨ Accuracy class

| | |
|---|---|
| H | High |
| P | Precision |
| SP | Super precision |

⑩ Interchangeable

| | |
|---|---|
| No symbol | Non-interchangeable specification |
| S1 | S1 specification |
| S2 | S2 specification |

⑪ Special specification: A, BS, D, E, F, I, J, L, LF, MA MN, N, PS, Q, RE, T, UR, V, W, Y, Z

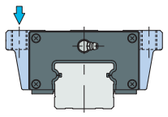




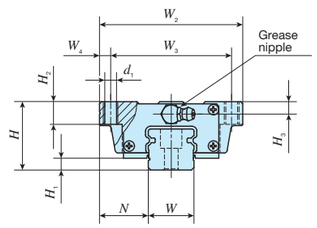
1N=0.102kgf=0.2248lbs.
1mm=0.03937inch

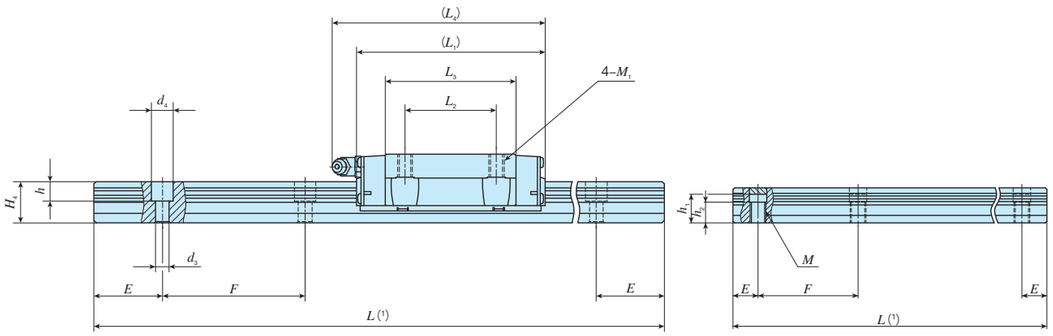
**Flange type mounting from top**

Shape: MHT · LWHT



Size: 8 | 10 | 12 | 15 | 20 | 25 | 30 | 35 | 45 | 55 | 65



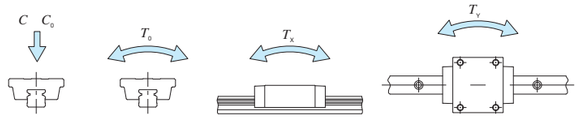



Ultra seal specification with track rail mounting from bottom

| Identification number | | Interchangeable | Mass (Ref.) | | Dimensions of assembly mm | | | Dimensions of slide unit mm | | | | | | | | | | | | Dimensions of track rail mm | | | | | | | | | | | Appended mounting bolt for track rail (3) mm | Basic dynamic load rating (4) | Basic static load rating (4) | Static moment rating (4) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MH series | LWH series (No C-Lube) | | Slide unit kg | Track rail kg/m | $H$ | $H_1$ | $N$ | $W_2$ | $W_3$ | $W_4$ | $L_1$ | $L_2$ | $L_3$ | $L_4$ | $d_1$ | $M_1$ | $H_2$ | | $H_3$ | $H_5$ | $W$ | $H_4$ | $d_3$ | $d_4$ | $h$ | $M$ | $h_1$ (2) | $h_2$ | $E$ | $F$ | Bolt size× $\ell$ | $C$ N | $C_0$ N | $T_0$ N·m | $T_X$ N·m | $T_Y$ N·m |
| MHT 45 | | ○ | 3.17 | 10.7 | 60 | 13 | 37.5 | 120 | 100 | 10 | 147 | 80 | 103.4 | 158 | – | M12 | 15 | | 13 | – | 45 | 34 | 14 | 20 | 17 | – | – | – | 52.5 | 105 | M12×35 | 74 600 | 80 200 | 1 610 | 1 150<br>6 190 | 1 060<br>5 690 |
| | LWHT 45···B | ○ | | | | 14 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| – | LWHT 45···M* | – | | | | 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| – | LWHT 45···MU* | – | | | | | | | | | | | | | | | | | | | | | – | – | – | M16 | 29 | 17 | | | – | | | |
| MHTG 45 | | ○ | 4.34 | | | 13 | | | | | 190 | | 146.6 | 201 | | | | | | | | | 14 | 20 | 17 | – | – | – | | | M12×35 | 95 200 | 114 000 | 2 280 | 2 240<br>11 100 | 2 050<br>10 200 |
| | LWHTG 45 | ○ | | | | 14 | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| – | LWHT 55···B | ○ | 5.30 | 15.5 | 70 | 17 | 43.5 | 140 | 116 | 12 | 183 | 95 | 132 | 194 | – | M14 | 17 | | 14 | – | 53 | 41 | 16 | 23 | 20 | – | – | – | 60 | 120 | M14×45 | 113 000 | 121 000 | 2 870 | 2 210<br>11 600 | 2 030<br>10 600 |
| – | LWHTG 55 | ○ | 7.40 | | | | | | | | 235 | | 183.6 | 246 | | | | | | | | | | | | | | | | | | 142 000 | 168 000 | 3 970 | 4 120<br>20 200 | 3 780<br>18 500 |
| – | LWHT 65···B | ○ | 12.3 | 22.2 | 90 | 18 | 53.5 | 170 | 142 | 14 | 229 | 110 | 164 | 239 | – | M16 | 23 | | 20 | – | 63 | 48 | 18 | 26 | 22 | – | – | – | 75 | 150 | M16×50 | 176 000 | 184 000 | 5 180 | 4 130<br>22 000 | 3 790<br>20 200 |
| – | LWHTG 65 | ○ | 17.6 | | | | | | | | 303 | | 238.8 | 313 | | | | | | | | | | | | | | | | | | 229 000 | 269 000 | 7 560 | 8 530<br>41 500 | 7 810<br>38 100 |

Notes (1) Track rail lengths $L$ are shown in Table 2.1 on page Ⅱ−93 and Tables 2.3 and 2.4 on page Ⅱ−95.
(2) Choose bolts whose dimension allow fixing thread depth into track rail to be less than $h_1$.
(3) The appended track rail mounting bolts are hexagon socket head bolts equivalent to JIS B 1176.
In an assembled set of MH series and LWHT···MU model, track rail mounting bolts are not appended.
(4) The direction of basic dynamic load rating ($C$), basic static load rating ($C_0$), and static moment rating ($T_0$, $T_X$, $T_Y$) are shown in the sketches below. The upper values of $T_X$ and $T_Y$ are for one slide unit and the lower values are for two slide units in close contact.

Remarks 1. The specifications of grease nipple are shown in Table 16 on page Ⅱ−104.
2. The identification numbers with * are our semi-standard items.




**Example of identification number of assembled set**

| Model code | Dimensions | Part code | | Model code | Dust protection code | Preload symbol | Classification symbol | Interchangeable code | Supplemental code |
|---|---|---|---|---|---|---|---|---|---|
| MHT | G | 45 | C2 | R1260 | | T1 | P | | /V |
| ① | ② | ③ | ④ | ⑤ | ① | ⑦ | ⑧ | ⑨ | ⑩ |

① Model
MHT, LWHT(···B): Flange type mounting from top

② Length of slide unit
No symbol: Standard
G: Long

③ Size
45, 55, 65

④ Number of slide unit (2)

⑤ Length of track rail (1,260 mm)

⑥ Dust protection code
No symbol: Standard specification
M: Ultra seal specification
MU: Ultra seal specification with track rail mounting from bottom

⑦ Preload amount
No symbol: Standard
T1: Light preload
T2: Medium preload
T3: Heavy preload

⑧ Accuracy class
H: High
P: Precision
SP: Super precision

⑨ Interchangeable
No symbol: Non-interchangeable specification
S1: S1 specification
S2: S2 specification

⑩ Special specification
A, BS, D, E, F, I, J, L, LF, MA
MN, N, PS, Q, RE, T, V, W, Y, Z

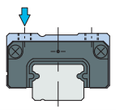


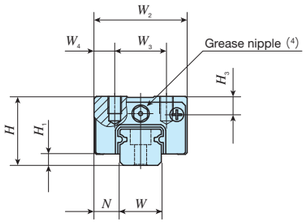


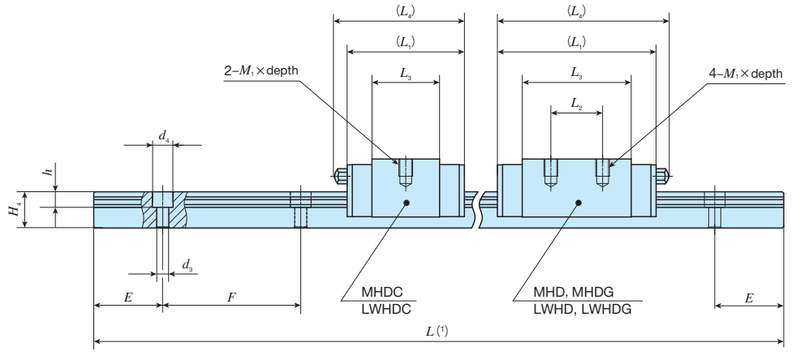
1N=0.102kgf=0.2248lbs.
1mm=0.03937inch

**Block type mounting from top**

| Shape | MHD · LWHD |
|---|---|
| Size | 8 · 10 · 12 · 15 · 25 / 30 · 35 · 45 · 55 · 65 |

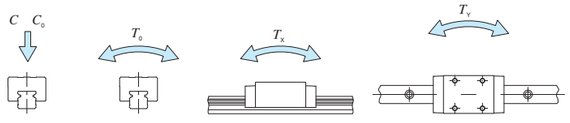





| Identification number | | Interchangeable | Mass (Ref.) | | Dimensions of assembly mm | | | Dimensions of slide unit mm | | | | | | | | | Dimensions of track rail mm | | | | | | | Appended mounting bolt for track rail (2) mm | Basic dynamic load rating (3) | Basic static load rating (3) | Static moment rating (3) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MH series | LWH series (No C-Lube) | | Slide unit kg | Track rail kg/m | $H$ | $H_1$ | $N$ | $W_2$ | $W_3$ | $W_4$ | $L_1$ | $L_2$ | $L_3$ | $L_4$ | $M_1$×depth | | $H_3$ | $W$ | $H_4$ | $d_3$ | $d_4$ | $h$ | $E$ | $F$ | Bolt size× $\ell$ | $C$ N | $C_0$ N | $T_0$ N·m | $T_X$ N·m | $T_Y$ N·m |
| MHDC 8···SL | LWHDC 8···SL | ○ | 0.008 | 0.32 | 11 | 2.1 | 4 | 16 | 10 | 3 | 18 | – | 9.0 | – | M2 ×2.5 | | 3 | 8 | 6 | 2.4 | 4.2 | 2.3 | 10 | 20 | M2× 8 | 1 050 | 1 270 | 5.3 | 2.2<br>15.5 | 1.8<br>13.0 |
| MHD 8···SL | LWHD 8···SL | ○ | 0.013 | | | | | | | | 24 | 10 | 15.3 | | | | | | | | | | | | | 1 510 | 2 120 | 8.8 | 5.5<br>32.0 | 4.7<br>26.9 |
| MHDG 8···SL | LWHDG 8···SL | ○ | 0.018 | | | | | | | | 30.5 | | 21.7 | | | | | | | | | | | | | 1 910 | 2 970 | 12.3 | 10.4<br>55.4 | 8.8<br>46.4 |
| MHDC 10···SL | LWHDC 10···SL | ○ | 0.018 | 0.47 | 13 | 2.4 | 5 | 20 | 13 | 3.5 | 24 | – | 13.4 | – | M2.6×3 | | 3.5 | 10 | 7 | 3.5 | 6 | 3.5 | 12.5 | 25 | M3× 8 | 1 920 | 2 350 | 12.2 | 5.8<br>37.1 | 4.8<br>31.2 |
| MHD 10···SL | | ○ | 0.026 | | | | | | | | 32 | 12 | 21.4 | | | | | | | | | | | | | 2 640 | 3 700 | 19.2 | 13.3<br>73.8 | 11.1<br>61.9 |
| | LWHD 10···SL | ○ | 0.027 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MHDG 10···SL | | ○ | 0.035 | | | | | | | | 40 | | 29.4 | | | | | | | | | | | | | 3 280 | 5 050 | 26.2 | 23.8<br>123 | 20.0<br>103 |
| | LWHDG 10···SL | ○ | 0.036 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MHDC 12···SL | | ○ | 0.057 | 0.86 | 20 | 3.2 | 7.5 | 27 | 15 | 6 | 34 | 15 | 19.6 | 38 | M4 ×5 | | 5 | 12 | 10.5 | 3.5 | 6 | 4.5 | 20 | 40 | M3×12 | 4 560 | 5 300 | 32.8 | 19.4<br>117 | 16.3<br>98.5 |
| | LWHDC 12···SL | ○ | 0.058 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MHD 12 | | ○ | 0.089 | | | | | | | | 46 | | 31.6 | 50 | | | | | | | | | | | | 6 260 | 8 330 | 51.6 | 44.7<br>237 | 37.5<br>199 |
| | LWHD 12 | ○ | 0.091 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MHD 12···SL | | ○ | 0.089 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | LWHD 12···SL | ○ | 0.091 | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MHDG 12···SL | | ○ | 0.115 | | | | | | | | 58 | | 43.6 | 62 | | | | | | | | | | | | 7 780 | 11 400 | 70.4 | 80.4<br>399 | 67.5<br>335 |
| | LWHDG 12···SL | ○ | 0.118 | | | | | | | | | | | | | | | | | | | | | | | | | | |

Notes (1) Track rail lengths $L$ are shown in Table 2.1 on page Ⅱ−93 and Table 2.2 on page Ⅱ−94.
(2) The appended track rail mounting bolts are hexagon socket head bolts equivalent to JIS B 1176. For stainless steel model, stainless steel bolts are appended.
In an assembled set of MH series, track rail mounting bolts are not appended.
(3) The direction of basic dynamic load rating ($C$), basic static load rating ($C_0$), and static moment rating ($T_0$, $T_X$, $T_Y$) are shown in the sketches below. The upper values of $T_X$ and $T_Y$ are for one slide unit and the lower values are for two slide units in close contact.
(4) Series of size 8 and 10 are provided with an oil hole. The specifications of oil holes are shown in Table 15 on page Ⅱ−104.
The specification of grease nipple for size 12 is shown in Table 16 on page Ⅱ−104.




**Example of identification number of assembled set**

| Model code | Dimensions | Part code | | Material code | Preload symbol | Classification symbol | Interchangeable code | Supplemental code |
|---|---|---|---|---|---|---|---|---|
| MHD | G | 12 | C2 | R320 | SL | T1 | P | | /V |
| ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ | ⑧ | ⑨ | ⑩ |

| ① Model | |
|---|---|
| MHD | Block type mounting from top |
| LWHD | |

| ② Length of slide unit | |
|---|---|
| C | Short |
| No symbol | Standard |
| G | Long |

| ③ Size |
|---|
| 8, 10, 12 |

| ④ Number of slide unit (2) |
|---|

| ⑤ Length of track rail (320 mm) |
|---|

| ⑥ Material type | |
|---|---|
| No symbol | High carbon steel made |
| SL | Stainless steel made |

| ⑦ Preload amount | |
|---|---|
| T0 | Clearance |
| No symbol | Standard |
| T1 | Light preload |

| ⑧ Accuracy class | |
|---|---|
| H | High |
| P | Precision |

| ⑨ Interchangeable | |
|---|---|
| No symbol | Non-interchangeable specification |
| S1 | S1 specification |
| S2 | S2 specification |

| ⑩ Special specification |
|---|
| A, D, E, F, Ⅰ, LR, MA<br>MN, N, Q, U, W, Y |

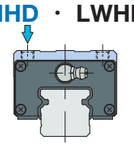




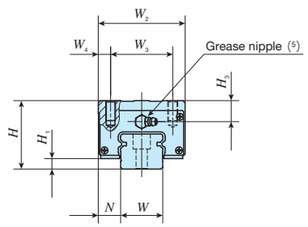
1N=0.102kgf=0.2248lbs.
1mm=0.03937inch

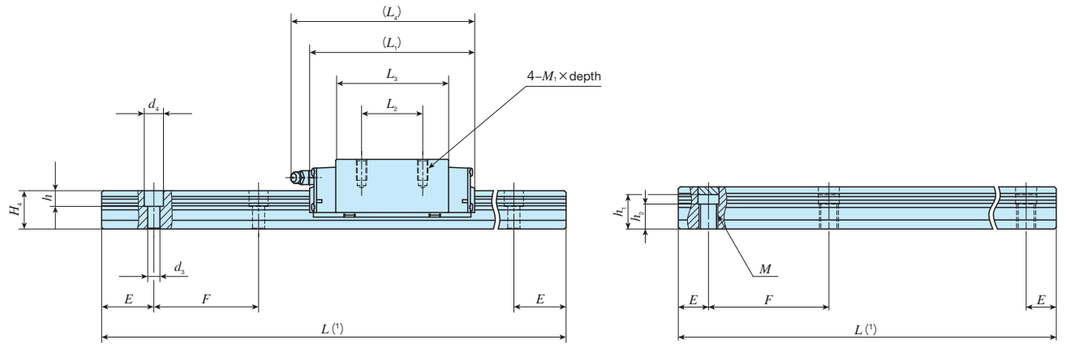
**Block type mounting from top**

Shape: MHD · LWHD



| Size | | | | | |
|---|---|---|---|---|---|
| 8 | 10 | 12 | 15 | 25 |
| 30 | 35 | 45 | 55 | 65 |

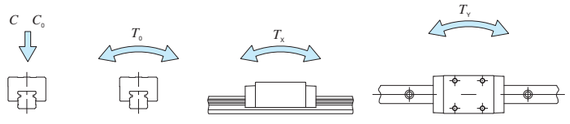



Ultra seal specification with track rail mounting from bottom

| Identification number | | Interchangeable | Mass (Ref.) | | Dimensions of assembly mm | | | Dimensions of slide unit mm | | | | | | | | | Dimensions of track rail mm | | | | | | | | | | Appended mounting bolt for track rail (3) mm | Basic dynamic load rating (4) | Basic static load rating (4) | Static moment rating (4) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MH series | LWH series (No C-Lube) | | Slide unit kg | Track rail kg/m | $H$ | $H_1$ | $N$ | $W_2$ | $W_3$ | $W_4$ | $L_1$ | $L_2$ | $L_3$ | $L_4$ | $M_1$×depth | $H_3$ | $W$ | $H_4$ | $d_3$ | $d_4$ | $h$ | $M$ | $h_1$ (2) | $h_2$ | $E$ | $F$ | Bolt size× $\ell$ | $C$ N | $C_0$ N | $T_0$ N·m | $T_X$ N·m | $T_Y$ N·m |
| MHD 15 | | ○ | 0.23 | 1.47 | 28 | 4.5 | 9.5 | 34 | 26 | 4 | 66 | 26 | 44.2 | 69 | M4×10 | 8.5 | 15 | 15 | 4.5 | 8 | 6 | – | – | – | 30 | 60 | M4×16 | 11 600 | 13 400 | 112 | 95.6 556 | 95.6 556 |
| | LWHD 15···B | ○ | | | | | | | | | | | 44.6 | | | | | | | | | | | | | | | | | | |
| – | LWHD 15···M* | – | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| – | LWHD 15···MU* | – | | | | | | | | | | | | | | | | | – | – | – | M 6 | 12 | 9 | | | – | | | | | |
| MHD 25 | | ○ | 0.65 | 3.50 | 40 | 8 | 12.5 | 48 | 35 | 6.5 | 95 | 35 | 63.9 | 105 | M6×12 | 10.5 | 23 | 22 | 7 | 11 | 9 | – | – | – | 30 | 60 | M6×22 | 25 200 | 28 800 | 362 | 309 1 690 | 309 1 690 |
| | LWHD 25···B | ○ | | | | 6.5 | | | | | | | 64.7 | | | | | | | | | | | | | | | | | | |
| MHD 25···M* | | – | | | | | | | | | | | 63.9 | | | | | | | | | | | | | | | | | | |
| | LWHD 25···M* | – | | | | | | | | | | | 64.7 | | | | | | | | | | | | | | | | | | |
| MHD 25···MU* | | – | | | | | | | | | | | 63.9 | | | | | | – | – | – | M10 | 18 | 13 | | | – | | | | | |
| | LWHD 25···MU* | – | | | | | | | | | | | 64.7 | | | | | | | | | | | | | | | | | | |
| MHDG 25 | | ○ | 0.80 | | | 8 | | | | | 118 | 50 | 86.6 | 128 | | | | | 7 | 11 | 9 | – | – | – | | | M6×22 | 30 800 | 38 300 | 483 | 533 2 740 | 533 2 740 |
| | LWHDG 25 | ○ | | | | 6.5 | | | | | | | 87.4 | | | | | | | | | | | | | | | | | | |
| MHD 30 | | ○ | 1.12 | 4.82 | 45 | 9 | 16 | 60 | 40 | 10 | 113 | 40 | 80.6 | 123 | M8×16 | 11 | 28 | 25 | 9 | 14 | 12 | – | – | – | 40 | 80 | M8×28 | 35 400 | 40 700 | 623 | 536 2 820 | 536 2 820 |
| | LWHD 30···B | ○ | | | | 7 | | | | | | | | | | | | | | | | | | | | | | | | | |
| MHD 30···M* | | – | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | LWHD 30···M* | – | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MHD 30···MU* | | – | | | | | | | | | | | | | | | | | – | – | – | M12 | 20 | 13 | | | – | | | | | |
| | LWHD 30···MU* | – | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MHDG 30 | | ○ | 1.44 | | | 9 | | | | | 139 | 60 | 106.6 | 149 | | | | | 9 | 14 | 12 | – | – | – | | | M8×28 | 42 700 | 53 200 | 814 | 894 4 460 | 894 4 460 |
| | LWHDG 30 | ○ | | | | 7 | | | | | | | | | | | | | | | | | | | | | | | | | |

Notes (1) Track rail lengths $L$ are shown in Table 2.1 on page Ⅱ−93 and Tables 2.3 and 2.4 on page Ⅱ−95.
(2) Choose bolts whose dimension allow fixing thread depth into track rail to be less than $h_1$.
(3) The appended track rail mounting bolts are hexagon socket head bolts equivalent to JIS B 1176.
In an assembled set of MH series and LWHD···MU model, track rail mounting bolts are not appended.
(4) The direction of basic dynamic load rating ($C$), basic static load rating ($C_0$), and static moment rating ($T_0$, $T_X$, $T_Y$) are shown in the sketches below. The upper values of $T_X$ and $T_Y$ are for one slide unit and the lower values are for two slide units in close contact.
(5) The shapes of grease nipple vary by size. The specifications are shown in Table 16 on page Ⅱ−104.
Remark: The identification numbers with * are our semi-standard items.




**Example of identification number of assembled set**

| Model code | Dimensions | Part code | Model code | Dust protection code | Preload symbol | Classification symbol | Interchangeable code | Supplemental code |
|---|---|---|---|---|---|---|---|---|
| MHD G | 25 | C2 R840 | | | T1 | P | | /V |
| ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ | ⑧ | ⑨ | ⑩ |

① Model

| | |
|---|---|
| MHD<br>LWHD(···B) | Block type mounting from top |

② Length of slide unit

| | |
|---|---|
| No symbol | Standard |
| G | Long |

③ Size: 15, 25, 30

④ Number of slide unit (2)

⑤ Length of track rail (840 mm)

⑥ Dust protection code

| | |
|---|---|
| No symbol | Standard specification |
| M | Ultra seal specification |
| MU | Ultra seal specification with track rail mounting from bottom |

⑦ Preload amount

| | |
|---|---|
| No symbol | Standard |
| T1 | Light preload |
| T2 | Medium preload |
| T3 | Heavy preload |

⑧ Accuracy class

| | |
|---|---|
| H | High |
| P | Precision |
| SP | Super precision |

⑨ Interchangeable

| | |
|---|---|
| No symbol | Non-interchangeable specification |
| S1 | S1 specification |
| S2 | S2 specification |

⑩ Special specification: A, BS, D, E, F, I , J, L, LF, MA MN, N, PS, Q, RE, T, UR, V, W, Y, Z

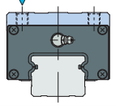




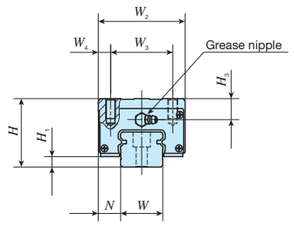
1N=0.102kgf=0.2248lbs.
1mm=0.03937inch

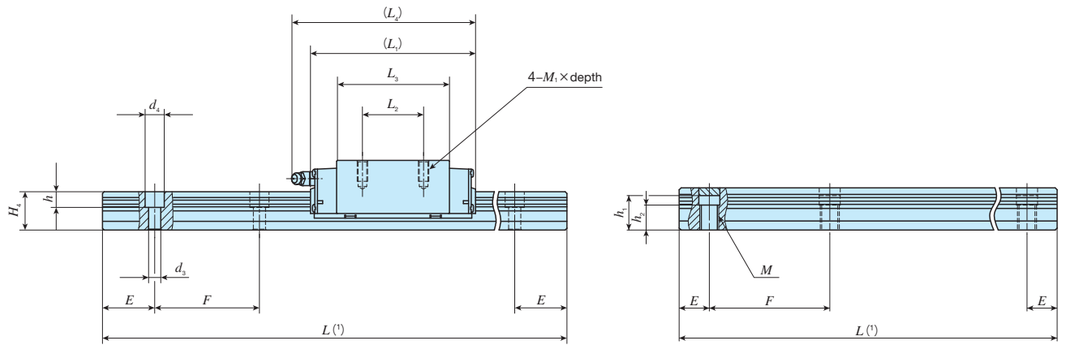
**Block type mounting from top**

Shape: MHD · LWHD



| Size | 8 | 10 | 12 | 15 | 25 |
|---|---|---|---|---|---|
| | 30 | 35 | 45 | 55 | 65 |

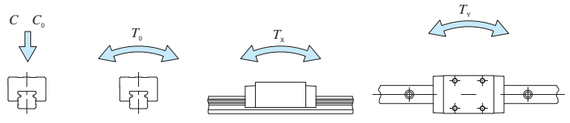



Ultra seal specification with track rail mounting from bottom

| Identification number: MH series | Identification number: LWH series (No C-Lube) | Interchangeable | Mass (Ref.): Slide unit kg | Mass (Ref.): Track rail kg/m | Dimensions of assembly mm: H | $H_1$ | N | Dimensions of slide unit mm: $W_2$ | $W_3$ | $W_4$ | $L_1$ | $L_2$ | $L_3$ | $L_4$ | $M_1$×depth | $H_3$ | Dimensions of track rail mm: W | $H_4$ | $d_3$ | $d_4$ | h | M | $h_1$ (2) | $h_2$ | E | F | Appended mounting bolt for track rail (3) mm: Bolt size× ℓ | Basic dynamic load rating (4): C N | Basic static load rating (4): $C_0$ N | Static moment rating (4): $T_0$ N·m | $T_X$ N·m | $T_Y$ N·m |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MHD 35 | | ○ | 1.74 | 6.85 | 55 | 10 | 18 | 70 | 50 | 10 | 123 | 50 | 86.2 | 135 | M 8×16 | 17 | 34 | 28 | 9 | 14 | 12 | – | – | – | 40 | 80 | M 8×28 | 48 700 | 53 700 | 823 | 631<br>3 480 | 579<br>3 190 |
| | LWHD 35···B | ○ | | | | 8 | | | | | | | | | | | | | | | | | | | | | | | | | |
| – | LWHD 35···M* | – | | | | | | | | | | | | | | | | | – | – | – | M12 | 23 | 16 | | | – | | | | |
| – | LWHD 35···MU* | – | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MHDG 35 | | ○ | 2.26 | | | 10 | | | | | 151 | 72 | 114 | 163 | | | | | 9 | 14 | 12 | – | – | – | | | M 8×28 | 59 500 | 71 600 | 1 100 | 1 090<br>5 570 | 1 000<br>5 110 |
| | LWHDG35 | ○ | | | | 8 | | | | | | | | | | | | | | | | | | | | | | | | | |
| MHD 45 | | ○ | 3.30 | 10.7 | 70 | 13 | 20.5 | 86 | 60 | 13 | 147 | 60 | 103.4 | 158 | M10×20 | 23 | 45 | 34 | 14 | 20 | 17 | – | – | – | 52.5 | 105 | M12×35 | 74 600 | 80 200 | 1 610 | 1 150<br>6 190 | 1 060<br>5 690 |
| | LWHD 45···B | ○ | | | | 14 | | | | | | | | | | | | | | | | | | | | | | | | | |
| – | LWHD 45···M* | – | | | | 10 | | | | | | | | | | | | | – | – | – | M16 | 29 | 17 | | | – | | | | |
| – | LWHD 45···MU* | – | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MHDG 45 | | ○ | 4.57 | | | 13 | | | | | 190 | 80 | 146.6 | 201 | | | | | 14 | 20 | 17 | – | – | – | | | M12×35 | 95 200 | 114 000 | 2 280 | 2 240<br>11 100 | 2 050<br>10 200 |
| | LWHDG45 | ○ | | | | 14 | | | | | | | | | | | | | | | | | | | | | | | | | |
| – | LWHD 55···B | ○ | 5.36 | 15.5 | 80 | 17 | 23.5 | 100 | 75 | 12.5 | 183 | 75 | 132 | 194 | M12×25 | 24 | 53 | 41 | 16 | 23 | 20 | – | – | – | 60 | 120 | M14×45 | 113 000 | 121 000 | 2 870 | 2 210<br>11 600 | 2 030<br>10 600 |
| – | LWHDG55 | ○ | 7.20 | | | | | | | | 235 | 95 | 183.6 | 246 | | | | | | | | | | | | | | 142 000 | 168 000 | 3 970 | 4 120<br>20 200 | 3 780<br>18 500 |
| – | LWHD 65···B | ○ | 9.80 | 22.2 | 90 | 18 | 31.5 | 126 | 76 | 25 | 229 | 70 | 164 | 239 | M16×30 | 20 | 63 | 48 | 18 | 26 | 22 | – | – | – | 75 | 150 | M16×50 | 176 000 | 184 000 | 5 180 | 4 130<br>22 000 | 3 790<br>20 200 |
| – | LWHDG65 | ○ | 14.3 | | | | | | | | 303 | 120 | 238.8 | 313 | | | | | | | | | | | | | | 229 000 | 269 000 | 7 560 | 8 530<br>41 500 | 7 810<br>38 100 |

Notes (1) Track rail lengths $L$ are shown in Table 2.1 on page Ⅱ−93 and Tables 2.3 and 2.4 on page Ⅱ−95.
(2) Choose bolts whose dimension allow fixing thread depth into track rail to be less than $h_1$.
(3) The appended track rail mounting bolts are hexagon socket head bolts equivalent to JIS B 1176.
In an assembled set of MH series and LWHD···MU model, track rail mounting bolts are not appended.
(4) The direction of basic dynamic load rating ($C$), basic static load rating ($C_0$), and static moment rating ($T_0$, $T_X$, $T_Y$) are shown in the sketches below. The upper values of $T_X$ and $T_Y$ are for one slide unit and the lower values are for two slide units in close contact.
Remarks 1. The specifications of grease nipple are shown in Table 16 on page Ⅱ−104.
2. The identification numbers with * are our semi-standard items.




**Example of identification number of assembled set**

| Model code | Dimensions | Part code | Model code | Dust protection code | Preload symbol | Classification symbol | Interchangeable code | Supplemental code |
|---|---|---|---|---|---|---|---|---|
| MHD | G | 45 | C2 | R1260 | | | T1 | P | | /V |
| ① | ② | ③ | ④ | ⑤ | ① | ⑥ | ⑦ | ⑧ | ⑨ | ⑩ |

① Model

| | |
|---|---|
| MHD<br>LWHD(···B) | Block type mounting from top |

② Length of slide unit

| | |
|---|---|
| No symbol | Standard |
| G | Long |

③ Size: 35, 45, 55, 65

④ Number of slide unit (2)

⑤ Length of track rail (1,260 mm)

⑥ Dust protection code

| | |
|---|---|
| No symbol | Standard specification |
| M | Ultra seal specification |
| MU | Ultra seal specification with track rail mounting from bottom |

⑦ Preload amount

| | |
|---|---|
| No symbol | Standard |
| T1 | Light preload |
| T2 | Medium preload |
| T3 | Heavy preload |

⑧ Accuracy class

| | |
|---|---|
| H | High |
| P | Precision |
| SP | Super precision |

⑨ Interchangeable

| | |
|---|---|
| No symbol | Non-interchangeable specification |
| S1 | S1 specification |
| S2 | S2 specification |

⑩ Special specification: A, D, E, F, I, J, L, LF, MA, MN, N, PS, Q, T, V, W, Y, Z

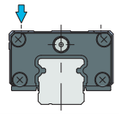


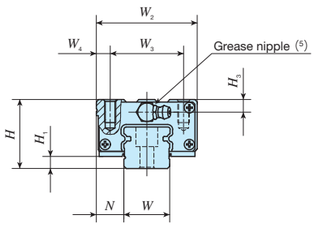


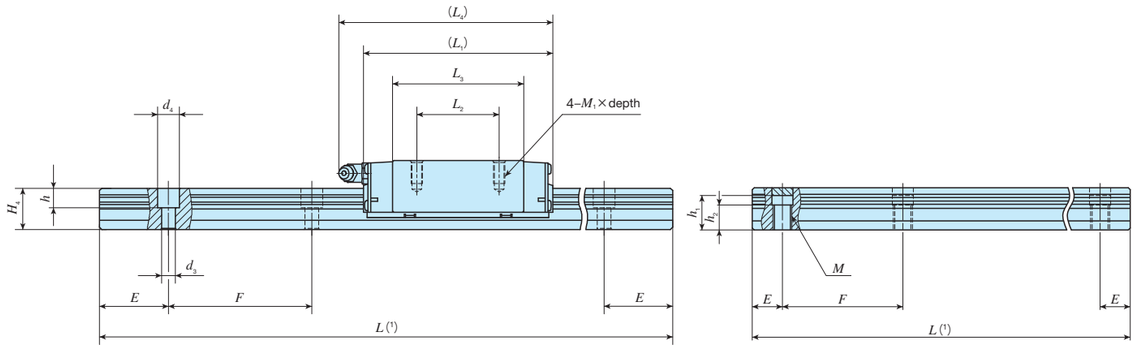
1N=0.102kgf=0.2248lbs.
1mm=0.03937inch

# IKO C-Lube Linear Way MH

**Compact block type mounting from top**

| Shape | MHS · LWHS  | | | |
|---|---|---|---|---|
| Size | 15 | 20 | 25 | 30 |



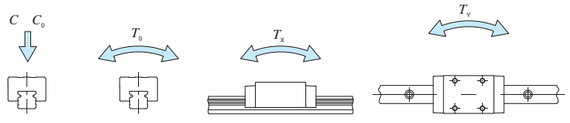




Ultra seal specification with track rail mounting from bottom

| Identification number: MH series | Identification number: LWH series (No C-Lube) | Interchangeable | Mass (Ref.): Slide unit kg | Mass (Ref.): Track rail kg/m | Dimensions of assembly mm: $H$ | $H_1$ | $N$ | Dimensions of slide unit mm: $W_2$ | $W_3$ | $W_4$ | $L_1$ | $L_2$ | $L_3$ | $L_4$ | $M_1$×depth | $H_3$ | Dimensions of track rail mm: $W$ | $H_4$ | $d_3$ | $d_4$ | $h$ | $M$ | $h_1$ (2) | $h_2$ | $E$ | $F$ | Appended mounting bolt for track rail (3) mm: Bolt size× $\ell$ | Basic dynamic load rating (4): $C$ N | Basic static load rating (4): $C_0$ N | Static moment rating (4): $T_0$ N·m | $T_X$ N·m | $T_Y$ N·m |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MHS 15 | | ○ | 0.18 | 1.47 | 24 | 4.5 | 9.5 | 34 | 26 | 4 | 66 | 26 | 44.2 | 69 | M4× 8 | 4.5 | 15 | 15 | 4.5 | 8 | 6 | – | – | – | 30 | 60 | M4×16 | 11 600 | 13 400 | 112 | 95.6<br>556 | 95.6<br>556 |
| | LWHS 15···B | ○ | | | | | | | | | | | 44.6 | | | | | | | | | | | | | | | | | | |
| MHS 15···SL | | ○ | | | | | | | | | | | 44.2 | | | | | | | | | | | | | | | | | | |
| | LWHS 15···SL | ○ | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| – | LWHS 15···M* | – | | | | | | | | | | | 44.6 | | | | | | | | | | | | | | | | | | |
| – | LWHS 15···MU* | – | | | | | | | | | | | | | | | | | – | – | – | M6 | 12 | 9 | | | – | | | | |
| MHSG 15 | – | ○ | 0.25 | | | | | | | | 82 | | 60.1 | 85 | | | | | 4.5 | 8 | 6 | – | – | – | | | M4×16 | 14 400 | 18 300 | 153 | 172<br>918 | 172<br>918 |
| MHS 20 | | ○ | 0.36 | 2.56 | 30 | 6 | 12 | 44 | 32 | 6 | 83 | 36 | 56 | 94 | M5×10 | 5.5 | 20 | 18 | 6 | 9.5 | 8.5 | – | – | – | 30 | 60 | M5×18 | 18 100 | 21 100 | 232 | 195<br>1 090 | 195<br>1 090 |
| | LWHS 20···B | ○ | | | | | | | | | | | 57.2 | | | | | | | | | | | | | | | | | | |
| MHS 20···SL | | ○ | | | | | | | | | | | 56 | | | | | | | | | | | | | | | | | | |
| | LWHS 20···SL | ○ | | | | 5 | | | | | | | | | | | | | | | | | | | | | | | | | |
| – | LWHS 20···M* | – | | | | | | | | | | | 57.2 | | | | | | | | | | | | | | | | | | |
| – | LWHS 20···MU* | – | | | | | | | | | | | | | | | | | – | – | – | M8 | 13.5 | 9.5 | | | – | | | | |
| MHSG 20 | | ○ | 0.53 | | | 6 | | | | | 112 | 50 | 84.8 | 122 | | | | | 6 | 9.5 | 8.5 | – | – | – | | | M5×18 | 24 100 | 31 700 | 349 | 421<br>2 140 | 421<br>2 140 |
| | LWHSG20 | ○ | | | | | | | | | | | 86 | | | | | | | | | | | | | | | | | | |

Notes (1) Track rail lengths $L$ are shown in Table 2.1 on page Ⅱ−93, Table 2.2 on page Ⅱ−94, and Tables 2.3 and 2.4 on page Ⅱ−95.
(2) Choose bolts whose dimension allow fixing thread depth into track rail to be less than $h_1$.
(3) The appended track rail mounting bolts are hexagon socket head bolts equivalent to JIS B 1176. For stainless steel model, stainless steel bolts are appended.
In an assembled set of MH series and LWHS···MU model, track rail mounting bolts are not appended.
(4) The direction of basic dynamic load rating ($C$), basic static load rating ($C_0$), and static moment rating ($T_0$, $T_X$, $T_Y$) are shown in the sketches below. The upper values of $T_X$ and $T_Y$ are for one slide unit and the lower values are for two slide units in close contact.
(5) The shapes of grease nipple vary by size. The specifications are shown in Table 16 on page Ⅱ−104.

Remark: The identification numbers with * are our semi-standard items.




**Example of identification number of assembled set**

| Model code | Dimensions | Part code | Model code | Dust protection code | Material code | Preload symbol | Classification symbol | Interchangeable code | Supplemental code |
|---|---|---|---|---|---|---|---|---|---|
| MHS | G | 20 C2 R480 | | | | T1 | P | | /V |
| ① | ② | ③ ④ ⑤ | ① | ⑥ | ⑦ | ⑧ | ⑨ | ⑩ | ⑪ |

① Model

| | |
|---|---|
| MHS | Compact block type mounting from top |
| LWHS(···B) | |

② Length of slide unit

| | |
|---|---|
| No symbol | Standard |
| G | Long |

③ Size: 15, 20

④ Number of slide unit (2)

⑤ Length of track rail (480 mm)

⑥ Dust protection code

| | |
|---|---|
| No symbol | Standard specification |
| M | Ultra seal specification |
| MU | Ultra seal specification with track rail mounting from bottom |

⑦ Material type

| | |
|---|---|
| No symbol | High carbon steel made |
| SL | Stainless steel made |

⑧ Preload amount

| | |
|---|---|
| No symbol | Standard |
| T1 | Light preload |
| T2 | Medium preload |
| T3 | Heavy preload |

⑨ Accuracy class

| | |
|---|---|
| H | High |
| P | Precision |
| SP | Super precision |

⑩ Interchangeable

| | |
|---|---|
| No symbol | Non-interchangeable specification |
| S1 | S1 specification |
| S2 | S2 specification |

⑪ Special specification: A, BS, D, E, F, I, J, L, LF, MA MN, N, Q, RE, T, V, W, Y, Z



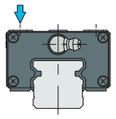


1N=0.102kgf=0.2248lbs.
1mm=0.03937inch

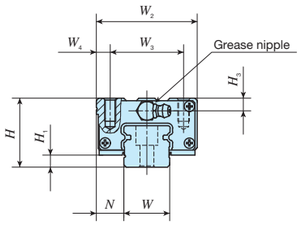
# IKO C-Lube Linear Way MH

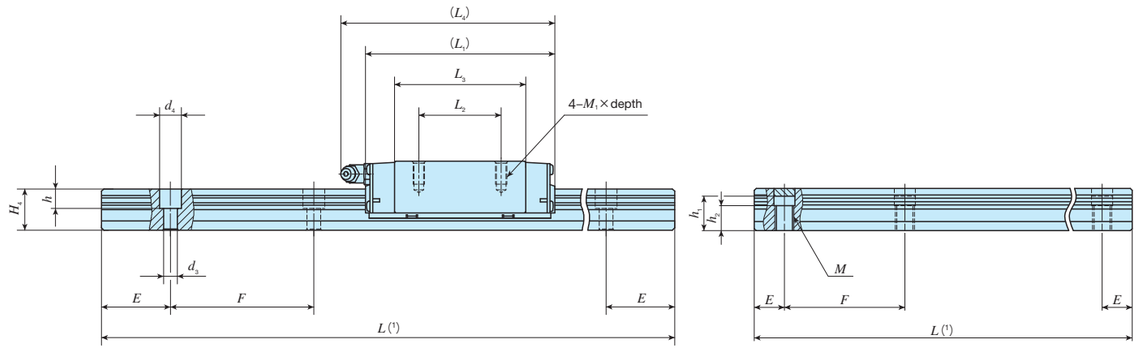
**Compact block type mounting from top**

Shape: **MHS · LWHS**



Size: 15 | 20 | 25 | 30



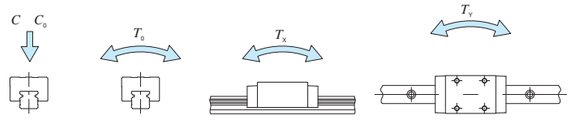




Ultra seal specification with track rail mounting from bottom

| Identification number | | Interchangeable | Mass (Ref.) | | Dimensions of assembly mm | | | Dimensions of slide unit mm | | | | | | | | | Dimensions of track rail mm | | | | | | | | | | Appended mounting bolt for track rail (3) mm | Basic dynamic load rating (4) | Basic static load rating (4) | Static moment rating (4) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MH series | LWH series (No C-Lube) | | Slide unit kg | Track rail kg/m | $H$ | $H_1$ | $N$ | $W_2$ | $W_3$ | $W_4$ | $L_1$ | $L_2$ | $L_3$ | $L_4$ | $M_1$×depth | $H_3$ | $W$ | $H_4$ | $d_3$ | $d_4$ | $h$ | $M$ | $h_1$ (2) | $h_2$ | $E$ | $F$ | Bolt size× $\ell$ | $C$ N | $C_0$ N | $T_0$ N·m | $T_X$ N·m | $T_Y$ N·m |
| MHS 25 | | ○ | 0.55 | 3.50 | 36 | 8 | 12.5 | 48 | 35 | 6.5 | 95 | 35 | 63.9 | 105 | M6×12 | 6.5 | 23 | 22 | 7 | 11 | 9 | – | – | – | 30 | 60 | M6×22 | 25 200 | 28 800 | 362 | 309<br>1 690 | 309<br>1 690 |
| | LWHS 25···B | ○ | | | | 6.5 | | | | | | | 64.7 | | | | | | | | | | | | | | | | | | |
| MHS 25···SL | | ○ | | | | 8 | | | | | | | 63.9 | | | | | | | | | | | | | | | | | | |
| | LWHS 25···SL | ○ | | | | 6.5 | | | | | | | 64.7 | | | | | | | | | | | | | | | | | | |
| MHS 25···M* | | – | | | | | | | | | | | 63.9 | | | | | | | | | | | | | | | | | | |
| | LWHS 25···M* | – | | | | | | | | | | | 64.7 | | | | | | | | | | | | | | | | | | |
| MHS 25···MU* | | – | | | | | | | | | | | 63.9 | | | | | | – | – | – | M10 | 18 | 13 | | | – | | | | |
| | LWHS 25···MU* | – | | | | | | | | | | | 64.7 | | | | | | | | | | | | | | | | | | |
| MHSG 25 | | ○ | 0.67 | | | 8 | | | | | 118 | 50 | 86.6 | 128 | | | | | 7 | 11 | 9 | – | – | – | | | M6×22 | 30 800 | 38 300 | 483 | 533<br>2 740 | 533<br>2 740 |
| | LWHSG25 | ○ | | | | 6.5 | | | | | | | 87.4 | | | | | | | | | | | | | | | | | | |
| MHS 30 | | ○ | 1.00 | 4.82 | 42 | 9 | 16 | 60 | 40 | 10 | 113 | 40 | 80.6 | 123 | M8×16 | 8 | 28 | 25 | 9 | 14 | 12 | – | – | – | 40 | 80 | M8×28 | 35 400 | 40 700 | 623 | 536<br>2 820 | 536<br>2 820 |
| | LWHS 30···B | ○ | | | | 7 | | | | | | | | | | | | | | | | | | | | | | | | | |
| MHS 30···SL | | ○ | | | | 9 | | | | | | | | | | | | | | | | | | | | | | | | | |
| | LWHS 30···SL | ○ | | | | 7 | | | | | | | | | | | | | | | | | | | | | | | | | |
| MHS 30···M* | | – | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | LWHS 30···M* | – | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MHS 30···MU* | | – | | | | | | | | | | | | | | | | | – | – | – | M12 | 20 | 13 | | | – | | | | |
| | LWHS 30···MU* | – | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MHSG 30 | | ○ | 1.29 | | | 9 | | | | | 139 | 60 | 106.6 | 149 | | | | | 9 | 14 | 12 | – | – | – | | | M8×28 | 42 700 | 53 200 | 814 | 894<br>4 460 | 894<br>4 460 |
| | LWHSG30 | ○ | | | | 7 | | | | | | | | | | | | | | | | | | | | | | | | | |

Notes (1) Track rail lengths $L$ are shown in Table 2.1 on page Ⅱ−93, Table 2.2 on page Ⅱ−94, and Tables 2.3 and 2.4 on page Ⅱ−95.
(2) Choose bolts whose dimension allow fixing thread depth into track rail to be less than $h_1$.
(3) The appended track rail mounting bolts are hexagon socket head bolts equivalent to JIS B 1176. For stainless steel model, stainless steel bolts are appended.
In an assembled set of MH series and LWHS···MU model, track rail mounting bolts are not appended.
(4) The direction of basic dynamic load rating ($C$), basic static load rating ($C_0$), and static moment rating ($T_0$, $T_X$, $T_Y$) are shown in the sketches below. The upper values of $T_X$ and $T_Y$ are for one slide unit and the lower values are for two slide units in close contact.

Remarks 1. The specifications of grease nipple are shown in Table 16 on page Ⅱ−104.
2. The identification numbers with * are our semi-standard items.




## Example of identification number of assembled set

| Model code | Dimensions | Part code | Model code | Dust protection code | Material code | Preload symbol | Classification symbol | Interchangeable code | Supplemental code |
|---|---|---|---|---|---|---|---|---|---|
| MHS | G | 30 | C2 | R480 | | | | T1 | P | | /V |
| ① | ② | ③ | ④ | ⑤ | ① | ⑥ | ⑦ | ⑧ | ⑨ | ⑩ | ⑪ |

**① Model**

| | |
|---|---|
| MHS | Compact block type mounting from top |
| LWHS(···B) | |

**② Length of slide unit**

| | |
|---|---|
| No symbol | Standard |
| G | Long |

**③ Size**: 25, 30

**④ Number of slide unit (2)**

**⑤ Length of track rail (480 mm)**

**⑥ Dust protection code**

| | |
|---|---|
| No symbol | Standard specification |
| M | Ultra seal specification |
| MU | Ultra seal specification with track rail mounting from bottom |

**⑦ Material type**

| | |
|---|---|
| No symbol | High carbon steel made |
| SL | Stainless steel made |

**⑧ Preload amount**

| | |
|---|---|
| No symbol | Standard |
| T1 | Light preload |
| T2 | Medium preload |
| T3 | Heavy preload |

**⑨ Accuracy class**

| | |
|---|---|
| H | High |
| P | Precision |
| SP | Super precision |

**⑩ Interchangeable**

| | |
|---|---|
| No symbol | Non-interchangeable specification |
| S1 | S1 specification |
| S2 | S2 specification |

**⑪ Special specification**: A, BS, D, E, F, I, J, L, LF, MA MN, N, PS, Q, RE, T, UR, V, W, Y, Z



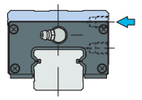


1N=0.102kgf=0.2248lbs.
1mm=0.03937inch

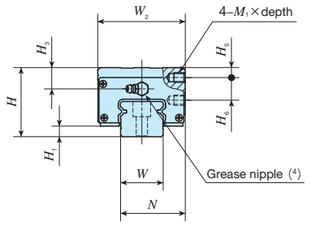
# IKO C-Lube Linear Way MH

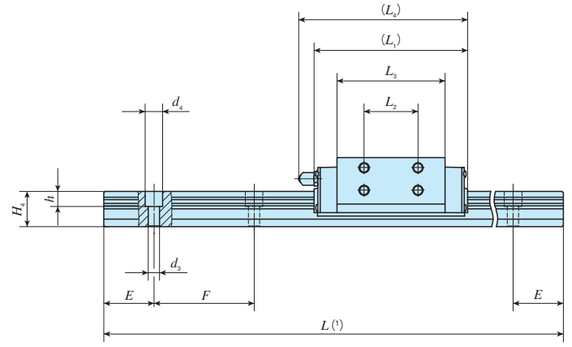
**Side mounting type**

Shape: **LWHY**



| Size | | | |
|---|---|---|---|
| 15 | 20 | 25 | |
| 30 | 35 | 45 | |

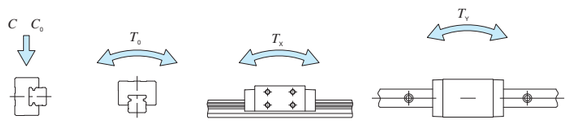



| Identification number | | Interchangeable | Mass (Ref.) | | Dimensions of assembly mm | | | Dimensions of slide unit mm | | | | | | | | Dimensions of track rail mm | | | | | | | Appended mounting bolt for track rail (2) mm | Basic dynamic load rating (3) | Basic static load rating (3) | Static moment rating (3) | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MH series | LWH series (No C-Lube) | | Slide unit kg | Track rail kg/m | $H$ | $H_1$ | $N$ | $W_2$ | $L_1$ | $L_2$ | $L_3$ | $L_4$ | $M_1$×depth | $H_3$ | | $H_5$ | $H_6$ | $W$ | $H_4$ | $d_3$ | $d_4$ | $h$ | $E$ | $F$ | Bolt size× $\ell$ | $C$ N | $C_0$ N | $T_0$ N·m | $T_X$ N·m | $T_Y$ N·m |
| – | LWHY 15* | – | 0.23 | 1.47 | 28 | 4.5 | 24.3 | 34 | 66 | 18 | 44.6 | 69 | M 4× 4 | 8.5 | | 4 | 9 | 15 | 15 | 4.5 | 8 | 6 | 30 | 60 | M 4×16 | 11 600 | 13 400 | 112 | 95.6<br>556 | 95.6<br>556 |
| – | LWHY 20* | – | 0.36 | 2.56 | 30 | 6 | 31.5 | 43.7 | 83 | 25 | 57.2 | 94 | M 5× 5 | 5.5 | | 4 | 10 | 20 | 18 | 6 | 9.5 | 8.5 | 30 | 60 | M 5×18 | 18 100 | 21 100 | 232 | 195<br>1 090 | 195<br>1 090 |
| – | LWHY 25* | – | 0.65 | 3.50 | 40 | 6.5 | 35 | 47.7 | 95 | 30 | 64.7 | 105 | M 6× 6 | 10.5 | | 6 | 12 | 23 | 22 | 7 | 11 | 9 | 30 | 60 | M 6×22 | 25 200 | 28 800 | 362 | 309<br>1 690 | 309<br>1 690 |
| – | LWHY 30* | – | 1.12 | 4.82 | 45 | 7 | 43.5 | 59.7 | 113 | 40 | 80.6 | 123 | M 6× 7 | 11 | | 8 | 14 | 28 | 25 | 9 | 14 | 12 | 40 | 80 | M 8×28 | 35 400 | 40 700 | 623 | 536<br>2 820 | 536<br>2 820 |
| – | LWHY 35* | – | 1.74 | 6.85 | 55 | 8 | 51.5 | 69.7 | 123 | 43 | 86.2 | 135 | M 8× 9 | 17 | | 8 | 18 | 34 | 28 | 9 | 14 | 12 | 40 | 80 | M 8×28 | 38 000 | 41 900 | 823 | 631<br>3 480 | 579<br>3 190 |
| – | LWHY 45* | – | 3.30 | 10.7 | 70 | 14 | 65 | 85.7 | 147 | 55 | 103.4 | 158 | M10×11 | 23 | | 10 | 22 | 45 | 34 | 14 | 20 | 17 | 52.5 | 105 | M12×35 | 58 300 | 62 600 | 1 610 | 1 150<br>6 190 | 1 060<br>5 690 |

Notes (1) Track rail lengths $L$ are shown in Table 2.1 on page Ⅱ−93.
(2) The appended track rail mounting bolts are hexagon socket head bolts equivalent to JIS B 1176.
(3) The direction of basic dynamic load rating ($C$), basic static load rating ($C_0$), and static moment rating ($T_0$, $T_X$, $T_Y$) are shown in the sketches below. The upper values of $T_X$ and $T_Y$ are for one slide unit and the lower values are for two slide units in close contact.
(4) The shapes of grease nipple vary by size. The specifications are shown in Table 16 on page Ⅱ−104.

Remark: The identification numbers with * are our semi-standard items.






**Example of identification number of assembled set**

| Model code | Dimensions | Part code | | Preload symbol | Classification symbol | Supplemental code |
|---|---|---|---|---|---|---|
| LWHY | 30 | C2 | R480 | T1 | P | /V |
| ① | ② | ③ | ④ | ⑤ | ⑥ | ⑦ |

① Model
LWHY: Side mounting type

② Size
15, 20, 25, 30, 35, 45

③ Number of slide unit (2)

④ Length of track rail (480 mm)

⑤ Preload amount

| | |
|---|---|
| No symbol | Standard |
| T1 | Light preload |
| T2 | Medium preload |
| T3 | Heavy preload |

⑥ Accuracy class

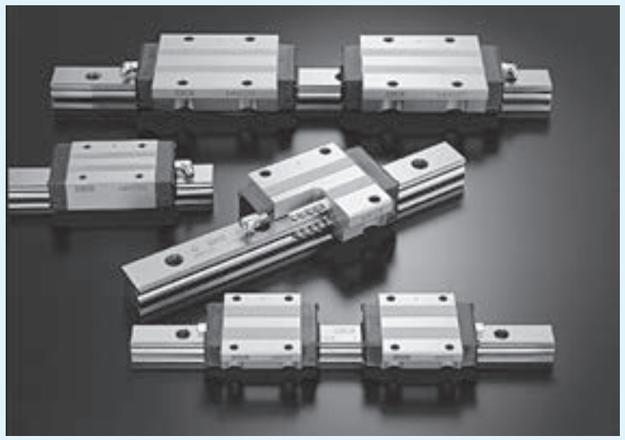
| | |
|---|---|
| H | High |
| P | Precision |
| SP | Super precision |

⑦ Special specification
A, E, F, Ⅰ, L, LF, MA, N, PS, RE, Y, Z

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

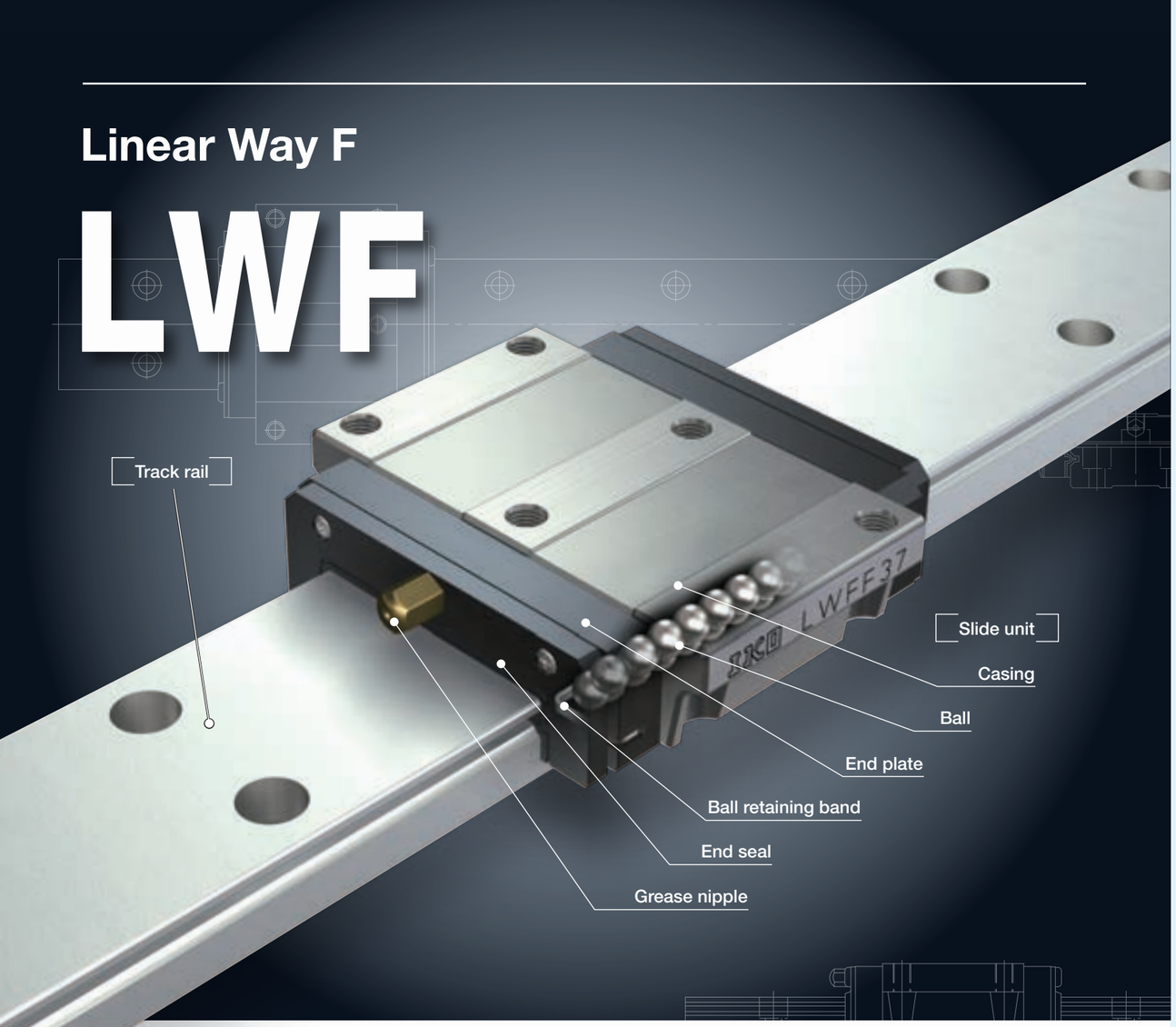
# Linear Way F





# Linear Way F

# LWF




## *Points*

### ● Wide rail type series resistant to moment load

1

As track rail width is wide and distance between moment load points is long, this is a linear motion rolling guide resistant to moment load and complex load and suitable for serial use.

### ● Slide unit shapes for various usage

2

As the lineup of three types of slide unit shape including two flange types with different dimensional series and block type with small width are available, you can select an optimal product for the specifications of your machine and device.

### ● Stainless steel selections superior in corrosion resistance are listed on lineup.

For details ➔ P.I-43

3

Products made of stainless steel are highly resistant to corrosion, so that they are suitable for applications where rust prevention oil is not preferred, such as in a cleanroom environment.



# Identification Number and Specification

## Example of an identification number

The specification of LWF series is indicated by the identification number. Indicate the identification number, consisting of a model code, dimensions, a part code, a material code, a preload symbol, a classification symbol, an interchangeable code, and any supplemental codes for each specification to apply.

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|
| **Non-interchangeable specification** | | | | | | | | | |
| Assembled set | LWFF | 37 | C1 | R800 | | T1 | P | | /FZ |
| **Interchangeable specification** | | | | | | | | | |
| Single slide unit | LWFS | 37 | C1 | | SL | T1 | P | S1 | /Z |
| Single track rail(1) | LWFF | 37 | | R800 | SL | | P | S1 | /F |
| Assembled set | LWFS | 37 | C1 | R800 | SL | T1 | P | S1 | /FZ |

1 **Model** — Model code Page Ⅱ－137

2 **Size** — Dimensions Page Ⅱ－137

3 **Number of slide units** — Part code Page Ⅱ－137

4 **Length of track rail** — Part code Page Ⅱ－137

5 **Material type** — Material code Page Ⅱ－137

6 **Preload amount** — Preload symbol Page Ⅱ－139

7 **Accuracy class** — Classification symbol Page Ⅱ－140

8 **Interchangeable** — Interchangeable code Page Ⅱ－141

9 **Special specification** — Supplemental code Page Ⅱ－141

Note (1) Please specify "LWFF" as the model code of the single track rail for block type LWFS mounted from top or stainless steel LWFS.



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

# Identification Number and Specification —Model · Size · Number of Slide Unit ·

## 1 Model

Linear Way F (1) (LWF series)

Flange type mounting from top / bottom : LWFH / : LWFF

Block type mounting from top : LWFS

For applicable models and sizes, see Table 1.
Please specify "LWFF" as the model code of the single track rail for block type LWFS mounted from top or stainless steel LWFS.

Note (1) This model has no built-in C-Lube.

## 2 Size

33,37,40,42,60,69,90 — For applicable models and sizes, see Table 1.

## 3 Number of slide units

: C○ — For an assembled set, indicates the number of slide units assembled on a track rail. For a single slide unit, only "C1" is specified.

## 4 Length of track rail

: R○ — Indicate the length of track rail in mm. For standard and maximum length, see Table 2.1 and Table 2.2.

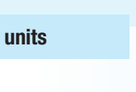
## 5 Material type

High carbon steel made : No symbol
Stainless steel made (2) : SL

For applicable models and sizes, see Table 1.

Note (2) Mount a standard grease nipple (brass) on the stainless steel type, too. Stainless steel grease nipple is also available. If needed, please contact IKO.

*Table 1 Models and sizes of LWF series*

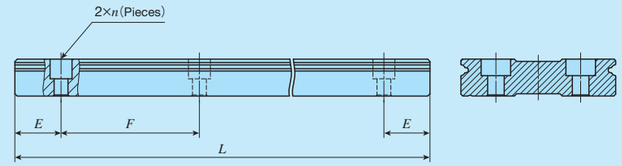
| Material | Shape | Model | Size | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | 33 | 37 | 40 | 42 | 60 | 69 | 90 |
| High carbon steel made | Flange type mounting from top/bottom  | LWFH | – | – | ○ | – | ○ | – | ○ |
| | Flange type mounting from top/bottom  | LWFF | ○ | ○ | – | ○ | – | ○ | – |
| | Block type mounting from top  | LWFS | ○ | ○ | – | – | – | – | – |
| Stainless steel made | Block type mounting from top  | LWFS···SL | ○ | ○ | – | ○ | – | – | – |

Remark: For the models indicated in ▭, the interchangeable specification is available.



# Length of Track Rail · Material Type—

*Table 2.1 Standard and maximum length of high carbon steel track rail*




unit: mm

| Item \ Identification number | LWFH40 | LWFH60 | LWFH90 | |
|---|---|---|---|---|
| Standard length $L$ ($n$) | 180 ( 3)<br>240 ( 4)<br>360 ( 6)<br>480 ( 8)<br>660 (11)<br>840 (14) | 240 ( 3)<br>480 ( 5)<br>640 ( 8)<br>800 (10)<br>1 040 (13) | 480 ( 6)<br>640 ( 8)<br>800 (10)<br>1 040 (13)<br>1 200 (15)<br>1 520 (19) | |
| Pitch of mounting holes $F$ | 60 | 80 | 80 | |
| $E$ | 30 | 40 | 40 | |
| Standard $E$ dimensions (1) or higher | 8 | 10 | 10 | |
| Standard $E$ dimensions (1) below | 38 | 50 | 50 | |
| Maximum length (2) | 1 500 | 1 520 | 1 520 | |
| Item \ Identification number | LWFF33<br>LWFS33 | LWFF37<br>LWFS37 | LWFF42 | LWFF69 |
| Standard length $L$ ($n$) | 120 ( 3)<br>200 ( 5)<br>320 ( 8)<br>480 (12)<br>560 (14) | 150 ( 3)<br>250 ( 5)<br>400 ( 8)<br>500 (10)<br>600 (12)<br>800 (16) | 180 ( 3)<br>240 ( 4)<br>360 ( 6)<br>480 ( 8)<br>660 (11)<br>840 (14) | 320 ( 4)<br>480 ( 6)<br>800 (10)<br>1 040 (13)<br>1 280 (16)<br>1 600 (20) |
| Pitch of mounting holes $F$ | 40 | 50 | 60 | 80 |
| $E$ | 20 | 25 | 30 | 40 |
| Standard $E$ dimensions (1) or higher | 7 | 7 | 7 | 9 |
| Standard $E$ dimensions (1) below | 27 | 32 | 37 | 49 |
| Maximum length (2) | 1 600 | 2 000 | 1 980 | 2 000 |

Notes (1) This does not apply to female threads for bellows (supplemental code "/J").
(2) We can produce products longer than the maximum length. If needed, please contact IKO.
Remarks 1. Indicate "LWFF" for the model code of the single track rail of block type LWFS mounting from top.
2. If not directed, $E$ dimensions for both ends will be the same within the range of standard $E$ dimensions. To change the dimensions, indicate the specified rail mounting hole positions "/E" of special specification. For more information, see page Ⅲ−30.

*Table 2.2 Standard and maximum length of stainless steel track rail*

unit: mm

| Item \ Identification number | LWFS33···SL | LWFS37···SL | LWFS42···SL |
|---|---|---|---|
| Standard length $L$ ($n$) | 120 ( 3)<br>200 ( 5)<br>320 ( 8)<br>480 (12)<br>560 (14) | 150 ( 3)<br>250 ( 5)<br>400 ( 8)<br>500 (10)<br>600 (12)<br>800 (16) | 180 ( 3)<br>240 ( 4)<br>360 ( 6)<br>480 ( 8)<br>660 (11)<br>840 (14) |
| Pitch of mounting holes $F$ | 40 | 50 | 60 |
| $E$ | 20 | 25 | 30 |
| Standard $E$ dimensions (1) or higher | 7 | 7 | 7 |
| Standard $E$ dimensions (1) below | 27 | 32 | 37 |
| Maximum length (2) | 1 200 | 1 200 | 1 200 |

Notes (1) This does not apply to female threads for bellows (supplemental code "/J").
(2) We can produce products longer than the maximum length. If needed, please contact IKO.
Remarks 1. Indicate "LWFF" for the model code of the single track rail.
2. If not directed, $E$ dimensions for both ends will be the same within the range of standard $E$ dimensions. To change the dimensions, indicate the specified rail mounting hole positions "/E" of special specification. For more information, see page Ⅲ−30.



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

## —Preload Amount—

### 6 Preload amount

| | | |
|---|---|---|
| Standard | : No symbol | Specify this item for an assembled set or a single slide unit. |
| Light preload | : $T_1$ | For details of the preload amount, see Table 3. |
| Medium preload | : $T_2$ | For applicable preload types, see Table 4. |

***Table 3 Preload amount***

| Item / Preload type | Preload symbol | Preload amount N | Operational conditions |
|---|---|---|---|
| Standard | (No symbol) | 0 (1) | · Light and precise motion |
| Light preload | $T_1$ | $0.02C_0$ | · Almost no vibrations<br>· Load is evenly balanced<br>· Light and precise motion |
| Medium preload | $T_2$ | $0.05C_0$ | · Medium vibration<br>· Medium overhung load |

Note (1) Indicates zero or minimal amount of preload.
Remark: $C_0$ indicates the basic static load rating.

***Table 4 Application of preload***

| Size | Preload type (preload symbol) | | |
|---|---|---|---|
| | Standard (No symbol) | Light preload ($T_1$) | Medium preload ($T_2$) |
| 33 | ○ | ○ | ○ |
| 37 | ○ | ○ | ○ |
| 40 | ○ | ○ | ○ |
| 42 | ○ | ○ | ○ |
| 60 | ○ | ○ | ○ |
| 69 | ○ | ○ | ○ |
| 90 | ○ | ○ | ○ |

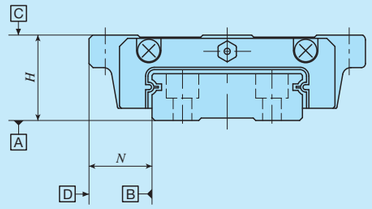
Remark: The mark ▭ indicates that interchangeable specification products are available.

## —Accuracy Class—

### 7 Accuracy class

| | | |
|---|---|---|
| High | : H | For interchangeable specification products, assemble a slide unit and a track rail of the same accuracy class. |
| Precision | : P | For details of accuracy class, see Table 5. |
| Super precision | : SP | For applicable accuracy class, see Table 6. |

***Table 5 Tolerance and allowance***




unit: mm

| Item / Class (classification symbol) | High (H) | Precision (P) | Super precision (SP) |
|---|---|---|---|
| Dim. $H$ tolerance | ±0.040 | ±0.020 | ±0.010 |
| Dim. $N$ tolerance | ±0.050 | ±0.025 | ±0.015 |
| Dim. variation of $H$ (1) | 0.015 | 0.007 | 0.005 |
| Dim. variation of $N$ (1) | 0.020 | 0.010 | 0.007 |
| Dim. variation of $H$ for multiple assembled sets (2) | 0.035 | 0.025 | – |
| Parallelism in operation of the slide unit C surface to A surface | See Fig. 1 | | |
| Parallelism in operation of the slide unit D surface to B surface | See Fig. 1 | | |

Notes (1) It means the size variation between slide units mounted on the same track rail.
(2) Applicable to the interchangeable specifications.

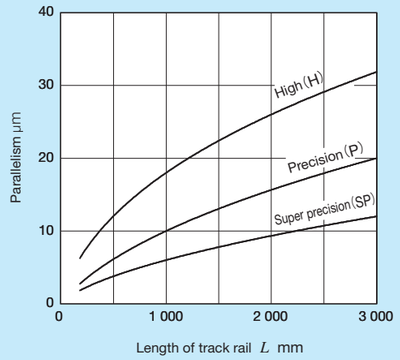



***Fig. 1 Parallelism in operation***

***Table 6 Application of accuracy class***

| Size | Class (classification symbol) | | |
|---|---|---|---|
| | High (H) | Precision (P) | Super precision (SP) |
| 33 | ○ | ○ | ○ |
| 37 | ○ | ○ | ○ |
| 40 | ○ | ○ | ○ |
| 42 | ○ | ○ | ○ |
| 60 | ○ | ○ | ○ |
| 69 | ○ | ○ | ○ |
| 90 | ○ | ○ | ○ |

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





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

**8 Interchangeable**

| | | |
|---|---|---|
| S1 specification | : S1 | This is specified for the interchangeable specifications. Assemble a track rail and a slide unit with the same interchangeable code. When using in combination with different interchangeable codes, please contact IKO. Note that the combination of interchangeable codes will not have any effect on accuracy. For applicable models and sizes, see Table 1. No symbol is indicated for non-interchangeable specification. |
| S2 specification | : S2 | |
| Non-interchangeable specification | : No symbol | |

**9 Special specification**

/A, /C, /D, /E, /F, /I, /J○, /L○, /LF○, /MN, /N, /Q, /U, /V○, /W○, /Y○, /Z○

For applicable special specifications, see Tables 7.1, 7.2, 7.3, and 7.4.
For combination of multiple special specifications, see Table 8.
For details of special specifications, see page Ⅲ—29.

*Table 7.1 Application of special specifications (Interchangeable specification, single slide unit)*

| Special specification | Supplemental code | Size | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 33 | 37 | 40 | 42 | 60 | 69 | 90 |
| Female threads for bellows (1) | /J○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| No end seal | /N | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| With C-Lube plate | /Q | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Under seal | /U | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Double end seals | /V○ | ○ | ○ | × | ○ | × | ○ | × |
| Scrapers | /Z○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Note (1) Not applicable to stainless steel made products.

*Table 7.2 Application of special specifications (Interchangeable specification, single track rail)*

| Special specification | Supplemental code | Size | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 33 | 37 | 40 | 42 | 60 | 69 | 90 |
| Specified rail mounting hole positions | /E | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Caps for rail mounting holes | /F | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Female threads for bellows (1) | /J | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Without track rail mounting bolt | /MN | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Note (1) Not applicable to stainless steel made products.

*Table 7.3 Application of special specifications (Interchangeable specification and assembled set)*

| Special specification | Supplemental code | Size | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 33 | 37 | 40 | 42 | 60 | 69 | 90 |
| Opposite reference surfaces arrangement | /D | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Specified rail mounting hole positions | /E | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Caps for rail mounting holes | /F | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Female threads for bellows (1) | /J○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Black chrome surface treatment | /L○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Fluorine black chrome surface treatment | /LF○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Without track rail mounting bolt | /MN | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| No end seal | /N | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| With C-Lube plate | /Q | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Under seal | /U | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Double end seals | /V○ | ○ | ○ | × | ○ | × | ○ | × |
| Specified grease | /Y○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Scrapers | /Z○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Note (1) Not applicable to stainless steel made products.





*Table 7.4 Application of special specifications (Non-interchangeable specification)*

| Special specification | Supplemental code | Size | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | 33 | 37 | 40 | 42 | 60 | 69 | 90 |
| Butt-jointing track rails | /A | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Chamfered reference surface | /C○ | × | × | ○ | × | ○ | × | ○ |
| Opposite reference surfaces arrangement | /D | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Specified rail mounting hole positions | /E | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Caps for rail mounting holes | /F | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Inspection sheet | /I | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Female threads for bellows | /J○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Black chrome surface treatment | /L○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Fluorine black chrome surface treatment | /LF○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Without track rail mounting bolt | /MN | ○ | ○ | ○ (1) | ○ | ○ | ○ | ○ |
| No end seal | /N | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| With C-Lube plate | /Q | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Under seal | /U | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Double end seals | /V○ | ○ | ○ | × | ○ | × | ○ | × |
| A group of multiple assembled sets | /W○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Specified grease | /Y○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| Scrapers | /Z○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

Note (1) Not applicable to LWFH size 40.

*Table 8 Combination of supplemental codes*

| | A | C | D | E | F | I | J | L | LF | MN | N | Q | U | V | W | Y |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| C | ○ | | | | | | | | | | | | | | | |
| D | ○ | ○ | | | | | | | | | | | | | | |
| E | – | ○ | – | | | | | | | | | | | | | |
| F | ○ | ○ | ○ | ○ | | | | | | | | | | | | |
| I | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | | |
| J | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | | |
| L | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | | | |
| LF | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | | | | | | | | |
| MN | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | | | | | | |
| N | ○ | ○ | ○ | ○ | – | ○ | – | ○ | ○ | ○ | | | | | | |
| Q | ○ | ○ | ○ | ○ | ○ | ○ | – | ○ | ○ | ○ | ○ | | | | | |
| U | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | ○ | | | | |
| V | ○ | – | ○ | ○ | ○ | ○ | ● | ○ | ○ | ○ | – | – | ○ | | | |
| W | ○ | ○ | ○ | – | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | | |
| Y | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | – | ○ | ○ | ○ | |
| Z | ○ | ○ | ○ | ○ | ○ | ○ | ●(1) | ○ | ○ | ○ | – | – | ○ | ● | ○ | ○ |

Note (1) Contact IKO for the case of LWFH.
Remarks 1. The combination of "—" shown in the table is not available.
2. Contact IKO for the combination of the interchangeable specification marked with ●.
3. When using multiple types for combination, please indicate by arranging the symbols in alphabetical order.



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

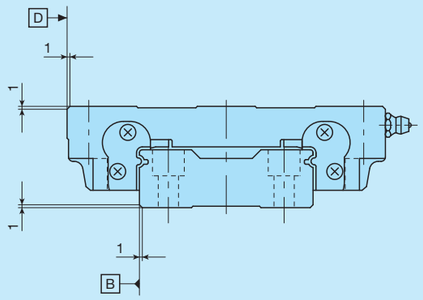
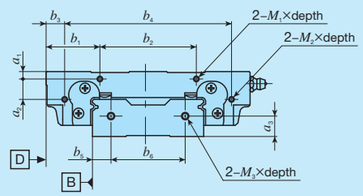



***Fig. 2 Dimension of chamfered reference surface (Supplemental code /C /CC)***

Remark: Add chamfer to the reference mounting surface of the slide unit and track rail.
For corner R of the mounting section, see Table 17.2 on page Ⅱ−148.

***Table 9 Dimension of female threads for bellows (Supplemental code Single unit: /J Assembled set: /J /JJ)***




unit: mm

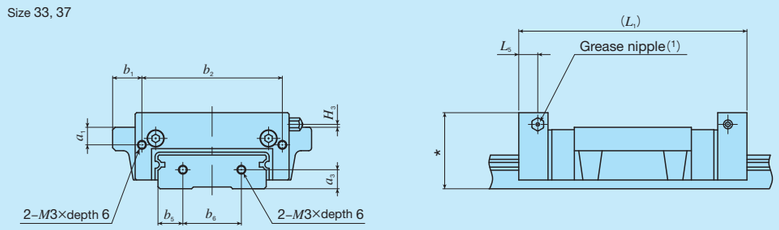
| Identification number | Slide unit | | | | | | | | Track rail | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | $a_1$ | $a_2$ | $b_1$ | $b_2$ | $b_3$ | $b_4$ | $M_1$×depth | $M_2$×depth | $a_3$ | $b_5$ | $b_6$ | $M_3$×depth |
| **LWFH 40** | 3 | – | 23.5 | 35 | – | – | M3×6 | – | 9 | 8 | 24 | M3×6 |
| **LWFH 60** | 4 | 11 | 29 | 52 | 10 | 90 | M3×6 | M3×3 | 11 | 10 | 40 | M4×8 |
| **LWFH 90** | 6 | 17 | 41 | 80 | 13 | 136 | M3×5 | M3×5 | 13 | 15 | 60 | M4×8 |



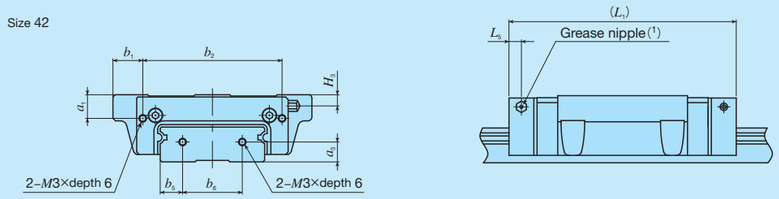


***Table 10 Dimension of female threads for bellows (Supplemental code Single unit: /J Assembled set: /J /JJ)***

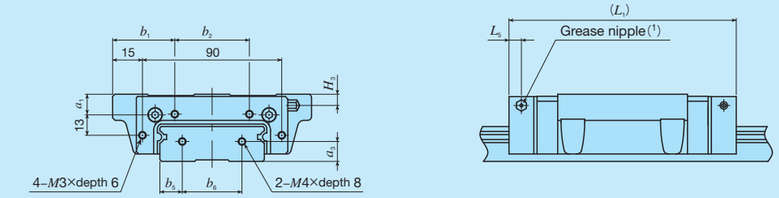
Size 33, 37




Size 42




Size 69

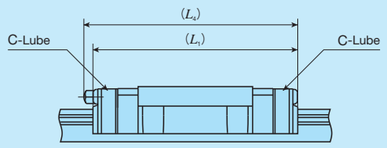



unit: mm

| Identification number | Slide unit | | | | | | Track rail | | |
|---|---|---|---|---|---|---|---|---|---|
| | $a_1$ | $b_1$ | $b_2$ | $L_1$(2) | $L_5$ | $H_3$ | $a_3$ | $b_5$ | $b_6$ |
| **LWFF 33** | 4 | 8.25 | 43.5 | 71 | 5 | 1 | 6 | 7.5 | 18 |
| **LWFS 33(…SL)** | | 3.25 | | | | | | | |
| **LWFF 37** | 6 | 10 | 48 | 78 | 5 | 1 | 6.5 | 8.5 | 20 |
| **LWFS 37(…SL)** | | 3 | | | | | | | |
| **LWFF 42** | 9.5 | 12 | 56 | 92 | 7 | 4.5 | 8 | 9 | 24 |
| **LWFS 42…SL** | | 3 | | | | | | | |
| **LWFF 69** | 9 | 35 | 50 | 125 | 7 | 5 | 11 | 14.5 | 40 |

Notes (1) Grease nipple specifications and mounting position are different from standard specifications. Provided grease nipple is A-M3 for size 37 and 42 models, and A-M4 for size 69 model. For grease nipple specification, see Table 15 on page Ⅱ−146.
(2) Dimensions of the specification that female threads for bellows are fitted to both ends of the slide unit are indicated.
Remark: Dimensions indicated by * mark for series of size 33 and Size 37 is higher than the $H$ dimension of Linear Way F. For details, contact IKO.

***Table 11 Dimension of slide unit with C-Lube plate (Supplemental code /Q)***

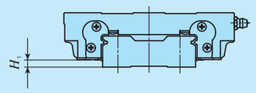



unit: mm

| Size | $L_1$ | $L_4$ |
|---|---|---|
| 33 | 64 | 66 |
| 37 | 73 | 75 |
| 40 | 78 | – |
| 42 | 86 | 98 |
| 60 | 98 | – |
| 69 | 121 | 132 |
| 90 | 131 | – |

Remark: The dimensions of the slide unit with C-Lube at both ends are indicated.

***Table 12 $H_1$ dimension with under seal (Supplemental code /U)***

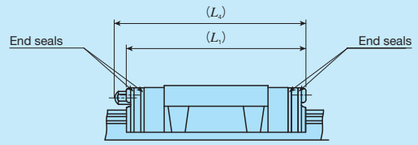



unit: mm

| Size | $H_1$ |
|---|---|
| 40 | 3 |
| 60 | 4 |
| 90 | 5 |

Remark: $H_1$ dimensions of series of the Size 33, 37, 42, and 69 are the same as dimensions before mounting of under seal.

***Table 13 Dimension of slide unit with double end seals (Supplemental code Single unit: /V Assembled set: /V /VV)***

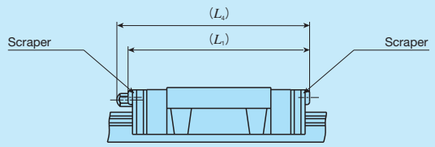



unit: mm

| Size | $L_1$ | $L_4$ |
|---|---|---|
| 33 | 61 | 64 |
| 37 | 70 | 74 |
| 42 | 82 | 96 |
| 69 | 117 | 130 |

Remark: The dimensions of the slide unit with double end seals at both ends are indicated.

***Table 14 Dimension of slide unit with scrapers (Supplemental code Single unit: /Z Assembled set: /Z /ZZ)***




unit: mm

| Size | $L_1$ | $L_4$ |
|---|---|---|
| 33 | 62 | 64 |
| 37 | 71 | 75 |
| 40 | 80 | – |
| 42 | 84 | 97 |
| 60 | 100 | – |
| 69 | 119 | 131 |
| 90 | 130 | – |

Remark: The dimensions of the slide unit with scraper at both ends are indicated.



# Lubrication

Lithium-soap base grease with extreme-pressure additive (Alvania EP grease 2 [Shell Lubricants Japan K.K.]) is pre-packed in LWF series.
LWF series has grease nipple as indicated in Table 15. Supply nozzles fit to each shapes of grease nipple are also available. For order of these parts for lubrication, see Table 14.1 on page Ⅲ—23 and Table 15 on page Ⅲ—24.

***Table 15 Parts for lubrication***

| Size | Grease nipple type (1) | Applicable supply nozzle type | Bolt size of female threads for piping |
|---|---|---|---|
| 33 | A-M3 | A-5120V A-5240V B-5120V B-5240V | – |
| 37 | A-M4 | | M4 |
| 40 | JIS type 1 | Grease gun available on the market | M6 |
| 42 | B-M6 | | |
| 60 | JIS type 1 | | |
| 69 | B-M6 | | |
| 90 | JIS type 1 | | |

Note (1) For grease nipple specification, see Table 14.1 and Table 14.2 on page Ⅲ—23.
Remark: Stainless steel grease nipple is also available. If needed, please contact IKO.

# Dust Protection

The slide units of LWF series are equipped with end seals as standard for dust protection. However, if large amount of contaminant or dust are floating, or if large particles of foreign substances such as chips or sand may adhere to the track rail, it is recommended to cover the whole unit with bellows or telescope type shield, etc.
LWF series is provided with specific bellows. The bellows are easy to mount and provide excellent dust protection. If needed, please refer to Ⅲ—26 for ordering.



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

# Precaution for Use

### ❶ Mounting surface, reference mounting surface and typical mounting structure

When mounting the LWF series, properly align the reference mounting surface B and D of the track rail and slide unit with the reference mounting surface of the table and bed and fix them. (See Fig. 3.)

The reference mounting surfaces B and D and mounting surfaces A and C are precisely ground. Machining the mounting surface of the table and bed, such as machine or device, to high accuracy and mounting them properly will ensure stable linear motion with high accuracy.

Reference mounting surface of the slide unit is the opposite side of the IKO mark. The track rail reference mounting surface is identified by locating the IKO mark on the top surface of the track rail. It is the side surface above the mark (in the direction of the arrow). (See Fig. 4)

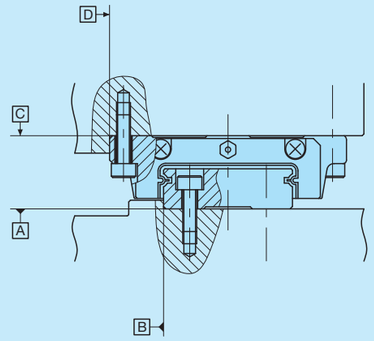



*Fig. 3 Reference mounting surface and typical mounting structure*

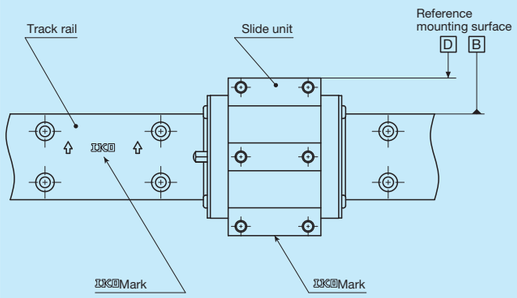



*Fig. 4 Reference mounting surface*

### ❷ Shoulder height and corner radius of the reference mounting surface

For the opposite corner of the mating reference mounting, it is recommended to have relieved fillet as indicated in Fig. 5. Recommended value for the shoulder height and corner radius on the mating side is indicated in Table 17.1 and Table 17.2.

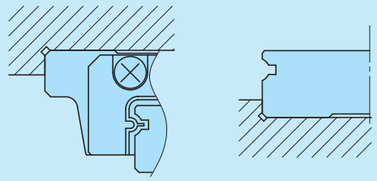


*Fig. 5 Corner of the mating reference mounting*

### ❸ Tightening torque for fixing screw

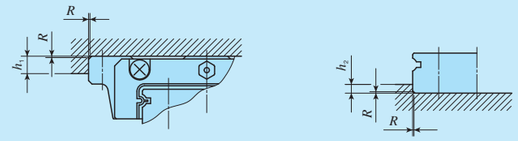
Typical tightening torque for mounting of the LWF series to the steel mating member material is indicated in Table 16. When vibration and shock of the machine or device are large, fluctuating load is large, or moment load is applied, fix it by using the torque 1.2 to 1.5 times larger than the value indicated in the table as necessary. If the mating member material is cast iron or aluminum alloy, reduce the tightening torque depending on the strength characteristics of the mating member material.

*Table 16 Tightening torque for fixing screw*

| Bolt size | Tightening torque N・m | |
|---|---|---|
| | High carbon steel-made screw | Stainless steel-made screw |
| M 4×0.7 | 4.1 | 2.5 |
| M 5×0.8 | 8.0 | 5.0 |
| M 6×1 | 13.6 | 8.5 |
| M 8×1.25 | 32.7 | – |
| M10×1.5 | 63.9 | – |

Remark: The tightening torque is calculated based on strength division 12.9 and property division A2-70.

*Table 17.1 Shoulder height and corner radius of the reference mounting surface*

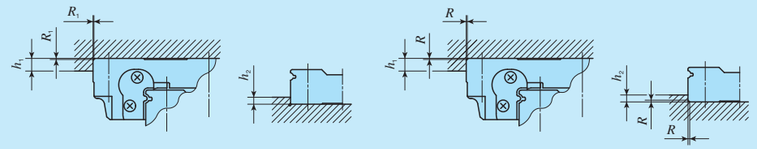



Mounting part of slide unit　　Mounting part of track rail

unit: mm

| Size | Mounting part of slide unit | | Mounting part of track rail | |
|---|---|---|---|---|
| | Shoulder height $h_1$ | Corner radius $R$ (Maximum) | Shoulder height $h_2$ | Corner radius $R$ (Maximum) |
| 33 | 4 | 0.4 | 2 | 0.4 |
| 37 | 5 | 0.4 | 2.5 | 0.4 |
| 42 | 5 | 0.4 | 2.5 | 0.4 |
| 69 | 5 | 0.8 | 3.5 | 0.8 |

*Table 17.2 Shoulder height and corner radius of the reference mounting surface*




Mounting part of slide unit　　Mounting part of track rail　　Mounting part of slide unit　　Mounting part of track rail

When supplemental code "/CC" is specified

unit: mm

| Size | Mounting part of slide unit | | Mounting part of track rail Shoulder height | Corner radius when supplemental code "/CC" is specified |
|---|---|---|---|---|
| | Shoulder height $h_1$ | Corner radius $R$ (Maximum) | $h_2$ | $R$ (Maximum) |
| 40 | 4 | 0.3 | 3 | 1 |
| 60 | 6 | 0.5 | 4 | 1 |
| 90 | 8 | 0.5 | 6 | 1 |

LWF



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