IKO

# C-Lube Linear Way ML
# Linear Way L





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# C-Lube Linear Way ML

# ML

C-Lube Maintenance-free

long term maintenance free supported!




Linear Way L

## LWL

## Points

### Extremely small size realized by simple structure

For details ➔ P.I-19

1 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.

### Wide range of variations for your needs

For details ➔ P.I-25

2 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.

### Ball retained type for easy operation

3 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.

### Stainless steel selections for excellent corrosion resistance

For details ➔ P.I-41

4 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.

### Widely supports special environment uses

For details ➔ P.I-33

5 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

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# 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

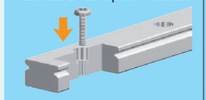
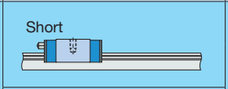
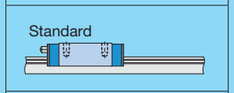
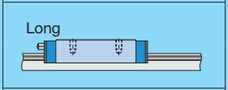
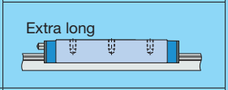
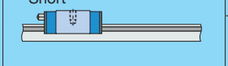
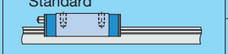
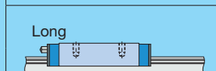
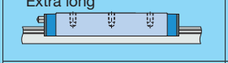
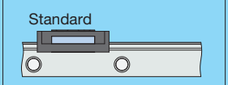
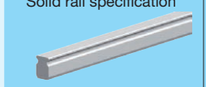
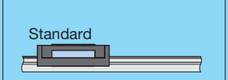
For applicable models and sizes, see Table 2.1 and Table 2.2.







*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.



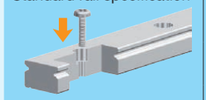
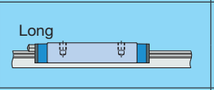
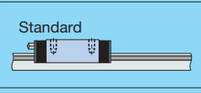
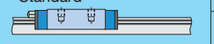
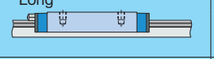
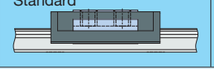
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1N=0.102kgf=0.2248lbs.
1mm=0.03937inch

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## — Model · Length of Slide Unit · Structure · Size · Material Type —

*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.

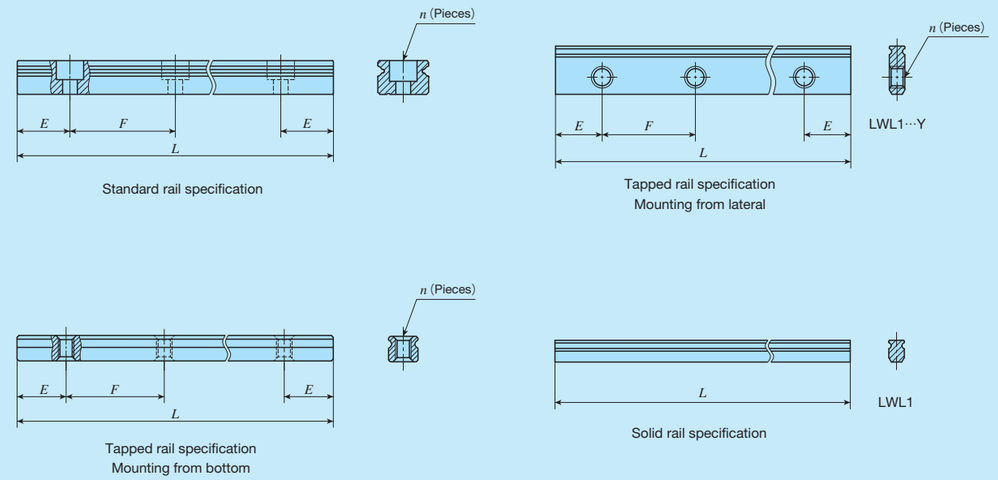


## — Length of Track Rail —

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*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 LWL5···B | ML 7 LWL7···B |
|---|---|---|---|---|---|---|
| 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 LWL9···B | 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.

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

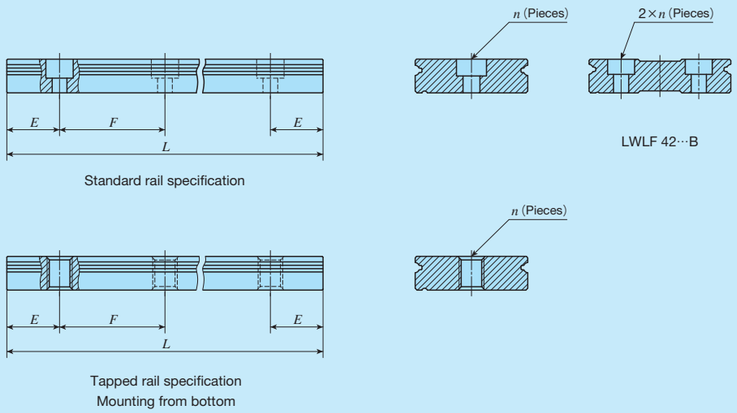


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### Table 3.2 Standard and maximum length of stainless steel track rail (Wide type)




unit: mm

| Item \ Identification number | LWLF2 | LWLF4 | MLF 6 LWLF6 | MLF 10 LWLF10···B | MLF 14 LWLF14···B |
|---|---|---|---|---|---|
| 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 LWLF18···B | 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.
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.

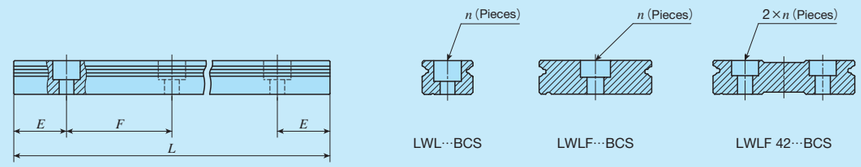


— Length of Track Rail —





### 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

ALMOTION

## — Preload Amount —

### 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 | ○ | ○ | ○ |

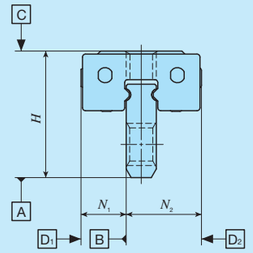
Remark: The mark ▭ indicates that interchangeable specification products are available.

## — Accuracy class —

### 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. |

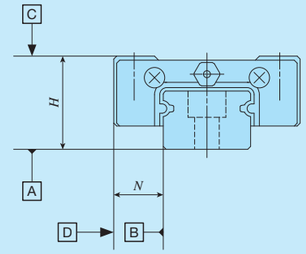
***Table 6.1 Tolerance and allowable values (Series of size 1)***




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.

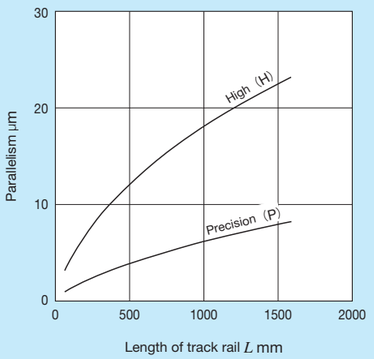



***Fig. 1 Parallelism in operation (Series of size 2 or higher)***





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

**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 2.1 and Table 2.2. "No symbol" is indicated for non-interchangeable specification. |
| S2 specification | : S2 | |
| Non-interchangeable specification | : No symbol | |

**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 | /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 (4) | /Y○ | × | ○(5) | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |

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

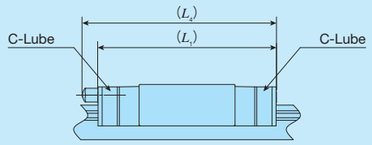
| | A | BS | D | E | HB | I | LR | MN | N | Q | RE | S | U | W |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BS | ○ | | | | | | | | | | | | | |
| D | ○ | ○ | | | | | | | | | | | | |
| E | – | ○ | – | | | | | | | | | | | |
| HB | ○ | – | ○ | ○ | | | | | | | | | | |
| I | ○ | ○ | ○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

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.

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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 | | | |

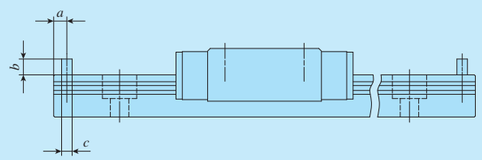
Remarks 1. The dimensions of the slide unit with C-Lube at both ends are indicated.
2. A typical identification number is indicated, but is applied to all LWL(F) series models of the same size.

*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.

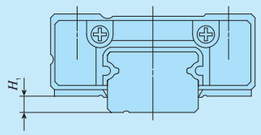
*Table 11 Dimension of track rail with stopper pins (Supplemental code /S)*




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.





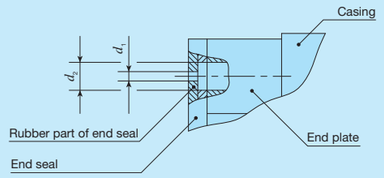




# Lubrication

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)

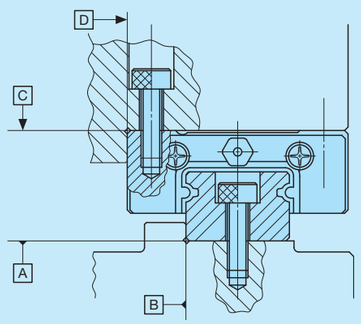



*Fig. 2 Reference mounting surface and typical mounting structure*

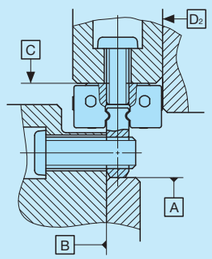



*Fig. 3.1 Reference mounting surface of LWL1···Y and typical mounting structure ①*

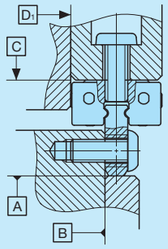



*Fig. 3.2 Reference mounting surface of LWL1···Y and typical mounting structure ②*

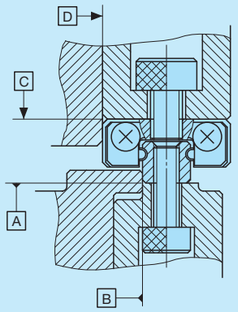



*Fig. 4 Reference mounting surface of size 2, 3, 4 and 6 series and typical mounting structure*

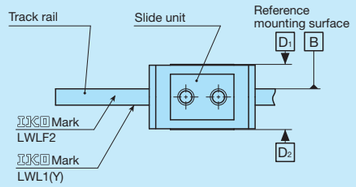



*Fig. 5.1 Reference mounting surface of LWL1 (Y) and LWLF2*

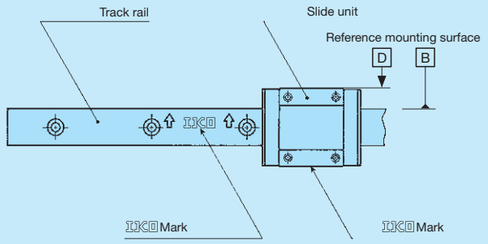



*Fig. 5.2 Reference mounting surface of products other than LWL1 (Y) and LWLF2*

### 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.

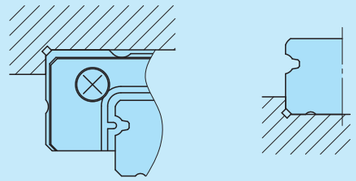


*Fig. 6 Corner of the mating reference mounting*

### 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.

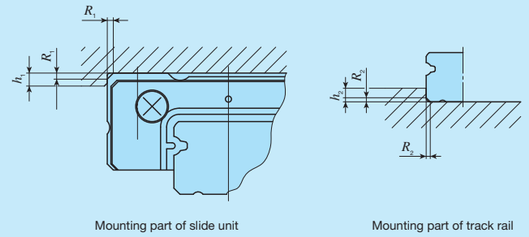




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1N=0.102kgf=0.2248lbs.
1mm=0.03937inch

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




Mounting part of slide unit　　Mounting part of track rail

unit: mm

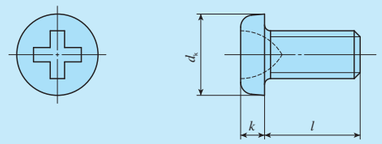
| Identification number | | Mounting part of slide unit | | Mounting part of track rail | |
|---|---|---|---|---|---|
| | | Shoulder height $h_1$ | Corner radius $R_1$ (Maximum) | Shoulder height (1) $h_2$ | Corner radius $R_2$ (Maximum) |
| – | LWL 1···Y | 1.3 | – | 2 | – |
| – | LWL 1 | | | – | |
| – | 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 the appended track rail mounting bolts.

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

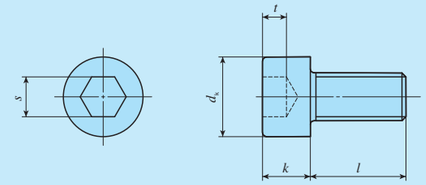



unit: mm

| 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(1) | 0.35 | 2.8 | 0.85 | 4, 5, 6 |
| M2(1) | 0.4 | 3.5 | 1 | 3, 4, 5 |

Note (1) Based on cross-recessed head screw for precision equipment (Number 0) in Japan Camera Industry Standard JCIS 10-70.

*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.





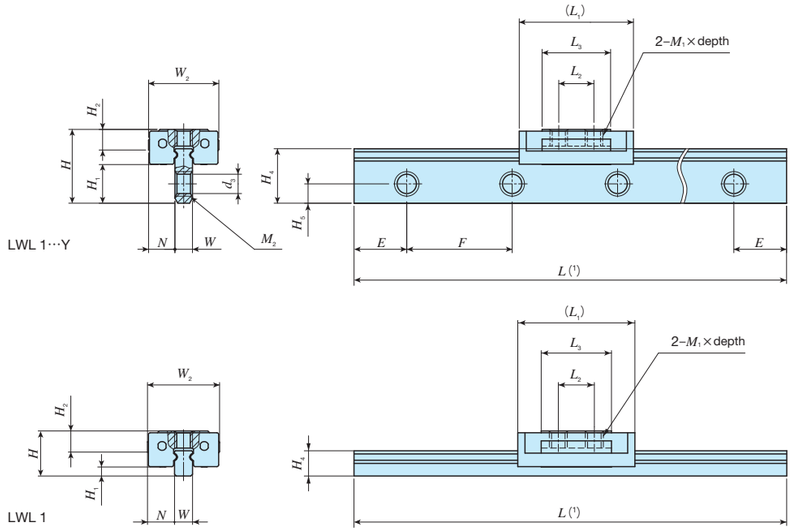
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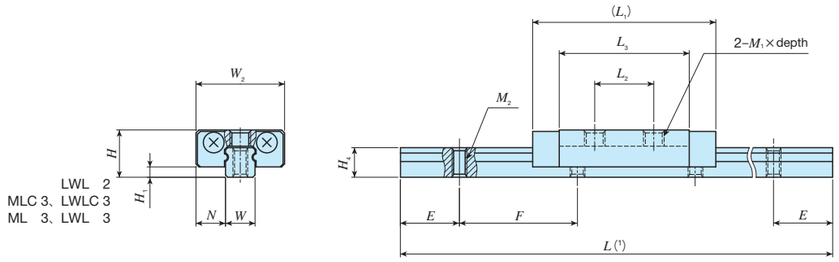
1N=0.102kgf=0.2248lbs.
1mm=0.03937inch

# IKO C-Lube Linear Way ML



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

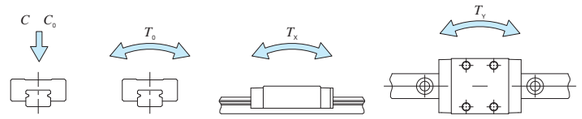



| Identification number | | Interchangeable | Mass (Ref.) g | | Dimensions of assembly mm | | | Dimensions of slide unit mm | | | | | | | Dimensions of track rail mm | | | | | | | Mounting bolt for track rail (2) mm | Basic dynamic load rating (5) | Basic static load rating (5) | Static moment rating (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 | 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 | 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 | 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



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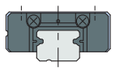
1N=0.102kgf=0.2248lbs.
1mm=0.03937inch

# IKO C-Lube Linear Way ML

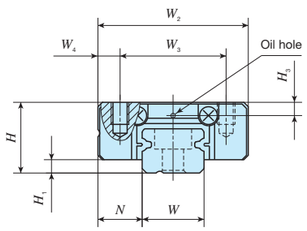


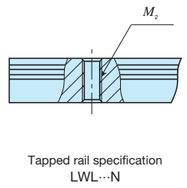
**Standard type**

Shape: **ML • LWL**

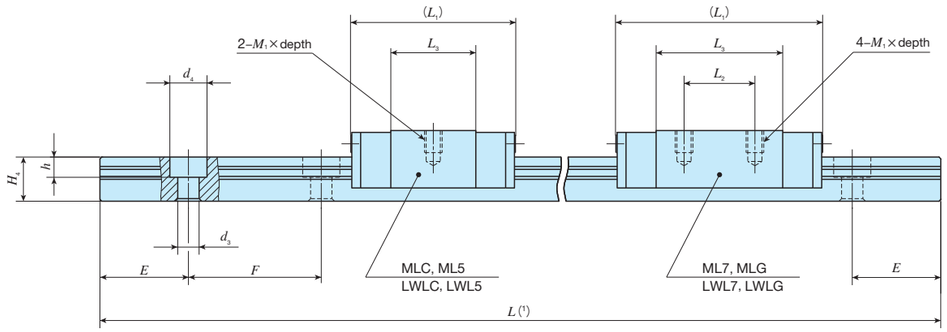


| Size | 1 | 2 | 3 | 5 | 7 |
|---|---|---|---|---|---|
| | 9 | 12 | 15 | 20 | 25 |



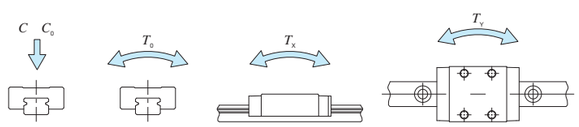

Tapped rail specification
LWL···N




| 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 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 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 track rail mounting bolts are hexagon socket head bolts equivalent to JIS B 1176 or JCIS10-70 cross-recessed pan head screw for precision equipment.
(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



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

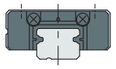
# IKO C-Lube Linear Way ML



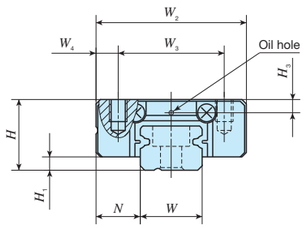


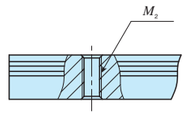
**Standard type**

Shape: **ML • LWL**

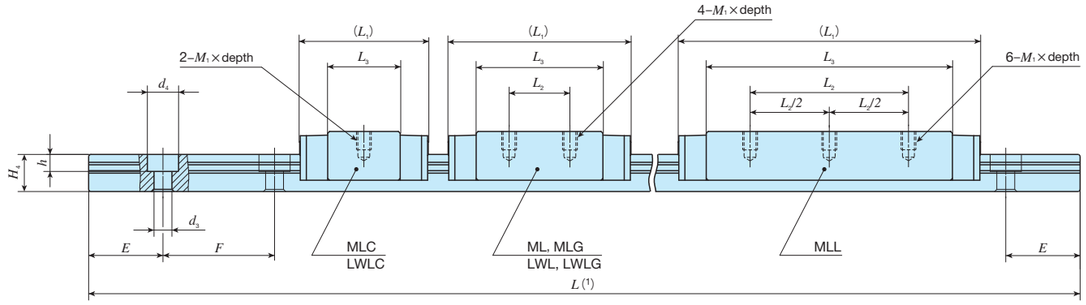


| Size | 1 | 2 | 3 | 5 | 7 |
|---|---|---|---|---|---|
| | **9** | **12** | 15 | 20 | 25 |



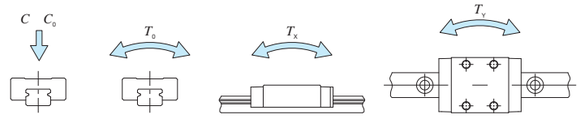

Tapped rail specification
LWL···N




| 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



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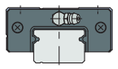
1N=0.102kgf=0.2248lbs.
1mm=0.03937inch

# IKO C-Lube Linear Way ML

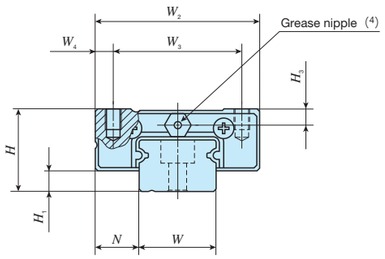


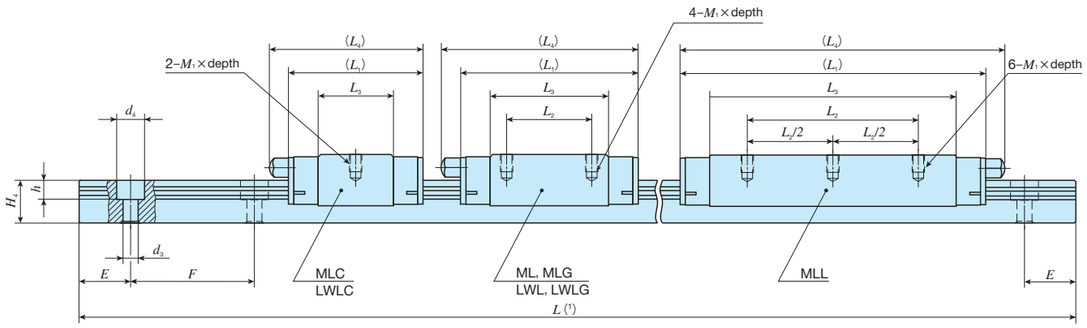
**Standard type**

Shape: **ML • LWL**



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



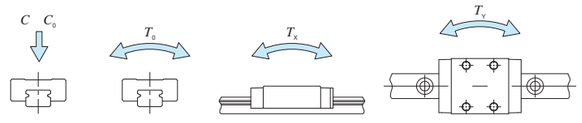

| Identification number | | Interchangeable | Mass (Ref.) g | | Dimensions of assembly mm | | | Dimensions of slide unit mm | | | | | | | | | Dimensions of track rail mm | | | | | | | Appended mounting bolt for track rail (2) mm | Basic dynamic load rating (3) | Basic static load rating (3) | Static 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



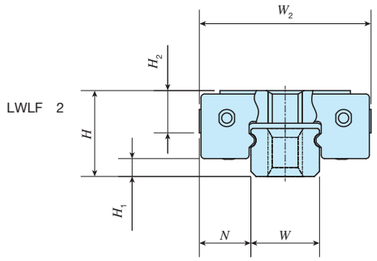
**Almotion B.V** Nijverheidsweg 14 | 6662 NG Elst (Gld) | The Netherlands t +31(0) 491 777 e info@almotion.nl
www.almotion.nl | www.lineairegeleiding.nl | www.lineairegeleidingshop.nl | www.linearmotion.nl

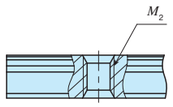
1N=0.102kgf=0.2248lbs.
1mm=0.03937inch

# IKO C-Lube Linear Way ML

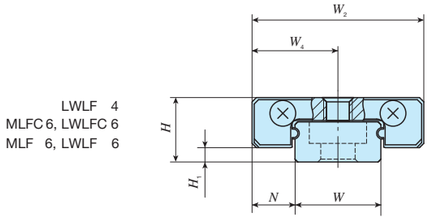


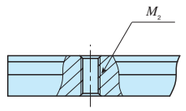
| Wide type | | | | | |
|---|---|---|---|---|---|
| Shape | MLF • LWLF | | | | |
| Size | 2 | 4 | 6 | 10 | 14 |
| | 18 | 24 | 30 | 42 | |



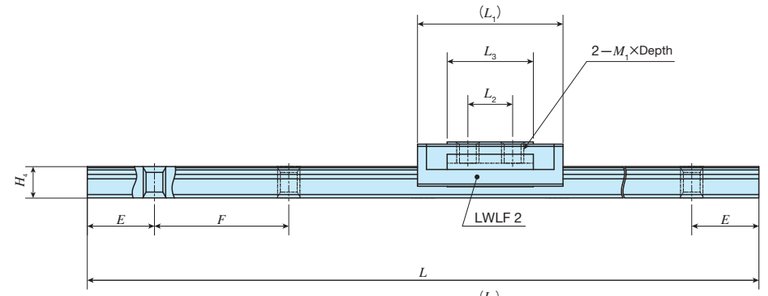



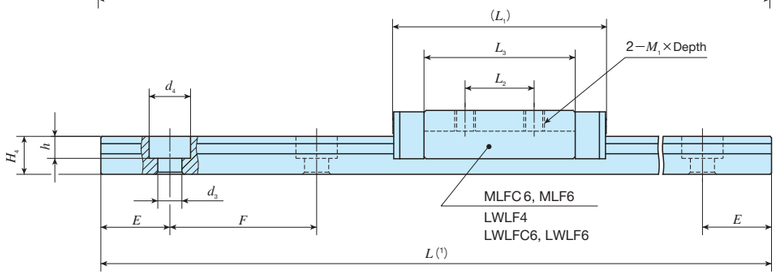

Tapped rail specification
LWLF2




Tapped rail specification
LWLF6···N

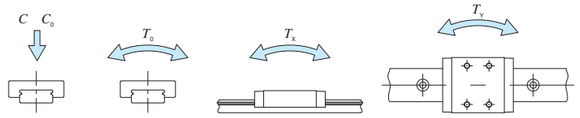



| Identification number | | Interchangeable | Mass (Ref.) g | | Dimensions of assembly mm | | | Dimensions of slide unit mm | | | | | | | | | Dimensions of track rail mm | | | | | | | | Appended mounting bolt for track rail mm | Basic dynamic load rating (4) | Basic static load rating (4) | Static moment 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 | 118 | 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 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 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 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 | | | | | | | | | | | | | | | | | | | | | | | | | | |

1N≒0.102kgf

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.




## 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 | Wide type |
| LWLF | |
| LWLF···N | |

| 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



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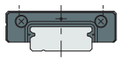
1N=0.102kgf=0.2248lbs.
1mm=0.03937inch

# IKO C-Lube Linear Way ML

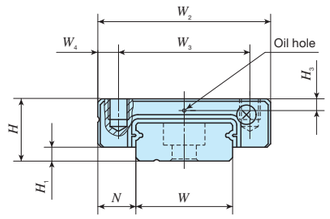


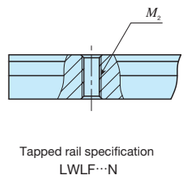
**Wide type**

Shape: **MLF • LWLF**

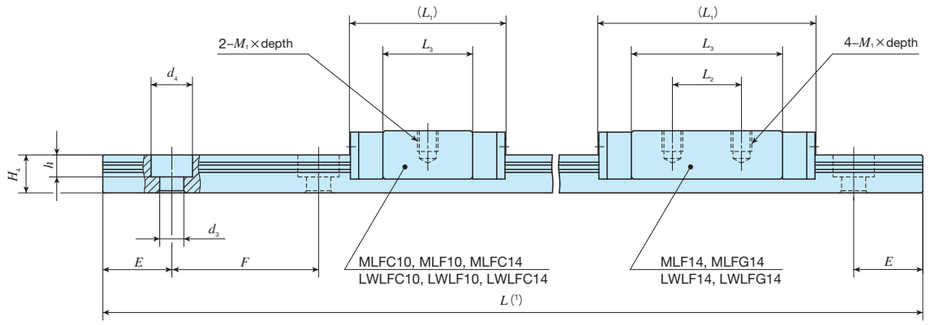


| Size | 2 | 4 | 6 | 10 | 14 |
|---|---|---|---|---|---|
| | 18 | 24 | 30 | 42 | |




Tapped rail specification
LWLF···N

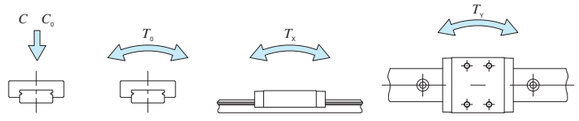



| Identification number | | Interchangeable | Mass (Ref.) g | | Dimensions of assembly mm | | | Dimensions of slide unit mm | | | | | | | | Dimensions of track rail mm | | | | | | | | Appended mounting bolt for track rail (2) mm | Basic dynamic load rating (4) | Basic static load rating (4) | Static 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 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 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<br>Through | – | – | – | | | M3× $\ell$ (3)<br>(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 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<br>Through | – | – | – | | | M3× $\ell$ (3)<br>(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<br>Through | – | – | – | | | M4× $\ell$ (3)<br>(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<br>Through | – | – | – | | | M4× $\ell$ (3)<br>(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<br>Through | – | – | – | | | M4× $\ell$ (3)<br>(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



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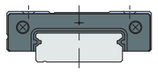
1N=0.102kgf=0.2248lbs.
1mm=0.03937inch

# IKO C-Lube Linear Way ML

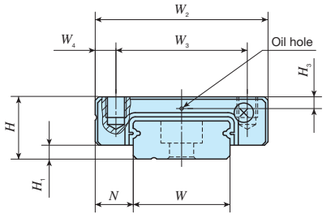


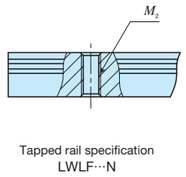
**Wide type**

Shape: **MLF • LWLF**

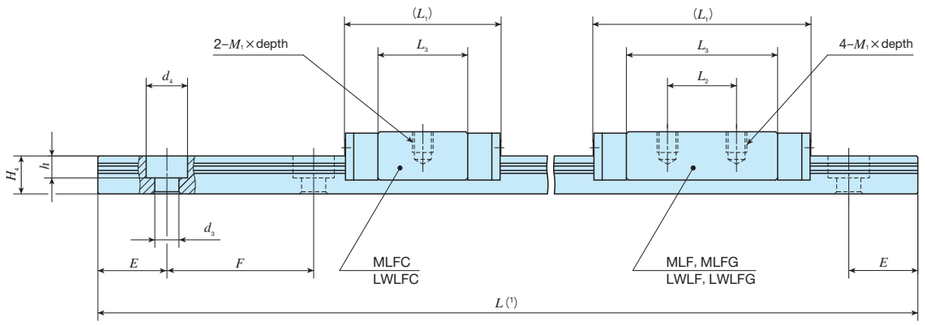


Size: 2 | 4 | 6 | 10 | 14 | **18** | **24** | 30 | 42



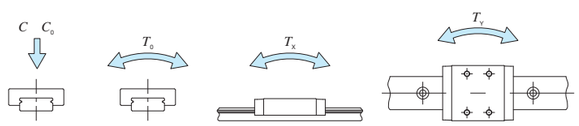

Tapped rail specification
LWLF···N




| 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

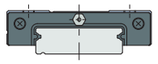


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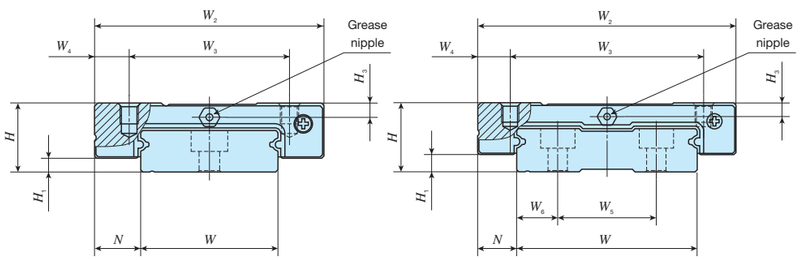
1N=0.102kgf=0.2248lbs.
1mm=0.03937inch

**Wide type**

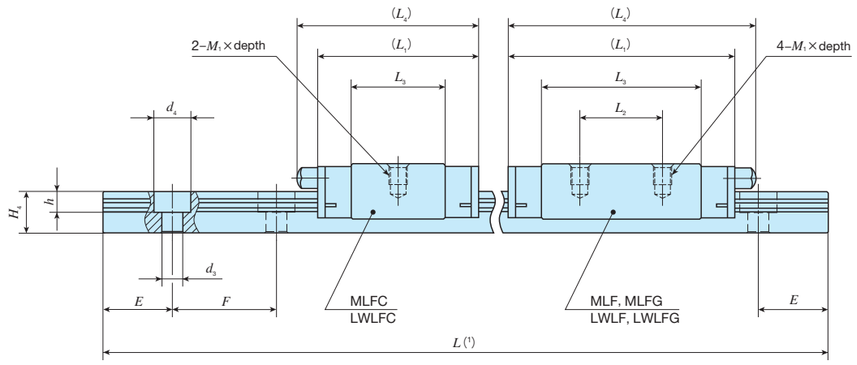
Shape: **MLF • LWLF**



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

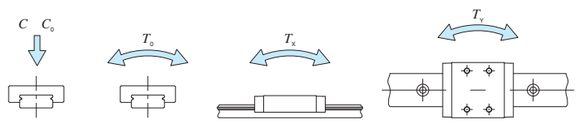



MLFC 42, LWLFC 42
MLF 42, LWLF 42
MLFG 42, LWLFG 42




| 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× $\ell$ | $C$ N | $C_0$ N | $T_0$ N·m | $T_x$ N·m | $T_y$ 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



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