

C-Lube Linear Way MH

MH



The aquamarine end plate is the symbol of maintenance free.

Track rail



Points

- **High rigidity series with the largest-class load rating among ball types**

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

- **Wide range of variations for your needs** For details ▶ P.I-26

As the lineup of 5 types of slide unit shape including the flange type, block type with small width and side mounting type, etc., and 3 types with different slide unit length with same section are available, you can select an optimal product for the specifications of your machine and device.

- **Stainless steels selections superior in corrosion resistance are listed on lineup.** For details ▶ P.I-39

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

- **Series of ultra seal specification for excellent dust protection performance**

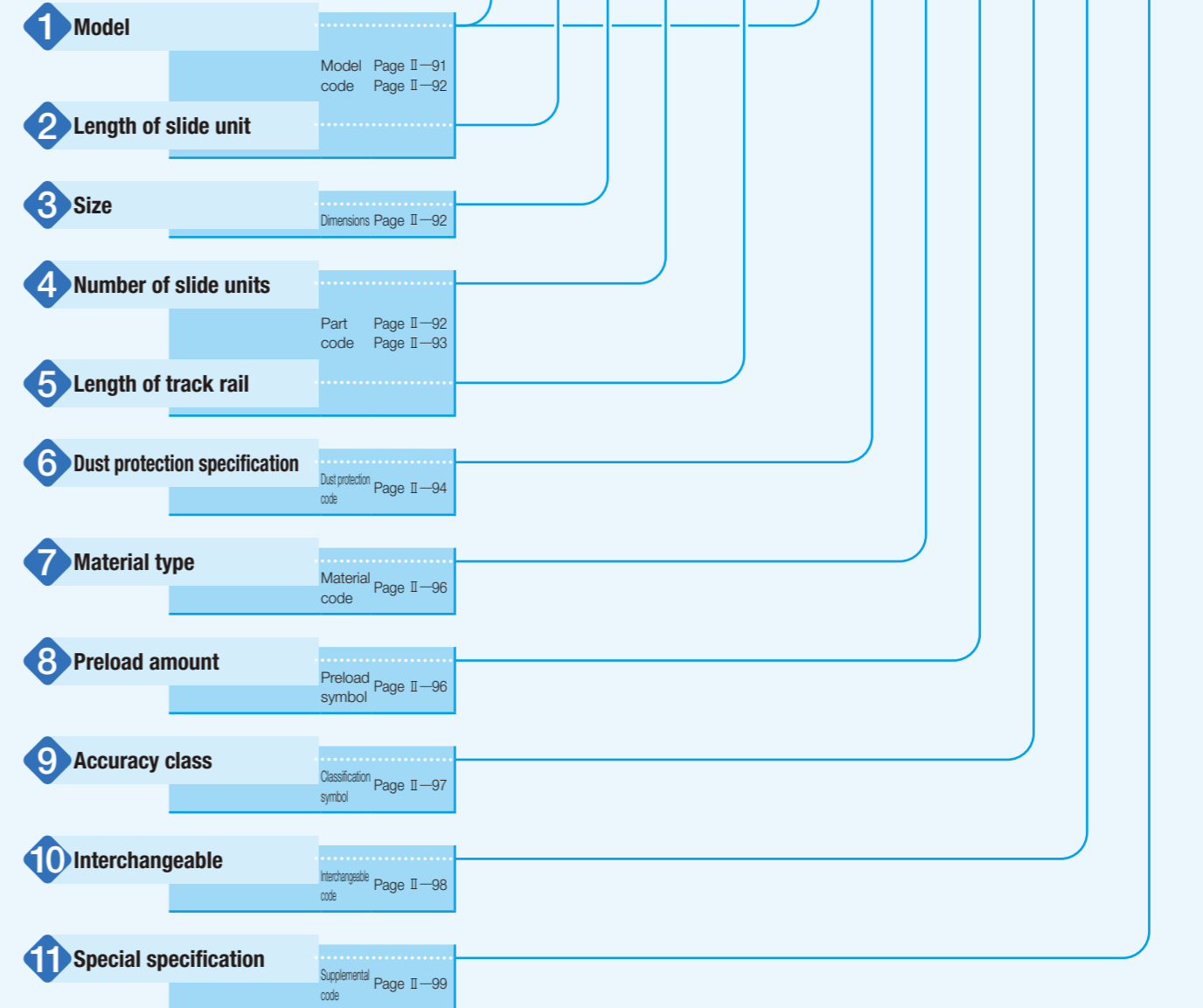
Products of ultra seal specifications have excellent dust protection performance thanks to the combination of the dedicated track rail finished with total ground and slide unit with end seal and under seal of special shapes. Special specification with inner seal further improves dust protection property of the ball circulation section against foreign substances from the upper surface of the track rail.

Identification Number and Specification

Example of an identification number

The specifications of MH and LWH series are indicated by the identification number. Indicate the identification number, consisting of a model code, dimensions, a part code, a dust protection code, a material code, a preload symbol, a classification symbol, an interchangeable code, and any supplemental codes for each specification to apply.

Non-interchangeable specification	1	2	3	4	5	1	6	7	8	9	10	11
Assembled set	MHT	G	20	C1	R840					T ₁	P	/FV
Interchangeable specification												
Single slide unit	MHT	G	20	C1						T ₁	P	S1 /V
Single track rail (1)	LWH		20		R840	B					P	S1 /F
Assembled set	MHT	G	20	C1	R840					T ₁	P	S1 /FV



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

Identification Number and Specification — Model —

1 Model	C-Lube Linear Way MH (MH series)	Flange type mounting from bottom : MH Flange type mounting from top ⁽²⁾ : MHT Block type mounting from top : MHD Compact block type mounting from top : MHS
	Linear Way H ⁽¹⁾ (LWH series)	Flange type mounting from bottom : LWH (...B) Flange type mounting from top ⁽²⁾ : LWHT (...B) Block type mounting from top : LWHD (...B) Compact block type mounting from top : LWHS (...B) Side mounting type : LWHY

For applicable models and sizes, see Table 1.1 and Table 1.2.
Indicate "LWH...B" or "LWH" for the model code of the single track rail regardless of the series and the combination of slide unit models.

Notes ⁽¹⁾ This model has no built-in C-Lube.
⁽²⁾ Some models may be mounted upward.

Table 1.1 Models and sizes of MH and LWH series

Material	Shape	Length of slide unit	Model	Size											
				8	10	12	15	20	25	30	35	45	55	65	
High carbon steel made	Flange type mounting from bottom	Standard	MH	-	-	-	○	○	○	○	○	○	-	-	
			LWH...B	-	-	-	○	○	○	○	○	○	○	○	
		Long	MH...M (U)	-	-	-	-	-	○	○	-	-	-	-	
			LWH...M (U)	-	-	-	○	○	○	○	○	○	-	-	
	Flange type mounting from top	Standard	MHG	-	-	-	-	○	○	○	○	○	-	-	
			LWHG	-	-	-	-	○	○	○	○	○	○	○	
		Standard	MHT	-	-	○ ⁽¹⁾	○	○	○	○	○	○	-	-	
			LWHT...B	-	-	○ ⁽¹⁾⁽²⁾	○	○	○	○	○	○	○	○	
		Long	MHT...M (U)	-	-	-	-	-	○	○	-	-	-	-	
			LWHT...M (U)	-	-	-	○	○	○	○	○	-	-	-	
		Extra long	MHTG	-	-	-	○ ⁽¹⁾	○	○	○	○	○	-	-	
			LWHTG	-	-	-	-	○	○	○	○	○	○	○	
	Block type mounting from top	Standard	MHTL ⁽¹⁾	-	-	-	-	-	○	○	○	-	-		
			MHD	-	-	○	○	-	○	○	○	○	-	-	
		Standard	LWHD...B	-	-	○ ⁽²⁾	○	-	○	○	○	○	○	○	
			MHD...M (U)	-	-	-	-	-	○	○	-	-	-	-	
		Long	LWHD...M (U)	-	-	-	○	○	○	○	○	-	-	-	
			MHDG	-	-	-	-	-	○	○	○	○	-	-	
		Extra long	LWHDG	-	-	-	-	-	○	○	○	○	○	○	
			MHDL	-	-	-	-	-	-	○	○	○	-	-	
Compact block type mounting from top		Standard	MHS	-	-	-	○	○	○	○	-	-	-		
			LWHS...B	-	-	-	○	○	○	○	-	-	-		
		Long	MHS...M (U)	-	-	-	-	-	○	○	-	-	-		
			LWHS...M (U)	-	-	-	○	○	○	○	-	-	-		
Long	MHSG	-	-	-	○	○	○	○	-	-	-				
	LWHSg	-	-	-	-	○	○	○	-	-	-				
Side mounting type	Standard	LWHY	-	-	-	○	○	○	○	○	-	-			

Notes ⁽¹⁾ This may be mounted upward.
⁽²⁾ "...B" is not included in the model code.
Remark: For the models indicated in , the interchangeable specification is available.

— Length of Slide Unit · Size · Number of Slide Unit —

2 Length of slide unit	Short	: C	For applicable models and sizes, see Table 1.1 and Table 1.2.
	Standard	: No symbol	
	Long	: G	
	Extra long	: L	
3 Size	8, 10, 12, 15, 20, 25, 30, 35, 45, 55, 65		For applicable models and sizes, see Table 1.1 and Table 1.2.
	4 Number of slide units	: C○	For an assembled set, indicates the number of slide units assembled on a track rail. For a single slide unit, only "C1" is specified.

Table 1.2 Models and sizes of MH and LWH series

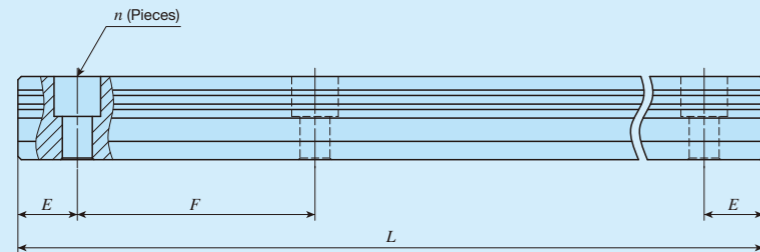
Material	Shape	Slide unit Length	Model	Size											
				8	10	12	15	20	25	30	35	45	55	65	
Stainless steel made	Flange type mounting from bottom	Standard	LWH...SL	-	-	-	○	○	○	○	-	-	-		
			MHT...SL	○ ⁽¹⁾	○ ⁽¹⁾	○ ⁽¹⁾	○	○	○	○	-	-	-		
	Flange type mounting from top	Standard	LWHT...SL	○ ⁽¹⁾	○ ⁽¹⁾	○ ⁽¹⁾	○	○	○	○	-	-	-		
			MHDC...SL	○	○	○	-	-	-	-	-	-	-		
	Block type mounting from top	Standard	LWDC...SL	○	○	○	-	-	-	-	-	-	-		
			MHD...SL	○	○	○	-	-	-	-	-	-	-		
		Long	LWHD...SL	○	○	○	-	-	-	-	-	-	-		
			MHDG...SL	○	○	○	-	-	-	-	-	-	-		
	Compact block type mounting from top	Standard	MHS...SL	-	-	-	○	○	○	○	-	-	-		
			LWHS...SL	-	-	-	○	○	○	○	-	-	-		

Note ⁽¹⁾ This may be mounted upward.
Remark: For the models indicated in , the interchangeable specification is available.

5 Length of track rail

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

Table 2.1 Standard and maximum length of high carbon steel track rail



unit: mm

Item	Identification number	MH 12 LWH12	MH 15 LWH15...B	MH 20 LWH20...B	MH 25 LWH25...B	MH 30 LWH30...B
Standard length L (n)		80 (2)	180 (3)	240 (4)	240 (4)	480 (6)
		160 (4)	240 (4)	480 (8)	480 (8)	640 (8)
		240 (6)	360 (6)	660 (11)	660 (11)	800 (10)
		320 (8)	480 (8)	840 (14)	840 (14)	1 040 (13)
		400 (10)	660 (11)	1 020 (17)	1 020 (17)	1 200 (15)
		480 (12)	900 (15)	1 200 (20)	1 200 (20)	1 520 (19)
		560 (14)	1 200 (20)	1 500 (25)	1 500 (25)	2 000 (25)
		640 (16)			1 980 (33)	
		720 (18)				
	Pitch of mounting holes F		40	60	60	60
E		20	30	30	30	40
Standard E or higher dimensions ⁽¹⁾	below	5.5	7	8	9	10
		25.5	37	38	39	50
Maximum length ⁽²⁾		1 480	1 500 (3 000)	1 980 (3 000)	3 000 (3 960)	2 960 (4 000)
Item	Identification number	MH 35 LWH35...B	MH 45 LWH45...B	LWH55...B	LWH65...B	
Standard length L (n)		480 (6)	840 (8)	840 (7)	1 500 (10)	
		640 (8)	1 050 (10)	1 200 (10)	1 950 (13)	
		800 (10)	1 260 (12)	1 560 (13)	3 000 (20)	
		1 040 (13)	1 470 (14)	1 920 (16)		
		1 200 (15)	1 995 (19)	3 000 (25)		
		1 520 (19)				
Pitch of mounting holes F		80	105	120	150	
E		40	52.5	60	75	
Standard E or higher dimensions ⁽¹⁾	below	10	12.5	15	17	
		50	65	75	92	
Maximum length ⁽²⁾		2 960 (4 000)	2 940 (3 990)	3 000 (3 960)	3 000 (3 900)	

Notes ⁽¹⁾ This does not apply to female threads for bellows (supplemental code "/J").

⁽²⁾ Length up to the value in () can be produced. If needed, please contact **IKO**.

Remarks 1. A typical identification number is indicated, but is applied to all models of the same size.

2. Indicate "LWH" for series of size 12 or "LWH...B" for series of size 15 or above for the model code of the single track rail regardless of the series and the combination of slide unit models.

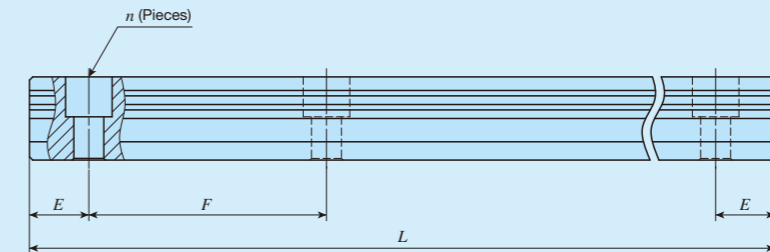
3. For ultra seal specification, refer to Table 2.3 and Table 2.4.

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

6 Dust protection specification

Standard specification : No symbol For applicable models and sizes, see Table 1.1 and Table 1.2.
Ultra seal specification : M Each specification of ultra seal specification with track rail mounting from bottom is in compliance to the ultra seal specification.
Ultra seal specification : MU Ultra seal specification with track rail mounting from bottom applies to products to fix the track rail on the mounting surface side by pressing in the aluminum alloy caps for rail mounting holes to the mounting hole of the track rail in advance. As the upper surface of the track rail is flat, adhesion to the seal is high and dust protection effect is improved further.
with track rail mounting from bottom
For track rail specifications, see Table 2.3 and Table 2.4.

Table 2.2 Standard and maximum length of stainless steel track rail



unit: mm

Item	Identification number	MH 8...SL LWH8...SL	MH 10...SL LWH10...SL	MH 12...SL LWH12...SL	MH 15...SL LWH15...SL	MH 20...SL LWH20...SL	MH 25...SL LWH25...SL	MH 30...SL LWH30...SL
Standard length L (n)		40 (2)	50 (2)	80 (2)	180 (3)	240 (4)	240 (4)	480 (6)
		80 (4)	100 (4)	160 (4)	240 (4)	480 (8)	480 (8)	640 (8)
		120 (6)	150 (6)	240 (6)	360 (6)	660 (11)	660 (11)	800 (10)
		160 (8)	200 (8)	320 (8)	480 (8)	840 (14)	840 (14)	1 040 (13)
		200 (10)	250 (10)	400 (10)	660 (11)			
		240 (12)	300 (12)	480 (12)				
		280 (14)	350 (14)	560 (14)				
			400 (16)	640 (16)				
			450 (18)	720 (18)				
			500 (20)					
Pitch of mounting holes F		20	25	40	60	60	60	80
E		10	12.5	20	30	30	30	40
Standard E or higher dimensions ⁽¹⁾	below	4.5	5	5.5	7	8	9	10
		14.5	17.5	25.5	37	38	39	50
Maximum length ⁽²⁾		480 (1 000)	850 (1 000)	1 000 (1 480)	1 200 (1 500)	1 200 (3 000)	1 200 (3 000)	1 200 (2 960)

Notes ⁽¹⁾ This does not apply to female threads for bellows (supplemental code "/J").

⁽²⁾ Length up to the value in () can be produced. If needed, please contact **IKO**.

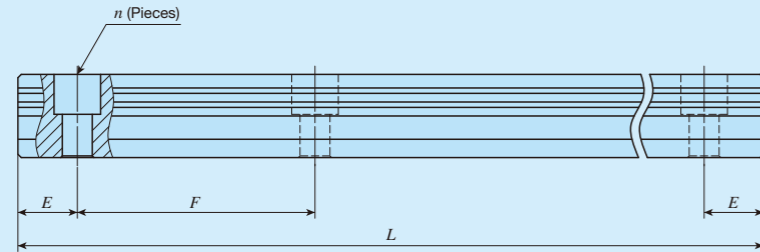
Remarks 1. A typical identification number is indicated, but is applied to all models of the same size.

2. Indicate "LWH" for the model code of the single track rail regardless of the series and the combination of slide unit models.

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

— Length of Track Rail —

Table 2.3 Standard and maximum length of ultra seal specification high carbon steel track rail



unit: mm

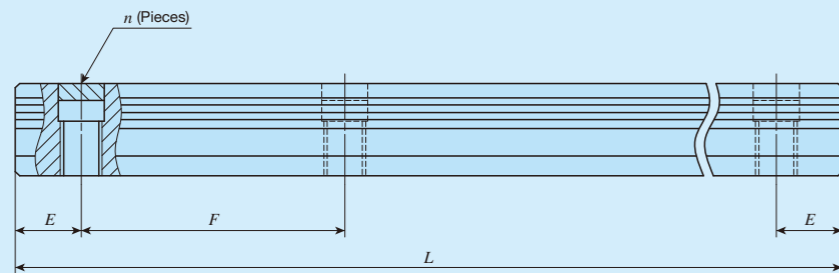
Item	Identification number	LWH15...M	LWH20...M	MH 25...M LWH25...M	MH 30...M LWH30...M	LWH35...M	LWH45...M
Standard length L (n)		180 (3)	240 (4)	240 (4)	480 (6)	480 (6)	840 (8)
		240 (4)	480 (8)	480 (8)	640 (8)	640 (8)	1 050 (10)
		360 (6)	660 (11)	660 (11)	800 (10)	800 (10)	1 260 (12)
		480 (8)	840 (14)	840 (14)	1 040 (13)	1 040 (13)	1 470 (14)
		660 (11)	1 020 (17)	1 020 (17)	1 200 (15)	1 200 (15)	1 995 (19)
		1 200 (20)	1 200 (20)	1 520 (19)	1 520 (19)		
Pitch of mounting holes F		60	60	60	80	80	105
E		30	30	30	40	40	52.5
Standard E or higher dimensions ⁽¹⁾ below		7	8	9	10	10	12.5
		37	38	39	50	50	65
Maximum length		1 500	1 980	3 000	2 960	2 960	2 940
Maximum number of butt-jointing track rails		3	3	3	3	3	3
Maximum length of butt-jointing track rail		4 200	5 640	8 700	8 480	8 480	8 295

Note ⁽¹⁾ This does not apply to female threads for bellows (supplemental code "/J").

Remarks 1. A typical identification number is indicated, but is applied to all models of the same size.

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

Table 2.4 Standard and maximum length of ultra seal specification with track rail mounting from bottom



unit: mm

Item	Identification number	LWH15...MU	LWH20...MU	MH 25...MU LWH25...MU	MH 30...MU LWH30...MU	LWH35...MU	LWH45...MU
Standard length L (n)		180 (3)	240 (4)	240 (4)	480 (6)	480 (6)	840 (8)
		240 (4)	480 (8)	480 (8)	640 (8)	640 (8)	1 050 (10)
		360 (6)	660 (11)	660 (11)	800 (10)	800 (10)	1 260 (12)
		480 (8)	840 (14)	840 (14)	1 040 (13)	1 040 (13)	1 470 (14)
		660 (11)	1 020 (17)	1 020 (17)	1 200 (15)	1 200 (15)	1 995 (19)
		1 200 (20)	1 200 (20)	1 520 (19)	1 520 (19)		
Pitch of mounting holes F		60	60	60	80	80	105
E		30	30	30	40	40	52.5
Standard E or higher dimensions ⁽¹⁾ below		7	8	9	10	10	12.5
		37	38	39	50	50	65
Maximum length		1 500	1 980	3 000	2 960	2 960	2 940
Maximum number of butt-jointing track rails		3	3	3	3	3	3
Maximum length of butt-jointing track rail		4 200	5 640	8 700	8 480	8 480	8 295

Note ⁽¹⁾ This does not apply to female threads for bellows (supplemental code "/J").

Remarks 1. A typical identification number is indicated, but is applied to all models of the same size.

2. Track rail mounting bolt is not included.

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

— Material Type · Preload Amount —

7 Material type

High carbon steel made : No symbol For applicable models and sizes, see Table 1.1 and
Stainless steel made ⁽¹⁾ : SL Table 1.2.

Note ⁽¹⁾ Mount a standard grease nipple (brass) on the stainless steel type, too.
Stainless steel grease nipple is also available. If needed, please contact **IKO**.

8 Preload amount

Clearance : T_0 Specify this item for an assembled set or a single slide unit.
Standard : No symbol For details of the preload amount, see Table 3.
Light preload : T_1 For applicable preload types, see Table 4.
Medium preload : T_2
Heavy preload : T_3

Table 3 Preload amount

Preload type	Preload symbol	Preload amount N	Operational conditions
Clearance	T_0	0 ⁽²⁾	· Very light motion
Standard	(No symbol)	0 ⁽³⁾	· Light and precise motion
Light preload	T_1	0.02 C_0	· Almost no vibrations · Load is evenly balanced · Light and precise motion
Medium preload	T_2	0.05 C_0	· Medium vibration · Medium overhung load
Heavy preload	T_3	0.08 C_0	· Operation with vibration and/or shock · Overhanging load applied · Heavy cutting

Notes ⁽²⁾ There is zero or subtle clearance.

⁽³⁾ Indicates zero or minimal amount of preload.

Remark: C_0 indicates the basic static load rating.

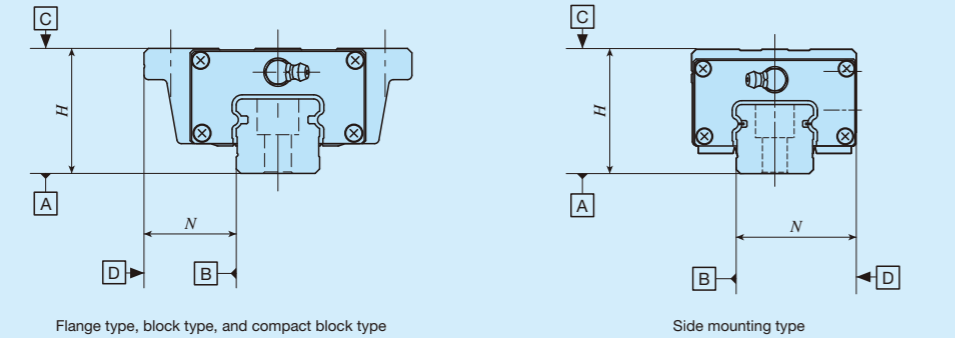
Table 4 Application of preload

Size	Preload type (preload symbol)				
	Clearance (T_0)	Standard (No symbol)	Light preload (T_1)	Medium preload (T_2)	Heavy preload (T_3)
8	○	○	○	—	—
10	○	○	○	—	—
12	○	○	○	—	—
15	—	○	○	○	○
20	—	○	○	○	○
25	—	○	○	○	○
30	—	○	○	○	○
35	—	○	○	○	○
45	—	○	○	○	○
55	—	○	○	○	○
65	—	○	○	○	○

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

9 Accuracy class	High	: H	For interchangeable specification products, assemble a slide unit and a track rail of the same accuracy class. For details of accuracy class, see Table 5.1 and Table 5.2. For applicable accuracy class, see Table 6.
	Precision	: P	
	Super precision	: SP	

Table 5.1 Tolerance and allowance (Series of size 15 or higher)



Item	Class (classification symbol)	High (H)	Precision (P)	Super precision (SP)
Dim. <i>H</i> tolerance		±0.040	±0.020	±0.010
Dim. <i>N</i> tolerance		±0.050	±0.025	±0.015
Dim. variation of <i>H</i> ⁽¹⁾		0.015	0.007	0.005
Dim. variation of <i>N</i> ⁽¹⁾		0.020	0.010	0.007
Dim. variation of <i>H</i> for multiple assembled sets ⁽²⁾		0.035	0.025	—
Slide unit against the A surface Parallelism during running on the C surface		See Fig. 1.1		
Slide unit against the B surface Parallelism during running on the D surface		See Fig. 1.1		

unit: mm

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

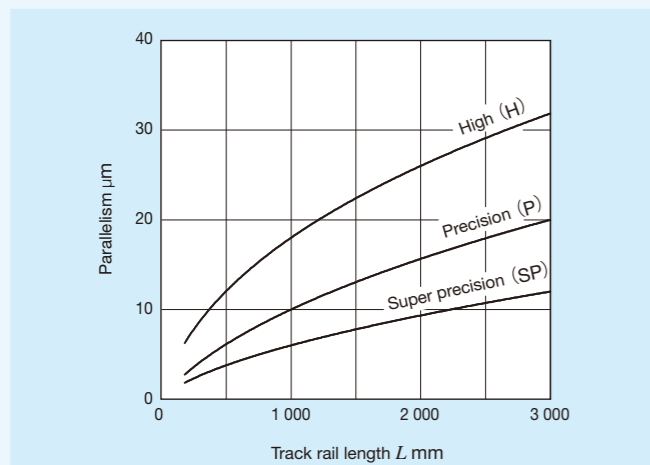
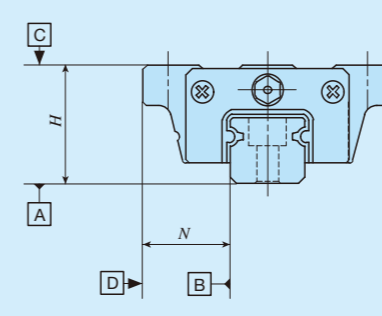


Fig. 1.1 Parallelism in operation (series of Size 15 or higher)

Table 5.2 Tolerance and allowance (Series of size 8 to 12)



Item	Class (classification symbol)	High (H)	Precision (P)
Dim. <i>H</i> tolerance		±0.020	±0.010
Dim. <i>N</i> tolerance		±0.025	±0.015
Dim. variation of <i>H</i> ⁽¹⁾		0.015	0.007
Dim. variation of <i>N</i> ⁽¹⁾		0.020	0.010
Dim. variation of <i>H</i> for multiple assembled sets ⁽²⁾		0.030	0.020
Parallelism in operation of the slide unit C surface to A surface		See Fig. 1.2	
Parallelism in operation of the slide unit D surface to B surface		See Fig. 1.2	

unit: mm

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

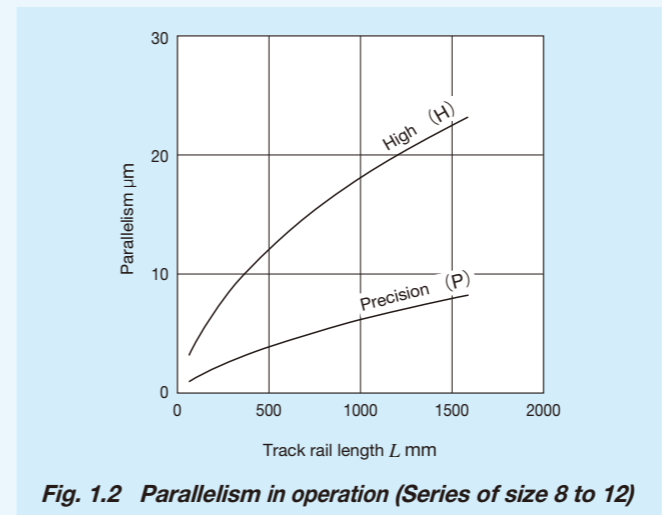



Fig. 1.2 Parallelism in operation (Series of size 8 to 12)

Table 6 Application of accuracy class

Size	Class (classification symbol)		
	High (H)	Precision (P)	Super precision (SP)
8	○	○	—
10	○	○	—
12	○	○	—
15	○	○	○
20	○	○	○
25	○	○	○
30	○	○	○
35	○	○	○
45	○	○	○
55	○	○	○
65	○	○	○

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

10 Interchangeable	S1 specification	: S1	This is specified for the interchangeable specifications. Assemble a track rail and a slide unit with the same interchangeable code. Performance and accuracy of "S1" and "S2" are the same. For applicable models and sizes, see Table 1.1 and Table 1.2. "No symbol" is indicated for non-interchangeable specification.
	S2 specification	: S2	
	Non-interchangeable specification	: No symbol	

11 Special specification

/A, /BS, /D, /E, /F, /I, /J○, /L○, /LFO, /MA, /MN, /N, /PS, /Q, /RE, /T, /U, /UR, /VO, /WO, /YO, /ZO

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

Table 7.1 Application of special specifications (Interchangeable specification and slide unit specification)

Special specification	Supplemental code	Size										
		8	10	12	15	20	25	30	35	45	55	65
Stainless steel end plate (1)	/BS	×	×	×	○	○	○	○	×	×	×	×
Female threads for bellows (2)	/J○	×	×	×	○	○	○	○	○	○	○	○
No end seal	/N	○	○	○	○	○	○	○	○	○	○	○
With C-Lube plate (1)	/Q	○	○	○	○	○	○	○	○	○	○	○
Special environment seal (1)	/RE	×	×	×	○	○	○	○	×	×	×	×
Under seal	/U	○	○	○	×	×	×	×	×	×	×	×
Double end seals	/VO	×	×	×	○	○	○	○	○	○	○	○
Scrapers	/ZO	×	×	×	○	○	○	○	○	○	○	○

Notes (1) Applicable to LWH series.
(2) Not applicable to stainless steel made products.
(3) Attached as standard.

Table 7.2 Application of special specifications (Interchangeable specification and track rail specification)

Special specification	Supplemental code	Size										
		8	10	12	15	20	25	30	35	45	55	65
Specified rail mounting hole positions	/E	○	○	○	○	○	○	○	○	○	○	○
Caps for rail mounting holes	/F	×	×	○	○	○	○	○	○	○	○	○
Female threads for bellows (1)	/J	×	×	×	○	○	○	○	○	○	○	○
Black chrome surface treatment	/LR	×	×	×	○	○	○	○	○	○	○	○
Without track rail mounting bolt	/MN	○	○	○	○	○	○	○	○	○	○	○
Butt-jointing track rails	/T	×	×	×	○	○	○	○	○	○	○	○

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

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

Special specification	Supplemental code	Size										
		8	10	12	15	20	25	30	35	45	55	65
Stainless steel end plate (1)	/BS	×	×	×	○	○	○	○	×	×	×	×
Opposite reference surfaces arrangement	/D	○	○	○	○	○	○	○	○	○	○	○
Specified rail mounting hole positions	/E	○	○	○	○	○	○	○	○	○	○	○
Caps for rail mounting holes	/F	×	×	○	○	○	○	○	○	○	○	○
Female threads for bellows (2)	/J○	×	×	×	○	○	○	○	○	○	○	○
Black chrome surface treatment	/L○	×	×	×	○	○	○	○	○	○	○	○
Fluorine black chrome surface treatment	/LFO	×	×	×	○	○	○	○	○	○	○	○
With track rail mounting bolt (3)	/MA	○	○	○	○	○	○	○	○	○	×	×
Without track rail mounting bolt (1)	/MN	○	○	○	○	○	○	○	○	○	○	○
No end seal	/N	○	○	○	○	○	○	○	○	○	○	○
With C-Lube plate (1)	/Q	○	○	○	○	○	○	○	○	○	○	○
Special environment seal (1)	/RE	×	×	×	○	○	○	○	×	×	×	×
Butt-jointing track rails	/T	×	×	×	○	○	○	○	○	○	○	○
Under seal	/U	○	○	○	×	×	×	×	×	×	×	×
Double end seals	/VO	×	×	×	○	○	○	○	○	○	○	○
Specified grease (4)	/YO	×	×	×	○	○	○	○	○	○	○	○
Scrapers	/ZO	×	×	×	○	○	○	○	○	○	○	○

Notes (1) Applicable to LWH series.
(2) Not applicable to stainless steel made products.
(3) Applicable to MH series.
(4) MH series is applicable only to /YCG.
(5) Attached as standard.

Table 7.4 Application of special specifications (Non-interchangeable specification)

Special specification	Supplemental code	Size										
		8	10	12	15	20	25	30	35	45	55	65
Butt-jointing track rails	/A	○	○	○	○	○	○	○	○	○	○	○
Stainless steel end plate (2) (3)	/BS	×	×	×	○	○	○	○	×	×	×	×
Opposite reference surfaces arrangement (3)	/D	○	○	○	○	○	○	○	○	○	○	○
Specified rail mounting hole positions	/E	○	○	○	○	○	○	○	○	○	○	○
Caps for rail mounting holes (4)	/F	×	×	○	○	○	○	○	○	○	○	○
Inspection sheet	/I	○	○	○	○	○	○	○	○	○	○	○
Female threads for bellows (3)	/J○	×	×	×	○	○	○	○	○	○	○	○
Black chrome surface treatment	/L○	○	○	○	○	○	○	○	○	○	○	○
Fluorine black chrome surface treatment	/LFO	×	×	×	○	○	○	○	○	○	○	○
With track rail mounting bolt (6)	/MA	○	○	○	○	○	○	○	○	○	×	×
Without track rail mounting bolt (2) (4)	/MN	○	○	○	○	○	○	○	○	○	○	○
No end seal (7)	/N	○	○	○	○	○	○	○	○	○	○	○
Rail cover plate for track rail (7) (8)	/PS	×	×	×	×	×	○	○	○	○	○	○
With C-Lube plate (2) (3) (7)	/Q	○	○	○	○	○	○	○	○	○	○	○
Special environment seal (2) (7)	/RE	×	×	×	○	○	○	○	×	×	×	×
Under seal	/U	○	○	○	×	×	×	×	×	×	×	×
Inner seal (10)	/UR	×	×	×	×	×	○	○	×	×	×	×
Double end seals	/VO	×	×	×	○	○	○	○	○	○	○	○
A pair of multiple assembled sets (3)	/WO	○	○	○	○	○	○	○	○	○	○	○
Specified grease (11)	/YO	○	○	○	○	○	○	○	○	○	○	○
Scrapers	/ZO	×	×	×	○	○	○	○	○	○	○	○

Notes (1) Not applicable to high carbon steel made products.
(2) Applicable to LWH series.
(3) This does not apply to side mounting type (LWHY).
(4) This does not apply to ultra seal specification with track rail mounting from bottom (LWH...MU).
(5) Applicable only to "LR".
(6) Applicable to MH series.
(7) This does not apply to ultra seal specification (LWH...M) and ultra seal specification with track rail mounting from bottom (LWH...MU).
(8) Not applicable to stainless steel made products.
(9) Attached as standard.
(10) Applicable only to MH...M(U).
(11) MH series is applicable only to /YCG.

Table 8 Combination of supplemental codes

BS	○																							
D	○	○																						
E	-	○	-																					
F	○	○	○	○																				
I	○	○	○	○	○																			
J	○	○	○	○	○	○																		
L	○	○	○	○	○	○	○																	
LF	○	○	○	○	○	○	○	○																
MA	○	-	○	○	○	○	○	○	○															
MN	○	○	○	○	○	○	○	○	○	○														
N	○	○	○	○	○	-	○	-	○	○	○													
PS	-	○	○	○	○	-	○	-	-	○	○	○												
Q	○	○	○	○	○	○	○	-	○	○	-	○	○											
RE	○	○	○	○	○	○	○	○	○	○	-	○	-	○										
T	-	○	○	○	○	-	○	-	-	○	○	○	○	-	○									
U	○	-	○	○	○	○	-	○	-	○	○	-	-	○	-									
UR	-	-	○	○	○	○	○	○	○	○	-	-	-	-	-									
V	○	○	○	○	○	○	○	○	○	○	○	-	○	-	○	○								
W	○	○	○	-	○	○	○	○	○	○	○	○	○	○	○	-	○							
Y	○	○	○	○	○	○	○	○	○	○	○	-	○	○	-	○	○							
Z	○	○	○	○	○	○	○	○	○	○	○	○	○	-	-	-	○	○	-	○	○	○	○	○
A	BS	D	E	F	I	J	L	LF	MA	MN	N	PS	Q	RE	T	U	UR	V	W	Y				

Note (1) Contact **IKO** for the case of size 8 to 12.
Remarks 1. The combination of "-" shown in the table is not available.
2. Contact **IKO** for the combination of the interchangeable specification marked with ●.
3. When using multiple types for combination, please indicate by arranging the symbols in alphabetical order.

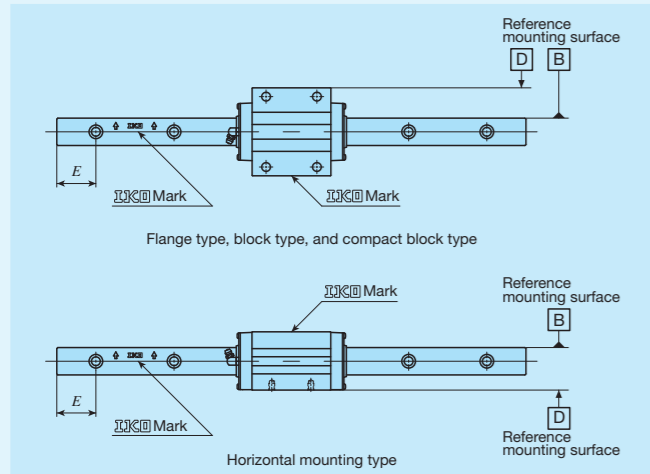


Fig. 2 Specified rail mounting hole positions (Supplemental code /E)

Remark: For details of specified rail mounting hole positions (supplemental code /E), see page III-30.

Table 9.1 Dimension of female threads for bellows (Supplemental code Single unit: /J Assembled set: /J /JJ)

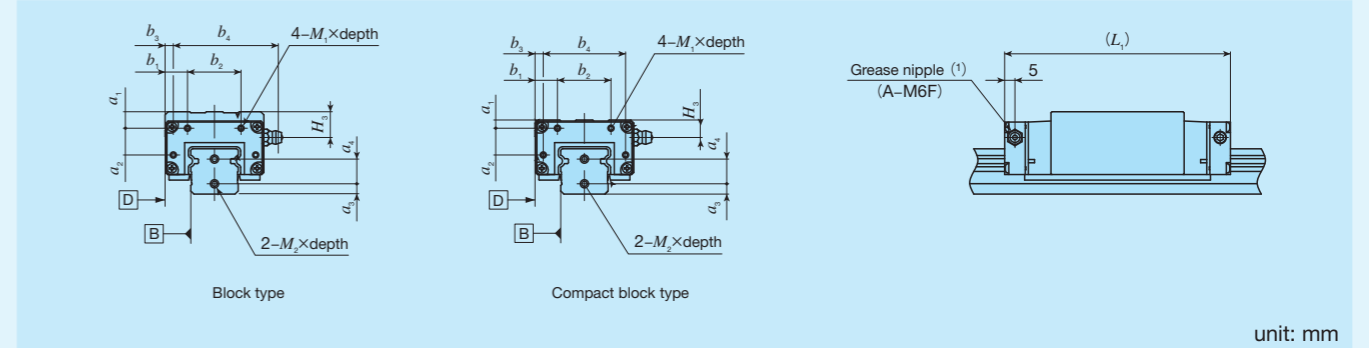
Identification number		Slide unit									Track rail		
		a_1	a_2	b_1	b_2	b_3	b_4	$M_1 \times \text{depth}$	$L_1^{(2)}$	H_3	a_3	a_4	$M_2 \times \text{depth}$
MH(T) 15	LWH(T) 15...B	3	7	15.5	16	9.5	28	M3×6	83	6.5	4	8	M3×6
-	LWH(T) 15...M								86				
MHTG 15	-	4	10	20.5	22	13.5	36	M3×6	99	8.5	5	9	M4×8
MH(T) 20	LWH(T) 20...B								103				
-	LWH(T) 20...M(U)	4	13	22	26	15	40	M3×6	128	8.5	5	12	M4×8
MH(T) 25	LWH(T) 25...B								110				
MH(T) 25...M(U)	LWH(T) 25...M(U)	4	13	22	26	15	40	M3×6	115	8.5	5	12	M4×8
MH(T)G 25	LWH(T)G 25								133				
MH(T) 30	LWH(T) 30...B	5	17	28	34	20	50	M3×6	128	11	6	14	M4×8
MH(T) 30...M(U)	LWH(T) 30...M(U)								133				
MH(T)G 30	LWH(T)G 30	5	17	28	34	20	50	M3×6	154	11	6	14	M4×8
MHTL 30	-								200				
MH(T) 35	LWH(T) 35...B	6	20	30	40	20	60	M3×6	137	13	7	15	M4×8
-	LWH(T) 35...M(U)								143				
MH(T)G 35	LWH(T)G 35	6	20	30	40	20	60	M3×6	165	13	7	15	M4×8
MHTL 35	-								213				
MH(T) 45	LWH(T) 45...B	7	26	35	50	23	74	M4×8	160	15	8	19	M5×10
-	LWH(T) 45...M(U)								167				
MH(T)G 45	LWH(T)G 45	7	26	35	50	23	74	M4×8	203	15	8	19	M5×10
MHTL 45	-								251				
-	LWH(T) 55...B	7	32	40	60	27	86	M4×8	196	17	8	25	M5×10
-	LWH(T)G 55								248				
-	LWH(T) 65...B	10	46	50	70	32	106	M5×10	240	20	10	28	M6×12
-	LWH(T)G 65								314				

Notes (1) The specification and mounting positions of grease nipple are different from those of the standard specification product. Provided grease nipple for size 15 models is NPB2 type (special specification). For details of dimensions, contact **IKO**.

(2) Dimensions of the specification that female threads for bellows are fitted to both ends of the slide unit are indicated.

Remark: This is also applicable to stainless steel models of the same size.

Table 9.2 Dimension of female threads for bellows (Supplemental code Single unit: /J Assembled set: /J /JJ)



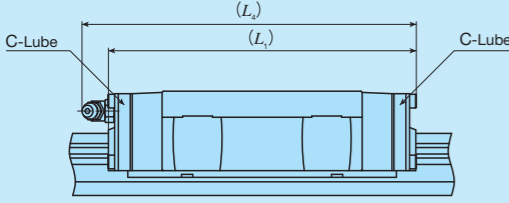
Identification number		Slide unit									Track rail		
		a_1	a_2	b_1	b_2	b_3	b_4	$M_1 \times \text{depth}$	$L_1^{(2)}$	H_3	a_3	a_4	$M_2 \times \text{depth}$
MHD 15	LWHD 15...B	7	7	9	16	3	28	M3×6	83	10.5	4	8	M3×6
-	LWHD 15...M								86				
MHS 15	LWHS 15...B	3	7	9	16	3	28	M3×6	83	6.5	4	8	M3×6
-	LWHS 15...M(U)								86				
MHSG 15	-	4	10	11	22	4	36	M3×6	99	8.5	5	9	M4×8
MHS 20	LWHS 20...B								103				
-	LWHS 20...M(U)	4	13	11	26	4	40	M3×6	128	8.5	5	12	M4×8
MHSG 20	LWHS 20								110				
MHD 25	LWHD 25...B	8	13	11	26	4	40	M3×6	115	12.5	5	12	M4×8
MHD 25...M(U)	LWHD 25...M(U)								133				
MHDG 25	LWHDG 25	4	13	11	26	4	40	M3×6	110	8.5	5	12	M4×8
MHS 25	LWHS 25...B								115				
MHS 25...M(U)	LWHS 25...M(U)	4	13	11	26	4	40	M3×6	133	8.5	5	12	M4×8
MHSG 25	LWHS 25								133				
MHD 30	LWHD 30...B	8	17	13	34	5	50	M3×6	128	14	6	14	M4×8
MHD 30...M(U)	LWHD 30...M(U)								133				
MHDG 30	LWHDG 30	8	17	13	34	5	50	M3×6	154	14	6	14	M4×8
MHDL 30	-								200				
MHS 30	LWHS 30...B	5	17	13	34	5	50	M3×6	128	11	6	14	M4×8
MHS 30...M(U)	LWHS 30...M(U)								133				
MHSG 30	LWHS 30	5	17	13	34	5	50	M3×6	154	11	6	14	M4×8
MHD 35	LWHD 35...B								137				
-	LWHD 35...M(U)	13	20	15	40	5	60	M3×6	143	20	7	15	M4×8
MHDG 35	LWHDG 35								165				
MHDL 35	-	17	26	18	50	6	74	M4×8	213	25	8	19	M5×10
MHD 45	LWHD 45...B								160				
-	LWHD 45...M(U)	17	26	18	50	6	74	M4×8	167	25	8	19	M5×10
MHDG 45	LWHDG 45								203				
MHDL 45	-	17	32	20	60	7	86	M4×8	251	27	8	25	M5×10
-	LWHD 55...B								196				
-	LWHDG 55	10	46	28	70	10	106	M5×10	248	20	10	28	M6×12
-	LWHD 65...B								240				
-	LWHDG 65	314											

Notes (1) The specification and mounting positions of grease nipple are different from those of the standard specification product. Provided grease nipple for size 15 models is NPB2 type (special specification). For details of dimensions, contact **IKO**.

(2) Dimensions of the specification that female threads for bellows are fitted to both ends of the slide unit are indicated.

Remark: This is also applicable to stainless steel models of the same size.

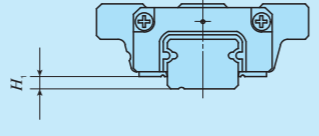
Table 10 Dimension of slide unit with C-Lube plate (Supplemental code /Q)



Identification number	L_1	L_4
LWHDC 8...SL	26	—
LWHT 8...SL	32	—
LWHD 8...SL		—
LWHDG 8...SL	38.5	—
LWHDC 10...SL	34	—
LWHT 10...SL	42	—
LWHD 10...SL		—
LWHDG 10...SL	50	—
LWHDC 12...SL	44	48
LWHT 12	56	60
LWHD 12		—
LWHDG 12...SL	68	72
LWH 15...B	75	78
LWH 20...B	92	105
LWHG 20	121	134
LWH 25...B	105	116
LWHG 25	127	139
LWH 30...B	125	135
LWHG 30	151	161
LWH 35...B	134	146
LWHG 35	162	174
LWH 45...B	160	170
LWHG 45	203	214
LWH 55...B	196	207
LWHG 55	248	258
LWH 65...B	246	253
LWHG 65	321	328

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

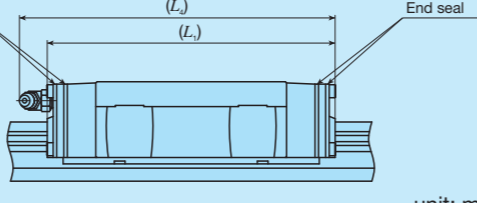
Table 11 H_1 dimension with under seal (Supplemental code /U)



Size	H_1
8	1.5
10	1.8
12	3.2 ⁽¹⁾

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

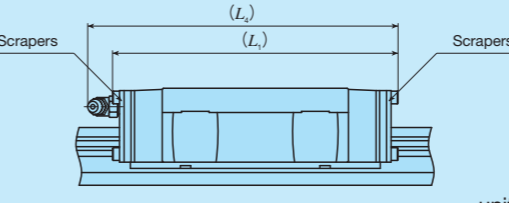
Table 12 Dimension of slide unit with double end seals (Supplemental code Single unit: /V Assembled set: /VV)



Identification number	L_1	L_4	
MH 15	LWH 15...B	72	77
—	LWH 15...M(U)	71	76
MHTG 15	—	88	93
MH 20	LWH 20...B	91	104
—	LWH 20...M(U)	90	103
MHG 20	LWHG 20	119	133
MH 25	LWH 25...B	104	116
MH 25...M(U)	LWH 25...M(U)	103	115
MHG 25	LWHG 25	127	139
MH 30	LWH 30...B	122	134
MH 30...M(U)	LWH 30...M(U)	121	
MHG 30	LWHG 30	148	160
MHL 30	—	194	206
MH 35	LWH 35...B	133	146
—	LWH 35...M(U)		
MHG 35	LWHG 35	161	173
MHL 35	—	209	222
MH 45	LWH 45...B	159	170
—	LWH 45...M(U)	158	
MHG 45	LWHG 45	202	213
MHL 45	—	251	261
—	LWH 55...B	195	206
—	LWHG 55	247	258
—	LWH 65...B	241	251
—	LWHG 65	316	325

Remarks 1. The dimensions of the slide unit with double end seals at both ends are indicated.
2. A typical identification number is indicated, but is applied to all models of the same size.

Table 13 Dimension of slide unit with scrapers (Supplemental code Single unit: /Z Assembled set: /ZZ)



Identification number	L_1	L_4	
MH 15	LWH 15...B	73	75
—	LWH 15...M(U)	72	74
MHTG 15	—	89	91
MH 20	LWH 20...B	91	104
—	LWH 20...M(U)	90	100
MHG 20	LWHG 20	119	133
MH 25	LWH 25...B	104	116
MH 25...M(U)	LWH 25...M(U)	103	112
MHG 25	LWHG 25	126	138
MH 30	LWH 30...B	124	135
MH 30...M(U)	LWH 30...M(U)	123	131
MHG 30	LWHG 30	150	161
MHL 30	—	196	206
MH 35	LWH 35...B	133	146
—	LWH 35...M(U)		
MHG 35	LWHG 35	161	174
MHL 35	—	209	222
MH 45	LWH 45...B	160	170
—	LWH 45...M(U)	159	
MHG 45	LWHG 45	203	214
MHL 45	—	251	262
—	LWH 55...B	196	207
—	LWHG 55	248	258
—	LWH 65...B	242	251
—	LWHG 65	317	326

Remarks 1. The dimensions of the slide unit with scraper at both ends are indicated.
2. A typical identification number is indicated, but is applied to all models of the same size.

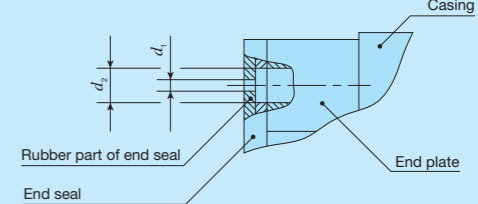
Table 15 Parts for lubrication

Size	Grease nipple type ⁽¹⁾	Applicable supply nozzle type	Bolt size of female threads for piping
8	Oil hole	Miniature greaser	—
10			—
12			M4
15	A-M3	A-5120V A-5240V	M6
20	A-M4	B-5120V B-5240V	
25	B-M6	Grease gun available on the market	PT1/8
30			
35			
45			
55			
65			
65	JIS type 4		

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

In the series of size 8 to 12 of MH series and LWH series, lithium-soap base grease (MULTEMP PS No.2, KYODO YUSHI) is pre-packed, and in the series of size 15 to 65, lithium-soap base grease with extreme-pressure additive (Alvania EP grease 2, [SHOWA SHELL SEKIYU K. K.]) is pre-packed. Additionally, MH series has C-Lube placed in the recirculation part of balls, so that the interval for reapplying lubricant can be extended and maintenance works such as grease job can be reduced significantly. MH series and LWH series have grease nipple or oil hole as indicated in Table 15. 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 14 Oil hole specifications



Size	d_1	d_2
8	0.5	1.5
10		

Dust Protection

The slide units of MH series and LWH series are equipped with end seals and under seals as standard for dust protection. However, if large amount of contaminant or dust are floating, or if large particles of foreign substances such as chips or sand may adhere to the track rail, it is recommended to cover the whole unit with bellows or telescope type shield, etc. MH series and LWH series are provided with specific bellows. The bellows are easy to mount and provide excellent dust protection. If needed, please refer to III-26 for ordering. And, track rail mounting from bottom with no mounting hole on the upper surface of the track rail (Figure 3) is also available. If needed, contact **IKO**.

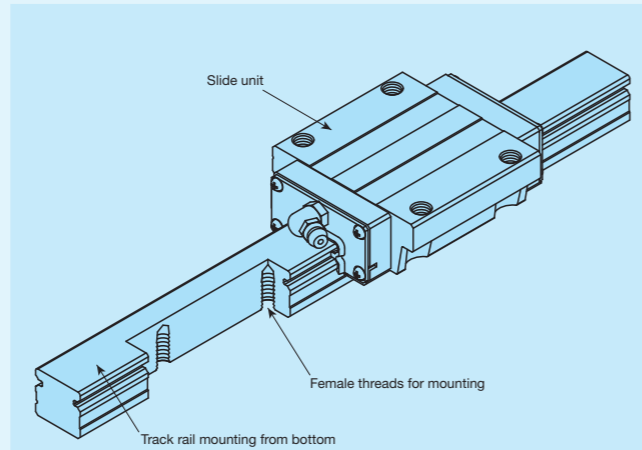


Fig. 3 Track rail mounting from bottom specification

Precaution for Use

1 Mounting surface, reference mounting surface and typical mounting structure

When mounting the MH series and LWH series, properly align the reference mounting surfaces B and D of the track rail and slide unit with the reference mounting surface of the table and bed and fix them. (See Fig. 4.)

The reference mounting surfaces B and D and mounting surfaces A and C are precisely ground. Machining the mounting surface of the table and bed, such as machine or device, to high accuracy and mounting them properly will ensure stable linear motion with high accuracy.

Reference mounting surface of the slide unit is the opposite side of the **IKO** mark. The track rail reference mounting surface is identified by locating the **IKO** mark on the top surface of the track rail. It is the side surface above the mark (in the direction of the arrow). (See Fig. 5.)

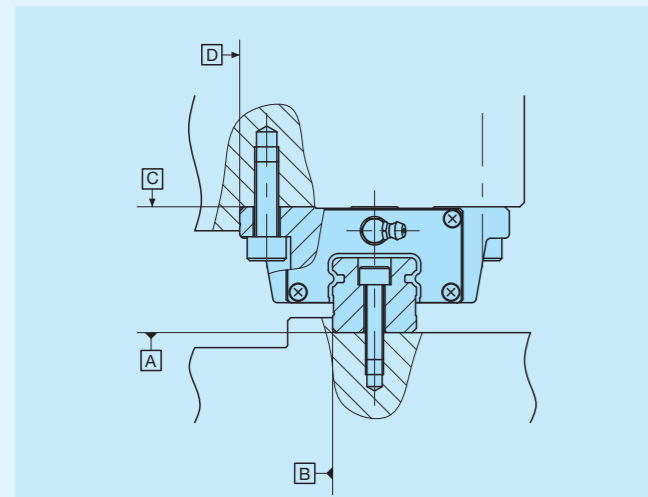


Fig. 4 Reference mounting surface and typical mounting structure

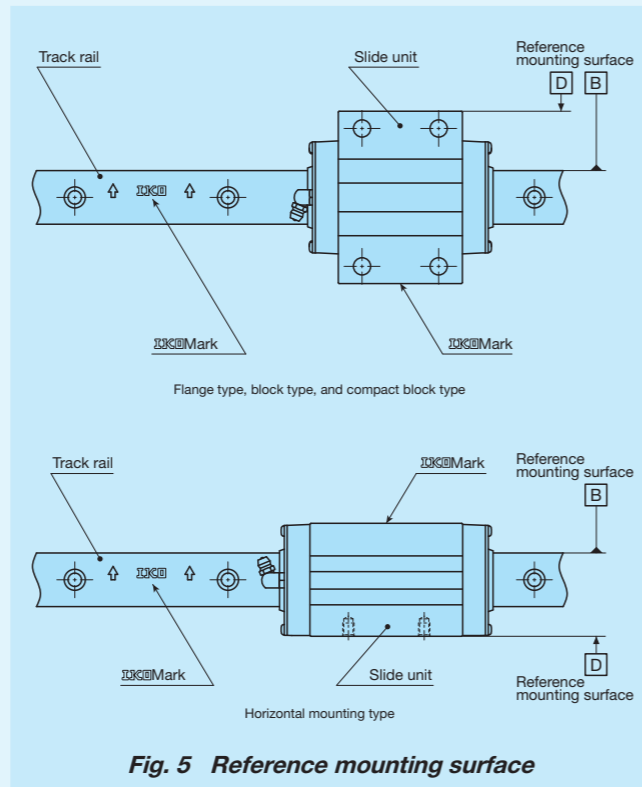


Fig. 5 Reference mounting surface

2 Shoulder height and corner radius of the reference mounting surface

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

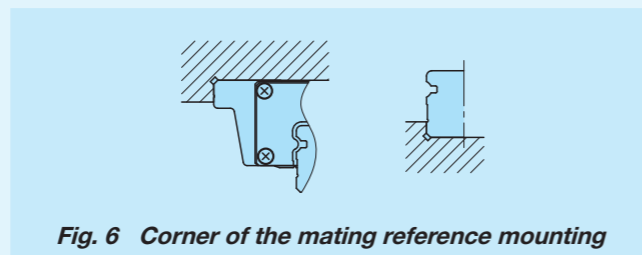
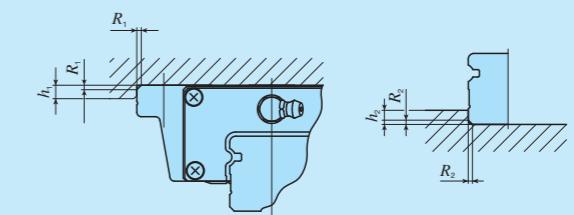


Fig. 6 Corner of the mating reference mounting

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



Size	Mounting part of slide unit		Mounting part of track rail	
	Shoulder height h_1	Corner radius R_1 (Maximum)	Shoulder height h_2	Corner radius R_2 (Maximum)
8	3.5(4) ⁽¹⁾	0.5	1.6 ⁽²⁾	0.2
10	4.5(5) ⁽¹⁾	0.5	1.9 ⁽²⁾	0.2
12	6	0.5	2.7 ⁽²⁾	0.7
15	4	0.5	3	0.5
20	5	0.5	3	0.5
25	6	1	4	1
30	8	1	5	1
35	8	1	6	1
45	8	1.5	7	1.5
55	10	1.5	8	1.5
65	10	1.5	10	1.5

unit: mm

Notes ⁽¹⁾ The values in () are applied to MHD and LWHD.

⁽²⁾ For models with under seals (supplemental code "/U"), it is recommended to use the values 0.6 mm smaller than the values in the table.

3 Tightening torque for fixing screw

Typical tightening torque for mounting of the MH series and LWH series to the steel mating member material is indicated in Table 17. 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 17 Tightening torque for fixing screw

Bolt size	Tightening torque N · m		
	High carbon steel-made screw		Stainless steel-made screw
	Size: 12	Size: 15 to 65	
M 1.6×0.35	—	—	0.15
M 2 ×0.4	—	—	0.31
M 2.3×0.4	—	—	0.49
M 2.6×0.45	—	—	0.70
M 3 ×0.5	1.3	—	1.1
M 4 ×0.7	2.9	4.1	2.5
M 5 ×0.8	—	8.0	5.0
M 6 ×1	—	13.6	8.5
M 8 ×1.25	—	32.7	20.4
M10 ×1.5	—	63.9	40.0
M12 ×1.75	—	110	—
M14 ×2	—	175	—
M16 ×2	—	268	—

Remark: The tightening torque is calculated based on strength division 8.8 for high carbon steel bolts in product size 12, strength division 12.9 for carbon steel bolts in product size 15 to 65, and property division A2-70 for stainless steel bolts.