

Low Decibel Linear Way E

LWE...Q/LWET...Q/LWES...Q

IKD Low Decibel Linear Way E is a linear motion rolling guide for smooth and quiet motion. Its low noise characteristic has been achieved by adopting optimum design based on a thorough analysis of ball recirculation behavior and sound quality. Plastic separators are incorporated to eliminate direct contact between balls and thus achieve smooth and quiet motion.

Low Decibel Linear Way E is suitable for production equipment or machinery, in which a large number of linear motion rolling guides are incorporated, and can be used to help reduce the noise level in factory and create a human-friendly environment.

Low decibel

Plastic separators are incorporated to eliminate direct contact between balls and thus achieve smooth and quiet motion.

Flange type and block type

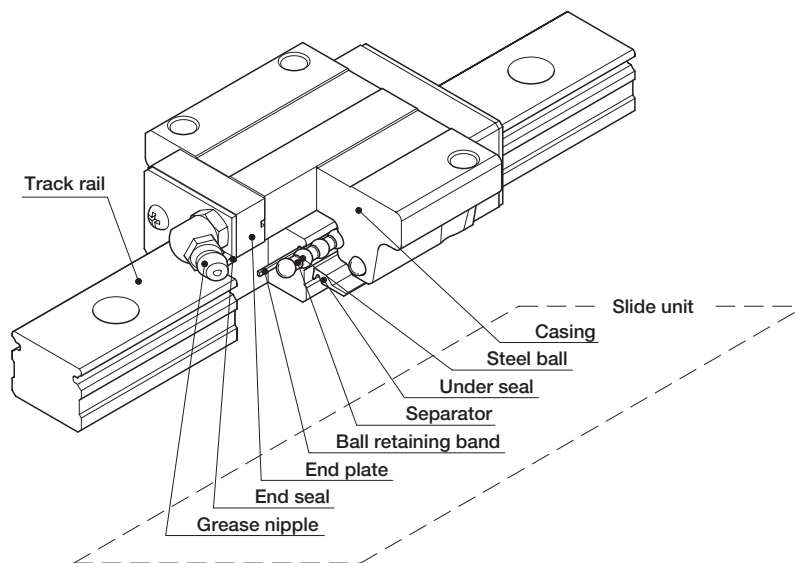
Slide units are available in three different sectional shapes; two flange types for different mounting directions and one block type with a narrow width.

Compact design

Lower, narrower, and shorter. Compactness has been pursued in every dimension.

Dimensional interchangeability with Linear Way E

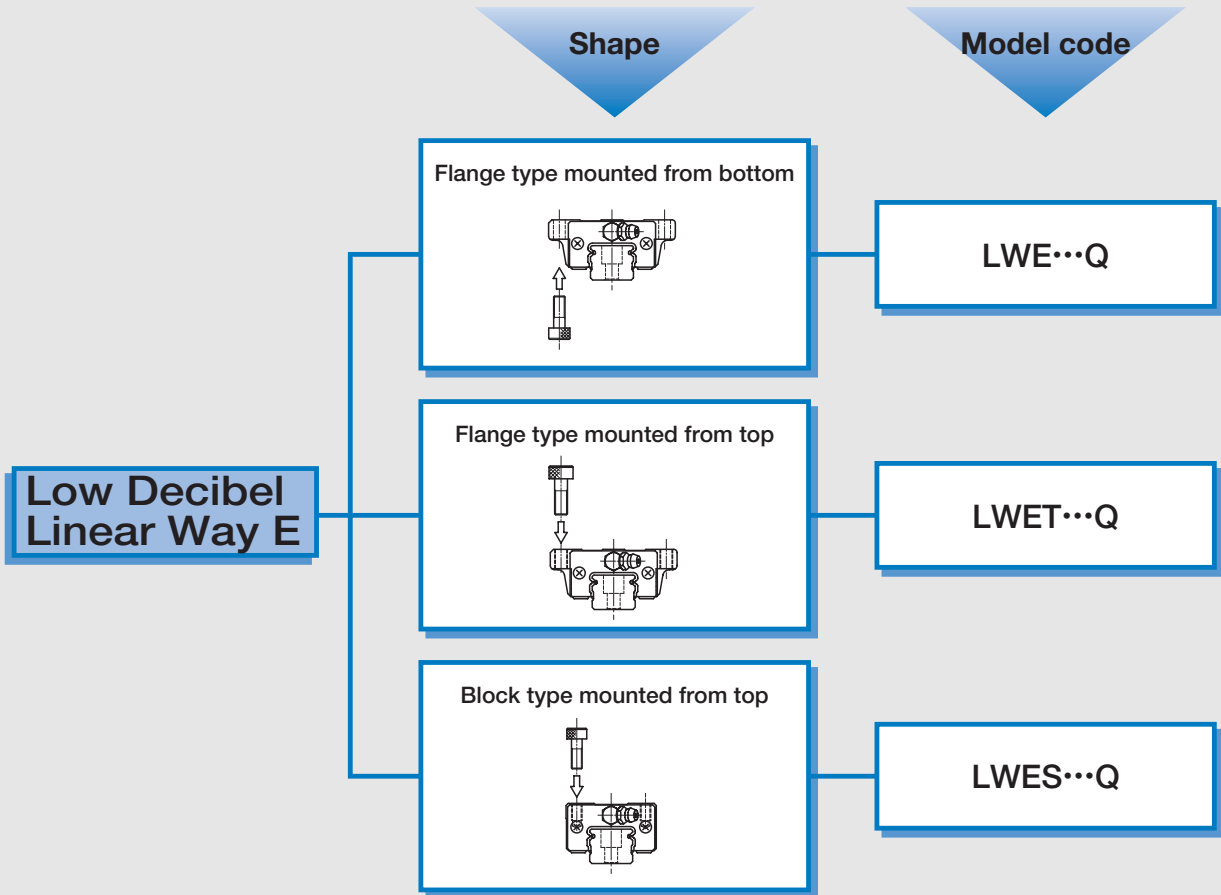
The mounting dimensions are the same as those of Linear Way E. So this guide can replace Linear Way E (LWE) with little modifications of machines or equipment.



U.S. PATENT No. 6,176,617
 No. 5,967,667
 No. 5,564,188
 No. 5,374,126
 No. 5,356,223
 No. 5,324,116
 No. 4,652,147

Structure of Low Decibel Linear Way E

Low Decibel Linear Way E series

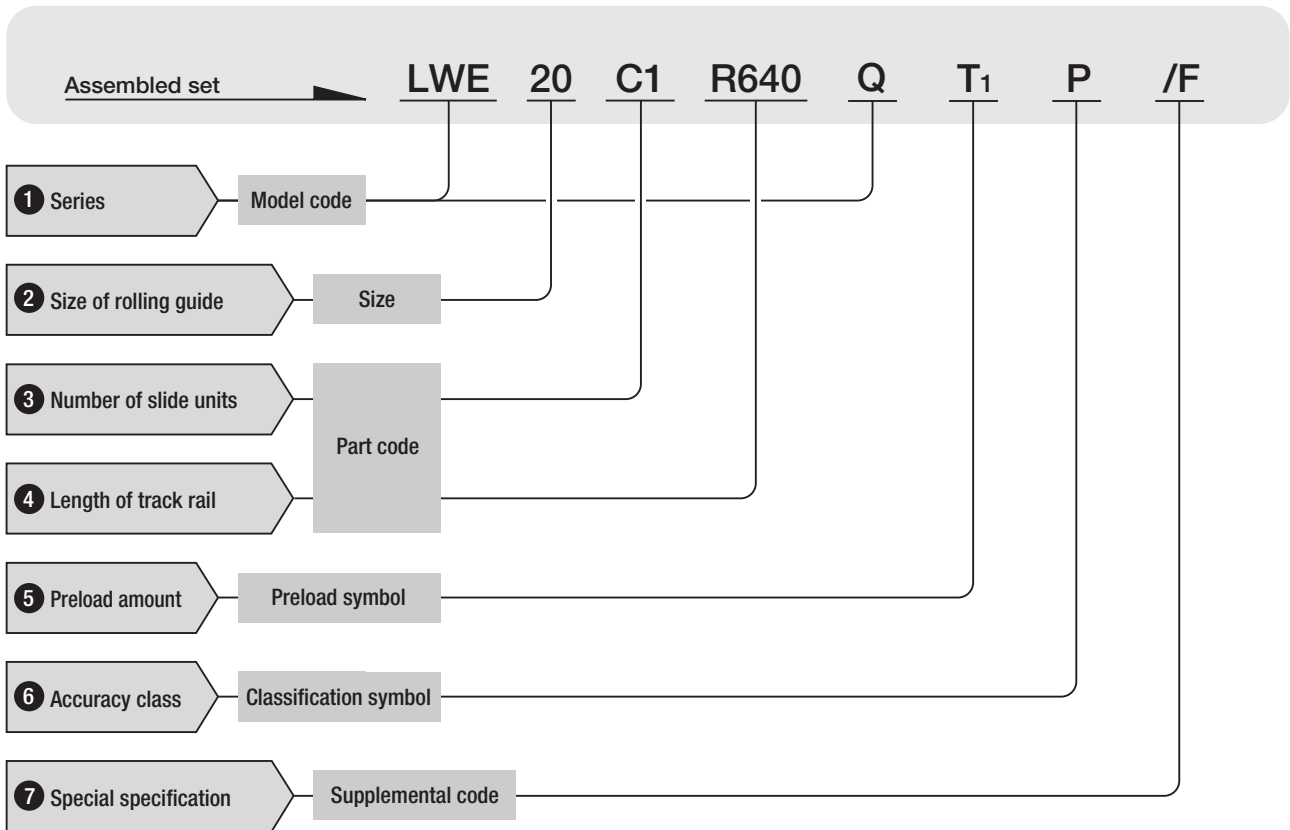


B

LWE...Q, LWET...Q, LWES...Q

● Identification number and specification

The specification of Low Decibel Linear Way E is indicated by the identification number, consisting of a model code, a size, a part code, a preload symbol, a classification symbol and any supplemental codes. For details of each specification, see page 76.



1 Series

Flange type mounted from bottom : LWE ...Q
 Flange type mounted from top : LWET...Q
 Block type mounted from top : LWES...Q

For available slide unit models and sizes, see Table 1.

2 Size of rolling guide

Table 1 Models and sizes of Low Decibel Linear Way E

Size	Model	High carbon steel made		
		Flange type mounted from bottom LWE...Q	Flange type mounted from top LWET...Q	Block type mounted from top LWES...Q
15		○	○	○
20		○	○	○
25		○	○	○
30		○	○	○
35		○	○	○

3 Number of slide units

: C○ Indicate the number of slide units assembled on one track rail.

4 Length of track rail

: R○ Indicate the length of track rail in mm. For standard and maximum lengths, see "Track rail length" on page B-65.

5 Preload amount

Standard : No symbol
 Light preload : T1
 For applicable combinations of accuracy and preload amount, see Table 2. For details of preload amount, see page 84.

6 Accuracy class

Ordinary : No symbol
 High : H
 Precision : P
 Super precision : SP

For applicable combinations of accuracy and preload amount, see Table 2. For details of accuracy, see page 79.

Table 2 Accuracy class and preload

Accuracy class (Symbol)	Ordinary (No symbol)	High (H)	Precision (P)	Super precision (SP)
Preload (Symbol)				
Standard (No symbol)	○	○	○	○
Light preload (T1)	—	○	○	○

7 Special specification

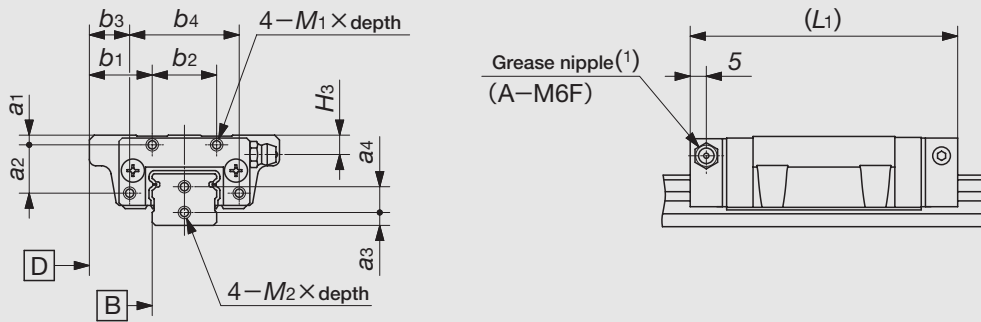
For applicable special specifications, see Table 3. When several special specifications are required, see Table 4. For details of special specifications, see page 86.

Table 3 Special specifications

Special specification	Supplemental code	Assembled set	Dimension
Opposite reference surfaces arrangement	D	○	
Specified rail mounting hole positions	E	○	
Caps for rail mounting holes	F	○	
Inspection sheet	I	○	
Female threads for bellows	J	○	See Table 5.1, Table 5.2.
Black chrome surface treatment	L	○	
Fluorine black chrome surface treatment	LF	○	
Supplied with track rail mounting bolt	MA	○	See Table 6.
Changed size of mounting holes	M4	○ ⁽¹⁾	See Table 7.
Capillary plates	Q	○	See Table 8.
Double end seals	V	○	See Table 9.
Matched sets to be used as an assembled group	W	○	
Specified grease	Y	○	
Scrapers	Z	○	See Table 10.

Note⁽¹⁾ : Applicable to size 15 models.

Table 5.1 Female threads for bellows for flange type slide unit (Supplemental code /J, /JJ)



unit : mm

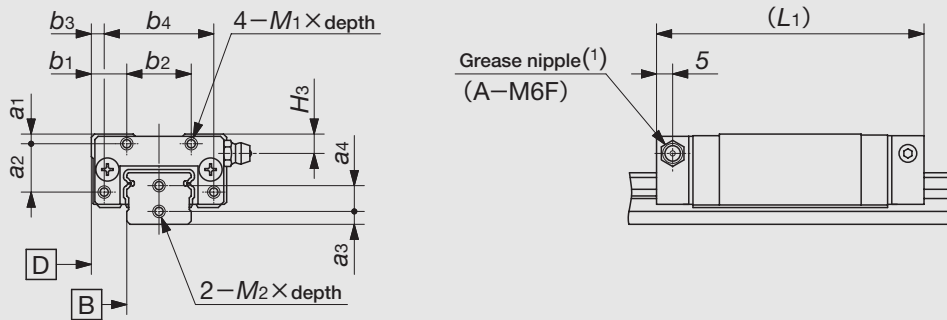
Model number	Slide unit									Track rail		
	a ₁	a ₂	b ₁	b ₂	b ₃	b ₄	M ₁ ×depth	L ₁ ⁽²⁾	H ₃	a ₃	a ₄	M ₂ ×depth
LWE (T) 15···Q	3	12	18	16	12	28	M3×6	74	5.7	4	7	M3×6
LWE (T) 20···Q	3	15	19.5	20	12.5	34	M3×6	83	6	4	8	M3×6
LWE (T) 25···Q	3.5	17	23.5	26	16.5	40	M3×6	100	7	5	9	M4×8
LWE (T) 30···Q	5	20	25	40	20	50	M3×6	111	10	6	14	M4×8
LWE (T) 35···Q	6	20	30	40	20	60	M3×6	125	11	7	15	M4×8

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

Size 15 models are provided with a special specification grease nipple (NPB2 type). For details of dimensions, consult **IKO** for further information.

⁽²⁾ : The values for a slide unit with female threads for bellows at both ends are shown.

Table 5.2 Female threads for bellows for block type slide unit (Supplemental code /J, /JJ)



unit : mm

Model number	Slide unit									Track rail		
	a ₁	a ₂	b ₁	b ₂	b ₃	b ₄	M ₁ ×depth	L ₁ ⁽²⁾	H ₃	a ₃	a ₄	M ₂ ×depth
LWES 15...Q	3	12	9	16	3	28	M3×6	74	5.7	4	7	M3×6
LWES 20...Q	3	15	11	20	4	34	M3×6	83	6	4	8	M3×6
LWES 25...Q	3.5	17	11	26	4	40	M3×6	100	7	5	9	M4×8
LWES 30...Q	5	20	10	40	5	50	M3×6	111	10	6	14	M4×8
LWES 35...Q	6	20	15	40	5	60	M3×6	125	11	7	15	M4×8

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

Size 15 models are provided with a special specification grease nipple (NPB2 type). For details of dimensions, consult **IKO** for further information.

⁽²⁾ : The values for a slide unit with female threads for bellows at both ends are shown.

Table 6 Recommended track rail mounting bolt size (Supplemental code /MA)

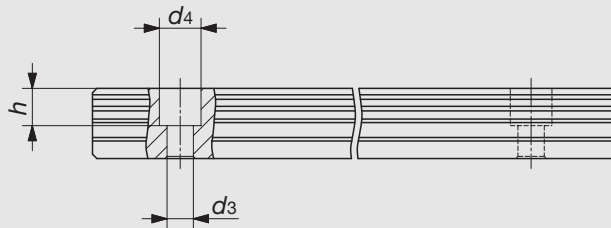
Model number	Recommended bolt size
LWE 15...Q	M3×16 M4×16 ⁽¹⁾
LWE 20...Q	M5×16
LWE 25...Q	M6×20
LWE 30...Q	M6×25
LWE 35...Q	M8×30

Note⁽¹⁾ : Applicable to the track rail of supplemental code "/M4" of special specification.

Remark 1 : The above table shows representative model numbers but is applicable to all models of the same size.

2 : Hexagon socket head bolts of strength division 12.9 of JIS B 1176 are recommended.

Table 7 Changed size of mounting holes (Supplemental code /M4)

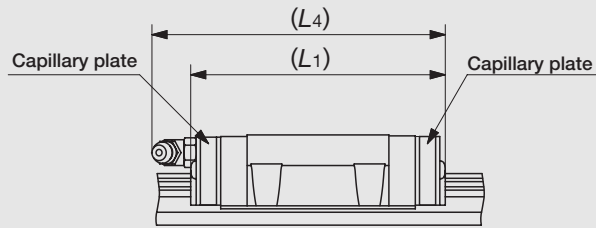


unit : mm

Model number	d_3	d_4	h
LWE 15...Q	4.5	8	6

Remark : The above table shows a representative model number but is applicable to all models of size 15.

Table 8 Slide unit with Capillary plates (Supplemental code /Q)

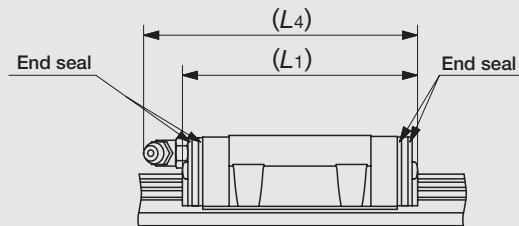


unit : mm

Model number	L ₁	L ₄
LWE 15...Q	68	71
LWE 20...Q	78	91
LWE 25...Q	94	107
LWE 30...Q	109	119
LWE 35...Q	124	135

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

Table 9 Slide unit with double end seals (Supplemental code /V, /VV)

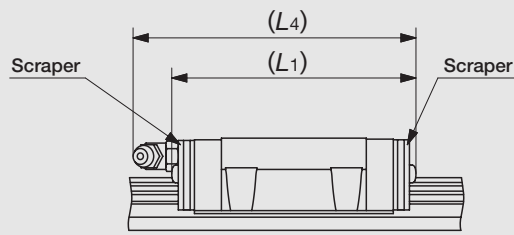


unit : mm

Model number	L ₁	L ₄
LWE 15...Q	64	66
LWE 20...Q	73	87
LWE 25...Q	91	104
LWE 30...Q	107	118
LWE 35...Q	121	134

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

Table 10 Slide unit with scrapers (Supplemental code /Z, /ZZ)



unit : mm

Model number	L_1	L_4
LWE 15...Q	64	66
LWE 20...Q	75	88
LWE 25...Q	93	105
LWE 30...Q	109	119
LWE 35...Q	123	135

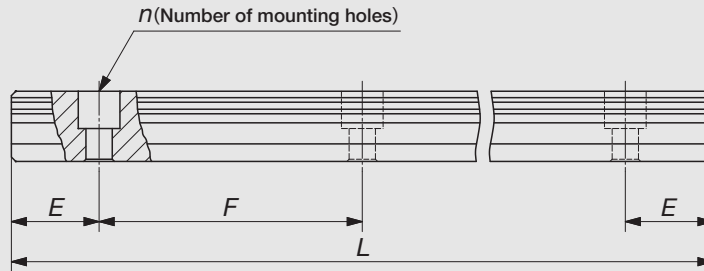
Remark : The above table shows representative model numbers but is applicable to all models of the same size.

● Track rail length

Standard and maximum lengths of track rails are shown in Table 11. When requiring track rails in any other length, consult **IKO** for further information. For the tolerances of E dimension and track rail length, consult **IKO** for further information.

- E dimensions at both ends are the same and are within the standard range of E unless otherwise specified. To change these dimensions, specify the specified rail mounting hole positions "/ E " of special specification. For details, see page 89.

Table 11 Standard and maximum lengths of track rails



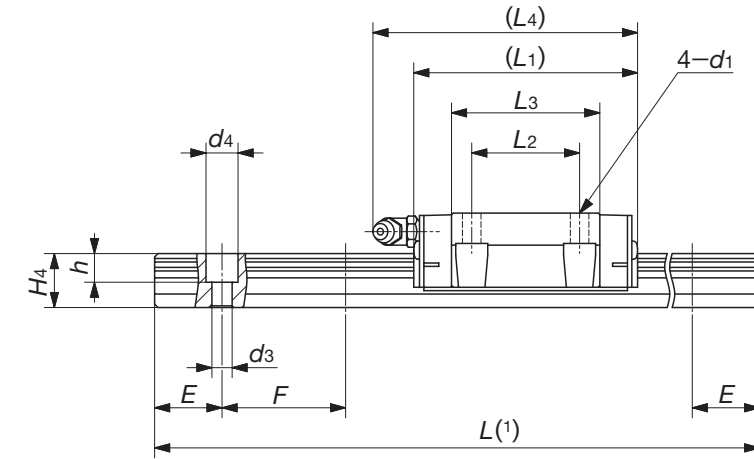
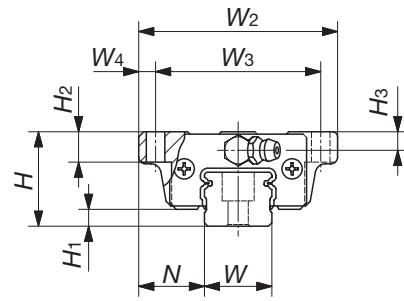
unit : mm

Model number		LWE 15...Q	LWE 20...Q	LWE 25...Q	LWE 30...Q	LWE 35...Q
Standard length L (n)		160 (3)	220 (4)	220 (4)	280 (4)	280 (4)
		220 (4)	280 (5)	280 (5)	440 (6)	440 (6)
		280 (5)	340 (6)	340 (6)	600 (8)	600 (8)
		340 (6)	460 (8)	460 (8)	760 (10)	760 (10)
		460 (8)	640 (11)	640 (11)	1 000 (13)	1 000 (13)
		640 (11)	820 (14)	820 (14)	1 240 (16)	1 240 (16)
		820 (14)	1 000 (17)	1 000 (17)	1 640 (21)	1 640 (21)
			1 240 (21)	1 240 (21)	2 040 (26)	2 040 (26)
			1 600 (27)	2 520 (32)	2 520 (32)	
				3 000 (38)	3 000 (38)	
Pitch of mounting holes F		60	60	60	80	80
E		20	20	20	20	20
Standard range of E (1)	incl.	6	8	9	9	10
	under	36	38	39	49	50
Maximum length		1 600	2 200	2 980	3 000	3 000

Note(1) : Not applicable to the track rail with female threads for bellows (supplemental code "/J").

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

Flange type mounted from bottom
LWE ...Q

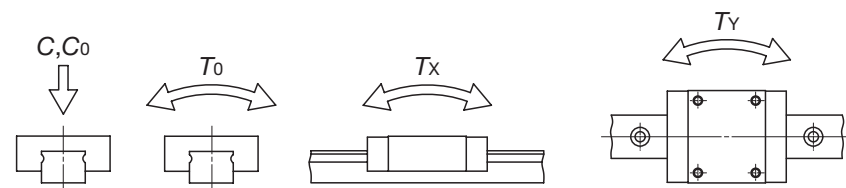


Model number	Mass (Ref.)		Dimensions of assembly mm			Dimensions of slide unit mm							
	Slide unit kg	Track rail kg/m	H	H ₁	N	W ₂	W ₃	W ₄	L ₁	L ₂	L ₃	L ₄	d ₁
LWE 15...Q	0.18	1.57	24	5	18.5	52	41	5.5	57	26	38.4	61	4.5
LWE 20...Q	0.30	2.28	28	5	19.5	59	49	5	66.5	32	44	79	5.5
LWE 25...Q	0.56	3.09	33	6	25	73	60	6.5	83	35	56	95	7
LWE 30...Q	0.97	5.04	42	10	31	90	72	9	95.5	40	64.8	106	9
LWE 35...Q	1.53	6.84	48	11	33	100	82	9	109.5	50	76.6	122	9

Note(1) : Track rail lengths are shown in Table 11 on page B-65.

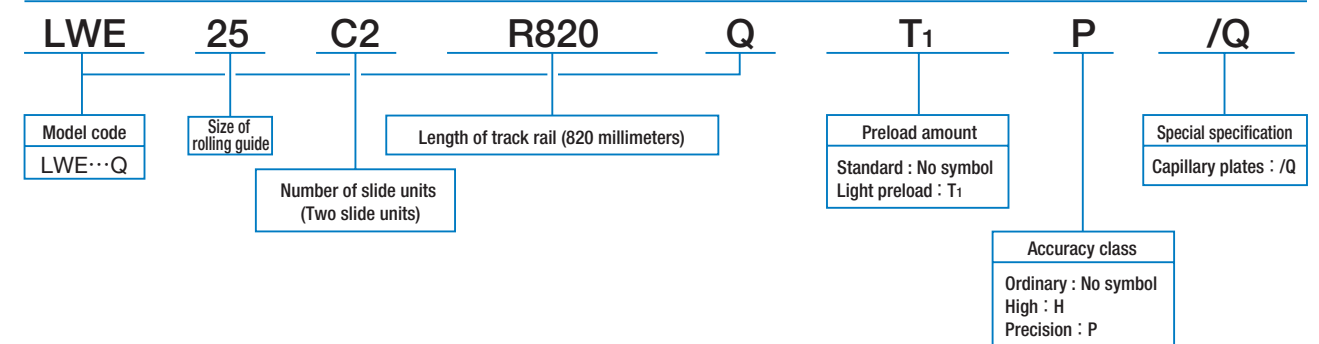
(2) : The directions of basic dynamic load rating (C), basic static load rating (C₀) and static moment rating (T₀, T_x, T_y) are shown in the sketches below. The upper values in the T_x and T_y columns apply to one slide unit, and the lower values apply to two slide units in close contact.

Remark 1 : Track rail mounting bolts are not appended. Hexagon socket bolt of JIS B1176 strength division 12.9 or equivalent are recommended. Recommended bolt sizes are shown in Table 6 on page B-62.
2 : For grease nipple specifications, see page 97.

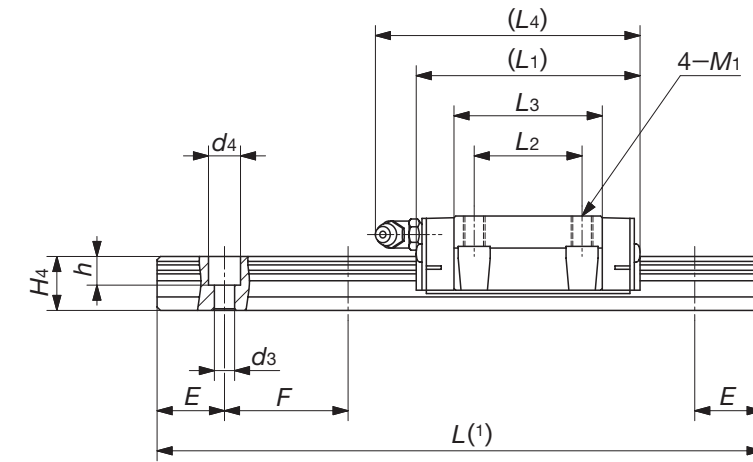
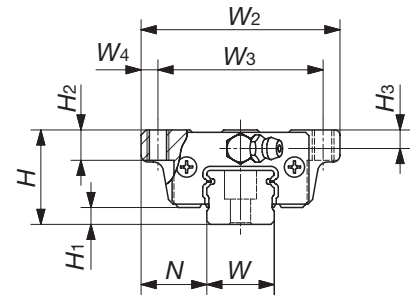


H ₃	H ₅	Dimensions of track rail mm							Basic dynamic load rating ⁽²⁾ C N	Basic static load rating ⁽²⁾ C ₀ N	Static moment rating ⁽²⁾		
		W	H ₄	d ₃	d ₄	h	E	F			T ₀ N·m	T _x N·m	T _y N·m
7	4.5	15	14.5	3.6	6.5	4.5	20	60	6 550	8 610	68.9	53.0 307	53.0 307
9	5.5	20	16	6	9.5	8.5	20	60	10 500	13 400	145	100 557	100 557
10	6.5	23	19	7	11	9	20	60	15 500	19 400	240	175 1 010	175 1 010
10	8	28	25	7	11	9	20	80	21 600	26 400	398	278 1 570	278 1 570
13	10	34	28	9	14	12	20	80	30 500	37 600	687	482 2 530	482 2 530

Example of identification number (For details, see "Identification number and specification".)



Flange type mounted from top
LWET ...Q

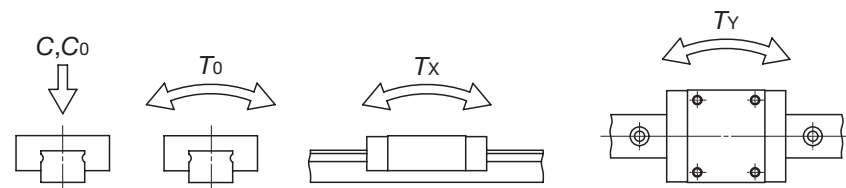


Model number	Mass (Ref.)		Dimensions of assembly mm			Dimensions of slide unit mm							
	Slide unit kg	Track rail kg/m	H	H ₁	N	W ₂	W ₃	W ₄	L ₁	L ₂	L ₃	L ₄	M ₁
LWET 15...Q	0.18	1.57	24	5	18.5	52	41	5.5	57	26	38.4	61	M 5
LWET 20...Q	0.30	2.28	28	5	19.5	59	49	5	66.5	32	44	79	M 6
LWET 25...Q	0.56	3.09	33	6	25	73	60	6.5	83	35	56	95	M 8
LWET 30...Q	0.97	5.04	42	10	31	90	72	9	95.5	40	64.8	106	M10
LWET 35...Q	1.53	6.84	48	11	33	100	82	9	109.5	50	76.6	122	M10

Note(1) : Track rail lengths are shown in Table 11 on page B-65.

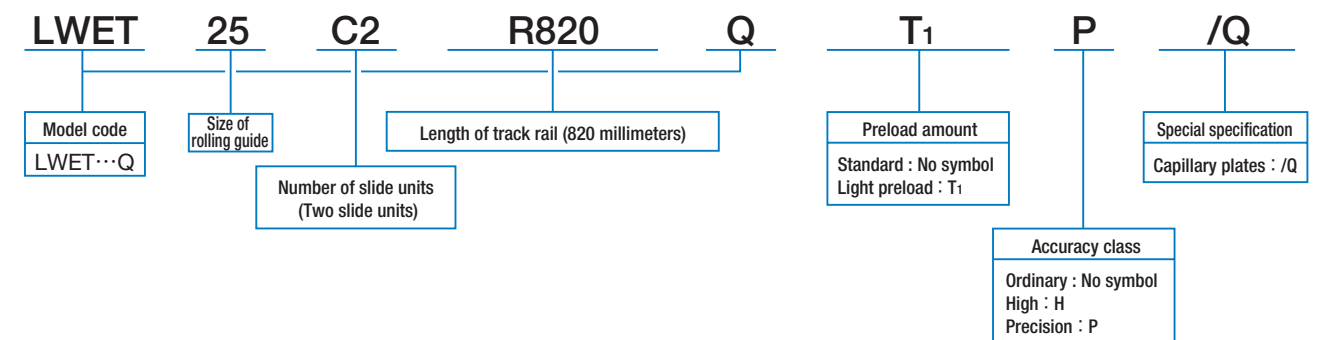
(2) : The directions of basic dynamic load rating (C), basic static load rating (C₀) and static moment rating (T₀, T_x, T_y) are shown in the sketches below. The upper values in the T_x and T_y columns apply to one slide unit, and the lower values apply to two slide units in close contact.

Remark 1 : Track rail mounting bolts are not appended. Hexagon socket bolt of JIS B1176 strength division 12.9 or equivalent are recommended. Recommended bolt sizes are shown in Table 6 on page B-62.
2 : For grease nipple specifications, see page 97.

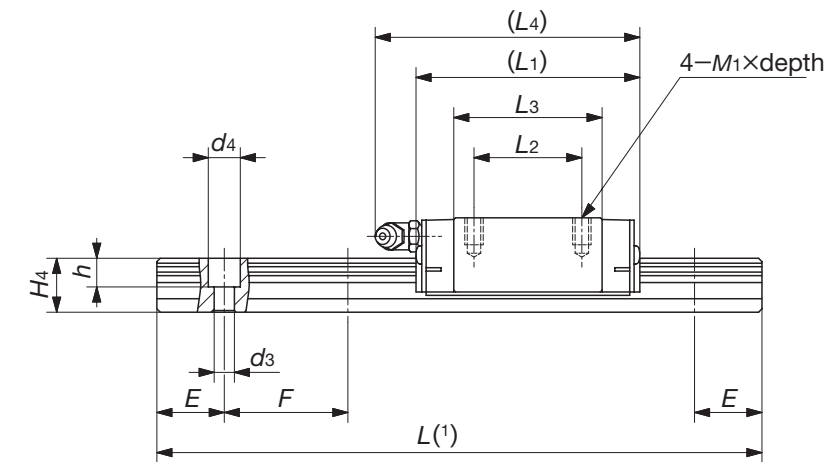
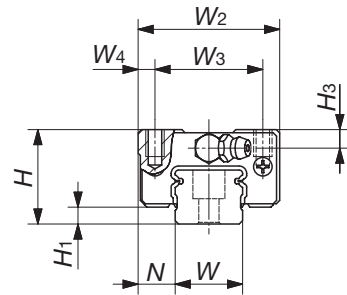


		Dimensions of track rail mm							Basic dynamic load rating ⁽²⁾ C N	Basic static load rating ⁽²⁾ C ₀ N	Static moment rating ⁽²⁾		
H ₂	H ₃	W	H ₄	d ₃	d ₄	h	E	F			T ₀ N·m	T _x N·m	T _y N·m
7	4.5	15	14.5	3.6	6.5	4.5	20	60	6 550	8 610	68.9 53.0 307		
9	5.5	20	16	6	9.5	8.5	20	60	10 500	13 400	145 100 557		
10	6.5	23	19	7	11	9	20	60	15 500	19 400	240 175 1 010		
10	8	28	25	7	11	9	20	80	21 600	26 400	398 278 1 570		
13	10	34	28	9	14	12	20	80	30 500	37 600	687 482 2 530		

Example of identification number (For details, see "Identification number and specification".)



Block type mounted from top
LWES ...Q



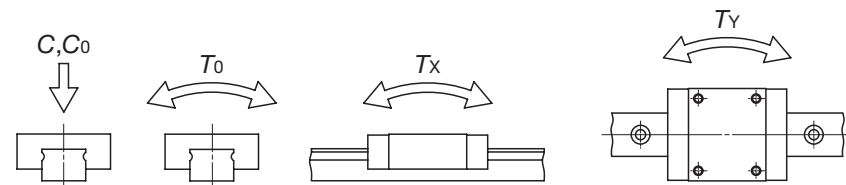
Model number	Mass (Ref.)		Dimensions of assembly mm			Dimensions of slide unit mm						
	Slide unit kg	Track rail kg/m	H	H ₁	N	W ₂	W ₃	W ₄	L ₁	L ₂	L ₃	L ₄
LWES 15...Q	0.14	1.57	24	5	9.5	34	26	4	57	26	38.4	61
LWES 20...Q	0.25	2.28	28	5	11	42	32	5	66.5	32	44	79
LWES 25...Q	0.43	3.09	33	6	12.5	48	35	6.5	83	35	56	95
LWES 30...Q	0.75	5.04	42	10	16	60	40	10	95.5	40	64.8	106
LWES 35...Q	1.20	6.84	48	11	18	70	50	10	109.5	50	76.6	122

Note⁽¹⁾: Track rail lengths are shown in Table 11 on page B-65.

⁽²⁾: The directions of basic dynamic load rating (C), basic static load rating (C₀) and static moment rating (T₀, T_x, T_y) are shown in the sketches below. The upper values in the T_x and T_y columns apply to one slide unit, and the lower values apply to two slide units in close contact.

Remark 1: Track rail mounting bolts are not appended. Hexagon socket bolt of JIS B1176 strength division 12.9 or equivalent are recommended. Recommended bolt sizes are shown in Table 6 on page B-62.

2: For grease nipple specifications, see page 97.



M1×depth	H ₃	Dimensions of track rail mm							Basic dynamic load rating ⁽²⁾ C N	Basic static load rating ⁽²⁾ C ₀ N	Static moment rating ⁽²⁾		
		W	H ₄	d ₃	d ₄	h	E	F			T ₀ N·m	T _x N·m	T _y N·m
M4× 7	4.5	15	14.5	3.6	6.5	4.5	20	60	6 550	8 610	68.9	53.0 307	53.0 307
M5× 8	5.5	20	16	6	9.5	8.5	20	60	10 500	13 400	145	100 557	100 557
M6× 9	6.5	23	19	7	11	9	20	60	15 500	19 400	240	175 1 010	175 1 010
M8×12	8	28	25	7	11	9	20	80	21 600	26 400	398	278 1 570	278 1 570
M8×12	10	34	28	9	14	12	20	80	30 500	37 600	687	482 2 530	482 2 530

Example of identification number (For details, see "Identification number and specification".)

