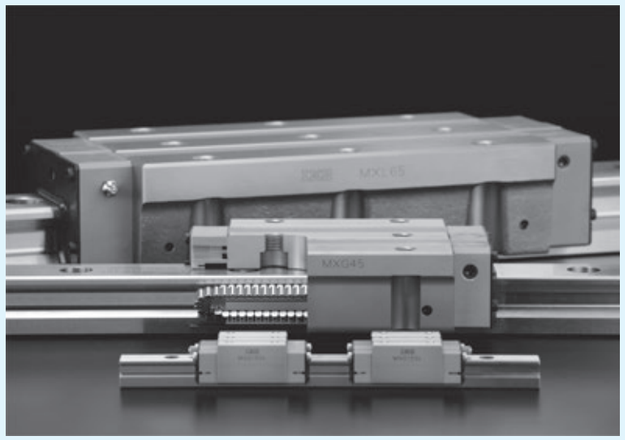
Linear Roller Way X



Linear Roller Way X

LRWX

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

Well-balanced roller arrangement enabling equal resistance to all direction loads!

Slide unit shape block type and flange type are available and can be selected according to the application!

Identification Number and Specification

Example of an identification number

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

	1	2	3	4	1	5	6	7
Assembled set	LRWX	35	C2	R660	B	T_2	SP	/Z

1 **Model** — Model code — Page Ⅱ－221

2 **Size** — Dimensions — Page Ⅱ－221

3 **Number of slide units**

4 **Length of track rail**

Part code — Page Ⅱ－221

5 **Preload amount** — Preload symbol — Page Ⅱ－222

6 **Accuracy class** — Classification symbol — Page Ⅱ－222

7 **Special specification** — Supplemental code — Page Ⅱ－223

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

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

1 Model

Linear Roller Way X (1) (LRWX series)

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

For applicable models and sizes, see Table 1.

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

2 Size

25,35,45,55,75

For applicable models and sizes, see Table 1.

3 Number of slide units

: C○

Indicates the number of slide units assembled on a track rail.

4 Length of track rail

: R○

Indicate the length of track rail in mm.
For standard and maximum lengths, see Table 2.

Table 1 Models and sizes of LRWX series

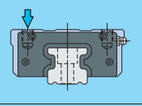
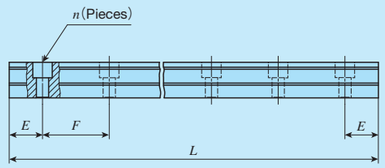
Shape	Model	Size				
		25	35	45	55	75
Block type mounting from top 	LRWX···B	○	○	○	○	○
Flange type mounting from bottom	LRWXH	–	○	○	○	○

Table 2 Standard and maximum lengths of track rail



unit: mm

Item \ Identification number	LRWX25···B	LRWX25···B/HP(3)	LRWX 35···B LRWXH35	LRWX 45···B LRWXH45	LRWX 55···B LRWXH55	LRWX 75···B LRWXH75
Standard length L (n)	480 (8) 660 (11) 840 (14) 1 020 (17) 1 200 (20) 1 500 (25)	480 (16) 660 (22) 840 (28) 1 020 (34) 1 200 (40) 1 500 (50)	480 (8) 660 (11) 840 (14) 1 020 (17) 1 200 (20) 1 500 (25)	800 (10) 1 040 (13) 1 200 (15) 1 520 (19) 1 920 (24)	800 (8) 1 000 (10) 1 200 (12) 1 500 (15) 2 000 (20) 3 000 (30)	840 (7) 1 200 (10) 1 560 (13) 1 920 (16) 3 000 (25)
Pitch of mounting holes F	60	30	60	80	100	120
E	30	15	30	40	50	60
Standard E dimensions (1) or higher	9	9	12	15	18	23
Standard E dimensions (1) below	39	24	42	55	68	83
Maximum length (2)	1 980 (3 000)	1 980 (3 000)	3 000 (3 960)	2 960 (4 000)	3 000 (4 000)	3 000 (3 960)

Notes (1) Not applicable to female threads for bellows (supplemental code "/J").
(2) Length up to the value in ( ) can be produced. If needed, please contact IKO.
(3) This indicates the dimension for the half pitch mounting holes specification of track rail.
Remark: If not directed, E dimensions for both ends will be the same within the range of standard E dimensions. To change the dimensions, indicate the specified rail mounting hole positions "/E" of special specification. For more information, see page Ⅲ−30.

—Preload Amount · Accuracy Class—

5 Preload amount

Standard : No symbol
Light preload : T_1
Medium preload : T_2
Heavy preload : T_3

For details of the preload amount, see Table 3.

6 Accuracy class

High : H
Precision : P
Super precision : SP
Ultra precision : UP

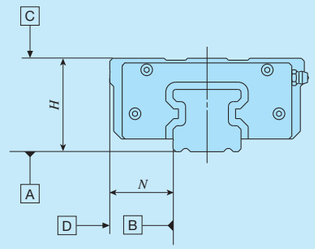
For details of accuracy class, see Table 4.

Table 3 Preload amount

Item \ Preload type	Preload symbol	Preload amount N	Operational conditions
Standard	(No symbol)	0(1)	· Light and precise motion
Light preload	T_1	0.02 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

Note (1) Indicates zero or minimal amount of preload.
Remark: C_0 indicates the basic static load rating.

Table 4 Tolerance and allowance



unit: mm

Item \ Class (classification symbol)	High (H)	Precision (P)	Super precision (SP)	Ultra precision (UP)
Dim. H tolerance	±0.040	±0.020	±0.010	±0.008
Dim. N tolerance	±0.050	±0.025	±0.015	±0.010
Dim. variation of H(1)	0.015	0.007	0.005	0.003
Dim. variation of N(1)	0.020	0.010	0.007	0.003
Dim. variation of H for multiple assembled sets	0.035	0.025	–	–
Parallelism in operation of the slide unit C surface to A surface	See Fig. 1			
Parallelism in operation of the slide unit D surface to B surface	See Fig. 1			

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

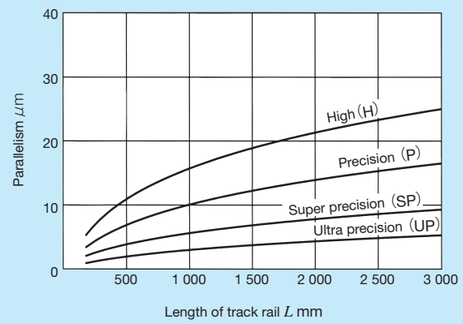


Fig. 1 Parallelism in operation

LRWX

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

7 Special specification

/A, /D, /E, /F, /HP, /I,
/J○, /L○, /LF○, /Q,
/V○, /W○, /Y○, /Z○

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

Table 5 Application of special specifications

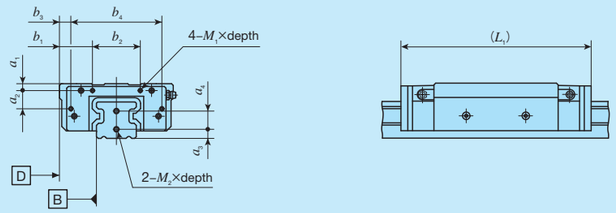
Special specification	Supplemental code	Size				
		25	35	45	55	75
Butt-jointing track rails	/A	○	○	○	○	○
Opposite reference surfaces arrangement	/D	○	○	○	○	○
Specified rail mounting hole positions	/E	○	○	○	○	○
Caps for rail mounting holes	/F	○	○	○	○	○
Half pitch mounting holes for track rail	/HP	○	×	×	×	×
Inspection sheet	/I	○	○	○	○	○
Female threads for bellows	/J○	○	○	○	○	○
Black chrome surface treatment	/L○	○	○	○	○	○
Fluorine black chrome surface treatment	/LF○	○	○	○	○	○
With C-Lube plate	/Q	○	○	○	○	○
Double seals	/V○	○	×	×	×	×
A group of multiple assembled sets	/W○	○	○	○	○	○
Specified grease	/Y○	○	○	○	○	○
Scrapers	/Z○	○	○	○	○	○

Table 6 Combination of supplemental codes

	A	D	E	F	HP	I	J	L	LF	Q	V	W	Y
D	○												
E	–	–											
F	○	○	○										
HP	–	○	–	○									
I	○	○	○	○	○								
J	○	○	○	○	–	○							
L	○	○	○	○	○	○	○						
LF	○	○	○	○	○	○	○	–					
Q	○	○	○	○	○	○	–	○	○				
V	○	○	○	○	○	○	○	○	○	–			
W	○	○	–	○	○	○	○	○	○	○	○		
Y	○	○	○	○	○	○	○	○	○	–	○	○	
Z	○	○	○	○	○	○	–	○	○	–	○	○	○

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

Table 7 Dimension of female threads for bellows (Supplemental code: /J /JJ)

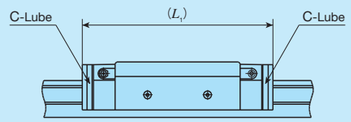


unit: mm

Identification number	Slide unit								Track rail		
	a_1	a_2	b_1	b_2	b_3	b_4	M_1×depth	L_1(1)	a_3	a_4	M_2×depth
LRWX 25···B	5	12	15	33	7	49	M3× 6	116	7	12	M4× 8
LRWX 35···B	6	16	29	42	10	80	M3× 6	166	8	16	M4× 8
LRWXH 35			31		12						
LRWX 45···B	8	20	34	52	12	96	M4× 8	221	10	19	M5×10
LRWXH 45			38		16						
LRWX 55···B	9	24	36	68	15	110	M5×10	282	12	23	M6×12
LRWXH 55			43		22						
LRWX 75···B	10	35	35	110	15.5	149	M5×10	366	15	30	M6×12
LRWXH 75			42		22.5						

Note (1) Dimensions of the specification that female threads for bellows are fitted to both ends of the slide unit are indicated.

Table 8 Dimension of slide unit with C-Lube plate (Supplemental code /Q)

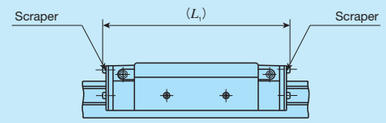


unit: mm

Size	L_1
25	120
35	166
45	218
55	275
75	364

Remark: The dimensions of the slide unit with C-Lube at both ends are indicated.

Table 9 Dimension of slide unit with scrapers (Supplemental code: /Z /ZZ)



unit: mm

Size	L_1
25	120
35	164
45	217
55	275
75	361

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

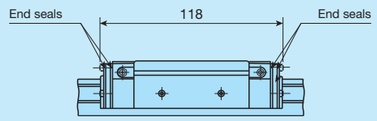


Fig. 2 Dimensions of slide unit with double seals (Size 25) (Supplemental code: /V /VV)

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

LRWX

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

Lubrication

Lithium-soap base grease with extreme-pressure additive (Alvania EP Grease 2 [Shell Lubricants Japan K.K.]) is pre-packed in LRWX series.

LRWX series has grease nipple as indicated in Table 10.

Table 10 Parts for lubrication

Size	Grease nipple type (1)	Applicable supply nozzle type	Bolt size of female threads for piping
25	JIS type 1	Grease gun available on the market	M6
35			
45	JIS type 2		PT1/8
55			
75			

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

Dust Protection

The slide units of LRWX 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.
LRWX series is provided with specific bellows. The bellows are easy to mount and provide excellent dust protection. If needed, please refer to Ⅲ−26 for ordering.

Precaution for Use

❶Mounting surface, reference mounting surface and typical mounting structure

When mounting the LRWX 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. 3)
Reference mounting surfaces B and D and mounting surfaces A and C are ground precisely. Machining the mounting surface of the table and bed, such as machine or device, to high accuracy and mounting them properly will ensure stable linear motion with high accuracy.
Reference mounting surface of the slide unit is the opposite side of the IKO mark. The track rail reference mounting surface is identified by locating the IKO mark on the top surface of the track rail. It is the side surface above the mark (in the direction of the arrow). (See Fig. 4)

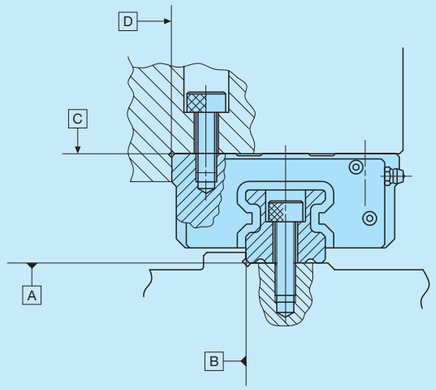


Fig. 3 Reference mounting surface and typical mounting structure

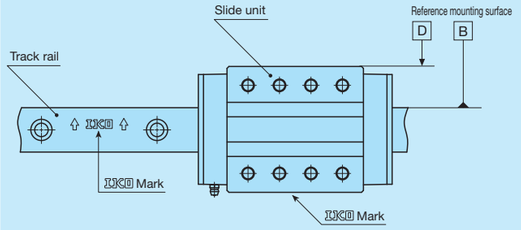


Fig. 4 Reference mounting surface

❷Fixing the slide unit

Slide unit of LRWX25··· B and LRWXH is also provided with mounting holes in the middle of width direction (see Fig. 5) and has the arrangement to receive the applied load in a good balance. When designing machines or equipment, consider the arrangement so that the mounting holes in the middle of slide unit can also be used to fix the units, to use the highest performance out of the product.

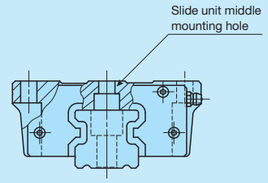


Fig. 5 Slide unit middle mounting hole

❸Shoulder 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, but you may also use it with providing corner radius R as shown in Table 11. Recommended value for the shoulder height and corner radius on the mating side is indicated in Table 11.

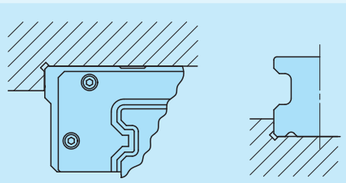
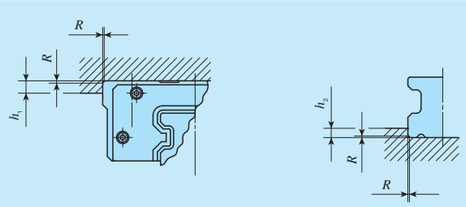


Fig. 6 Corner of the mating reference mounting

Table 11 Shoulder height and corner radius of the reference mounting surface



unit: mm

Size	Shoulder height of slide unit mounting part h_1	Shoulder height of track rail mounting part h_2	Corner radius R (Maximum)
25	6	4	1
35	8	5.5	1
45	8	6	1
55	10	8	1.5
75	10	8	1.5

❹Tightening torque for fixing screw

Typical tightening torque for mounting of the LRWX series to the steel mating member material is indicated in Table 12. 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 12 Tightening torque for fixing screw

Bolt size	Tightening torque N · m
	High carbon steel-made screw
M 6×1	13.6
M 8×1.25	32.7
M10×1.5	63.9
M12×1.75	110
M16×2	268
M24×3	749

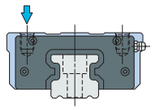
Remark: The tightening torque is calculated based on strength division 12.9 for product size up to 55, and strength division 10.9 for product size 75.

LRWX

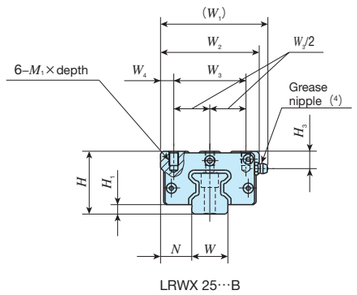
1N=0.102kgf=0.2248lbs.
1mm=0.03937inch

Block type mounting from top

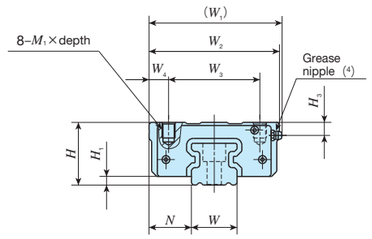
Shape: LRWX···B

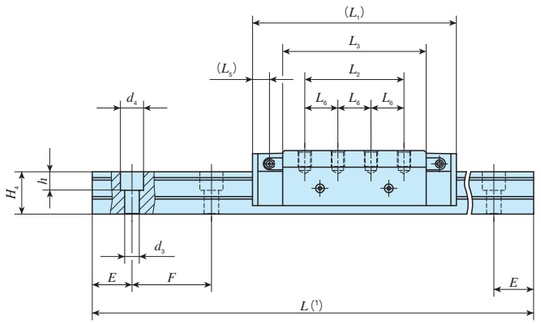


Size: 25 | 35 | 45 | 55 | 75



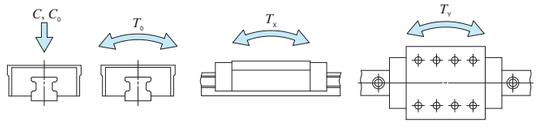
LRWX 25···B





Identification number	Mass (Ref.)		Dimensions of assembly mm			Dimensions of slide unit mm										Dimensions of track rail mm								Appended mounting bolt for track rail (2)	Basic dynamic load rating (3)	Basic static load rating (3)	Static moment rating (3)		
LRWX series (No C-Lube)	Slide unit	Track rail	H	H_1	N	W_1	W_2	W_3	W_4	L_1	L_2	L_3	L_5	L_6	$M_1\times$ depth		H_3	W	H_4	d_3	d_4	h	E	F	Bolt size× ℓ	C	C_0	T_0	T_X	T_Y
	kg	kg/m																								N	N	N · m	N · m	N · m
LRWX 25···B	0.93	3.70	40	6	20	69	63	46	8.5	109	45	74.4	11	–	M 6× 9		11	23	26	7	11	9	30	60	M 6×28	32 700	70 300	1 110	885 5 170	885 5 170
LRWX 35···B	2.65	6.66	48	6.5	32.5	103	100	70	15	154	75	108.4	12.8	25	M10×12		10	35	32	11	17.5	14	30	60	M10×35	49 900	91 100	2 150	1 660 9 450	1 660 9 450
LRWX 45···B	5.32	10.3	60	8	37.5	125	120	82	19	205	105	144	18.5	35	M12×16		14.5	45	39	14	20	16	40	80	M12×40	93 300	167 000	5 000	4 030 23 000	4 030 23 000
LRWX 55···B	9.09	15.3	70	9	42.5	142	140	95	22.5	262	135	189	24.5	45	M12×18		16	55	47	18	26	21	50	100	M16×50	186 000	330 000	12 200	10 700 57 900	10 700 57 900
LRWX 75···B	19.0	25.1	90	10	52.5	190	180	123	28.5	346	180	240	45	60	M16×25		20	75	57	26	39	30	60	120	M24×60	298 000	518 000	25 200	20 900 121 000	20 900 121 000

Notes (1) Track rail lengths L are shown in Table 2 on page Ⅱ−221.
(2) The appended track rail mounting bolts are hexagon socket head bolts equivalent to JIS B 1176.
(3) The direction of basic dynamic load rating (C), basic static load rating (C_0), and static moment rating (T_0, T_X, T_Y) are shown in the sketches below. The upper values of T_X and T_Y are for one slide unit and the lower values are for two slide units in close contact.
(4) The shapes of grease nipple vary by size. The specifications are shown in Table 10 on page Ⅱ−225.



Example of identification number of assembled set

Model code	Dimensions	Part code		Model code	Preload symbol	Classification symbol	Supplemental code
LRWX	35	C2	R840	B	T1	P	/W2
①	②	③	④	①	⑤	⑥	⑦

① Model
LRWX···B | Block type mounting from top

② Size
25, 35, 45, 55, 75

③ Number of slide unit (2)

④ Length of track rail (840 mm)

⑤ Preload amount

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

⑥ Accuracy class

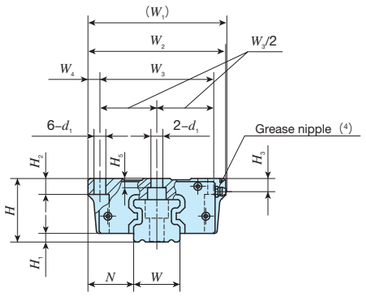
H	High
P	Precision
SP	Super precision
UP	Ultra precision

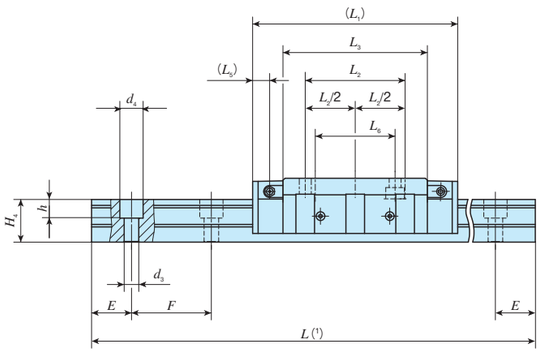
⑦ Special specification
A, D, E, F, HP, Ⅰ, J
L, LF, Q, V, W, Y, Z

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

Flange type mounting from bottom

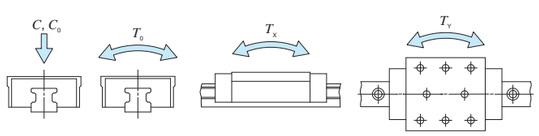
Shape	LRWXH
Size	35 / 45 / 55 / 75





Identification number	Mass (Ref.)		Dimensions of assembly mm			Dimensions of slide unit mm													Dimensions of track rail mm							Appended mounting bolt for track rail (2)	Basic dynamic load rating (3)	Basic static load rating (3)	Static moment rating (3)		
LRWX series (No C-Lube)	Slide unit	Track rail	H	H_1	N	W_1	W_2	W_3	W_4	L_1	L_2	L_3	L_5	L_6	d_1	H_2		H_3	H_5	W	H_4	d_3	d_4	h	E	F	Bolt size× ℓ	C	C_0	T_0	T_X	T_Y
	kg	kg/m																									N	N	N · m	N · m	N · m
LRWXH 35	2.51	6.66	48	6.5	34.5	105	104	86	9	154	75	108.4	12.8	60	9	12		10	7	35	32	11	17.5	14	30	60	M10×35	49 900	91 100	2 150	1 660 9 450	1 660 9 450
LRWXH 45	5.18	10.3	60	8	41.5	129	128	108	10	205	105	144	18.5	80	11	15		14.5	10	45	39	14	20	16	40	80	M12×40	93 300	167 000	5 000	4 030 23 000	4 030 23 000
LRWXH 55	9.08	15.3	70	9	49.5	–	154	130	12	262	135	189	24.5	106	14	18		16	10	55	47	18	26	21	50	100	M16×50	186 000	330 000	12 200	10 700 57 900	10 700 57 900
LRWXH 75	19.7	25.1	90	10	59.5	197	194	164	15	346	180	240	45	134	18	24		20	16	75	57	26	39	30	60	120	M24×60	298 000	518 000	25 200	20 900 121 000	20 900 121 000

Notes (1) Track rail lengths L are shown in Table 2 on page Ⅱ−221.
(2) The appended track rail mounting bolts are hexagon socket head bolts equivalent to JIS B 1176.
(3) The direction of basic dynamic load rating (C), basic static load rating (C_0), and static moment rating (T_0, T_X, T_Y) are shown in the sketches below. The upper values of T_X and T_Y are for one slide unit and the lower values are for two slide units in close contact.
(4) The shapes of grease nipple vary by size. The specifications are shown in Table 10 on page Ⅱ−225.



Example of identification number of assembled set

Model code	Dimensions	Part code		Preload symbol	Classification symbol	Supplemental code
LRWXH	35	C2	R840	T1	P	/W2
①	②	③	④	⑤	⑥	⑦

① Model
LRWXH — Flange type mounting from bottom

② Size
35, 45, 55, 75

③ Number of slide unit (2)

④ Length of track rail (840 mm)

⑤ Preload amount

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

⑥ Accuracy class

H	High
P	Precision
SP	Super precision
UP	Ultra precision

⑦ Special specification
A, D, E, F, HP, Ⅰ, J
L, LF, Q, V, W, Y, Z

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