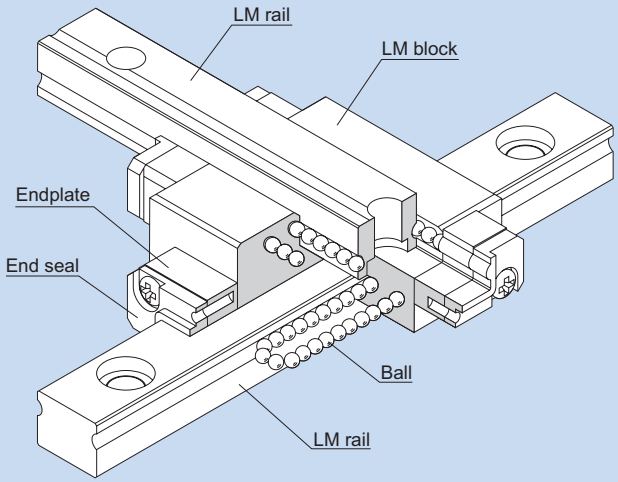
MX

LM Guide
Miniature Cross Guide Model MX



Structure and Features

Balls roll in two rows of raceways precision-ground on an LM rail and an LM block, and endplates incorporated in the LM block allow the balls to circulate. This model is an integral type of LM Guide that squares a unit of miniature LM Guide model RSR with another and uses two LM rails in combination. Since an orthogonal LM system with an extremely low height can be achieved with model MX alone, a conventionally required saddle is no longer necessary and the whole system can be downsized.

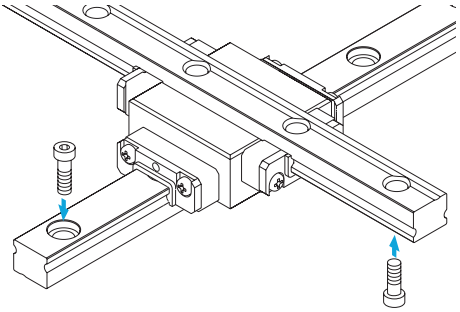
[4-way Equal Load Type]
Each row of balls is placed at a contact angle of 45° so that the rated loads applied to the LM block are uniform in the four directions (radial, reverse radial and lateral directions), enabling the LM Guide to be used in all orientations.

[Tapped-hole LM Rail Type]
There are two types of the LM rail: one designed to be mounted from the top with bolts, and a semi-standard type whose bottom face has tapped holes, allowing the rail to be mounted from the bottom.

Model MX

Specification Table⇒B-160

MX is divided into two types: RSR5M cross type and RSR7WM cross type.



Rated Loads in All Directions

Model MX is capable of receiving loads in four directions: radial, reverse radial and lateral directions.
The basic load ratings are defined with an LM rail and an LM block, and uniform in the four directions (radial, reverse radial and lateral directions). Their actual values are provided in the specification table for MX.

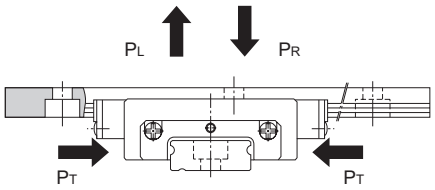


Fig.1

Equivalent Load

When the LM block of model MX receives loads in the radial, reverse radial and lateral directions simultaneously, the equivalent load is obtained from the equation below.

$$P_E = P_R\ (P_L) + P_T$$

P_E : Equivalent load (N)
: Radial direction
: Reverse radial direction
: Lateral direction
P_R : Radial load (N)
P_L : Reverse radial load (N)
P_T : Lateral load (N)

Service Life

For details,see A-100.

Radial Clearance Standard

For details,see A-115.

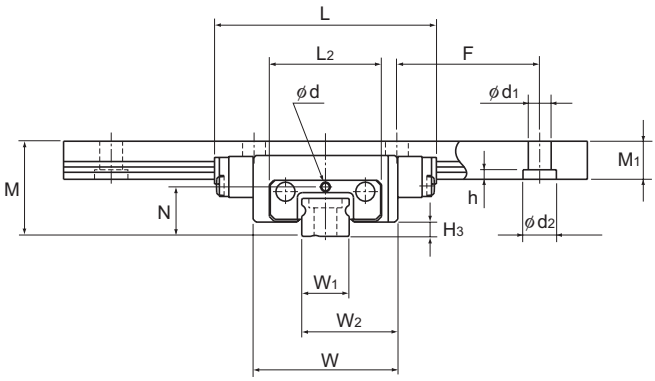
Accuracy Standards

For details,see A-127.

Shoulder Height of the Mounting Base and the Corner Radius

For details,see A-327.

Model MX



Model No.	Outer dimensions			LM block dimensions			
	Height M	Width W	Length L	L_2	N	Greasing hole d	H_3
MX 5M	10	15.2	23.3	11.8	5.2	0.8	1.5
MX 7WM	14.5	30.2	40.8	24.6	7.4	1.2	2

Note) Since stainless steel is used in the LM block, LM rail and balls, these models are highly resistant to corrosion and environment.

Model number coding

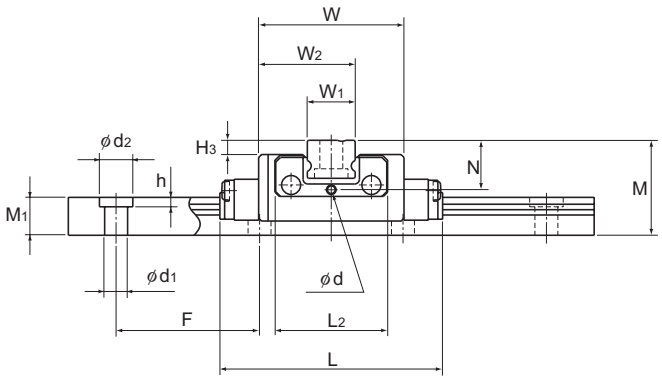
4 MX7W M UU C1 +120 / 100L P T M

- 4 — Total No. of LM blocks
- MX7W M — Model number
- UU — Contamination protection accessory symbol (*1)
- C1 — Radial clearance symbol (*2) Normal (No symbol) Light preload (C1)
- +120 — LM rail length on the X axis (in mm)
- 100L — LM rail length on the Y axis (in mm)
- P — Accuracy symbol (*3) Normal grade (No Symbol)/Precision grade (P)
- T — Symbol for LM rail jointed use
- M — LM rail is made of stainless steel

(*1) See contamination protection accessory on A-368. (*2) See A-115. (*3) See A-127.

Note) If the LM rail mount of a semi-standard model is of a tapped-hole LM rail type, add symbol "K" after the accuracy symbol.

Example: 4 MX7W M UU C1+120/100L P K T M
Add symbol K

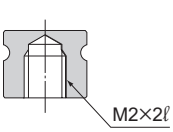


Unit: mm

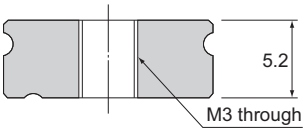
	LM rail dimensions						Basic load rating		Static Permissible Moment* N-m	Mass	
	Width W_1	W_2	Height M_1	Pitch F	$d_1 \times d_2 \times h$	Length* Max	C kN	C_0 kN	M_0	LM block kg	LM rail kg/m
	$5\ {}^{0}_{-0.02}$	10.1	4	15	2.4×3.5×1	200	0.59	1.1	2.57	0.01	0.14
	$14\ {}^{0}_{-0.025}$	22.1	5.2	30	3.5×6×3.2	400	2.04	3.21	14.7	0.051	0.51

Note) The maximum length under "Length*" indicates the standard maximum length of an LM rail. (See B-162.)
Static permissible moment*: static permissible moment value with 1 LM block

For the LM rail mounting hole, a tapped-hole LM rail type is available as semi-standard.



Model MX5M



Model MX7WM

When mounting the LM rail of model MX7WM, take into account the thread length of the mounting bolt in order not to let the bolt end stick out of the top face of the LM rail.

Standard Length and Maximum Length of the LM Rail

Table1 shows the standard lengths and the maximum lengths of model MX variations.

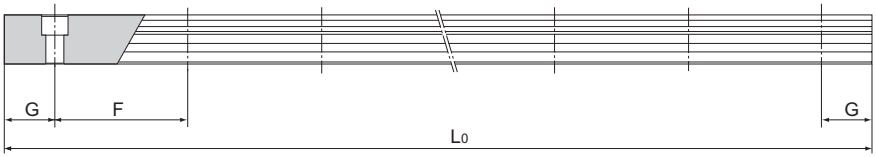


Table1 Standard Length and Maximum Length of the LM Rail for Model MX Unit: mm

Model No.	MX 5	MX 7W
LM rail standard length (L_0)	40 55 70 100 130 160	50 80 110 140 170 200 260 290
Standard pitch F	15	30
G	5	10
Max length	200	400

Note) The maximum length varies with accuracy grades. Contact THK for details.