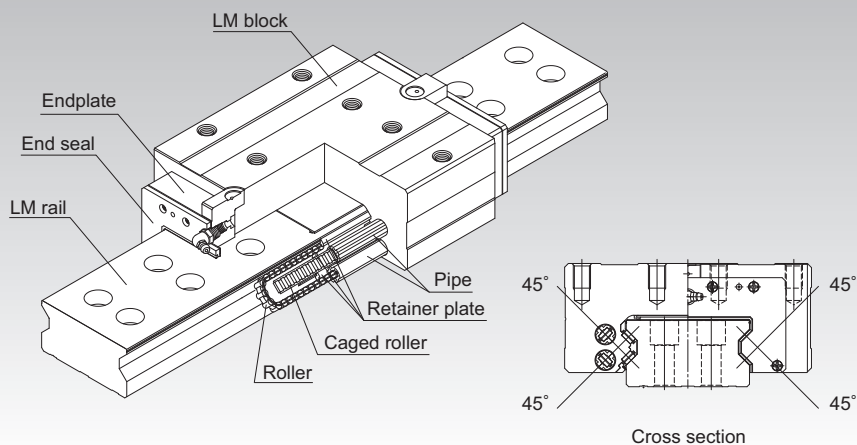


# SRW



## Caged Roller LM Guide Ultra-high Rigidity Type (Wide) Model SRW



\*For the caged roller, see **A1-392**.

**Point of Selection** **A1-10**

**Point of Design** **A1-434**

**Options** **A1-457**

**Model No.** **A1-522**

**Precautions on Use** **A1-528**

**Accessories for Lubrication** **A24-1**

**Mounting Procedure and Maintenance** **B1-89**

Equivalent moment factor **A1-43**

Rated Loads in All Directions **A1-58**

Equivalent factor in each direction **A1-60**

Radial Clearance **A1-72**

Accuracy Standards **A1-84**

Shoulder Height of the Mounting Base and the Corner Radius **A1-446**

Permissible Error of the Mounting Surface **A1-429**

Dimensions of Each Model with an Option Attached **A1-470**

## Structure and Features

Based on Caged Roller LM Guide model SRG, this model has a wider rail and two rows of LM rail mounting holes to achieve high mounting strength and mounting stability. SRW is an ultra-high rigidity Roller Guide that uses roller cages to allow low-friction, smooth motion and achieve long-term maintenance-free operation.

### [Ultra-high Rigidity]

Since it has a wide rail and can be secured on the table using two rows of mounting bolts, the mounting strength is significantly increased. In addition, since the crosswise raceway distance (L) is large, model SRW is structurally strong against a moment load (Mc moment) in the rolling direction. Furthermore, model SRW uses rollers that show little elastic deformation as its rolling elements, and the overall length of each roller is 1.5 times greater than the diameter, thus to increase the rigidity.

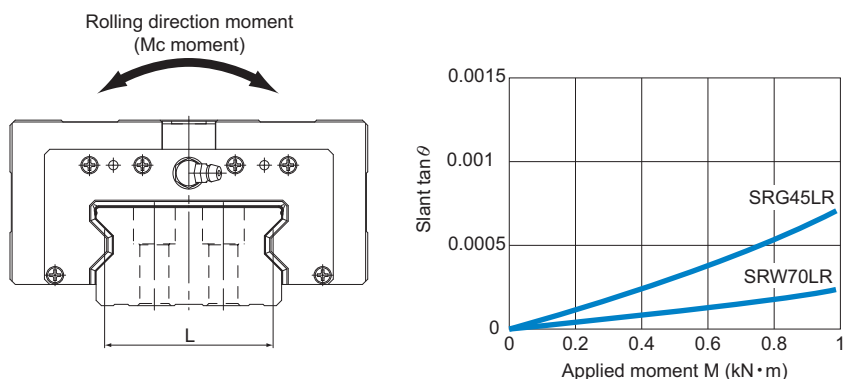


Fig.1 Result of Comparison between Models SRW and SRG in Moment Rigidity in the Rolling Direction (Mc Moment)

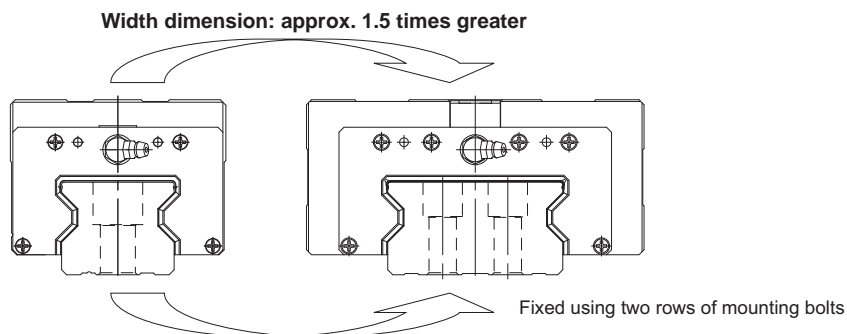


Fig.2 Comparison between Models SRW and SRG in Cross Section

### [Smoothness Achieved through Skewing Prevention]

The roller cage allows rollers to form an evenly spaced line while circulating, thus preventing the rollers from skewing as the block enters an loaded area. As a result, fluctuation of the rolling resistance is minimized, and stable, smooth motion is achieved.

### [Long-term Maintenance-free Operation]

Use of the roller cage eliminates friction between rollers and enables the lubricant to be retained in grease pockets formed between adjacent rollers. As the rollers circulate, the grease pocket serves to provide the required amount of lubricant to the contact curvature of the spacer and the roller, thus to achieve long-term maintenance-free operation.

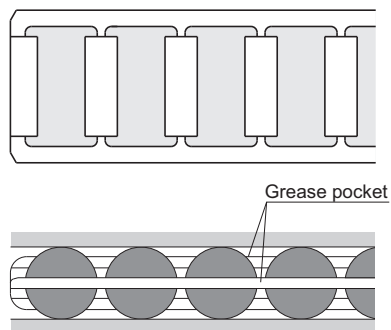


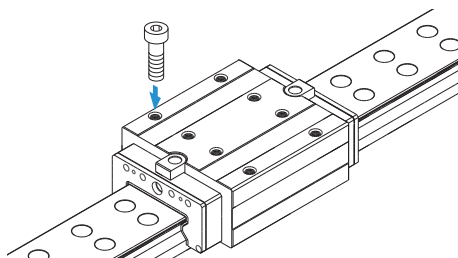
Fig.3

## Types and Features

### Model SRW-LR

The LM block has tapped holes.

Specification Table⇒ **A1-430**



## Permissible Error of the Mounting Surface

The Caged Roller LM Guide Model SRW features high rigidity since the raceway is made up of rollers, preventing roller skew due to the roller cage. However, high machining accuracy is required in the mounting surface. If the error on the mounting surface is large, it will affect the rolling resistance and the service life. The following shows the maximum permissible value (limit value) according to the radial clearance.

Table1 Error in Parallelism (P) between Two Rails

Unit: mm

Radial clearance Model No.	Normal	C1	C0
SRW 70	0.013	0.009	0.007
SRW 85	0.016	0.011	0.008
SRW 100	0.020	0.014	0.011
SRW 130	0.026	0.018	0.014
SRW 150	0.030	0.021	0.016

Table2 Error in Level (X) between Two Rails

Unit: mm

Radial clearance	Normal	C1	C0
Accuracy of the mounting surface X	0.00020a	0.00014a	0.000072a

$$X = X_1 + X_2$$

$X_1$ : Level difference on the rail mounting surface

$X_2$ : Level difference on the block mounting surface

### Example of calculation

When the rail span :

$$a = 500\text{mm}$$

Accuracy of the mounting surface

$$X = 0.0002 \times 500$$

$$= 0.1$$

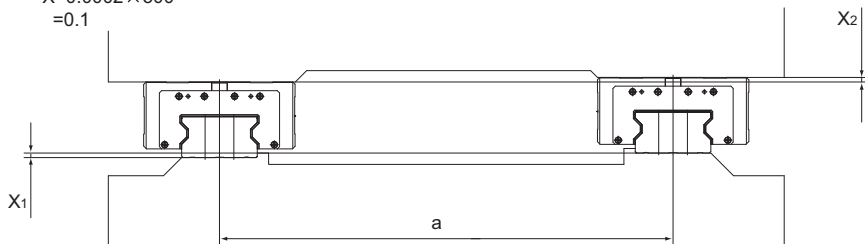


Fig.5

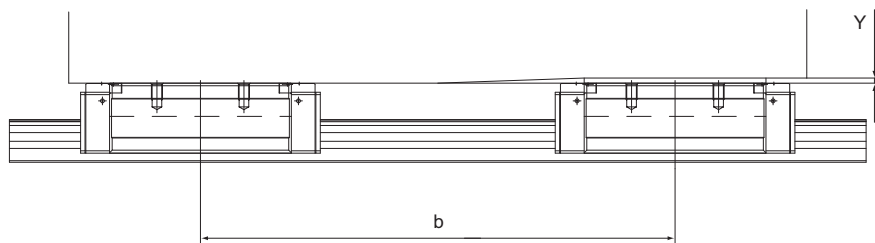


Fig.6

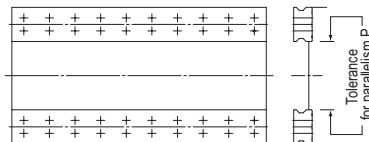


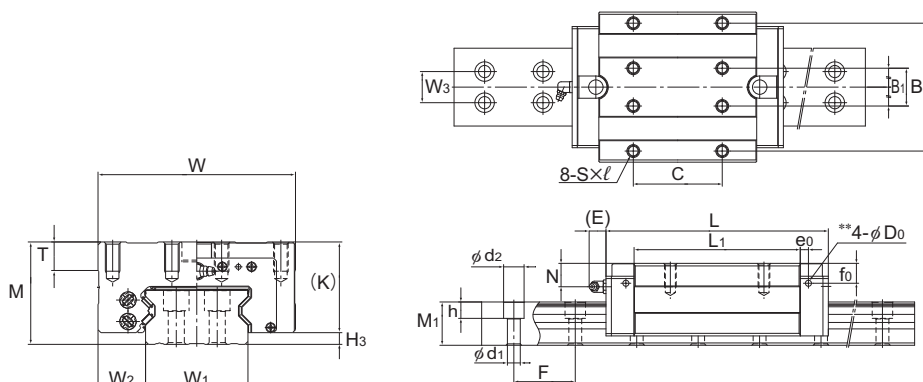
Fig.4

Table3 Error in Level (Y) in the Axial Direction

Unit: mm

Accuracy of the mounting surface	0.000036b
----------------------------------	-----------

# Model SRW-LR



Models SRW70 to 100LR

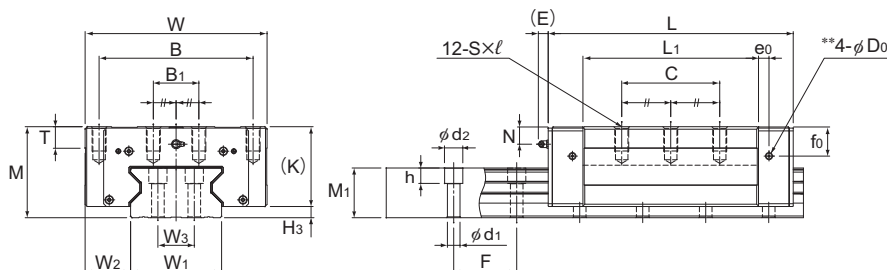
Model No.	Outer dimensions			LM block dimensions													Grease nipple	H <sub>3</sub>
	Height	Width	Length															
	M	W	L	B	B <sub>1</sub>	C	S × l	L <sub>1</sub>	T	K	N	E	e <sub>0</sub>	f <sub>0</sub>	D <sub>0</sub>			
SRW 70LR	70	135	190	115	34	80	M10×20	142	20	62	20	16	7	19	5.2	B-PT1/8	8	
SRW 85LR	80	165	235	140	40	95	M12×19	179.2	28	70	22	16	9	19.5	5.2	B-PT1/8	10	
SRW 100LR	100	200	303	172	50	110	M14×20	229.8	20	88.5	27	16	9	26	5.2	B-PT1/8	11.5	
SRW 130LR	130	260	350	220	65	140	M20×35	250.8	30	114	25	16	15	42	8.2	B-PT1/8	16	
SRW 150LR	150	300	395	260	75	200	M20×40	280.2	35	134	28.8	16	15	53	8.2	B-PT1/4	16	

## Model number coding

<b>SRW70LR</b>	<b>2</b>	<b>QZ</b>	<b>KKHH</b>	<b>C0</b>	<b>+1200L</b>	<b>P</b>	<b>Z</b>	<b>T</b>	<b>-II</b>
Model number	No. of LM blocks used on the same rail	With QZ Lubricator	Contamination protection accessory symbol (*1)	Radial clearance symbol (*2) Normal (No symbol) Light preload (C1) Medium preload (C0)	LM rail length (in mm)	Accuracy symbol (*3) Precision grade (P)/Super precision grade (SP) Ultra precision grade (UP)	With plate cover	Symbol for LM rail jointed use	Symbol for No. of rails used on the same plane (*4)




(\*1) See contamination protection accessory on **A1-494**. (\*2) See **A1-72**. (\*3) See **A1-84**. (\*4) See **A1-13**.

Note) Those models equipped with QZ Lubricator cannot have a grease nipple. When desiring a grease nipple for a model attached with QZ, contact THK.



Models SRW130 and 150LR

Unit: mm

	LM rail dimensions							Basic load rating		Static permissible moment kN-m*					Mass	
	Width			Height	Pitch		Length*	C	C <sub>0</sub>						LM block	LM rail
	W <sub>1</sub> 0 -0.05	W <sub>2</sub>	W <sub>3</sub>	M <sub>1</sub>	F	d <sub>1</sub> × d <sub>2</sub> × h	Max	kN	kN	1 block	Double blocks	1 block	Double blocks	1 block	kg	kg/m
	70	32.5	28	37	52.5	11 × 17.5 × 14	3090	115	256	6.13	32.2	6.13	32.2	10.2	6.3	18.6
	85	40	32	43	60	14 × 20 × 17	3060	167	366	10.8	57	10.8	57	17.5	11.0	26.7
	100	50	38	54	75	16 × 23 × 20	3000	278	599	22.7	120	22.7	120	33.9	21.6	35.9
	130	65	52	71	90	18 × 26 × 22	3000	497	990	45.3	239	45.3	239	74.2	41.7	61.0
	150	75	60	77	105	24 × 35 × 28	3000	601	1170	60	319	60	319	101.6	65.1	74.4

Note1) Model SRW is attached with "SS" as standard.

Note2) This model number indicates that a single-rail unit constitutes one set. (i.e., required number of sets when 2 rails are used in parallel is 2 at a minimum.)

Note3) For the standard LM rail length, see Table4 on **A1-432**.

Note4) The greasing hole on the top face and the pilot hole of the side nipple\*\* are not drilled through in order to prevent foreign material from entering the block.

For details, see **A1-433**.

Note5) The removing/mounting jig is not provided as standard. When desiring to use it, contact THK.

The maximum length under "Length\*" indicates the standard maximum length of an LM rail. (See **A1-432**.)

Static permissible moment\*: 1 block: static permissible moment value with 1 LM block

Double blocks: static permissible moment value with 2 blocks closely contacting with each other

## Standard Length and Maximum Length of the LM Rail

Table4 shows the standard lengths and the maximum lengths of model SRW variations. If the maximum length of the desired LM rail exceeds them, jointed rails will be used.

For the G dimension when a special length is required, we recommend selecting the corresponding G value from the table. The longer the G dimension is, the less stable the G area may become after installation, thus causing an adverse impact to accuracy.

If desiring connected use of this model, be sure to indicate the overall length so that we can manufacture the product without leaving a level difference in the joint.

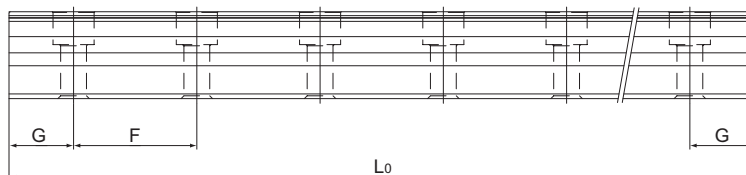


Table4 Standard Length and Maximum Length of the LM Rail for Model SRW

Unit: mm

Model No.	SRW 70	SRW 85	SRW 100	SRW 130	SRW 150
LM rail standard length ( $L_0$ )	570	780	1270	1530	1340
	675	900	1570	1890	1760
	780	1020	2020	2250	2180
	885	1140	2620	2610	2600
	990	1260			
	1095	1380			
	1200	1500			
	1305	1620			
	1410	1740			
	1515	1860			
	1620	1980			
	1725	2100			
	1830	2220			
	1935	2340			
	2040	2460			
	2145	2580			
	2250	2700			
	2355	2820			
	2460	2940			
	2565	3060			
	2670				
	2775				
	2880				
	2985				
Standard pitch F	52.5	60	75	90	105
G	22.5	30	35	45	40
Max length	3090	3060	3000	3000	3000

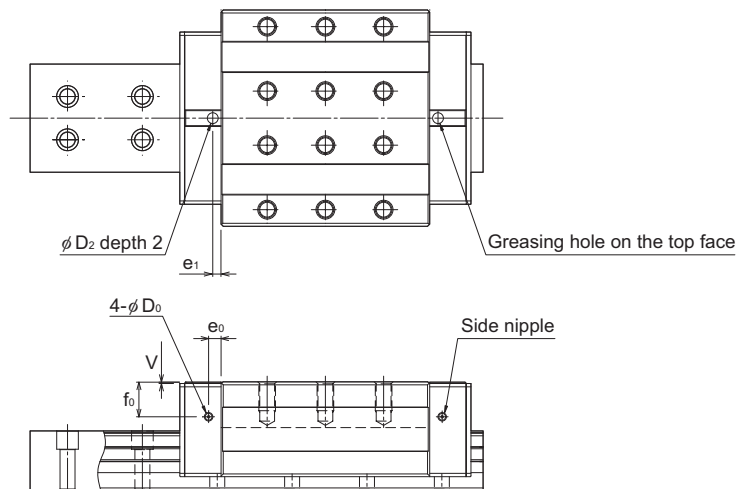
Note1) The maximum length varies with accuracy grades. Contact THK for details.

Note2) If jointed rails are not allowed and a greater length than the maximum values above is required, contact THK.

## Greasing Hole

### [Greasing Hole for Model SRW]

Model SRW allows lubrication from both the side and top faces of the LM block. The greasing hole of standard types is not drilled through in order to prevent foreign material from entering the LM block. When using the greasing hole, contact THK.



Unit: mm

Model No.		Pilot hole for side nipple			Applicable nipple	Greasing hole on the top face		
		e <sub>0</sub>	f <sub>0</sub>	D <sub>0</sub>		D <sub>2</sub> (O-ring)	V	e <sub>1</sub>
SRW	70	7	17	5.2	M6F	13 (P10)	0.4	2.7
	85	9	18.5	5.2	M6F	13 (P10)	0.4	9.9
	100	9	23.5	5.2	M6F	13 (P10)	0.4	10.1
	130	15	42	8.2	PT1/8	13 (P10)	0.4	10
	150	15	53	8.2	PT1/8	13 (P10)	0.4	10

Note) The greasing interval is longer than that of full-roller types because of the roller cage effect. However, the actual greasing interval may vary depending on the service environment, such as a high load and high speed. Contact THK for details.