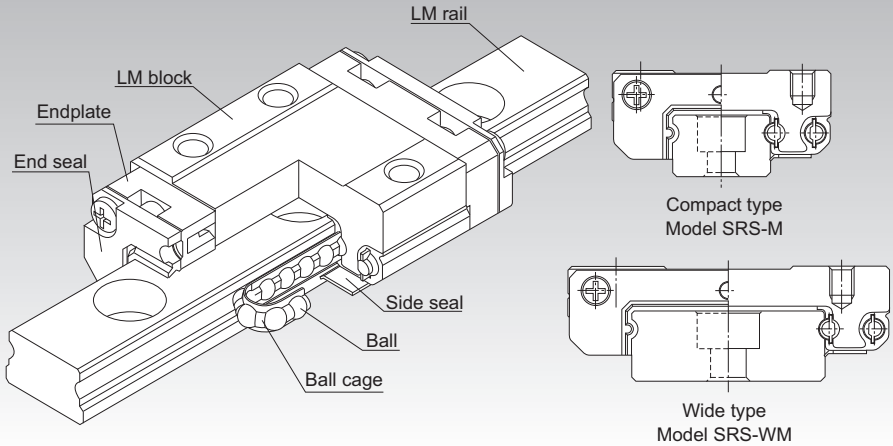


# SRS



## Caged Ball LM Guide Miniature Type Model SRS



\*For the ball cage, see **A1-88**.

<b>Point of Selection</b>	<b>A1-10</b>
<b>Point of Design</b>	<b>A1-450</b>
<b>Options</b>	<b>A1-473</b>
<b>Model No.</b>	<b>A1-537</b>
<b>Precautions on Use</b>	<b>A1-543</b>
<b>Accessories for Lubrication</b>	<b>A24-1</b>
<b>Mounting Procedure and Maintenance</b>	<b>B1-89</b>
<b>Equivalent moment factor</b>	<b>A1-43</b>
<b>Rated Loads in All Directions</b>	<b>A1-58</b>
<b>Equivalent factor in each direction</b>	<b>A1-60</b>
<b>Radial Clearance</b>	<b>A1-70</b>
<b>Accuracy Standards</b>	<b>A1-83</b>
<b>Shoulder Height of the Mounting Base and the Corner Radius</b>	<b>A1-465</b>
<b>Permissible Error of the Mounting Surface</b>	<b>A1-467</b>
<b>Flatness of the Mounting Surface</b>	<b>A1-468</b>
<b>Dimensions of Each Model with an Option Attached</b>	<b>A1-484</b>

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## Structure and Features

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Caged Ball LM Guide model SRS has a structure where two raceways are incorporated into the compact body, enabling the model to receive loads in all directions, and to be used in locations where a moment is applied with a single rail. In addition, use of ball cages eliminates friction between balls, thus achieving high speed, low noise, acceptable running sound, long service life, and long-term maintenance-free operation.

### [Low Dust Generation]

Use of ball cages eliminates friction between balls and retains lubricant, thus achieving low dust generation. In addition, the LM block and LM rail use stainless steel, which is highly resistant to corrosion.

### [Compact]

Since SRS has a compact structure where the rail cross section is designed to be low and that contains only two rows of balls, it can be installed in space-saving locations.

### [Lightweight]

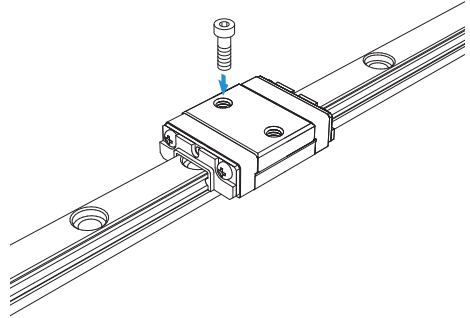
Since part of the LM block (e.g., around the ball relief hole) is made of resin and formed through insert molding, SRS is a lightweight, low inertia type of LM Guide.

## Types and Features

### Model SRS5M

SRS5 is the smallest caged ball LM guide and its mounting dimensions are interchangeable with the conventional RSR5 model.

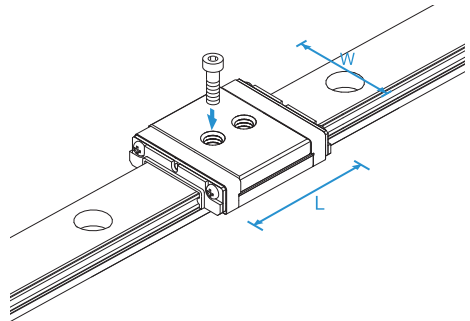
Specification Table⇒ **A1-154**



### Model SRS5WM

This model has a larger overall LM block length (L), width (W), rated load and permissible moment than model SRS5M. Mounting dimensions are interchangeable with RSR5WM.

Specification Table⇒ **A1-154**

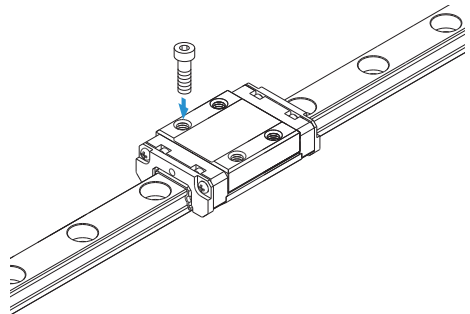


### Model SRS-M

A standard type of SRS.

Note) In addition to model SRS-M, a full-ball type without ball cage is also available. If desiring this type, indicate type "SRS-G" when placing an order. However, since SRS-G does not have a ball cage, its dynamic load rating is smaller than SRS-M. See the table of basic load ratings for SRS-G on **A1-157** for details.

Specification Table⇒ **A1-156**

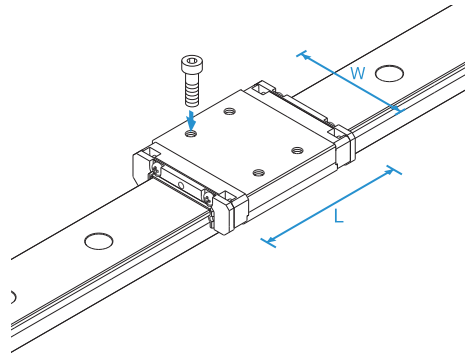


## Model SRS-WM

Has a longer overall LM block length (L), a greater width and a larger rated load and permissible moment than SRS-M.

Note) In addition to model SRS-WM, a full-ball type without ball cage is also available. If desiring this type, indicate type "SRS-G" when placing an order. However, since SRS-G does not have a ball cage, its dynamic load rating is smaller than SRS-WM. See the table of basic load ratings for SRS-G on [A1-159](#) for details.

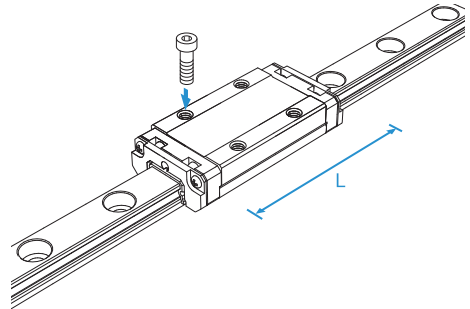
Specification Table⇒ [A1-158](#)



## Model SRS-N

Compared with model SRS-M, it has a longer total LM block length (L) and a higher load rating and permissible moment.

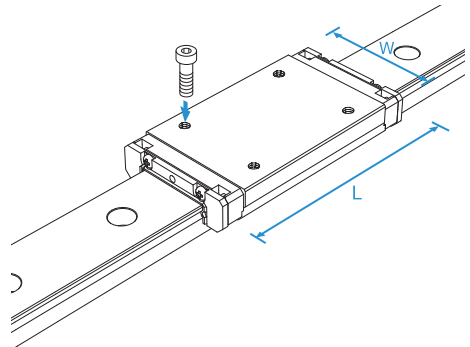
Specification Table⇒ [A1-156](#)



## Model SRS-WN

Compared with model SRS-WM, it has a longer total LM block length (L) and a higher load rating and permissible moment.

Specification Table⇒ [A1-158](#)



## Flatness of the LM Rail and the LM Block Mounting Surface

The values in Table1 apply when the clearance is a normal clearance. If the clearance is C1 clearance and two rails are used in combination, we recommend using 50% or less of the value in the table.

Note) Since SRS has Gothic-arch grooves, any accuracy error in the mounting surface may negatively affect the operation. Therefore, we recommend using SRS on a highly accurate mounting surface.

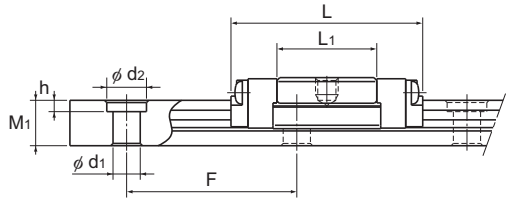
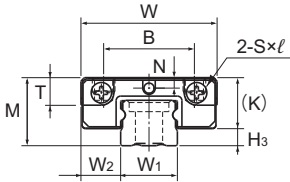
Table1 Flatness of the LM Rail and the LM Block Mounting Surface

Unit: mm

Model No.	Flatness error
SRS 5	0.015/200
SRS 7	0.025/200
SRS 9	0.035/200
SRS 12	0.050/200
SRS 15	0.060/200
SRS 20	0.070/200
SRS 25	0.070/200



# Models SRS5M, SRS5WM



SRS5M

Model No.	Outer dimensions			LM block dimensions							H <sub>3</sub>
	Height	Width	Length	B	C	S × ℓ	L <sub>1</sub>	T	K	N	
	M	W	L								
SRS 5M	6	12	16.9	8	—	M2 × 1.5	8.8	1.7	4.5	0.93	1.5
SRS 5WM	6.5	17	22.1	—	6.5	M <sup>3</sup> through	13.7	2.7	5	1.1	1.5

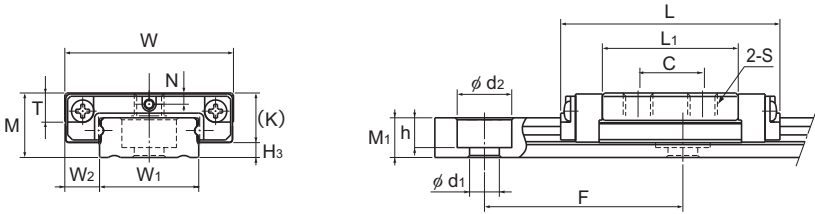
Note) Since stainless steel is used in the LM block, LM rail and balls, these models are highly resistant to corrosion.  
To secure the LM rail of model SRS5M, use cross-recessed head screws for precision equipment (No. 0 pan head screw, class 1) M2.

## Model number coding

<b>2</b>	<b>SRS5WM</b>	<b>UU</b>	<b>C1</b>	<b>+150L</b>	<b>P</b>	<b>M</b>	<b>-II</b>
No. of LM blocks used on the same rail	Model number	Contamination protection accessory symbol (*1)	Radial clearance symbol (*2) Normal (No symbol) Light preload (C1)	LM rail length (in mm)	Accuracy symbol (*3) Normal grade (No Symbol)/Precision grade (P)	Stainless steel LM rail	Symbol for No. of rails used on the same plane (*4)

(\*1) See contamination protection accessory on **A1-510**. (\*2) See **A1-70**. (\*3) See **A1-83**. (\*4) See **A1-13**.

Note) This model number indicates that a single-rail unit constitutes one set. (i.e. If you are using 2 shafts in parallel, the required number of sets is 2.)



SRS5WM

Unit: mm

	LM rail dimensions						Basic Load Rating		Static permissible moment N·m*					Mass	
	Width		Height	Pitch		Length*	C	C <sub>0</sub>	M <sub>A</sub>		M <sub>B</sub>		M <sub>C</sub>	LM block	LM rail
	W <sub>1</sub>	W <sub>2</sub>	M <sub>1</sub>	F	d <sub>1</sub> × d <sub>2</sub> × h	Max	N	N	1 block	Double blocks	1 block	Double blocks	1 block	kg	kg/m
	5 <sup>0</sup> <sub>-0.02</sub>	3.5	4	15	2.4 × 3.5 × 1	220	439	468	0.74	5.11	0.86	5.99	1.21	0.002	0.13
	10 <sup>0</sup> <sub>-0.02</sub>	3.5	4	20	3 × 5.5 × 3	220	584	703	1.57	9.59	1.83	11.24	3.58	0.005	0.27

Note) The maximum length under "Length\*" indicates the standard maximum length of an LM rail. (See **A1-160**.)

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

- Reference bolt tightening torque when mounting an LM block for model SRS 5M/5WM is shown in the table below.

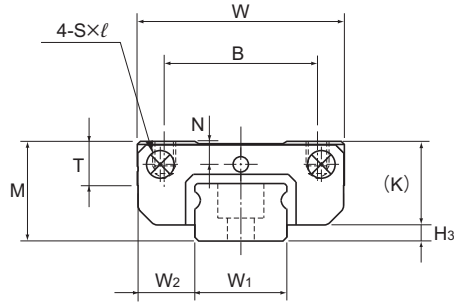
Reference tightening torque

Model No.	Model No. of screw	Screw depth (mm)	Reference tightening torque (N·m)*
SRS 5M	M2	1.5	0.4
SRS 5WM	M3	2.3	0.4

\* Tightening above the tightening torque affects accuracy.  
Be sure to tighten at or below the defined tightening torque.



# Models SRS-S, SRS-M and SRS-N



Model No.	Outer dimensions			LM block dimensions							H <sub>3</sub>
	Height	Width	Length	B	C	S × l	L <sub>1</sub>	T	K	N	
	M	W	L								
SRS 7M	8	17	23.4	12	8	M2 × 2.3	13.4	3.3	6.7	1.6	1.3
SRS 9XS SRS 9XM SRS 9XN	10	20	21.5 30.8 40.8	15	— 10 16	M3 × 2.8	10.5 19.8 29.8	4.5	8.5	2.4	1.5
SRS 12M SRS 12N	13	27	34.4 47.1	20	15 20	M3 × 3.2	20.6 33.3	5.7	11	3	2
SRS 15M SRS 15N	16	32	43 60.8	25	20 25	M3 × 3.5	25.7 43.5	6.5	13.3	3	2.7
SRS 20M	20	40	50	30	25	M4 × 6	34	9	16.6	4	3.4
SRS 25M	25	48	77	35	35	M6 × 7	56	11	20	5	5

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

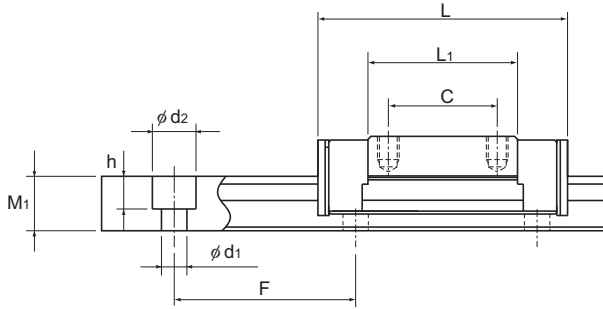
## Model number coding

**2 SRS20M QZ UU C1 +220L P M - II**

2	SRS20M	QZ	UU	C1	+220L	P	M	- II
Model number	With QZ Lubricator	Contamination protection accessory symbol (*1)	LM rail length (in mm)	Stainless steel LM rail	Symbol for No. of rails used on the same plane (*4)			
No. of LM blocks used on the same rail	Radial clearance symbol (*2) Normal (No symbol) Light preload (C1)		Accuracy symbol (*3) Normal grade (No Symbol)/High accuracy grade (H) Precision grade (P)					

(\*1) See contamination protection accessory on **A1-510**. (\*2) See **A1-70**. (\*3) See **A1-83**. (\*4) See **A1-13**.

Note) 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.)  
Those models equipped with QZ Lubricator cannot have a grease nipple.



Unit: mm

LM rail dimensions						Basic load rating		Static permissible moment N·m*					Mass	
Width	Height	Pitch		Length*		C	C <sub>0</sub>	M <sub>A</sub>		M <sub>B</sub>		M <sub>C</sub>	LM block	LM rail
W <sub>1</sub>	W <sub>2</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
7 <sup>0</sup> <sub>-0.02</sub>	5	4.7	15	2.4 × 4.2 × 2.3	480	1.51	1.29	3.09	19	3.69	22.1	5.02	0.009	0.25
9 <sup>0</sup> <sub>-0.02</sub>	5.5	5.5	20	3.5 × 6 × 3.3	1240	1.78 2.69 3.48	1.53 2.75 3.98	3.15 9.31 18.7	22.2 52.2 96.5	3.61 10.7 21.6	25.6 60.3 112	7.04 12.7 18.3	0.009 0.016 0.024	0.36
12 <sup>0</sup> <sub>-0.02</sub>	7.5	7.5	25	3.5 × 6 × 4.5	1430	4 5.82	3.53 5.30	12 28.4	78.5 151	12 28.4	78.5 151	23.1 34.7	0.027 0.049	0.65
15 <sup>0</sup> <sub>-0.02</sub>	8.5	9.5	40	3.5 × 6 × 4.5	1600	6.66 9.71	5.7 8.55	26.2 59.7	154 312	26.2 59.7	154 312	40.4 60.7	0.047 0.095	0.96
20 <sup>0</sup> <sub>-0.03</sub>	10	11	60	6 × 9.5 × 8	1800	7.75	9.77	54.3	296	62.4	341	104	0.11	1.68
23 <sup>0</sup> <sub>-0.03</sub>	12.5	15	60	7 × 11 × 9	1800	16.5	20.2	177	932	177	932	248	0.24	2.6

Note) If a grease nipple is required, indicate "with grease nipple". (available for models SRS 15M/15N/15WM/15WN/20M/25M)  
 If a greasing hole is required, indicate "with greasing hole". (available for models SRS 7M/7WM/9WM/9WN/12M/12N/12WM/12WN)  
 The maximum length under "Length\*" indicates the standard maximum length of an LM rail. (See **A1-160**.)

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

SRS-G (Full-ball Type) Basic Load Ratings

Model No.	Basic load rating	
	C	C <sub>0</sub>
	kN	kN
SRS 7GM	1.16	1.54
SRS 9XGS	1.37	1.53
SRS 9XGM	2.22	3.06
SRS 9XGN	2.94	4.59
SRS 12GM	3.36	3.55
SRS 15GM	5.59	5.72
SRS 20GM	5.95	9.40
SRS 25GM	13.3	22.3

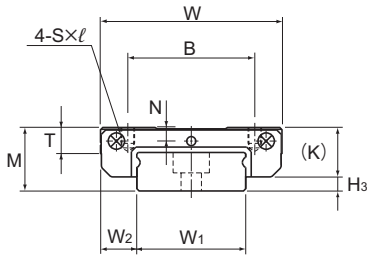
- Reference bolt tightening torque when mounting an LM block for model SRS 7M is shown in the table below.

Reference tightening torque

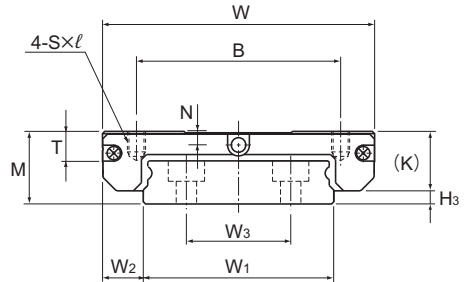
Model No.	Model No. of screw	Screw depth (mm)	Reference tightening torque (N·m)*
SRS 7M	M2	2.3	0.4

\* Tightening above the tightening torque affects accuracy.  
 Be sure to tighten at or below the defined tightening torque.

# Models SRS-WM and SRS-WN



Models SRS7WM/9, 12WM/WN



Models SRS15WM/WN

Model No.	Outer dimensions			LM block dimensions							H <sub>3</sub>
	Height	Width	Length	B	C	S × l	L <sub>1</sub>	T	K	N	
	M	W	L								
SRS 7WM	9	25	31	19	10	M3 × 2.8	20.4	3.8	7.2	1.8	1.8
SRS 9WM SRS 9WN	12	30	39 50.7	21 23	12 24	M3 × 2.8	27 38.7	4.9	9.1	2.3	2.9
SRS 12WM SRS 12WN	14	40	44.5 59.5	28	15 28	M3 × 3.5	30.9 45.9	5.7	11	3	3
SRS 15WM SRS 15WN	16	60	55.5 74.5	45	20 35	M4 × 4.5	38.9 57.9	6.5	13.3	3	2.7

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

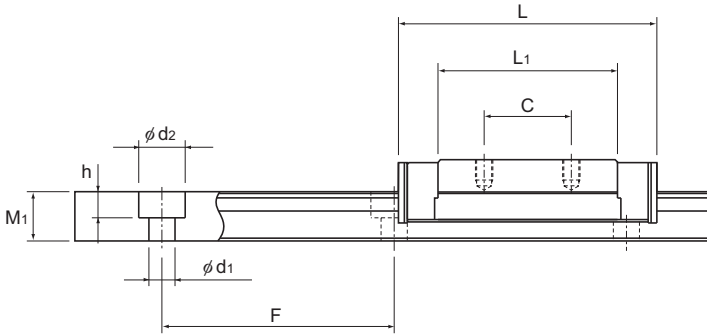
## Model number coding

**2 SRS15WM QZ UU C1 +550L P M - II**

Model number	With QZ Lubricator	Contamination protection accessory symbol (*1)	LM rail length (in mm)	Stainless steel LM rail	Symbol for No. of rails used on the same plane (*4)
No. of LM blocks used on the same rail		Radial clearance symbol (*2) Normal (No symbol) Light preload (C1)		Accuracy symbol (*3) Normal grade (No Symbol)/High accuracy grade (H) Precision grade (P)	

(\*1) See contamination protection accessory on **A1-510**. (\*2) See **A1-70**. (\*3) See **A1-83**. (\*4) See **A1-13**.

Note) 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.)  
Those models equipped with QZ Lubricator cannot have a grease nipple.



Unit: mm

	LM rail dimensions							Basic load rating		Static permissible moment N-m*						Mass	
	Width		W <sub>3</sub>	Height/Pitch		Length*	C	C <sub>0</sub>	M <sub>A</sub>		M <sub>B</sub>		M <sub>C</sub>	LM block	LM rail		
	W <sub>1</sub>	W <sub>2</sub>		M <sub>1</sub>	F				d <sub>1</sub> × d <sub>2</sub> × h	Max	kN	kN				1 block	Double blocks
14	<sup>0</sup> <sub>-0.02</sub>	5.5	—	5.2	30	3.5×6×3.2	480	2.01	1.94	6.47	36.4	7.71	42.3	14.33	0.018	0.56	
18	<sup>0</sup> <sub>-0.02</sub>	6	—	7.5	30	3.5×6×4.5	1430	3.29 4.20	3.34 4.37	14 25.1	78.6 130	16.2 29.1	91 151	31.5 41.3	0.031 0.049	1.01	
24	<sup>0</sup> <sub>-0.02</sub>	8	—	8.5	40	4.5×8×4.5	1600	5.48 7.13	5.3 7.07	26.4 49.2	143 249	26.4 49.2	143 249	66.5 88.7	0.055 0.091	1.52	
42	<sup>0</sup> <sub>-0.02</sub>	9	23	9.5	40	4.5×8×4.5	1800	9.12 12.4	8.55 12.1	51.2 106	290 532	51.2 106	290 532	176 250	0.13 0.201	2.87	

Note) If a grease nipple is required, indicate "with grease nipple". (available for models SRS 15M/15N/15WM/15 WN/20M/25M)  
 If a greasing hole is required, indicate "with greasing hole". (available for models SRS 7M/7WM/9M/9N/9W M/9WN/12M/12N/12WM/12WN).  
 The maximum length under "Length\*" indicates the standard maximum length of an LM rail. (See **A1-160**.)  
 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

SRS-G (Full-ball Type) Basic Load Ratings

Model No.	Basic load rating	
	C kN	C <sub>0</sub> kN
SRS 7WGM	1.63	2.51
SRS 9WGM	2.67	3.35
SRS 12WGM	4.46	5.32
SRS 15WGM	7.43	8.59

- Reference bolt tightening torque when mounting an LM block for model SRS 7WM is shown in the table below.

Reference tightening torque

Model No.	Model No. of screw	Screw depth (mm)	Reference tightening torque (N·m)*
SRS 7WM	M3	2.8	0.4

\* Tightening above the tightening torque affects accuracy.  
 Be sure to tighten at or below the defined tightening torque.

## Standard Length and Maximum Length of the LM Rail

Table2 shows the standard lengths and the maximum lengths of model SRS variations. If the maximum length of the desired LM rail exceeds them, jointed rails will be used. Contact THK for details. 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.

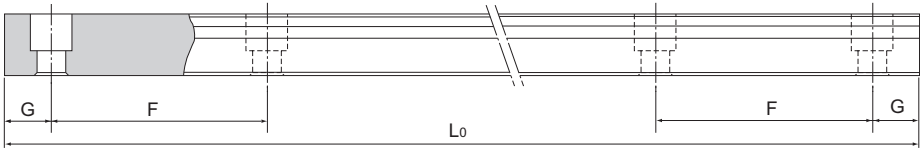


Table2 Standard Length and Maximum Length of the LM Rail for Model SRS

Unit: mm

Model No.	SRS 5M	SRS 5WM	SRS 7M	SRS 7WM	SRS 9XS/XM/XN	SRS 9WM/WN	SRS 12M/N	SRS 12WM/WN	SRS 15M/N	SRS 15WM/WN	SRS 20M	SRS 25M
LM rail standard length (L <sub>0</sub> )	40	50	40	50	55	50	70	70	70	110	220	220
	55	70	55	80	75	80	95	110	110	150	280	280
	70	90	70	110	95	110	120	150	150	190	340	340
	100	110	85	140	115	140	145	190	190	230	460	460
	130	130	100	170	135	170	170	230	230	270	640	640
	160	150	115	200	155	200	195	270	270	310	880	880
			170	130	260	175	260	220	310	310	430	1000
				290	195	290	245	390	350	550		
					275	320	270	470	390	670		
					375		320	550	430	790		
							370		470			
							470		550			
							570		670			
								870				
Standard pitch F	15	20	15	30	20	30	25	40	40	40	60	60
G	5	5	5	10	7.5	10	10	15	15	15	20	20
Max length	220	220	480	480	1240	1430	1430	1600	1600	1800	1800	1800

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

### [Grease Nipple and Greasing Hole for Model SRS]

The standard version of Model SRS is not equipped with either a grease nipple or an oil hole. Grease nipple installation and greasing hole drilling are performed at THK. When ordering SRS, indicate that the desired model requires a grease nipple or greasing hole. Model SRS-G (full-ball type) has a grease nipple and a greasing hole as standard. (For greasing hole dimensions and supported grease nipple types and dimensions, see Table3.)

When using SRS under harsh conditions, use QZ Lubricator\* (optional) or Laminated Contact Scraper LaCS\* (optional).

Note1) Grease nipple is not available for models SRS5M, SRS5WM, SRS7M, SRS7WM, SRS9XS, SRS9XM, SRS9XN, SRS9WM, SRS12M and SRS12WM. They can have a greasing hole.

Note2) Using a greasing hole other than for greasing may cause damage.

Note3) For QZ Lubricator\*, see **A1-502**. For Laminated Contact Scraper LaCS\*, see **A1-479**.

Note4) When desiring a grease nipple for a model attached with QZ Lubricator, contact THK.

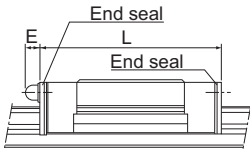


Fig.1 Dimensions of the Grease Nipple for Model SRS

Note) For the L dimension, see the corresponding specification table.

Table3 Table of Grease Nipple and Greasing Hole Dimensions

Unit: mm

Model No.	E	Grease nipple or greasing hole	
SRS	5M	—	
	5WM	—	
	7M	—	
	7WM	—	
	9XS/XM/XN	—	
	9 WM/WN	—	
	12 M/N	—	
	12 WM/WN	—	
	15 M/N	4.0 (5.0)	PB107
	15 WM/WN	4.0 (5.0)	PB107
	20M	3.5 (5.0)	PB107
	25M	4.0 (5.5)	PB1021B
SRS-G	7GM	—	
	7WGM	—	
	9XGS/ XGM/XGN	—	
	9WGM	—	
	12GM	—	
	12WGM	—	
	15GM	4.0 (5.0)	PB107
	15WGM	4.0 (5.0)	PB107
	20GM	3.5 (5.0)	PB107
	25GM	4.0 (5.5)	PB1021B

Note) Figures in the parentheses indicate dimensions without a seal.