

## Global Standard Type LM Guide Model SHS

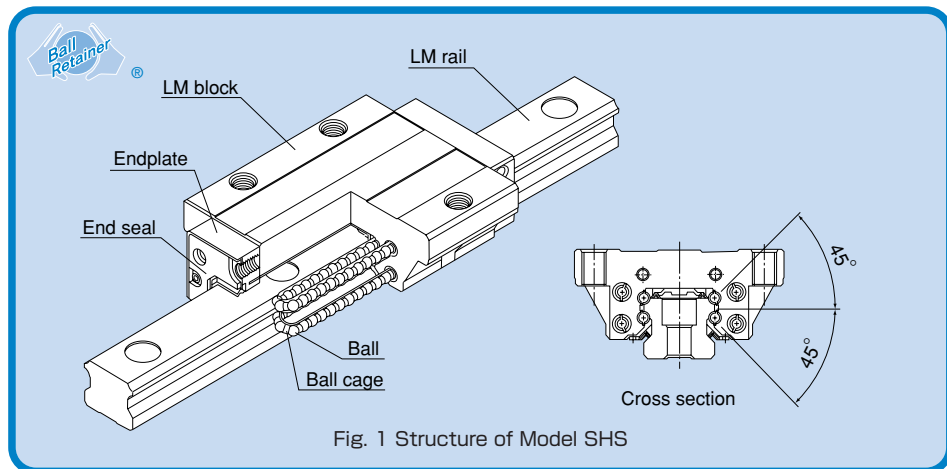


Fig. 1 Structure of Model SHS

## Structure and Features

Balls roll in four rows of raceways precision-ground on an LM rail and an LM block, and ball cages and endplates incorporated in the LM block allow the balls to circulate.

Each row of balls is placed at a contact angle of  $45^\circ$  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. In addition, the LM block can receive a well-balanced preload, increasing the rigidity in the four directions while maintaining a constant, low friction coefficient. With the low sectional height and the high rigidity design of the LM block, SHS achieves highly accurate and stable linear motion.

### 4-way equal load

Each row of balls is placed at a contact angle of  $45^\circ$  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 and in extensive applications.

### Self-adjustment capability

The self-adjustment capability through front-to-front configuration of THK's unique circular-arc grooves (DF set) enables a mounting error to be absorbed even under a preload, thus to achieve highly accurate, smooth linear motion.

### Global standard size

SHS is designed to have dimensions almost the same as that of model HSR, which THK as a pioneer of the linear motion system has developed and is practically a global standard model.

### Low gravity center, high rigidity

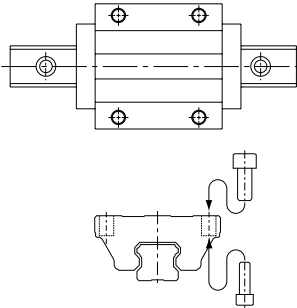
As a result of downsizing the LM rail section, the center of gravity is lowered and the rigidity is increased.

## Types and Features

### Model SHS-C

The flange of the LM block has tapped holes.

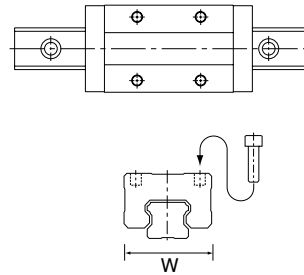
Can be mounted from the top or the bottom.  
Used in places where the table cannot have through holes for mounting bolts.



### Model SHS-V

The LM block has a smaller width (W) and is equipped with tapped holes.

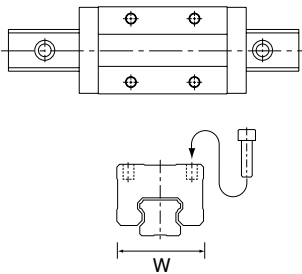
Suitable for places where space for the table width is limited.



### Model SHS-R

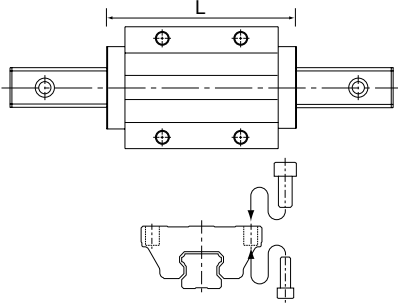
The LM block has a smaller width (W) and the mounting holes are tapped.

It exceeds the height dimension of full-ball type LM Guide HSR-R.



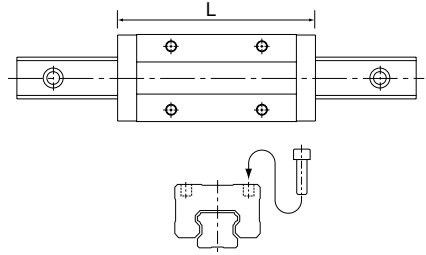
### Model SHS-LC

The LM block has the same sectional shape as model SHS-C, but has a longer overall LM block length (L) and a greater rated load.



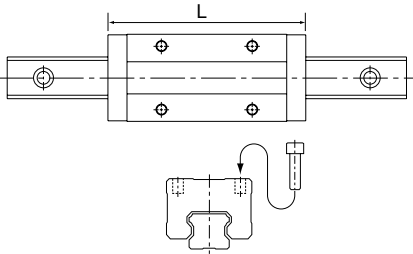
### Model SHS-LV

The LM block has the same sectional shape as model SHS-V, but has a longer overall LM block length (L) and a greater rated load.



### Model SHS-LR

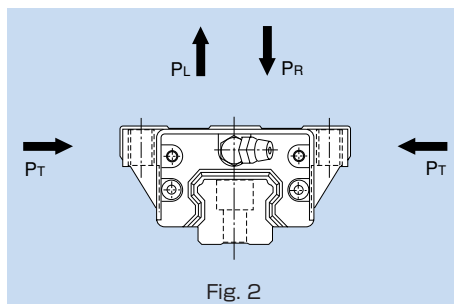
The LM block has the same sectional shape as model SHS-R, but has a longer overall LM block length (L) and a greater rated load.



## Rated Loads in All Directions

Model SHS is capable of receiving loads in all four directions: radial, reverse-radial and lateral directions.

The basic load ratings are uniform in the four directions (radial, reverse-radial and lateral directions), and their actual values are provided in the dimensional table for SHS.



## Equivalent Load

When the LM block of model SHS receives loads in all directions simultaneously, the equivalent load is obtained from the equation below.

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

where

$P_E$	: 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)

## Options

### Dust Prevention Accessories

THK offers various dust prevention accessories for model SHS.

When a dust prevention accessory is required, specify the desired item with the corresponding symbol provided in table 1 (for details of dust prevention accessories, see pages a-24 and a-25).

For supported model numbers for dust prevention accessories and overall LM block length with dust prevention accessories attached (dimension L), see page a-150.

Table 1 Symbols of Dust Prevention Accessories for Model SHS

Symbol	Dust prevention accessory
UU	With end seal
SS	With end seal + side seal + inner seal
DD	With double seals + side seal + inner seal
ZZ	With end seal + side seal + inner seal + metal scraper
KK	With double seals + side seal + inner seal + metal scraper
SSH	With end seal + side seal + inner seal + LaCS
DDH	With double seals + side seal + inner seal + LaCS
ZZH	With end seal + side seal + inner seal + metal scraper + LaCS
KKH	With double seals + side seal + inner seal + metal scraper + LaCS

### Seal resistance value

For the maximum seal resistance value per LM block when a lubricant is applied on seal SHS ... SS, refer to the corresponding value provided in table 2.

Table 2 Maximum Seal Resistance Value of Seal SHS ... SS

Model No.	Unit: N	
	Seal resistance value	
SHS 15	4.5	
SHS 20	7.0	
SHS 25	10.5	
SHS 30	17.0	
SHS 35	20.5	
SHS 45	30.0	
SHS 55	31.5	
SHS 65	43.0	

### ●Dedicated Bellows JSH for Model SHS

The table below shows the dimensions of dedicated bellows JSH for model SHS. Specify the corresponding model number of the desired bellows from the table.

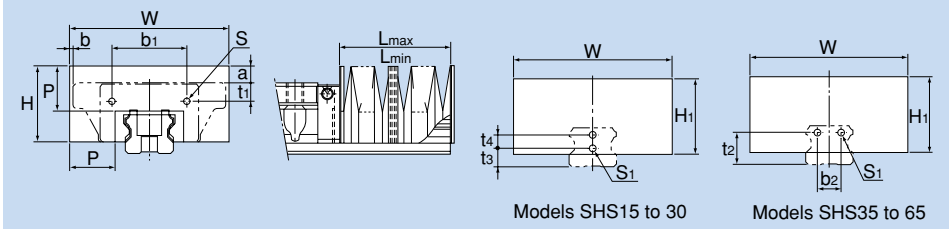


Table 3 Dimensional Table for JSH

Model No.	Major dimensions (mm)												Supported model
	W	H	H <sub>1</sub>	P	b <sub>1</sub>	t <sub>1</sub>			b <sub>2</sub>	t <sub>2</sub>	t <sub>3</sub>	t <sub>4</sub>	
						Type C	Type V	Type R					
JSH 15	53	26	26	15	22.4	4	4	8	—	—	8	—	SHS 15
JSH 20	60	30	30	17	27.6	7.5	7.5	—	—	—	8	6	SHS 20
JSH 25	75	36	36	20	38	9.1	9.1	13.1	—	—	9	7	SHS 25
JSH 30	80	38	38	20	44	11	11	14	—	—	11	8	SHS 30
JSH 35	86	40.5	40.5	20	50	11	11	18	20	21.5	—	—	SHS 35
JSH 45	97	46	46	20	64.6	13.5	13.5	23.5	26	26.5	—	—	SHS 45
JSH 55	105	48	48	20	68	13	13	23	30	31.5	—	—	SHS 55
JSH 65	126	63	63	25	80	18	18	—	34	45	—	—	SHS 65

Supported model	Mounting bolt		Other dimensions (mm)						$\frac{A}{L_{max} - L_{min}}$
	S	S <sub>1</sub>	Type C	Type V	Type R	Type C	Type V	Type R	
SHS 15	M2X8 ℓ	M4X8 ℓ	5	5	1	3	9.5	9.5	5
SHS 20	M2.6X8 ℓ	M3X6 ℓ	5	5	—	- 1.5	8	—	6
SHS 25	M3X8 ℓ	M3X6 ℓ	6	6	2	2.5	13.5	13.5	7
SHS 30	M3X10 ℓ	M3X6 ℓ	3	3	0	- 5	10	10	7
SHS 35	M4X10 ℓ	M4X8 ℓ	0	0	- 7	- 7	8	8	7
SHS 45	M4X12 ℓ	M4X8 ℓ	-5	-5	-15	-11.7	5.5	5.5	7
SHS 55	M5X12 ℓ	M5X10 ℓ	-9	-9	-19	-17.5	2.5	2.5	7
SHS 65	M6X14 ℓ	M6X12 ℓ	-8	-8	—	-22	0	—	9

Note 1: When desiring to use the dedicated bellows other than in horizontal mount (i.e., vertical, wall and inverted mount), or when desiring a heat-resistant type of bellows, contact THK.

Note 2: For lubrication when using the dedicated bellows, contact THK.

Note 3: When using the dedicated bellows, the LM block and LM rail need to be machined so that the bellows can be mounted. Be sure to indicate that the dedicated bellows is required when ordering SHS.

#### Model number coding JSH35-60/420

1

2

1 Model number ... bellows for SHS35

2 Bellows dimensions (length when compressed / length when extended)

Note: The length of the bellows is calculated as follows.

$$L_{min} = \frac{S}{(A-1)} \quad S: \text{Stroke length (mm)}$$

$$L_{max} = L_{min} \cdot A \quad A: \text{Extension rate}$$

## ●Dedicated Cap C for LM Rail Mounting Holes

If any of the LM rail mounting holes of an LM Guide is filled with cutting chips or foreign matter, they may enter the LM block structure. Entrance of such foreign matter can be prevented by covering each LM rail mounting hole with the dedicated cap so that the top of the mounting holes are on the same level as the LM rail top face.

Since the dedicated cap C for LM rail mounting holes uses a special synthetic resin with high oil resistance and high wear resistance, it is highly durable.

When placing an order, specify the desired cap type with the corresponding cap number indicated in table 4.

For the procedure for mounting the cap, see page a-22.

## ●Steel Tape SP

By covering the LM rail mounting holes with an ultra thin stainless steel (SUS304) plate, the steel tape SP further increases sealability of the end seal, thus to prevent foreign matter and water from entering the top face of the LM rail.

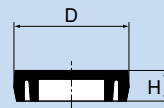
For the mounting procedure, see page a-28.

Note 1: To mount the steel tape, the LM block needs to be removed from the LM rail. It requires an LM block removing/mounting jig. Contact THK for details.

Note 2: When mounting the steel tape, the LM rail needs to be machined. Indicate that the steel tape is required when ordering the LM Guide.

Table 4 Major Dimensions of Dedicated Cap C

Model No.	Cap C model No.	Bolt used	Major dimensions mm	
			D	H
SHS 15	C 4	M 4	7.8	1.0
SHS 20	C 5	M 5	9.8	2.4
SHS 25	C 6	M 6	11.4	2.7
SHS 30	C 8	M 8	14.4	3.7
SHS 35	C 8	M 8	14.4	3.7
SHS 45	C12	M12	20.5	4.7
SHS 55	C14	M14	23.5	5.7
SHS 65	C16	M16	26.5	5.7



Dedicated Cap C

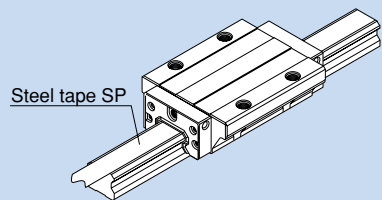


Fig. 3

Note: The steel tape is available for models SHS15 to 65.

## QZ Lubricator™

When QZ Lubricator is required, specify the desired type with the corresponding symbol indicated in table 5 (for details of QZ Lubricator, see pages a-19 and a-20).

For supported LM Guide model numbers for QZ Lubricator and overall LM block length with QZ Lubricator attached (dimension L), see page a-150.

Table 5 Parts Symbols for Model SHS with QZ Lubricator Attached

Symbol	Dust prevention accessories for LM Guide with QZ Lubricator attached
QZUU	With end seal + QZ Lubricator
QZSS	With end seal + side seal + inner seal + QZ Lubricator
QZDD	With double seals + side seal + inner seal + QZ Lubricator
QZZZ	With end seal + side seal + inner seal + metal scraper + QZ Lubricator
QZKK	With double seals + side seal + inner seal + metal scraper + QZ Lubricator
QZSSHH	With end seal + side seal + inner seal + LaCS + QZ Lubricator
QZDDHH	With double seals + side seal + inner seal + LaCS + QZ Lubricator
QZZZHH	With end seal + side seal + inner seal + metal scraper + LaCS + QZ Lubricator
QZKKHH	With double seals + side seal + inner seal + metal scraper + LaCS + QZ Lubricator



## Standard Length and Maximum Length of the LM Rail

Table 6 shows the standard lengths and the maximum lengths of model SHS variations. If the maximum length of the desired LM rail exceeds them, connected 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.

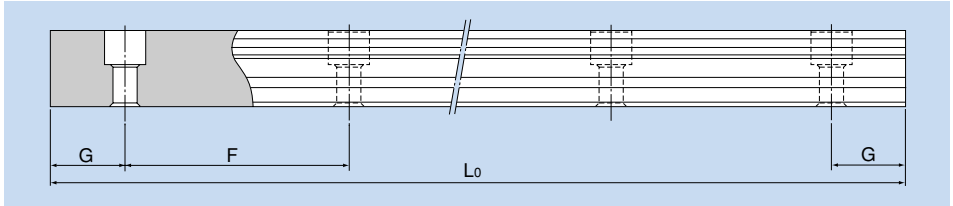
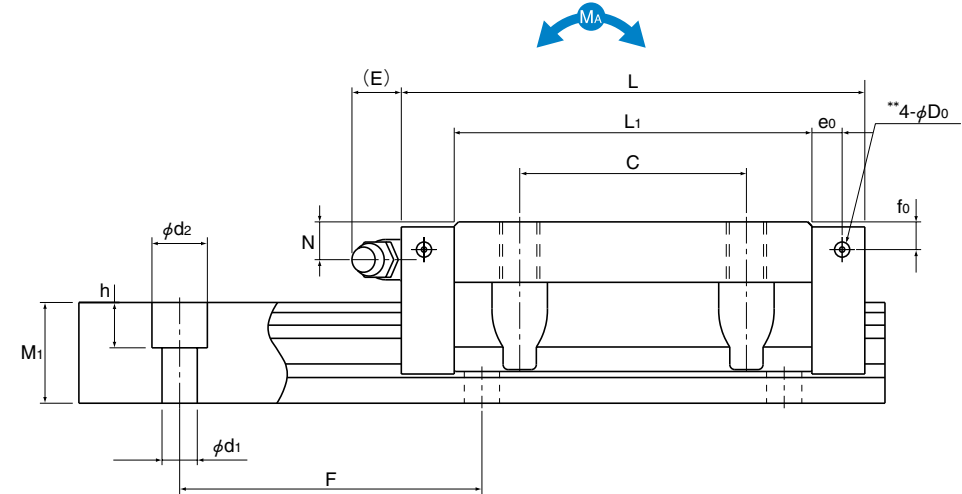
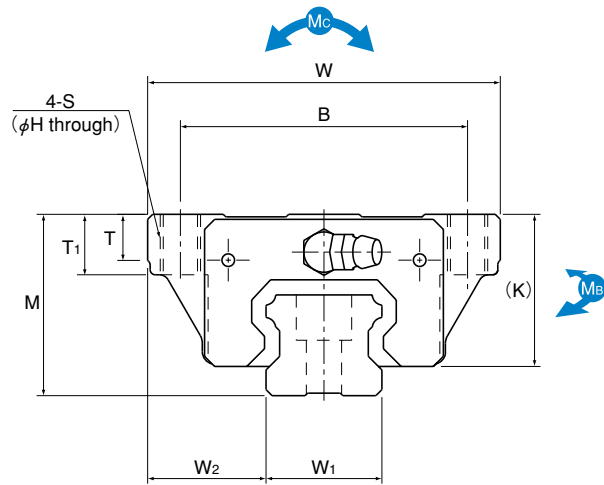


Table 6 Standard Length and Maximum Length of the LM Rail for Model SHS Unit: mm

Model No.	SHS 15	SHS 20	SHS 25	SHS 30	SHS 35	SHS 45	SHS 55	SHS 65	
Standard LM rail length ( $L_0$ )	160	220	220	280	280	570	780	1270	
	220	280	280	360	360	675	900	1570	
	280	340	340	440	440	780	1020	2020	
	340	400	400	520	520	885	1140	2620	
	400	460	460	600	600	990	1260		
	460	520	520	680	680	1095	1380		
	520	580	580	760	760	1200	1500		
	580	640	640	840	840	1305	1620		
	640	700	700	920	920	1410	1740		
	700	760	760	1000	1000	1515	1860		
	760	820	820	1080	1080	1620	1980		
	820	940	940	1160	1160	1725	2100		
	940	1000	1000	1240	1240	1830	2220		
	1000	1060	1060	1320	1320	1935	2340		
	1060	1120	1120	1400	1400	2040	2460		
	1120	1180	1180	1480	1480	2145	2580		
	1180	1240	1240	1560	1560	2250	2700		
	1240	1360	1300	1640	1640	2355	2820		
	1360	1480	1360	1720	1720	2460	2940		
	1480	1600	1420	1800	1800	2565	3060		
	1600	1720	1480	1880	1880	2670			
		1840	1540	1960	1960	2775			
		1960	1600	2040	2040	2880			
		2080	1720	2200	2200	2985			
		2200	1840	2360	2360	3090			
			1960	2520	2520				
		2080	2680	2680					
		2200	2840	2840					
		2320	3000	3000					
		2440							
Standard pitch F	60	60	60	80	80	105	120	150	
G	20	20	20	20	20	22.5	30	35	
Max length	2500	3000	3000	3000	3000	3090	3060	3000	

Note 1: The maximum length varies with accuracy grades. Contact THK for details.

Note 2: If connected rails are not allowed and a greater length than the maximum values above is required, contact THK.



Unit: mm

Model No.	External dimensions			LM block dimensions										Grease nipple	Pilot holes for side nipples**			LM rail dimensions				Basic load rating		Static permissible moment kN-m*					Mass		
	Height M	Width W	Length L	B	C	S	H	L <sub>1</sub>	T	T <sub>1</sub>	K	N	E		e <sub>0</sub>	f <sub>0</sub>	D <sub>0</sub>	Width W <sub>1</sub> 0-0.05	W <sub>2</sub>	Height M <sub>1</sub>	Pitch F	d <sub>1</sub> × d <sub>2</sub> × h	C	C <sub>0</sub>	M <sub>A</sub> 1 block	M <sub>B</sub> 2 blocks in close contact	M <sub>C</sub> 1 block	M <sub>B</sub> 2 blocks in close contact	M <sub>C</sub> 1 block	LM block kg	LM rail kg/m
SHS 15C SHS 15LC	24	47	64.4 79.4	38	30	M 5	4.4	48 63	5.9	8	21	5.5	5.5	PB1021B	4	4	3	15	16	13	60	4.5×7.5×5.3	14.2 17.2	24.2 31.9	0.175 0.296	0.898 1.43	0.175 0.296	0.898 1.43	0.16 0.212	0.23 0.29	1.3
SHS 20C SHS 20LC	30	63	79 98	53	40	M 6	5.4	59 78	7.2	10	25.4	6.5	12	B-M6F	4.3	5.3	3	20	21.5	16.5	60	6×9.5×8.5	22.3 28.1	38.4 50.3	0.334 0.568	1.75 2.8	0.334 0.568	1.75 2.8	0.361 0.473	0.46 0.61	2.3
SHS 25C SHS 25LC	36	70	92 109	57	45	M 8	6.8	71 88	9.1	12	30.2	7.5	12	B-M6F	6	5.5	3	23	23.5	20	60	7×11×9	31.7 36.8	52.4 64.7	0.566 0.848	2.75 3.98	0.566 0.848	2.75 3.98	0.563 0.696	0.72 0.89	3.2
SHS 30C SHS 30LC	42	90	106 131	72	52	M10	8.5	80 105	11.5	15	35	8	12	B-M6F	5.5	6	5.2	28	31	23	80	9×14×12	44.8 54.2	66.6 88.8	0.786 1.36	4.08 6.6	0.786 1.36	4.08 6.6	0.865 1.15	1.34 1.66	4.5
SHS 35C SHS 35LC	48	100	122 152	82	62	M10	8.5	93 123	11.5	15	40.5	8	12	B-M6F	6.5	5.5	5.2	34	33	26	80	9×14×12	62.3 72.9	96.6 127	1.38 2.34	6.76 10.9	1.38 2.34	6.76 10.9	1.53 2.01	1.9 2.54	6.2
SHS 45C SHS 45LC	60	120	140 174	100	80	M12	10.5	106 140	14.1	18	51.1	10.5	16	B-PT1/8	8	8	5.2	45	37.5	32	105	14×20×17	82.8 100	126 166	2.05 3.46	10.1 16.3	2.05 3.46	10.1 16.3	2.68 3.53	3.24 4.19	10.4
SHS 55C SHS 55LC	70	140	171 213	116	95	M14	12.5	131 173	16	21	57.3	11	16	B-PT1/8	10	8	5.2	53	43.5	38	120	16×23×20	128 161	197 259	3.96 6.68	19.3 31.1	3.96 6.68	19.3 31.1	4.9 6.44	5.35 6.97	14.5
SHS 65C SHS 65LC	90	170	221 272	142	110	M16	14.5	175 226	18.8	24	71	19	16	B-PT1/8	10	12	5.2	63	53.5	53	150	18×26×22	205 253	320 408	8.26 13.3	40.4 62.6	8.26 13.3	40.4 62.6	9.4 11.9	10.7 13.7	23.7

Model number coding **SHS25 LC 2 QZ KKHH C0 +1200L P Z - II**

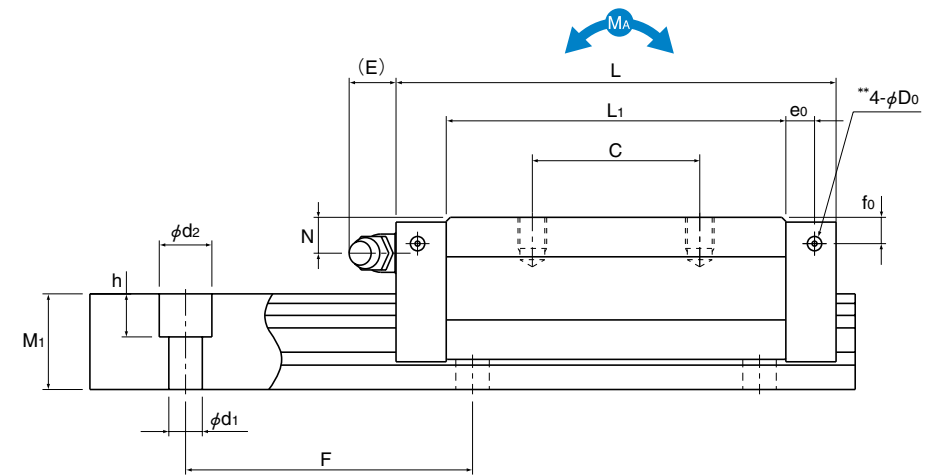
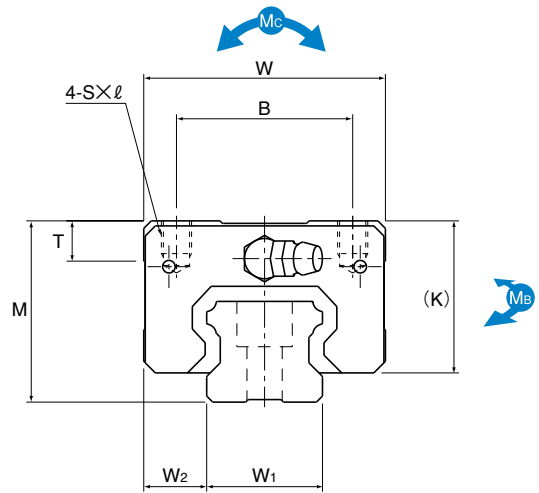


- 1 Model number
- 2 Type of LM block
- 3 No. of LM blocks used on the same rail
- 4 With QZ Lubricator
- 5 Dust prevention accessory symbol (see page a-138)
- 6 Radial clearance symbol (see page a-33)
- 7 LM rail length (in mm)
- 8 Accuracy symbol (see page a-38)
- 9 With steel tape
- 10 No. of rails used on the same plane

**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.

**Note** Pilot holes for side nipples\*\* are not drilled through in order to prevent foreign matter from entering the product. The product will mount grease nipples per your request. Therefore, do not use the side nipple pilot holes\*\* for purposes other than mounting a grease nipple.

Static permissible moment\*: 1 block: static permissible moment value with 1 LM block  
2 blocks: static permissible moment value with 2 blocks closely contacting with each other



Unit: mm

Model No.	External dimensions			LM block dimensions								Pilot holes for side nipples**			LM rail dimensions				Basic load rating		Static permissible moment kN-m*					Mass			
	Height M	Width W	Length L	B	C	S × ℓ	L <sub>1</sub>	T	K	N	E	Grease nipple	e <sub>o</sub>	f <sub>o</sub>	D <sub>o</sub>	Width W <sub>1</sub> 0-0.05	W <sub>2</sub>	Height M <sub>1</sub>	Pitch F	d <sub>1</sub> × d <sub>2</sub> × h	C	C <sub>0</sub>	M <sub>A</sub> 1 block	M <sub>B</sub> 2 blocks in close contact	M <sub>B</sub> 1 block	M <sub>B</sub> 2 blocks in close contact	M <sub>C</sub> 1 block	LM block kg	LM rail kg/m
SHS 15V SHS 15LV	24	34	64.4 79.4	26	26 34	M4×4	48 63	5.9	21	5.5	5.5	PB1021B	4	4	3	15	9.5	13	60	4.5×7.5×5.3	14.2 17.2	24.2 31.9	0.175 0.296	0.898 1.43	0.175 0.296	0.898 1.43	0.16 0.212	0.19 0.22	1.3
SHS 20V SHS 20LV	30	44	79 98	32	36 50	M5×5	59 78	8	25.4	6.5	12	B-M6F	4.3	5.3	3	20	12	16.5	60	6×9.5×8.5	22.3 28.1	38.4 50.3	0.334 0.568	1.75 2.8	0.334 0.568	1.75 2.8	0.361 0.473	0.35 0.46	2.3
SHS 25V SHS 25LV	36	48	92 109	35	35 50	M6×6.5	71 88	8	30.2	7.5	12	B-M6F	6	5.5	3	23	12.5	20	60	7×11×9	31.7 36.8	52.4 64.7	0.566 0.848	2.75 3.98	0.566 0.848	2.75 3.98	0.563 0.696	0.54 0.67	3.2
SHS 30V SHS 30LV	42	60	106 131	40	40 60	M8×8	80 105	8	35	8	12	B-M6F	5.5	6	5.2	28	16	23	80	9×14×12	44.8 54.2	66.6 88.8	0.786 1.36	4.08 6.6	0.786 1.36	4.08 6.6	0.865 1.15	0.94 1.16	4.5
SHS 35V SHS 35LV	48	70	122 152	50	50 72	M8×10	93 123	14.7	40.5	8	12	B-M6F	6.5	5.5	5.2	34	18	26	80	9×14×12	62.3 72.9	96.6 127	1.38 2.34	6.76 10.9	1.38 2.34	6.76 10.9	1.53 2.01	1.4 1.84	6.2
SHS 45V SHS 45LV	60	86	140 174	60	60 80	M10×15	106 140	14.9	51.1	10.5	16	B-PT1/8	8	8	5.2	45	20.5	32	105	14×20×17	82.8 100	126 166	2.05 3.46	10.1 16.3	2.05 3.46	10.1 16.3	2.68 3.53	2.54 3.19	10.4
SHS 55V SHS 55LV	70	100	171 213	75	75 95	M12×15	131 173	19.4	57.3	11	16	B-PT1/8	10	8	5.2	53	23.5	38	120	16×23×20	128 161	197 259	3.96 6.68	19.3 31.1	3.96 6.68	19.3 31.1	4.9 6.44	4.05 5.23	14.5
SHS 65V SHS 65LV	90	126	221 272	76	70 120	M16×20	175 226	19.5	71	19	16	B-PT1/8	10	12	5.2	63	31.5	53	150	18×26×22	205 253	320 408	8.26 13.3	40.4 62.6	8.26 13.3	40.4 62.6	9.4 11.9	8.41 10.7	23.7

Model number coding **SHS30 V 2 QZ KKHH C1 +1240L P Z - II**

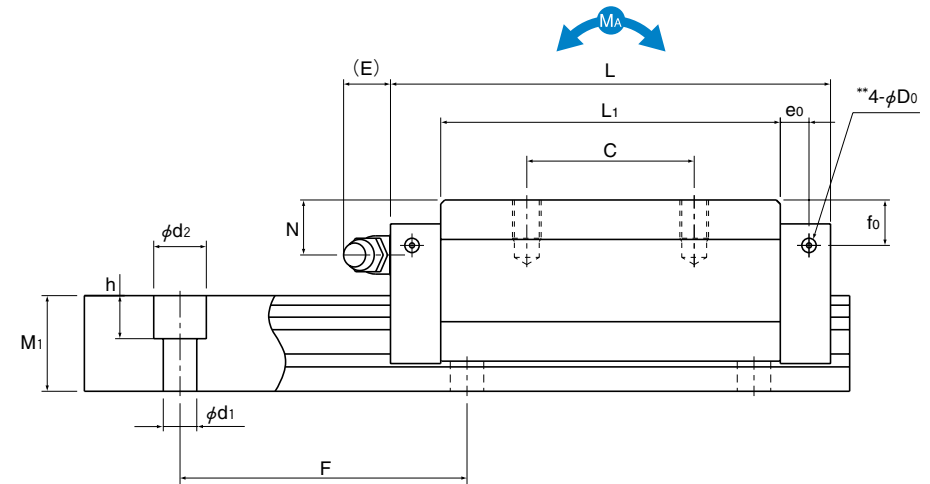
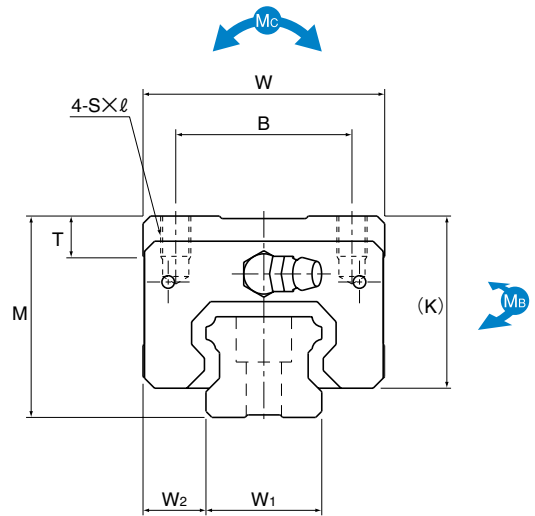
1 2 3 4 5 6 7 8 9 10

- 1 Model number
- 2 Type of LM block
- 3 No. of LM blocks used on the same rail
- 4 With QZ Lubricator
- 5 Dust prevention accessory symbol (see page a-138)
- 6 Radial clearance symbol (see page a-33)
- 7 LM rail length (in mm)
- 8 Accuracy symbol (see page a-38)
- 9 With steel tape
- 10 No. of rails used on the same plane

**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.

**Note** Pilot holes for side nipples\*\* are not drilled through in order to prevent foreign matter from entering the product. THK will mount grease nipples per your request. Therefore, do not use the side nipple pilot holes\*\* for purposes other than mounting a grease nipple.

Static permissible moment\*: 1 block: static permissible moment value with 1 LM block  
2 blocks: static permissible moment value with 2 blocks closely contacting with each other



Unit: mm

Model No.	External dimensions			LM block dimensions								Grease nipple	Pilot holes for side nipples**			LM rail dimensions				Basic load rating		Static permissible moment kN-m*				Mass			
	Height M	Width W	Length L	B	C	S x l	L <sub>1</sub>	T	K	N	E		e <sub>0</sub>	f <sub>0</sub>	D <sub>0</sub>	Width W <sub>1</sub> -0.05	W <sub>2</sub>	Height M <sub>1</sub>	Pitch F	d <sub>1</sub> x d <sub>2</sub> x h	C	C <sub>0</sub>	M <sub>A</sub> 1 block	M <sub>A</sub> 2 blocks in close contact	M <sub>B</sub> 1 block	M <sub>B</sub> 2 blocks in close contact	M <sub>C</sub>	LM block kg	LM rail kg/m
SHS 15R	28	34	64.4	26	26	M4x5	48	5.9	25	9.5	5.5	PB1021B	4	8	3	15	9.5	13	60	4.5x7.5x5.3	14.2	24.2	0.175	0.898	0.175	0.898	0.16	0.22	1.3
SHS 25R	40	48	92	35	35	M6x8	71	8	34.2	11.5	12	B-M6F	6	9.5	3	23	12.5	20	60	7x11x9	31.7	52.4	0.566	2.75	0.566	2.75	0.563	0.66	3.2
SHS 25LR			109	50	50		88													36.8	64.7	0.848	3.98	0.848	3.98	0.696	0.8		
SHS 30R	45	60	106	40	40	M8x10	80	8	38	11	12	B-M6F	5.5	9	5.2	28	16	23	80	9x14x12	44.8	66.6	0.786	4.08	0.786	4.08	0.865	1.04	4.5
SHS 30LR			131	60	60		105													54.2	88.8	1.36	6.6	1.36	6.6	1.15	1.36		
SHS 35R	55	70	122	50	50	M8x12	93	14.7	47.5	15	12	B-M6F	6.5	12.5	5.2	34	18	26	80	9x14x12	62.3	96.6	1.38	6.76	1.38	6.76	1.53	1.8	6.2
SHS 35LR			152	72	72		123													72.9	127	2.34	10.9	2.34	10.9	2.01	2.34		
SHS 45R	70	86	140	60	60	M10x17	106	14.9	61.1	20.5	16	B-PT1/8	8	18	5.2	45	20.5	32	105	14x20x17	82.8	126	2.05	10.1	2.05	10.1	2.68	3.24	10.4
SHS 45LR			174	80	80		140													100	166	3.46	16.3	3.46	16.3	3.53	4.19		
SHS 55R	80	100	171	75	75	M12x18	131	19.4	67.3	21	16	B-PT1/8	10	18	5.2	53	23.5	38	120	16x23x20	128	197	3.96	19.3	3.96	19.3	4.9	5.05	14.5
SHS 55LR			213	95	95		173													161	259	6.68	31.1	6.68	31.1	6.44	6.57		

**Note** Pilot holes for side nipples\*\* are not drilled through in order to prevent foreign matter from entering the product.

THK will mount grease nipples per your request. Therefore, do not use the side nipple pilot holes\*\* for purposes other than mounting a grease nipple.

Static permissible moment\*: 1 block: static permissible moment value with 1 LM block  
2 blocks: static permissible moment value with 2 blocks closely contacting with each other

### Model number coding SHS45 LR 2 QZ KKHH C0 +1200L P - II

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9

- 1 Model number
- 2 Type of LM block
- 3 No. of LM blocks used on the same rail
- 4 With QZ Lubricator
- 5 Dust prevention accessory symbol (see page a-138)
- 6 Radial clearance symbol (see page a-33)
- 7 LM rail length (in mm)
- 8 Accuracy symbol (see page a-38)
- 9 No. of rails used on the same plane

**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.

## Overall LM Block Length with Options

### ■ Overall LM Block Length (Dimension L) of Model SHS with a Dust Prevention Accessory Attached

Unit: mm

Model No.	UU	SS	DD	ZZ	KK	SSHH	DDHH	ZZHH	KKHH
SHS 15C/V/R	64.4	64.4	69.8	66.8	72.2	78.9	84.4	79.9	85.2
SHS 15LC/LV	79.4	79.4	84.8	81.8	87.2	93.9	99.4	94.9	100.2
SHS 20C/V	79	79	85.4	83	89.4	94	100	96	102.5
SHS 20LC/LV	98	98	104.4	102	108.4	113	119	115	121.5
SHS 25C/V/R	92	92	101.6	100.4	107.6	112	119.2	114.4	121.6
SHS 25LC/LV/LR	109	109	118.6	117.4	124.6	129	136.2	131.4	138.6
SHS 30C/V/R	106	106	116	113.8	122.4	129.4	138	131.8	140.4
SHS 30LC/LV/LR	131	131	141	138.8	147.4	154.4	163	156.8	165.4
SHS 35C/V/R	122	122	134.8	132.4	142.2	148	157.8	150.4	160.2
SHS 35LC/LV/LR	152	152	164.8	162.4	172.2	178	187.8	180.4	190.2
SHS 45C/V/R	140	140	152.8	151.2	161	169	178.8	172.2	182
SHS 45LC/LV/LR	174	174	186.8	185.2	195	203	212.8	206.2	216
SHS 55C/V/R	171	171	186.6	184.2	195.4	202	213.2	205.2	216.4
SHS 55LC/LV/LR	213	213	228.6	226.2	237.4	244	255.2	247.2	258.4
SHS 65C/V	221	221	238.6	236.2	248.6	258	270.4	261.2	273.6
SHS 65LC/LV	272	272	289.6	287.2	299.6	309	321.4	312.2	324.6

### ■ Overall LM Block Length (Dimension L) of Model SHS with QZ Lubricator Attached

Unit: mm

Model No.	QZUU	QZSS	QZDD	QZZZ	QZKK	QZSSHH	QZDDHH	QZZZHH	QZKKHH
SHS 15C/V/R	84.4	84.4	89.8	86.8	92.2	100.4	105.4	101.4	106.9
SHS 15LC/LV	99.4	99.4	104.8	101.8	107.2	115.4	120.4	116.4	121.9
SHS 20C/V	99	99	105.4	103	109.4	115.5	122	118	124.5
SHS 20LC/LV	118	118	124.4	122	128.4	134.5	141	137	143.5
SHS 25C/V/R	114.4	114.4	121.6	120.4	127.6	132	139.2	134.4	141.6
SHS 25LC/LV/LR	131.4	131.4	138.6	137.4	144.6	149	156.2	151.4	158.6
SHS 30C/V/R	127.4	127.4	136	133.8	142.4	149.4	158	151.8	160.4
SHS 30LC/LV/LR	152.4	152.4	161	158.8	167.4	174.4	183	176.8	185.4
SHS 35C/V/R	145	145	154.8	152.4	162.2	168	177.8	170.4	180.2
SHS 35LC/LV/LR	175	175	184.8	182.4	192.2	198	207.8	200.4	210.2
SHS 45C/V/R	173	173	182.8	181.2	191	199	208.8	202.2	212
SHS 45LC/LV/LR	207	207	216.8	215.2	225	233	242.8	236.2	246
SHS 55C/V/R	205.4	205.4	216.6	214.2	225.4	232	243.2	235.2	246.4
SHS 55LC/LV/LR	247.4	247.4	258.6	256.2	267.4	274	285.2	277.2	288.4
SHS 65C/V	256.2	256.2	268.6	266.2	278.6	288	300.4	291.2	303.6
SHS 65LC/LV	307.2	307.2	319.6	317.2	329.6	339	351.4	342.2	354.6

## Basic Specifications of LaCS®

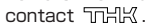
- ① Service temperature range of LaCS: -20°C to +80°C
- ② Resistance of LaCS: indicated in table 7

Table 7 Resistance of LaCS

Unit: N

Model No.	Resistance of LaCS
SHS 15	5.2
SHS 20	6.5
SHS 25	11.7
SHS 30	18.2
SHS 35	20.8
SHS 45	26.0
SHS 55	32.5
SHS 65	39.0

Note 1: Each resistance value in the table only consists of that of LaCS, and does not include sliding resistances of seals and other accessories.

Note 2: For the maximum service speed of LaCS, contact .

## Grease Nipple

Those LM Guide models without QZ Lubricator are equipped with a grease nipple. Fig. 4 shows the mounting location for the grease nipple. Please note that attaching the grease nipple increases the LM block width.

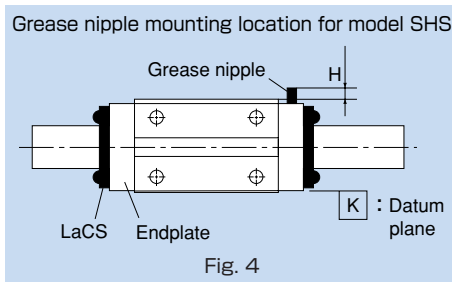
### ■ For LM Guide Models with Dust Prevention Accessories SSHH, DDHH, ZZHH or KKHH

LM Guide models with dust prevention accessories SSHH, DDHH, ZZHH or KKHH have the grease nipple in the location indicated in Fig. 4.

Table 8 shows incremental dimensions with the grease nipple.

Table 8

Unit: mm



Model No.	Incremental dimension with grease nipple H	Nipple type
SHS 15C/LC	—	PB107
SHS 15R/V/LV	4.7	PB107
SHS 20C/LC	—	PB107
SHS 20V/LV	4.5	PB107
SHS 25C/LC	—	PB107
SHS 25R/LR/V/LV	4.7	PB107
SHS 30C/LC	—	A-M6F
SHS 30R/LR/V/LV	7.4	A-M6F
SHS 35C/LC	—	A-M6F
SHS 35R/LR/V/LV	7.4	A-M6F
SHS 45C/LC	—	A-M6F
SHS 45R/LR/V/LV	7.7	A-M6F
SHS 55C/LC	—	A-M6F
SHS 55R/LR/V/LV	7.4	A-M6F
SHS 65C/LC	—	A-M6F
SHS 65V/LV	6.9	A-M6F

Note: When desiring the mounting location for the grease nipple other than the one indicated in Fig. 4, contact **THK**.

### ■ For LM Guide Models with Dust Prevention Accessories UU or SS

For the mounting location of the grease nipple (N) and its incremental dimension (E) when dust prevention accessories UU or SS are attached, see the corresponding table of dimensions.

### ■ For LM Guide Models with Dust Prevention Accessories DD, ZZ or KK

For the mounting location of the grease nipple and its incremental dimension when dust prevention accessories DD, ZZ or KK are attached, contact **THK**.

#### Model number coding

**SHS25 C 2 QZ KKHH C1 +760L P**

1

2

3

1 LM Guide model number

2 QZ : with QZ Lubricator, without grease nipple  
No symbol: without QZ Lubricator, with grease nipple (see Fig. 4)

3 Dust prevention accessory symbol (see page a-138)

Note 1: QZ Lubricator and LaCS are not sold alone.

Note 2: Those models equipped with QZ Lubricator cannot have a grease nipple. When desiring both QZ Lubricator and LaCS to be attached, contact **THK**.

## Precautions on Use

### ■ Laminated Contact Scraper LaCS for LM Guides

#### Service environment

- Be sure the service temperature range of Laminated Contact Scraper LaCS is between  $-20^{\circ}\text{C}$  and  $+80^{\circ}\text{C}$ , and do not clean LaCS in an organic solvent or white kerosene, or leave it unpacked.

#### Impregnating oil

- The lubricant impregnated into Laminated Contact Scraper LaCS is used to increase the sliding capability of LaCS itself. For lubrication of the LM Guide, attach QZ Lubricator or the grease nipple.

#### Function

- The intended role of Laminated Contact Scraper LaCS is to remove foreign matter or liquids. To seal oils, end seals are needed.

#### Design

- When using Laminated Contact Scraper LaCS, be sure to use the dedicated cap C for LM rail mounting holes or an appropriate form of cover.

### ■ QZ Lubricator for LM Guides

#### Handling

- Dropping or hitting this product may damage it. Take much care when handling it.
- Do not clean it with an organic solvent or white kerosene.
- Do not leave it unpacked for a long period of time.
- Do not block the air vent with grease or the like.

#### Service temperature range

- Be sure the service temperature of this product is between  $-10^{\circ}\text{C}$  and  $+50^{\circ}\text{C}$ .

#### Use in a special environment

- When using it in a special environment, contact .

#### Precaution on selection

- Be sure the stroke is longer than the overall length of the LM block length attached with QZ Lubricator.

#### Corrosion prevention of LM Guides

- QZ Lubricator is a lubricating device designed to feed a minimum amount of oil to the ball raceway of LM rails, and does not provide corrosion prevention to the whole LM Guide. When using it in an environment subject to a coolant or the like, we strongly recommend taking an anti-corrosion measure.