

SLIDE GUIDE

Miniature
(SEB Type)

The SEB type slide guide is a linear motion bearing in which the ball elements roll along two tracking grooves. This is the smallest and lightest slide guide series offered by Nippon Bearing. The compact design allows for the size and weight of machinery and other equipment to be reduced.

STRUCTURE AND ADVANTAGES

The SEB type slide guide consists of a rail with precisely machined raceway grooves and a block assembly consisting of the main body, return caps and ball elements. Side-seals are available as an optional feature.

Retained Ball:

With the retained balls, the SEBS "B" type block is able to be removed from the guide rail, simplifying its installation and resulting in lower assembly costs.

All Stainless Steel Type:

By using Stainless Steel for the return caps, the SEBS "BM" type is constructed from only Stainless Steel making this the ideal choice for special environments such as high temperature, clean room, or vacuum applications.

Moment Resistant:

A wide block "WA" type, a long block "AY" type, and a wide/long block "WAY" type are moment resistant slide guides available. One of these should be suitable for any demanding operating condition.

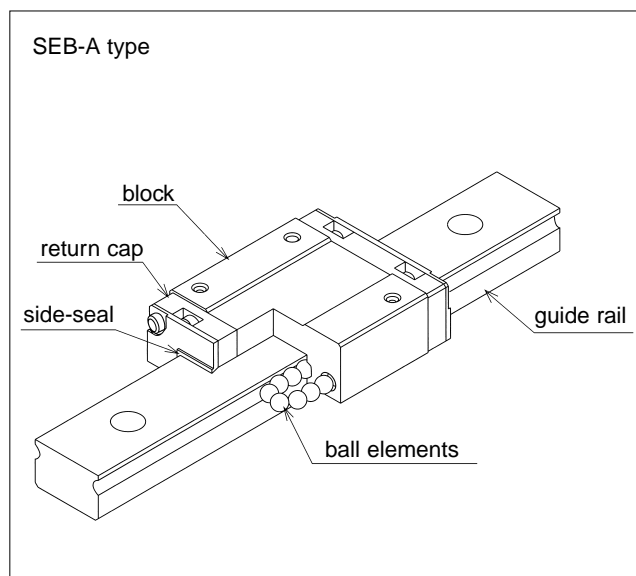
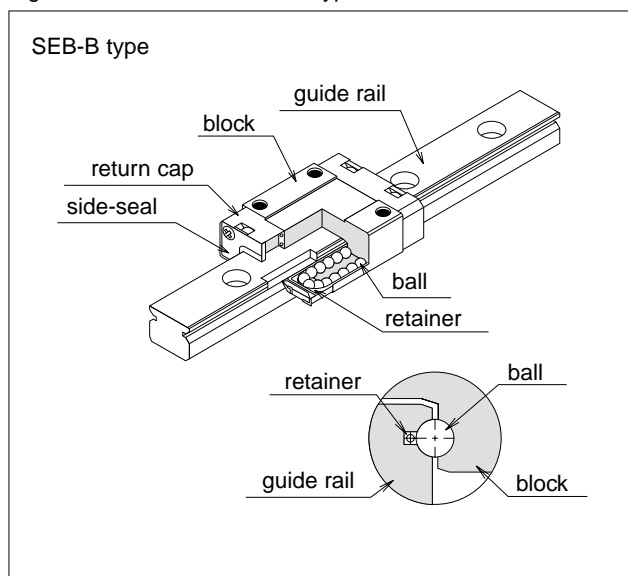
Tapped-Hole rail Types:

Slide guides with clearance holes are standard and tapped holes are available upon request.

Anti-Corrosion:

The SEBS type slide guide uses Martensite stainless steel which is highly resistant to corrosion and may be used in hostile environments.

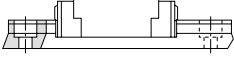


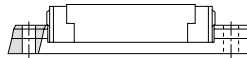
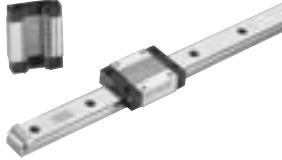

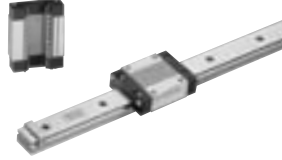
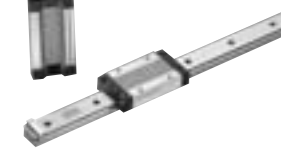


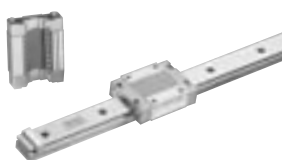
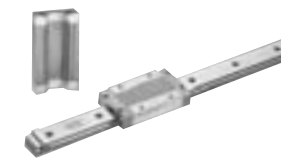


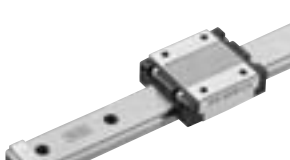

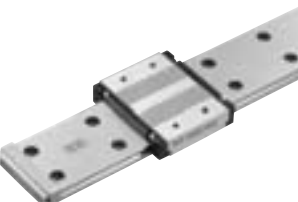
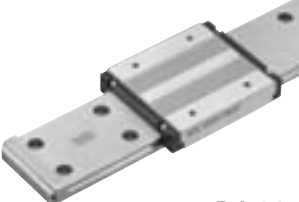
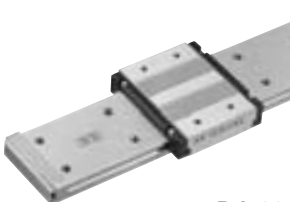

Figure A-29 Structure of SEB Type Slide Guide



TYPES

The SEB type slide guides are categorized according to their block shape and the rail installation method. They are also available in stainless steel and with or without optional side-seals.

Table A-4 Type

	standard block counterbore rail type	long block counterbore rail type	standard block tapped hole rail type	long block tapped hole rail type
retained ball type				
	SEBS-B type	SEBS-BY type	SEBS-B-N type	SEBS-BY-N type
				
	P.A-22	P.A-22	P.A-24	P.A-24
All stainless steel	SEBS-BM type	SEBS-BYM type	SEBS-BM-N type	SEBS-BYM-N type
				
	P.A-26	P.A-26	P.A-28	P.A-28
	Standard type	SEB-A type	SEB-AY type	SEB-A-N type
				
P.A-30		P.A-30	P.A-32	P.A-32
SEB-WA type		SEB-WAY type	SEB-WA-N type	SEB-WAY-N type
				
P.A-34	P.A-34	P.A-36	P.A-36	

ACCURACY

The SEB slide guides are available in two grades of accuracy: high-grade and precision-grade (P).

Table A-5 Accuracy unit/mm

accuracy grade	high	precision
accuracy symbol	none	P
allowable dimensional difference in height H	± 0.020	± 0.010
paired difference for height H	0.015	0.007
allowable dimensional difference in width W	± 0.025	± 0.015
paired difference for width W	0.020	0.010
Running parallelism of surface C to surface A	Refer to Figure A-28	
Running parallelism of surface D to surface B	Refer to Figure A-28	

Figure A-30 Accuracy

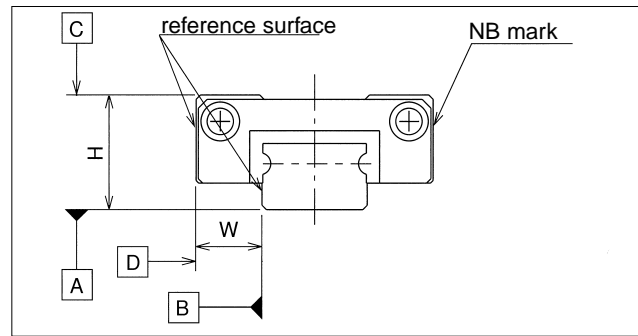
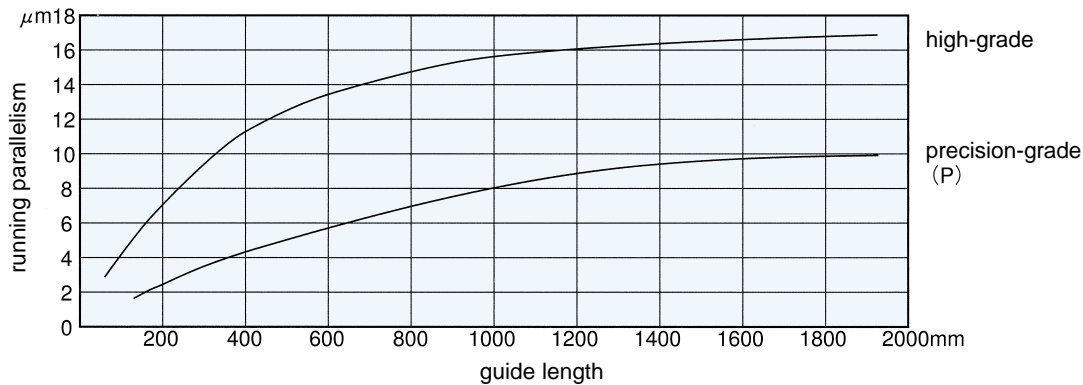


Figure A-31 Motion Accuracy



PRE-LOAD

SEB slide guides are available with a standard pre-load (no suffix), light pre-load (T1), and a positive-clearance (T0).

Table A-6 Pre-Load symbol and Radial Clearance unit/ μm

pre-load symbol	clearance T0	standard	light T1
3	+1~+3	—	—
5		-1~0	—
7		-3~0	-3~0
9	-7~-3		
12			
15			
20	+4~+8	—	—
3W	+3~+6	-3~0	-4~-2
7W			
9W			
12W			
15W			

Table A-7 Operating Conditions and Pre-Load

pre-load	symbol	operating conditions
clearance	T0	Smooth movement is crucial. The installation tolerance is to be absorbed.
standard	none	Minute vibration is applied. High-precision movement is required. A moment in a given direction is applied.
light	T1	Light vibration is applied. A slight torque is applied. When moment is applied.

RATED LOAD

The load rating for SEB slide guides depends on the direction of load.

Table A-8 Load Rating

		retained ball types	standard types
basic dynamic load rating	vertical	$1.00 \times C$	$1.00 \times C$
	horizontal	$0.89 \times C$	$1.13 \times C$
basic static load rating	vertical	$1.00 \times Co$	$1.00 \times Co$
	horizontal	$0.84 \times Co$	$1.19 \times Co$

RAIL LENGTH

Slide guides with most commonly used lengths are available as standard. Unless otherwise specified, the distance to the first mounting hole (N) from one end of the rail will be located within the ranges listed in Tables A-9 and A-10 for slide guides with non-standard lengths satisfying the following equation.

$$L = M \cdot P + 2N$$

L : length (mm) N : distance to the first hole from the end of the rail (mm)
 M : number of pitches P : hole pitch (mm)

Table A-9 Standard-Type Rails

unit/mm

size	N	
	and over	less than
3	3	6
5		10.5
7		
9	4	14
12		16.5
15		
20	6	36

Figure A-32 Direction of Load

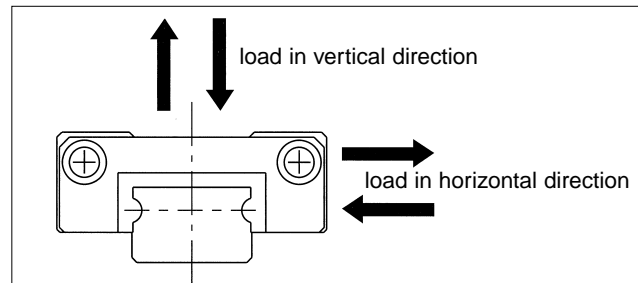


Figure A-33 Rail

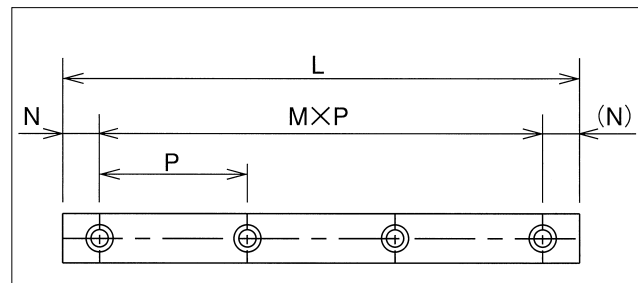


Table A-10 Wide-Type Rails

unit/mm

size	N	
	and over	less than
3W	3	10
7W	4	19
9W		
12W	5	25
15W		

MOUNTING

Mounting Surface Shapes:

Slide guides are mounted by pushing the reference surface of the rail and the block against the shoulder provided on the mounting surface. An escape groove should be provided at the corner of the shoulder to prevent interference.

Table A-11 Mounting Surface Dimensions unit/mm

size	h1	h2
3	1.2	0.8
5	2	1
7	2.5	
9	3	1.5
12	4	2
15	5	3.5
20		5
3W	1.5	0.8
7W	3	1.5
9W		1.5
12W	4	2.5
15W	5	

Recommended Torque Values:

The bolts used to secure the rail should be tightened using a torque wrench. The recommended torque values are given in Tables A-12 and A-13. (By using stainless steel bolt)

Table A-12 Recommended Torque for Standard Rail unit/N·m

size	bolt size	recommended torque
5	M2	0.4
7		
9		
12	M3	1.0
15		
20	M5	4.9
3W	M3	1.0
7W		
9W		
12W	M4	2.5
15W		

Figure A-34 Mounting Surface Shape

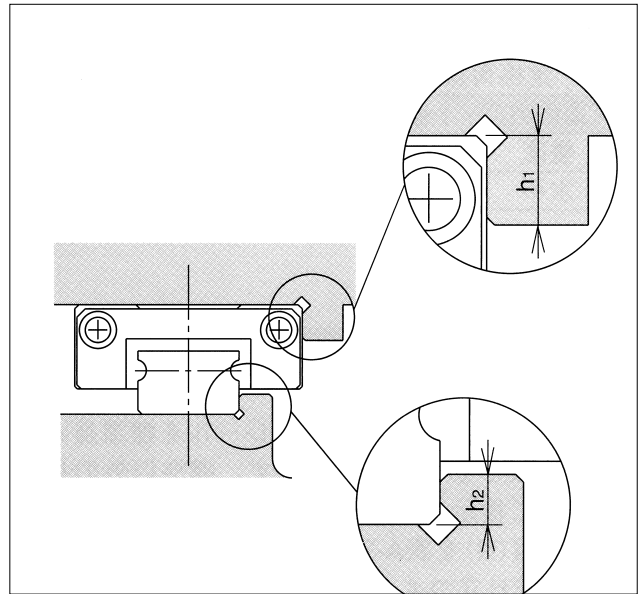
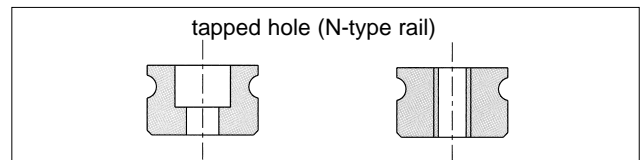
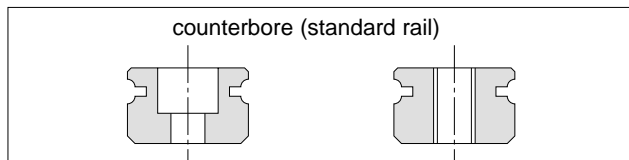


Table A-13 Recommended Torque for N-Type Rail unit/N · m

size	bolt size	recommended torque
3	M1.6	0.15
5	M2.6	0.6
7	M3	1.0
9	M4	2.5
12		
15	M5	4.9
20	M6	10.0
3W	M3	1.0
7W	M4	2.5
9W		
12W	M5	4.9
15W		

Figure A-35 Shape of Rail



MOUNTING BOLTS

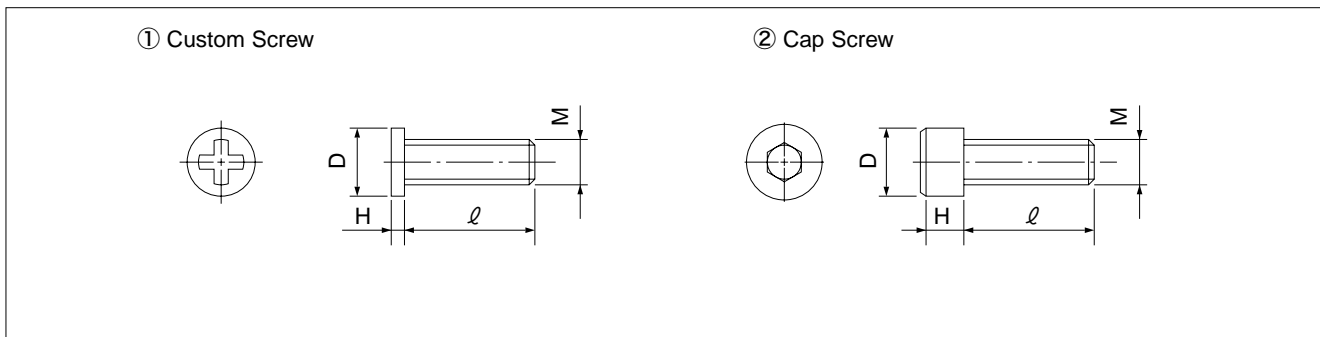
Extremely small custom bolts for mounting are available from NB.

Table A-14 Mounting Bolt Dimension

		unit/mm				
		bolt size	D	H	pitch	ℓ
custom screw	Figure A-36 ①	M2	3	0.6	0.4	6
cap screw	Figure A-36 ②	M2	3.8	2	0.4	4, 5, 6, 8, 10
		M2.6	4.5	2.6	0.45	4, 5, 6, 8, 10

All the material is stainless steel.

Figure A-36 Mounting Screws



LUBRICATION

A high grade lithium soap grease is applied to the NB Slide Guides in our factory making these ready for immediate use. A similar type grease should be added periodically depending on the operating conditions.

For use in clean rooms or vacuum environments, NB Slide Guides without grease are available upon request. Additionally, customer specified grease cases, please contact NB.

A special syringe lubricant applicator (refer to Figure A-37) is available from NB as an option. Table A-15 lists the types of greases, which are now available from NB.

Please refer to Page Eng-12 for details on the low dust generation lubricant K grease.

Figure A-37 Greasing Method

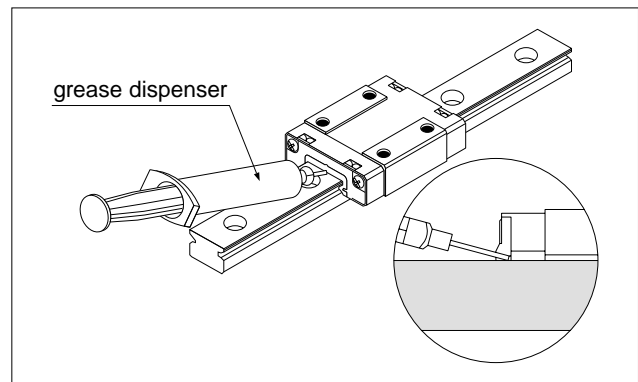
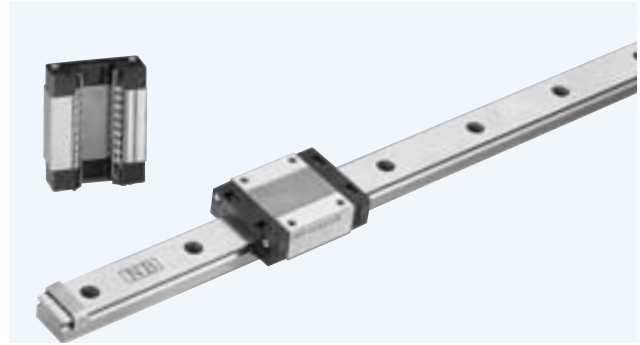


Table A-15 Type of Grease

Use	Name of Grease	Contents
General	Multemp PS No.2 (kyodo yushi)	10g
Low dust	K Grease (NB)	10g

SEBS-B/BY Type

– Retained Ball Type –

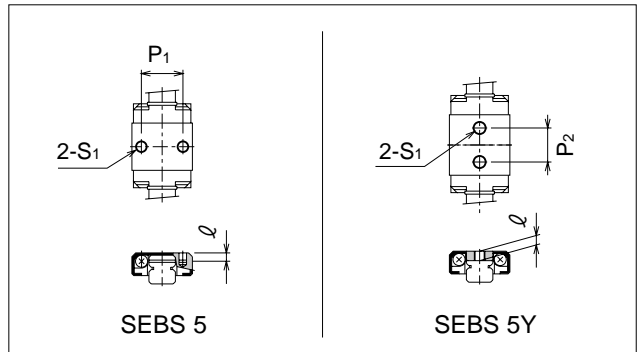


part number structure

example **SEBS15BYM UU2T1-589P/W2**

SEBS: anticorrosion	15: size	B: retained ball type	Y: block size	M: return cap	UU: seal	2: number of blocks attached to one rail	T1: pre-load symbol	589: total length of rail	P: accuracy grade	W2: symbol for number of rails
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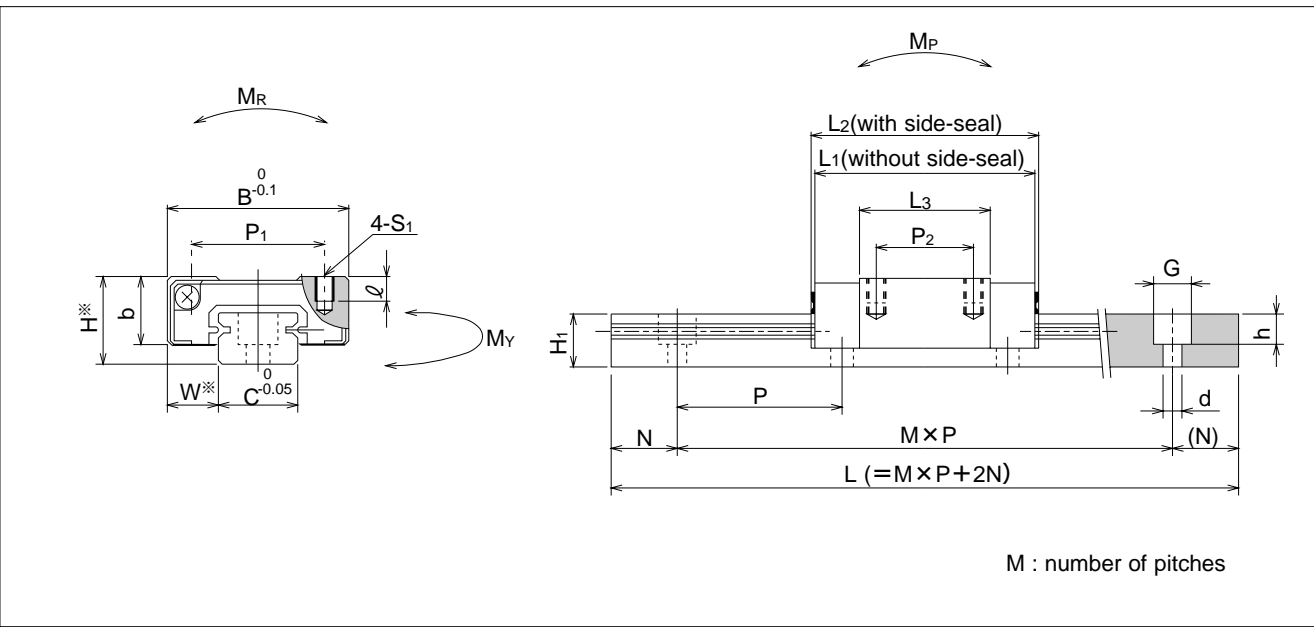
Note: The symbol for the number of rails does not mean the number of rails ordered.



part number	assembly dimensions		block dimensions								
	H	W	B	L ₁	L ₂	P ₁	P ₂	S ₁	∅	L ₃	b
resin return cap	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
SEBS 5B	6	3.5	12	16.3	16.7	8	—	M2	1.5	9.3	4.5
SEBS 5BY				19.3	19.7	—	7	M2.6	1.8	12.3	
SEBS 7B	8	5	17	23	23	12	8	M2	2.5	12.8	6.5
SEBS 7BY				32.5	32.5		13			22.3	
SEBS 9B	10	5.5	20	30.8	30.8	15	10	M3	3	19.6	7.8
SEBS 9BY				40.3	40.3		16			29.1	
SEBS 12B	13	7.5	27	33.8	34.2	20	15		3.5	20.2	10
SEBS 12BY				45.7	46.1		20			32.1	
SEBS 15B	16	8.5	32	41.6	42	25	20	4	26.6	12	
SEBS 15BY				57.5	57.9		25		42.5		
SEBS 20B	25	13	46	65.9	65.9	38	38	M4	6	44.7	17.5
SEBS 20BY				85.7	85.7					64.5	

part number	standard rail length											
	L mm											
SEBS 5B	40	55	70	85	100	130	160					
SEBS 7B	40	55	70	85	100	130	160	190	220	250	280	310
SEBS 9B	55	75	95	115	135	155	175	195	235	275	315	355
SEBS 12B	70	95	120	145	170	195	220	245	270	295	320	345
SEBS 15B	70	110	150	190	230	270	310	350	390	430	470	510
SEBS 20B	220	280	340	400	460	520	580	640	760	880	1,000	

With custom length rails, kindly advise distance (N) from one end of rail to first hole.
 Unless we are advised (N) distance by customer, we assume distance (N) to be as state in Page4.
 Joint rails are used when the required length exceeds the maximum standard length listed in the dimensional tables contact NB for details.

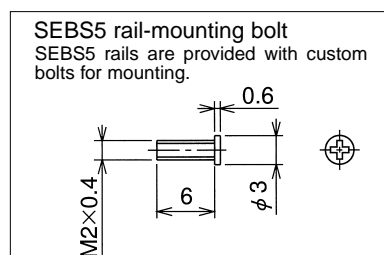


※Refer to P.A-18 for description of accuracy

guide-rail dimensions					basic load rating		allowable static moment			mass		block size	
H_1	C	$d \times G \times h$	N	P	dynamic	static	M_P	M_Y	M_R	resin return cap	stainlees return cap		guide rail
mm	mm	mm	mm	mm	kN	kN	$N \cdot m$	$N \cdot m$	$N \cdot m$	kg	kg	kg/m	
4	5	$2.4 \times 3.5 \times 0.8^{*1}$	5	15	0.39	0.66	0.9	0.8	1.7	0.003	0.004	0.13	5B
					0.52	0.88	1.7	1.4	2.2	0.004	0.005		5BY
4.7	7	$2.4 \times 4.2 \times 2.3$	5	15	1.10	1.70	3.5	3.0	6.2	0.009	0.011	0.19	7B
					1.93	2.98	11.0	9.3	10.8	0.015	0.017		7BY
5.5	9	$3.5 \times 6 \times 3.5$	7.5	20	1.67	2.47	7.8	6.6	11.5	0.02	0.02	0.31	9B
					2.47	3.70	17.6	14.9	17.2	0.03	0.03		9BY
7.5	12	$3.5 \times 6 \times 4.5$	10	25	2.55	3.70	11.7	9.9	23.1	0.03	0.04	0.61	12B
					4.15	6.02	31.0	26.3	37.6	0.05	0.06		12BY
9.5	15	$3.5 \times 6 \times 4.5$	15	40	4.26	6.36	26.9	22.8	49.2	0.06	0.08	1.02	15B
					6.92	10.3	71.1	60.2	80.1	0.10	0.11		15BY
15	20	$6 \times 9.5 \times 8.5$	20	60	8.91	12.7	92.7	78.5	130	0.23	0.27	2.14	20B
					12.9	18.5	195	165	189	0.32	0.36		20BY

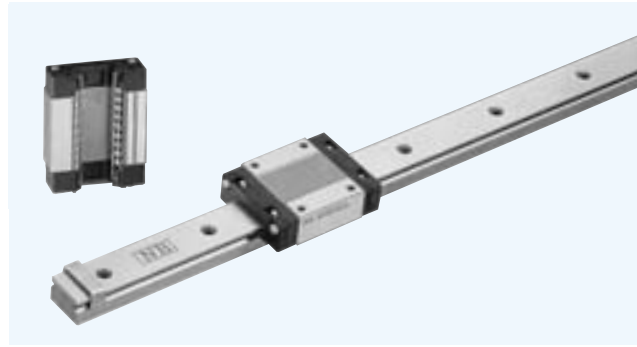
1kN \approx 102kgf 1N \cdot m \approx 0.102kgf \cdot m

395	435	475			
370	395	420	445	470	495
550	590	630	670		



SEBS-B-N/BY-N Type

— Retained Ball Type / Tapped Hole rail —

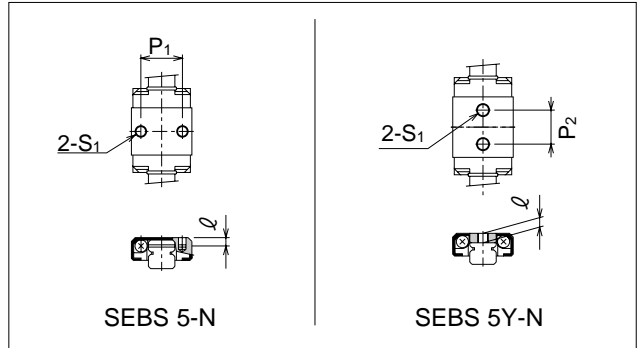


part number structure

example **SEBS15BYMUU2T1-589PN/W2**

SEBS: anticorrosion	15: size	B: retained ball type	Y: block size	M: blank standard	UU: return cap	2: number of blocks attached to one rail	T1: tapped hole rail	589: total length of rail	P: accuracy grade	N: pre-load symbol	W2: symbol for number of rails
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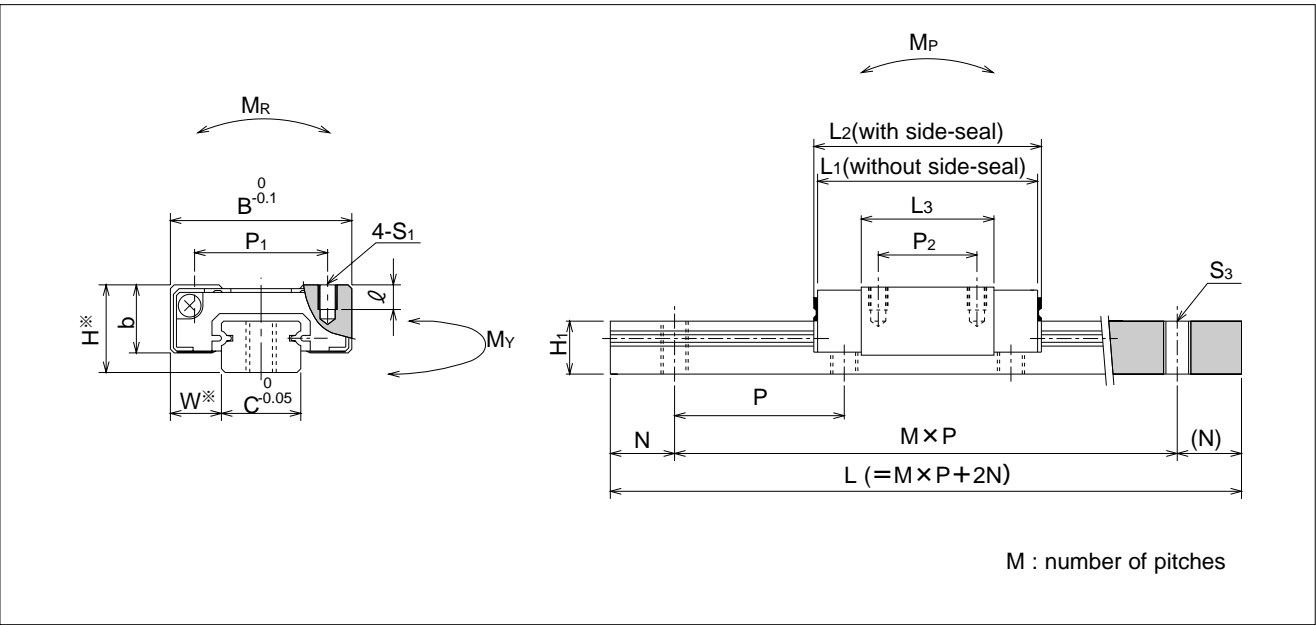
Note: The symbol for the number of rails does not mean the number of rails ordered.



part number	assembly dimensions		block dimensions								
	H	W	B	L ₁	L ₂	P ₁	P ₂	S ₁	∅	L ₃	b
SEBS 5B-N SEBS 5BY-N	6	3.5	12	16.3 19.3	16.7 19.7	8 —	— 7	M2 M2.6	1.5 1.8	9.3 12.3	4.5
SEBS 7B-N SEBS 7BY-N	8	5	17	23 32.5	23 32.5	12	8 13	M2	2.5	12.8 22.3	6.5
SEBS 9B-N SEBS 9BY-N	10	5.5	20	30.8 40.3	30.8 40.3	15	10 16	M3	3	19.6 29.1	7.8
SEBS 12B-N SEBS 12BY-N	13	7.5	27	33.8 45.7	34.2 46.1	20	15 20			3.5	
SEBS 15B-N SEBS 15BY-N	16	8.5	32	41.6 57.5	42 57.9	25	20 25	M4	4	26.6 42.5	12
SEBS 20B-N SEBS 20BY-N	25	13	46	65.9 85.7	65.9 85.7	38	38			6	

part number	standard rail length											
	L mm											
SEBS 5B-N	40	55	70	85	100	130	160					
SEBS 7B-N	40	55	70	85	100	130	160	190	220	250	280	310
SEBS 9B-N	55	75	95	115	135	155	175	195	235	275	315	355
SEBS 12B-N	70	95	120	145	170	195	220	245	270	295	320	345
SEBS 15B-N	70	110	150	190	230	270	310	350	390	430	470	510
SEBS 20B-N	220	280	340	400	460	520	580	640	760	880	1,000	

With custom length rails, kindly advise distance (N) from one end of rail to first hole.
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 Joint rails are used when the required length exceeds the maximum standard length listed in the dimensional tables contact NB for details.



※Refer to P.A-18 for description of accuracy

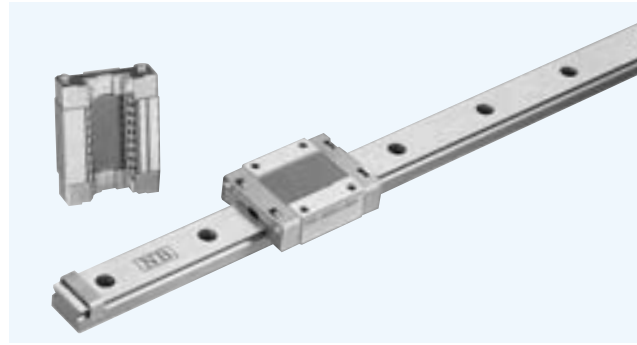
guide-rail dimensions					basic load rating		allowable static moment			mass		block size	
H ₁	C	S ₃	N	P	dynamic	static	M _P	M _Y	M _R	block kg			guide rail kg/m
mm	mm		mm	mm	C	Co				resin return cap	stainlees return cap		
4	5	M2.6	5	15	0.39	0.66	0.9	0.8	1.7	0.003	0.004	0.13	5B
					0.52	0.88	1.7	1.4	2.2	0.004	0.005		5BY
4.7	7	M3	5	15	1.10	1.70	3.5	3.0	6.2	0.009	0.011	0.19	7B
					1.93	2.98	11.0	9.3	10.8	0.015	0.017		7BY
5.5	9	M4	7.5	20	1.67	2.47	7.8	6.6	11.5	0.02	0.02	0.31	9B
					2.47	3.70	17.6	14.9	17.2	0.03	0.03		9BY
7.5	12	M4	10	25	2.55	3.70	11.7	9.9	23.1	0.03	0.04	0.61	12B
					4.15	6.02	31.0	26.3	37.6	0.05	0.06		12BY
9.5	15	M5	15	40	4.26	6.36	26.9	22.8	49.2	0.06	0.08	1.02	15B
					6.92	10.3	71.1	60.2	80.1	0.10	0.11		15BY
15	20	M6	20	60	8.91	12.7	92.7	78.5	130	0.23	0.27	2.14	20B
					12.9	18.5	195	165	189	0.32	0.36		20BY

1kN ≒ 102kgf 1N · m ≒ 0.102kgf · m

395	435	475			
370	395	420	445	470	495
550	590	630	670		

SEBS-BM/BYM Type

— Retained Ball Type —

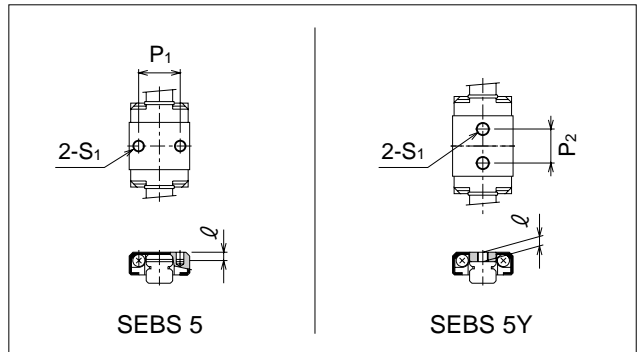


part number structure

example **SEBS15BYMUU2T1-589P/W2**

SEBS: anticorrosion	15: size	B: retained ball type	Y: block size	M: return cap	UU: seal	2: number of blocks attached to one rail	T1: pre-load symbol	-589: total length of rail	P: accuracy grade	/W2: symbol for number of rails
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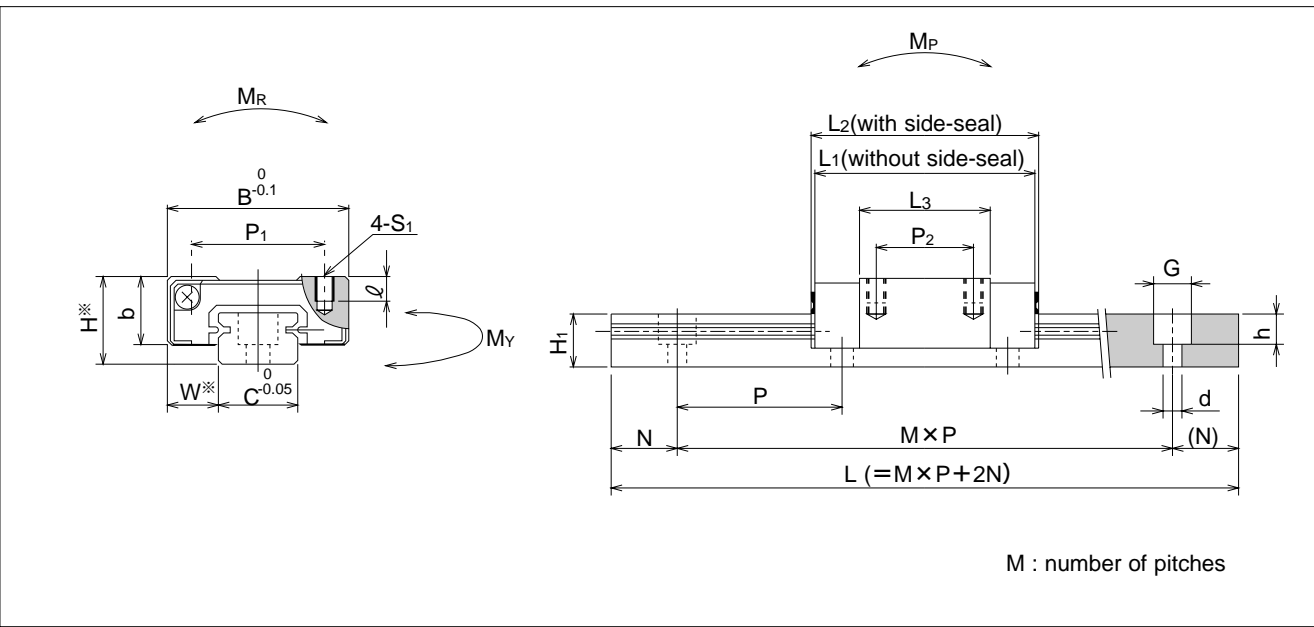
Note: The symbol for the number of rails does not mean the number of rails ordered.



part number	assembly dimensions		block dimensions								
	H	W	B	L ₁	L ₂	P ₁	P ₂	S ₁	∅	L ₃	b
SEBS 5BM SEBS 5BYM	6	3.5	12	16.3 19.3	16.7 19.7	8 —	— 7	M2 M2.6	1.5 1.8	9.3 12.3	4.5
SEBS 7BM SEBS 7BYM	8	5	17	23 32.5	23 32.5	12	8 13	M2	2.5	12.8 22.3	6.5
SEBS 9BM SEBS 9BYM	10	5.5	20	30.8 40.3	30.8 40.3	15	10 16	M3	3	19.6 29.1	7.8
SEBS 12BM SEBS 12BYM	13	7.5	27	33.8 45.7	34.2 46.1	20	15 20			3.5	
SEBS 15BM SEBS 15BYM	16	8.5	32	41.6 57.5	42 57.9	25	20 25	M4	4	26.6 42.5	12
SEBS 20BM SEBS 20BYM	25	13	46	65.9 85.7	65.9 85.7	38	38			6	

part number	standard rail length											
	L mm											
SEBS 5BM	40	55	70	85	100	130	160					
SEBS 7BM	40	55	70	85	100	130	160	190	220	250	280	310
SEBS 9BM	55	75	95	115	135	155	175	195	235	275	315	355
SEBS 12BM	70	95	120	145	170	195	220	245	270	295	320	345
SEBS 15BM	70	110	150	190	230	270	310	350	390	430	470	510
SEBS 20BM	220	280	340	400	460	520	580	640	760	880	1,000	

With custom length rails, kindly advise distance (N) from one end of rail to first hole.
 Unless we are advised (N) distance by customer, we assume distance (N) to be as state in P.A-19
 Joint rails are used when the required length exceeds the maximum standard length listed in the dimensional tables contact NB for details.

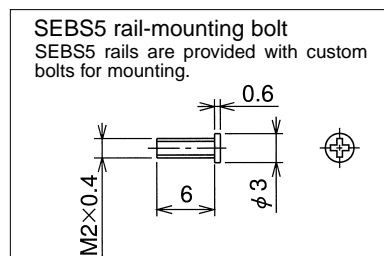


※Refer to P.A-18 for description of accuracy

guide-rail dimensions					basic load rating		allowable static moment			mass		block size	
H_1	C	$d \times G \times h$	N	P	dynamic	static	M_P	M_Y	M_R	resin return cap	stainlees return cap		guide rail
mm	mm	mm	mm	mm	kN	kN	$N \cdot m$	$N \cdot m$	$N \cdot m$	kg	kg		kg/m
4	5	$2.4 \times 3.5 \times 0.8^{*1}$	5	15	0.39	0.66	0.9	0.8	1.7	0.003	0.004	0.13	5B
					0.52	0.88	1.7	1.4	2.2	0.004	0.005		5BY
4.7	7	$2.4 \times 4.2 \times 2.3$	5	15	1.10	1.70	3.5	3.0	6.2	0.009	0.011	0.19	7B
					1.93	2.98	11.0	9.3	10.8	0.015	0.017		7BY
5.5	9	$3.5 \times 6 \times 3.5$	7.5	20	1.67	2.47	7.8	6.6	11.5	0.02	0.02	0.31	9B
					2.47	3.70	17.6	14.9	17.2	0.03	0.03		9BY
7.5	12	$3.5 \times 6 \times 4.5$	10	25	2.55	3.70	11.7	9.9	23.1	0.03	0.04	0.61	12B
					4.15	6.02	31.0	26.3	37.6	0.05	0.06		12BY
9.5	15	$3.5 \times 6 \times 4.5$	15	40	4.26	6.36	26.9	22.8	49.2	0.06	0.08	1.02	15B
					6.92	10.3	71.1	60.2	80.1	0.10	0.11		15BY
15	20	$6 \times 9.5 \times 8.5$	20	60	8.91	12.7	92.7	78.5	130	0.23	0.27	2.14	20B
					12.9	18.5	195	165	189	0.32	0.36		20BY

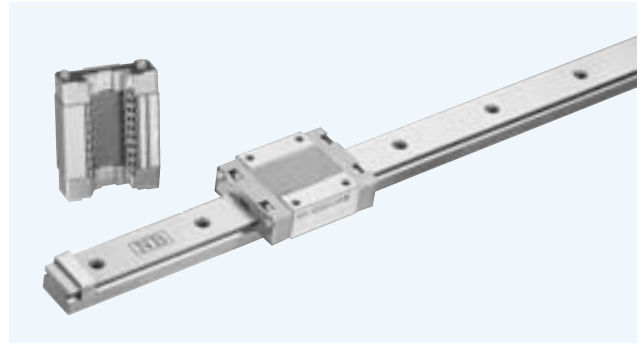
1kN \approx 102kgf 1N \cdot m \approx 0.102kgf \cdot m

395	435	475			
370	395	420	445	470	495
550	590	630	670		



SEBS-BM-N/BYM-N Type

— Retained Ball Type / Tapped Hole rail —

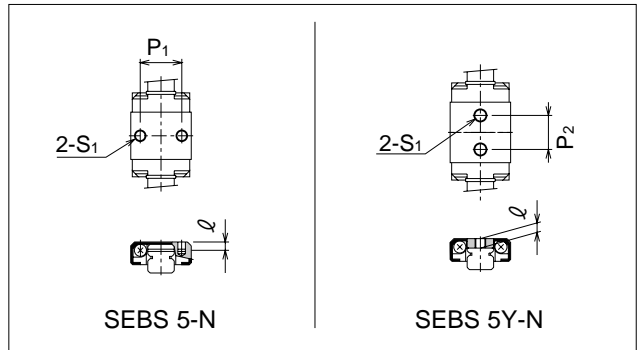


part number structure

example **SEBS15BYMUU2T1-589PN/W2**

SEBS: anticorrosion	15: size	B: retained ball type	Y: block size	M: blank	UU: return cap	2: number of blocks	T1: seal	589: total length	P: accuracy grade	N: tapped hole rail	W2: symbol for number of rails
			Y: long	blank: standard	blank: resin		blank: without seal		blank: high		blank: single rail
				Y: long	M: stainless steel		UU: seals on both ends		P: precision		W2: double rails
											W3: triple rails

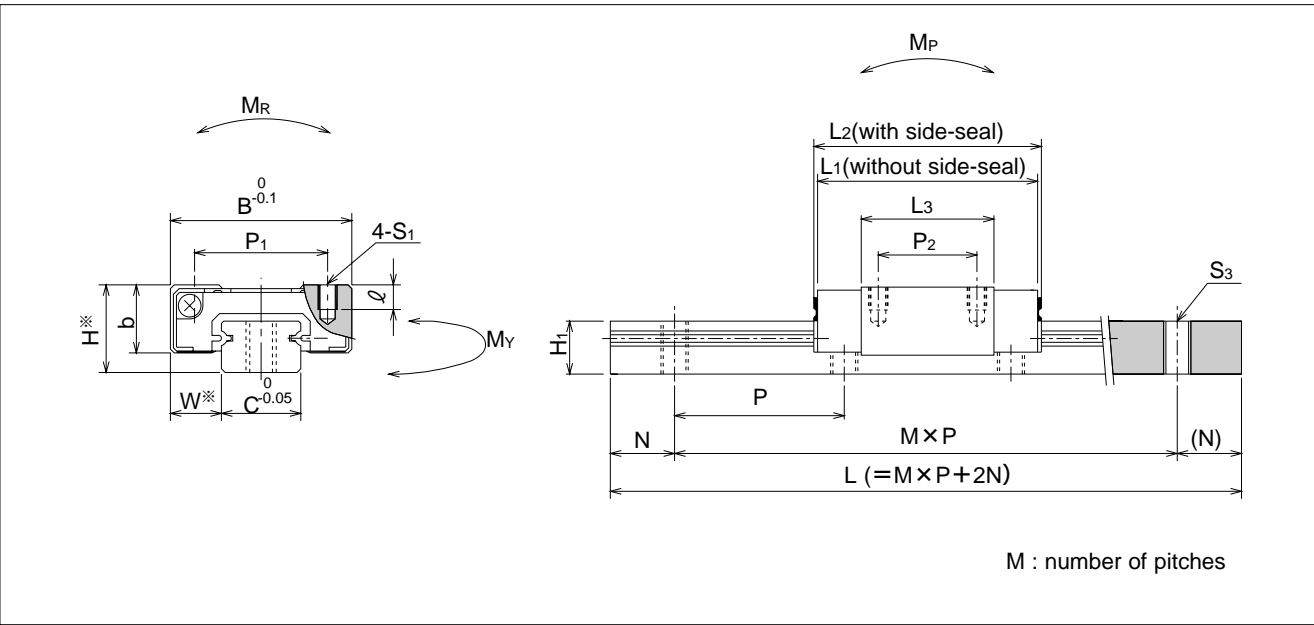
Note: The symbol for the number of rails does not mean the number of rails ordered.



part number	assembly dimensions		block dimensions								
	H	W	B	L ₁	L ₂	P ₁	P ₂	S ₁	ℓ	L ₃	b
stainless return cap	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
SEBS 5BM-N	6	3.5	12	16.3	16.7	8	—	M2	1.5	9.3	4.5
SEBS 5BYM-N				19.3	19.7		—				
SEBS 7BM-N	8	5	17	23	23	12	8	M2	2.5	12.8	6.5
SEBS 7BYM-N				32.5	32.5		13			22.3	
SEBS 9BM-N	10	5.5	20	30.8	30.8	15	10	M3	3	19.6	7.8
SEBS 9BYM-N				40.3	40.3		16			29.1	
SEBS 12BM-N	13	7.5	27	33.8	34.2	20	15	M3	3.5	20.2	10
SEBS 12BYM-N				45.7	46.1		20			32.1	
SEBS 15BM-N	16	8.5	32	41.6	42	25	20	M3	4	26.6	12
SEBS 15BYM-N				57.5	57.9		25			42.5	
SEBS 20BM-N	25	13	46	65.9	65.9	38	38	M4	6	44.7	17.5
SEBS 20BYM-N				85.7	85.7		38			64.5	

part number	standard rail length											
	L mm											
SEBS 5BM-N	40	55	70	85	100	130	160					
SEBS 7BM-N	40	55	70	85	100	130	160	190	220	250	280	310
SEBS 9BM-N	55	75	95	115	135	155	175	195	235	275	315	355
SEBS 12BM-N	70	95	120	145	170	195	220	245	270	295	320	345
SEBS 15BM-N	70	110	150	190	230	270	310	350	390	430	470	510
SEBS 20BM-N	220	280	340	400	460	520	580	640	760	880	1,000	

With custom length rails, kindly advise distance (N) from one end of rail to first hole.
 Unless we are advised (N) distance by customer, we assume distance (N) to be as state in P.A-19
 Joint rails are used when the required length exceeds the maximum standard length listed in the dimensional tables contact NB for details.



※Refer to P.A-18 for description of accuracy

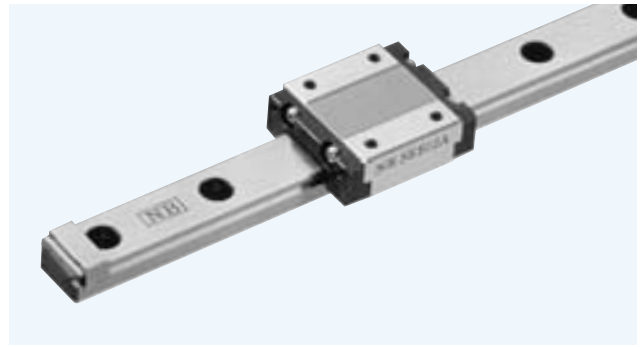
guide-rail dimensions					basic load rating		allowable static moment			mass		block size	
H ₁	C	S ₃	N	P	dynamic	static	M _P	M _Y	M _R	block kg			guide rail kg/m
mm	mm		mm	mm	C	Co				resin return cap	stainlees return cap		
4	5	M2.6	5	15	0.39	0.66	0.9	0.8	1.7	0.003	0.004	0.13	5B
					0.52	0.88	1.7	1.4	2.2	0.004	0.005		5BY
4.7	7	M3	5	15	1.10	1.70	3.5	3.0	6.2	0.009	0.011	0.19	7B
					1.93	2.98	11.0	9.3	10.8	0.015	0.017		7BY
5.5	9	M4	7.5	20	1.67	2.47	7.8	6.6	11.5	0.02	0.02	0.31	9B
					2.47	3.70	17.6	14.9	17.2	0.03	0.03		9BY
7.5	12	M4	10	25	2.55	3.70	11.7	9.9	23.1	0.03	0.04	0.61	12B
					4.15	6.02	31.0	26.3	37.6	0.05	0.06		12BY
9.5	15	M5	15	40	4.26	6.36	26.9	22.8	49.2	0.06	0.08	1.02	15B
					6.92	10.3	71.1	60.2	80.1	0.10	0.11		15BY
15	20	M6	20	60	8.91	12.7	92.7	78.5	130	0.23	0.27	2.14	20B
					12.9	18.5	195	165	189	0.32	0.36		20BY

1kN ≒ 102kgf 1N · m ≒ 0.102kgf · m

395	435	475			
370	395	420	445	470	495
550	590	630	670		

SEB-A/AY TYPE

– Standard Type –



part number structure

example **SEBS 15A Y UU 2 T1 - 589 P / W2**

specification	symbol for number of rails
SEB standard	blank single rail
SEBS anticorrosion	W2 double rails
	W3 triple rails

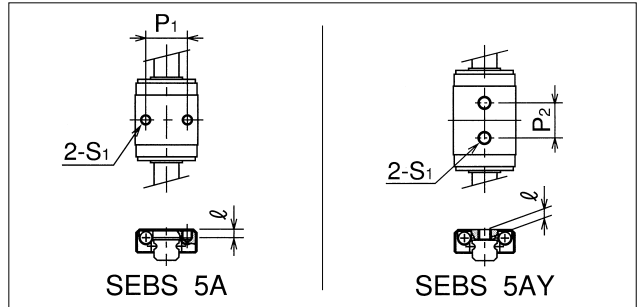
size	accuracy grade
blank	blank high
Y long	P precision

block	total length of rail
blank standard	blank
Y long	P

seal	pre-load symbol
blank without side-seal	T0 clearance
UU seals on both ends	blank standard
	T1 light pre-load

number of blocks attached to one rail

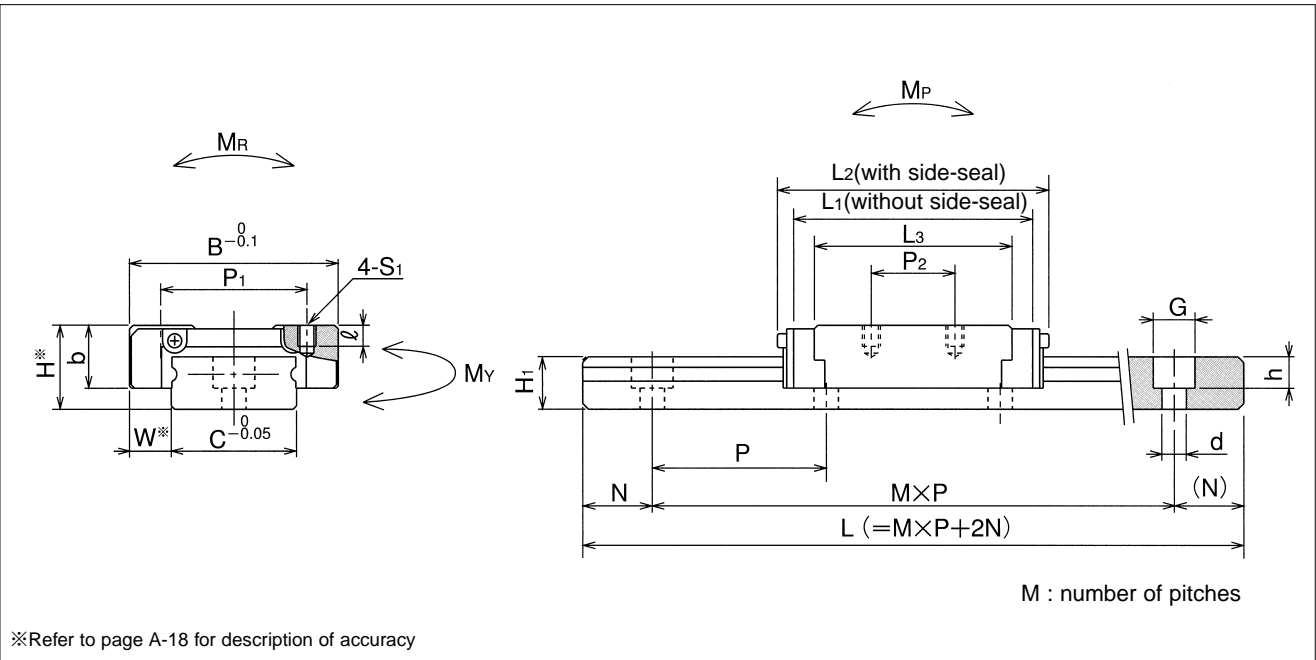
Note: The symbol for the number of rails does not mean the number of rails ordered.



part number		assembly dimensions		block dimensions								
		H	W	B	L ₁	L ₂	P ₁	P ₂	S ₁	ℓ	L ₃	b
standard	anticorrosion	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
—	SEBS 5A	6	3.5	12	15.6	17	8	—	M2	1.5	9.8	4.5
	SEBS 5AY				19.2	20.6		7				
—	SEBS 7A	8	5	17	21.9	24	12	8	M2	2.5	15.1	6.5
	SEBS 7AY				31	33		13			24.6	
SEB 9A	SEBS 9A	10	5.5	20	28.1	30	15	10	M3	3	20.4	7.8
	SEB 9AY				SEBS 9AY	38.1		40			16	
SEB 12A	SEBS 12A	13	7.5	27	30	33.5	20	15	M3	3.5	23	10
	SEB 12AY				SEBS 12AY	42		45.5			20	
SEB 15A	SEBS 15A	16	8.5	32	38.5	42	25	20	M3	4	29.5	12
	SEB 15AY				SEBS 15AY	54.5		58			25	
SEB 20A	SEBS 20A	25	13	46	55.7	61	38	38	M4	6	45.7	17.5
	SEB 20AY				SEBS 20AY	79.5		85			38	

part number		standard rail length											
standard	anticorrosion	L mm											
—	SEBS 5A	40	55	70	85	100	130	160					
—	SEBS 7A	40	55	70	85	100	130	160	190	220	250	280	310
SEB 9A	SEBS 9A	55	75	95	115	135	155	175	195	235	275	315	355
SEB 12A	SEBS 12A	70	95	120	145	170	195	220	245	270	295	320	345
SEB 15A	SEBS 15A	70	110	150	190	230	270	310	350	390	430	470	510
SEB 20A	SEBS 20A	220	280	340	400	460	520	580	640	760	880	1,000	

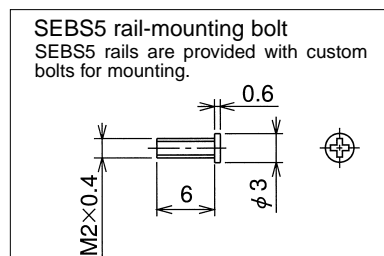
Joint rails are used when the required length exceeds the maximum standard length listed in the dimensional tables. Contact NB for details.



guide-rail dimensions					basic load rating		allowable static moment			mass		size
H ₁	C	d×G×h	N	P	dynamic	static	M _P	M _Y	M _R	block	guide rail	
mm	mm	mm	mm	mm	C	Co	N · m	N · m	N · m	kg	kg/m	
4	5	2.4×3.5×1	5	15	0.43	0.72	1.2	1.5	1.9	0.003	0.13	5A
					0.59	0.99	2.2	2.8	2.6	0.004		5AY
4.7	7	2.4×4.2×2.3	5	15	1.08	1.67	4.1	4.9	5.2	0.01	0.19	7A
					1.89	2.92	12.0	14.3	9.1	0.015		7AY
5.5	9	3.5×6×3.5	7.5	20	1.67	2.45	6.9	7.8	11.8	0.02	0.31	9A
					2.55	3.82	16.7	19.6	17.6	0.03		9AY
7.5	12	3.5×6×4.5	10	25	2.16	3.14	8.8	10.8	18.6	0.04	0.61	12A
					3.53	5.10	24.5	29.4	32.3	0.06		12AY
9.5	15	3.5×6×4.5	15	40	3.63	5.39	21.6	25.5	40.2	0.06	1.02	15A
					5.88	8.72	57.8	68.6	67.6	0.10		15AY
15	20	6×9.5×8.5	20	60	6.86	9.80	51.0	60.8	98.0	0.23	2.14	20A
					11.0	15.7	157	186	157	0.34		20AY

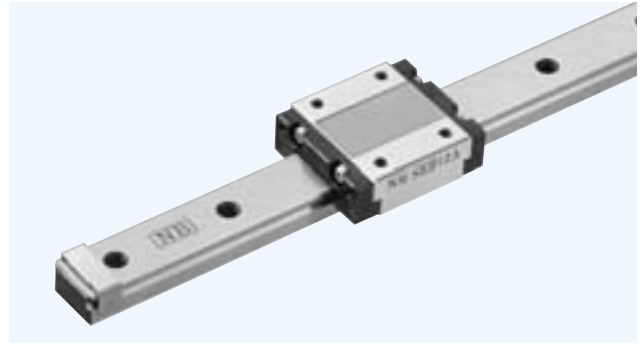
1kN ≒ 102kgf 1N · m ≒ 0.102kgf · m

						maximum length	
						standard	anticorrosion
						—	300
						—	700
395	435	475				500	1,000
370	395	420	445	470	495		
550	590	630	670				
						1,900	



SEB-A-N/AY-N TYPE

– Standard Type w/Tapped Hole Rail –



part number structure

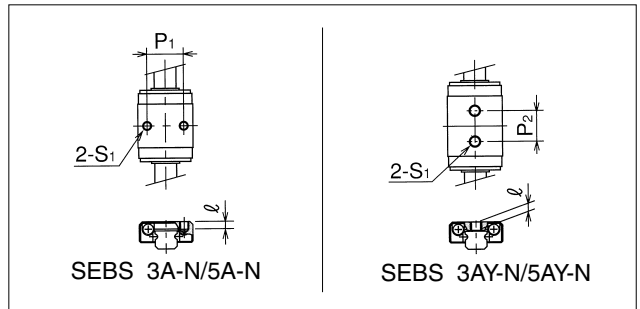
example **SEBS 15A Y UU 2 T1 -589 P N / W2**

specification	symbol for number of rails
SEB standard	blank single rail
SEBS anticorrosion	W2 double rails
	W3 triple rails

size	tapped-hole rail
block	accuracy grade
blank standard	blank high
Y long	P precision

seal	total length of rail
blank without side-seal	pre-load symbol
UU seals on both ends	T0 clearance
	blank standard
	T1 light pre-load

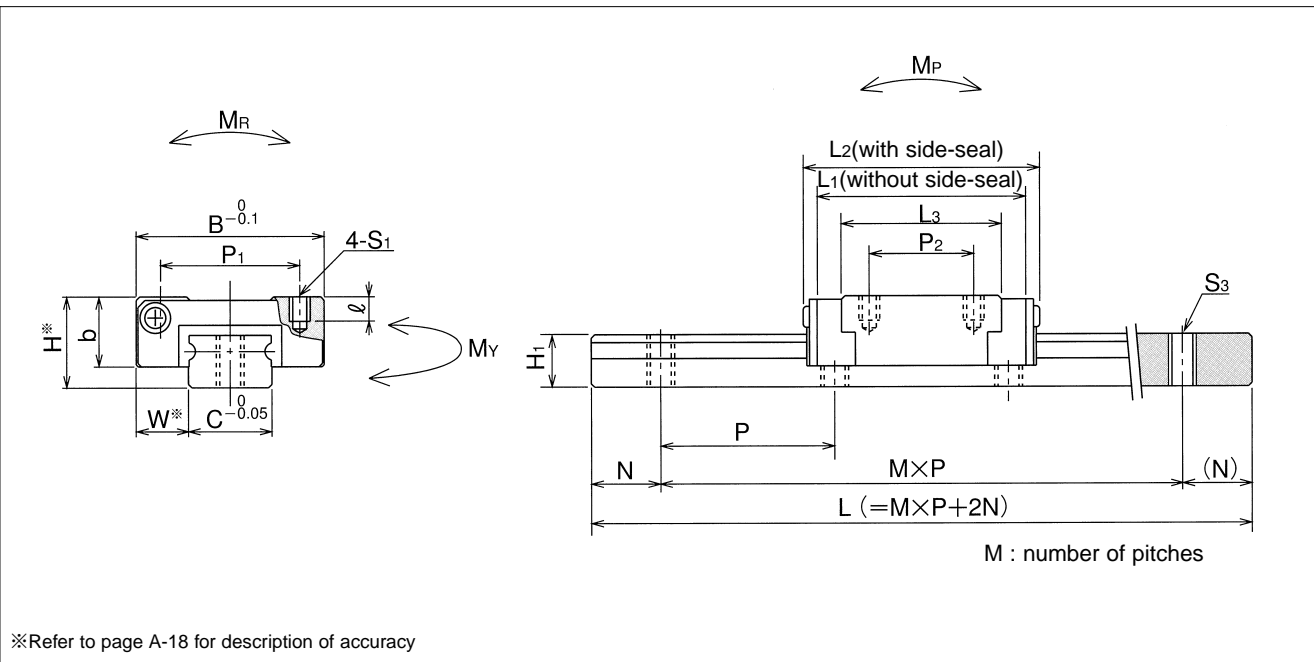
Note: The symbol for the number of rails does not mean the number of rails ordered.



part number		assembly dimensions		block dimensions								
		H	W	B	L ₁	L ₂	P ₁	P ₂	S ₁	ℓ	L ₃	b
standard	anticorrosion	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
—	SEBS 3A-N	4	2.5	8 ^{0.05}	10.5	11.8	—	3.5	M1.6	1.3	6.5	3
	SEBS 3AY-N				14.5	15.8		5.5	M2		10.5	
—	SEBS 5A-N	6	3.5	12	15.6	17	8	—	M2	1.5	9.8	4.5
	SEBS 5AY-N				19.2	20.6		7	M2.6		13.4	
—	SEBS 7A-N	8	5	17	21.9	24	12	8	M2	2.5	15.1	6.5
	SEBS 7AY-N				31	33		13			24.6	
SEB 9A-N	SEBS 9A-N	10	5.5	20	28.1	30	15	10	M3	3	20.4	7.8
SEB 9AY-N	SEBS 9AY-N				38.1	40		16			30.4	
SEB12A-N	SEBS12A-N	13	7.5	27	30	33.5	20	15	M3	3.5	23	10
SEB12AY-N	SEBS12AY-N				42	45.5		20			34.7	
SEB15A-N	SEBS15A-N	16	8.5	32	38.5	42	25	20	M3	4	29.5	12
SEB15AY-N	SEBS15AY-N				54.5	58		25			45.4	
SEB20A-N	SEBS20A-N	25	13	46	55.7	61	38	38	M4	6	45.7	17.5
SEB20AY-N	SEBS20AY-N				79.5	85		38			69.5	

part number		standard rail length											
standard	anticorrosion	L mm											
—	SEBS 3A-N	30	40	60	80	100							
—	SEBS 5A-N	40	55	70	85	100	130	160					
—	SEBS 7A-N	40	55	70	85	100	130	160	190	220	250	280	310
SEB 9A-N	SEBS 9A-N	55	75	95	115	135	155	175	195	235	275	315	355
SEB12A-N	SEBS12A-N	70	95	120	145	170	195	220	245	270	295	320	345
SEB15A-N	SEBS15A-N	70	110	150	190	230	270	310	350	390	430	470	510
SEB20A-N	SEBS20A-N	220	280	340	400	460	520	580	640	760	880	1,000	

Joint rails are used when the required length exceeds the maximum standard length listed in the dimensional tables. Contact NB for details.



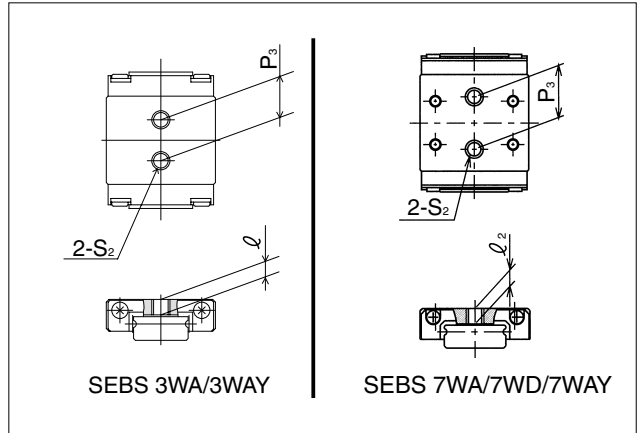
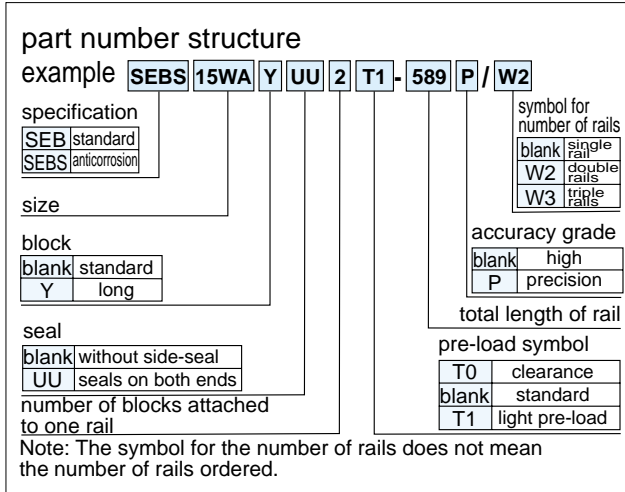
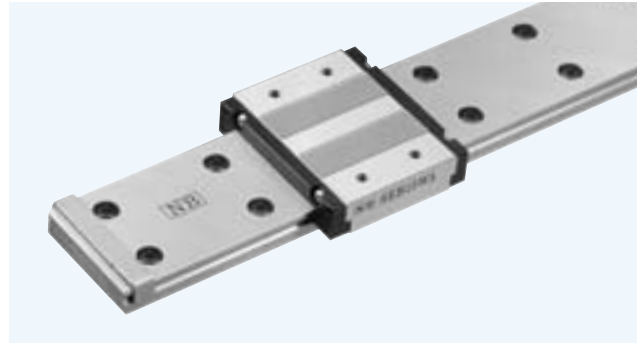
guide-rail dimensions					basic load rating		allowable static moment			mass		size
H ₁	C	S ₃	N	P	dynamic	static	M _P	M _Y	M _R	block	guide rail	
mm	mm		mm	mm	C	Co						
2.6	3	M1.6	5	10	0.19	0.31	0.33	0.39	0.50	0.001	0.053	3A
					0.31	0.51	0.88	1.04	0.82	0.0016		3AY
4	5	M2.6	5	15	0.43	0.72	1.2	1.5	1.9	0.003	0.13	5A
					0.59	0.99	2.2	2.8	2.6	0.004		5AY
4.7	7	M3	5	15	1.08	1.67	4.1	4.9	5.2	0.01	0.19	7A
					1.89	2.92	12.0	14.3	9.1	0.015		7AY
5.5	9	M4	7.5	20	1.67	2.45	6.9	7.8	11.8	0.02	0.31	9A
					2.55	3.82	16.7	19.6	17.6	0.03		9AY
7.5	12	M4	10	25	2.16	3.14	8.8	10.8	18.6	0.04	0.61	12A
					3.53	5.10	24.5	29.4	32.3	0.06		12AY
9.5	15	M5	15	40	3.63	5.39	21.6	25.5	40.2	0.06	1.02	15A
					5.88	8.72	57.8	68.6	67.6	0.10		15AY
15	20	M6	20	60	6.86	9.80	51.0	60.8	98.0	0.23	2.14	20A
					11.0	15.7	157	186	157	0.34		20AY

1kN ≒ 102kgf 1N · m ≒ 0.102kgf · m

						maximum length	
						standard	anticorrosion
							150
						—	300
						—	700
395	435	475				500	1,000
370	395	420	445	470	495		
550	590	630	670				

SEB-WA/WAY TYPE

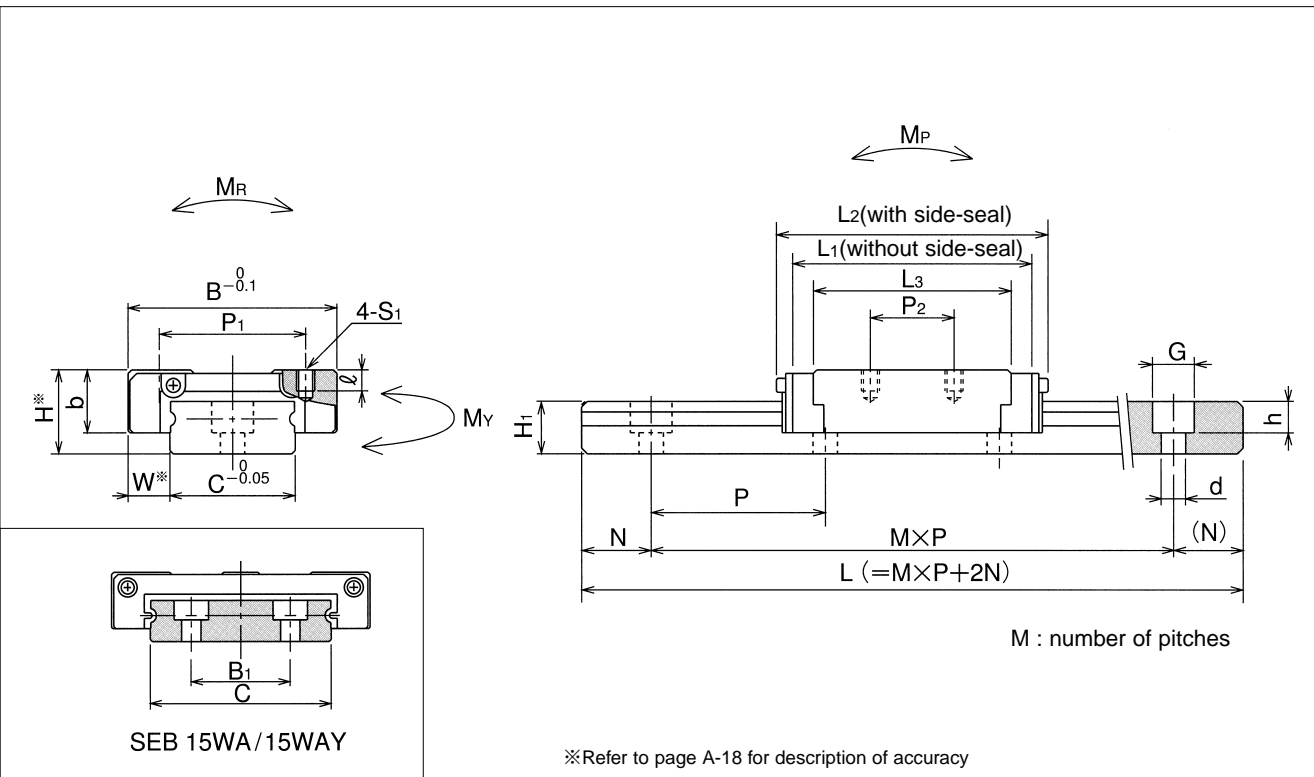
— Wide Type —



part number		assembly dimensions		block dimensions											
		H	W	B	L ₁	L ₂	P ₁	P ₂	S ₁	ℓ	L ₃	P ₃	S ₂	ℓ ₂	b
standard	anticorrosion	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
—	SEBS 3WA	4.5	3	12 ^{0.05}	14.2	15	—	4.5	M2	1.7	9.7	—	—	—	3.5
	SEBS 3WAY				19	19.8					8				
—	SEBS 7WA	9	5.5	25	30.1	32	18	12	M2.6	2.5	22.1	12	M4	3.5	7
	SEBS 7WD				39.6	41	19	10	M3	2.8	31.6				
SEB 9WA	SEBS 9WA	12	6	30	35.9	38	21	12	M2.6	3	28.4	—	—	—	9
SEB 9WD	SEBS 9WD				48	50	23	24		2.8	40.4				
SEB 9WAY	SEBS 9WAY	14	8	40	40.7	44	28	15	M3	3	33.5	—	—	—	11
SEB 12WA	SEBS 12WA				55	58.5				28	28				
SEB 12WAY	SEBS 12WAY	16	9	60	51.2	55	45	20	M4	4.5	42	—	—	—	13
SEB 15WA	SEBS 15WA				70.5	74				35	61.1				
SEB 15WAY	SEBS 15WAY														

part number		standard rail length													
standard	anticorrosion	L mm													
—	SEBS 3WA	40	55	70	85	100									
—	SEBS 7WA	50	80	110	140	170	200	230	260	290	350	410			
SEB 9WA	SEBS 9WA	50	80	110	140	170	200	230	260	290	350	410			
SEB12WA	SEBS12WA	70	110	150	190	230	270	310	350	390	430	470			
SEB15WA	SEBS15WA	70	110	150	190	230	270	310	350	390	430	470			

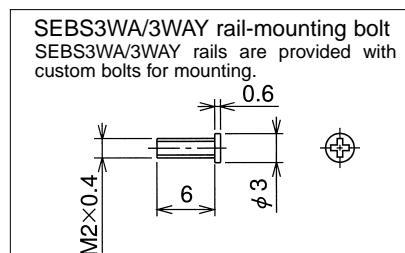
Joint rails are used when the required length exceeds the maximum standard length listed in the dimensional tables. Contact NB for details.



guide-rail dimensions						basic load rating		allowable static moment			mass		size
H ₁	C	B ₁	d×G×h	N	P	C	Co	M _P	M _Y	M _R	block	guide rail	
mm	mm	mm	mm	mm	mm	kN	kN	N·m	N·m	N·m	kg	kg/m	
2.6	6	—	2.4×4×1.5	5	15	0.28	0.47	0.82	0.89	1.46	0.0024	0.11	3WA 3WAY
						0.42	0.71	1.7	2.02	2.20	0.0034		
5.2	14	—	3.5×6×3.2	10	30	15.7	2.45	7.8	9.8	15.7	0.02	0.5	7WA 7WD 7WAY
						2.36	3.68	17.2	21.6	23.6	0.03		
7.5	18	—	3.5×6×4.5	10	30	2.25	3.33	13.7	16.7	30.4	0.04	0.96	9WA 9WD 9WAY
						3.33	4.9	29.4	35.3	45.1	0.06		
8	24	—	4.5×8×4.5	15	40	2.94	4.31	20.6	24.5	51.9	0.08	1.40	12WA 12WAY
						4.31	6.27	44.1	52.9	76.4	0.11		
9.5	42	23	4.5×8×4.5	15	40	4.9	7.06	40.2	48.0	148	0.15	2.95	15WA 15WAY
						7.35	10.6	94.1	108	225	0.22		

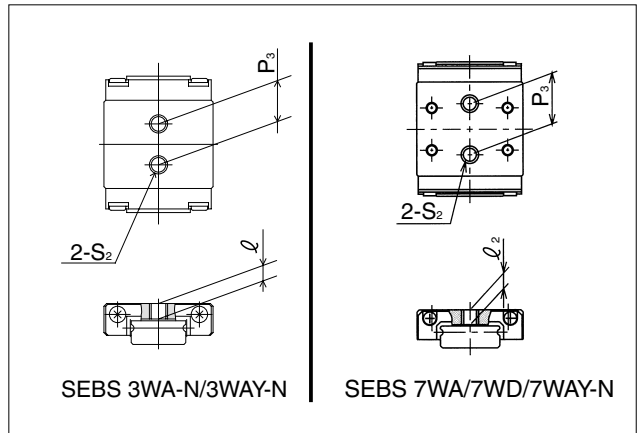
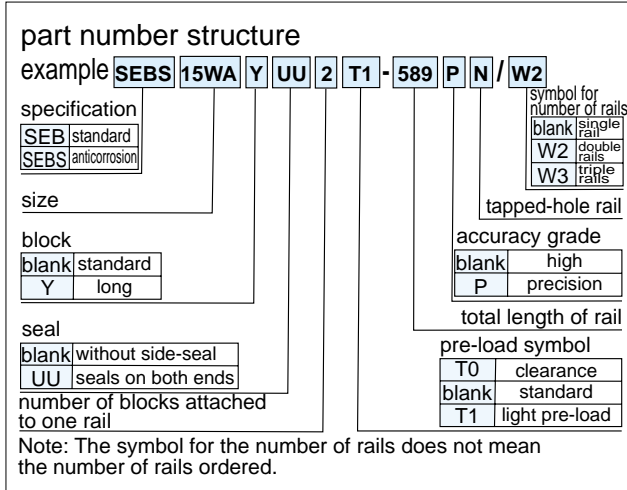
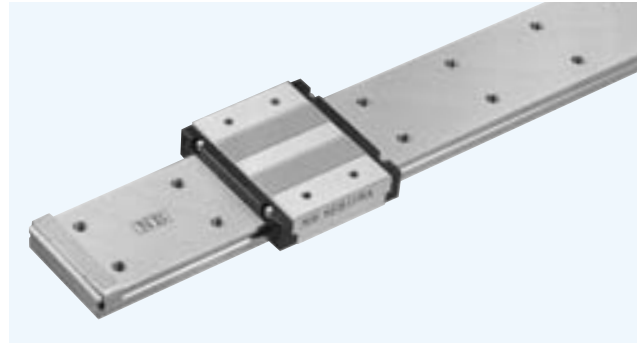
1kN≒102kgf 1N·m≒0.102kgf·m

	maximum length	
	standard	anticorrosion
		150
470	—	700
470 530	1,000	1,000
550 630 710	1,900	
550 630 710 790 870		



SEB-WA-N/WAY-N TYPE

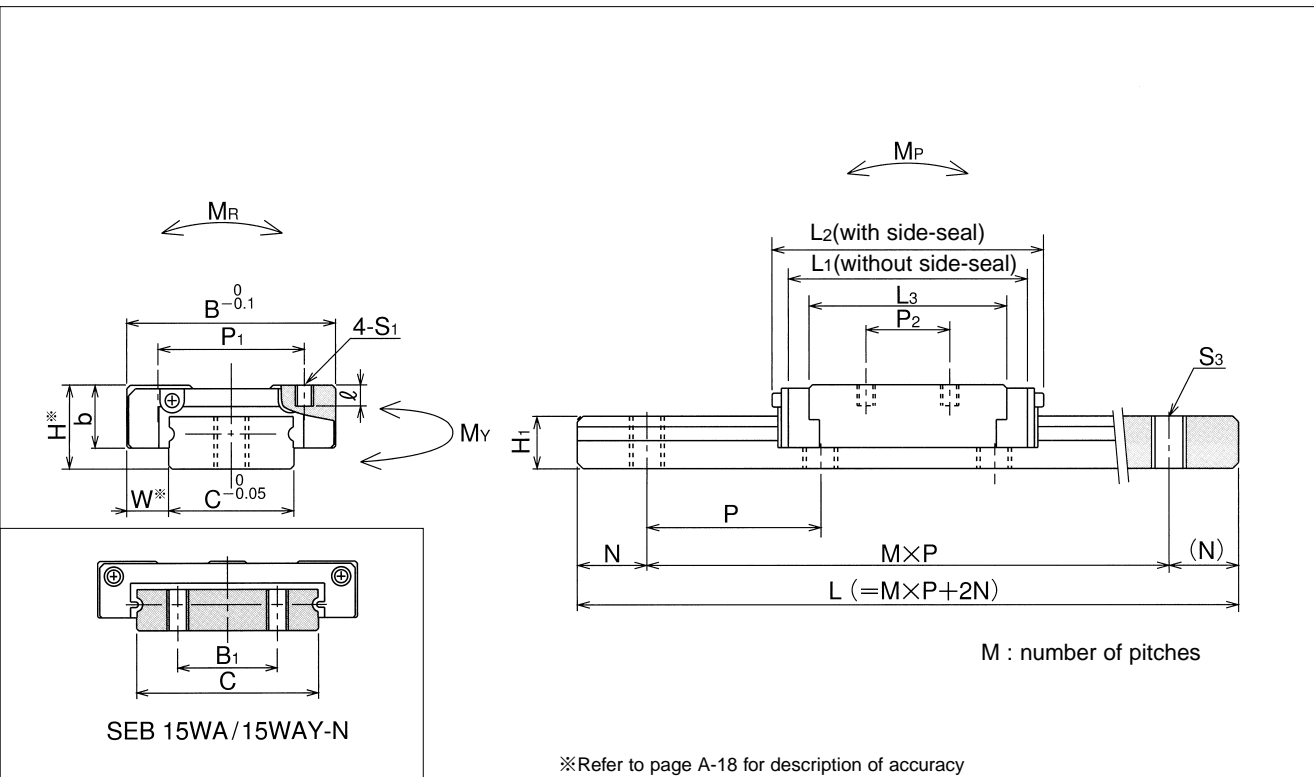
— Wide Type w/Tapped Hole Rail —



part number		assembly dimensions			block dimensions										
		H	W	B	L ₁	L ₂	P ₁	P ₂	S ₁	ℓ	L ₃	P ₃	S ₂	ℓ ₂	b
standard	anticorrosion	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
—	SEBS 3WA-N	4.5	3	12 ^{0.05}	14.2	15	—	4.5	M2	1.7	9.7	—	—	—	3.5
	SEBS 3WAY-N				19	19.8	—	8			14.5				
—	SEBS 7WA-N	9	5.5	25	30.1	32	18	12	M2.6	2.5	22.1	12	M4	3.5	7
	SEBS 7WD-N				39.6	41	19	10			31.6				
SEB 9WA-N	SEBS 9WA-N	12	6	30	35.9	38	21	12	M2.6	3	28.4	—	—	—	9
SEB 9WD-N	SEBS 9WD-N				2.8	40.4									
SEB 9WAY-N	SEBS 9WAY-N	14	8	40	48	50	23	24	M3	3	47.8	—	—	—	11
SEB12WA-N	SEBS12WA-N				40.7	44	15	33.5							
SEB12WAY-N	SEBS12WAY-N	16	9	60	55	58.5	28	28	M4	3.5	61.1	—	—	—	13
SEB15WA-N	SEBS15WA-N				51.2	55	45	20		42					
SEB15WAY-N	SEBS15WAY-N	70.5	74	35	35	61.1									

part number		standard rail length											
standard	anticorrosion	L mm											
—	SEBS 3WA-N	40	55	70	85	100							
—	SEBS 7WA-N	50	80	110	140	170	200	230	260	290	350	410	
SEB 9WA-N	SEBS 9WA-N	50	80	110	140	170	200	230	260	290	350	410	
SEB12WA-N	SEBS12WA-N	70	110	150	190	230	270	310	350	390	430	470	
SEB15WA-N	SEBS15WA-N	70	110	150	190	230	270	310	350	390	430	470	

Joint rails are used when the required length exceeds the maximum standard length listed in the dimensional tables. Contact NB for details.



guide-rail dimensions						basic load rating		allowable static moment			mass		size
H_1	C	B_1	S_3	N	P	dynamic	static	M_P	M_Y	M_R	block	guide rail	
mm	mm	mm		mm	mm	kN	kN	$N \cdot m$	$N \cdot m$	$N \cdot m$	kg	kg/m	
2.6	6	—	M3	5	15	0.28	0.47	0.82	0.89	1.46	0.0024	0.11	3WA
						0.42	0.71	1.7	2.02	2.20			0.0034
5.2	14	—	M4	10	30	1.57	2.45	7.8	9.8	15.7	0.02	0.5	7WA
						2.36	3.68	17.2	21.6	23.6			0.03
7.5	18	—	M4	10	30	2.25	3.33	13.7	16.7	30.4	0.04	0.96	9WA
						3.33	4.9	29.4	35.5	45.1			0.06
8	24	—	M5	15	40	2.94	4.31	20.6	24.5	51.9	0.08	1.40	12WA
						4.31	6.27	44.1	52.9	76.4			0.11
9.5	42	23	M5	15	40	4.9	7.06	40.2	48.0	148	0.15	2.95	15WA
						7.35	10.6	94.1	108	225			0.22

1kN ≒ 102kgf 1N · m ≒ 0.102kgf · m

	maximum length	
	standard	anticorrosion
		150
470	—	700
470	530	1,000
550	630	710
550	630	710
	790	870
	1,900	1,000