

## Rexroth Linear Bushings and Shafts, GreenLight Selection



Bosch Rexroth is the global leader in metric bushings. Whether you need standard bushings or cut-to-length linear shafts, our products are available in both inch and metric sizes.

Offered in a wide range of standard bearing housings, mountings, seals, shaft supports, and end finishes, our products can be interchanged with those of other major manufacturers.

### Linear Bushings: Technical Data and Ordering Information

#### Metric Bushings: Closed

Size(mm)	STD Precision with 2 seals	SUPER A with 2 seals	COMPACT with 2 seals
5	R0602 305 10	-	-
8	R0602 308 10	-	-
12	R0602 012 10	R0670 212 40	R0658 212 40
16	R0602 016 10	R0670 216 40	R0658 216 40
20	R0602 020 10	R0670 220 40	R0658 220 40
25	R0602 025 10	R0670 225 40	R0658 225 40
30	R0602 030 10	R0670 230 40	R0658 230 40
40	R0602 040 10	R0670 240 40	R0658 240 40
50	R0602 050 10	R0670 250 40	R0658 250 40

#### Metric Shafts: Carbon Steel

Size (mm)	AISI 1060 Tolerance h6
5	R1000 005 00
8	R1000 008 00
12	R1000 012 00
16	R1000 016 00
20	R1000 020 00
25	R1000 025 00
30	R1000 030 00
40	R1000 040 00
50	R1000 050 00

#### Inch Bushings: Closed

Size(in)	STD Precision with 2 seals	SUPER with 2 seals
0.250	0750 204 00	R0755 204 00
0.375	0750 206 00	R0755 206 00
0.500	0750 208 00	R0755 208 00
0.625	0750 210 00	R0755 210 00
0.750	0750 212 00	R0755 212 00
1.000	0750 216 00	R0755 216 00
1.250	0750 220 00	R0755 220 00
1.500	0750 224 00	R0755 224 00
2.000	0750 232 00	R0755 232 00

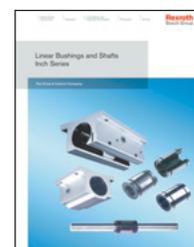
#### Inch Shafts: Carbon Steel

Size (in)	AISI 1060 Class L
0.250	R1700 004 08
0.375	R1700 006 08
0.500	R1700 008 08
0.625	R1700 010 08
0.750	R1700 012 08
1.000	R1700 016 08
1.250	R1700 020 08
1.500	R1700 024 08
2.000	R1700 032 08

### Need more than what you see here?

For information on the complete line of Rexroth bushing products, request catalog **RA 99 110** for inch and **R310A 3100** for metric or

download it from the Linear Motion and Assembly Technologies area at: [www.boschrexroth-us.com](http://www.boschrexroth-us.com).



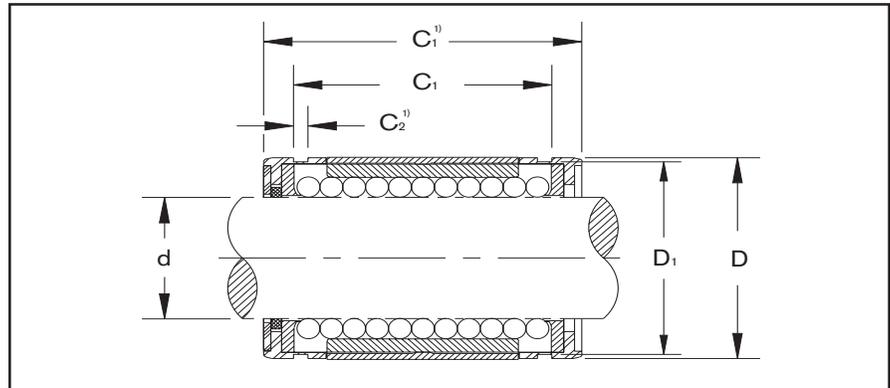
## Linear Bushing Dimensions Closed Type

Dimensions: Metric Bushings (mm) Standard and Super Series

Bore / d	D h5	C h12	C <sub>1</sub> H13	C <sub>2</sub>	D <sub>1</sub>	
					Standard	Super
5 <sup>1)</sup>	12	22	14.2	1.1	11.1	-
8 <sup>1)</sup>	16	25	16.2	1.1	14.7	-
12	22	32	22.6	1.3	20.5	21
16	26	36	24.6	1.3	24.9	24.9
20	32	45	31.2	1.6	30.5	30.5
25	40	58	43.7	1.85	38.5	38.5
30	47	68	51.7	1.85	44.5	44.5
40	62	80	60.3	2.15	58	58.5
50	75	100	77.3	2.65	71	71.5

Dimensions: Metric Bushings (mm)  
Compact Series

Bore / d	D	C
		± 0.2
12	19	28
16	24	30
20	28	30
25	35	40
30	40	50
40	52	60
50	62	70



<sup>1)</sup> C<sub>1</sub>, C<sub>2</sub> and D<sub>1</sub> refer to the snap ring groove.

There is no snap ring groove on the metric compact type.

The outer dimension of the metal stamping is slightly oversized.  
No special retention elements are necessary.

For load capacities and life prediction, see Bosch Rexroth catalog R310A 3100 for metric linear bushings and RA99110 for inch products.

Dimensions: Inch\* Bushings Standard and Super Series

Bore / d	D	C	C <sub>1</sub>		C <sub>2</sub>	D <sub>1</sub>
			Standard	Super		
.2500/.2496	0.5000	0.7500	0.5110	0.0390	0.4687	0.4687
.3750/.3746	0.6250	0.8750	0.6385	0.0390	0.5880	0.5880
.5000/.4996	0.8750	1.2500	0.9625	0.0459	0.8209	0.8209
.6250/.6246	1.1250	1.5000	1.1039	0.0559	1.0590	1.0590
.7500/.7496	1.2500	1.6250	1.1657	0.0559	1.1760	1.1760
1.0000/.9996	1.5625	2.2500	1.7547	0.0679	1.4687	1.4687
1.2500/1.2495	2.0000	2.6250	2.0047	0.0679	1.8859	1.8859
1.5000/1.4995	2.3750	3.0000	2.4118	0.0859	2.2389	2.2389
2.0000/1.9995	3.0000	4.0000	3.1917	0.1029	2.8379	2.8379

\* Dimensions in this chart are in inches.

# Rexroth Ball Rail Systems GreenLight Program



Rexroth Ball Rail® Systems in the GreenLight™ program are available in all standard sizes 15-45, N accuracy, with standard and slimline runner blocks in clearance and 2% preload versions. Rails are cut to length, in 1 mm increments.

Rexroth Ball Rail® Systems feature major product advances and virtually eliminate maintenance.

Since all Rexroth runner blocks are dimensionally compatible with any rail

of the same size, the fast delivery in our GreenLight program means lower spare parts inventory with no limited selection of rail lengths, and no need to replace the block and rail together as a matched set.

To assure your Ball Rail System can be shipped on the following day, please limit the quantities to 10 rails and 20 runner blocks.

To order Runner Blocks, simply pick the sizes and styles that suit your application and choose the part numbers from the table at right. For miniature sizes, see pages 9-11.

### Runner Block Part Numbers

Size	Preload Type*	Accuracy Class	Standard	Slimline
15	CLR	N	R1651 194 20	R1622 194 20
	.02C		R1651 114 20	R1622 114 20
20	CLR	N	R1651 894 20	R1622 894 20
	.02C		R1651 814 20	R1622 814 20
25	CLR	N	R1651 294 20	R1622 294 20
	.02C		R1651 214 20	R1622 214 20
30	CLR	N	R1651 794 20	R1622 794 20
	.02C		R1651 714 20	R1622 714 20
35	CLR	N	R1651 394 20	R1622 394 20
	.02C		R1651 314 20	R1622 314 20
45	CLR	N	R1651 494 10	R1622 494 10
	.02C		R1651 414 10	R1622 414 10



Standard



Slimline

\* CLR = up to 10µm clearance  
.02C = 2% of dynamic capacity, C

### Need more than what you see here?

For information on the complete line of Rexroth Ball Rail® Systems products, please request catalog **R310A 2202** or download it from the Linear Motion and Assembly Technologies area at: [www.boschrexroth-us.com](http://www.boschrexroth-us.com).





# Rails: Technical Data and Ordering Information

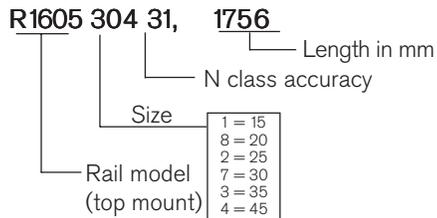


## Rail Part Numbers

Size	Accuracy Class	Part Number
15	N	R1605 104 31....
20	N	R1605 804 31....
25	N	R1605 204 31....
30	N	R1605 704 31....
35	N	R1605 304 31....
45	N	R1605 404 31....

## Ordering guide rails

Example part number:



Guide rail size 35,  
accuracy class N,  
rail length 1756 mm,

When ordering non-standard rails, you will also need to specify mounting hole locations. Fig. 3 provides hole spacing information. Make sure that the hole spacing matches up with the overall length of your rail.

$$L = (n_T \times T) + (2 \times T_1)$$

where L = length

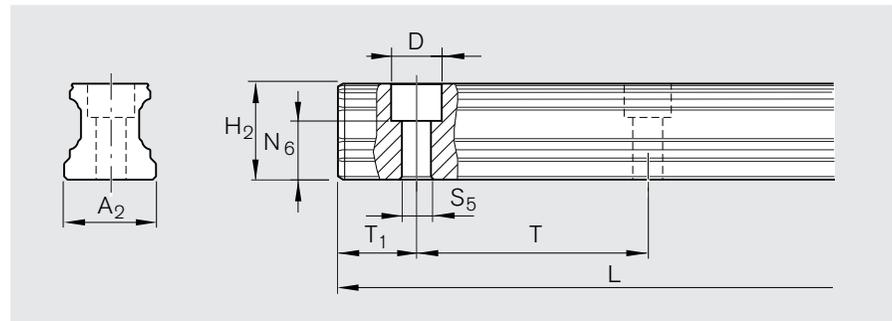
$n_T$  = number of spaces, T

T = hole spacing

$T_1$  = distance to first hole

For ordering examples when ordering intermediate lengths, please consult the Rexroth Ball Rail Systems catalog.

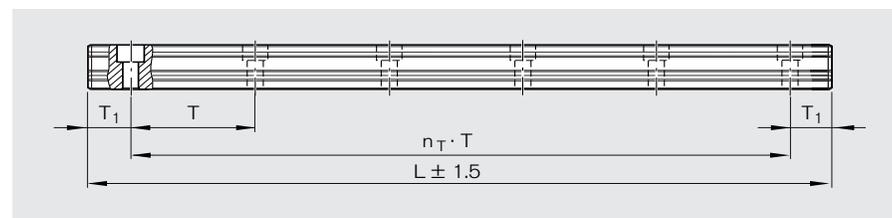
Fig. 2: Rail Dimensions



## Dimensions

Size	A <sub>2</sub>	H <sub>2</sub>	N <sub>6</sub>	D	S <sub>5</sub>	T <sub>1S</sub>	T <sub>1 min</sub>	T	L <sub>ma</sub>	Mass kg/m
15	15	16.20	10.3	7.4	4.4	28.0	10	60	3000	1.4
20	20	20.55	13.2	9.4	6.0	28.0	10	60	4000	2.4
25	23	24.25	15.2	11.0	7.0	28.0	10	60	4000	3.2
30	28	28.35	17.0	15.0	9.0	38.0	12	80	4000	5.0
35	34	31.85	20.5	15.0	9.0	38.0	12	80	4000	6.8
45	45	39.85	23.5	20.0	14.0	50.5	16	105	4000	10.5

Fig. 3: Hole Dimensions



# Rexroth Miniature Ball Rail Systems, GreenLight Selection



Rexroth Miniature Ball Rail® Systems in the GreenLight™ program are available in all standard sizes: 7, 9M3, (9M2 also available) 12 and 15, accuracy class H in clearance and preload versions. All feature low friction seals and are pre-lubricated. Precision-machined, corrosion resistant steel rails are cut to length, in 1 mm increments.

The fast delivery of our GreenLight Program means lower spare parts

inventory with no limited selection of rail lengths, and no need to replace the block and rail together as a matched set.

To assure your Rexroth Miniature Ball Rail System can be shipped on the following day, please limit the quantities to 10 rails and 20 runner blocks.

## Runner Blocks: Technical Data and Ordering Information

To order Runner Blocks, simply pick the sizes that suit your application and choose the part numbers from the table at right.

For standard sizes in the GreenLight program, see page 6. For Miniature Rails, see page 11.

### Runner Block Part Numbers

Size	Preload Type	Accuracy Class	Standard
7	CLR	H	R0442 793 01
	Preload		R0442 713 01
9/M3	CLR	H	R0442 893 01
	Preload		R0442 813 01
12	CLR	H	R0442 293 01
	Preload		R0442 213 01
15	CLR	H	R0442 593 01
	Preload		R0442 513 01

Like their standard-sized counterparts, all Rexroth miniature runner blocks can fit on any rail of the same size.

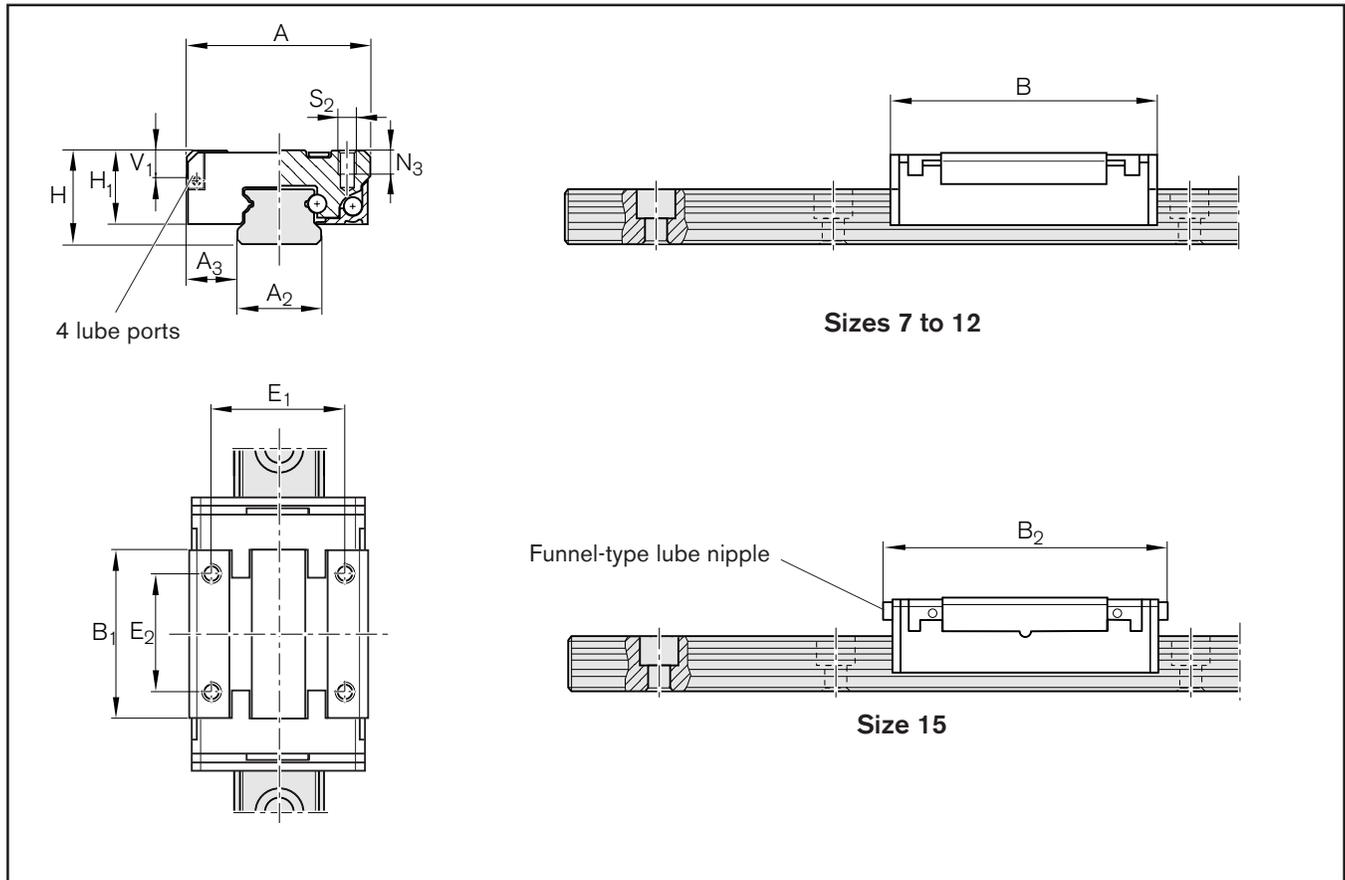
## Need more than what you see here?

For information on the complete line of Rexroth miniature products, request catalog **RA 82 210** or download it from the Linear Motion and Assembly Technologies area at: [www.boschrexroth-us.com](http://www.boschrexroth-us.com).



# Miniature Runner Blocks: Technical Data

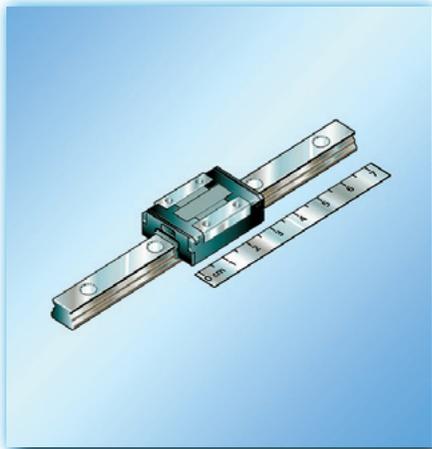
Fig. 4: Runner Block Dimensions



Size	Dimensions (mm)												
	A	A <sub>2</sub>	A <sub>3</sub>	B	B <sub>1</sub>	B <sub>2</sub>	H	H <sub>1</sub>	V <sub>1</sub>	E <sub>1</sub>	E <sub>2</sub>	N <sub>3</sub>	S <sub>2</sub>
7	17	7	5.0	24.0	14.5	–	8	6.5	2.0	12	8	2.5	M2
9/M3	20	9	5.5	31.0	20.7	–	10	8.0	2.8	15	10	3.5	M3
12	27	12	7.5	34.8	21.6	–	13	10.0	3.3	20	15	3.5	M3
15	32	15	8.5	43.0	27.2	46	16	12.0	4.7	25	20	4.0	M3

Size	Weight Runner blocks (g)	Load capacities (N)		Moments (Nm)			
		C dyn.	C <sub>0</sub> stat.	M <sub>t</sub> dyn.	M <sub>t0</sub> stat.	M <sub>L</sub> dyn.	M <sub>L0</sub> stat.
7	9	860	1400	3.1	5.1	1.9	3.2
9/M3	16	1180	2100	5.4	9.6	3.6	6.4
12	33	2310	3470	13.7	20.6	7.9	11.8
15	47	4200	6260	31.2	46.3	18.3	27.0

# Miniature Rails: Technical Data and Ordering Information



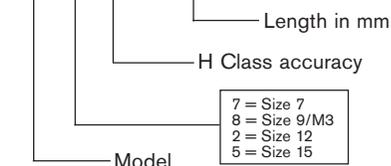
## Rails

Size	Accuracy Class	Part Number
7	H	R0445-703-31....
9M3	H	R0445-803-31....
12	H	R0445-203-31....
15	H	R0445-503-31....

## Ordering guide rails

Example part number:

**R044520331, 771**



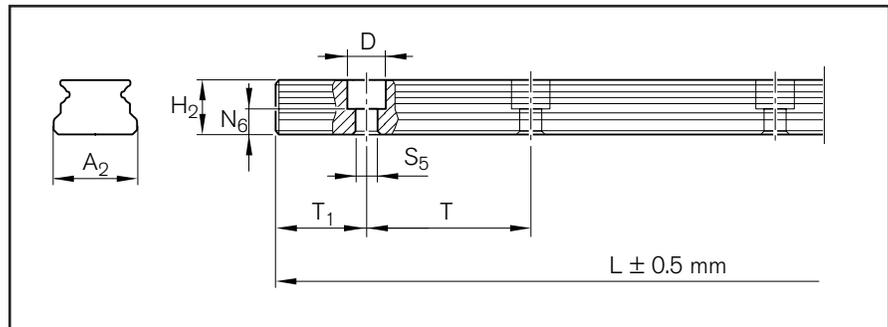
Guide rail size, accuracy class H, preferred rail length 771 mm (standard rail)

If no  $T_1$  is specified by the customer, both ends of the guide rail will be identical. The rail lengths were calculated using the formula for recommended rail lengths. For more information, please see our Miniature Ball Rail catalog **RA 82 201**.

When ordering non-standard rails, you will also need to specify mounting hole locations.

Figure 5. Provides hole spacing information for  $T_1$  and  $T$ . Make sure that the hole spacing matches up with the overall length of your rail.

Fig. 5 Rail Dimensions



## Guide rail:

Position tolerance of the mounting holes for

- rail length up to 500 mm  $\oplus \text{Ø } 0.3$
- rail length up to 1000 mm  $\oplus \text{Ø up to } 0.6 \text{ - increasing in linear proportion}$

## Dimensions

Size	$A_2$	$H_2$	$N_6$	$D$	$S_5$	$T_{1 \text{ min}}$	$T$	$L_{\text{max}}$	Weight g/100 mm
7	7	4.7	2.2	4.3	2.5	2.5	15	2000	22
9/M3	9	5.5	2.2	6.0	3.5	3.5	20	2000	33
12	12	7.8	3.0	6.0	3.5	3.5	25	2000	61
15	15	9.5	4.7	6.0	3.5	4.5	40	2000	97

# Rexroth eLINE GreenLight Program



Rexroth eLINE Systems in the GreenLight Program are available in all standard sizes 15, 20, and 25 in both styles (flanged and slimline), in all accuracy classes (N and E), and all preload levels (clearance and preload).

Made of wrought aluminum with ball tracks of hardened bearing steel, eLINE runner blocks and guide rails are characterized by their low weight, and compact design. This makes eLINE ideal for light machinery applications and for handling and positioning movements where the main emphasis is on economy and durability.

eLINE runner blocks ship pre-lubricated for maximum initial travel of 4,000 km. eLINE rail will ship cut to length with a maximum length of 4m.

Since Rexroth eLINE runner blocks are dimensionally compatible with all eLINE rail of the same size, the fast delivery in our GreenLight Program means lower spare parts inventory and no need to replace blocks and rail together as a matched set.

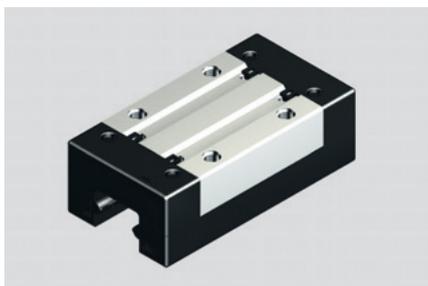
To assure your eLINE system can be shipped on the following day, please limit the order quantities to 5 rails and 10 runner blocks."

## eLINE Runner Block Part Numbers



Standard

Size	Accuracy class	Part numbers – Runner blocks	
		Clearance	Preload
15	N	R2031 194 10	R2031 114 10
	E	R2031 195 10	–
20	N	R2031 894 10	R2031 814 10
	E	R2031 895 10	–
25	N	R2031 294 10	R2031 214 10
	E	R2031 295 10	–



Slimline

Size	Accuracy class	Part numbers – Runner blocks	
		Clearance	Preload
15	N	R2032 194 10	R2032 114 10
	E	R2032 195 10	–
20	N	R2032 894 10	R2032 814 10
	E	R2032 895 10	–
25	N	R2032 294 10	R2032 214 10
	E	R2032 295 10	–

## Need more than what you see here?

For information on the complete line of eLINE Products, please request catalog **R310A 2211** or download it from the Linear Motion and Assembly Technologies area at: [www.boschrexroth-us.com](http://www.boschrexroth-us.com).

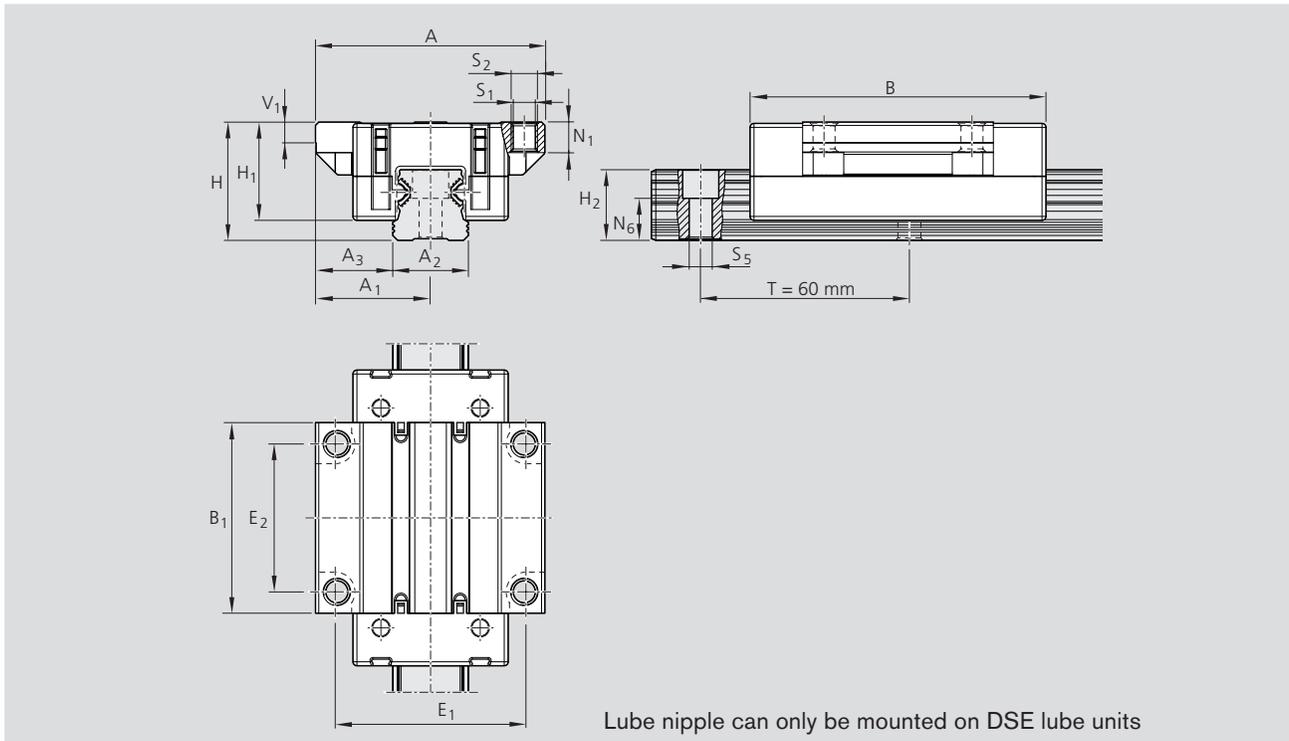


# eLINE Standard Runner Blocks: Technical Data

## Runner block FNS R2031

Flanged, normal, standard height

- Runner block body made from wrought aluminum alloy
- Hardened steel running tracks
- Steel balls to DIN 5401
- With seals
- Initial greasing with Dynalub 510
- For  $P_{act.} \leq P_{max.1}$  no relubrication necessary throughout the stated minimum service life



Size	Dimensions (mm)																	Weight <sup>1)</sup> (kg)
	A	A <sub>1</sub>	A <sub>2</sub>	A <sub>3</sub>	B	B <sub>1</sub>	H	H <sub>1</sub>	H <sub>2</sub>	V <sub>1</sub>	E <sub>1</sub>	E <sub>2</sub>	N <sub>1</sub>	N <sub>6</sub> <sup>±0.5</sup>	S <sub>1</sub>	S <sub>2</sub>	S <sub>5</sub>	
15	47	23.5	15	16.0	59.0	37.8	24	19.8	14.3	4.1	38	30	6.0	8.1	4.3	M5	4.4	0.08
20	63	31.5	20	21.5	80.3	51.5	30	24.7	19.3	5.5	53	40	8.0	11.6	5.3	M6	6.0	0.18
25	70	35.0	23	23.5	90.0	58.0	36	29.9	21.8	6.4	57	45	9.3	12.9	6.7	M8	7.0	0.26

<sup>1)</sup> Please note the low weight of the runner block.

Size	Load capacities (N) <sup>2)</sup>		Moments (Nm)			
	C dyn.	F <sub>max.</sub>	M <sub>t</sub> dyn.	M <sub>t max.</sub> stat.	M <sub>L</sub> dyn.	M <sub>L max.</sub> stat.
15	5 000	2 000	36	14	29	12
20	11 000	4 400	101	40	89	35
25	16 000	6 400	165	66	147	59

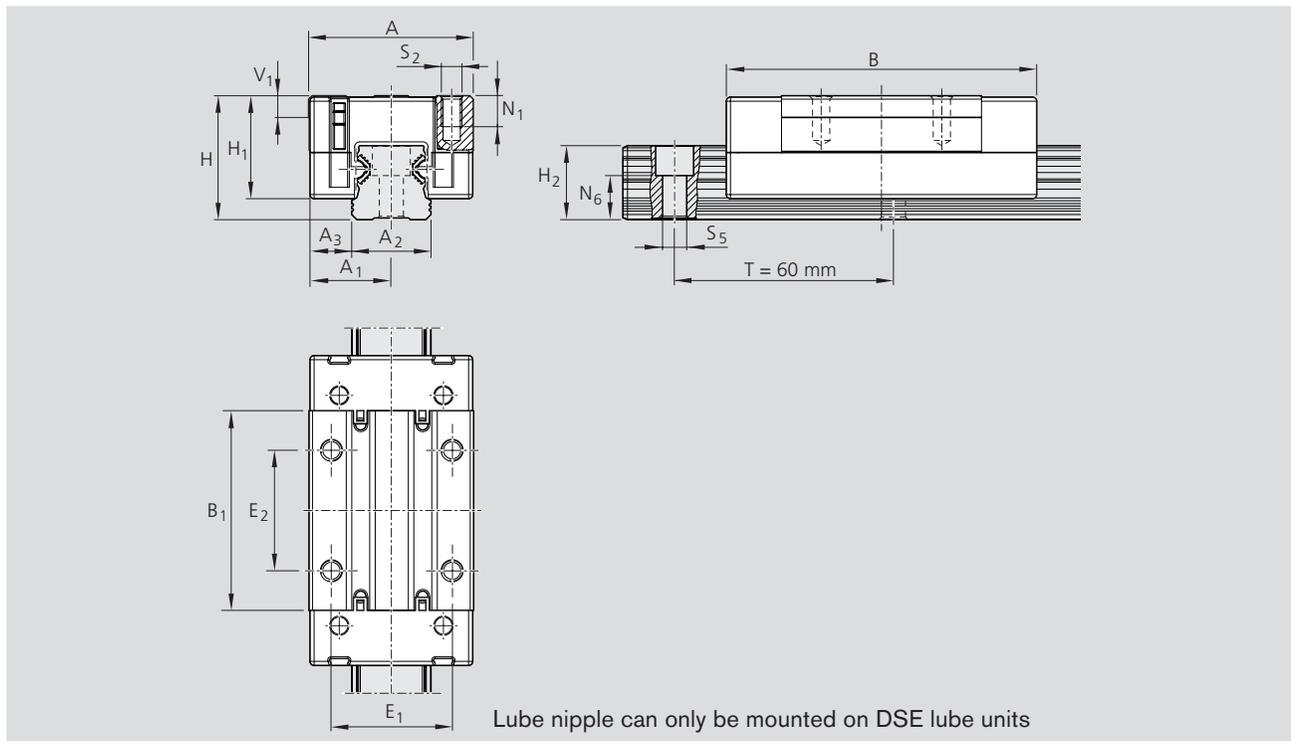
<sup>2)</sup> Determination of dynamic load capacities and moments is based on a travel life of 100,000 m. However, frequently this is determined on the basis of only 50,000 m. In this case for comparison: multiply values C, M<sub>t</sub> and M<sub>L</sub> by 1.26 in accordance with the table.

# eLINE slimline Runner Blocks: Technical Data

## Runner block SNS R2032

Slimline, normal, standard height

- Runner block body made from wrought aluminum alloy
- Hardened steel running tracks
- Steel balls to DIN 5401
- With seals
- Initial greasing with Dynalub 510
- For  $P_{act.} \leq P_{max.}$  no relubrication necessary throughout the stated minimum service life



Size	Dimensions (mm)																Weight <sup>1)</sup> (kg)
	A	A <sub>1</sub>	A <sub>2</sub>	A <sub>3</sub>	B	B <sub>1</sub>	H	H <sub>1</sub>	H <sub>2</sub>	V <sub>1</sub>	E <sub>1</sub>	E <sub>2</sub>	N <sub>1</sub>	N <sub>6</sub> <sup>±0.5</sup>	S <sub>2</sub>	S <sub>5</sub>	
15	34	17	15	9.5	59.0	37.8	24	19.8	14.3	4.1	26	26	6.0	8.1	M4	4.4	0.07
20	44	22	20	12.0	80.3	51.5	30	24.7	19.3	5.5	32	36	7.5	11.6	M5	6.0	0.15
25	48	24	23	12.5	90.0	58.0	36	29.9	21.8	6.4	35	35	9.0	12.9	M6	7.0	0.22

<sup>1)</sup> Please note the low weight of the runner block.

Size	Load capacities (N) <sup>2)</sup>		Moments (Nm)			
	C dyn.	F <sub>max.</sub>	M <sub>t</sub> dyn.	M <sub>t max.</sub> stat.	M <sub>L</sub> dyn.	M <sub>L max.</sub> stat.
15	5 000	2 000	36	14	29	12
20	11 000	4 400	101	40	89	35
25	16 000	6 400	165	66	147	59

<sup>2)</sup> Determination of dynamic load capacities and moments is based on a travel life of 100,000 m. However, frequently this is determined on the basis of only 50,000 m. In this case for comparison: multiply values C, M<sub>t</sub> and M<sub>L</sub> by 1.26 in accordance with the table.

# eLINE Guide Rails - Technical Data and Ordering Information



## Guide rails R2035

For mounting from above, with plastic mounting hole plugs (supplied)

- Rail body made from wrought aluminum alloy, anodized
- Ball running tracks made from hardened antifriction bearing steel

### Part numbers and rail lengths

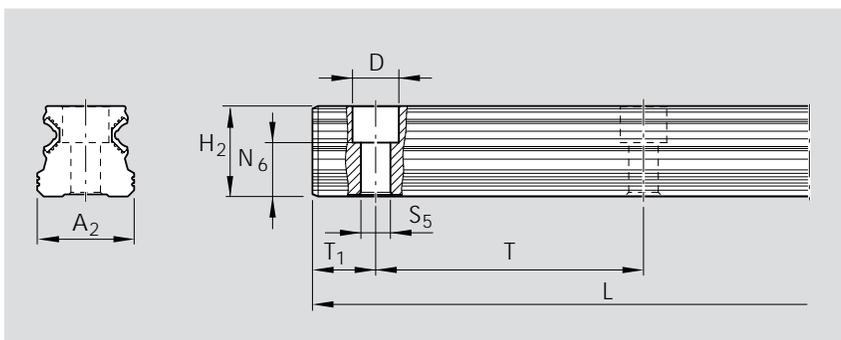
Size	Accuracy class	Guide Rail One-piece Part number, Rail length L (mm)	Spacing T (mm)	Recommended rail length				
				Number of holes $n_B$ / Rail length L (mm)				
15	N	R2035 104 31,....	60	2/ 80	5/ 280	8/ 460	13/ 776	25/ 1496
	E	R2035 105 31,....		2/ 90	5/ 296	8/ 476	14/ 836	30/ 1796
20	N	R2035 804 31,....		2/ 100	6/ 340	9/ 536	16/ 956	32/ 1916
	E	R2035 805 31,....		2/ 116	6/ 356	10/ 596	18/ 1076	
25	N	R2035 204 31,....		3/ 176	7/ 400	11/ 656	20/ 1196	
	E	R2035 205 31,....		4/ 236	7/ 416	12/ 716	22/ 1316	

Please Note!

Maximum = 5 Pieces

Maximum Length = 4 Meters

### Dimensions and weights



Size	Dimensions (mm)									Weight <sup>2)</sup> kg/m
	$A_2$	$H_2$	$N_6^{\pm 0.5}$	D	$S_5$	$T_{1S}^{\pm 0.5}$	$T_{1min.}$	T	$L_{max.}^{1)}$	
15	15	14.3	8.1	7.4	4.4	28.0	10	60	2000	0.57
20	20	19.3	11.6	9.4	6.0	28.0	10	60	2000	0.98
25	23	21.8	12.9	11.0	7.0	28.0	10	60	2000	1.25

<sup>1)</sup> One-piece guide rails

<sup>2)</sup> Please note the low weight per meter of the guide rail.