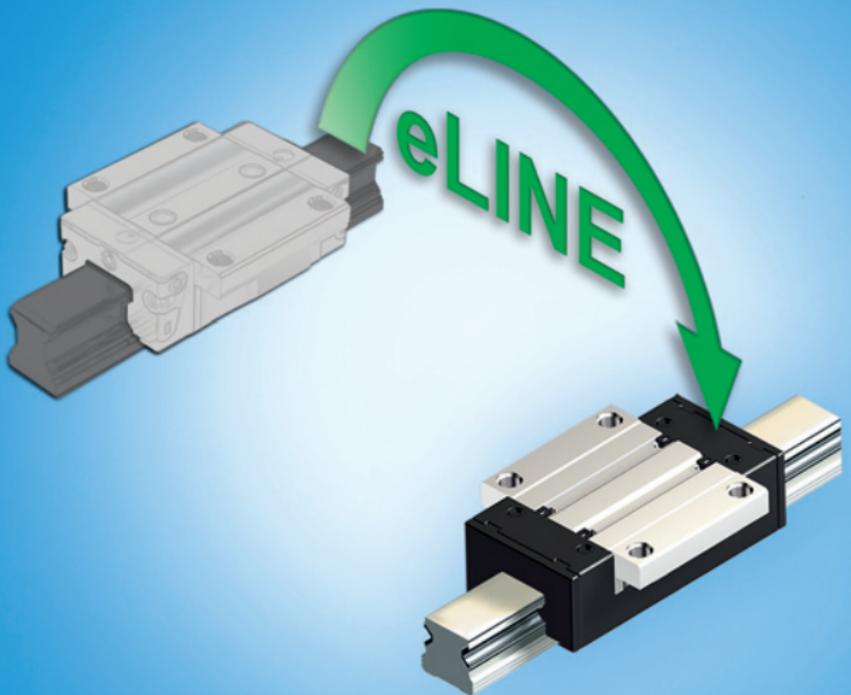


Cost Optimization Guide

Ball Rail Systems





eLINE – The Benefits

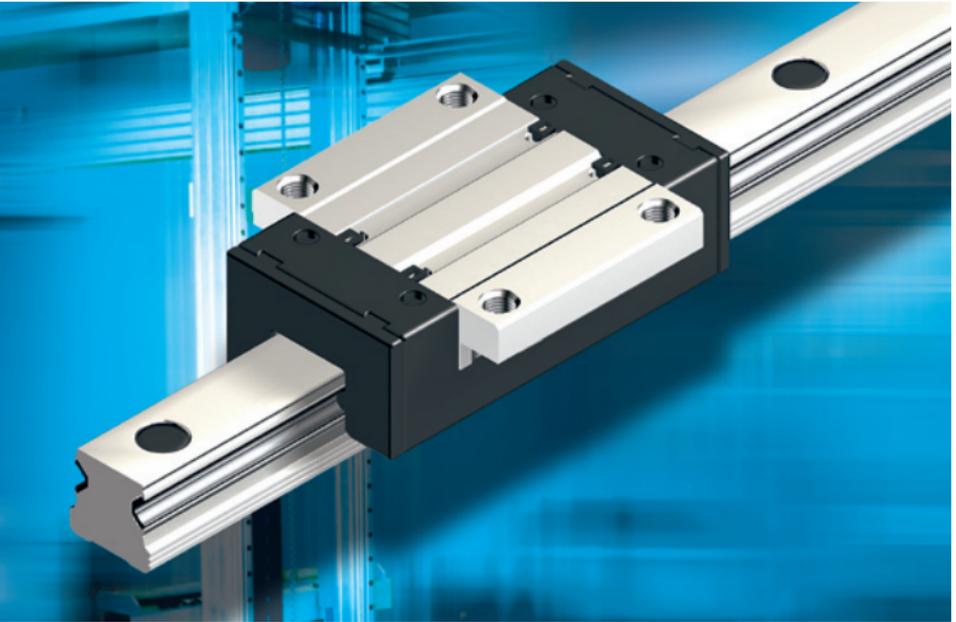
- Unbeatable price/performance ratio
- Life Long Lube lubricating concept
- High load capability, highly economical
- Minimal demands on accuracy of mounting base
- Guide rails also available in corrosion-resistant versions as per DIN 10088
- Attractively priced alternative to conventional profiled rail systems
- Same connection dimensions as steel Ball Rail Systems (DIN 645-1)
- Same guide rails for both ball and cam roller runner blocks
- Built-in interchangeability
- Maintenance-friendly
- Easy selection and sizing
- Easy installation

With its eLINE profiled rail systems, Bosch Rexroth offers a high quality and economical product that is ideal for many customer applications. This gives you an opportunity to achieve an outstanding price-performance ratio with real cost-saving benefits.

The Checklist

The checklist provided here allows you to quickly check whether a replacement is possible. It helps you to compare the technical data of your application with the maximum values specified for use of eLINE Ball Rail Systems. In many cases, the systems can be easily replaced without any design modifications.

eLINE – The Principle



In developing its eLINE profiled rail systems, Rexroth has greatly expanded the product characteristics relative to conventional linear motion guides.

For example, the eLINE Rail Systems can attain a travel life of up to 30,000 kilometers, i.e. many million cycles. Moreover, the products are made from a wrought aluminum alloy that brings tremendous benefits:

- approx. 60% weight saving versus steel versions
- considerably enhanced corrosion resistance

The ball runner blocks have two rows of especially large-diameter balls.

This results in:

- high load capacities
- greater resistance to contamination

eLINE also sets new standards in ease of maintenance. Thanks to our “3L Life Long Lube” pre-lubrication concept, relubrication will not normally be required.

A further highlight is the possibility to use same-size ball runner blocks and cam roller blocks on the same guide rail.

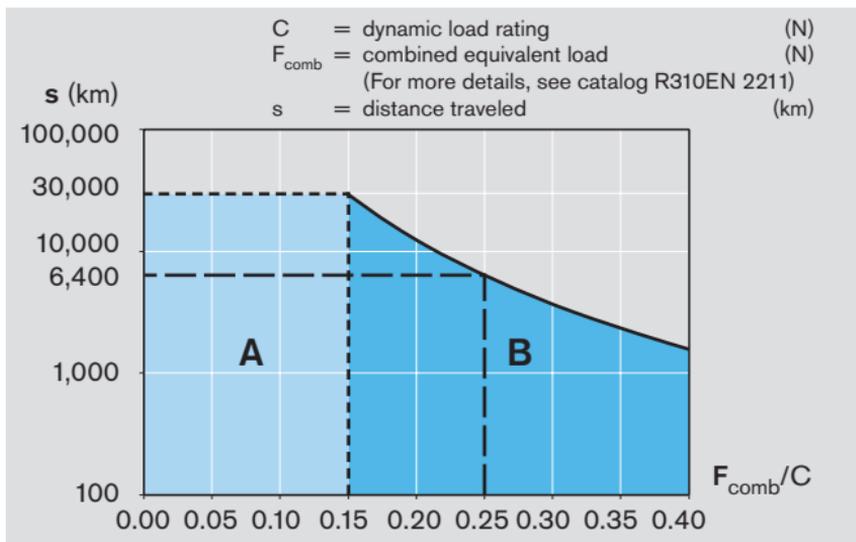
To learn more about technical details and interesting features of our eLINE technology, simply consult our catalogs or get in touch with your personal contact at Rexroth.



The Life Long Lube Concept

With Rexroth's 3L Life Long Lube pre-lubrication concept, eLINE profiled rail systems stay maintenance-free throughout their service life.

This reduced maintenance effort and the fact that they are very easy to use makes them a highly economical option for many different applications. These benefits result in significant cost savings.



$$F_{comb} \leq 0.15 C$$

Zone A in the chart,
lubed for life

$$F_{comb} > 0.15 C \text{ and } \leq 0.4 C$$

Zone B in the chart,
relubrication required

Example: For $F_{comb} = 0.25$, zone B in the graph applies. Relubrication required after a distance traveled $s = 6,400$ km.

Load limits $F_{0.15C}$

Size	Ball runner block $F_{0.15C}$ (N)	Cam roller runner block R2041 $F_{0.15C}$ (N)
15	750	140
20	1700	390
25	2500	400

Interchangeability



The following data and dimensions allow you to check the interchangeability in detail.

Technical Data

The mounting hole pattern complies with DIN 645-1.

eLINE Ball Runner Blocks R2031 / R2032

Size	A ₂	B	B ₁	B ₂	H	H ₁	H ₂	V ₁	N ₆ ^{±0.5}	S ₅
15	15	64.0	37.8	59.0	24	19.8	14.0	4.1	8.1	4.4
20	20	85.9	51.5	80.3	30	24.7	19.0	5.5	11.6	6.0
25	23	96.0	58.0	90.0	36	29.9	21.8	6.4	12.9	7.0

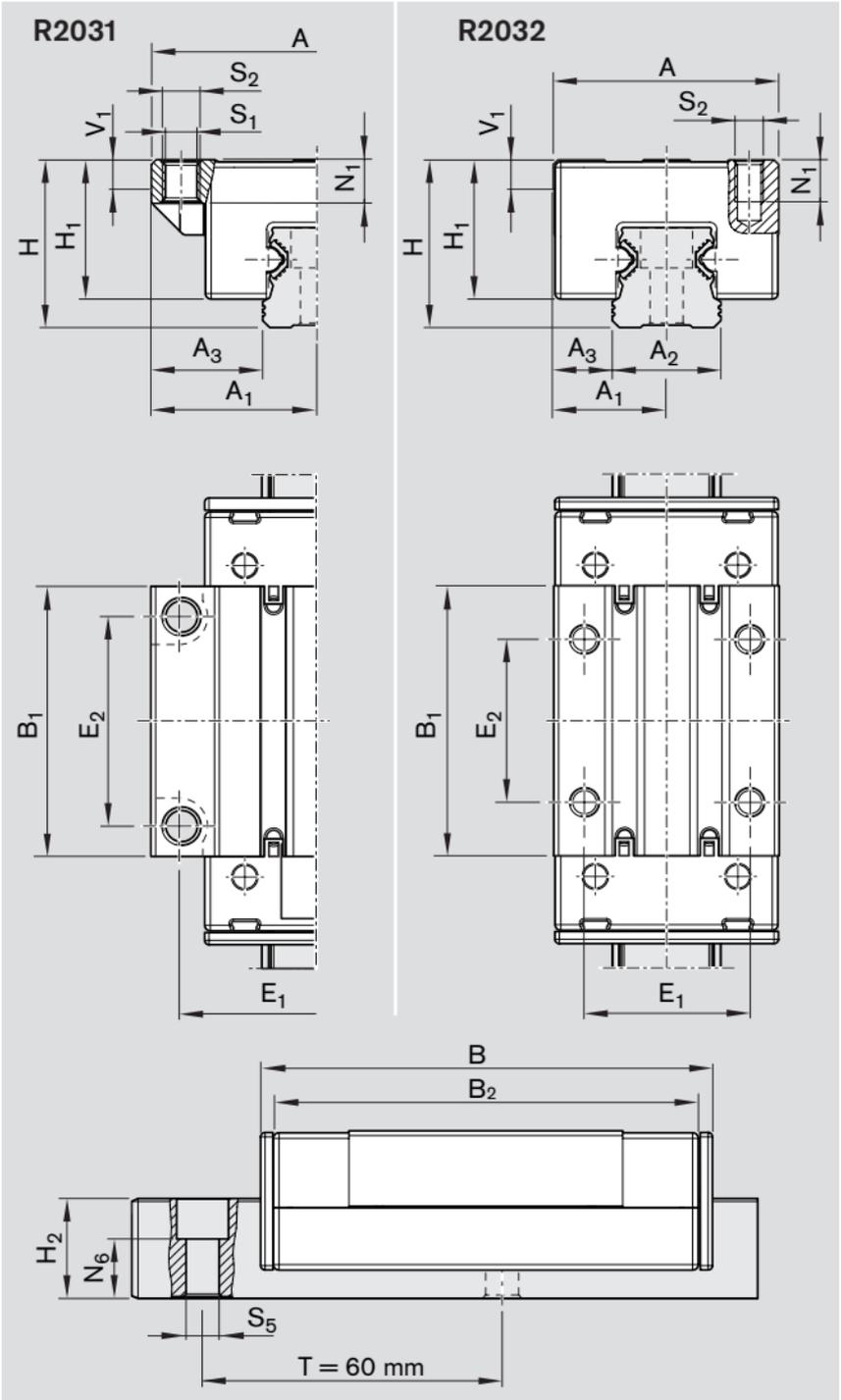
eLINE Ball Runner Block R2031 / Flanged, normal, standard height

Size	Dimensions (mm)								Weight (kg)
	A	A ₁	A ₃	E ₁	E ₂	N ₁	S ₁	S ₂	
15	47	23.5	16.0	38	30	6.0	4.3	M5	0.08
20	63	31.5	21.5	53	40	8.0	5.3	M6	0.18
25	70	35.0	23.5	57	45	9.3	6.7	M8	0.26

eLINE Ball Runner Block R2032 / Slimline, normal, standard height

Size	Dimensions (mm)							Weight (kg)
	A	A ₁	A ₃	E ₁	E ₂	N ₁	S ₂	
15	34	17	9.5	26	26	6.0	M4	0.07
20	44	22	12.0	32	36	7.5	M5	0.15
25	48	24	12.5	35	35	9.0	M6	0.22

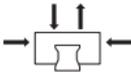
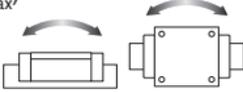
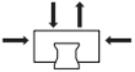
Dimensions



Checklist

Product Interchangeability

The following figures are maximum values. If your values do not exceed them, select "YES." If all items have been answered with "YES," the Ball Rail System you are using can be replaced with eLINE.

Please check the appropriate box.		YES	NO
Travel speed (v_{max})	2 m/s	<input type="checkbox"/>	<input type="checkbox"/>
Acceleration (a_{max})	30 m/s ²	<input type="checkbox"/>	<input type="checkbox"/>
Temperature resistance (t_{max})	0 - 60 °C	<input type="checkbox"/>	<input type="checkbox"/>
Maximum load (F_{max}) 	Size 15 = 2000 N	<input type="checkbox"/>	<input type="checkbox"/>
	Size 20 = 4400 N	<input type="checkbox"/>	<input type="checkbox"/>
	Size 25 = 6400 N	<input type="checkbox"/>	<input type="checkbox"/>
Total length of ball runner block (Dimension B)	Size 15 = 64 mm	<input type="checkbox"/>	<input type="checkbox"/>
	Size 20 = 85.9 mm	<input type="checkbox"/>	<input type="checkbox"/>
	Size 25 = 96 mm	<input type="checkbox"/>	<input type="checkbox"/>
For a single ball runner block on a guide rail, please check:			
Permissible load moments (M_{tmax}) 	Size 15 = 14 Nm	<input type="checkbox"/>	<input type="checkbox"/>
	Size 20 = 40 Nm	<input type="checkbox"/>	<input type="checkbox"/>
	Size 25 = 66 Nm	<input type="checkbox"/>	<input type="checkbox"/>
(M_{Lmax}) 	Size 15 = 12 Nm	<input type="checkbox"/>	<input type="checkbox"/>
	Size 20 = 35 Nm	<input type="checkbox"/>	<input type="checkbox"/>
	Size 25 = 59 Nm	<input type="checkbox"/>	<input type="checkbox"/>
For information: Load capacities and load moments for nominal life calculation			
(C)		Size 15 = 5000 N	
		Size 20 = 11000 N	
		Size 25 = 16000 N	
(M _t)		Size 15 = 36 Nm	
		Size 20 = 101 Nm	
		Size 25 = 165 Nm	

Designation of the product used: _____

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