V-Guide Rails

Product Description, V-Guide Rail SNS

Characteristic features

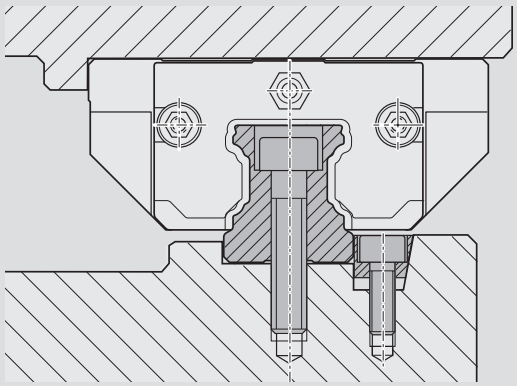
Thanks to their mounting style, V-Guide Rails for Ball Rail Systems offer the following advantages:

- Reduced geometric variations in runner block travel, since there are no mounting holes in the guide rail
- Freely selectable ball guide rail length (not dependent on mounting holes)
- No need to drill and tap holes in the mounting base
- V-Guide Rails are especially suited for single-rail applications (mounting in aluminum profiles)
- Rail mounting recess can be designed into aluminum profiles – no extra effort required
- Rail mounting recess can be machined with standard profile milling tools
- Improved rail straightness due to absence of mounting holes
- No need for mounting hole plugs or covers
- V-Guide Rails can be mounted at lower cost
- Smooth rail surface for optimal sealing action
- Multiple-rail applications require milling of parallel rail seating

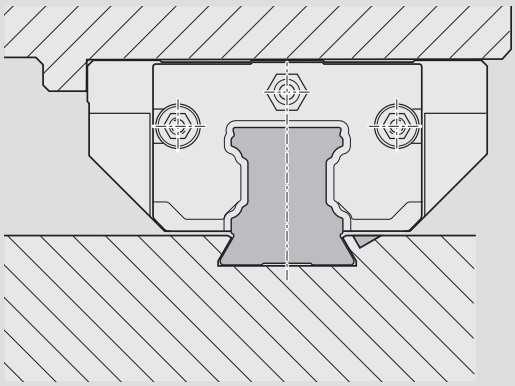
Thanks to Rexroth's proven policy of interchangeability, the entire range of ball runner blocks and accessories can be used.

Comparison of Mounting Styles

Ball rail system with standard ball guide rail



Ball rail system with V-guide rail



Mounting of standard guide rail

The standard guide rail is pressed against the reference edge using clamping strips or wedge profiles to align it. The rail is screwed into place from above or below. Mounting holes in the standard guide rail are closed with a cover strip or plugs.
Two rows of holes are needed in the machine bed for each standard guide rail.

Mounting of V-guide rail

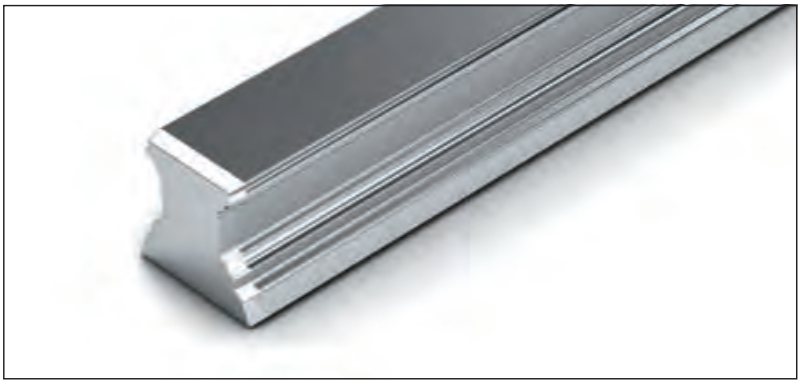
The V-guide rail for ball rail systems has no mounting holes. It is installed by press-fitting it into mounting base.
The mating cavity for the rail can be produced using a standard contour milling machine.
It is not necessary to drill any holes.

SNS without Mounting Holes

R1608 .1. ..

Without mounting holes
Press-fit mounting

Note on installation
- Composite ball guide rails also available.
- Combinable with all ball runner blocks.



Options and part numbers

Size	Ball guide rail with size	Accuracy class	Number of sections ., Rail length L (mm), ...		Rail length freely selectable up to L_{max}
		N	One-piece	Composite	L_{max} (mm)
15	R1608 11	4	31, ...	3., ...	3836
20	R1608 81	4	31, ...	3., ...	3836
25	R1608 21	4	31, ...	3., ...	3836
e.g.	R1608 21	4	31, 1676		

Ordering example 1 (up to L_{max})
Options:
- Ball Guide Rail SNS
- Size 25
- Accuracy class N
- One-piece
- Rail length L = 1676 mm

Part number:
R1608 214 31, 1676 mm

Ordering example 2 (over L_{max})
Options:
- Ball Guide Rail SNS
- Size 25
- Accuracy class N
- **2 sections**
- Rail length L = 5116 mm

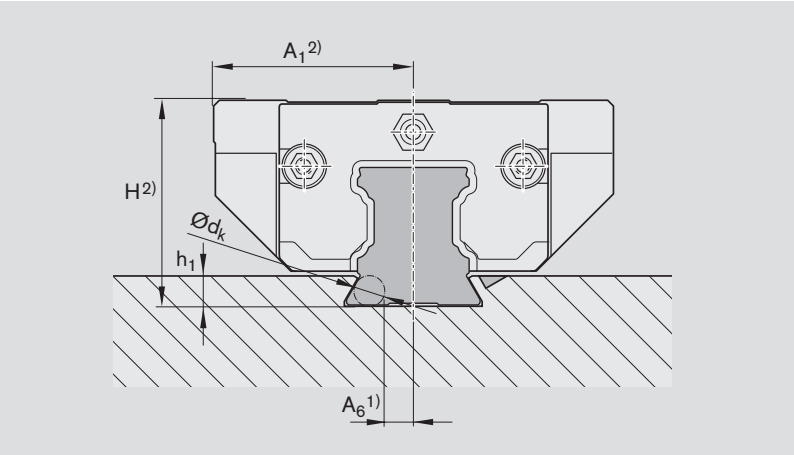
Part number:
R1608 214 3**2**, 5116 mm

V-Guide Rails

Mounting and Installation Tolerances

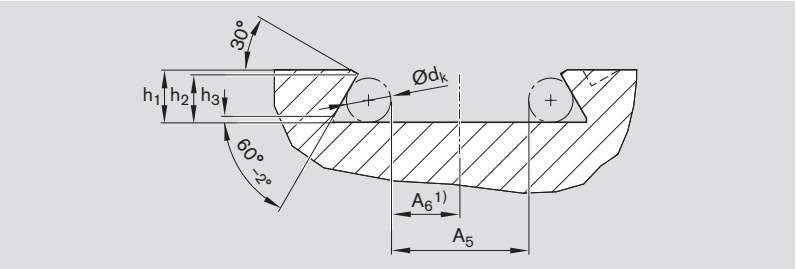
Single-rail applications

For details regarding straightness and parallelism of the guide rail mounting surface, ☞ 26.



Structural design of the rail mounting recess

Material recommended by Rexroth:
Wrought aluminum alloy F22 to F27

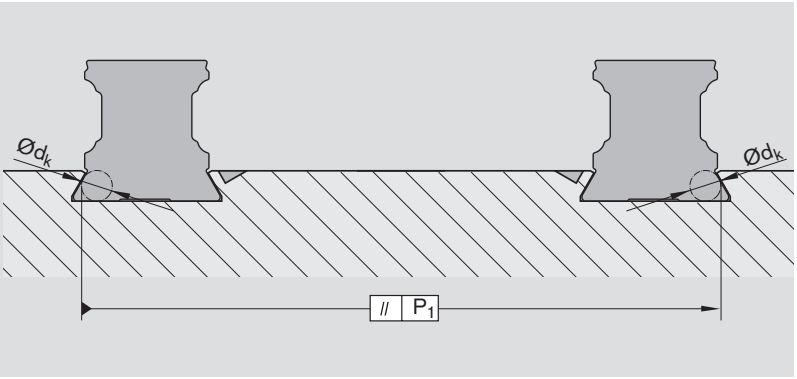


Size	Dimensions (mm)					
	$A_5^{\pm 0.2}$	A_6 1)	$h_1^{\pm 0.15}$	$h_2^{\pm 0.1}$	$h_{3-0.2}$	$Ød_k$
15	8.6	4.2	3.5	3.0	0.5	3.0
20	13.4	6.6	4.0	3.6	0.5	3.0
25	14.0	6.9	5.0	4.6	0.5	4.0

1) Tolerances of $A_6 \triangleq A_3$ ☞ 26
2) For dimensions and tolerances, see the sections on Ball Runner Blocks

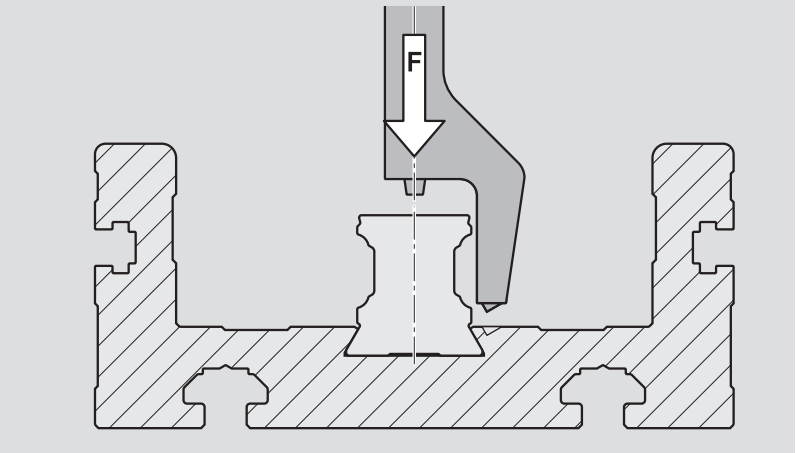
Multiple-rail applications

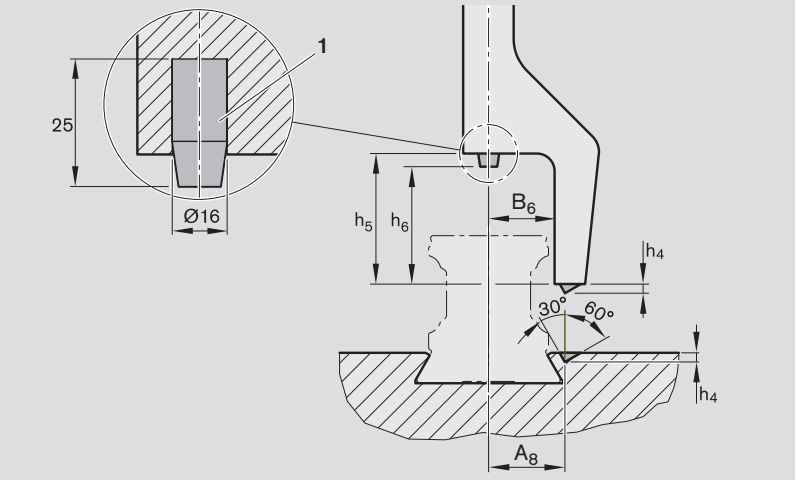
For multiple-rail applications the rail seating must be machined into the mounting base.
For details regarding vertical offset and parallelism of the guide rail mounting surfaces, ☞ 240 – 242.



Recommended installation procedure

⚠ **Do not press in manually!**





1) Example: Use rubber buffers as contact points while pressing the guide rail in.
Material: PUR
Hardness: 90±5 Shore A

Size	Dimensions (mm)					Pressing force
	A_8	B_6	h_4	h_5	h_6	(kN)
15	9.5	8	1.3	14	9.5	27
20	12.0	10	1.8	18	12.8	30
25	14.0	11	2.0	21	15.3	33

Recommended values for all sizes