











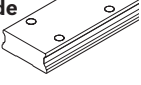


Product overview ball guide rails with rail lengths

Ball guide rails can be cut to length as desired by the customer. The maximum lengths for a one-piece rail section can be found in the following table and in the “Ball guide rails” section. If longer rails are required, Bosch Rexroth will supply them as multi-piece ball guide rails.

Ball guide rails		Page	Size							
			15	20	25	30	35	45	55	65
			Rail length (mm)							
Standard ball guide rails made of steel 	SNS / SNO R1605 .3. .. / R1605 .B. .. For mounting from above with cover strip and strip clamps	110	3 836	5 816	5 816	5 836	5 836	5 771	3 836	3 746
	 SNS / SNO R1605 .6. .. / R1605 .D. .. For mounting from above with cover strip and protective caps	112	3 836	5 816	5 816	5 836	5 836	5 771	3 836	3 746
	 SNS / SNO R1605 .0. .. / R1605 .C. .. For mounting from above with plastic mounting hole plugs	114	3 836	5 816	5 816	5 836	5 836	5 771	3 836	3 746
	 SNS R1606 .5. .. For mounting from above, for mounting hole plugs made of steel	116	–	–	5 816	5 836	5 836	5 771	3 836	3 746
	 SNS R1607 .0. .. For mounting from below	118	3 836	5 816	5 816	5 836	5 836	5 771	3 836	3 746
Standard ball guide rails Resist NR II¹⁾ 	SNS R2045 .3. .. For mounting from above with cover strip and strip clamps	120	1 856	3 836	3 836	3 836	3 836	–	–	–
	 SNS R2045 .0. .. For mounting from above with plastic mounting hole plugs	121	1 856	3 836	3 836	3 836	3 836	–	–	–
	 SNS R2047 .0. .. For mounting from below	121	1 856	3 836	3 836	3 836	3 836	–	–	–
Standard ball guide rails Resist CR²⁾ 	SNS R1645 .3. .. For mounting from above with cover strip and strip clamps	122	3 836	3 836	3 836	3 836	3 836	3 776	3 836	3 746
	 SNS R1645 .0. .. For mounting from above with plastic mounting hole plugs	123	3 836	3 836	3 836	3 836	3 836	3 776	3 836	3 746
	 SNS R1647 .0. .. For mounting from below	123	3 836	3 836	3 836	3 836	3 836	3 776	3 836	3 746

Design and version

Ball guide rails		Application area	Fastening type	Special feature
Standard ball guide rail made of steel 	SNS / SNO R1605 .3. .. R1605 .B. .. R1645 .3. ..²⁾ R2045 .3. ..¹⁾	Standard version Very harsh environments Robust strip clamp	For mounting from above	With cover strip and strip clamp. A single cover for all holes. No end-face hole required for strip clamp.
	SNS / SNO R1605 .6. .. R1605 .D. ..	Harsh environments Compact strip clamp	For mounting from above	With cover strip and protective cap. A single cover for all holes.
	SNS / SNO R1605 .0. .. R1605 .C. .. R1645 .0. ..²⁾ R2045 .0. ..¹⁾	Inexpensive	For mounting from above	With plastic mounting hole plugs. No extra space required at rail ends.
	SNS R1606 .5. ..	More resistant to mechanical influences (e.g. shocks) Very harsh environments	For mounting from above	With steel mounting hole plugs. No extra space required at rail ends.
	SNS R1607 .0. .. R1647 .0. ..²⁾ R2047 .0. ..¹⁾	Easy access to the mounting base underside, best sealing action of end seals	For mounting from below	Use of larger screws than for mounting from above. Greater side loads permitted. No extra space required at rail ends.
Wide ball guide rails made of steel 	BNS R1675 .0. .. R1673 .0. ..²⁾	High moment rigidity	For mounting from above	With plastic mounting hole plugs. No extra space required at rail ends.
	BNS R1676 .5. ..	More moment rigidity, more resistant to mechanical influences (e.g. shocks) Very harsh environments	For mounting from above	With steel mounting hole plugs. No extra space required at rail ends.
	BNS R1677 .0. ..	High moment rigidity Best sealing action of end seals	For mounting from below	Use of larger screws than for mounting from above. Larger side loads are permitted than for the single-row series. No extra space required at rail ends.

1) Resist NR II

2) Resist CR

For short product names of the design styles, see the product description

Ordering guide rails in the recommended rail lengths

Ordering ball guide rails in the recommended rail lengths

The procedure shown in the following ordering examples applies to all ball guide rails. Recommended rail lengths are more cost effective.

Options and part numbers											
Size	Ball guide rail with size	Accuracy class					Number of sections, rail length L (mm), ...		Pitch T (mm)	Recommended rail length in accordance with formula $L = n_B \cdot T - 4$ mm	
		N	H	P	SP	UP	One-piece	Composite		Maximum number of holes n_B	
15	R1605 13	4	3	2	1	9	31, ...	3, ...	60	64	
20	R1605 83	4	3	2	1	9	31, ...	3, ...	60	64	
25	R1605 23	4	3	2	1	9	31, ...	3, ...	60	64	
30	R1605 73	4	3	2	1	9	31, ...	3, ...	80	48	
35	R1605 33	4	3	2	1	9	61, ...	6, ...	80	48	
45	R1605 43	4	3	2	1	9	61, ...	6, ...	105	36	
55	R1605 53	4	3	2	1	9	61, ...	6, ...	120	32	
65	R1605 63	4	3	2	1	9	61, ...	6, ...	150	25	
e.g.	R1605 73	3					31, 1676				

Excerpt from table with part numbers and recommended rail lengths for ordering example

From the desired rail length to the recommended length

$$L = \left(\frac{L_W}{T} \right)^* \cdot T - 4$$

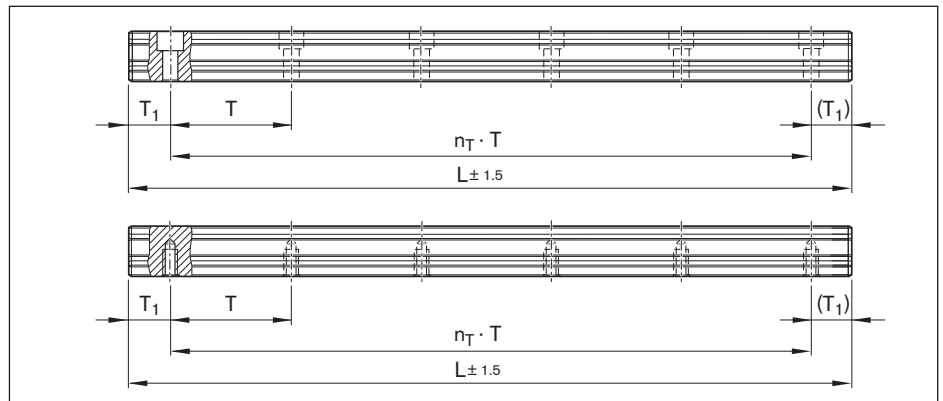
* Round up quotient L_W/T to the nearest whole number!

Calculation example

$$L = \left(\frac{1660}{80} \right) \cdot 80 \text{ mm} - 4 \text{ mm}$$

$$L = 21 \cdot 80 \text{ mm} - 4 \text{ mm}$$

$$L = 1676 \text{ mm}$$



Basis: Number of holes

$$L = n_B \cdot T - 4 \text{ mm}$$

Basis: Number of spaces

$$L = n_T \cdot T + 2 \cdot T_{1S}$$

L = Recommended rail length (mm)

L_W = Desired rail length (mm)

T = Pitch (mm)

T_{1S} = Preferred dimension (mm)

n_B = Number of holes (-)

n_T = Number of spaces (-)

Notes on ordering examples

If preferred dimension T_{1S} is not used, it is possible to choose between:

- ▶ Select end spacing T_1 between T_{1S} and T_{1min}
- ▶ As an alternative, it is possible to choose end spacings T_1 to T_{1max}

Ordering example 1 (to L_{max})

- ▶ Ball guide rail SNS size 30 with cover strip and strip clamps
- ▶ Accuracy class H
- ▶ Calculated rail length 1676 mm, ($20 \cdot T$, preferred dimension $T_{1S} = 38$ mm; number of holes $n_B = 21$)

Ordering data

Part number; rail length (mm)

$T_1 / n_T \cdot T / T_1$ (mm)

R1605 733 31, 1676 mm

38 / 20 · 80 / 38 mm

Ordering example 2 (above L_{max})

- ▶ Ball guide rail SNS size 30 with cover strip and strip clamps
- ▶ Accuracy class H
- ▶ Calculated rail length 5116 mm, 2 partial sections ($63 \cdot T$, preferred dimension $T_{1S} = 38$ mm; number of holes $n_B = 64$)

Ordering data

Material number with number of partial sections, rail length (mm)

$T_1 / n_T \cdot T / T_1$ (mm)

R1605 733 32, 5116 mm

38 / 63 · 80 / 38 mm

In the case of rail lengths above L_{max} , partial sections approved by Rexroth are joined together.

SNS/SNO with cover strip and strip clamps



R1605 .3. .. / R1605 .B. ..

For mounting from above, with cover strip made of corrosion-resistant spring steel as per DIN EN 10088 and aluminium strip clamps (without threaded holes on end faces)

Notes

- ▶ Secure the cover strip!
- ▶ Strip clamps included in scope of delivery.
- ▶ Observe the instruction for mounting!
Please request the “Mounting instructions for ball rail systems” and “Mounting instructions for cover strip”.
- ▶ Composite ball guide rail also available.

Further ball guide rails SNS/SNO and accessories available.

- ▶ Cover strip, protective caps (see accessories for ball guide rails)

**Ball guide rails SNO R1605 .B. .. with smooth base area for mounting surfaces from cast mineral parts
In sizes 25-45 and available in accuracy class P and SP.**

Options and material numbers

Size	Ball guide rail with size	Accuracy class					Number of partial sections ., Rail length L (mm),		Spacing T (mm)	Recommended rail length in accordance with formula $L = n_B \cdot T - 4 \text{ mm}$		
		N	H	P	SP	UP	One-piece	Composite		Maximum number of holes n_B		
15	R1605 13	4	3	2	1	9	31,	3,	60	64		
20	R1605 83	4	3	2	1	9	31,	3,	60	64		
25	R1605 23	4	3	2	1	9	31,	3,	60	64		
30	R1605 73	4	3	2	1	9	31,	3,	80	48		
35	R1605 33	4	3	2	1	9	61,	6,	80	48		
45	R1605 43	4	3	2	1	9	61,	6,	105	36		
55	R1605 53	4	3	2	1	9	61,	6,	120	32		
65	R1605 63	4	3	2	1	9	61,	6,	150	25		
E.g.:	R1605 73	3					31, 1676					

Ordering example 1 (to L_{max})

Options:

- ▶ Ball guide rail SNS
- ▶ Size 30
- ▶ Accuracy class H
- ▶ One-piece
- ▶ Rail length
L = 1676 mm

Material number:

R1605 733 31, 1676 mm

Ordering example 2 (above L_{max})

Options:

- ▶ Ball guide rail SNS
- ▶ Size 30
- ▶ Accuracy class H
- ▶ **2 partial sections**
- ▶ Rail length
L = 5116 mm

Material number:

R1605 733 32, 5116 mm

Ordering example 3 (up to L_{max} , with smooth surface)

Options:

- ▶ Ball guide rail SNO
- ▶ Size 30
- ▶ Accuracy class H
- ▶ One-piece
- ▶ Rail length
L = 1676 mm

Material number:

R1605 7B3 31, 1676 mm

SNS/SNO with cover strip and protective caps



R1605 .6. .. / R1605 .D. ..

For mounting from above, with cover strip made of corrosion-resistant spring steel as per DIN EN 10088 and screw-down plastic protective caps (with threaded mounting holes on end faces)

Notes

- ▶ Secure the cover strip!
- ▶ Protective caps with screws and washers are included in the scope of delivery.
- ▶ Observe the instruction for mounting!
Please request the “Mounting instructions for ball rail systems” and “Mounting instructions for cover strip”.
- ▶ Composite ball guide rail also available.

Further ball guide rails SNS/SNO and accessories

- ▶ Cover strip, protective caps (see accessories for ball guide rails)

**Ball guide rails SNO R1605 .D. .. with smooth base area for mounting surfaces from cast mineral parts
In sizes 25-45 and available in accuracy class P and SP.**

Options and material numbers

Size	Ball guide rail with size	Accuracy class					Number of partial sections, Rail length L (mm),		Spacing T (mm)	Recommended rail length in accordance with formula $L = n_B \cdot T - 4 \text{ mm}$	
		N	H	P	SP	UP	One-piece	Composite			Maximum number of holes n_B
15	R1605 16	4	3	2	1	9	31,	3.,	60	64	
20	R1605 86	4	3	2	1	9	31,	3.,	60	64	
25	R1605 26	4	3	2	1	9	31,	3.,	60	64	
30	R1605 76	4	3	2	1	9	31,	3.,	80	48	
35	R1605 36	4	3	2	1	9	61,	6.,	80	48	
45	R1605 46	4	3	2	1	9	61,	6.,	105	36	
55	R1605 56	4	3	2	1	9	61,	6.,	120	32	
65	R1605 66	4	3	2	1	9	61,	6.,	150	25	
E.g.:	R1605 76	3					31, 1676				

Ordering example 1 (to L_{max})

Options:

- ▶ Ball guide rail SNS
- ▶ Size 30
- ▶ Accuracy class H
- ▶ One-piece
- ▶ Rail length
L = 1676 mm

Material number:

R1605 763 31, 1676 mm

Ordering example 2 (above L_{max})

Options:

- ▶ Ball guide rail SNS
- ▶ Size 30
- ▶ Accuracy class H
- ▶ **2 partial sections**
- ▶ Rail length
L = 5116 mm

Material number:

R1605 763 32, 5116 mm

Ordering example 3 (up to L_{max} , with smooth surface)

Options:

- ▶ Ball guide rail SNO
- ▶ Size 30
- ▶ Accuracy class H
- ▶ One-piece
- ▶ Rail length
L = 1676 mm

Material number:

R1605 7D3 31, 1676 mm

SNS/SNO with plastic mounting hole plugs



R1605 .0. .. / R1605 .C. ..

For mounting from above with plastic mounting hole plugs

Notes

- ▶ Plastic mounting hole plugs included in scope of supply.
- ▶ Observe the instruction for mounting!
Please request the “Mounting instructions for ball rail systems.”
- ▶ Composite ball guide rail also available.

Further ball guide rails SNS and accessories

- ▶ Corrosion resistant ball guide rails Resist NR, Resist CR
- ▶ Mounting hole plugs made of plastic, see accessories for ball guide rails

Ball guide rails SNO R1605 .C. .. with smooth base area for mounting surfaces from cast mineral parts

In sizes 25-45 and available in accuracy class P and SP.

Options and material numbers

Size	Ball guide rail with size	Accuracy class					Number of partial sections, Rail length L (mm), ...		Spacing T (mm)	Recommended rail length in accordance with formula $L = n_B \cdot T - 4 \text{ mm}$	
		N	H	P	SP	UP	One-piece	Composite			Maximum number of holes n_B
15	R1605 10	4	3	2	1	9	31, ...	3., ...	60	64	
20	R1605 80	4	3	2	1	9	31, ...	3., ...	60	64	
25	R1605 20	4	3	2	1	9	31, ...	3., ...	60	64	
30	R1605 70	4	3	2	1	9	31, ...	3., ...	80	48	
35	R1605 30	4	3	2	1	9	31, ...	3., ...	80	48	
45	R1605 40	4	3	2	1	9	31, ...	3., ...	105	36	
55	R1605 50	4	3	2	1	9	31, ...	3., ...	120	32	
65	R1605 60	4	3	2	1	9	31, ...	3., ...	150	25	
E.g.:	R1605 70	3					31, 1676				

Ordering example 1 (to L_{max})

Options:

- ▶ Ball guide rail SNS
- ▶ Size 30
- ▶ Accuracy class H
- ▶ One-piece
- ▶ Rail length

L = 1676 mm

Material number:

R1605 703 31, 1676 mm

Ordering example 2 (above L_{max})

Options:

- ▶ Ball guide rail SNS
- ▶ Size 30
- ▶ Accuracy class H
- ▶ **2 partial sections**
- ▶ Rail length

L = 5116 mm

Material number:

R1605 703 32, 5116 mm

Ordering example 3

(up to L_{max} , with smooth surface)

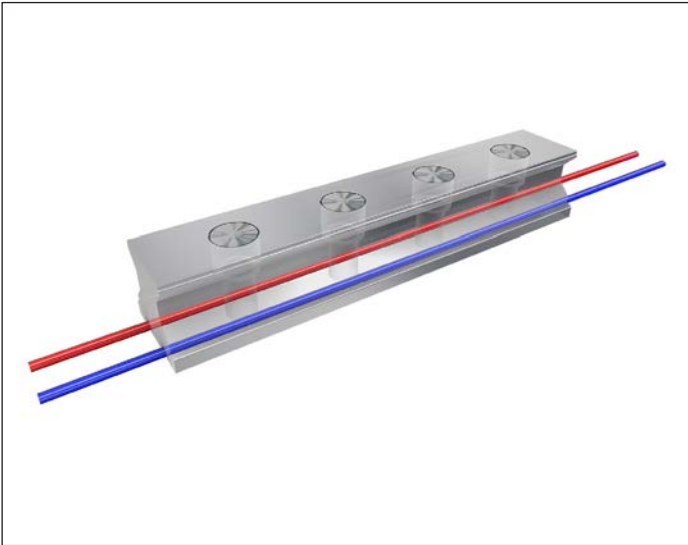
Options:

- ▶ Ball guide rail SNO
- ▶ Size 30
- ▶ Accuracy class H
- ▶ One-piece
- ▶ Rail length

L = 1676 mm

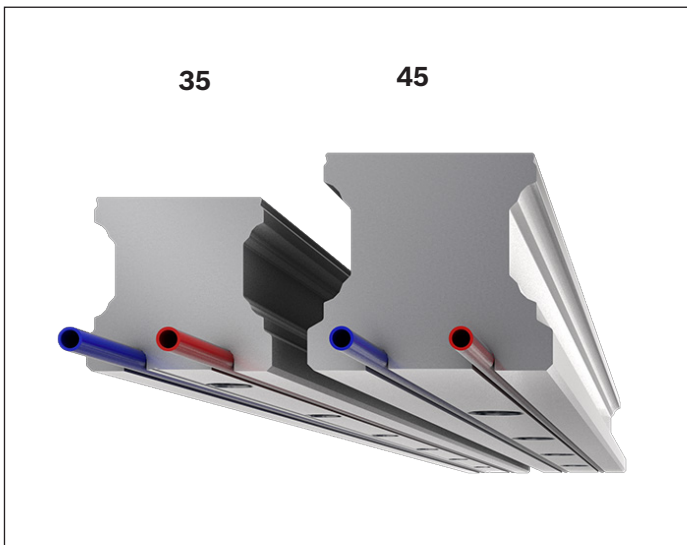
Material number:

R1605 7C3 31, 1676 mm



Further highlights

- ▶ High precision: up to 75% higher part accuracy, regardless of environment
- ▶ Always available: no run-in to the operating temperature
- ▶ Flexible: can be adjusted to changes as required
- ▶ Can be retrofitted: compatible with existing systems
- ▶ Simple: pipes are ready to connect, uses existing cooling circuits



Technical features

- ▶ Ball guide sizes: 35/45
- ▶ Formats: R1605
- ▶ Rail covers: Cover strip, plastic caps
- ▶ Series with groove
- ▶ Accuracy classes: P/SP
- ▶ Rail lengths: up to max. 4000 mm
- ▶ Redirecting temperature control: to the rails or universal
- ▶ Patent pending

Ball guide rails with temperature control are available on request.
The illustrations partly show the roller guide rail version

Mounting hole plugs

Plastic mounting hole plugs

Size	Single cap Material numbers	Mass (g)
15	R1605 100 80	0.05
20	R1605 800 80	0.10
25	R1605 200 80	0.30
30	R1605 300 80	0.60
35	R1605 300 80	0.60
45	R1605 400 80	1.00
55	R1605 500 80	1.70
65	R1605 600 80	2.10
20/40	R1605 100 80	0.05
25/70	R1605 200 80	0.30
35/90	R1605 300 80	0.60

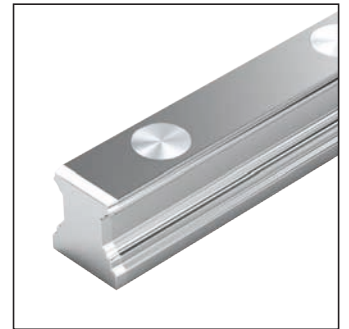


Note

- ▶ Observe the instruction for mounting!
Please request the “Mounting instructions for ball rail systems.”

Mounting hole plugs made of steel

Size	Single cap made of machining steel Material numbers	Mass (g)
25	R1606 200 75	2
30	R1606 300 75	3
35	R1606 300 75	3
45	R1606 400 75	6
55	R1606 500 75	8
65	R1606 600 75	9
25/70	R1606 200 75	2
35/90	R1606 300 75	3



Notes

- ▶ Mounting hole plugs made of steel are not included in the scope of delivery of the ball guide rails.
Order the mounting tool too!
- ▶ Observe the instruction for mounting!
Please request the “Mounting instructions for ball rail systems.”

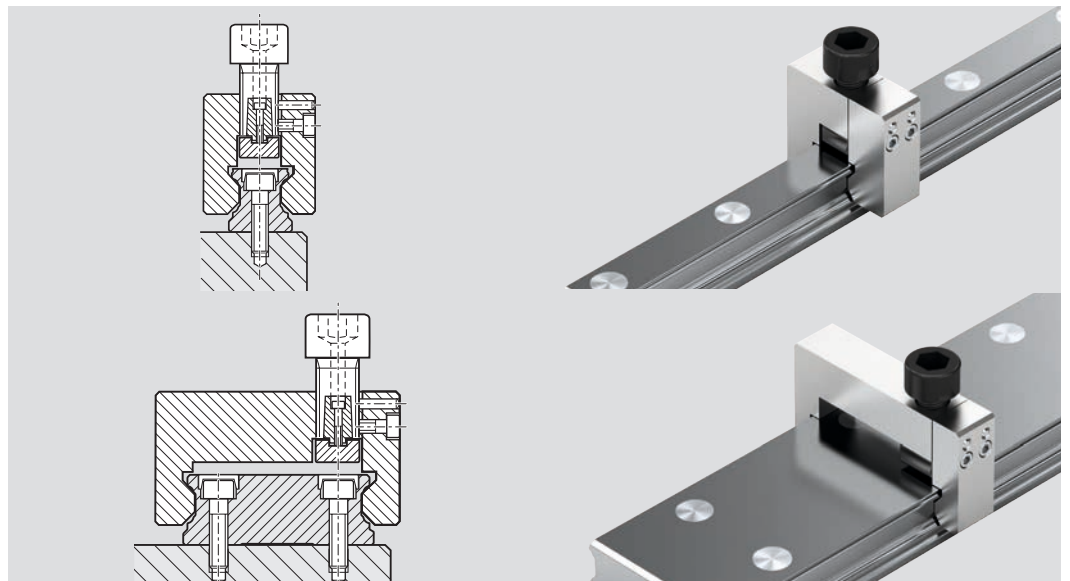
Mounting tool for mounting hole plugs made of steel

Two-piece, with assembly instructions

The two-piece mounting tool is suitable for mounting hole plugs in built-in ball guide rail.

Size	Material numbers	Mass (kg)
25	R1619 210 00 ¹⁾	0.37
30	R1619 710 00 ¹⁾	0.37
35	R1619 310 10	0.57
45	R1619 410 10	0.85
55	R1619 510 10	1.50
65	R1619 610 00 ¹⁾	1.85
25/70	R1619 210 40	0.75
35/90	R1619 310 40	1.05

- 1) Can only be delivered as one part.



**Reference edges,
corner radii**

Combination examples

The combinations shown here are examples.

Basically, any ball runner block may be combined with any of the ball guide rail types offered.

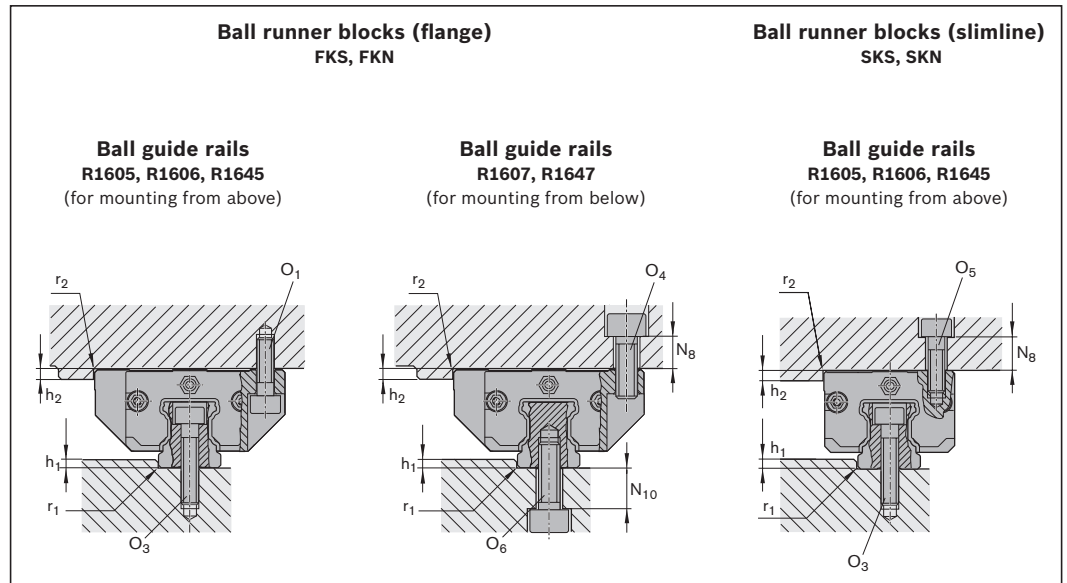
The tightening of the ball runner blocks with 2 screws is completely sufficient up to the maximum load. (For maximum load capacity and load moments, see corresponding ball runner blocks).

Mounting screws

⚠ Always make sure the screws are secure where there are high screw loads!

For more information on this topic, see the “General mounting instructions” section.

Ball guide rail with ball runner block, short and super.



Size	Dimensions (mm)						
	$h_{1 \min}$	$h_{1 \max}^{1)}$	h_2	N_8	N_{10}	$r_{1 \max}$	$r_{2 \max}$
15	2.5	3.5	4	6	7.0	0.4	0.6
20	2.5	4.0	5	9 10 ²⁾	9.5 -	0.6	0.6
25	3.0	5.0	5	10 11 ²⁾	12.0 -	0.8	0.8
30	3.0	5.0	6	10	9.0	0.8	0.8
35	3.5	6.0	6	13	13.0	0.8	0.8

- 1) When using clamping and braking units, please take account of the values H1.
- 2) Ball runner block SKN

Size	Screw sizes				
	Ball runner blocks			Ball guide rail	
	O_1 ISO 4762 2 pieces	O_4 ISO 4762 2 pieces	O_5 ISO 4762 2 pieces	O_3 ISO 4762	O_6 ISO 4762
15	M4x12	M5x12	M4x12	M4x20	M5x12
20	M5x16	M6x16	M5x16	M5x25	M6x16
25	M6x20	M8x20	M6x18	M6x30	M6x20
30	M8x25	M10x20	M8x20	M8x30	M8x20
35	M8x25	M10x25	M8x25	M8x35	M8x25

Dimensioning example of lubrication a typical 2-axes application using central lubrication
X-axis

Component or characteristic value	Specifications
Ball runner blocks	Size 35, 4 pieces, C = 51,800 N, part numbers: R1651 323 20
Ball guide rail	Size 35, 2 pieces, L = 1,500 mm; part numbers: R1605 333 61
Dynamic equivalent load on bearing	$F_m = 12,570$ N (per ball runner block) with consideration of the preload (here C2)
Stroke	500 mm
Average linear speed	$v_m = 1$ m/s
Temperature	20 – 30 °C
Installation position	Horizontal
Lubrication	Single-line distributor system for all axes with liquid grease Dynalub 520
Exposure to contaminants	No exposure to media, chips, dust

Dimensioning sizes

1. Normal stroke or short stroke?

Dimensioning (for each ball runner block)

Normal stroke:

 $\text{Stroke} \geq 2 \cdot \text{ball runner block length } B_1$
 $500 \text{ mm} \geq 2 \cdot 77 \text{ mm}$
 $500 \text{ mm} \geq 154 \text{ mm!}$

i.e. normal stroke applies!

Sources of information

- ▶ Normal-stroke formula, Ball runner block length B_1

2. Initial lubrication amount

1 lube connection, initial lubrication quantity: pre-lubricated at the factory with Dynalub 510

- ▶ Initial lubrication amount from table 5

3. Relubrication quantity

 1 lube connection, relubrication quantity: 2.2 cm^3 (2x)

- ▶ Relubrication amount from table 7

4. Installation position

Installation position I – Normal stroke (horizontal)

- ▶ Installation position from overview

5. Piston distributor size

 Permissible piston distributor size: 0.1 cm^3

- ▶ Piston distributor size from table 9 Size 35, installation position I (horizontal)

6. Number of pulses

$$\text{Number of pulses} = \frac{2 \cdot 2.2 \text{ cm}^3}{0.1 \text{ cm}^3} = 44$$

- ▶ Number of pulses = $\frac{\text{Number} \cdot \text{relubrication quantity}}{\text{Permissible Piston distributor size}}$

7. Load ratio

$$\text{Load ratio} = \frac{12,570 \text{ N}}{51,800 \text{ N}} = 0.24$$

- ▶ Load ratio = F_m/C
 F_m and C from specifications

8. Relubrication interval

Relubrication interval: 2,150 km

- ▶ Relubrication interval from diagram 4: Curve size 35 with load ratio of 0.24

9. Lubrication cycle

$$\text{Lubrication cycle} = \frac{2,150 \text{ km}}{44} = 48$$

- ▶ Lubrication cycle = $\frac{\text{Relubrication interval}}{\text{Number of pulses}}$

Interim result (X-axis)

 For the x-axis, for each ball runner block, a minimum quantity of 0.1 cm^3 of Dynalub 520 is to be supplied every 48 km.

Lubrication

Y-axis

Component or characteristic value	Specifications
Ball runner blocks	Size 25, 4 pieces, C = 28,600 N, part numbers: R1651 223 20
Ball guide rail	Size 25; 2 pieces; L = 1 000 mm, Material numbers: R1605 232 31
Dynamic equivalent load on bearing	$F_m = 3,420$ N (per ball runner block) with consideration of the preload (here C2)
Stroke	50 mm (short stroke)
Average linear speed	$v_m = 1$ m/s
Temperature	20 – 30 °C
Installation position	Vertical
Lubrication	Single-line distributor system for all axes with liquid grease Dynalub 520
Exposure to contaminants	No exposure to media, chips, dust

Dimensioning sizes

1. Normal stroke or short stroke?

Dimensioning (for each ball runner block)

Normal stroke:
 Stroke $\geq 2 \cdot$ ball runner block length B_1
 $50 \text{ mm} \geq 2 \cdot 57.8 \text{ mm}$
 $50 \text{ mm} < 115.6 \text{ mm!}$
 i.e. short stroke applies!

Sources of information

- ▶ Normal-stroke formula, Ball runner block length B_1

2. Initial lubrication amount

2 lube connections, initial lubrication quantity for each connection: pre-lubricated at the factory with Dynalub 510

- ▶ Initial lubrication amount from table 6

3. Relubrication quantity

2 lube connections, relubrication quantity for each connection: 1.4 cm^3 (2x)

- ▶ Relubrication amount from table 8

4. Installation position

Installation position V – short stroke (vertical to inclined horizontal)

- ▶ Installation position from overview

5. Piston distributor size

Permissible piston distributor size: 0.03 cm^3

- ▶ Piston distributor size from table 9, size 25, mounting position V (vertical to inclined horizontal)

6. Number of pulses

$$\text{Number of pulses} = \frac{2 \cdot 1.4 \text{ cm}^3}{0.03 \text{ cm}^3} = 94$$

- ▶ Number of pulses = $\frac{\text{Number} \cdot \text{relubrication quantity}}{\text{Permissible Piston distributor size}}$

7. Load ratio

$$\text{Load ratio} = \frac{3,420 \text{ N}}{28,600 \text{ N}} = 0.12$$

- ▶ Load ratio = F_m/C
 F_m and C from specifications

8. Relubrication interval

Relubrication interval: 7,500 km

- ▶ Relubrication interval from diagram 4: Curve size 25 with load ratio of 0.12

9. Lubrication cycle

$$\text{Lubrication cycle} = \frac{7,500 \text{ km}}{94} = 80 \text{ km}$$

- ▶ Lubrication cycle = $\frac{\text{Relubrication interval}}{\text{Number of pulses}}$

Interim result (Y-axis)

For the y-axis, for each ball runner block and each lube connection, a minimum quantity of 0.03 cm^3 of Dynalub 520 is to be supplied every 80 km.

Final result (Two-axes lubrication)

Since, in this example, both axes are to be supplied by a single-line distributor system, the x-axis with its smaller lubrication cycle (48 km) determines the total lubrication cycle of the system, i.e. the y-axis is lubricated every 48 km as well.

The number of connections and minimum quantities determined for each individual axis remain valid.