

5.1 Product features



Very good dynamic characteristics and high economy are the distinguishing features of the Schneebberger ball type linear guideway MONORAIL BM. The novel design with few but optimally designed components, because the small number of transitions (joints) in the ball tracks makes outstanding running characteristics possible, which are distinguished by smooth running, little pulsation, low friction values and high travelling speeds. By means of the trapeze-shaped rail cross-section, a high rigidity of the guideway has been achieved and simultaneously the maintenance effort required significantly reduced, because parts subject to wear can be replaced without having to dismantle the guideway. The complete sealing of the carriages guarantees a high reliability in conjunction with a long service life. This robust guideway is therefore suitable for many and diverse applications and represents an ideal complement to the roller guideway MR.

Unique running characteristics

Special attention was focused on the run-in area of the balls from the unloaded to the loaded zone. This area was geometrically balanced in such a manner, that very smooth operation, minimum travel pulsation, pitch movement and noise, was achieved, in both low and high speed movements.



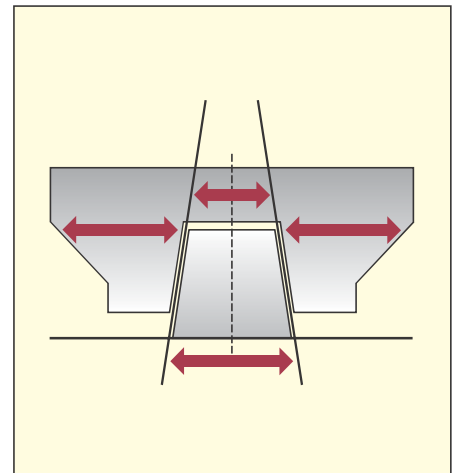
Completely sealed

The guide carriages as standard execution are equipped with double-lipped transverse wipers and longitudinal wipers. These in conjunction with additionally sealed gaps between the front plate and the steel body provide for an exceedingly effective seal. As a result of this, a significant increase of the service lifetime is achieved and the losses of lubricant are reduced to a minimum. The functional security of the wipers is increased to an even greater extent by the optimally smooth rail surface when utilising the rail cover strip BAB.



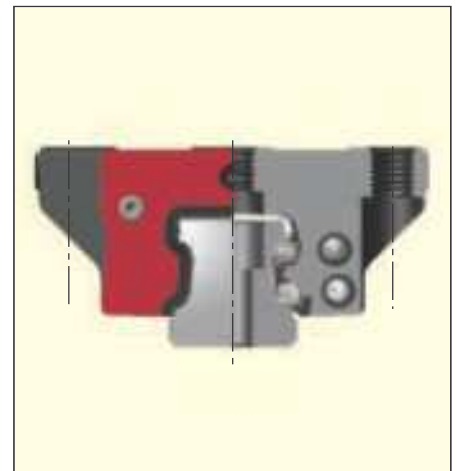
Optimized rail and carriage cross sections

Because of the trapezoidal rail profile, it was possible to optimize the carriage cross sections for the highest possible rigidity. This rail profile enables easier servicing because the front plate, standard and additional wipers can be replaced without removing the carriage from the rail.



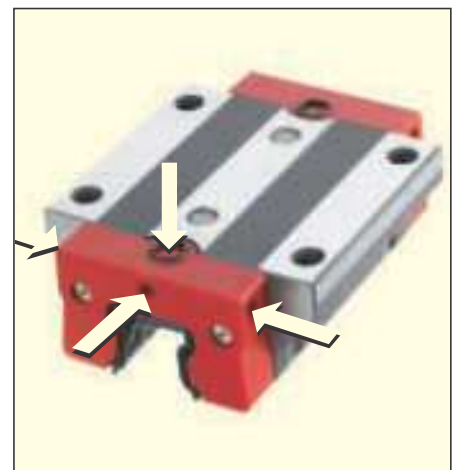
The highest precision with high rigidity

The MONORAIL BM is a modern, 4-row ball guideway. The balls make contact with each track at only two points, even under pre-load. As a result, the friction is reduced to a minimum and quiet, smooth running is achieved. Due to the selected ball arrangement, this guideway has a high load bearing capacity, equal in any direction. Consequently, the MONORAIL BM can be used in a broad range of applications. The precision of the guideway corresponds to the high SCHNEEBERGER accuracy standard. Additional central mounting holes particularly when wide carriages are used yields an increased rigidity under tensile load.



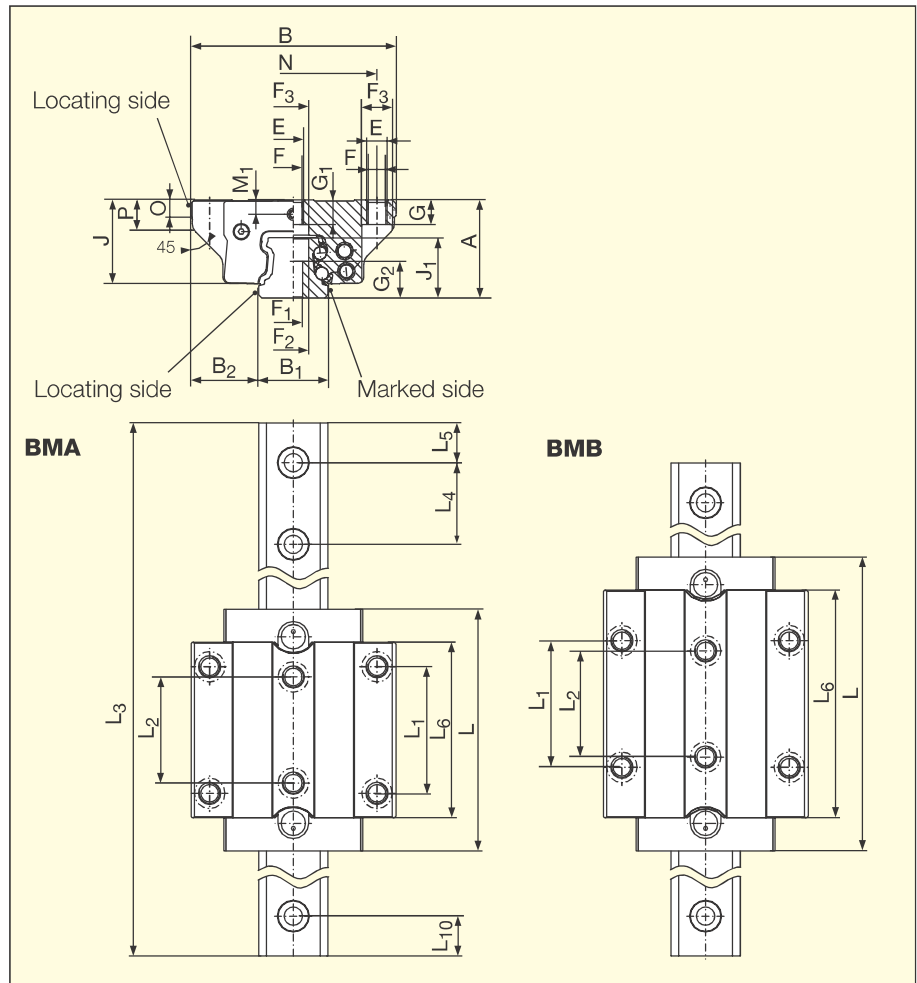
Versatile lubrication possibilities

The carriages can be lubricated through various lubrication connections (from the front, either side or above). The geometry of the lubrication channels, combined with efficient sealing, reduces lubricant consumption. This provides both economic and environmental benefits.



**5.2 Dimension table,
loading capacities
MONORAIL BM**

Carriage types BMA and BMB

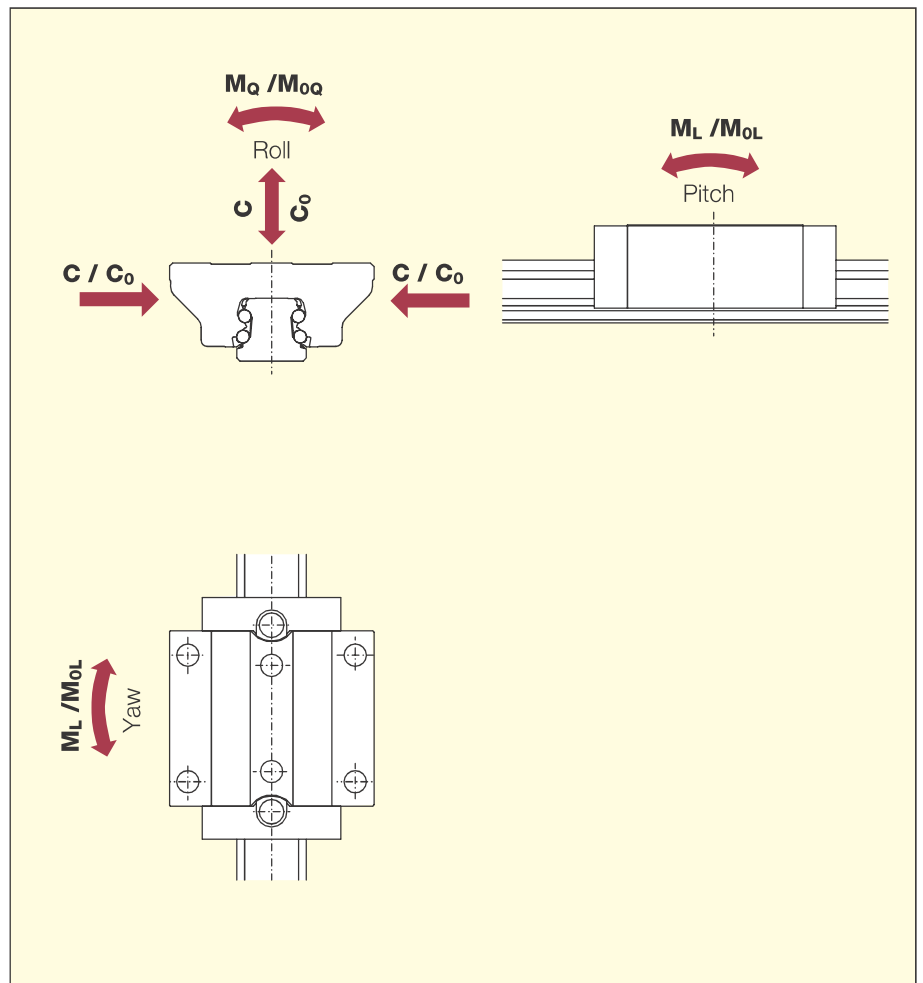


Drawing in all common file formats are available on www.schneeberger.com under Services.

Type	Dimensions (mm)																	
	A	B	B ₁ *	B ₂	J	J ₁	L**	L ₁	L ₂	L ₄	L ₅ / L ₁₀	L ₆	N	E	F	F ₁	F ₂	F ₃
BMA 15	24	47	15	16	20.2	15.7	59.8	30	26	60	29	42.8	38	M 5	4.4	4.5	8	7.5
BMA 20	30	63	20	21.5	25.5	19	75.5	40	35	60	29	53.5	53	M 6	5.4	5.8	10	9.5
BMB 20							91.5					69.5						
BMA 25	36	70	23	23.5	30.5	22.7	89.3	45	40	60	29	64.3	57	M 8	6.8	7	11	11
BMB 25							108.3					83.3						
BMA 30	42	90	28	31	35.9	26	103	52	44	80	39	75	72	M10	8.5	9	15	15
BMB 30							125					97						
BMA 35	48	100	34	33	41	29.5	118	62	52	80	39	86	82	M10	8.5	9	15	15
BMB 35							143.5					111.5						
BMA 45	60	120	45	37.5	50.8	37	145	80	60	105	51.5	107	100	M12	10.5	14	20	18
BMB 45							176.5					138.5						

* Lower tolerances on request

** When using additional wipers, metal wipers and lubrication plates, the total length L is increasing, see chapter 5.7.



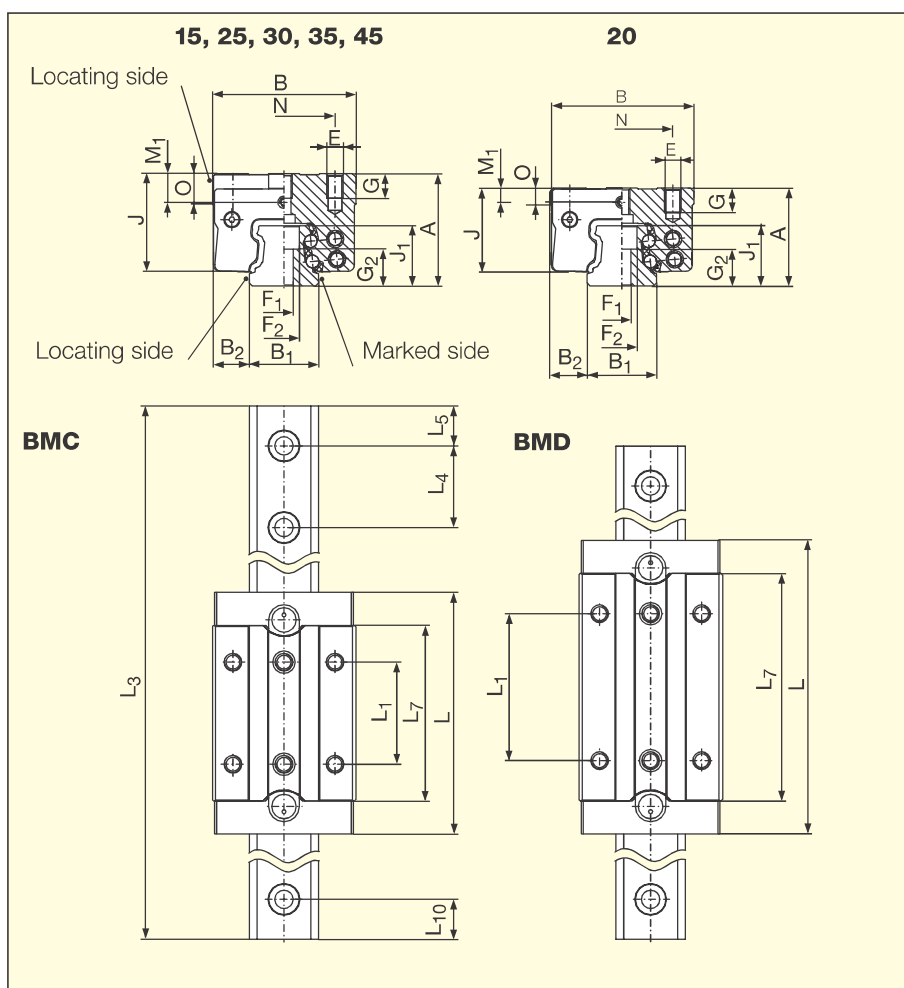
Ball	Ø	G	G ₁	G ₂	M ₁	O	P
3.2	7	4.5	9.5	4	7	7	
4.0	8	6.5	11.5	5.2	8	8	
4.8	9	8	14	5.5	7	11	
5.6	12	10	14.5	7	8	12	
6.4	12	12	18	7	8	14	
7.9	15	15	22	8	10	17.5	

Loading capacities		Moments				Weight	
C ₀	C	M _{0Q}	M _{0L}	M _Q	M _L	Carriage	Rail
(N)	(N)	(Nm)	(Nm)	(Nm)	(Nm)	(kg)	(kg/m)
19 600	9 000	181	146	83	67	0.2	1.4
31 400	14 400	373	292	171	134	0.5	2.2
41 100	17 400	490	495	206	208	0.6	
46 100	21 100	631	513	289	235	0.7	3.0
60 300	25 500	825	863	349	365	0.9	
63 700	29 200	1 084	829	497	380	1.2	4.3
83 300	35 300	1 414	1 390	599	589	1.5	
84 400	38 700	1 566	1 252	718	574	1.8	5.4
110 300	46 700	2 048	2 104	867	891	2.3	
134 800	61 900	3 193	2 498	1 466	1 147	3.3	8.8
176 300	74 700	4 175	4 199	1 769	1 779	4.2	

C₀ = Static loading capacity
 C = Dynamic loading capacity (100 km)
 M₀ = Static moment capacity
 M = Dynamic moment capacity (100 km)

**5.3 Dimension table,
loading capacities
MONORAIL BM**

Carriage types BMC and BMD

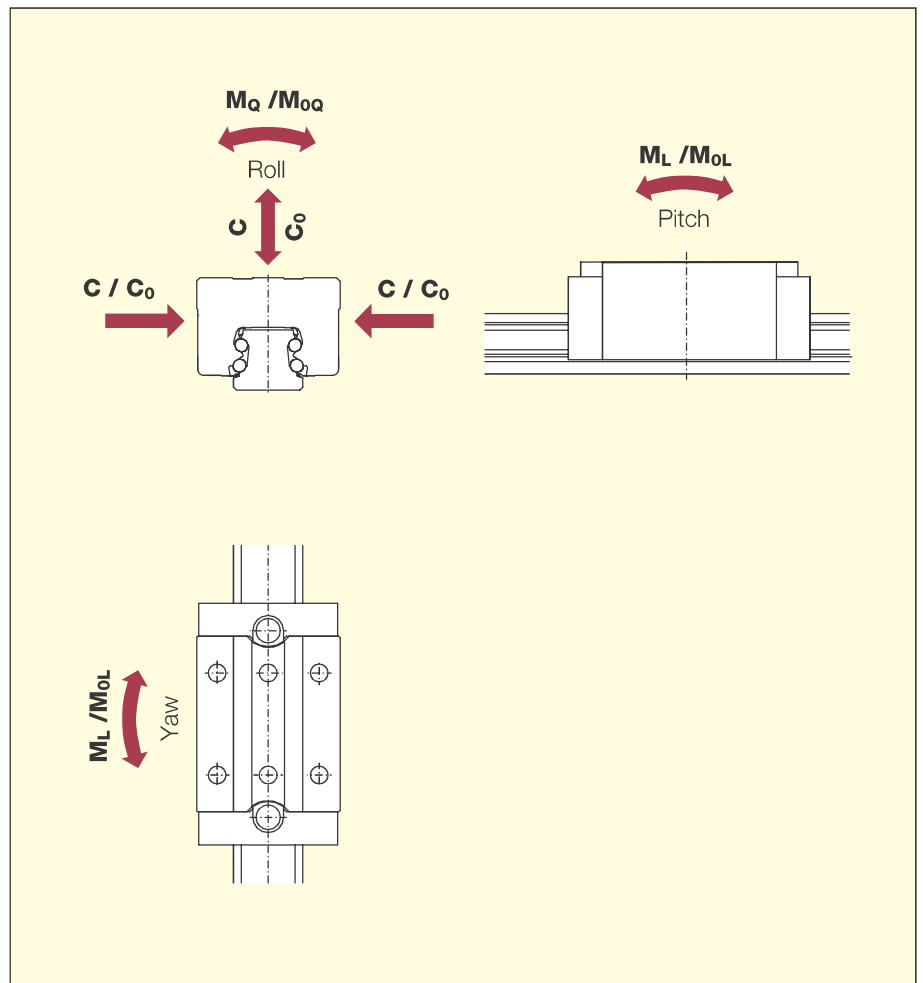


Drawings in all common file formats are available on www.schneeberger.com under Services.

Type	Dimensions (mm)													
	A	B +0.4 0	B ₁ * ±0.05	B ₂	J	J ₁	L**	L ₁	L ₄	L _{5/ L₁₀}	L ₇	N	E	F ₁
BMC 15	28	34	15	9.5	24.2	15.7	59.8	26	60	29	42.8	26	M 4	4.5
BMC 20	30	44	20	12	25.5	19	75.5	36	60	29	53.5	32	M 5	5.8
BMD 20							91.5	50			69.5			
BMC 25	40	48	23	12.5	34.5	22.7	89.3	35	60	29	64.3	35	M 6	7
BMD 25							108.3	50			83.3			
BMC 30	45	60	28	16	38.9	26	103	40	80	39	75	40	M 8	9
BMD 30							125	60			97			
BMC 35	55	70	34	18	48	29.5	118	50	80	39	86	50	M 8	9
BMD 35							143.5	72			111.5			
BMC 45	70	86	45	20.5	60.8	37	145	60	105	51.5	107	60	M 10	14
BMD 45							176.5	80			138.5			

* Lower tolerances on request

** When using additional wipers, metal wipers and lubrication plates, the total length L is increasing, see chapter 5.7.



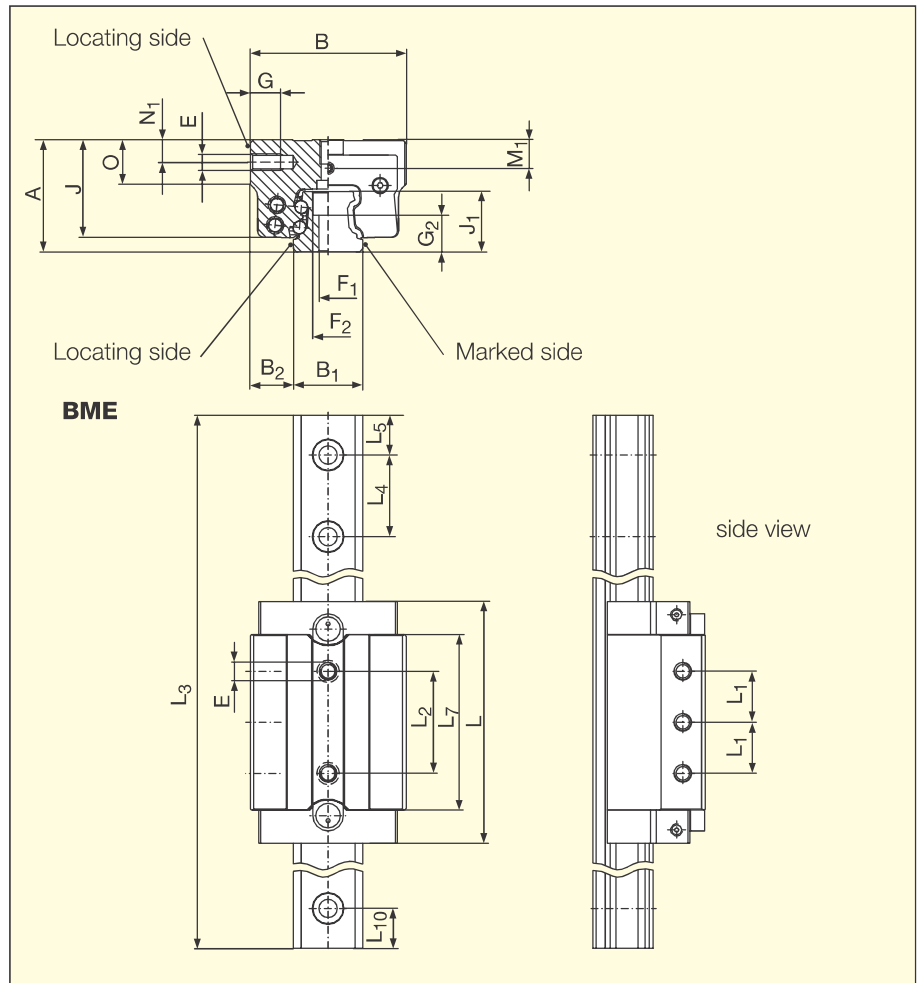
F_2	Ball \varnothing	G	G_2	M_1	O
8	3.2	6	9.5	8	6
10	4.0	7	11.5	5.2	6
11	4.8	9	14	9.5	11
15	5.6	11	14.5	10	11
15	6.4	12	18	14	15
20	7.9	18	22	18	19

Loading capacities		Moments				Weight	
C_0 (N)	C (N)	M_{0Q} (Nm)	M_{0L} (Nm)	M_Q (Nm)	M_L (Nm)	Carriage (kg)	Rail (kg/m)
19 600	9 000	181	146	83	67	0.3	1.4
31 400	14 400	373	292	171	134	0.4	2.2
41 100	17 400	490	495	206	208	0.5	2.2
46 100	21 100	631	513	289	235	0.6	3.0
60 300	25 500	825	863	349	365	0.8	3.0
63 700	29 200	1 084	829	497	380	1.0	4.3
83 300	35 300	1 414	1 390	599	589	1.3	4.3
84 400	38 700	1 566	1 252	718	574	1.7	5.4
110 300	46 700	2 048	2 104	867	891	2.2	5.4
134 800	61 900	3 193	2 498	1 466	1 147	3.3	8.8
176 300	74 700	4 175	4 199	1 769	1 779	4.3	8.8

C_0 = Static loading capacity
 C = Dynamic loading capacity (100 km)
 M_0 = Static moment capacity
 M = Dynamic moment capacity (100 km)

**5.4 Dimension table,
loading capacities
MONORAIL BM**

Carriage type BME

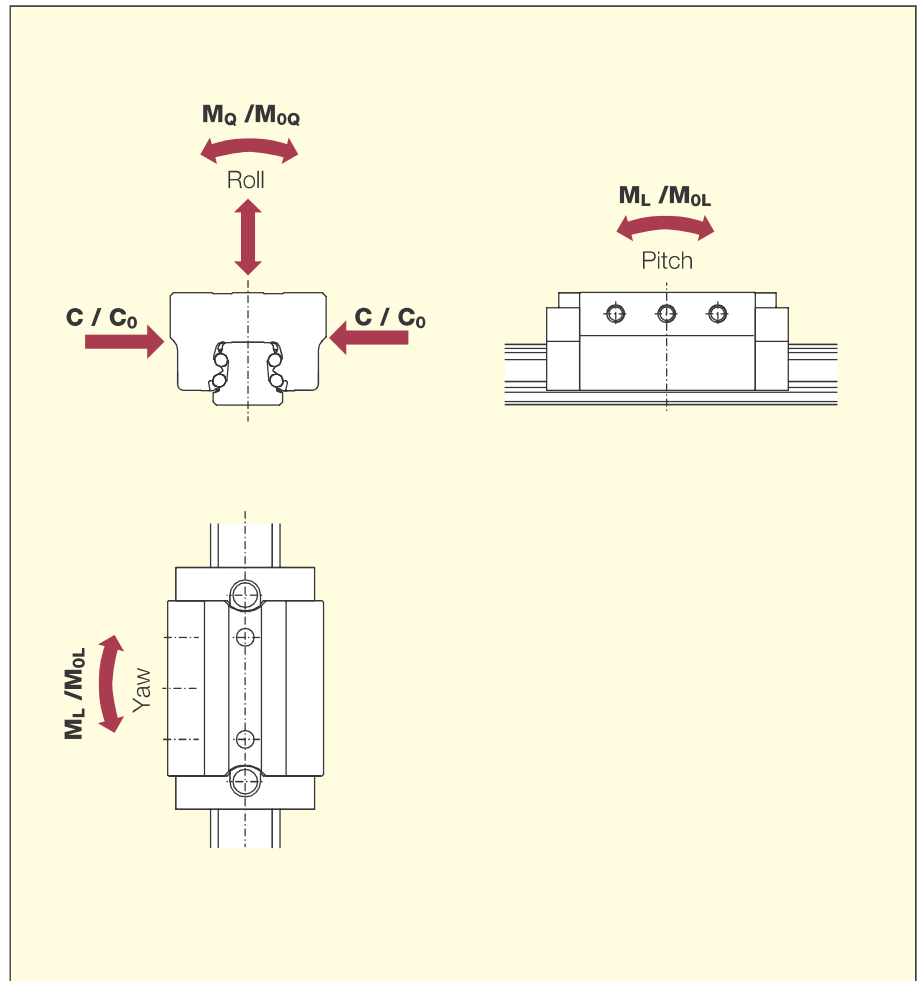


Drawings in all common file formats are available on www.schneeberger.com under Services.

Type	Dimensions (mm)														
	A	B +0.4 0	B ₁ * ±0.05	B ₂	J	J ₁	L**	L ₁	L ₂	L ₄	L ₅ / L ₁₀	L ₇	N ₁	E	F ₁
BME 25	40	57	23	17	34.5	22.7	89.7	17.5	35	60	29	64.3	7.5	M 6	7
BME 30	45	62	28	17	38.9	26	103.4	20	40	80	39	75	8.5	M 8	9
BME 35	55	76	34	21	48	29.5	118.4	25	50	80	39	86	11	M 8	9

* Lower tolerances on request

** When using additional wipers, metal wipers and lubrication plates, the total length L is increasing, see chapter 5.7.



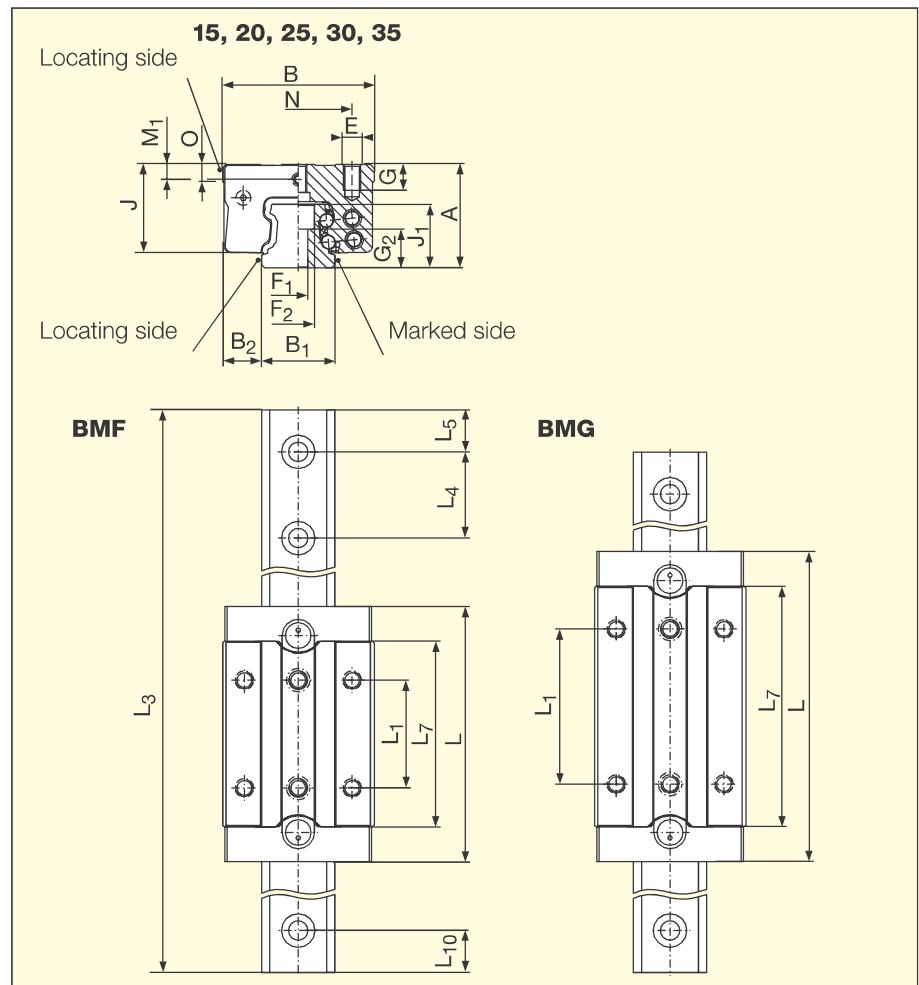
F ₂	Ball Ø	G	G ₂	M ₁	O
11	4.8	9	14	9.5	15
15	5.6	12	14.5	10	17
15	6.4	12	18	14	22

Loading capacities		Moments				Weight	
C ₀ (N)	C (N)	M _{0Q} (Nm)	M _{0L} (Nm)	M _Q (Nm)	M _L (Nm)	Carriage (kg)	Rail (kg/m)
46 100	21 100	631	513	289	235	0.7	3.0
63 700	29 200	1 084	829	497	380	1.0	4.3
84 400	38 700	1 566	1 252	718	574	1.9	5.4

C₀ = Static loading capacity
 C = Dynamic loading capacity (100 km)
 M₀ = Static moment capacity
 M = Dynamic moment capacity (100 km)

**5.5. Dimension table,
loading capacities
MONORAIL BM**

Carriage type BMF and BMG

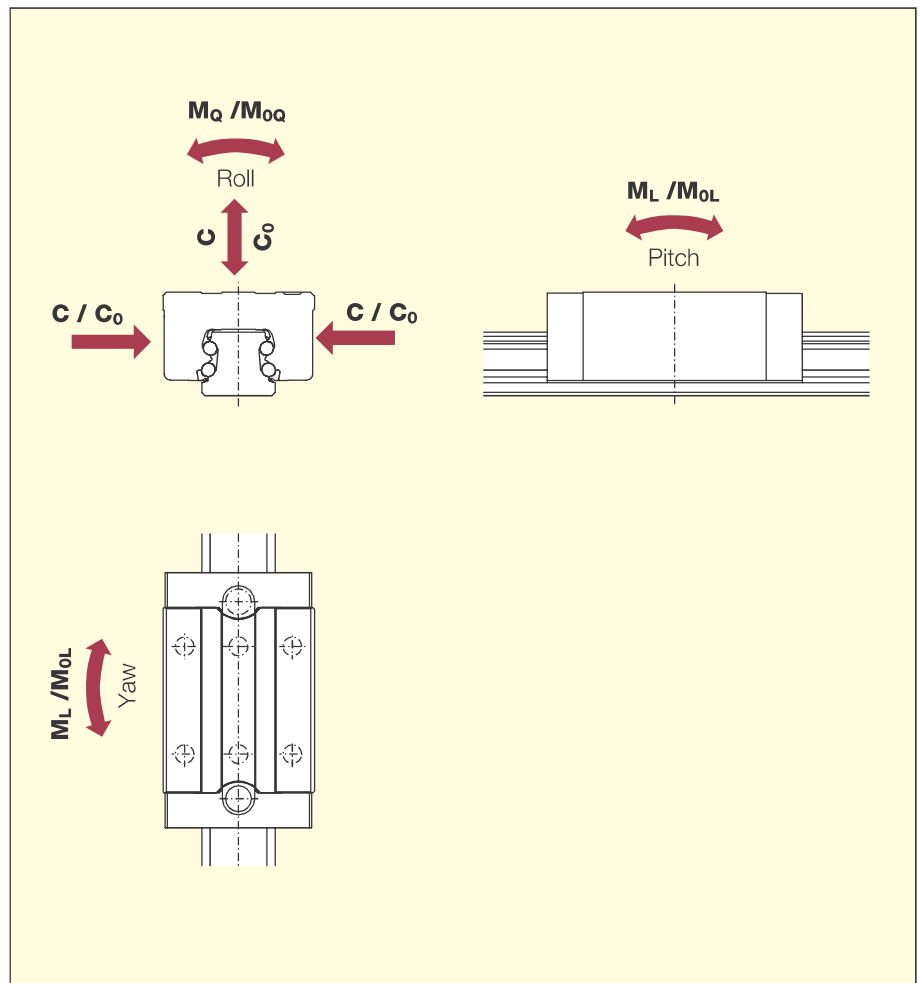


Drawings in all common file formats are available on www.schneeberger.com under Services.

Type	Dimension (mm)													
	A	B +0.4 0	B ₁ * ±0.05	B ₂	J	J ₁	L**	L ₁	L ₄	L ₅ / L ₁₀	L ₇	N	E	F ₁
BMF 15	24	34	15	9.5	20.2	15.7	59.8	26	60	29	42.8	26	M 4	4.5
BMF 20	BMF 20 correspond to BMC 20, see chapter 5.3													
BMG 20	BMF 20 correspond to BMC 20, see chapter 5.3													
BMF 25	36	48	23	12.5	30.5	22.7	89.3	35	60	29	64.3	35	M 6	7
BMG 25	BMF 25 correspond to BMC 25, see chapter 5.3													
BMF 30	42	60	28	16	35.9	26	103	40	80	39	75	40	M 8	9
BMG 30	BMF 30 correspond to BMC 30, see chapter 5.3													
BMF 35	48	70	34	18	41	29.5	118	50	80	39	86	50	M 8	9
BMG 35	BMF 35 correspond to BMC 35, see chapter 5.3													

* Lower tolerances on request

** When using additional wipers, metal wipers and lubrication plates, the total length L is increasing, see chapter 5.7.



F ₂	Ball Ø	G	G ₂	M ₁	O
8	3.2	5	9.5	4	5.5
11	4.8	9	14	5.5	7.5
15	5.6	11	14.5	7	8
15	6.4	12	18	7	8

Loading capacities		Moments				Weight	
C ₀ (N)	C (N)	M _{0Q} (Nm)	M _{0L} (Nm)	M _Q (Nm)	M _L (Nm)	Carriage (kg)	Rail (kg/m)
19600	9000	181	146	83	67	0.2	1.4
46100	21100	631	513	289	235	0.6	3.0
60300	25500	825	863	349	365	0.7	3.0
63700	29200	1084	829	497	380	0.9	4.3
83300	35300	1414	1390	599	589	1.2	4.3
84400	38700	1566	1252	718	574	1.4	5.4
110300	46700	2048	2104	867	891	1.8	5.4

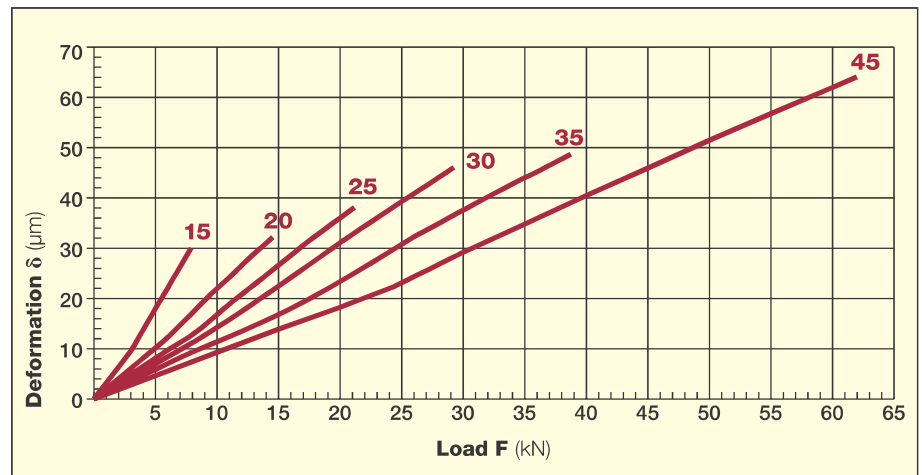
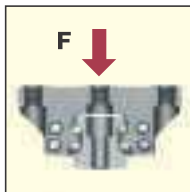
C₀ = Static loading capacity
 C = Dynamic loading capacity (100 km)
 M₀ = Static moment capacity
 M = Dynamic moment capacity (100 km)

5.6 Rigidity

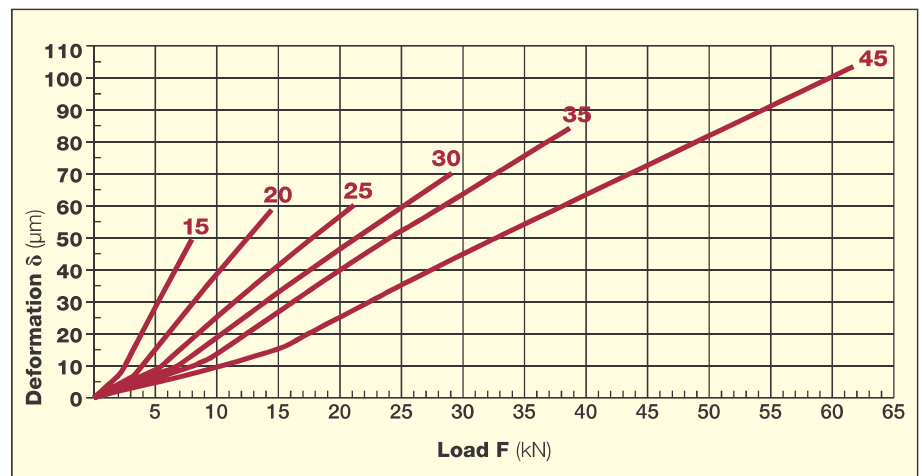
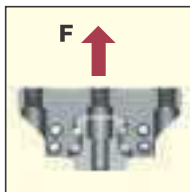
BMA 15, 20, 25, 30, 35, 45
 BMC 15, 20, 25, 30, 35, 45
 BMF 15, 25, 30, 35

The diagrams correspond to preload class V3

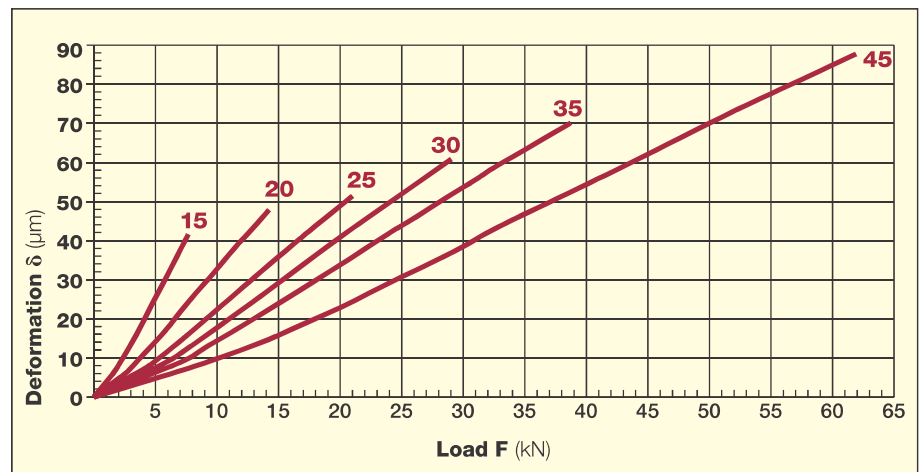
Compressive load



Tensile load

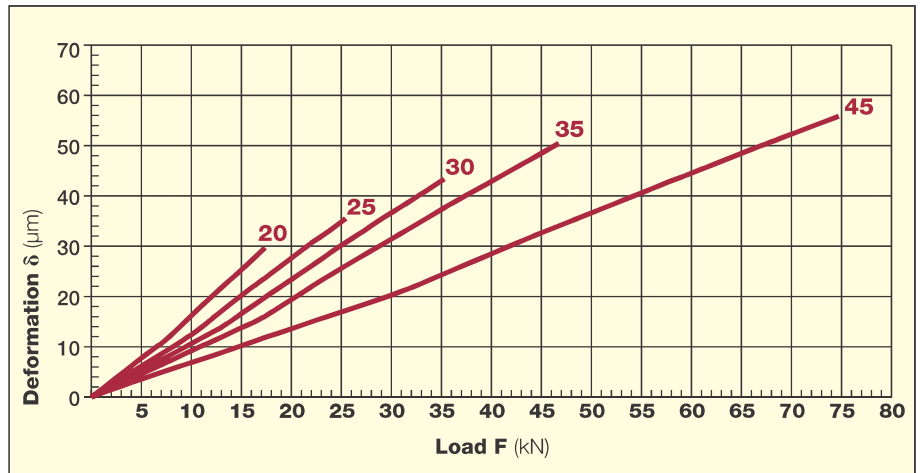
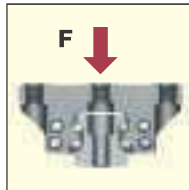


Lateral load

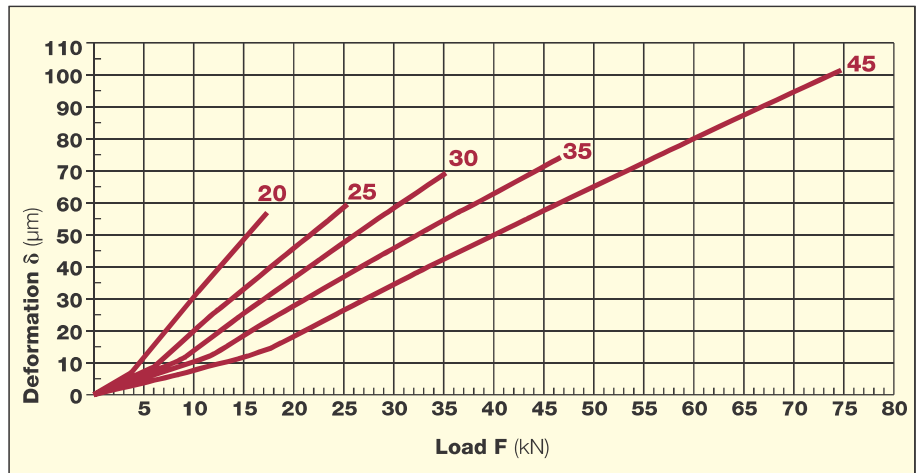
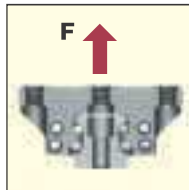


BMB 20, 25, 30, 35, 45
BMD 20, 25, 30, 35, 45
BMG 25, 30, 35

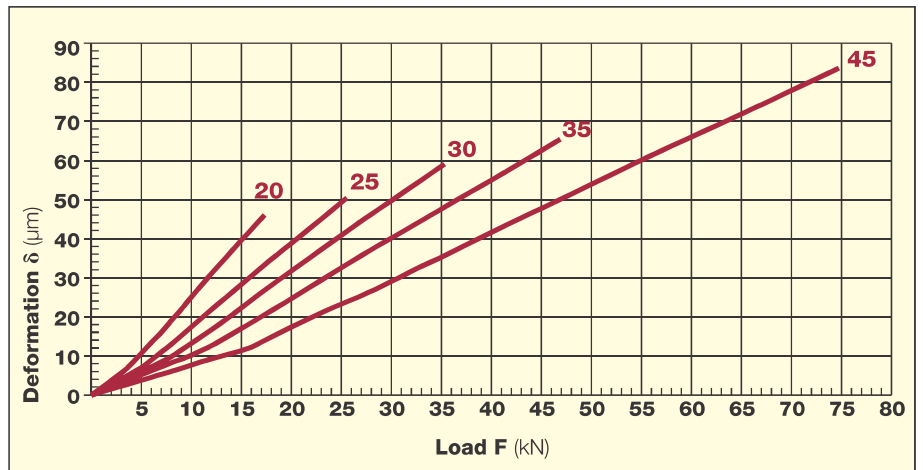
Compressive load



Tensile load



Lateral load



5.7 Accessories – to be ordered separately

Rail cover strip BAB

With the rail cover strip (stainless steel), a smooth sealing surface is achieved, which optimizes wiper function. The cover strip is easily installed and can be supplied in several pieces. The cover is secured by a full-surface adhesive tape which prevents liquids from seeping under the strip and potentially causing corrosion. In addition, the adhesive prevents the strip from separating from the rail in any installation orientation. The rail cover strip is always 5 mm shorter than the total length of the rail.



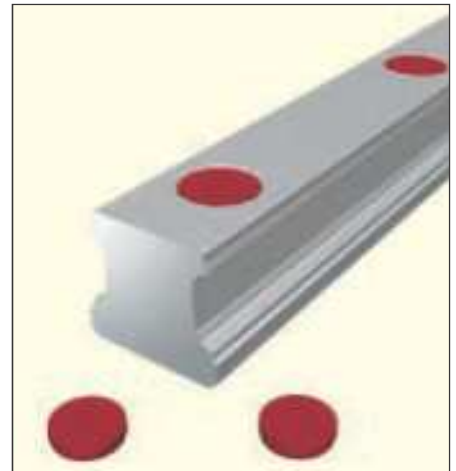
Plastic plugs BRK



Plastic plugs can be utilized instead of the rail cover strip for closing off the rail attachment holes.

When utilizing them it must be noted, that the rails in their standard version have a chamfer, so that with the plastic plugs ring-shaped gaps result.

For applications in environments with strong contamination with dirt therefore the rail cover strip BAB has to be preferred. When plastic plugs are utilized, they have to be used in conjunction with additional wipers ZBN-U/ZBV-U.

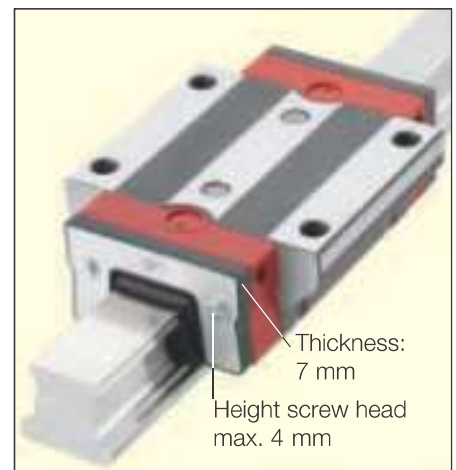


Additional wipers ZBN/ZBV

The ZBN and ZBV wipers provide effective additional protection of the rails in highly contaminated surroundings. Two versions are available:

- ZBN made of NBR (Nitrile)
- ZBV made of VITON® (Fluoro-elastomer)

for applications with aggressive coolants
The wipers ZBN/ZBV can also be used in combination with the metal wiper ABM.

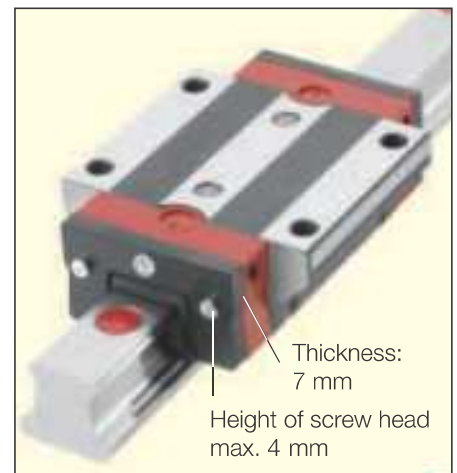


**Additional wipers
ZBN-U/ZBV-U**

For rails without cover strip, such as rails attached from the bottom or with plastic plugs, exists a special type with adapted sealing lips geometry and black-anodized support. Two versions are available:

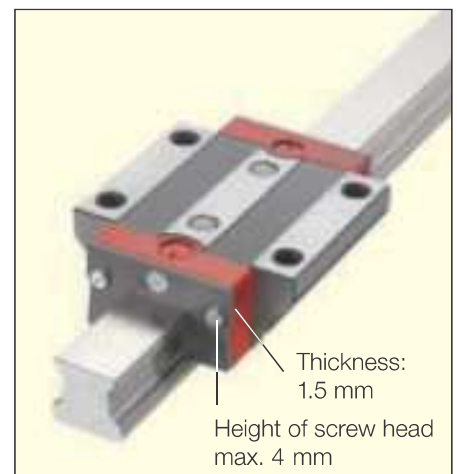
- ZBN-U made of NBR (Nitrile)
- ZBV-U made of VITON® (Fluoro-elastomer) for applications with aggressive coolants

The wipers ZBN-U/ZBV-U can also be used in combination with the metal wiper ABM.



Metal wiper ABM

The metal wipers ABM serve for the protection of the sealing lips of carriages and additional wipers against hot metal chips. Large and loose dirt particles are pushed away and because of the large radial gap to the rail cannot get jammed. The metal wipers are ideally utilized in combination with additional wipers ZBN/ZBV.



Bellows FBB

A standard bellows is available for MONORAIL sizes BM 20–BM 45. The bellows covers the entire length of the rail and is mainly used to provide additional protection against dust and splashed water.

The bellows is made of a synthetic fabric coated on both sides with plastic. Installation is simple and requires little time. The ZPB adapter plate is required to attach the bellows to the carriage. The adapter plate is screwed to the front plate of the carriage. The EPL end plate can be screwed to the end face of the rail. The bellows is fastened with two rivets each to the adapter plate and front plate.

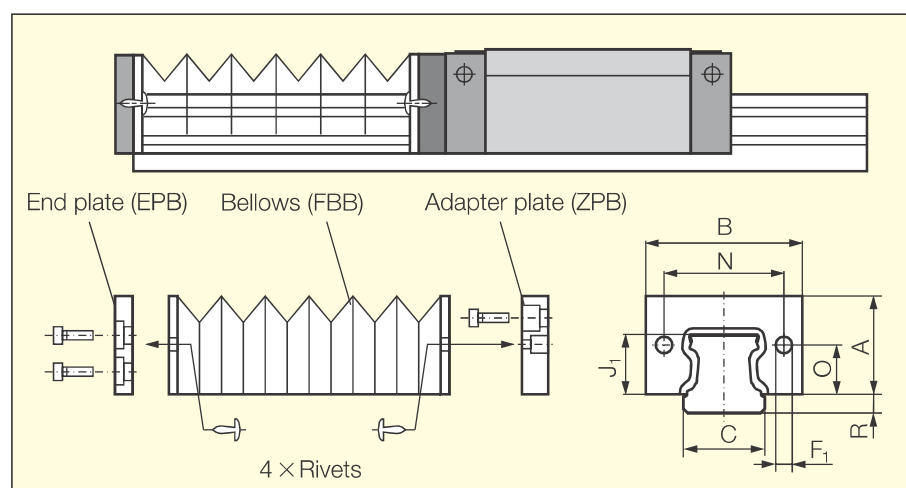
The required adapter and end plates, the attaching screws and rivets are supplied with the order of a complete bellows.

Outside dimensions

The outside dimensions of the bellows and adapter plates conform to those of the respective front plates.

Adapter plate ZPB

The adapter plate is used for attaching the bellows to the carriage and is made of black-anodized aluminum.

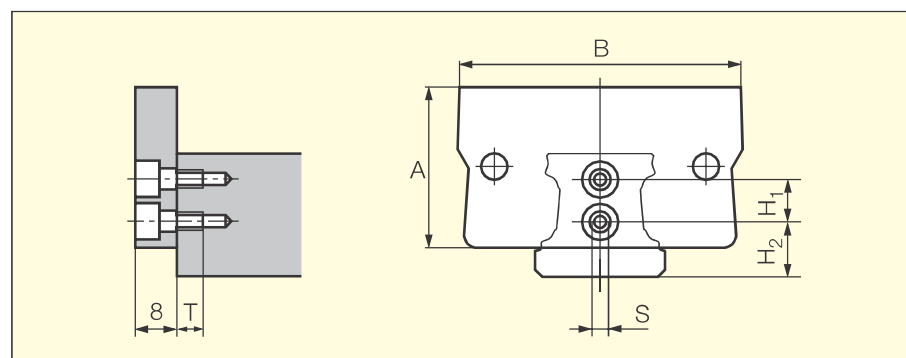


Size	FBB 20	FBB 25	FBB 30	FBB 35	FBB 45
Dimension in mm					
A	25	30	35	39.5	50
B	43	47	58.5	68	84
C	20	23	28	34	45
N	32	34	42	53	67
O	12.5	14	17.5	20	25.5
J ₁	14.8	17.5	20.2	22.3	28.1
R	4.5	5.5	6.1	7	9.2
F ₁	4.5	4.5	4.5	4.5	4.5

End plate EPB

The end plate is used to attach the bellows at the end of the rail and is made of red-anodized aluminum.

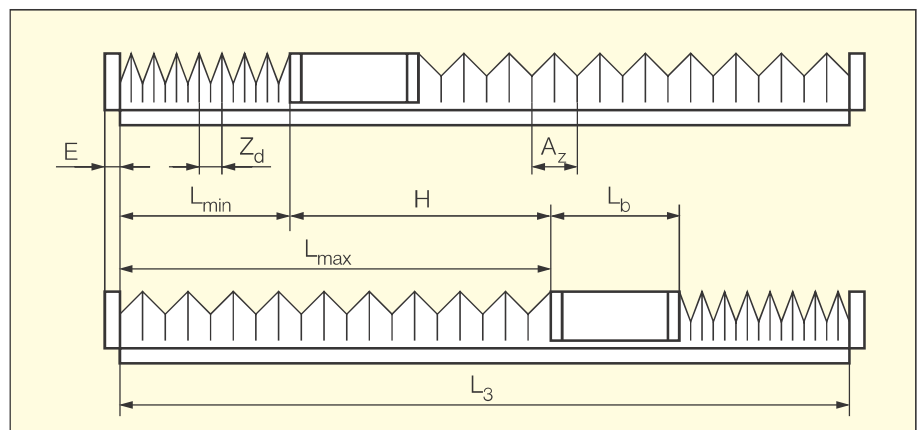
The attaching holes can be drilled into the rail according to the drawing below, if the bellows is to be retrofitted.



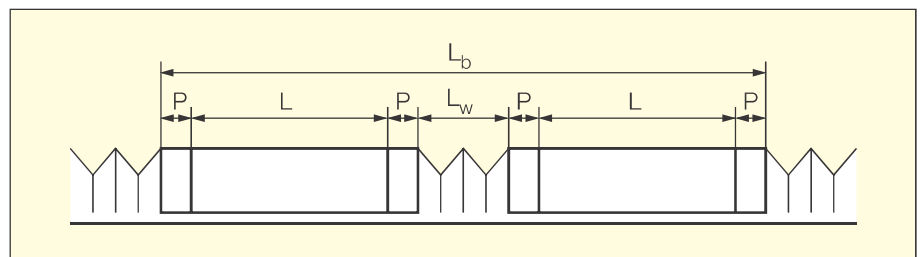
Size	EPB 20	EPB 25	EPB 30	EPB 35	EPB 45
Dimension in mm					
A	25	30	35	40	50
B	43	47	58.5	68	84
H ₁	6.5	8	8	10.5	13.5
H ₂	8.5	10	12	13	16.7
S × T	M 3 × 12	M 4 × 8	M 4 × 8	M 4 × 8	M 6 × 10

Bellows length calculation

$$L_b = L + 2 \cdot P$$



$$L_b = 2 \cdot (L + 2 \cdot P) + L_w$$



$$L_{min} = n \cdot Z_d + 10$$

$$L_{max} = H + L_{min}$$

$$n = \frac{H}{A_z - Z_d}$$

round up to whole number

- A_z : Extension per fold
- E : End plate thickness
- H : Travel distance
- L : Carriage length
- L_b : Total length with adapter plates
- L₃ : Rail length

- L_{max} : Extended length of bellows
- L_{min} : Closed length of bellows
- L_w : Clearance between two carriages
- n : Number of folds per bellows
- P : Adapter plate thickness
- Z_d : Closed distance per fold

Size	FBB 20	FBB 25	FBB 30	FBB 35	FBB 45
Dimension in mm					
A _z	12	12	15	20	22
Z _d	2	2.7	2.7	2.7	2.7
E	8	8	8	8	8
P	10	10	10	10	10

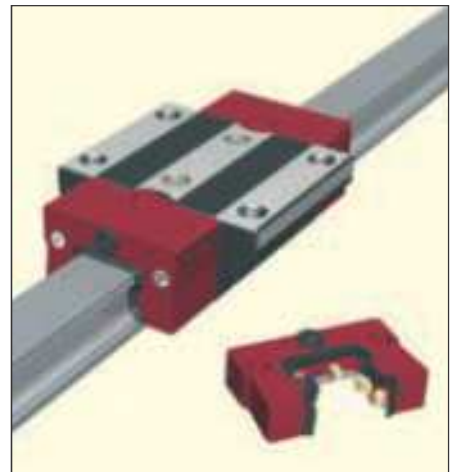
Rail length calculation

$$L_3 = L_{\min} + L_{\max} + L_b$$

Lubrication plate SPL

The lubrication plate SPL by means of its integrated lubricant reservoir makes an automatic and uniform supply of lubricant to the roller elements over a long time period possible. As a result of this, the investment – and operating costs can be significantly reduced. The advantages are:

- An assured supply of lubricant in all installation positions
 - Long lubrication intervals of up to 5000 km, respectively, 12 months
 - Capable of being replenished, in this context refer to chapter 3.7 Lubrication
 - Cost savings because of the elimination of the need for a central lubrication system
 - A low burden on the environment because of the minimum consumption of lubricant
- For maximum travelling distances without re-lubrication, the lubrication plates are always utilised in pairs. The lubrication plates have the same dimensions as the front plates of the carriages and they are installed in front of them. Retro-fitting is possible. For applications, in the case of which cooling lubricants can reach the guideways, additional wipers ZBN/ZBV have to be foreseen.



Dimensions SPL-BM			
Size	Width	Height	Thickness*
Dimensions in mm			
BM 15	33	20.5	8.5
BM 20	43	25.1	11
BM 25	47	30	12.7
BM 30	58.5	35.2	14
BM 35	68	40.5	16.2
BM 45	84	50.3	19.2

* = without centering cone in carriage longitudinal direction

Assembly rail MBM

The plastic assembly rail is recommended for protection of the balls against contamination during transportation and storage. It also facilitates removing the carriage from the rail and the reinstallation of the carriage after the guideway assembly. If necessary, the two internal screws for fastening the carriage can be tightened through the two holes in the assembly rail.



Front plate STB – spare part

The red front plates at the end sides of the MONORAIL carriages have two essential functions:

- Supply of lubricant and
- Sealing the MONORAIL carriages.

Through several integrated lubrication connections, with the help of a lubricating nipple or by connection to a lubricating line lubricant can be supplied to the carriages, refer to chapter 3.7 Lubrication. Lubricating channels inside the front plate distribute the lubricant and guide it to the balls.

The integrated double-lip cross wipers seal the carriage at the ends and with this prevent the ingress of dirt and the loss of lubricant. Because the cross wipers are subject to wear, the front plates have to be examined regularly and if necessary replaced, also refer to chapter 10, Precautionary Measures.



Brakes and clamps

SCHNEEBERGER for the most diverse application cases offers clamping – and braking elements for the ball guideway MONORAIL BM. The various alternatives can be utilized for applications like the securing of a position of linear axes, the clamping of machine tables and right to the application of a controllable counter-force in case of chip-removing processes. Available are manual, pneumatic, hydraulic and electrically actuated products. Versions opening when pressure is applied are optimally suitable for securing vertical axes or linear motor axes in case of an electric power failure.

For more detailed information, please contact your SCHNEEBERGER representative.



5.8 Ordering information BM

When custom MONORAIL BM versions are required, additional information is needed to ensure the correct execution of the order. This has to be marked on the supplementary order sheet.

- Type, accuracy class, preload in the event of different carriage types on a rail
- Additional wipers
- Locating sides of carriages and rail
- Position of the lubrication connections
- Installation orientation and type of lubrication

In the case of more than 2 rails, butt joint rails or in the case of more than three carriages per rail, a separate drawing is required on which as well the lengths of all sections of multi-section rails and rail cover strips are indicated.

Guideway BALL-MONORAIL BM

	—	BM	35	-C2	-0964	-U	-19	-25	-X	-G3	-V1	-GP	-SO	-A	-HH
Quantity															
Guideway type BM															
Size	15, 20, 25, 30, 35, 45														
Carriage type	A, B, C, D, E, F, G When different carriages														
Carriage qty	1, 2, ... per rail e.g. -A2-B1														
Rail length L₃ (in mm)	State the total length for multi-section rails ground together														
Rail version*	U Rails with tapped attachment holes														
Starting hole pitch L₅ (in mm)															
End hole pitch L₁₀ (mm)															
Rail hole pitch	X half hole pitch (as MR)														
L₄ special*	Y L ₄ not standard or not uniform (drawing required)														
Accuracy class	G 0, G 1, G 2, G 3														
Preload class	V 1, V 2, V 3														
Matched*	GP														
Lubrication connection not standard*	SO above														
Position has to be indicated on supplementary sheet	SS lateral														
	ST special, 2 × connections per carriage (not sizes 15, 20)														
Carriages with two locating sides*	A parallel locating sides, carriage width $B_A = (B + 0.2) \pm 0.05$ mm														
Hard-chroming*	HS rails hard-chromed														
	HW carriages hard-chromed														
	HH rails and carriages hard-chromed														

*Optional specifications, no indications signifies «without»

Accessories **BALL-MONORAIL BM** – to be ordered separately

Rail cover strip

			—	BAB	35	-0958
Quantity						
Type	BAB	(spring steel)				
Size	15, 20, 25, 30, 35, 45					
Rail length L₃	(Length rail cover strip = L ₃ – 5 mm)					

Plugs

			—	BRK	35	
Quantity						
Type	BRK	(plastic)				
Size	15, 20, 25, 30, 35, 45					

Additional wipers

			—	ZBN	35	-U
Quantity						
Type	ZBN	(NBR)	not possible with AMS-40 scanning head			
	ZBV	(Viton)	not possible with AMS-40 scanning head			
Size	15, 20, 25, 30, 35, 45					
Version	without specification		Rail with cover strip BAB			
	U		U-rails and rails with plugs BRK			

Metal wipers

			—	ABM	35	
Quantity						
Type	ABM	not allowed with AMS rail				
Size	15, 20, 25, 30, 35, 45					

Bellows

			—	FBB	30	-24	-EZ
Quantity							
Type	FBB						
Size	20, 25, 30, 35, 45						
Number of folds							
Version	without specification	bellows only, without attachment plates					
	EZ	with 1 end plate (EPL) and 1 adapter plate (ZPL) – For mounting to rail ends					
	ZZ	with 2 adapter plates – For mounting between two carriages					

Attachment plates for bellows

			—	ZPB	-30
Quantity					
Type	ZPB EPB	Adapter plate End plate			
Size	20, 25, 30, 35, 45				

Lubricating plate

			—	SPL	-35	BM
Quantity	Ordering only in pairs					
Type	SPL					
Size	15, 20, 25, 30, 35, 45					
Version	BM	for MONORAIL BM / BZ / BO				

Assembly rail

			—	MBM	-20
Quantity					
Type	MBM				
Size	15, 20, 25, 30, 35, 45				

Front plate (spare part)

			—	STB	-30	-AB	-SO
Quantity							
Type	STB						
Size	15, 20, 25, 30, 35, 45						
Version	AB CD	for carriage type BMA, BMB, BMF, BMG for carriage type BMC, BMD, BME					
Lubrication connection	no specification SO SS ST	Standard, center front from above lateral special, 2 × connections per carriage (not sizes 15, 20)					

Supplementary sheet for BM 15–45 / Arrangement of carriages and accessories

Customer, address

Machine, axis

Drawing No. Customer

SCHNEEBERGER rep.

Drawing No. SCHNEEBERGER

Ordering information MONORAIL 1

Ordering information MONORAIL 2

MONORAIL 1

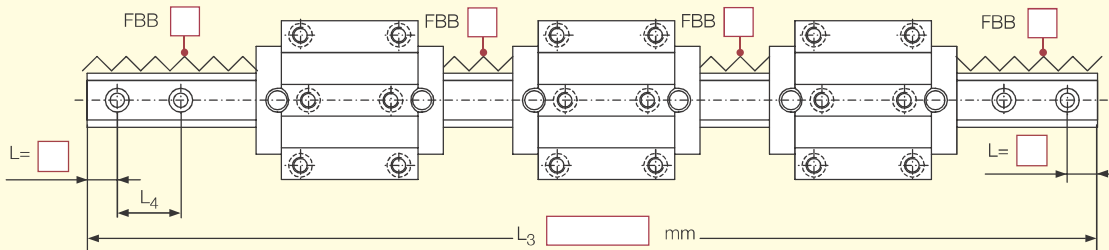
Wipers

ABM	<input type="checkbox"/>	Type	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ZBN-U	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ZBV-U	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Size BM

Lubrication connections

SS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Lubrication connections

laterally	SS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
above	SO	<input type="checkbox"/>	SPL	<input type="checkbox"/>	SPL	<input type="checkbox"/>	SPL
front center	SM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

MONORAIL 2

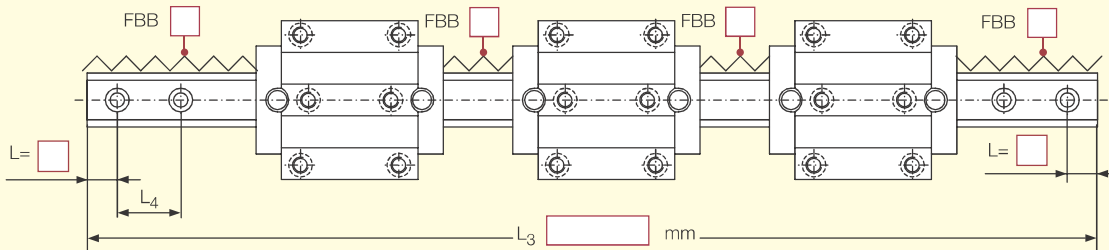
Wipers

ABM	<input type="checkbox"/>	Type	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ZBN-U	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
ZBV-U	<input type="checkbox"/>		<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Size BM

Lubrication connections

SS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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Lubrication connections

laterally	SS	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
above	SO	<input type="checkbox"/>	SPL	<input type="checkbox"/>	SPL	<input type="checkbox"/>	SPL
front center	SM	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Special lubricants

(In the standard version the carriages are preserved with mineral oil VG 32)

<input type="checkbox"/>	Oil preserving, special oil: _____
<input type="checkbox"/>	Grease preserving, special grease: _____
<input type="checkbox"/>	Full lubrication, standard grease
<input type="checkbox"/>	Full lubrication, special grease: _____

Other lubrication options

<input type="checkbox"/>	Double lubrication connection special –ST
<input type="checkbox"/>	Lubrication accessories mounted
<input type="checkbox"/>	Unused lubrication holes closed with set screw

Hard-chromed

<input type="checkbox"/>	Rails	<input type="checkbox"/>	Carriages
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System options

<input type="checkbox"/>	Matched rails –GP
<input type="checkbox"/>	Parallel locating sides –A
<input type="checkbox"/>	Rails through-hardened –D

Rail covering

<input type="checkbox"/>	BRK	<input type="checkbox"/>	BAB
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Rail mounting

<input type="checkbox"/>	from above
<input type="checkbox"/>	from bottom (–U)

