

5.1 Product features

In the handling and automation industry increasing use is being made of linear guiding systems with additional features. The ever increasing cost pressure and quality demands on handling and automation systems in industrial applications are satisfied by SCHNEEBERGER MONORAIL MZ. The **MZ**, with integrated rack, offers the following decisive advantages:

- Extremely simple dimensioning and design of the connecting structure.
- Logical mounting of the guiderail and carriage systems.
- Optimal load-carrying capacity and service life based on the well-known MONORAIL machine guideway.
- Minimum servicing and maintenance as the design of the MONORAIL is conceived for industrial usage.
- Life and speed uncompromisingly match the user's requirements.

5.2 Dimension table, loading capacities MONORAIL MZ with carriage type MRE

Standard version

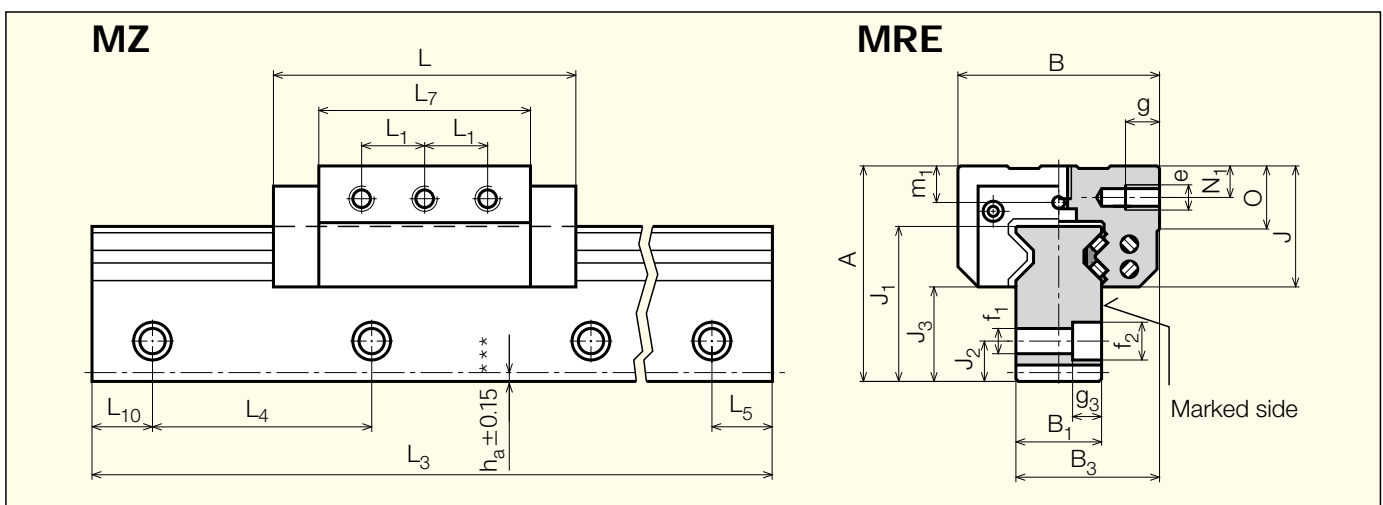
- MONORAIL carriage and track of the rail are hardened
- MONORAIL rails can be mounted continuously
- Rack Teeth cut straight (as per DIN 867)
Pressure angle 20°
Milled to quality 8, unhardened
Maximum accumulated pitch error for single unit rails: ± 0.06 mm per 1000 mm
- The running accuracy Δ of the carriages on the rail corresponds to accuracy class G3
- The preload class of the carriages corresponds to V1

Version MO

- Rail cross section same as MZ but without rack

On request

- Besides carriage type MRE, carriage types MRA, MRB, MRC and MRD can also be used
- Helical rack (single piece rails only)
- Special tooth pitch
- Rails of special length, maximum single piece rail length $L_3 = 2400$ mm



Type	Dimensions (mm)															
	Linear pitch	A	B	B ₁ * ±0.05	B ₂	B ₃	J	J ₁	J ₂	J ₃	L**	L ₁	L ₃	L ₄	L ₅ / L ₁₀	L ₇
MZ/MRE 25	7.5	60	57	23	–	40	33.5	44.5	11.5	26.5	81	17.5	1500	60	30	57
MR-X/MRC 25	–	40	48	23	12.5	–	33.5	24.5	–	–	81	35	1500	60	30	57
MZ/MRE 35	10.0	85	76	34	–	55	47	62	17	38	109	25	1520	80	40	76
MR-X/MRC 35	–	55	70	34	18	–	47	32	–	–	109	50	1520	80	40	76

* Lower tolerances on request

** When using additional wipers, metal wipers and lubrication plates, the total length L is increasing, see chapter 4.5.

*** Dimension $h_a \triangleq$ Module m, see chapter 5.4.

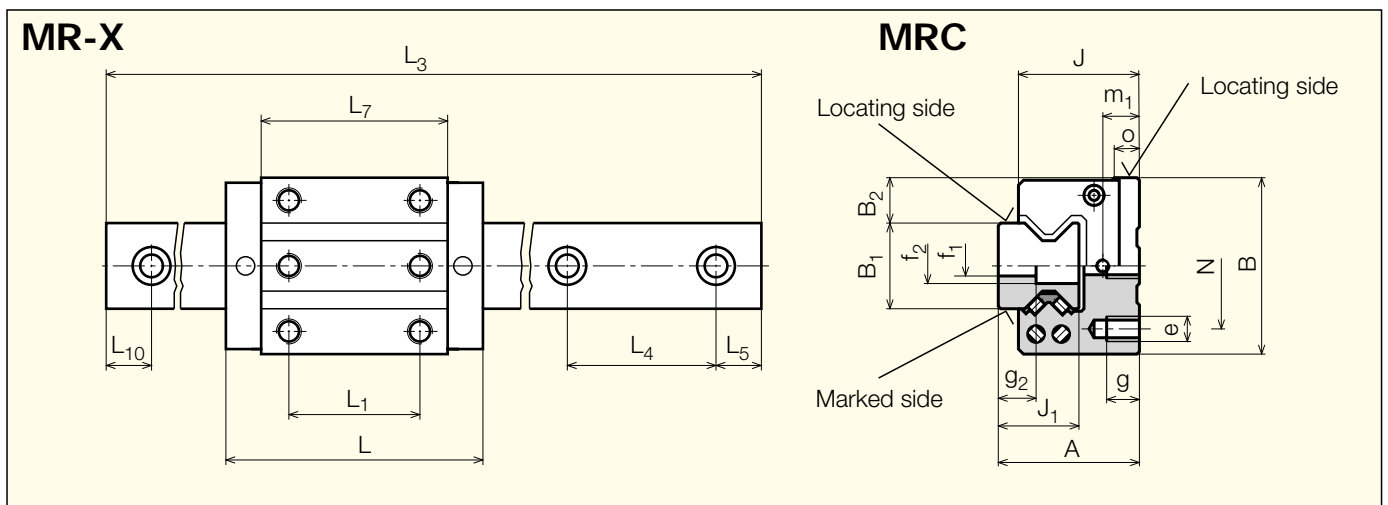
5.3 Dimension table, loading capacities MONORAIL MR-X with carriage type MRC

Standard version

- MONORAIL-rail with double hole spacing L_4
- The running accuracy Δ of the carriages on the rail corresponds to accuracy class G3
- The preload class of the carriages corresponds to V1

On request

- Also carriage types MRA, MRB, MRD and MRE can be used



N	N ₁	e	f ₁	f ₂	g	g ₂	g ₃	m ₁	o	Roller Ø	Loading capacities* C _o (N)	C (N)	Max. rack load (N)	Weights Carriage (kg)	Rail (kg/m)
–	7.5	M6	7	11	10	–	7	9.5	15	3.2	24 900	13 850	1800	0.75	7.0
35	–	M6	7	11	9	13	–	9.5	7.5	3.2	24 900	13 850	1800	0.6	3.4
–	11	M8	9	15	12	–	9	14	22	4.5	46 700	26 000	2500	1.6	14.8
50	–	M8	9	15	12	15	–	14	8	4.5	46 700	26 000	2500	1.35	6.8

*Loading capacities reduced according to hole pitch

C = dynamic loading capacity (100 km)
C_o = static loading capacity

5.4 Accessories

For MONORAIL MZ the following accessories are available, see also chapter 4.5:

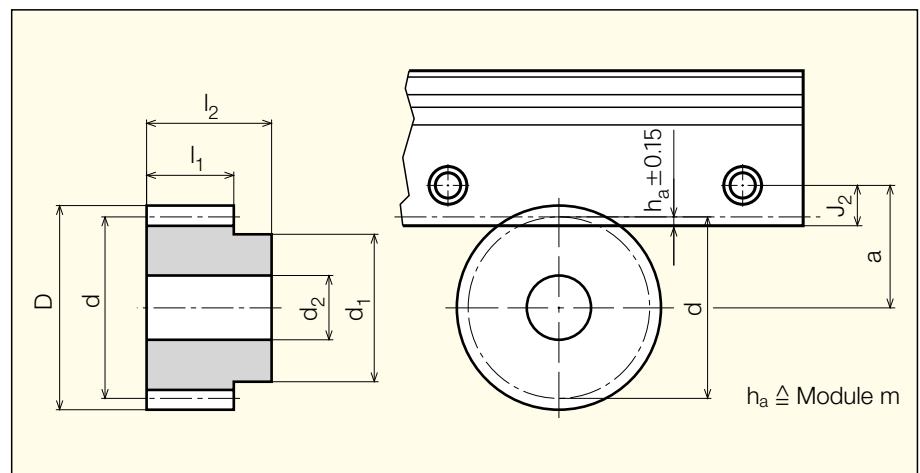
- Additional wipers ZCN/ZCV
- Metal wiper ASM
- Lubrication plate SPL
- Mounting rail MRM

Standard accessories

For the parallel rail MR-X the same accessories are available as for the standard MONORAIL MR.

Standard pinion MZR

- Tothing hardened and ground
- Quality 6 f 24 according to DIN 3962/3963/3967
- Straight bore for customized fitting to the motor shaft



	Reference circle $\varnothing d$	Module m	No of Teeth z	Pitch p	Dimensions (mm)						Weight in kg
					a	D	d ₁	d ₂	l ₁	l ₂	
MZR 25	47.75	2.3873	20	7.5	33.0	52.52	40	15 h7	19.5	30	0.34
MZR 35	63.66	3.1831	20	10	45.7	70.02	50	15 h7	29.5	43	0.88

all dimensions in mm

$$\text{Module } m = \frac{p}{\pi}$$

$$\text{Reference circle } \varnothing d = m \cdot z$$



Attention:

- For systems with multi-section rails, a pinion with spring pre-load must be used due to the ± 0.15 mm tolerance of the dimension h_a .
- When mounting multi-section rails, the rail joints have to be adjusted according to section 9.6 of this catalog (Handling the rails).

5.5 Ordering information MZ

When custom MONORAIL MZ 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 lubrication connections or additional lubrication plates
- Installation orientation and type of lubrication

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

Guideway MONORAIL MZ

	—	MZ	35	-E2	-0950	-30	-20	-Y	-G3	-V1	-SO	-A
Quantity												
Guideway type		MZ MO										
Size		25, 35										
Carriage type		E (A, B, C, D)										
Carriage quantity		1, 2, ...										
Rail length L₃ (in mm).												
Starting hole pitch L₅ (in mm)												
End hole pitch L₁₀ (in mm)												
Hole pitch L₄ special*		X Y										
Accuracy class		G3										
Preload class		V1										
Lubrication connection not standard*												
Position has to be indicated on supplementary sheet												
Carriages with parallel locating sides*												

Order information for parallel guideway see chapter 4.6 MONORAIL MR

*Optional specifications

Supplementary sheet for MZ/MO 25-35/Arrangement of carriages and accessories

Customer, Address

Machine, axis

Drawing No. Customer

SCHNEEBERGER-rep.

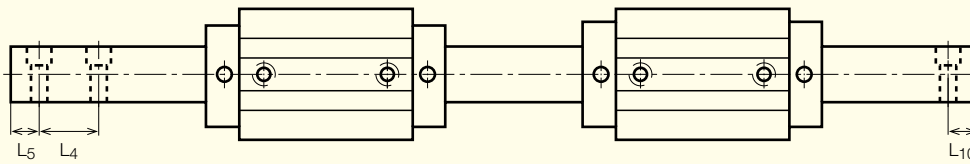
Drawing No. SCHNEEBERGER

Ordering information MONORAIL MZ/MO

Ordering information MONORAIL MR-X

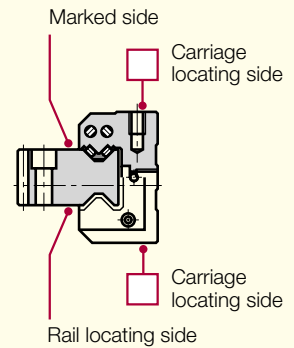
MONORAIL MZ/MO

	Type, Size	Type, Size
Wiper	ASM <input type="checkbox"/>	<input type="checkbox"/>
	ZCN <input type="checkbox"/>	<input type="checkbox"/>
	ZCV <input type="checkbox"/>	<input type="checkbox"/>
Lubrication	SS <input type="checkbox"/>	<input type="checkbox"/>
	SV <input type="checkbox"/>	<input type="checkbox"/>



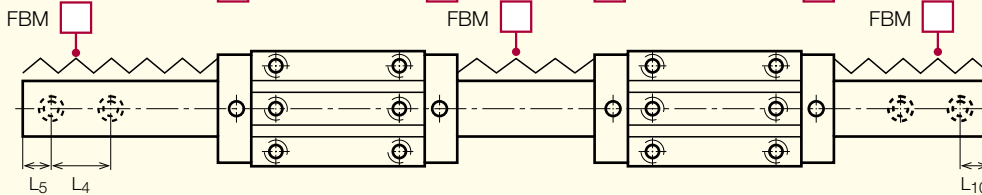
Lubrication

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

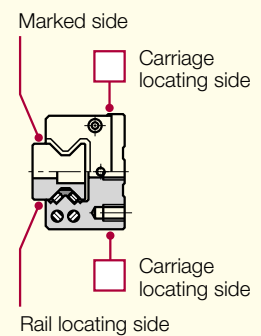


MONORAIL MR-X

	Type, Size	Type, Size
Wiper	ASM <input type="checkbox"/>	<input type="checkbox"/>
	ZCN <input type="checkbox"/>	<input type="checkbox"/>
	ZCV <input type="checkbox"/>	<input type="checkbox"/>
Lubrication	SS <input type="checkbox"/>	<input type="checkbox"/>
	SV <input type="checkbox"/>	<input type="checkbox"/>



SV <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SS <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SO <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SM <input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



Mounting position

- standard (horizontal/vertical)
- special: turned ___° on longitudinal axis of the rail
(Two connections per carriage are recommended with oil, size 35)

Lubrication Accessories

- Lubrication plate SPL
- Lubrication nipple mounted

Attach MR-X

- from above
- from bottom (-U-)

Rail covering MR-X

- MRK MRZ
- MRS MAB