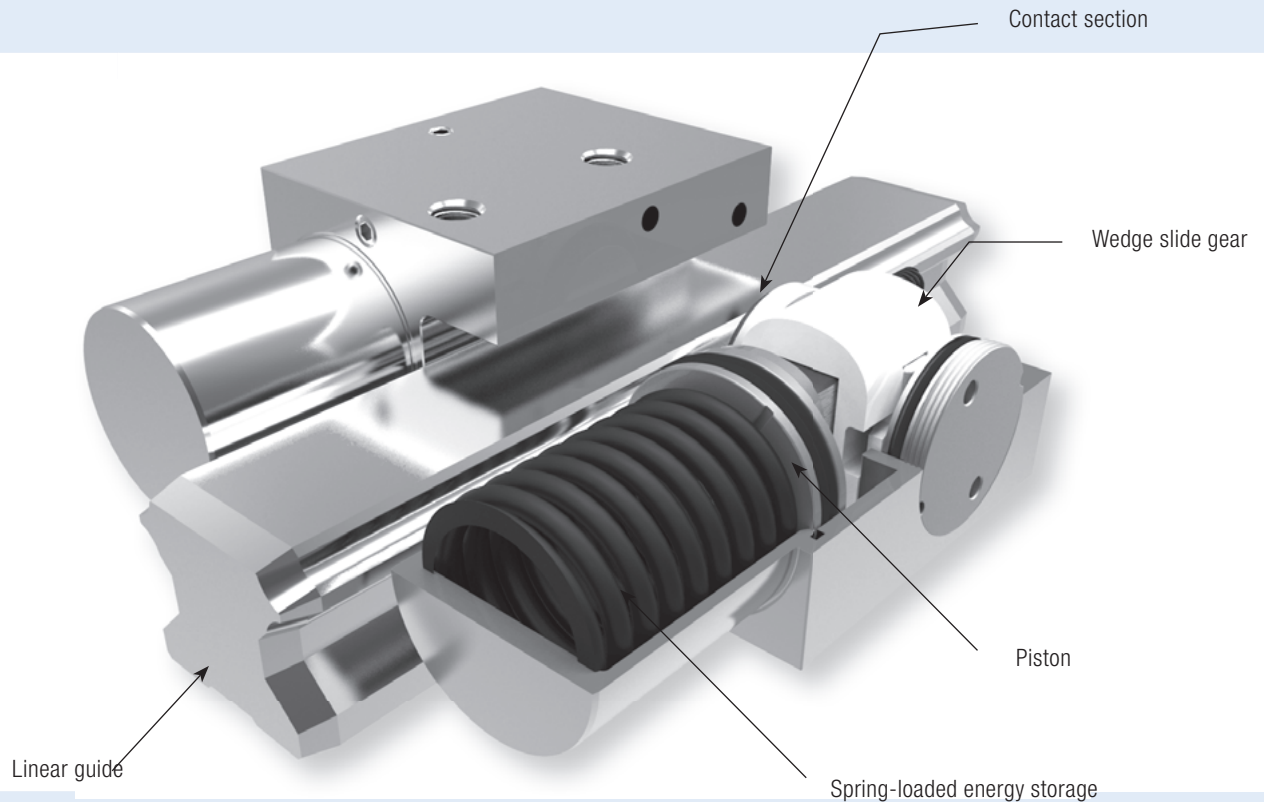
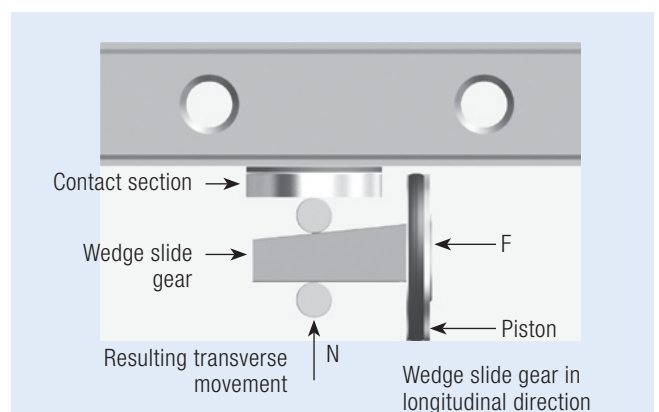




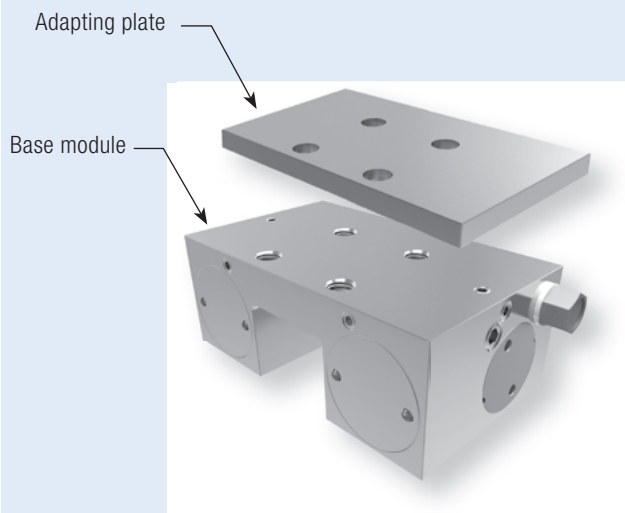
High holding forces – low cost: The pneumatic Clamping Element MK/MKS.

The MK/MKS series is the classic Zimmer clamping element. The patented wedge slide gear achieves high supporting forces. The pressure medium moves the wedge slide gear in a longitudinal direction. The resulting transverse movement presses contact sections

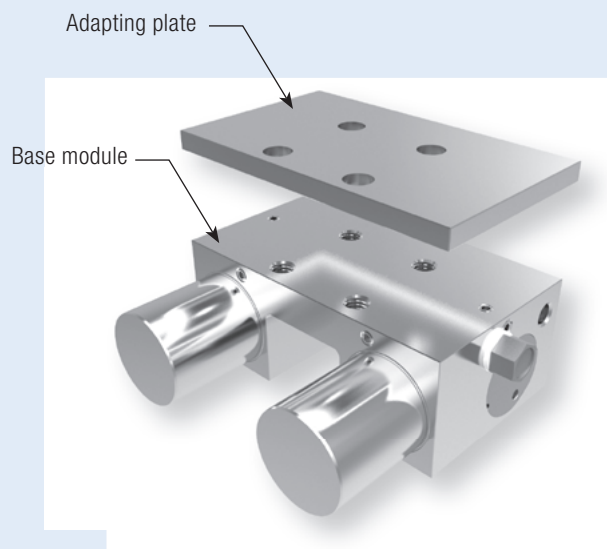
with high force against the free surfaces of the section rail guide. The MK is clamped (closed) by pneumatic pressure. The MKS is clamped (closed) by spring-loaded energy storage and is opened by pneumatic pressure.



MK Series



MKS Series



Technical data for MK series:

Rail size	12–100
Holding forces	350 N–2,250 N
Min. pressure	6 bar
Max. pressure	8 bar
Spring-loaded energy storage	-
PLUS connection	-
Clamping cycles	5 mil. (B10d-value)
Braking cycles	unsuitable

Application scenarios for MK:

- Positioning of axes
- Fixing of vertical axes
- Positioning of lifting devices
- Clamping of machine tables

Connection options for MK/MKS:

The MK/MKS series have air connections on both sides as part of their standard equipment. This means that the air connection and the air-release filter can be moved over to the opposite side.

Higher supporting forces with PLUS connection (MKS only):

By using a 5/2 (overflow-free) or 5/3 valve it is possible to support the spring power with pneumatic pressure. By using the PLUS connection, the stated supporting force will be increased. When the PLUS connection (MKS only) is being used the air-release filter is replaced by connecting a second pneumatic tube (see drawing).

For further information, please refer to the assembly instructions or visit www.zimmer-gmbh.com.

*Note: With PLUS connection, the B10d value is not achieved

Technical data for MKS series:

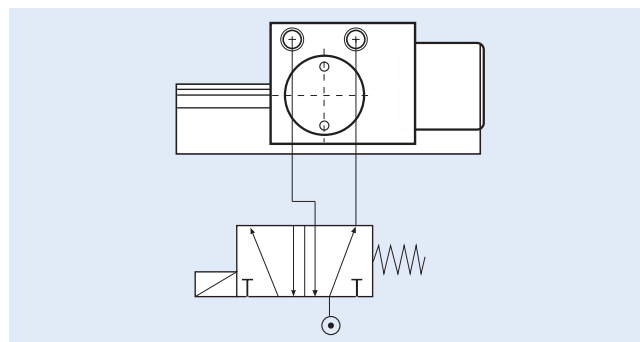
Rail size	12–100
Holding forces	250 N–1,450 N
Min. pressure	5.5 bar
Max. pressure	8 bar
Spring-loaded energy storage	✓
PLUS-connection	✓
Clamping cycles	5 mil. (B10d-value)*
Braking cycles	unsuitable

Application scenarios for MKS:

- Clamping in case of pressure drop
- Clamping without energy requirement

Adapting plate accessory for MK/MKS:

Depending on the height of the carriage (measure D), an additional adapting plate is required (see table from page 38).



Type of rail	Size	Type of carriage	Item number	Adapting plate (for height compensation)	Measure D [mm]	Measure D [mm] *1 (page 48 and 49)
SR, SSR	15	SR..W, SR..WM, SR..V, SR..VM, SR..TB, SR..TBM, SR..SB, SR..SBM, SSR..XW, SSR..XWM, SSR..XV, SSR..XVM, SSR..XTB	MK/MKS 1501 A		24	1
	20	SR..W, SR..WM, SR..V, SR..VM, SR..TB, SR..TBM, SR..SB, SR..SBM, SSR..XW, SSR..XWM, SSR..XV, SSR..XVM, SSR..XTB	MK/MKS 2001 A		28	7
	25	SR..W, SR..WM, SR..V, SR..VM, SR..TB, SR..TBM, SR..SB, SR..SBM, SSR..XW, SSR..XWM, SSR..XV, SSR..XVM, SSR..XTB	MK/MKS 2501 A		33	17
	30	SR..W, SR..WM, SR..V, SR..VM, SR..TB, SR..TBM, SR..SB, SR..SBM, SSR..XW, SSR..XWM	MK/MKS 3001 A		42	29
	35	SR..W, SR..WM, SR..V, SR..VM, SR..TB, SR..TBM, SR..SB, SR..SBM, SSR..XW	MK/MKS 3501 A	PMK 35-3	48	36
	45	SR..W, SR..TB	MK/MKS 4501 A		60	46
	55	SR..W, SR..TB	MK/MKS 5501 SR		68	55
HSR	15	HSR..A, HSR..AM, HSR..B, HSR..BM, HSR..C	MK/MKS 1501 A		24	1
		HSR..R, HSR..RM, HSR..YR, HSR..YRM	MK/MKS 1501 A	PMK 15-4	28	
	20	HSR..A, HSR..AM, HSR..LA, HSR..LAM, HSR..B, HSR..BM, HSR..LB, HSR..LBM, HSR..C, HSR..CA, HSR..CAM, HSR..LR, HSR..LRM, HSR..YR, HSR..YRM, HSR..CA, HSR..CAM, HSR..HA, HSR..HAM, HSR..CB, HSR..CBM, HSR..HB, HSR..HBM	MK/MKS 2001 A		30	9
	25	HSR..A, HSR..AM, HSR..LA, HSR..LAM, HSR..B, HSR..BM, HSR..LB, HSR..LBM, HSR..C, HSR..CA, HSR..CAM, HSR..HA, HSR..HAM, HSR..CB, HSR..CBM, HSR..HB, HSR..HBM	MK/MKS 2501 A		36	19
		HSR..R, HSR..RM, HSR..LR, HSR..LRM, HSR..YR, HSR..YRM	MK/MKS 2501 A	PMK 25-4	40	
	30	HSR..A, HSR..AM, HSR..LA, HSR..LAM, HSR..B, HSR..BM, HSR..LB, HSR..LBM, HSR..C, HSR..CA, HSR..CAM, HSR..HA, HSR..HAM, HSR..CB, HSR..CBM, HSR..HB, HSR..HBM	MK/MKS 3001 A		42	29
		HSR..R, HSR..RM, HSR..LR, HSR..LRM, HSR..YR, HSR..YRM	MK/MKS 3001 A	PMK 30-3	45	
	35	HSR..A, HSR..AM, HSR..LA, HSR..LAM, HSR..B, HSR..BM, HSR..LB, HSR..LBM, HSR..C, HSR..CA, HSR..CAM, HSR..HA, HSR..HAM, HSR..CB, HSR..CBM, HSR..HB, HSR..HBM	MK/MKS 3501 A	PMK 35-3	48	36
		HSR..R, HSR..RM, HSR..LR, HSR..LRM, HSR..YR, HSR..YRM	MK/MKS 3501 A	PMK 35-10	55	
	45	HSR..A, HSR..LA, HSR..B, HSR..LB, HSR..CA, HSR..HA, HSR..CB, HSR..HB	MK/MKS 4501 A		60	46
		HSR..R, HSR..LR, HSR..YR	MK/MKS 4501 A	PMK 45-10	70	
	55	HSR..A, HSR..LA, HSR..B, HSR..LB, HSR..CA, HSR..HA, HSR..CB, HSR..HB	MK/MKS 5501 A		70	56
		HSR..R, HSR..LR, HSR..YR	MK/MKS 5501 A	PMK 55-10	80	
	65	HSR..A, HSR..LA, HSR..B, HSR..LB, HSR..CA, HSR..HA, HSR..CB, HSR..HB, HSR..R, HSR..LR, HSR..YR	MK/MKS 6501 A		90	60
	85	HSR..A, HSR..LA, HSR..B, HSR..LB, HSR..CA, HSR..HA, HSR..CB, HSR..HB, HSR..R, HSR..LR	Ⓒ		110	Ⓒ
GSR	15	GSR..T, GSR..V	Ⓒ		20	Ⓒ
	20	GSR..T, GSR..V	MK/MKS 2001 G★		24	5
	25	GSR..T, GSR..V	MK/MKS 2501 G★		30	23
	30	GSR..T	MK/MKS 3001 G★		33	31
	35	GSR..T	MK/MKS 3501 G★		38	32
HRW	12	HRW..LRM	Ⓒ		12	Ⓒ
	17	HRW..CA, HRW..CAM, HRW..CR, HSR..CRM	MK/MKS 1701 B		17	11
	21	HRW..CA, HRW..CAM, HRW..CR, HSR..CRM	MK/MKS 2101 B★		21	24
	27	HRW..CA, HRW..CAM, HRW..CR, HSR..CRM	MK/MKS 2701 B★		27	25
	35	HRW..CA, HRW..CAM, HRW..CR, HSR..CRM	MK/MKS 3501 B		35	49
	50	HRW..CA, HRW..CR	MK/MKS 5001 B		50	62
	60	HRW..CA	Ⓒ		60	Ⓒ
SHW	12	SHW..CAM, SHW..CRM, SHW..HRM	Ⓒ		12	Ⓒ
	17	SHW..CAM, SHW..CRM	MK/MKS 1701 B		17	11
	21	SHW..CA, SHW..CR	MK/MKS 2101 B★		21	24
	27	SHW..CA, SHW..CR	MK/MKS 2701 B★		27	25
	35	SHW..CA, SHW..CR	MK/MKS 3501 B		35	49
	50	SHW..CA, SHW..CR	MK/MKS 5001 B		50	62
SHS	15	SHS..C, SHS..LC, SHS..V, SHS..LV	MK/MKS 1501 A		24	1
		SHS..R	MK/MKS 1501 A	PMK 15-4	28	
	20	SHS..C, SHS..LC, SHS..V, SHS..LV	MK/MKS 2001 A		30	9
	25	SHS..C, SHS..LC, SHS..V, SHS..LV	MK/MKS 2501 A	PMK 25-2	36	18
		SHS..R, SHS..LR	MK/MKS 2501 A	PMK 25-6	40	
	30	SHS..C, SHS..LC, SHS..V, SHS..LV	MK/MKS 3001 A		42	29
		SHS..R, SHS..LR	MK/MKS 3001 A	PMK 30-3	45	
	35	SHS..C, SHS..LC, SHS..V, SHS..LV	MK/MKS 3501 A	PMK 35-4	48	37
		SHS..R, SHS..LR	MK/MKS 3501 A	PMK 35-11	55	
	45	SHS..C, SHS..LC, SHS..V, SHS..LV	MK/MKS 4501 A	PMK 45-6	60	44
		SHS..R, SHS..LR	MK/MKS 4501 A	PMK 45-16	70	
	55	SHS..C, SHS..LC, SHS..V, SHS..LV	MK/MKS 5501 A	PMK 55-6	70	53
		SHS..R, SHS..LR	MK/MKS 5501 A	PMK 55-16	80	
	65	SHS..C, SHS..LC, SHS..V, SHS..LV	MK/MKS 6501 A		90	60

* PLUS connection not possible

*1 Supplements the measure table and datasheet

See page 10 for part number explanation

Type of rail	Size	Item number	[for height compensation]	Measure D [mm] ^{*1}	[page 48 and 49]
SNR, SNS	25	SNR..R, SNR..LR, SNR..C, SNR..LC, SNS..R, SNS..LR, SNS..C, SNS..LC	MK/MKS 2501 N	31	61
	30	SNR..R, SNR..LR, SNR..C, SNR..LC, SNS..R, SNS..LR, SNS..C, SNS..LC	MK/MKS 3001 A	38	26
	35	SNR..R, SNR..LR, SNR..C, SNR..LC, SNS..R, SNS..LR, SNS..C, SNS..LC	MK/MKS 3501 A	44	37
	45	SNR..CH, SNR..LCH, SNS..CH, SNS..LCH	MK/MKS 3501 A	48	43
		SNR..RH, SNR..LRH, SNS..RH, SNS..LRH	MK/MKS 3501 A	55	
		SNR..R, SNR..LR, SNR..C, SNR..LC, SNS..R, SNS..LR, SNS..C, SNS..LC	MK/MKS 4501 A	52	
		SNR..CH, SNR..LCH, SNS..CH, SNS..LCH	MK/MKS 4501 A	60	
	55	SNR..RH, SNR..LRH, SNS..RH, SNS..LRH	MK/MKS 4501 A	70	52
		SNR..R, SNR..LR, SNR..C, SNR..LC, SNS..R, SNS..LR, SNS..C, SNS..LC	MK/MKS 5501 A	63	
		SNR..CH, SNR..LCH, SNS..CH, SNS..LCH	MK/MKS 5501 A	70	
	65	SNR..RH, SNR..LRH, SNS..RH, SNS..LRH	MK/MKS 5501 A	80	47
		SNR..R, SNR..LR, SNR..C, SNR..LC, SNS..R, SNS..LR, SNS..C, SNS..LC	MK/MKS 6501 N	75	
NR, NRS	85	SNR..LR, SNR..LC, SNS..LR, SNS..LC	MK/MKS 8501 A	90	67
	25	NR..XR, NR..XLR, NR..XA, NR..XLA, NR..XB, NR..XLB, NRS..XR, NR S..XLR, NRS..XA, NRS..XLA, NRS..XB, NRS..XLB	MK/MKS 2501 N	31	61
	30	NR..R, NR..LR, NR..A, NR..LA, NR..B, NR..LB, NRS..R, NRS..LR, NRS..A, NRS..LA, NRS..B, NRS..LB	MK/MKS 3001 A	38	26
	35	NR..R, NR..LR, NR..A, NR..LA, NR..B, NR..LB, NRS..R, NRS..LR, NRS..A, NRS..LA, NRS..B, NRS..LB	MK/MKS 3501 A	44	37
	45	NR..R, NR..LR, NR..A, NR..LA, NR..B, NR..LB, NRS..R, NRS..LR, NRS..A, NRS..LA, NRS..B, NRS..LB	MK/MKS 4501 A	52	43
	55	NR..R, NR..LR, NR..A, NR..LA, NR..B, NR..LB, NRS..R, NRS..LR, NRS..A, NRS..LA, NRS..B, NRS..LB	MK/MKS 5501 A	63	52
	65	NR..R, NR..LR, NR..A, NR..LA, NR..B, NR..LB, NRS..R, NRS..LR, NRS..A, NRS..LA, NRS..B, NRS..LB	MK/MKS 6501 N	75	47
	85	NR..R, NR..LR, NR..A, NR..LA, NR..B, NR..LB, NRS..R, NRS..LR, NRS..A, NRS..LA, NRS..B, NRS..LB	MK/MKS 8501 A	90	67
SRG	15	SRG..A, SRG..V	MK/MKS 1501 E	24	2
	20	SRG..A, SRG..LA, SRG..V, SRG..LV	MK/MKS 2001 E	30	8
	25	SRG..C, SRG..LC	MK/MKS 2501 E	36	48
	30	SRG..R, SRG..LR	MK/MKS 2501 E	40	15
		SRG..C, SRG..LC	MK/MKS 3001 E	42	
	35	SRG..R, SRG..LR	MK/MKS 3001 E	45	35
		SRG..C, SRG..LC	MK/MKS 3501 E	48	
	45	SRG..R, SRG..LR	MK/MKS 3501 E	55	42
		SRG..C, SRG..LC	MK/MKS 4501 E	60	
	55	SRG..R, SRG..LR	MK/MKS 4501 E	70	40
		SRG..C, SRG..LC	MK/MKS 5501 F	70	
	65	SRG..R, SRG..LR	MK/MKS 5501 F	80	40
HCR	85	SRG..LC, SRG..LV	MK/MKS 6501 F	90	39
	85	SRG..LC	Ⓢ	110	Ⓢ
	15	HCR 15A +60/150R	MK/MKS 1501/300	24	64
	25	HCR 15A +60/300R	MK/MKS 2501/1000	36	65
		HCR 15A +60/400R			
		HCR 25A +60/500R			
	35	HCR 25A +60/750R	MK/MKS 3501/1000	48	66
		HCR 25A +60/1000R			
		HCR 35A +60/600R			
		HCR 35A +60/800R			
	45	HCR 35A +60/1000R	MK/MKS 4501/1000	60	51
		HCR 35A +60/1300R			
		HCR 45A +60/800R			
		HCR 45A +60/1000R			
	65	HCR 45A +60/1200R	MK/MKS 6501/1000	90	68
		HCR 45A +60/1600R			
		HCR 65A +60/1000R			
		HCR 65A +60/1500R			

*1 Supplements the measure table and datasheet

See page 10 for part number explanation

Rail manufacturer
Rexroth
Bosch Group

Type of rail	Size	Type of carriage	Item number	Adapting plate (for height compensation)	Measure D [mm]	Measure table (page 48 and 49)
R1605, R1606, R1607, R1608, R1645, R1647, R2045, R2047	15	R1622, R1623, R1631, R1632, R1651, R1653, R1661, R1662, R1665, R1666, R2001, R2002, R2011, R2012, R2000, R2010	MK/MKS 1505 AK		24	2
		R1621	MK/MKS 1505 AK	PMK 15-4	28	
	20	R1622, R1623, R1631, R1632, R1651, R1653, R1661, R1662, R1665, R1666, R2001, R2002, R2011, R2012, R2000, R2010	MK/MKS 2005 AK		30	8
	25	R1622, R1623, R1631, R1632, R1651, R1653, R1661, R1662, R1665, R1666, R2001, R2002, R2011, R2012, R2000, R2010	MK/MKS 2505 AK		36	14
		R1621, R1624	MK/MKS 2505 AK	PMK 25-4	40	
	30	R1622, R1623, R1631, R1632, R1651, R1653, R1661, R1662, R1665, R1666, R2001, R2002, R2011, R2012, R2000, R2010	MK/MKS 3005 AK		42	71
		R1621, R1624	MK/MKS 3005 AK	PMK 30-3	45	
	35	R1622, R1623, R1631, R1632, R1651, R1653, R1661, R1662, R1665, R1666, R2001, R2002, R2011, R2012, R2000, R2010	MK/MKS 3505 AK		48	35
		R1621, R1624	MK/MKS 3505 AK	PMK 35-7	55	
	45	R1622, R1623, R1651, R1653	MK/MKS 4505 AK		60	42
		R1621, R1624	MK/MKS 4505 AK	PMK 45-10	70	
	55	R1622, R1623, R1651, R1653	MK/MKS 5505 AK		70	50
		R1621, R1624	MK/MKS 5505 AK	PMK 55-10	80	
	65	R1622, R1623, R1651, R1653	MK/MKS 6505 AK		90	59
R1675, R1676 R1677	20	R1671, R1672	MK/MKS 2005 KB		27	58
	25	R1671, R1672	MK/MKS 2505 KB		35	41
	35	R1671	MK/MKS 3505 KB		50	63
R1805, R1806, R1807, R1808, R1845, R1846, R1847	25	R1851, R1853	MK/MKS 2505 AR		36	14
		R1821, R1824	MK/MKS 2505 AR	PMK 25-4	40	
	35	R1851, R1853	MK/MKS 3505 AR		48	35
		R1821, R1824	MK/MKS 3505 AR	PMK 35-7	55	
	45	R1851, R1853	MK/MKS 4505 AR		60	42
		R1821, R1824	MK/MKS 4505 AR	PMK 45-10	70	
	55	R1851, R1853	MK/MKS 5505 AR		70	50
		R1821, R1824	MK/MKS 5505 AR	PMK 55-10	80	
	65	R1824, R1851, R1853	MK/MKS 6505 AR		90	59

Rail manufacturer
SCHNEEBERGER
LINEAR TECHNOLOGY

MRS	25	MRW..A, MRW..B	MK/MKS 2503 MR		36	14
		MRW..C, MRW..D, MRW..E	MK/MKS 2503 MR	PMK 25-4	40	
	35	MRW..A, MRW..B	MK/MKS 3503 MR		48	35
		MRW..C, MRW..D, MRW..E	MK/MKS 3503 MR	PMK 35-7	55	
	45	MRW..A, MRW..B	MK/MKS 4503 MR		60	42
		MRW..C, MRW..D	MK/MKS 4503 MR	PMK 45-10	70	
	55	MRW..A, MRW..B	MK/MKS 5503 MR		70	50
		MRW..C, MRW..D	MK/MKS 5503 MR	PMK 55-10	80	
	65	MRW..B, MRW..D	MK/MKS 6503 MR		90	59
	100	MRW..B	⊗		120	⊗
BMS	15	BMW..A, BMW..F, BMW..C	MK/MKS 1503 BM		24	2
			MK/MKS 1503 BM	PMK 15-4	28	
	20	BMW..A, BMW..B, BMW..C, BMW..D	MK/MKS 2003 BM		30	8
	25	BMW..A, BMW..B, BMW..F, BMW..G	MK/MKS 2503 B		36	14
		BMW..C, BMW..D, BMW..E	MK/MKS 2503 B	PMK 25-4/02	40	
	30	BMW..A, BMW..B, BMW..F, BMW..G	MK/MKS 3003 BM		42	27
		BMW..C, BMW..D, BMW..E	MK/MKS 3003 BM	PMK 30-3	45	
	35	BMW..A, BMW..B, BMW..F, BMW..G	MK/MKS 3503 BM		48	35
		BMW..C, BMW..D, BMW..E	MK/MKS 3503 BM	PMK 35-7	55	
	45	BMW..A, BMW..B	MK/MKS 4503 BM		60	42
		BMW..C, BMW..D	MK/MKS 4503 BM	PMK 45-10	70	

*1 Supplements the measure table and datasheet

See page 10 for part number explanation

Rail manufacturer

IKO

MK/MKS

Type of rail	Size	Type of carriage	Item number	Adapting plate (for height compensation)	Measure D [mm]	Measure table (page 48 and 49)
MX	15	MXC, MX, MXG, MXSC, MXS, MXSG	MK/MKS 1510 B		24	2
		MXDC, MXD, MXDG	MK/MKS 1510 B	PMK 15-4	28	
	20	MXC, MX, MXG, MXL, MXSC, MXS, MXSG, MXSL	MK/MKS 2010 B		30	8
		MXDC, MXD, MXDG, MXDL	MK/MKS 2010 B	PMK 20-4	34	
	25	MXC, MX, MXG, MXL, MXSC, MXS, MXSG, MXSL	MK/MKS 2501 A		36	19
		MXDC, MXD, MXDG, MXDL	MK/MKS 2501 A		40	21
	30	MXC, MX, MXG, MXL, MXSC, MXS, MXSG, MXSL	MK/MKS 3001 A		42	29
		MXDC, MXD, MXDG, MXDL	MK/MKS 3001 A		45	30
	35	MXN, MXNG, MXNS, MXNSG	⊗		44	⊗
		MXC, MX, MXG, MXL	MK/MKS 3501 A		48	38
	45	MXN, MXNG, MXNS, MXNSG	⊗		52	⊗
		MXC, MX, MXG, MXL	MK/MKS 4501 A		60	46
LWE	15	MXN, MXNG, MXNS, MXNSG	⊗		63	⊗
		MXC, MX, MXG	MK/MKS 5501 A		70	56
	65	MXC, MX, MXG	MK/MKS 6505 AK	PMK 65-2	90	10
	15	LWE..Q, LWET..Q, LWES..Q, LWEC, LWEC..SL, LWE, LWE..SL, LWEG, LWEG..SL, LWETC, LWETC..SL, LWET, LWET..SL, LWETG, LWETG..SL, LWESC, LWESC..SL, LWES, LWES..SL, LWESG, LWESG..SL	MK/MKS 1501 A		24	1
		LWE..Q, LWET..Q, LWES..Q, LWEC, LWEC..SL, LWE, LWE..SL, LWEG, LWEG..SL, LWETC, LWETC..SL, LWET, LWET..SL, LWETG, LWETG..SL, LWESC, LWESC..SL, LWES, LWES..SL, LWESG, LWESG..SL	MK/MKS 2001 A		28	7
		LWE..Q, LWET..Q, LWES..Q, LWEC, LWEC..SL, LWE, LWE..SL, LWEG, LWEG..SL, LWETC, LWETC..SL, LWET, LWET..SL, LWETG, LWETG..SL, LWESC, LWESC..SL, LWES, LWES..SL, LWESG, LWESG..SL	MK/MKS 2501 A		33	17
		LWE..Q, LWET..Q, LWES..Q, LWEC, LWEC..SL, LWE, LWE..SL, LWEG, LWEG..SL, LWETC, LWETC..SL, LWET, LWET..SL, LWETG, LWETG..SL, LWESC, LWESC..SL, LWES, LWES..SL, LWESG, LWESG..SL	MK/MKS 3001 A		42	29
		LWE..Q, LWET..Q, LWES..Q, LWEC, LWE, LWETC, LWET, LWESC, LWES	MK/MKS 3501 A		48	38
	45	LWE, LWET, LWES	MK/MKS 4501 A		60	46
ME	15	MEC, MEC..SL, ME, ME..SL, MEG, MEG..SL, METC, METC..SL, MET, MET..SL, METG, METG..SL, MESC, MESC..SL, MES, MES..SL, MESG, MESG..SL, MH, MHT, MHS	MK/MKS 1501 A		24	1
		MHD	MK/MKS 1501 A	PMK 15-4	28	
	20	MEC, MEC..SL, ME, ME..SL, MEG, MEG..SL, METC, METC..SL, MET, MET..SL, METG, METG..SL, MESC, MESC..SL, MES, MES..SL, MESG, MESG..SL	MK/MKS 2001 A		28	7
		MH, MHG, MHT, MHTG, MHS, MHSG	MK/MKS 2001 A		30	9
	25	MEC, MEC..SL, ME, ME..SL, MEG, MEG..SL, METC, METC..SL, MET, MET..SL, METG, METG..SL, MESC, MESC..SL, MES, MES..SL, MESG, MESG..SL	MK/MKS 2501 A		33	17
		MH, MHG, MHT, MHTG, MHS, MHSG	MK/MKS 2501 A	PMK 25-2	36	18
	30	MHD, MHDG	MK/MKS 2501 A	PMK 25-6	40	
		MEC, MEC..SL, ME, ME..SL, MEG, MEG..SL, METC, METC..SL, MET, MET..SL, METG, METG..SL, MESC, MESC..SL, MES, MES..SL, MESG, MESG..SL, MH, MHG, MHT, MHTG, MHS, MHSG	MK/MKS 3001 A		42	29
	35	MHD, MHDG	MK/MKS 3001 A	PMK 30-3	45	
		MEC, ME, METC, MET, MESC, MES, MH, MHG, MHT, MHTG	MK/MKS 3501 A		48	38
	45	MHD, MHDG	MK/MKS 3501 A	PMK 35-7	55	
		ME, MET, MES, MH, MHG, MHT, MHTG	MK/MKS 4501 A		60	46
		MHD, MHDG	MK/MKS 4501 A	PMK 45-10	70	

*¹ Supplements the measure table and datasheet

See page 10 for part number explanation

Type of rail	Size		Item number	[for height compensation]	Measure D [mm] ^{*)}	[page 48 and 49]
TKD (KUE)	15	KWE	MK/MKS 1501 A		24	1
		KWE...-H	MK/MKS 1501 A	PMK 15-4	28	
	20	KWE, KWE...-H	MK/MKS 2001 A		30	9
	25	KWE	MK/MKS 2501 A	PMK 25-4	36	16
		KWE...-H	MK/MKS 2501 A	PMK 25-8	40	
	30	KWE	MK/MKS 3001 A	PMK 30-2	42	28
		KWE...-H	MK/MKS 3001 A	PMK 30-5	45	
	35	KWE	MK/MKS 3501 A	PMK 35-8	48	33
		KWE...-H	MK/MKS 3501 A	PMK 35-15	55	
TKVD (KUVE)	15	KWVE...-B, KWVE...-B-EC, KWVE...-B-ESC, KWVE...-B-S	MK/MKS 1502 K		24	1
		KWVE...-B-H	MK/MKS 1502 K	PMK 15-4	28	
	20	KWVE...-B, KWVE...-B-L, KWVE...-B-S, KWVE...-B-SL, KWVE...-B-H	MK/MKS 2002 K		30	9
		KWVE...-B-N, KWVE...-B-NL, KWVE...-B-SN, KWVE...-B-SNL	MK/MKS 2002 K		27	6
		KWVE...-B-EC, KWVE...-B-ESC	MK/MKS 2002 K		28	7
	25	KWVE...-B, KWVE...-B-L, KWVE...-B-S, KWVE...-B-SL, KWVE...-B-HS, KWVE...-B-S-HS	MK/MKS 2502 K	PMK 25-2	36	18
		KWVE...-B-EC, KWVE...-B-ESC	MK/MKS 2502 K		33	17
		KWVE...-B-H, KWVE...-B-HL, KWVE...-B-H-HS	MK/MKS 2502 K	PMK 25-6	40	18
	30	KWVE...-B, KWVE...-B-EC, KWVE...-B-L, KWVE...-B-ESC, KWVE...-B-S, KWVE...-B-SL	MK/MKS 3002 K		42	29
		KWVE...-B-N, KWVE...-B-NL, KWVE...-B-SN, KWVE...-B-SNL	MK/MKS 3002 K		38	26
		KWVE...-B-H, KWVE...-B-HL	MK/MKS 3002 K	PMK 30-3	45	29
	35	KWVE...-B, KWVE...-B-EC, KWVE...-B-L, KWVE...-B-ESC, KWVE...-B-S, KWVE...-B-SL	MK/MKS 3502 K		48	38
		KWVE...-B-N, KWVE...-B-NL, KWVE...-B-SN, KWVE...-B-SNL	MK/MKS 3502 K		44	37
		KWVE...-B-H, KWVE...-B-HL	MK/MKS 3502 K	PMK 35-11	55	
	45	KWVE...-B, KWVE...-B-EC, KWVE...-B-L, KWVE...-B-ESC, KWVE...-B-S, KWVE...-B-SL	MK/MKS 4502 K		60	46
		KWVE...-B-N, KWVE...-B-NL, KWVE...-B-SN, KWVE...-B-SNL	MK/MKS 4502 E		52	54
		KWVE...-B-H, KWVE...-B-HL	MK/MKS 4502 K	PMK 45-10	70	46
	55	KWVE...-B, KWVE...-B-L, KWVE...-B-S, KWVE...-B-SL	MK/MKS 5502 K		70	56
TKSD (KUSE)	20	KWSE, KWSE...-L, KWSE...-H, KWSE...-HL	MK/MKS 2001 A		30	9
	25	KWSE, KWSE...-L	MK/MKS 2501 A		36	19
		KWSE...-H, KWSE...-HL	MK/MKS 2501 A	PMK 25-4	40	
	30	KWSE, KWSE...-L	MK/MKS 3001 A		42	29
		KWSE...-H, KWSE...-HL	MK/MKS 3001 A	PMK 30-3	45	
	35	KWSE, KWSE...-L	MK/MKS 3501 A		48	38
	45	KWSE, KWSE...-L	MK/MKS 4501 A		60	46
TKVD - W (KUVE-W)	15	KWVE...-W	MK/MKS 1502 KB★		21	57
	20	KWVE...-W, KWVE...-WL	MK/MKS 2002 KB		27	13
	25	KWVE...-W, KWVE...-WL	MK/MKS 2502 KB		35	49
	30	KWVE...-W	MK/MKS 3002 KB		42	3
	35	KWVE...-WL	MK/MKS 3502 KB		50	62
TSX - E (RUE)	25	RWU...-D-FE, RWU...-D-OE, RWU...-D-L-FE, RWU...-D-L-OE	MK/MKS 2502 R★	PMK 25-2	36	18
		RWU...-D-H-FE, RWU...-D-H-OE, RWU...-D-HL-FE, RWU...-D-HL-OE	MK/MKS 2502 R★	PMK 25-6	40	
	35	RWU...-E, RWU...-E-L	MK/MKS 3502 R/02★		48	35
		RWU...-E-H, RWU...-E-HL	MK/MKS 3502 R/02★	PMK 35-7	55	
	45	RWU...-E, RWU...-E-L	MK/MKS 4502 R★	PMK 45-2	60	45
		RWU...-E-H, RWU...-E-HL	MK/MKS 4502 R★	PMK 45-12	70	
	55	RWU...-E, RWU...-E-L	MK/MKS 5502 R★		70	50
		RWU...-E-H, RWU...-E-HL	MK/MKS 5502 R★	PMK 55-10	80	
	65	RWU...-E, RWU...-E-L	MK/MKS 6502 R★		90	60
		RWU...-E-H, RWU...-E-HL	MK/MKS 6502 R★	PMK 65-10	100	

★ PLUS connection not possible

*) Supplements the measure table and datasheet

See page 10 for part number explanation

Rail manufacturer



Rail manufacturer
NSK

MK/MKS

Type of rail	Size	Type of carriage	Item number	Adapting plate (for height compensation)	Measure D [mm]	Measure D [mm] * ¹ (page 48 and 49)
LH	15	LAH..EMZ, LAH..GMZ	MK/MKS 1501 A	PMK 15-4	24	1
		LAH..ANZ, LAH..BNZ	MK/MKS 1501 A		28	
	20	LAH..EMZ, LAH..GMZ, LAH..ANZ, LAH..BNZ	MK/MKS 2001 A	PMK 25-4	30	9
	25	LAH..EMZ, LAH..GMZ, LAH..ALZ, LAH..BLZ	MK/MKS 2501 A		36	19
		LAH..ANZ, LAH..BNZ	MK/MKS 2501 A		40	
	30	LAH..EMZ, LAH..GMZ, LAH..ALZ, LAH..BLZ	MK/MKS 3001 A		42	29
		LAH..ANZ, LAH..BNZ	MK/MKS 3001 A		45	30
	35	LAH..EMZ, LAH..GMZ, LAH..ALZ, LAH..BLZ	MK/MKS 3501 A	PMK 35-7	48	38
		LAH..ANZ, LAH..BNZ	MK/MKS 3501 A		55	
	45	LAH..EMZ, LAH..GMZ	MK/MKS 4501 A	PMK 45-10	60	46
		LAH..ANZ, LAH..BNZ	MK/MKS 4501 A		70	
	55	LAH..EMZ, LAH..GMZ	MK/MKS 5501 A	PMK 55-10	70	56
		LAH..ANZ, LAH..BNZ	MK/MKS 5501 A		80	
	65	LAH..EMZ, LAH..GMZ, LAH..ANZ, LAH..BNZ	MK/MKS 6501 A		90	60
SH	15	SAH..EMZ, SAH..GMZ	MK/MKS 1501 A	PMK 15-4	24	1
		SAH..ANZ, SAH..BNZ	MK/MKS 1501 A		28	
	20	SAH..EMZ, SAH..GMZ, SAH..ANZ, SAH..BNZ	MK/MKS 2001 A	PMK 25-4	30	9
	25	SAH..EMZ, SAH..GMZ, SAH..ALZ, SAH..BLZ	MK/MKS 2501 A		36	19
		SAH..ANZ, SAH..BNZ	MK/MKS 2501 A		40	
	30	SAH..EMZ, SAH..GMZ, SAH..ALZ, SAH..BLZ	MK/MKS 3001 A		42	29
		SAH..ANZ, SAH..BNZ	MK/MKS 3001 A		45	30
	35	SAH..EMZ, SAH..GMZ, SAH..ALZ, SAH..BLZ	MK/MKS 3501 A	PMK 35-7	48	38
		SAH..ANZ, SAH..BNZ	MK/MKS 3501 A		55	
LS	15	LAS..JMZ, LAS..EMZ, LAS..CLZ, LAS..ALZ	MK/MKS 1501 A	PMK 35-4	24	1
	20	LAS..JMZ, LAS..EMZ, LAS..CLZ, LAS..ALZ	MK/MKS 2001 A		28	7
	25	LAS..JMZ, LAS..EMZ, LAS..CLZ, LAS..ALZ	MK/MKS 2501 A		33	17
	30	LAS..JMZ, LAS..EMZ, LAS..CLZ, LAS..ALZ	MK/MKS 3001 A		42	29
	35	LAS..JMZ, LAS..EMZ, LAS..CLZ, LAS..ALZ	MK/MKS 3501 A		48	37
SS	15	SAS..JMZ, SAS..EMZ, SAS..CLZ, SAS..ALZ	MK/MKS 1501 A	PMK 35-4	24	1
	20	SAS..JMZ, SAS..EMZ, SAS..CLZ, SAS..ALZ	MK/MKS 2001 A		28	7
	25	SAS..JMZ, SAS..EMZ, SAS..CLZ, SAS..ALZ	MK/MKS 2501 A		33	17
	30	SAS..JMZ, SAS..EMZ, SAS..CLZ, SAS..ALZ	MK/MKS 3001 A		42	29
	35	SAS..JMZ, SAS..EMZ, SAS..CLZ, SAS..ALZ	MK/MKS 3501 A		48	37
LW	17	LAW..ELZ	MK/MKS 1701 B		17	11
	21	LAW..ELZ	MK/MKS 2101 B★		21	24
	27	LAW..ELZ	MK/MKS 2701 B★		27	25
	35	LAW..ELZ	MK/MKS 3501 B		35	49
	50	LAW..ELZ	MK/MKS 5001 B		50	62
RA	15	RA..AL, RA..BL, RA..EM, RA..GM	MK/MKS 1504 F	PMK 15-4	24	2
		RA..AN, RA..BN	MK/MKS 1504 F		28	
	20	RA..EM, RA..GM, RA..AN, RA..BN	MK/MKS 2004 F	PMK 25-4	30	8
	25	RA..AL, RA..BL, RA..EM, RA..GM	MK/MKS 2505 AR		36	14
		RA..AN, RA..BN	MK/MKS 2505 AR		40	
	30	RA..AL, RA..BL, RA..EM, RA..GM	MK/MKS 3004 F		42	15
		RA..AN, RA..BN	MK/MKS 3004 F		45	
	35	RA..AL, RA..BL, RA..EM, RA..GM	MK/MKS 3504 F	PMK 30-3	48	35
		RA..AN, RA..BN	MK/MKS 3504 F		55	
	45	RA..AL, RA..BL, RA..EM, RA..GM	MK/MKS 4504 F	PMK 35-7	60	42
		RA..AN, RA..BN	MK/MKS 4504 F		70	
	55	RA..AL, RA..BL, RA..EM, RA..GM	MK/MKS 5504 F	PMK 45-10	70	22
		RA..AN, RA..BN	MK/MKS 5504 F		80	
	65	RA..EM, RA..GM, RA..AN, RA..BN	MK/MKS 6504 F	PMK 65-12	90	34

★ PLUS connection not possible

*¹ Supplements the measure table and datasheet

See page 10 for part number explanation

Type of rail	Size		Item number	[for height compensation]	Measure D [mm] ^{*1}	[page 48 and 49]
HGR..R, HGR..T	15	HGW..CC, HGL..CA, QHW..CC	MK/MKS 1501 A		24	1
		HGH..CA, QHH..CA	MK/MKS 1501 A	PMK 15-4	28	
	20	HGW..CC, HGW..HC, HGH..CA, HGH..HA, QHW..CC, QHW..HC, QHH..CA, QHH..HA	MK/MKS 2001 A		30	9
	25	HGW..CC, HGW..HC, HGL..CA, HGL..HA, QHW..CC, QHW..HC	MK/MKS 2501 A		36	19
		HGH..CA, HGH..HA, QHH..CA, QHH..HA	MK/MKS 2501 A	PMK 25-4	40	
	30	HGW..CC, HGW..HC, HGL..CA, HGL..HA, QHW..CC, QHW..HC	MK/MKS 3001 A		42	29
		HGH..CA, HGH..HA, QHH..CA, QHH..HA	MK/MKS 3001 A	PMK 30-3	45	
	35	HGW..CC, HGW..HC, HGL..CA, HGL..HA, QHW..CC, QHW..HC	MK/MKS 3501 A		48	38
		HGH..CA, HGH..HA, QHH..CA, QHH..HA	MK/MKS 3501 A	PMK 35-7	55	
	45	HGW..CC, HGW..HC, HGL..CA, HGL..HA, QHW..CC, QHW..HC	MK/MKS 4501 A	PMK 45-2	60	45
		HGH..CA, HGH..HA, QHH..CA, QHH..HA	MK/MKS 4501 A	PMK 45-12	70	
	55	HGW..CC, HGW..HC, HGL..CA, HGL..HA, HGH..CA, HGH..HA	MK/MKS 5501 A		70	56
			MK/MKS 5501 A	PMK 55-10	80	
	65	HGW..CC, HGW..HC, HGH..CA, HGH..HA	MK/MKS 6501 A		90	60
EGR..R, EGR..U, EGR..T	15	EGH...SA, EGH...CA, EGW...SC, EGW...CC QEH..SA, QEH..CA, QEW..SC, QEW..CC	MK/MKS 1501 A		24	1
	20	EGH...SA, EGH...CA, EGW...SC, EGW...CC QEH..SA, QEH..CA, QEW..SC, QEW..CC	MK/MKS 2001 A		28	7
	25	EGH...SA, EGH...CA, EGW...SC, EGW...CC QEH..SA, QEH..CA, QEW..SC, QEW..CC	MK/MKS 2501 A	PMK 25-2	33	20
	30	EGH...SA, EGH...CA, EGW...SC, EGW...CC QEH..SA, QEH..CA, QEW..SC, QEW..CC	MK/MKS 3001 A	PMK 30-2	42	28
	35	EGH...SA, EGH...CA, EGW...SC, EGW...CC	Ⓢ		48	Ⓢ
RG..T	15	RGW..CC	Ⓢ		24	Ⓢ
		RGH..CA	Ⓢ		28	
	20	RGW..CC, RGW..HC	Ⓢ		30	Ⓢ
		RGH..CA, RGH..HA	Ⓢ		34	
	25	RGW..CC, RGW..HC	MK/MKS 2512 F		36	14
		RGH..CA, RGH..HA	MK/MKS 2512 F	PMK 25-4	40	
	30	RGW..CC, RGW..HC	MK/MKS 3012 F		42	15
		RGH..CA, RGH..HA	MK/MKS 3012 F	PMK 30-3	45	
	35	RGW..CC, RGW..HC	MK/MKS 3512 F		48	35
		RGH..CA, RGH..HA	MK/MKS 3512 F	PMK 35-7	55	
	45	RGW..CC, RGW..HC	MK/MKS 4512 F		60	42
		RGH..CA, RGH..HA	MK/MKS 4512 F	PMK 45-10	70	
WE	27	WEW..CC, WEH..CA	MK/MKS 2701 B★		27	25
	35	WEW..CC, WEH..CA	MK/MKS 3501 B		35	49

Rail manufacturer
HIWIN
Lineartechnologie

MK/MKS

* PLUS connection not possible

*¹ Supplements the measure table and datasheet

See page 10 for part number explanation

Rail manufacturer
ROLLON

Type of rail	Size	Type of carriage	Item number	Adapting plate (for height compensation)	Measure D [mm]	Measure table (page 48 and 49)
MRR	15	MRS, MRT..W, MRT..SW	MK/MKS 1501 A		24	1
		MRS..W	MK/MKS 1501 A	PMK 15-4	28	
	20	MRT..W, MRT..SW	MK/MKS 2001 A		28	7
		MRS, MRS..L, MRS..W, MRS..LW	MK/MKS 2001 A	PMK 20-2	30	
	25	MRT, MRT..S, MRT..W, MRT..SW, MRT..LW	Ⓢ		33	Ⓢ
		MRS, MRS..L, MRZ..W	MK/MKS 2501 A		36	19
		MRS..W, MRS..LW	MK/MKS 2501 A	PMK 25-4	40	
	30	MRS, MRS..L, MRT..W, MRT..SW, MRT..LW	MK/MKS 3001 A		42	29
		MRS..W, MRS..LW	MK/MKS 3001 A	PMK 30-3	45	
	35	MRS, MRS..L, MRT..W, MRT..SW, MRT..LW	MK/MKS 3501 A		48	38
		MRS..W, MRS..LW	MK/MKS 3501 A	PMK 35-7	55	
	45	MRS, MRS..L, MRT..W, MRT..LW	MK/MKS 4501 A		60	46
		MRS..W, MRS..LW	MK/MKS 4501 A	PMK 45-10	70	
	55	MCT..W, MCT..LW	Ⓢ		68	Ⓢ
		MCS, MCS..L	MK/MKS 5501 A		70	56
		MCS..W, MCS..LW	MK/MKS 5501 A	PMK 55-10	80	

NTN 

BG	15	BGCH..FN, BGCH..FL, BGCS..BS, BGCS..BN, BGCS..BL, BGXH..FN, BGXH..FL, BGXS..BS, BGXS..BN, BGXS..BL	MK/MKS 1501 A		24	1
		BGCH..BN, BGXH..BN	MK/MKS 1501 A	PMK 15-4	28	
	20	BGCS..BS, BGCS..BN, BGXS..BN, BGXS..BN	MK/MKS 2001 A		28	7
		BGCH..FN, BGCH..FL, BGCH..BN, BGCH..BL, BGXH..FN, BGXH..FL, BGXH..BN, BGXH..BL	MK/MKS 2001 A		30	9
	25	BGCS..BS, BGCS..BN, BGXS..BS, BGXS..BN	MK/MKS 2501 A		33	17
		BGCH..FN, BGCH..FL, BGCH..FE, BGCH..BN, BGCH..BL, BGCH..BE, BGXH..FN, BGXH..FL, BGXH..FE, BGXH..BN, BGXH..BL, BGXH..BE	MK/MKS 2501 A	PMK 25-2	36	18
		BGCH..BN, BGCH..BL, BGCH..BE, BGXH..BN, BGXH..BL, BGXH..BE	MK/MKS 2501 A	PMK 25-6	40	
		BGCH..FN, BGCH..FL, BGCH..FE, BGCS..BS, BGCS..BN, BGCS..BL, BGCS..BE, BGXH..FN, BGXH..FL, BGXH..FE, BGXS..BS, BGXS..BN, BGXS..BL, BGXS..BE	MK/MKS 3001 A		42	29
	30	BGCH..BN, BGCH..BL, BGCH..BE, BGXH..BN, BGXH..BL, BGXH..BE	MK/MKS 3001 A	PMK 30-3	45	
		BGCH..FN, BGCH..FL, BGCH..FE, BGCS..BS, BGCS..BN, BGCS..BL, BGCS..BE, BGXH..FN, BGXH..FL, BGXH..FE, BGXS..BS, BGXS..BN, BGXS..BL, BGXS..BE	MK/MKS 3501 A	PMK 35-4	48	37
	35	BGCH..BN, BGCH..BL, BGCH..BE, BGXH..BN, BGXH..BL, BGXH..BE	MK/MKS 3501 A	PMK 35-11	55	
		BGCH..FN, BGCH..FL, BGCH..FE, BGCS..BN, BGCS..BL, BGCS..BE, BGXH..FN, BGXH..FL, BGXH..FE, BGXS..BN, BGXS..BL, BGXS..BE	MK/MKS 4501 A	PMK 45-6	60	44
	45	BGCH..BN, BGCH..BL, BGCH..BE, BGXH..BN, BGXH..BL, BGXH..BE	MK/MKS 4501 A	PMK 45-16	70	
		BGCH..FN, BGCH..FL, BGCH..FE, BGCS..BN, BGCS..BL, BGCS..BE, BGXH..FN, BGXH..FL, BGXH..FE, BGXS..BN, BGXS..BL, BGXS..BE	MK/MKS 5501 A	PMK 55-7	70	4
	55	BGCH..BN, BGCH..BL, BGCH..BE, BGXH..BN, BGXH..BL, BGXH..BE	MK/MKS 5501 A	PMK 55-17	80	
		BGCH..FN, BGCH..FL, BGCH..FE, BGCS..BN, BGCS..BL, BGCS..BE, BGXH..FN, BGXH..FL, BGXH..FE, BGXS..BN, BGXS..BL, BGXS..BE	MK/MKS 5501 A			

*¹ Supplements the measure table and datasheet

See page 10 for part number explanation

Type of rail	Size		Item number	[for height compensation]	Measure D [mm] ^{*1}	
LLTH, LLTH..D4, LLTH..D6	15	LLTHC..SA, LLTHC..A, LLTHC..SU, LLTHC..U	MK/MKS 1501 A		24	1
		LLTHC..R	MK/MKS 1501 A	PMK 15-4	28	
	20	LLTHC..SA, LLTHC..A, LLTHC..LA, LLTHC..SU, LLTHC..U, LLTHC..LR	MK/MKS 2001 A		30	9
		LLTHC..SA, LLTHC..A, LLTHC..LA, LLTHC..SU, LLTHC..U, LLTHC..LU,	MK/MKS 2501 A		36	19
	25	LLTHC..R, LLTHC..LR	MK/MKS 2501 A	PMK 25-4	40	
		LLTHC..SA, LLTHC..A, LLTHC..LA, LLTHC..SU, LLTHC..U, LLTHC..LU,	MK/MKS 3001 A		42	29
	30	LLTHC..R, LLTHC..LR	MK/MKS 3001 A	PMK 30-3	45	
		LLTHC..SA, LLTHC..A, LLTHC..LA, LLTHC..SU, LLTHC..U, LLTHC..LU,	MK/MKS 3501 A	PMK 35-3	48	36
	35	LLTHC..R, LLTHC..LR	MK/MKS 3501 A	PMK 35-10	55	
		LLTHC..A, LLTHC..LA, LLTHC..U, LLTHC..LU,	MK/MKS 4501 A		60	46
	45	LLTHC..R, LLTHC..LR	MK/MKS 4501 A	PMK 45-10	70	

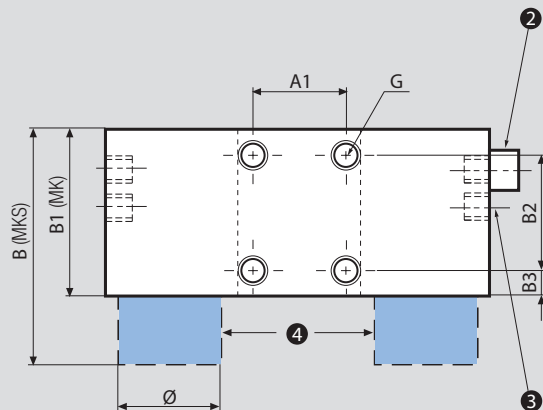
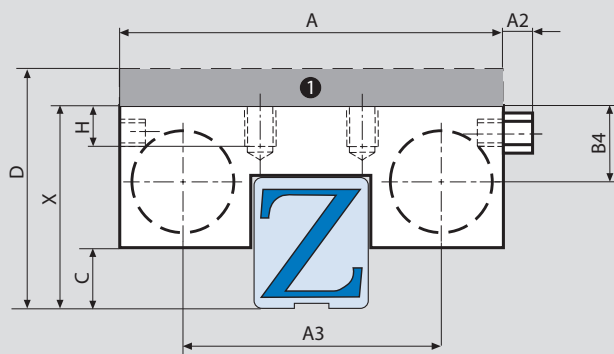
Rail manufacturer



MK/MKS

^{*1} Supplements the measure table and datasheet

See page 10 for part number explanation



Note: Consider measurement C/Interfering contour!

Air connections are located on both sides and can be exchanged according to mounting requirements. Only one connection is necessary for function.

- ❶ Adapting plate PMK (accessory)
- ❷ MK Series: Air filter
MKS: M5 port (air connection)
- ❸ MK Series: M5 port (air connection)
MKS: Air filter / Plus connection M5.
- ❹ The attachment spring unit on the MKS is not applicable on the MK.

Measure table	Holding Power [N] MK	Holding Power [N] MKS	A [mm]	A1 [mm]	A2 [mm]	A3 [mm]	B [mm]	B1 [mm]	B2 [mm]	B3 [mm]	B4 [mm]	C [mm]	X [mm]	G	H [mm]	Ø
1	650	400	55	15	6	34	58	39	15	15,5	12	2,5	24	M4	4,5	16
2	650	400	55	15	6	34	58	39	15	15,5	11,6	3,2	24	M4	4,5	16
3	1750	1050	142	22	5	110	68	39	22	8,5	20,5	7	42	M8	8	25
4	2250	1450	128	30	5	87	82	49	30	9,5	30,5	14	63	M10	18	30
5	650	400	60	15	5	39	68	59	25	12	10,5	4,5	24	M5	7	16
6	1000	600	66	20	6	43	61	39	20	5	14,4	1,5	27	M5	5,5	20
7	1000	600	66	20	6	43	61	39	20	5	14,4	2,5	28	M5	5,5	20
8	1000	600	66	20	5	43	61	39	20	9	15,5	3	30	M6	6	20
9	1000	600	66	20	6	43	61	39	20	5	14,4	4,5	30	M5	5,5	20
10	2250	1450	138	30	5	96,8	82	49	30	9,5	55	16,5	88	M10	20	30
11	460	250	70	15	5	50,6	63	48	15	11,5	8,3	1,2	17	M5	7,5	12
12	2250	1450	128	30	5	86,8	82	49	30	9,5	36,2	11	64	M10	15	30
13	1000	600	88	20	6	65	61	39	20	5	14,4	1,5	27	M5	5,5	20
14	1200	750	75	20	5	49	56	35	20	5	20	3,5	36	M6	8	22
15	1200	750	90	22	5	64	60	39	22	8,5	24,5	5	42	M8	9	22
16	1200	750	75	20	5	49	56	35	20	5	15,5	4	32	M6	8	22
17	1200	750	75	20	5	49	56	35	20	5	15,5	5	33	M6	8	22
18	1200	750	75	20	5	49	56	35	20	5	15,5	6	34	M6	8	22
19	1200	750	75	20	5	49	56	35	20	5	15,5	8	36	M6	8	22
20	1200	750	75	20	5	49	56	35	20	5	15,5	3,0	31	M6	8	22
21	1200	750	75	20	5	49	56	35	20	5	15,5	12	40	M6	8	22
22	2250	1450	128	30	5	86,8	82	49	30	9,5	40	10	67	M10	15	30
23	1200	750	75	20	5	49	65	54	20	12	12,5	5	30	M6	8	22
24	650	400	77	15	5	56	58	49	15	21,5	9,6	2	21	M5	5	16
25	1000	600	88	20	5	65	65	53	20	19,5	11,5	4	27	M6	6	20
26	1750	1050	90	22	5	58	68	39	22	8,5	20,5	3	38	M8	10	25
27	1750	1050	90	22	5	58	68	39	22	8,5	24	3,5	42	M8	9	25
28	1750	1050	90	22	5	58	68	39	22	8,5	20,5	5	40	M8	10	25
29	1750	1050	90	22	5	58	68	39	22	8,5	20,5	7	42	M8	10	25
30	1750	1050	90	22	5	58	68	39	22	8,5	20,5	10	45	M8	10	25
31	1750	1050	90	22	5	58	78	59	22	13,5	14	5	33	M8	8	25
32	1750	1050	96	20	5	64	73	54	20	10	15,5	8,5	38	M8	10	25
33	2000	1250	100	24	5	68	67	39	24	7,5	20,5	3,5	40	M8	10	28
34	2250	1450	138	30	5	96,8	82	49	30	9,5	43,7	14,5	78	M10	15	30
35	2000	1250	100	24	5	68	67	39	24	7,5	28	4	48	M8	10	28
36	2000	1250	100	24	5	68	67	39	24	7,5	20,5	8,5	45	M8	10	28
37	2000	1250	100	24	5	68	67	39	24	7,5	20,5	7,5	44	M8	10	28
38	2000	1250	100	24	5	68	67	39	24	7,5	20,5	11,5	48	M8	10	28
39	2250	1450	138	30	5	96,8	82	49	30	9,5	43,7	11,5	75	M10	15	30
40	2250	1450	128	30	5	86,8	82	49	30	9,5	36,2	10	63	M10	15	30
41	1200	750	120	50	5	94	56	35	20	5	20	2,5	35	M6	8	22
42	2250	1450	120	26	5	78,8	82	49	26	11,5	35,5	8	60	M10	15	30
43	2250	1450	120	26	5	78,8	82	49	26	11,5	26,8	8,5	52	M10	15	30
44	2250	1450	120	26	5	78,8	82	49	26	11,5	26,8	10,5	54	M10	15	30
45	2250	1450	120	26	5	78,8	82	49	26	11,5	26,8	14,5	58	M10	15	30
46	2250	1450	120	26	5	78,8	82	49	26	11,5	26,8	16,5	60	M10	15	30
47	2250	1450	138	30	5	97	82	49	30	9,5	42	16	75	M10	15	30
48	1200	750	75	20	5	49	56	35	20	5	15,3	3,5	31	M6	7,5	22
49	1200	750	121	50	5	95	57	36	20	5	17,5	5	35	M8	10	22
50	2250	1450	128	30	5	86,8	82	49	30	9,5	40	13	70	M10	15	30
51	1500	1000	130	26	5	88,8	82	49	26	11,5	26,8	16,5	60	M10	15	30
52	2250	1450	128	30	5	87	82	49	30	9,5	30,5	14,5	63	M10	18	30
53	2250	1450	128	30	5	87	82	49	30	9,5	30,5	15,5	64	M10	18	30
54	2250	1450	120	26	5	78,8	82	49	26	11,5	28,5	7	52	M10	13,8	30
55	2250	1450	128	30	5	87	82	49	30	9,5	30,5	19,5	68	M10	18	30
56	2250	1450	128	30	5	87	82	49	30	9,5	30,5	21,5	70	M10	18	30
57	650	400	77	15	5	56	58	39	15	21,5	9,6	2	21	M5	5	16
58	650	400	80	20	5	59	58	39	20	15,5	14	3,5	27	M4	4,5	16
59	2250	1450	138	30	5	96,8	82	49	30	9,5	55	16,5	90	M10	20	30
60	2250	1450	138	30	5	96,8	82	49	30	9,5	46	27	90	M10	15	30
61	1200	750	75	20	5	50,4	56	35	20	5	15,5	3	31	M6	8	22
62	2000	1250	156	60	5	124	67	39	20	9,5	29,5	4,5	50	M10	10	28
63	2000	1250	156	60	5	124	70	42	20	9,5	30	4,5	50	M10	10	28
64	650	400	64	15	6	45,4	58	39	15	15,5	12	2,5	24	M4	4,5	16
65	1200	750	84	20	5	58	56	35	20	5	15,5	8	36	M6	8	22
66	1200	750	114	24	5	82	67	39	24	7,5	20,5	11,5	48	M8	10	28
67	2250	1450	160	60	5	119	82	49	30	9,5	42	23	82	M10	15	30
68	2250	1450	150	30	5	108,8	82	49	30	9	47	26	90	M10	20	30
69	350	250	48,6	15	5	29,7	63	50	15	15,5	8,5	3	19	M4	4,5	12
70	350	250	48,6	15	5	29,7	63	50	15	15,5	8,5	4	20	M4	4,5	12
71	1750	1050	90	22	5	58	68	39	22	8,5	24,5	3,5	42	M8	9	25