



RK ROSE+KRIEGER

A Phoenix Mecano Company

RK MonoLine Z **corrosion-protected**

The solution for damp environments



Key features / technical benefits

Drain hole

- Allows condensation and moisture to drain off
- No build-up of liquid

Tapered lubricating nipple

- Allows lubrication with the carriage in any position

Guided timing-belt

- Protected from foreign bodies falling in (protection rating IP 20)
- Safe use above the head, toothed belt does not sag when using above the head

Clamping strip

- Provide an assembly-friendly and flexible fastening

Centring holes in the guide carriage
(Image shows optional centring sets as accessory)

- Time-saving and repeatable installation of rated load
- No cumbersome alignment

Variable motor connection

- Simple and subsequently changeable adaptation of the drive
- Can be adapted to an individual drive concept (drive shaft or claw coupling)

Motor shaft configuration

- Can be modified at a later stage

Your added value:

Corrosion-protected – extended lifetime in damp environment

Compatible – with the standard range

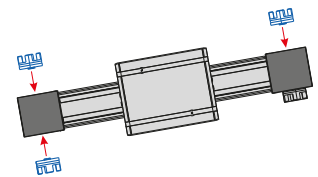
Assembly-friendly – simple to integrate into your system

Precise – repeatability ± 0.05 mm

Fast – thanks to central lubrication of the guide carriage which is not dependent on position

Safe – as per Machinery Directive 2006/42/EC

Variable – compatible with various drives

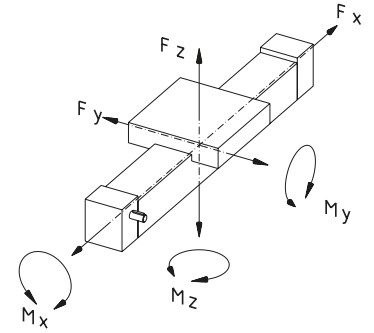


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Technical benefits

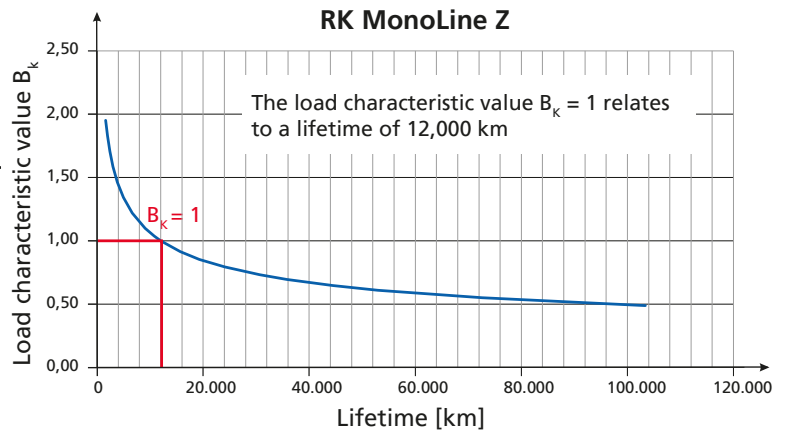
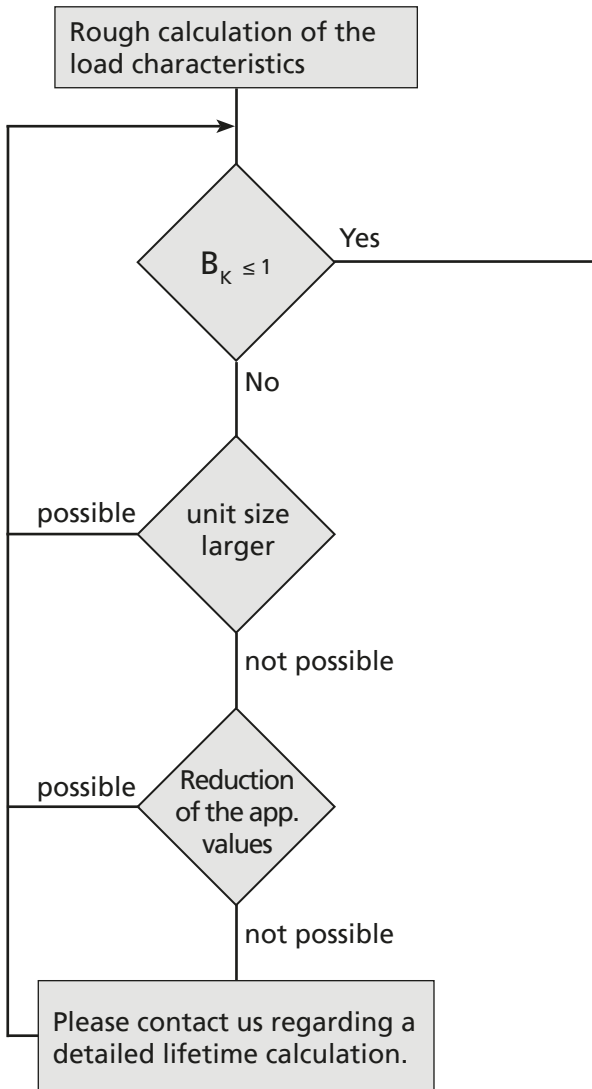
Calculation of the load characteristic to define the lifetime

- The lifetime of linear units are in accordance with the average loads and moments of an application. The load characteristic can approximately calculated by following equation with simultaneously appearing load and moments.



$$\text{Load characteristic} = \frac{\text{Application values (z.B. } F_y)}{\text{Catalog values (z.B. } F_{y_{\max}})}$$

$$\text{Load characteristic } B_k = \frac{F_y}{F_{y_{\max}}} + \frac{F_z}{F_{z_{\max}}} + \frac{M_x}{M_{x_{\max}}} + \frac{M_y}{M_{y_{\max}}} + \frac{M_z}{M_{z_{\max}}} \leq 1$$



At a load characteristic value of $B_k < 1$ higher theoretical lifetime can be achieved. The illustration is intended as an approximate reflection of the expected lifetime depending on the load characteristic value B_k . Increased speeds, short-stroke, vibrations, impacts, insufficient lubrication or other specific conditions are not taken into account.

Please contact us regarding a detailed lifetime calculation.

Example:

- The load and moments of the application are: $F_z = 700\text{N}$, $M_x = 20\text{ Nm}$ und $M_z = 45\text{ Nm}$. According to the above equation you will have following load characteristic of a RK MonoLine 80: $B_k = 0.63$.

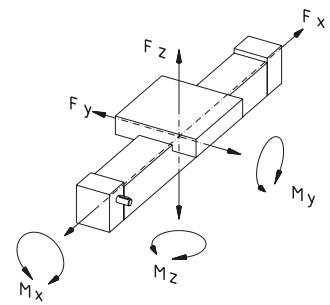
General information / operating conditions

RK MonoLine Z 80 / 80x120 / 80x160	
Guidance system	Roller guide
Installation position	any position
Max. driving torque	55 Nm
Max. speed	10 m/s
Max. acceleration	20 m/s ²
Repeat accuracy	± 0.05 mm
Pitch accuracy	± 0.1 mm/300 mm travel
Max. no-load torque	1,0 Nm
Drive	HTD-Belts from Polyurethane, Pitch 8 mm, Width 40 mm, corrosion-resistant
Active Ø pulley wheel	61.12 mm
Pulley wheel circumference	192 mm
Ambient temperature	0 to +60°C
Degree of protection	IP 20

Dynamic load data

Force [N]

Torque [Nm]

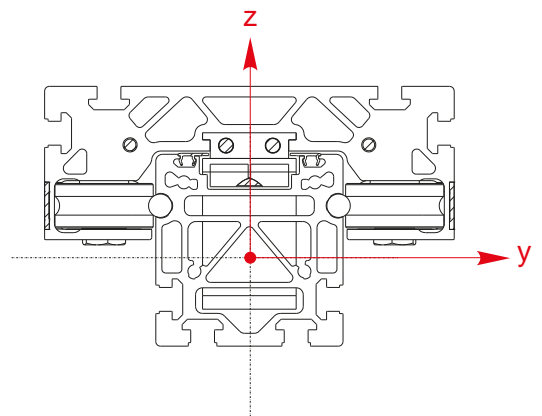


Toothed-belt drive						
Load data	Fx*	Fy	Fz	Mx	My	Mz
Standard guide carriage						
RK MonoLine Z 80 / 80x120 / 80x160	1820	4367	2509	95	188	327
Extended guide carriage						
RK MonoLine Z 80 / 80x120 / 80x160	1820	4367	2509	95	351	611

* Initial tension of the timing belt 0,8 x Fx

Geometric moment of inertia

	[cm ⁴]	
	Iy	Iz
RK MonoLine Z 80	155.82 cm ⁴	172.79 cm ⁴
RK MonoLine Z 80x120	462.41 cm ⁴	239.76 cm ⁴
RK MonoLine Z 80x160	1008.38 cm ⁴	304.63 cm ⁴



RK MonoLine Z corrosion-protected

Versions

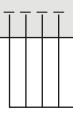
Order instructions:

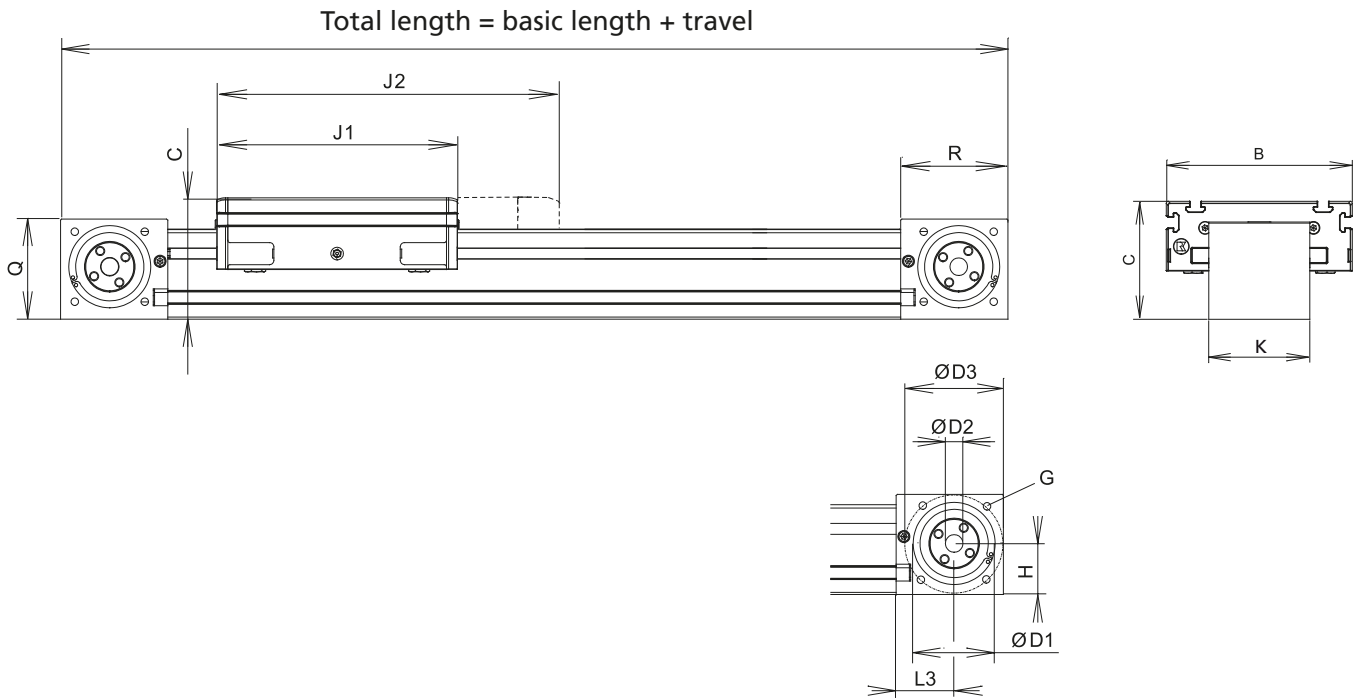
- Longer travel lengths on request
- Also without screw drive as a torque support available on request

Timing-belt unit
RK MonoLine Z corrosion-protected



Code No.	Type	Basic length	B	C	D1	D2
TB12B3F5A14A0 _ _ _ _	RK MonoLine Z 80	416	175	111	75 ^{H7} 4.5 deep	16 ^{H6}
TB12B3F5B14A0 _ _ _ _	RK MonoLine Z 80 with extended guide carriage	546				
TB12B6F5A14A0 _ _ _ _	RK MonoLine Z 80x120	416	175	151	75 ^{H7} 4.5 deep	16 ^{H6}
TB12B6F5B14A0 _ _ _ _	RK MonoLine Z 80x120 with extended guide carriage	546				
TB12B7F5A14A0 _ _ _ _	RK MonoLine Z 80x160	416	175	191	75 ^{H7} 4.5 deep	16 ^{H6}
TB12B7F5B14A0 _ _ _ _	RK MonoLine Z 80x160 with extended guide carriage	546				


 Total length = basic length + total travel (mm)



[mm]

D3	G	H	J1	J2	K	L3	Q	R	max. travel	Mass [kg]	
										Basic length	per 100 mm travel
90.5±0.2	M8-14 deep	48	220	-	95	53	91.5	98	5677	10.30	0.84
			-	350						12.99	0.84
90.5±0.2	M8-14 deep	88	220	-	95	53	131.5	98	5677	10.75	1.04
			-	350						13.71	1.04
90.5±0.2	M8-14 deep	128	220	-	95	53	171.5	98	5677	11.19	1.25
			-	350						14.42	1.25

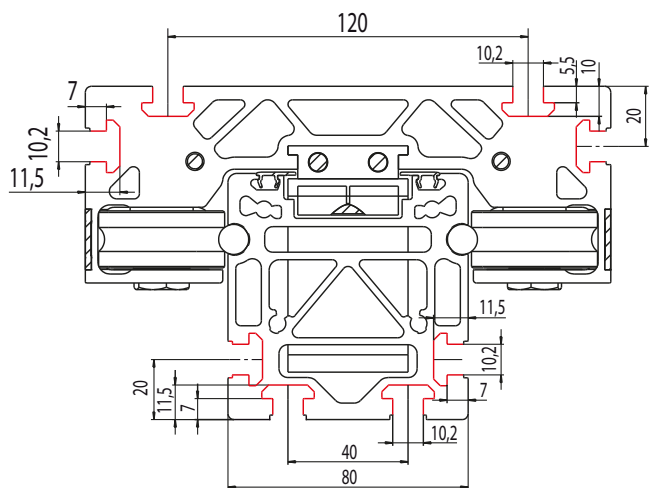
RK MonoLine Z corrosion-protected

Fixation

Fixation of payload

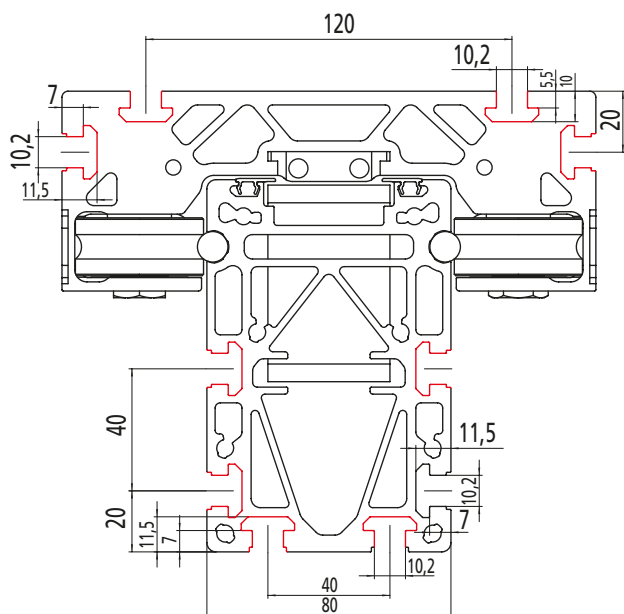
- Two profile slots have been inserted in the guide carriage on which fittings can be securely attached in a variety of ways
- Profile slots in the guide carriage and guide profiles facilitate fixation

RK MonoLine Z 80



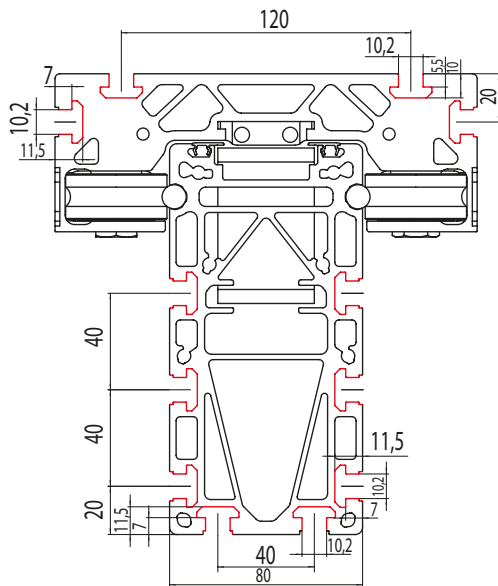
— 40 slot geometry

RK MonoLine Z 80x120



— 40 slot geometry

RK MonoLine Z 80x160



— 40 slot geometry

Fixation

Clamping strips

- Clamping strips facilitate fixation of the linear unit to the chassis or two units to a crossing table

Material:
Natural anodised aluminium, zinc plated fixing material stainless steel

Scope of delivery:
2 clamping strips with fixing material

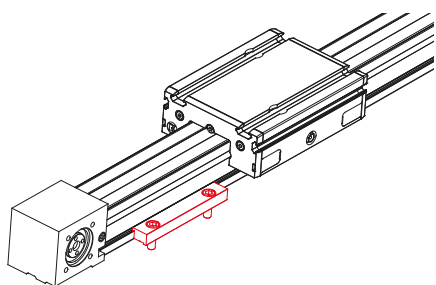


Fig. 1: Ground assembly

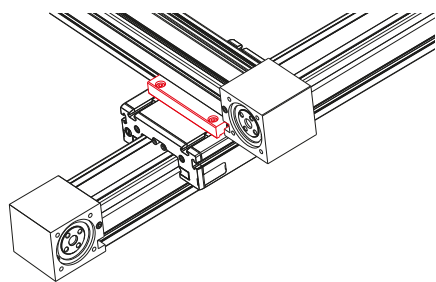


Fig. 2: Crossing units

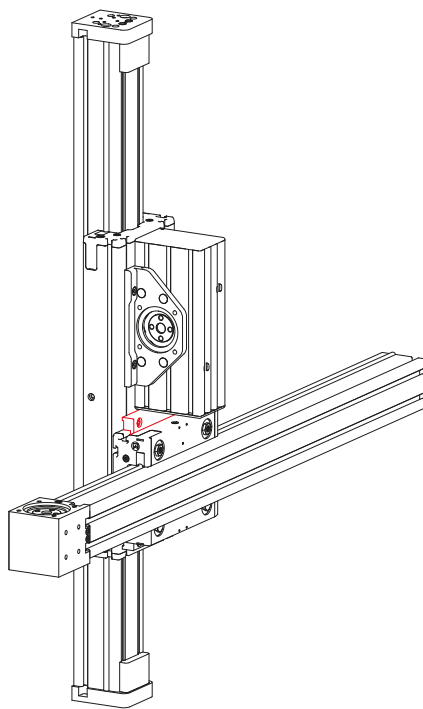
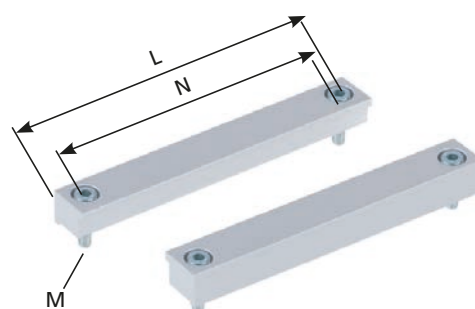
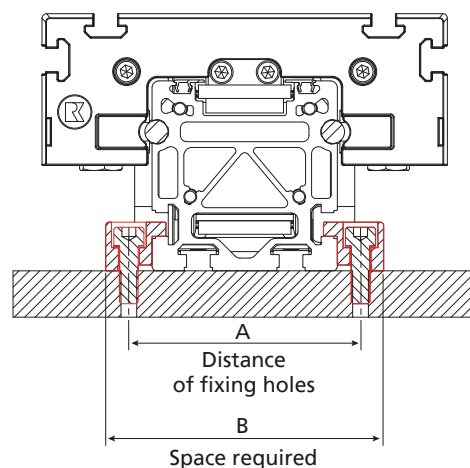


Fig. 3: Crossing units

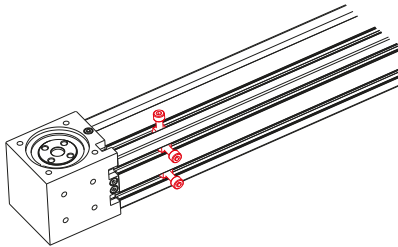


									[mm]
Code No.	Type	Fig.	A	B	L	M	N		
91812	RK MonoLine 80 / 80 x120 / 80 x160 ground assembly	1	100	120	116	M8	80		
91887	RK MonoLine 80 crossing to 80	2/3			156		120		

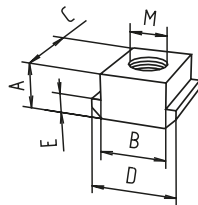
Slot stones

- Slot stones can be inserted and positioned at the guide profile and guide carriage

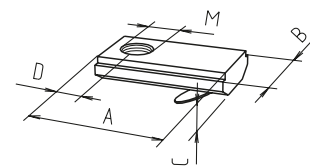
Material:
Steel nickel-plated, stainless steel



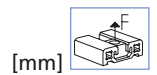
View of RK MonoLine from below



Slot stones -N-
can be slid into the slot



Slot stones -K-
can be swivelled into the slot



Code No.	Type	lot sizes	Slot geometry	Material	A	B	C	D	E	M	F [N]
Slot stone -N-											
400B206	M8	–	40	nickel-plated	5	10	13	13	3	M8	4000
4029206	M8	10, 20, 30... pcs	40	Stainless steel	8	10	13	15	4	M8	9000
Slot stone -K-											
4009212	M6	10, 20, 30... pcs	30	Stainless steel	21	12	4	7	–	M6	5000

Fixation

Centering Sets for RK MonoLine

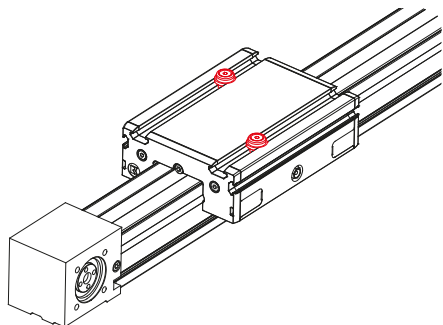
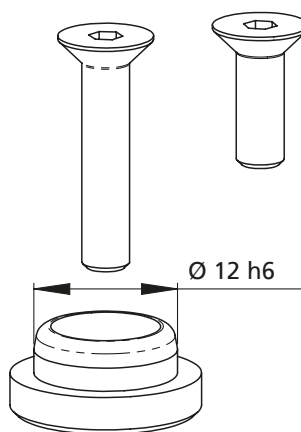


Fig. 1: Slide centering RK MonoLine Z

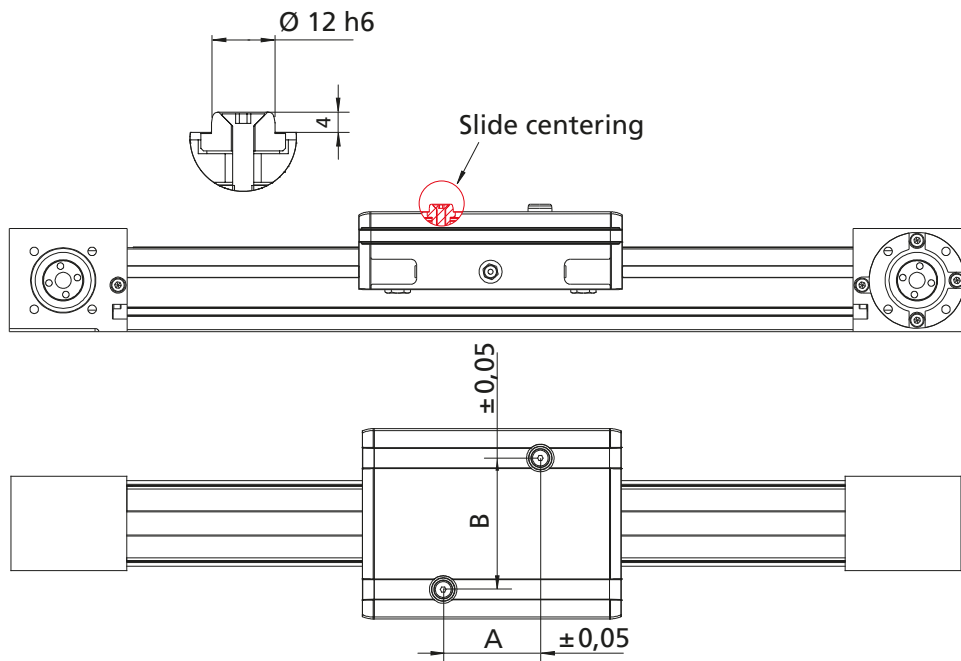
- The position of the rated load can be defined exactly during the construction phase
- Reproducible position of the load capacity
- Reduced assembly/disassembly time of the load capacity
- Accuracy of the centering bolts h6

Scope of delivery per set:
2 centering bolts and fixing material



Size -B-

Code No.	Type	Use for
91899	Centering Set Size -B-	Slide centering RK MonoLine Z 80 / 80x120 / 80x160



[mm]

Type	A	B
RK MonoLine Z 80 / 80x120 / 80x160 with extended guide carriage	100	120

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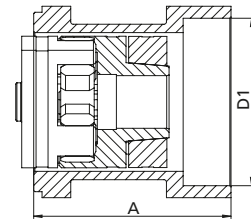
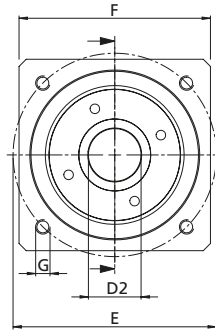
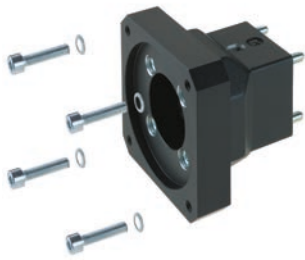
Drive

Selection table motor adapter kits RK MonoLine for servo motors without gear

- Servomotors can be easily connected
- Complete motor adapter kits manufactured to your specifications on request

Scope of delivery:
Motor adapter kit, servo coupling with zero backlash and fixing material

Manufacturers	Motor	RK MonoLine Z 80 / 80x120 / 80x160
RK Rose+Krieger	RK-AC 240	-
	RK-AC 470	949730
Baumüller	DSD2-045	On request
Beckhoff	AM8041, AM8042, AM8043	On request
Bosch	MSK050B, MSK050C	949730
Kollmorgen	AKM2G-41, AKM2G-42, AKM2G-43, AKM2G-44	On request
Lenze	MCS09D, MCS09F, MCS09H, MCS09L	On request
Lti/Keba	LSP10	949730
Mitsubishi	HG-JR53(4), HG-JR 73(4), HG-JR103(4), HG-JR153(4), HG-JR203(4)	On request
Parker	SMH 82, SMHA 82	-
	SMH 100, SMHA 100	949730
SEW	CMP63S, CMP63M, CPM63L	On request
Siemens	1FK7040, 1FK042, 1FK043, 1FK2205	On request
	1FK2105	949730



Motor flange	A	D1	D2	E	F	G	Mass [kg]
IM B5 56	50	Ø 80 H7 4 deep	Ø14x30	Ø 100	□82	M6 15 deep	0.432
IM B5 63	64/67	Ø 95 H7 4 deep	Ø19x40	Ø 115	□105	M8 19.5/12 deep	1.38/1.16
IM B5 56	49/59/61.5	Ø 80 H7 4 deep	Ø14x30	Ø 100	□82	M6 15/12/12 deep	0.432/0.93/0.93
IM B5 56	60/64.5/67	Ø 80 H7 5 deep	Ø19x40	Ø 100	□82	M6 20/12/12 deep	0.49/0.93/1.03
IM B5 63	64/67	Ø 95 H7 4 deep	Ø19x40	Ø 115	□105	M8 19.5/12 deep	1.38/1.16
IM B5 56	60/64.5/67	Ø 80 H7 5 deep	Ø19x40	Ø 100	□82	M6 20/12/12 deep	0.49/0.93/1.03
IM B5 56	49/59/61.5	Ø 80 H7 4 deep	Ø14x30	Ø 100	□82	M6 15/12/12 deep	0.432/0.93/0.93
IM B5 63	64/67	Ø 95 H7 4 deep	Ø19x40	Ø 115	□105	M8 19.5/12 deep	1.38/1.16
IM B5 56	60/64.5/67	Ø 80 H7 5 deep	Ø16x30	Ø 100	□82	M6 20/12/12 deep	0.49/0.93/1.03
IM B5 56	50	Ø 80 H7 4 deep	Ø14x30	Ø 100	□82	M6 15 deep	0.432
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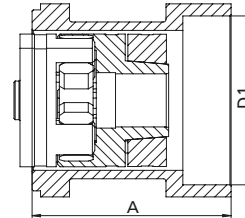
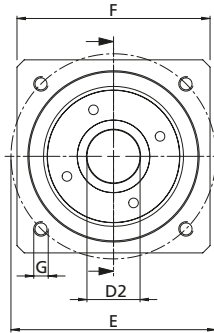
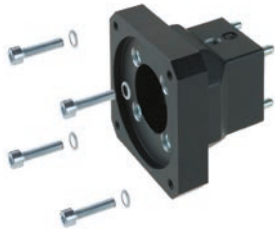
RK MonoLine Z corrosion-protected

Drive

Motor adapter kits

- Servo- and three phase motors can be easily connected
- Complete motor adapter kits manufactured to your specifications on request

Scope of delivery:
Motor adapter kit,
servo coupling with zero backlash
and fixing material



Selection table motor adapter kits for three-phase motor

Manufacturers	Motor	RK MonoLine Z 80/120/80x160
RK Rose+Krieger	90/120W	-
RK Rose+Krieger	180/250W	949734

Selection table motor adapter kits servo motors with gear

Manufacturers	Gear	RK MonoLine Z 80 / 80x120 / 80x160	A	D1	D2	E	F	G	Mass [kg]
Neugart	PLE 60	949731	54.5/60 /60	∅ 40 3/7.8/5.4 deep	∅ 14x30	∅ 52	□ 70/□ 80/ □ 80	M 5	0.92
	PLE 80	949732	64/60	∅ 60 5 deep	∅ 20x36	∅ 70	□ 80	M 6	0.92
	PLE 120	949733	60/82	∅ 80 4.5 deep	∅ 25x50	∅ 100	∅ 120/ □ 130	M 10	1.43/3.04
	PLE 160	-	114	∅ 130 13 deep	∅ 40x80	∅ 145	□ 140	M 12	2.63
Atlanta	APG 080	949732	64/60	∅ 60 5 deep	∅ 20x36	∅ 70	□ 80	M 6	0.92
	APG 120	949733	60/82	∅ 80 4.5 deep	∅ 25x50	∅ 100	∅ 120/ □ 130	M 10	1.43/3.04
Eppinger	PE065	949731	54.5/60 /60	∅ 40 3/7.8/5.4 deep	∅ 14x30	∅ 52	□ 70/□ 80/ □ 80	M 5	0.92
	PE080	949732	64/60	∅ 60 5 deep	∅ 20x36	∅ 70	□ 80	M 6	0.92
Ruhr-getriebe	RPS060	949731	54.5/60 /60	∅ 40 3/7.8/5.4 deep	∅ 14x30	∅ 52	□ 70/□ 80/ □ 80	M 5	0.92
	RPS080	949732	64/60	∅ 60 5 deep	∅ 20x36	∅ 70	□ 80	M 6	0.92
SPN Schwaben Präzision	SPN-ECO (E2) EZ 23	949731	54.5/60 /60	∅ 40 3/7.8/5.4 deep	∅ 14 x 30	∅ 52	□ 70/□ 80/ □ 80	M 5	0.92
	SPN-ECO (E2) EZ 24	949732	64/60	∅ 60 5 deep	∅ 20 x 36	∅ 70	□ 80	M 6	0.92
	SPN-ECO (E2) EZ 25	949733	60/82	∅ 80 4.5 deep	∅ 25x50	∅ 100	∅ 120/ □ 130	M 10	1.43/3.04
	SPN-ECO (E2) EZ 26	-	114	∅ 130 13 deep	∅ 40x80	∅ 145	□ 140	M 12	2.63
Wittenstein	Alpha CP015 MF	949731	54.5/60 /60	∅ 40 3/7.8/5.4 deep	∅ 14 x 30	∅ 52	□ 70/□ 80/ □ 80	M 5	0.92
	Alpha CP025 MF	949732	64/60	∅ 60 5 deep	∅ 20 x 36	∅ 70	□ 80	M 6	0.92
	Alpha CP035 MF	949733	60/82	∅ 80 4.5 deep	∅ 25x50	∅ 100	∅ 120/ □ 130	M 10	1.43/3.04
	Alpha CP045 MF	-	114	∅ 130 13 deep	∅ 40x82	∅ 145	□ 140	M 12	2.63

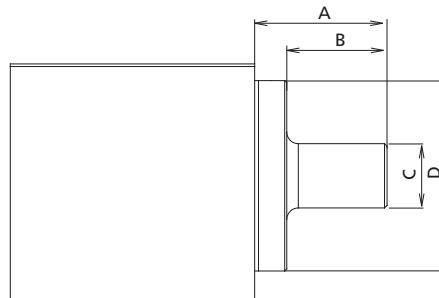
Drive shaft

- The RK MonoLine Z is fitted as standard with a hollow shaft
- This can be retrofitted with a drive shaft as an optional extra

Scope of delivery:
Drive shaft with fixing material



For metal bellows coupling



[mm]

Code No.	Type	Version	A	B	C	D
91330	RK MonoLine Z 80 / 80x120 / 80x160	Drive shaft for metal bellows coupling	37.5	31.5	20	52

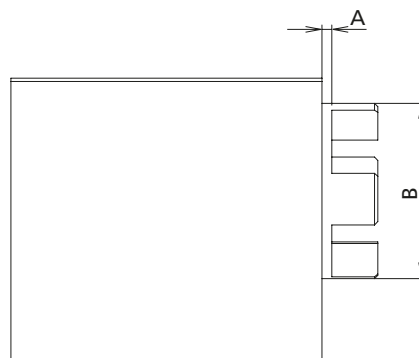
Screw-on hub

- The RK MonoLine Z is fitted as standard with a hollow shaft
- This can be retrofitted with a screw-on hub as an optional extra

Scope of delivery:
Screw-on hub with fixing material



For servo coupling with zero backlash



[mm]

Code No.	Type	Version	Size	A	B
91335	RK MonoLine Z 80 / 80x120 / 80x160	Screw-on hub for KTR type Rotex GS servo couplings with zero backlash	GS 24	9	55

RK MonoLine Z corrosion-protected

Drive / Position determination

Synchronisation shaft

Max. transfer torque:

RK MonoLine Z 80 47 Nm

- For torque transmission with parallel linear units
- Synchronisation of the guide carriages by zero point alignment

Scope of delivery:
Synchronisation shaft with fixing material

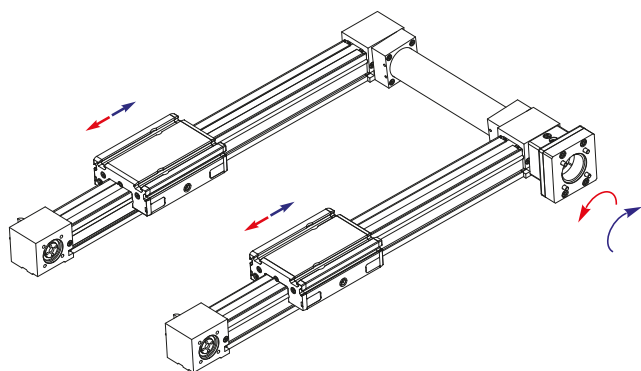
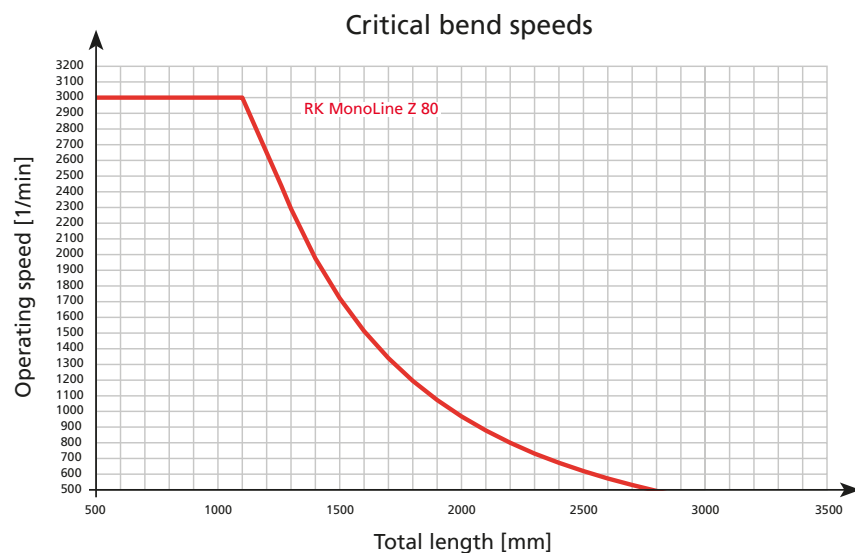
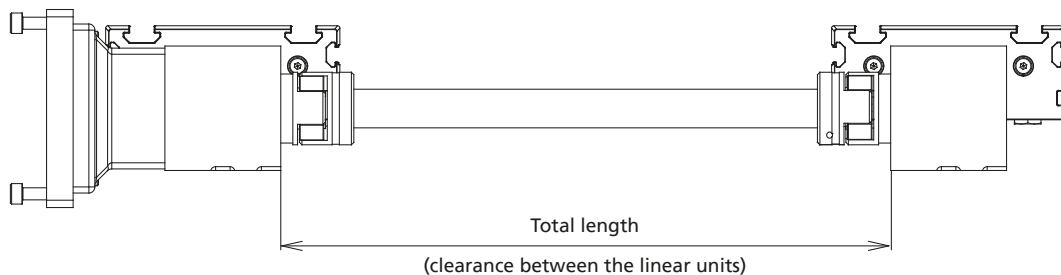


Fig. shows synchronisation shaft with protection

[mm]

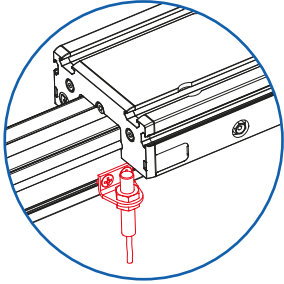
Code No.	Type	Basic length (minimum length)	Max. length (clearance)	Weight [kg]	
				Basic length	per 100 mm travel
92521900	Synchronisation shaft RK MonoLine Z 80 with protection	220	2800	1.99	0.30

— Total length [mm]

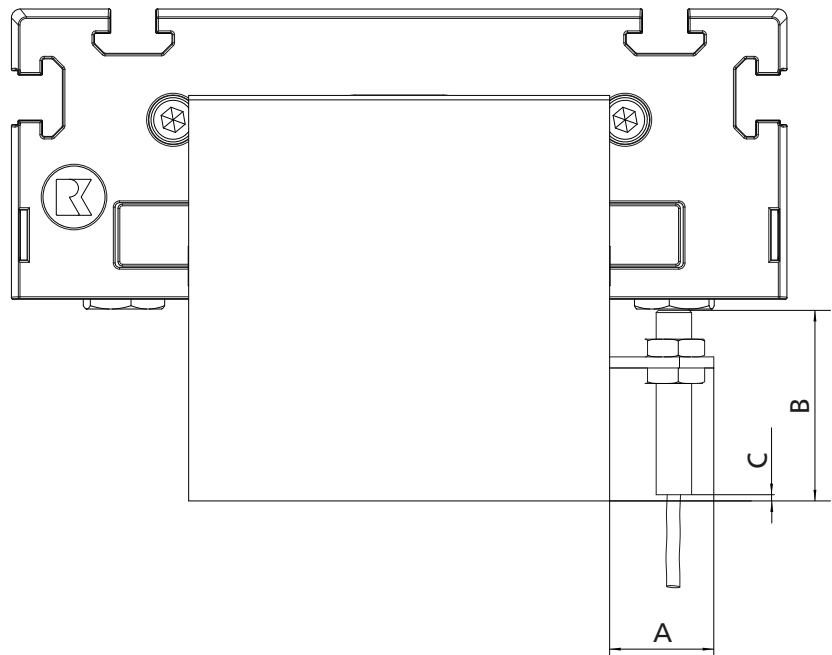
External inductive limit switch

- External fixation on the guide profile

Scope of delivery:
Limit switch with set of fixing material



Limit switch	
Voltage	10...30 VDC
Max. switching current	150 mA
Operating distance	2 mm for steel
Degree of protection	IP 67
Cable length	2m
Ambient temperature	-25°C to +70°C



Code No.	Type	A	B	C	Version
92855	RK MonoLine Z 80 / 80x120 / 80x160	43	23.5	1.4	Changeover, External inductive limit switch M8x1



RK ROSE+KRIEGER

A Phoenix Mecano Company

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