RK ROSE+KRIEGER
A Phoenix Mecano Company

Linear Technology

Movement and positioning

How to use this catalogue

Depending on your level of experience, we suggest you proceed as follows

If you are new to linear technology

Please use our selection guide from page 9 onwards.
We will guide you to the right product for your particular application.

If you know all about linear technology

You know exactly what you require and can go straight to the right product category, where you will find a product overview on the first pages.

Specific search

...if you are looking for a specific product,
we suggest you start in our index on the last pages of this catalogue.

**If you have any questions,
do not hesitate to contact one of our product consultants.**

From page 4 **Introduction**
About Us
Our products
Service
Level of service

From page 9 **Linear Technology - Selection guide**
Systematic product range
(What is linear technology?)
Four steps to your recommended product
(How do I find the right product?)

From page 21 **Move-Tec**
Width, length and height adjustment

From page 356 **Place-Tec**
Loading and unloading,
palletising, pick & place

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Numerically controlled positioning

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Numerically controlled Traversing tasks

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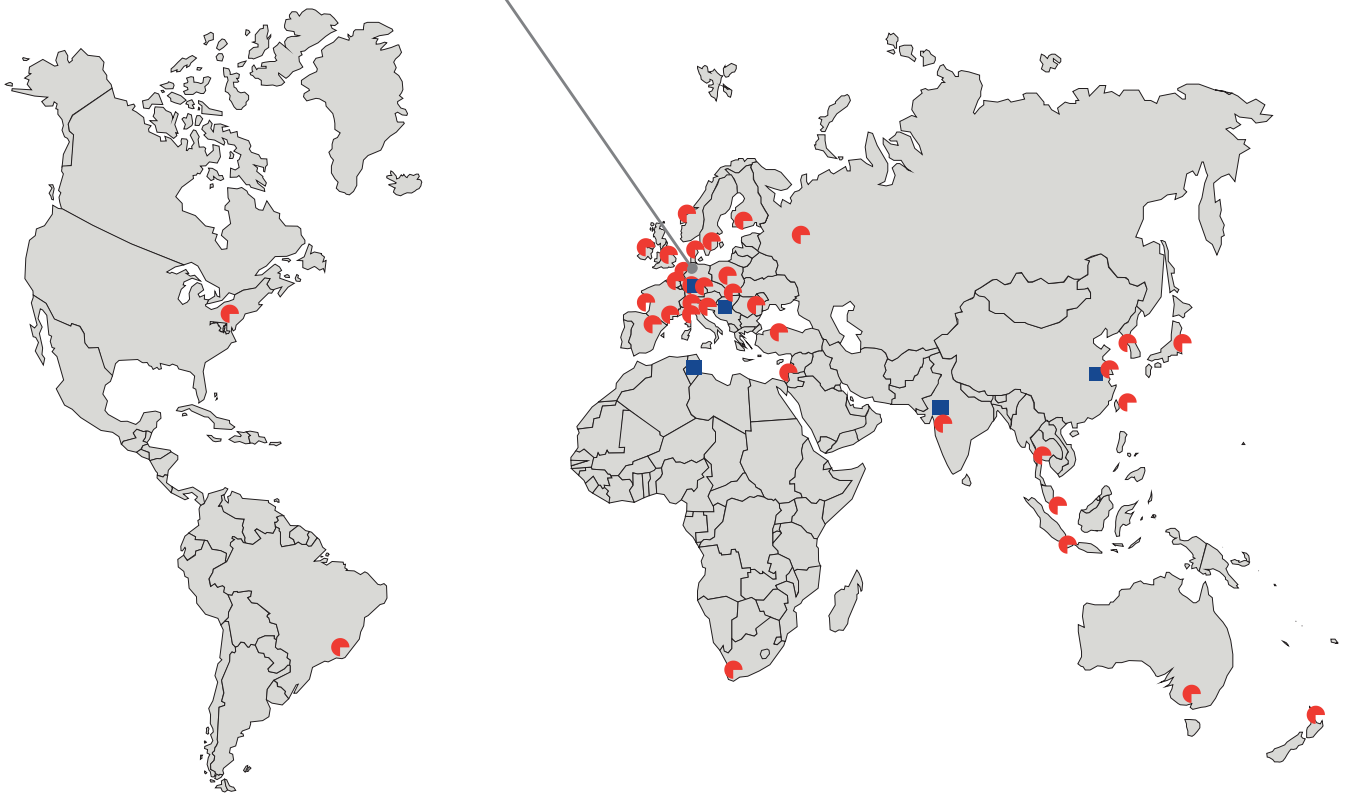
About Us

As a subsidiary of the global Phoenix Mecano AG, we offer an unrivalled range of products in the fields of linear, profile, connecting and module technology. With decades of experience and expertise in a huge range of industrial applications, you need look no further for a highly competent partner. From the first point of contact through to delivery, we focus entirely on your requirements. Individual advice and short delivery periods are two central priorities in our customer-focused corporate philosophy. Our aim is your success, and we look forward to being your strategic partner.

Head Office: Germany, Minden/Westph.

- Company sales representatives
- Distributors and system partners



Available around the globe.

Profit Centre within Phoenix Mecano
Sales and system partners

■ = Production facilities

◔ = Distribution companies

RK ROSE+KRIEGER
A Phoenix Mecano Company

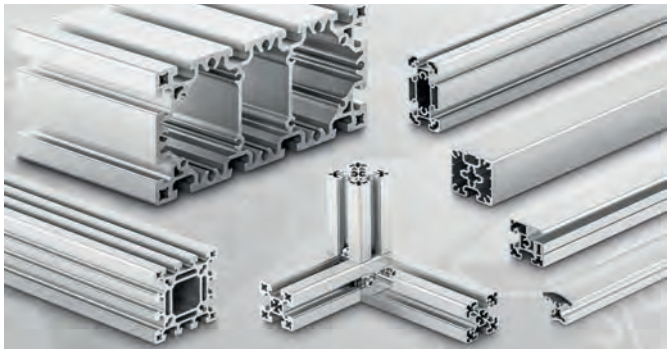
Our product range

CONNECTING TECHNOLOGY

- Fittings for the secure clamp connection of round and square tubes
- Elements made of aluminium, stainless steel and plastic
- Sizes from 8 mm to 80 mm

PROFILE TECHNOLOGY

- The tried and tested BLOCAN® aluminium assembly system
- Sections from 20 mm to 320 mm for all applications
- Connecting technology with an unsurpassed combination of flexibility and reliability

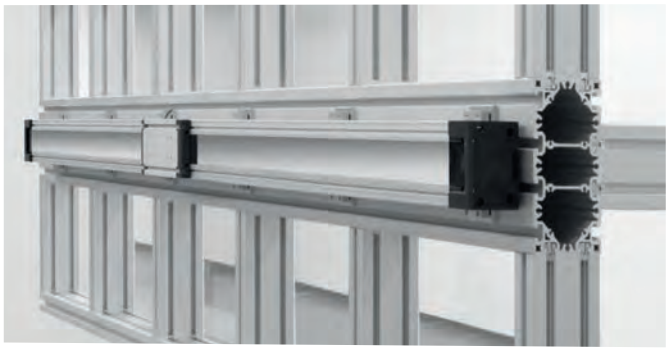


LINEAR TECHNOLOGY

- Manual adjustment units
- Electric cylinders
- Lifting columns
- Linear axes
- We can move loads for you of up to 3 t and up to 12 m dynamically, reliably and with great precision

MODULE TECHNOLOGY

- Machine frames
- Workstations
- Machine guards
- Multidimensional linear axis modules
- Complete drive solutions

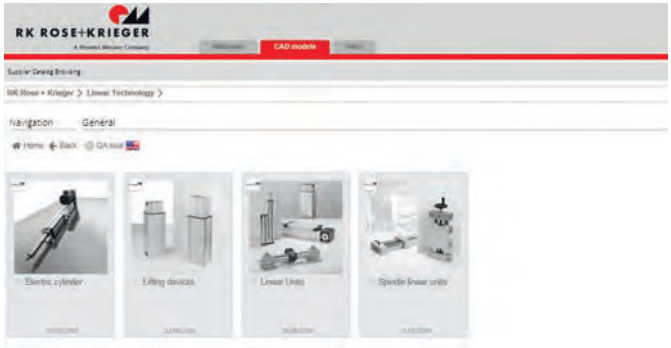


Our Service

We help you make the right choice:

CAD component library

To help you design your products, we give you free access to the component data stored in our Rose+Krieger component library (drawings, technical descriptions). This library lets you choose between around 60 different file formats (2D/3D). The link to our component server can be found on our web site at: www.rk-rose-krieger.com/deutsch/service/cad-daten.html

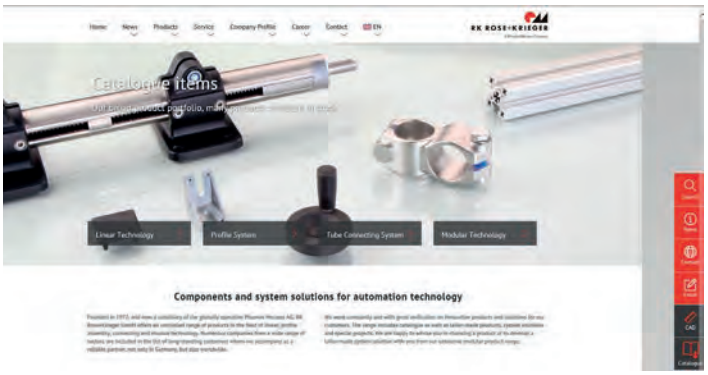


In-house RK product consultancy

The RK infovan - our showroom on your doorstep. With more than 20 presentation boards containing exhibits and functional samples and a range of applications from the world of drive and linear technology, our infovan provides a complete cross-section of the RK products currently available. Our Key Account managers and sales consultants are happy to visit you on site and help you draw up concrete proposals for practical solutions.

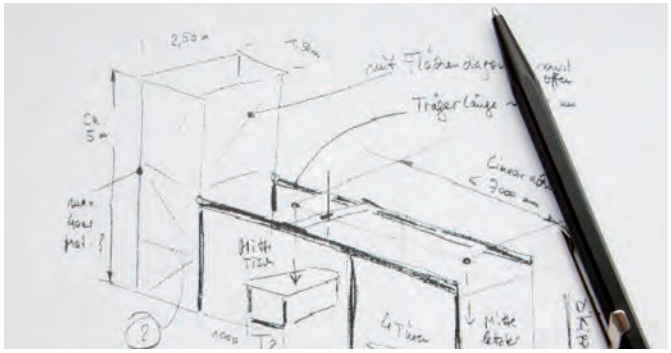
RK website: www.rk-rose-krieger.com

At our website you will find a wealth of information on our company and our products. You will also find the details of company contacts in your area and the latest catalogues (PDF format) available to download.



Do you need to focus your resources on other tasks and are you looking for an expert partner you can rely on? Working in close collaboration with you, our specialists will develop solutions tailor-made to meet your needs. If you wish, we can also assemble and commission the units on site.

Just make a sketch of your requirements



Our product specialists will develop a solution for you

We can deliver your turnkey solution or assemble and commission it for you on site

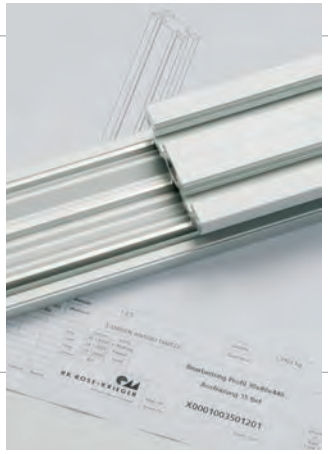
Level of service

You decide...

100%

Modules and systems
You require your skills and time for other tasks and are looking for a partner you can rely on.

Customised developments
Are you looking for something completely new. Then we'll team up with you to develop it.



Different models, modified standards
Our expertise at your fingertips. Our expert consultants can recommend the optimum products modified to your requirements.

Catalogue items
If you know what you want and take the time to browse our catalogue, you are sure to find what you're looking for in our standard range.

...what level of service you require

0%

We offer

- A broad range of compatible products
- 40 years of experience in numerous industries
- Expert advice for all your requirements
- Quality – because we deliver what we promise

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How to find the right product Page 11

The RK linear circle.....Page 12

Move-Tec.....Page 14

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Control-Tec.....Page 18

Selection aid

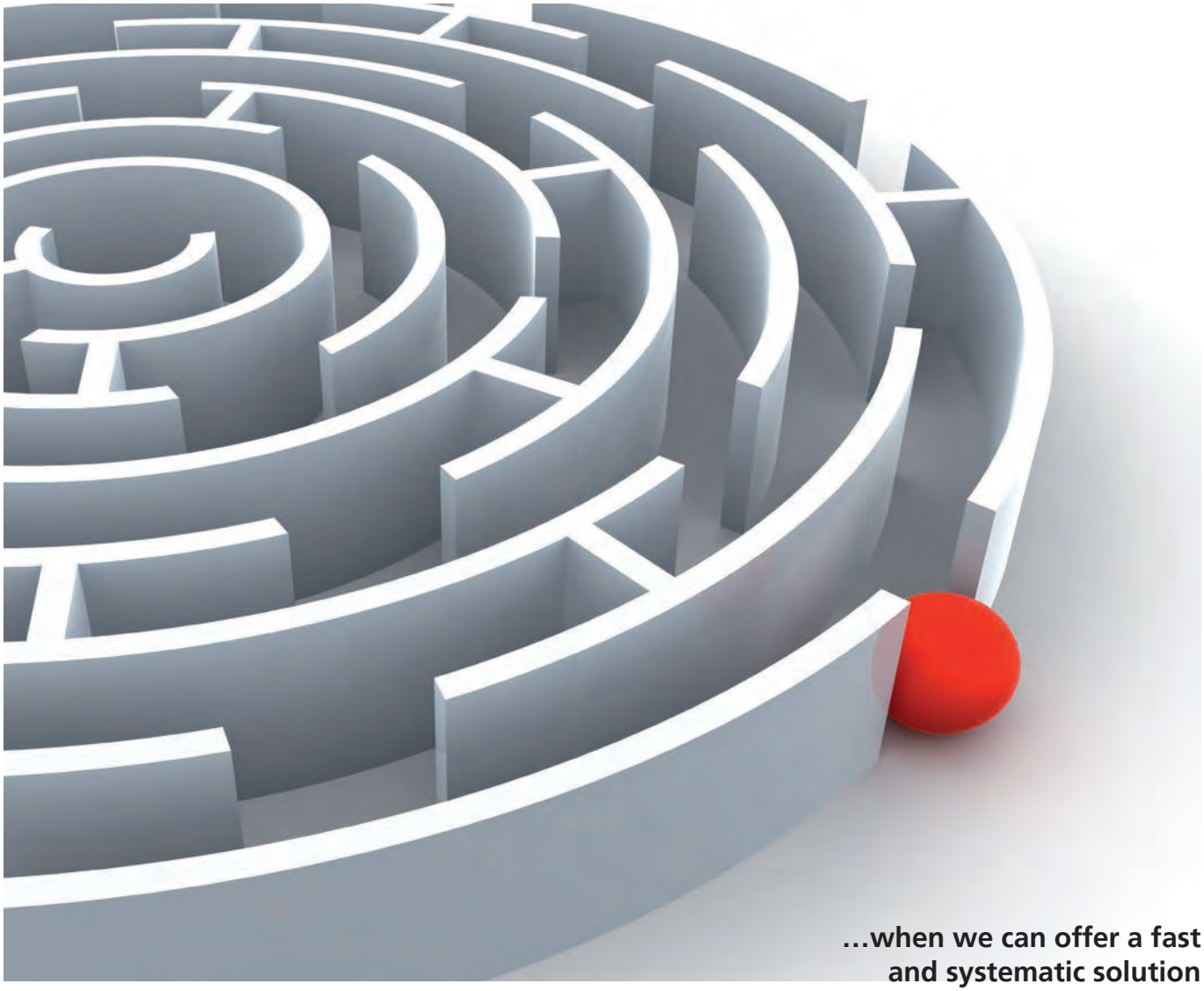
Systematic product range

What is Linear Technology?

Whether guiding, adjusting, positioning or moving uniformly, the demands on linear motion sequences are as varied as the available solutions. We offer a broad spectrum of linear movement components: from the occasional manual adjustment, through to frequent movements and highly dynamic positioning in continuous operation.

And to help you select the most suitable range of products for your requirements quickly and easily, we have developed a system that is strictly application-oriented. Within the selected range you can then determine the ideal size and model based on your performance requirements.
And if you need any further help, we are only too happy to assist.

Why waste time with trial and error…



…when we can offer a fast and systematic solution

RK ROSE+KRIEGER

Four steps to your recommended product

Step 1:

Your application takes centre stage

- Width, length and height adjustment
- Loading and unloading, palletising, pick & place
- Numerically controlled positioning applications

Step 2:

Which product version do you require?

- Rodless style (linear actuator)
- Rodstyle (E-cylinder, lifting column)

Step 3:

What functions do your require the product to perform?

- Guide
- Drive
- Guide + drive

Step 4:

Which performance category do you require?

- Stroke length
- Load
- Speed
- Accuracy
- etc.

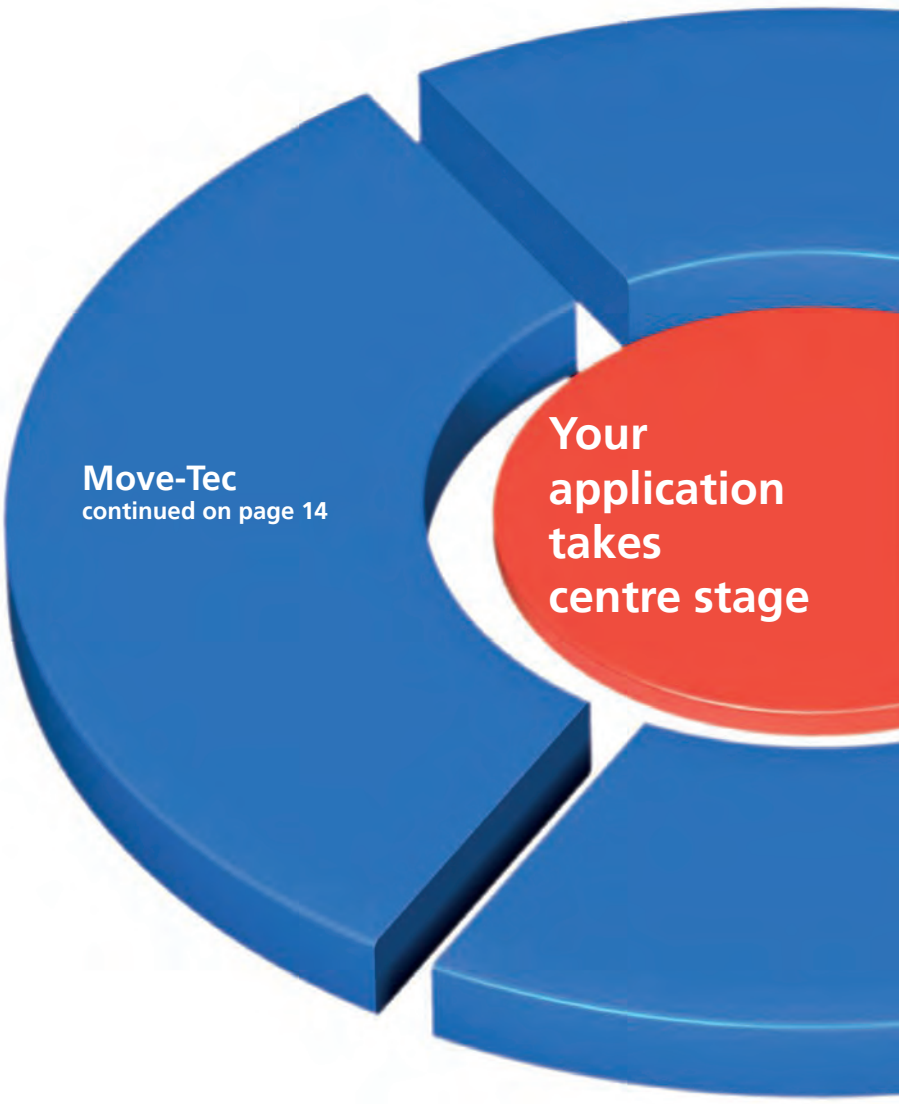
...just follow our system and you'll find the terms are self-explanatory

Selection aid

The RK linear circle

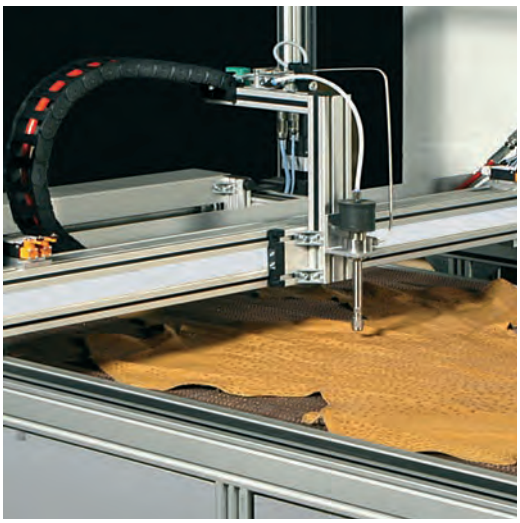
Width, length and height adjustment

- Manual or electric drive
- Occasional to multiple adjustments daily
- Low duty cycle
- Low speed
- Medium to high stability



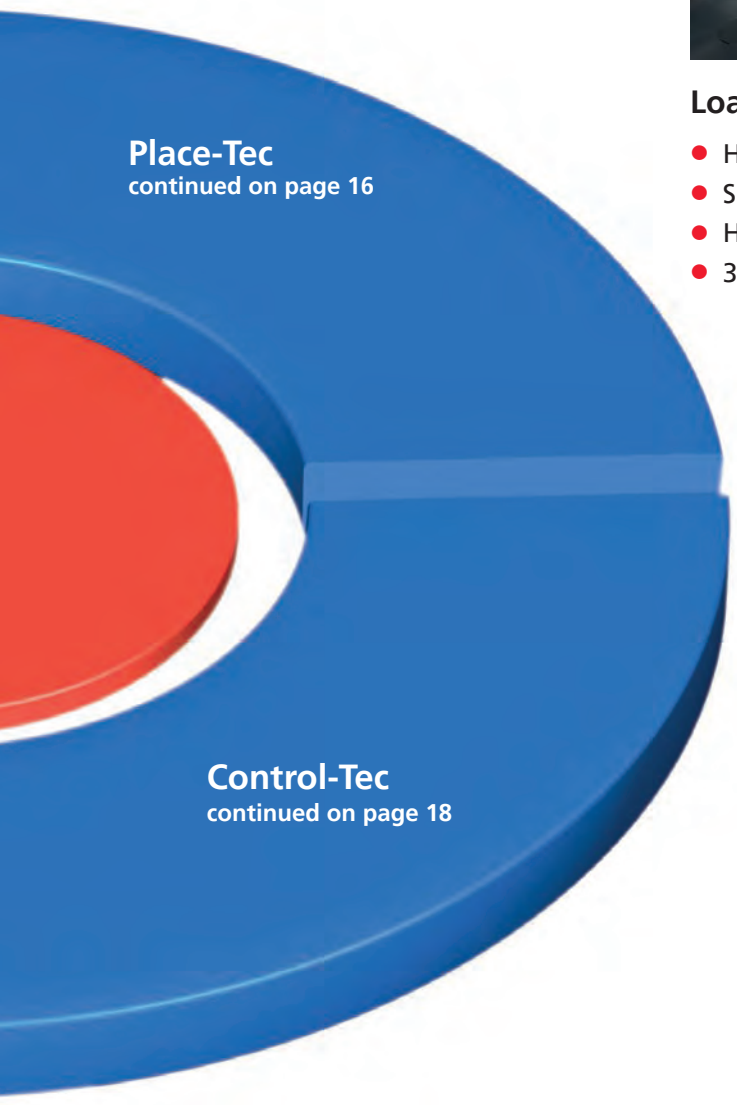
Loading and unloading, palletising, pick & place

- High repeatability
- Short cycle times
- High cycle rates
- 3 shift operaition



Numerically controlled positioning applications

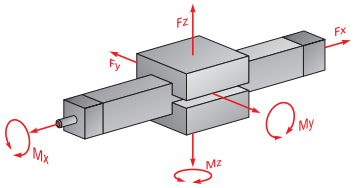
- High positioning accuracy
- Uniform motion
- High drive stiffness
- 3 shift operation
- IP 40 protection class



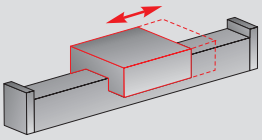
Selection aid

Move-Tec

Width, length and height adjustment

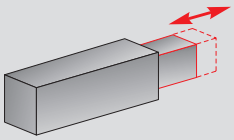


Rodless style
(up to 6m travel)

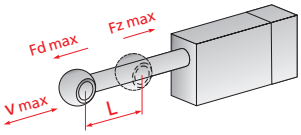


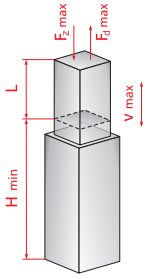
	Single-tube-guide		Twin-tube-guide
Guide			 p. 102 **RE** Max. travel: 3,000 mm Fy max: 600 N Fz max: 2,400 N
Drive + Guide (linear actuator)	 p. 36 **RK LightUnit** Max. travel: 920 mm Fx max: 300 N Fy max: 550 N Fz max: 1,210 N	 p. 86 **E / E-II / E-II-stainless** Max. travel: 2,740 mm Fx max: 4,500 N Fy max: 5,500 N Fz max: 5,650 N	Twin-tube-actuators p. 110 **EP(X) / EP(X)-II** Max. travel: 2,760 mm Fx max: 4,500 N Fy max: 14,000 N Fz max: 9,100 N

Rodstyle
(bis 2 m Hub)



	Cylinders-performance-class 1*		Cylinders
Drive (E-cylinder)	 **M9 E-cylinder** Travel: 50 mm Fd max: 300 N Fz max: 300 N Vmax: 14 mm/s	 **010 E-cylinder** Max. travel: 100 mm Fd max: 500 N Fz max: 500 N Vmax: 22 mm/s	 **015 E-cylinder** Max. travel: 140 mm Fd max: 1,000 N Fz max: 1,000 N Vmax: 100 mm/s
Drive + Guide (lifting column)	Two-stage **RK Multilift** Max. travel: 498 mm Fd max: 3,000 N Fz max: 1,000 N Vmax: 16 mm/s	 **RK Multilift II** Max. travel: 497 mm Fd max: 3,000 N Fz max: 3,000 N Vmax: 16 mm/s	 **RK Slimlift** Max. travel: 500 mm Fd max: 4,000 N Fz max: 2,000 N Vmax: 32 mm/s

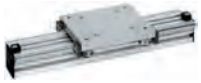




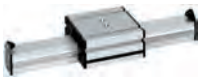
Profile-guides

p. 180
PLM-G
Max. travel: 2,935 mm
Fy max: 200 N
Fz max: 220 N

p. 200
RK Compact-G
Max. travel: 400 mm
Fy max: 1,150 N
Fz max: 1,150 N



p. 212
SQL
Max. travel: 5,750 mm
Fy max: 2,500 N
Fz max: 1,500 N



p. 272
PL
Max. travel: 5,860 mm
Fy max: 2,550 N
Fz max: 2,550 N

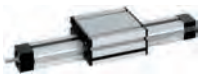
p. 280
RK DuoLine R
Max. travel: 7,692 mm
Fy max: 5,100 N
Fz max: 8,900 N

Profil actuators

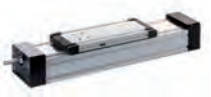
p. 176
PLM
Max. travel: 855 mm
Fx max: 125 N
Fy max: 200 N
Fz max: 220 N

p. 196
RK Compact
Max. travel: 400 mm
Fx max: 215 N
Fy max: 1,150 N
Fz max: 1,150 N

p. 220
quad®EV
Max. travel: 2,850 mm
Fx max: 2,500 N
Fy max: 6,000 N
Fz max: 6,000 N



p. 254
PLS
Max. travel: 2.868 mm
Fx max: 3,050 N
Fy max: 2,550 N
Fz max: 2,550 N



p. 276
RK DuoLine S
Max. travel: 2,924 mm
Fx max: 3,400 N
Fy max: 5,000 N
Fz max: 6,000 N

performance class 2*

LAMBDA E-Zylinder
Max. travel: 600 mm
Fd max: 6.000 N
Fz max: 4.000 N
Vmax: 21 mm/s

LZ 60 E-cylinder
Max. travel: 597 mm
Fd max: 4,000 N
Fz max: 4,000 N
Vmax: 50 mm/s

Heavy duty cylinders

p. 314
LZ 80 E-cylinder
Max. travel: 1,005 mm
Fd max: 10,000 N
Fz max: 10,000 N
Vmax: 13 mm/s

p. 322
SLZ 63 TR FL/PL E-Zylinder
Max. travel: 1.000 mm
Fd max: 15.000 N
Fz max: 15.000 N
Vmax: 58 mm/s

p. 342
SLZ 90 E-Zylinder
Max. travel: 2.000 mm
Fd max: 25.000 N
Fz max: 25.000 N
Vmax: 77 mm/s

lifting columns

RK Powerlift
Max. travel: 500 mm
Fd max: 3.000 N
Fz max: 1.500 N
Vmax: 50 mm/s

Multi stage lifting columns*

Multilift II telescope
Max. travel: 650 mm
Fd max: 3.000 N
Fz max: 2.000 N
Vmax: 16 mm/s

RK Powerlift telescope
Max. travel: 650 mm
Fd max: 1.600 N
Fz max: 800 N
Vmax: 30 mm/s

Alpha Colonne
Max. travel: 600 mm
Fd max: 3.000 N
Fz max: 3.000 N
Vmax: 18 mm/s

LAMBDA Colonne
Max. travel: 600 mm
Fd max: 4.500 N Fz max: 4.500 N Vmax: 20 mm/s

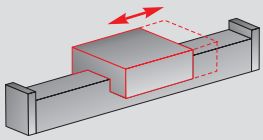
*For further details,please refer to the catalog "Linear Technology **Lifting columns and electric cylinders**"

Selection aid

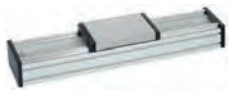
Place-Tec

Loading and unloading, palletising, pick & place

Rodless style
(up to 6 m travel)
(D-Line 50 m travel)



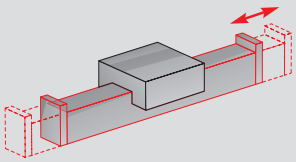
Guide

Roller guide	Ball rall guide	
		
p. 370 **RK MonoLine** Max. travel: 5.780 mm Fy max: 4.367 N Fz max: 2.509 N v max: 10 m/s a max: 20 m/s²	p. 394 **MultiLine R** Max. travel: 5.620 mm Fy max: 8.200 N Fz max: 12.000 N v max: 5 m/s a max: 50 m/s²	p. 416 **RK DuoLine R** Max. travel: 7.692 mm Fy max: 5.100 N Fz max: 8.900 N v max: 5 m/s a max: 50 m/s²

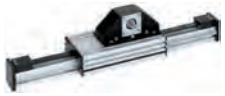
Drive + Guide
(linear actuator)

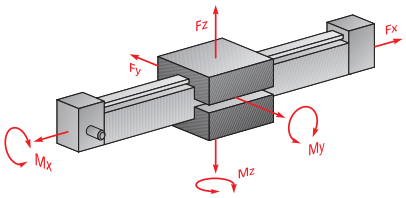
Roller guide actuators	Ball rall actuators	
p. 372 **RK MonoLine** Max. travel: 5.780 mm Fx max: 4.800 N Fy max: 9.400 N Fz max: 5.200 N v max: 10 m/s a max: 20 m/s² Repeatability ±0,05 mm	p. 394 **MultiLine** Max. travel: 5.620 mm Fx max: 4.700 N Fy max: 8.200 N Fz max: 12.000 N v max: 5 m/s a max: 50 m/s² Repeatabilityt ±0,05 mm	p. 410 **RK DuoLine Z** Max. travel: 9.010 mm Fx max: 6.000 N Fy max: 5.100 N Fz max: 8.900 N v max: 5 m/s a max: 50 m/s² Repeatability ±0,05 mm

Rodstyle
(up to 30m travel)



Drive + Guide
(linear actuator)

Roller guide actustors		
		
p. 374 **RK MonoLine MT** Max. travel: 5614 mm Fx max: 1.500 N Fy max: 4.367 N Fz max: 2.509 N v max: 5 m/s / a max: 15 m/s² Repeatability ±0,05 mm	p. 454 **SQ MT** Max. travel: 17.446 mm Fx max: 2.810 N Fy max: 2.550 N Fz max: 2.550 N v max: 10 m/s / a max: 20 m/s² Repeatability ±0,05 mm	p. 468 **SQ ZST** Hub max: 29.530 mm Fx max: 1.132 N Fy max: 2.550 N Fz max: 2.550 N v max: 5 m/s / a max: 20 m/s² Repeatability ±0,05 mm



Heavy duty actuators*

D-Line (on request)
Max. travel: 50.000 mm
Fx max: 4.700 N
Fy max: 10.000 N
Fz max: 10.000 N
v max: 5 m/s
a max: 50 m/s²
Repeatability ±0,1 mm

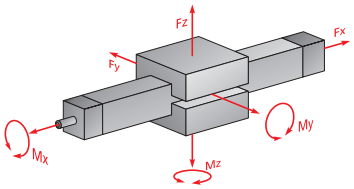
Application example:

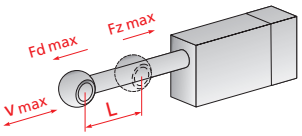
*For further details, please refer to the catalog **"Heavy duty linear units D-Line"**

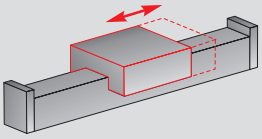
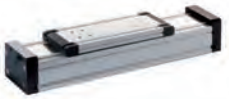
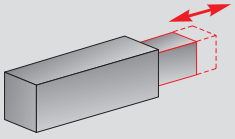
Selection aid

Control-Tec

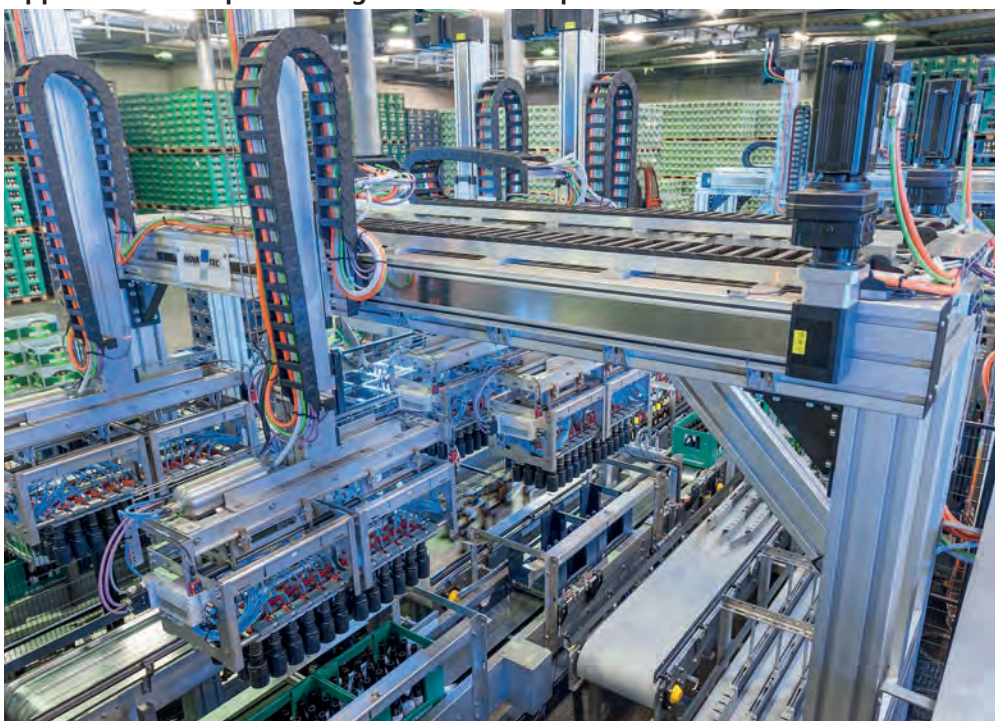
Numerically controlled positioning applications





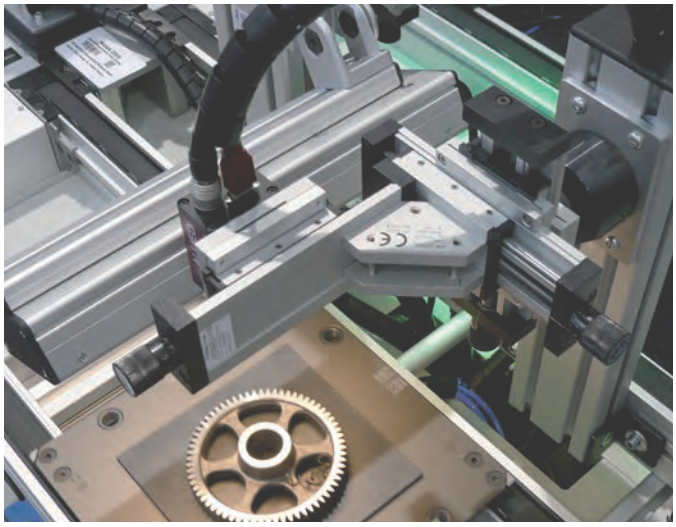
Rodless style (up to 4.4 m travel) 	**Guide**	**Ball rail guide**  p. 504 **RK DuoLine R** Max. travel: 7.692 mm Fy max: 5.100 N Fz max: 8.900 N v max: 5 m/s a max: 50 m/s²	
	Drive + Guide (linear actuator)	**ball rail actuators** p. 498 **DuoLine S** Max. travel: 4.440 mm Fx max: 8.000 N / Fy max: 5.100 N Fz max: 8.900 N Mx max: 500 Nm / My max: 1.200 N Mz max: 1.150 Nm v max: 2,5 m/s / a max: 20 m/s² Positioning accuracy ± 0,05 mm	**ball bushing guide shafts actuators** p. 480 **EP(X)-II KG** Max. travel: 2.520 mm Fx max: 1.200 N / Fy max: 2.400 N Fz max: 2.400 N Mx max: 160 Nm / My max: 250 Nm Mz max: 280 Nm v max: 0,24 m/s / a max: 10 m/s² Positioning accuracy ± 0,1 mm
Rodstyle (up to 2 m travel) 	**Drive** (E-cylinders)	**Heavy duty cylinders** p. 548 SLZ 63 KG FL/PL E-Zylinder Max. travel: 1.000 mm Fd max: 10.000 N Fz max: 10.000 N v max: 1.250 mm/s Mechanical Positioning accuracy ± 0,08 mm	p. 570 **SLZ 90 E-Zylinder** Max. travel: 1.900 mm Fd max: 25.000 N Fz max: 25.000 N v max: 933 mm/s Mechanical Positioning accuracy ± 0,142 mm

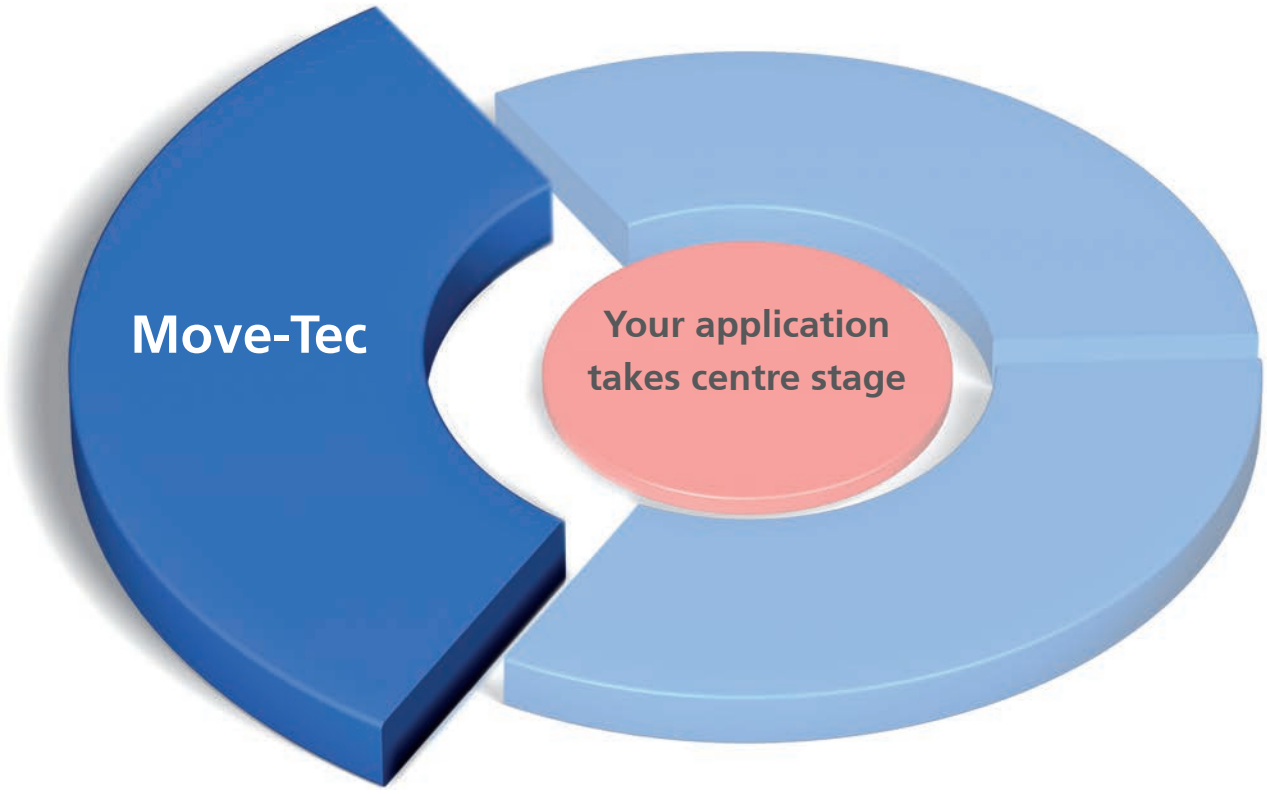
Application example: sorting machine of empties



Detailangaben, Auslegung, Zubehör, Motoren und Steuerungen entnehmen Sie bitte dem Hauptkatalog **„LINEAR-TECHNIK Schwerlastlineareiheiten D-Line"**

Move-Tec





Move-Tec features:

- Manual or electric drive
- Occasional to multiple adjustments daily
- Low duty cycle
- Low speed
- Medium to high stability

Width, length and height adjustment

Rodless style..... Page 28 - 311

Rodstyle:

Drive (elec. cylinder) ..... Page 24 - 26

Drive +
Guide (lifting column)..... Page 26 - 27

Move-Tec overview

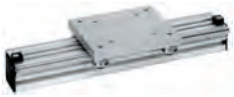
Rodless style | Drive + Guide

The data refers to standard sizes

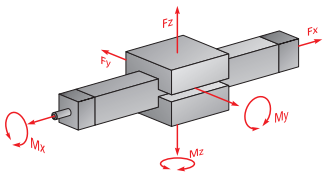
Single tube actuators

Features	RK LightUnit from page 36	E / E-II / E-II-stainless from page 52
Size	30	18, 30, 40, 50, 60, 80
Max. travel	920 mm	890-2740 mm
Fx max.	300 N	400-4500 N
Fy max.	550 N	90-5500 N
Fz max.	1210 N	60-5650 N
Mx max.	2.5 Nm	1.5-70 Nm
My max.	5.5 Nm	4-170 Nm
Mz max.	5.5 Nm	4-170 Nm
Screw, right or lefthand thread	•	•
Screw, right and lefthand thread	•	•
Screw, split		•
Guide (without drive)		
Features	● The “light option” for simple hand adjustments	● Flexible all-rounder – a simply unbeatable price/performance ratio

Profile actuators/guides



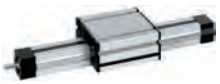
Features	PLM from page 168	RK Compact from page 196	SQL from page 212
Size	20, 40 x 20	30, 50, 80, 120	40, 60, 80, 120, 160
Max. travel	855 mm	130-400 mm	5750 mm
Fx max.	125 N	50-215 N	–
Fy max.	160-200 N	160-1150 N	1500-2500 N
Fz max.	180-220 N	160-1150 N	1000-1500 N
Mx max.	3-4 Nm	3-32 Nm	50-134 Nm
My max.	10-14 Nm	3-59 Nm	70-121 Nm
Mz max.	10-14 Nm	3-59 Nm	140-243 Nm
Screw, right or lefthand thread	•	•	
Screw, right and lefthand thread	•	•	
Screw, split	•		
Guide (without drive)	•	•	•
Features	● The small range for positioning small loads	● Flat short-stroke linear actuator for hand adjustment – with excellent price-performance ratio	● Low-cost guide for medium to heavy loads



RK ROSE+KRIEGER

Twin tube actuators/guides

RE from page 102	EP(X) from page 110	EP(X)-II from page 136
30, 40	18, 30, 40, 50, 60, 80	30, 40
3000 mm	320-2610 mm	1398-2820 mm
–	400-4500 N	800-1000 N
330-600 N	200-14000 N	1000-6000 N
1600-2400 N	100-9100 N	550-2200 N
65-155 Nm	20-650 Nm	60-160 Nm
65-155 Nm	30-780 Nm	60-190 Nm
20-65 Nm	35-1100 Nm	75-240 Nm
	•	•
	•	•
	•	•
•		
● Robust guide for simple adjustment of medium loads	● The robust twin tube unit – compensates for high bending moments during manual and motor-driven adjustments	● Torsion-free, resilient yet smooth-running at the same time. The robust twin-tube all-rounder with long service life



quad® from page 220	PLS from page 254	RK DuoLine S from page 276
30, 40, 50, 60, 80	30, 40, 50, 60, 80	60, 80, 120 x 80
1375-4157 mm	830-3000 mm	2476-2924 mm
800-2500 N	340-3050 N	1400-3400 N
600-6000 N	790-2550 N	700-5000 N
600-6000 N	790-2550 N	2500-6000 N
6-80 Nm	14-124 Nm	48-380 Nm
11-140 Nm	20-168 Nm	160-620 Nm
8-85 Nm	22-169 Nm	140-550 Nm
•	•	•
•	•	•
•		
•	•	•
● Compact and versatile linear actuator for motor-driven and manual adjustment of medium loads	● Motor-driven or manual adjustment of medium to heavy loads – easy for the PLS profile linear unit	● The all-rounder with encapsulated drive/guiding concept

Move-Tec overview

Order instruction:

- For detailed information, please look in our catalogue, “Linear Technology Lifting columns and electric cylinders”

All data refer to standard sizes

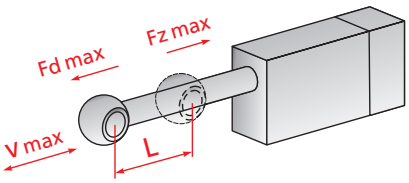
Cylinders performance class 1

Features	M9	010
Max. travel	50 mm	40–100 mm
Max. push force	300 N	500 N
Max. pull force	300 N	500 N
Max. travel speed	14 mm/s	22 mm/s
Protection class	IP 30	IP 40 | IP 54
Integrated limit switch	●	+ (adjustable)
Fitted with signal contact optional	●	●
Potentiometer optional	●	●
Features	● Lightweight ● Bellows	● Range of lifting speeds

All data refer to standard sizes

Cylinders performance class 2

Features	015	LAMBDA	LZ 60 P/S
Max. travel	300 mm	600 mm	600 mm
Max. push force	1000 N	6000 N	4000 N
Max. pull force	1000 N	4000 N	4000 N
Max. travel speed	100 mm/s	21 mm/s	50 mm/s
Protection class	IP54	IP 66	IP 54
Integrated limit switch	+ (adjustable)	●	●
Can be synchronised by means of control system		●	●
Fitted with signal contact optional	●	●	●
Integr. control			●
Potentiometer optional	●	●	
Features	● Rugged design ● Adjustable travel	● Clamping protection optional	● Various connections for industrial applications



L = Travel
F_d = Push force
F_z = Pull force
V = Travel speed

Heavy duty cylinders

All data refer to standard sizes

Features	LZ 80 page 314	LZ 80 TR PL page 292	SLZ 90 page 342
Max. travel	1005 mm	1000 mm	2000 mm
Max. push force	10000 N	15000 N	25000 N
Max. pull force	10000 N	15000 N	25000 N
Max. travel speed	13 mm/s	58 mm/s	77 mm/s
Protection class	IP 54 | IP 66	IP 54 | IP 65	IP 54
Integrated limit switch	●		
Can be synchronised by means of control system		motordependent	motordependent
Fitted with signal contact	●		
Features	● Industrial cylinder with DC- Motor	● Industrial cylinder with adaptable motor	

Move-Tec overview

Order instruction:

- For detailed information, please look in our catalogue, “Linear Technology Lifting columns and electric cylinders”

All data refer to standard sizes

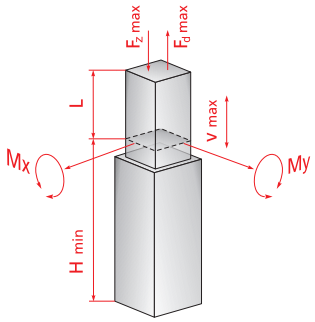
Two-stage lifting columns (up to 500 mm travel)

Features	RK Multilift	RK Multilift II	RK Slimlift	RK Slimlift EM
Max. travel	498 mm	497 mm	460 mm	500 mm
Max. push force	3000 N	3000 N	4000 N	1000 N
Max. pull force	1000 N	3000 N	2000 N	1000 N
Mx dyn. max	150 Nm	200 Nm	100 Nm	75 Nm
My dyn. max	100 Nm	130 Nm	100 Nm	75 Nm
Mx stat. max	300 Nm	300 Nm	200 Nm	150 Nm
My stat. max	200 Nm	200 Nm	200 Nm	150 Nm
Max. travel speed	8/16 mm/s	8/16 mm/s	32 mm/s	25 mm/s
Protection class	IP 20	IP 30	IP 30	IP 30
Integrated limit switch	●	●	●	●
Can be synchronised by means of control system	●	●	●	●
Integr. control				
Features	● Tested to EN 60601-1	● Tested to IEC 60601-1	● Rod-shaped design and extremely quiet operation	● Rod-shaped design and extremely quiet operation ● Optimum stroke/installation height ratio

All data refer to standard sizes

Two-stage lifting columns (up to 500 mm travel)

Features	RK Powerlift Z	RK Powerlift M
Max. travel	490 mm	500 mm
Max. push force	2000 N	3000 N
Max. pull force		1500 N
Mx dyn. max	125 N	200 N
My dyn. max	125 N	200 N
Mx stat. max	250 N	400 N
My stat. max	250 N	400 N
Max. travel speed	50 mm/s	13 mm/s
Protection class	IP 30	IP 30
Integrated limit switch	●	●
Can be synchronised by means of control system	●	●
Integr. control	●	●
Features	● High lifting speed	● Tested to EN 60601-1



L = Travel
H = Installation dimension
F_d = Push force
F_z = Pull force
V = Travel speed

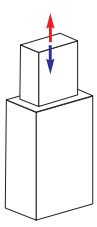
Multi-stage lifting columns more than 500 mm travel

All data refer to standard sizes

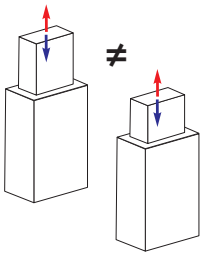
Features	RK Powerlift telescope	RK Multilift telescope	Alpha Colonne	LAMBDA Colonne
Max. travel	650 mm	650 mm	600 mm	600 mm
Max. push force	1600 N	3000 N	3000 N	4500 N
Max. pull force	800 N	2000 N	3000 N	4500 N
Mx dyn. max	125 Nm	200 Nm	200 Nm	250 Nm
My dyn. max	125 Nm	100 Nm	200 Nm	250 Nm
Mx stat. max	200 Nm	300 Nm	200 Nm	250 Nm
My stat. max	200 Nm	150 Nm	200 Nm	250 Nm
Max. travel speed	15-30 mm/s	8-16 mm/s	8-18 mm/s	8-20 mm/s
Protection class	IP 30	IP 30	IP 30	IP 54 | IP 40
Integrated limit switch	●	●	●	●
Can be synchronised by means of control system	●	●	●	●
Integr. control	●		●	
Features	● Optimal stro-ke/installation height ratio	● Suitable for push and pull force	● Suitable for push and pull force	● Guides set to minimum back-lash

Preferred field of application

Mono columns
(single or joint movementl)

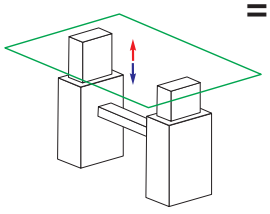


Individual operation / Mono operation

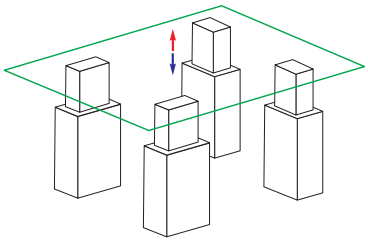


Parallel operation

Synchronised columns (2-32 pc.)
(can be moved synchronously)



Synchronised operation



Multiple column system

RK LightUnit, RK LightUnit-G / telescope

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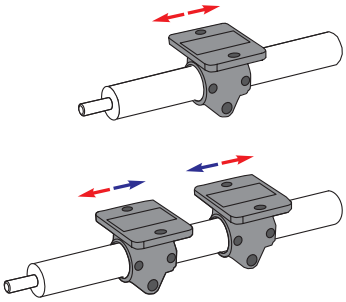
(Dimensions, order numbers)



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RK LightUnit Right-hand thread ..... Page 38

Right or lefthand thread ..... Page 39

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(Fixing)

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Clamping lever ..... Page 48

Drive

Handwheel ..... Page 49

Position determination

Positioning indicator ..... Page 49

Technical data

General information/operating conditions

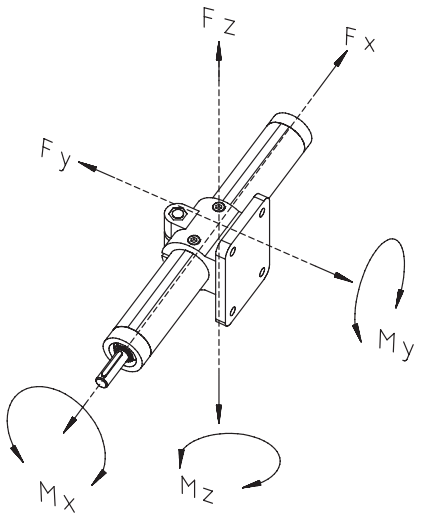
Design	Actuator with aluminium ACME screw in a slotted aluminium profile
Guide	Slide guide
Installation position	Any position
Lead accuracy	± 0.3 mm/300 mm travel
Screw lead	3 mm
Self-locking	Yes
No-load torque	0.35 Nm
Ambient temperature	0°C to +60°C

Load data*

F Force [N]

M Moment [Nm]

I Geometric moment of inertia [cm^4]



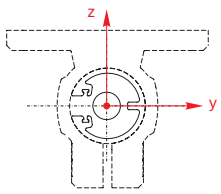
* with reference to carriage (static, resting on end elements)

Type	Fx	Fy				Fz				Mx	My	Mz
Total length [mm]		300	500	800	1000	300	500	800	1000			
Deflection [mm]		1,0	2,5	4,0	5,0	1,0	2,5	4,0	5,0			
Force	300	700	550	270	140	1390	1210	600	450	2,5	5,5	5,5

Geometric moment of inertia

[cm^4]

Type	Iy	Iz
RK LightUnit	1,90	1,88



RK LightUnit-G / telescope

RK ROSE+KRIEGER

Attention!
The data in the chart do not ensure a guarantee of quality or a warrant characteristic of our products. These are nonbinding standard values which might be not reached in individual cases due to the temperature or surface finish of the clamping profile.

Load data

F Force [N]

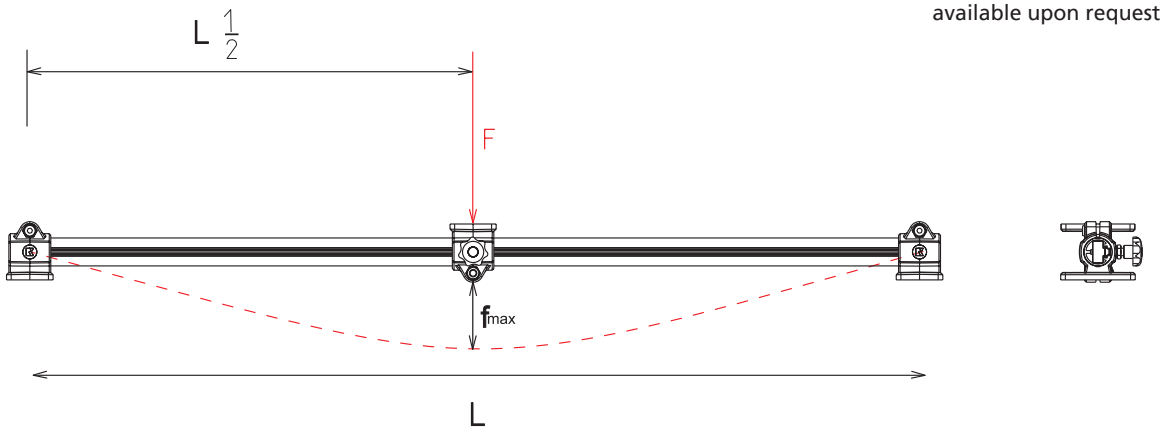
f_{max} Deflection [mm]

L Total length [mm]

Tightening torque:
Cap screw M8: 8,0 Nm
Cap screw M10: 50,0 Nm

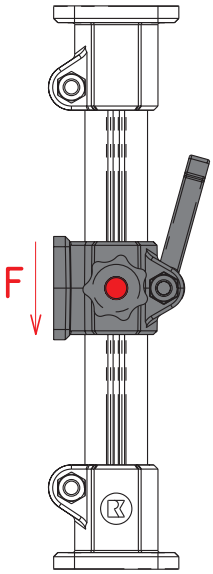
Positioning element G
Tightening torque 1 Nm

Material data sheet
available upon request

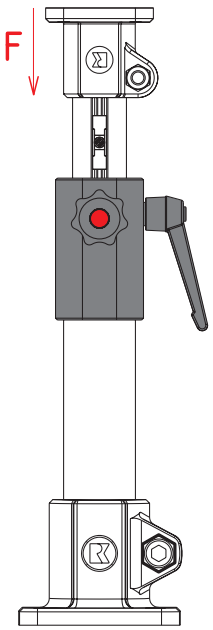


Type		
Total length [mm]	1000	1500
Deflection [mm]	5,0	5,0
Force [N]	305	108

RK LightUnit-G



RK LightUnit-G telescope



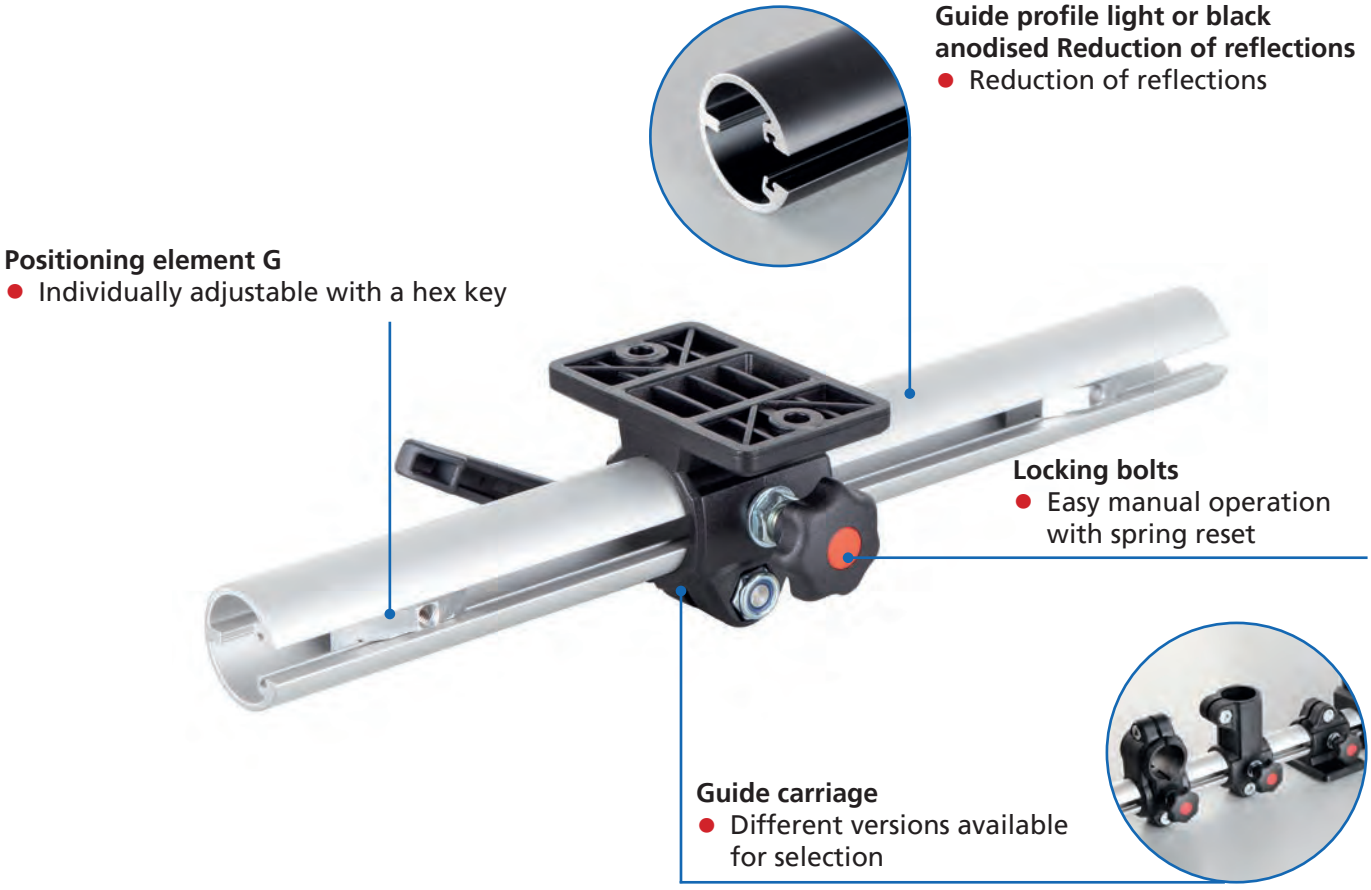
Type	
Adhesion force [KN]	1,0 *

* Fastening screw on the guide carriage tightened with tightening torque

Holding and positioning

The RK LightUnit profile with one-sided slot makes for easy adjustment of the carriage with the individually adjustable positioning element G, without the need for any machining. If the carriage is moved over the positioning element G, it is secured in the desired position with the locking bolt. This connection technology provides a high degree of flexibility as (any number of) securing points do not need to be defined in advance (e.g. by drilling). So the limit positions can be adjusted at any time, and different carriages can be freely combined in order to achieve the desired application.

Video
RK LightUnit-G /
telescope
How it works



Product benefits:

Easy – Installation using just a single tool

Flexible – Individual adjustment of the positioning elements

Versatile – Free selection of carriages for many different applications

Compatible – Wide range of connection versions with RK tube connectors

Fast delivery – All components available from stock

Overview individual components

Fixing elements

GF-KU
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FS-KU
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W-KU
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K-KU
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FK-KU
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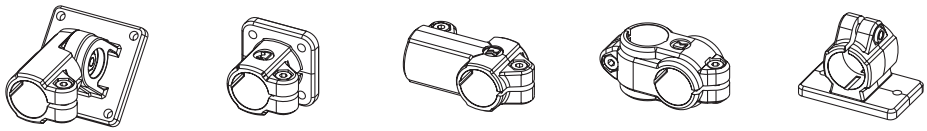

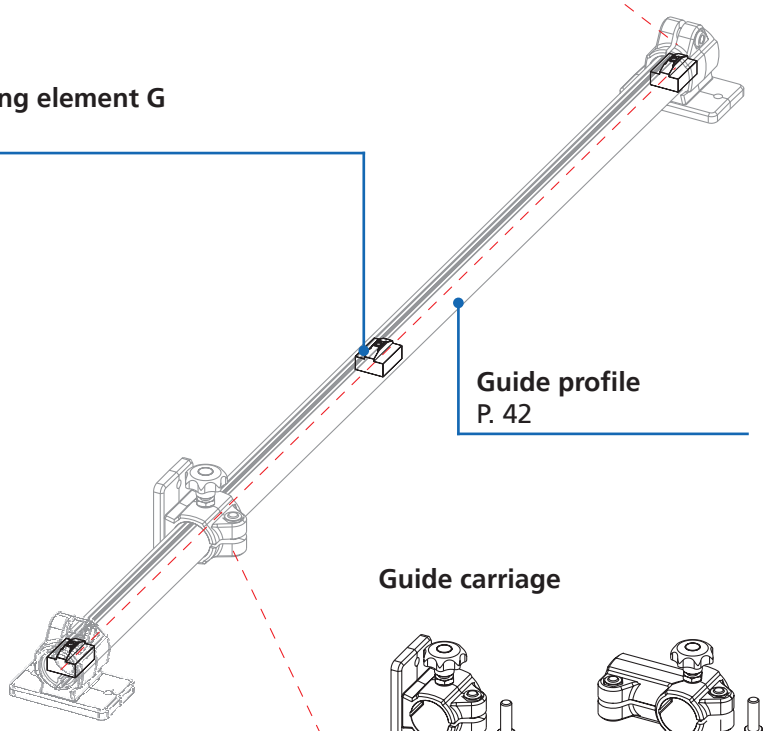

Positioning element G
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Guide profile
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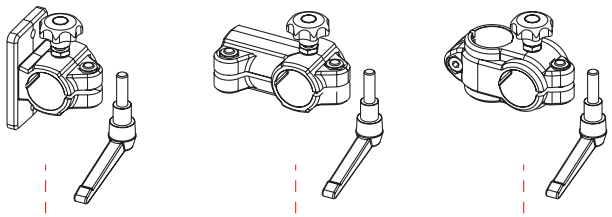
Guide carriage



FK-KU-G
P. 43

W-KU-G
P. 43

K-KU-G
P. 43

Holding, positioning and telescoping

The RK LightUnit-G telescope features a special telescopic unit which allows easy and space-saving integration and adjustment. Unlike the RK LightUnit-G, the telescopic version has a guide tube that can be positioned manually. Positioning elements can also be used in the guide tube, enabling any number of latching positions to be defined.

Product benefits:

Easy – Installation using just a single tool

Flexible – Individual adjustment of the positioning elements

Versatile – Free selection of carriages for many different applications

Compatible – Wide range of connection versions with RK tube connectors

Fast delivery – All components available from stock

Overview individual components

Fixing elements Ø 40 mm Aluminium

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W
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GF
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FS
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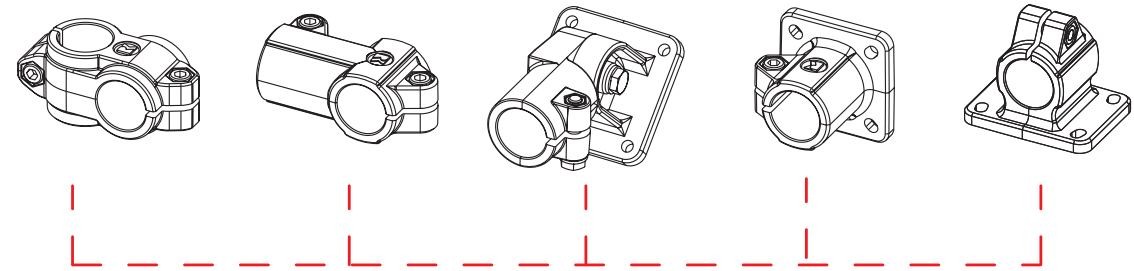
FK
P. 46



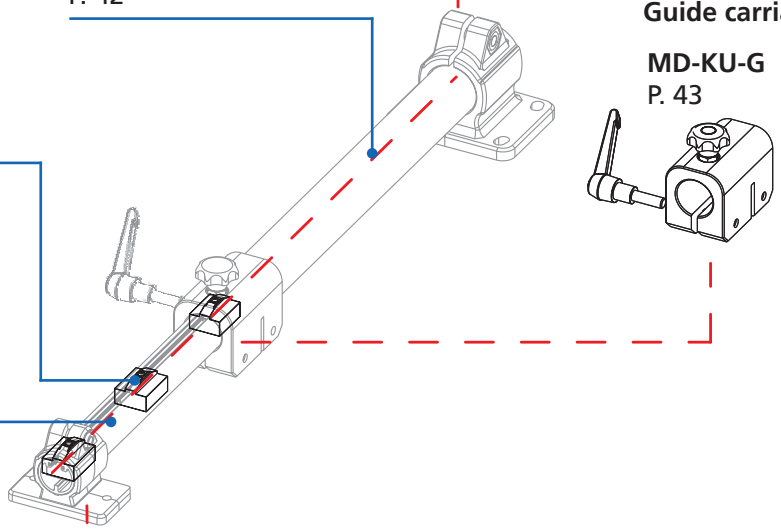
Aluminum tube
P. 42

Guide carriage

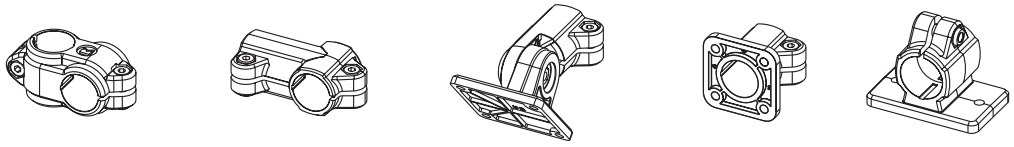
MD-KU-G
P. 43

Positioning element G
P. 42

Guide profile
P. 42



Fixing elements Ø 30 mm plastic tube



K-KU
P. 46

W-KU
P. 47

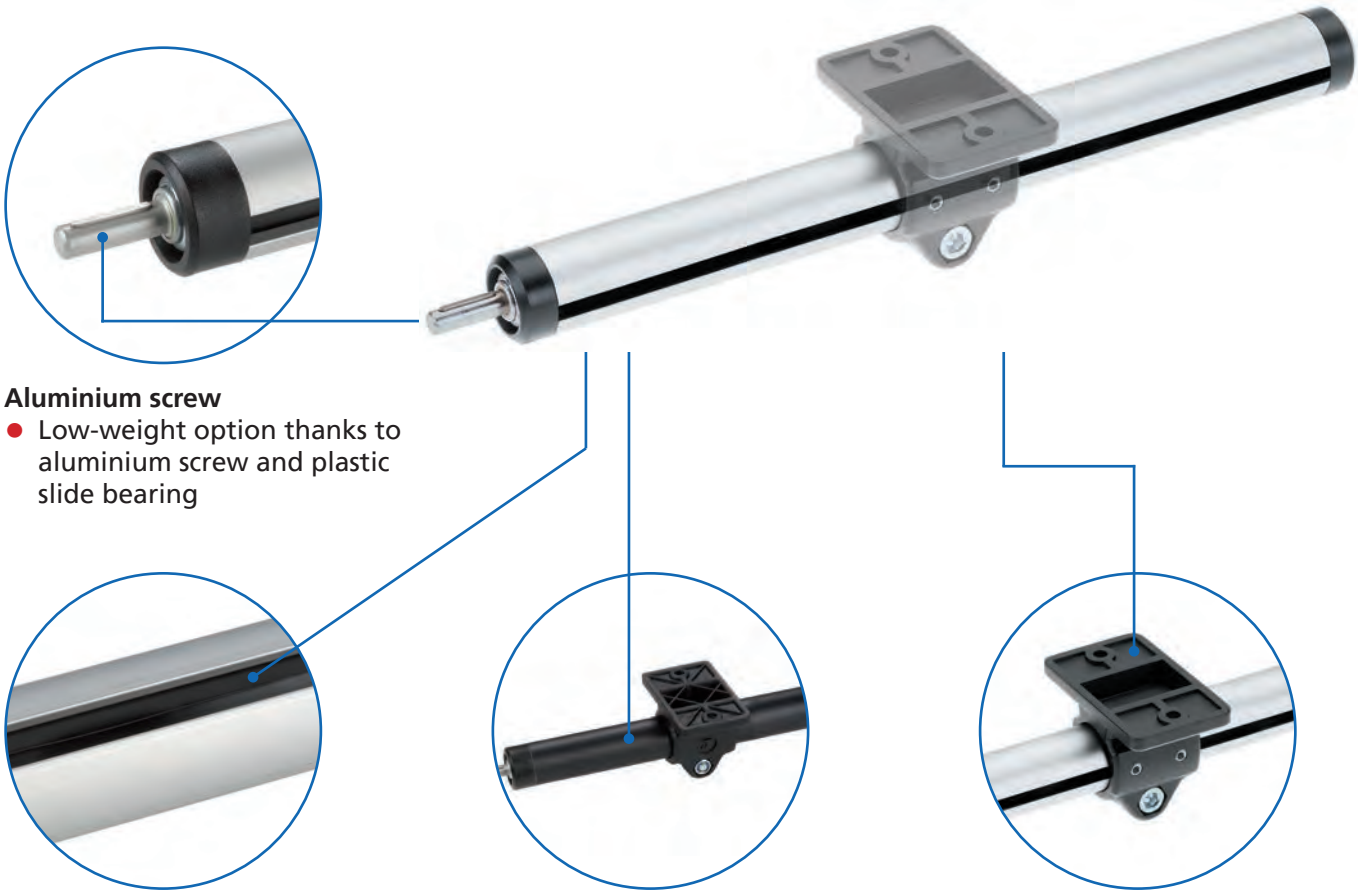
GF-KU
P. 47

FS-KU
P. 47

FK-KU
P. 46

Single tube actuator RK LightUnit

The “light option” for simple manual adjustments



Aluminium screw
- Low-weight option thanks to aluminium screw and plastic slide bearing

Screw cover
- An elastic plastic sealing lip protects the screw

Choice of guiding tube clear or black anodised
- Reduced reflection (e.g. for operation in areas of photography)

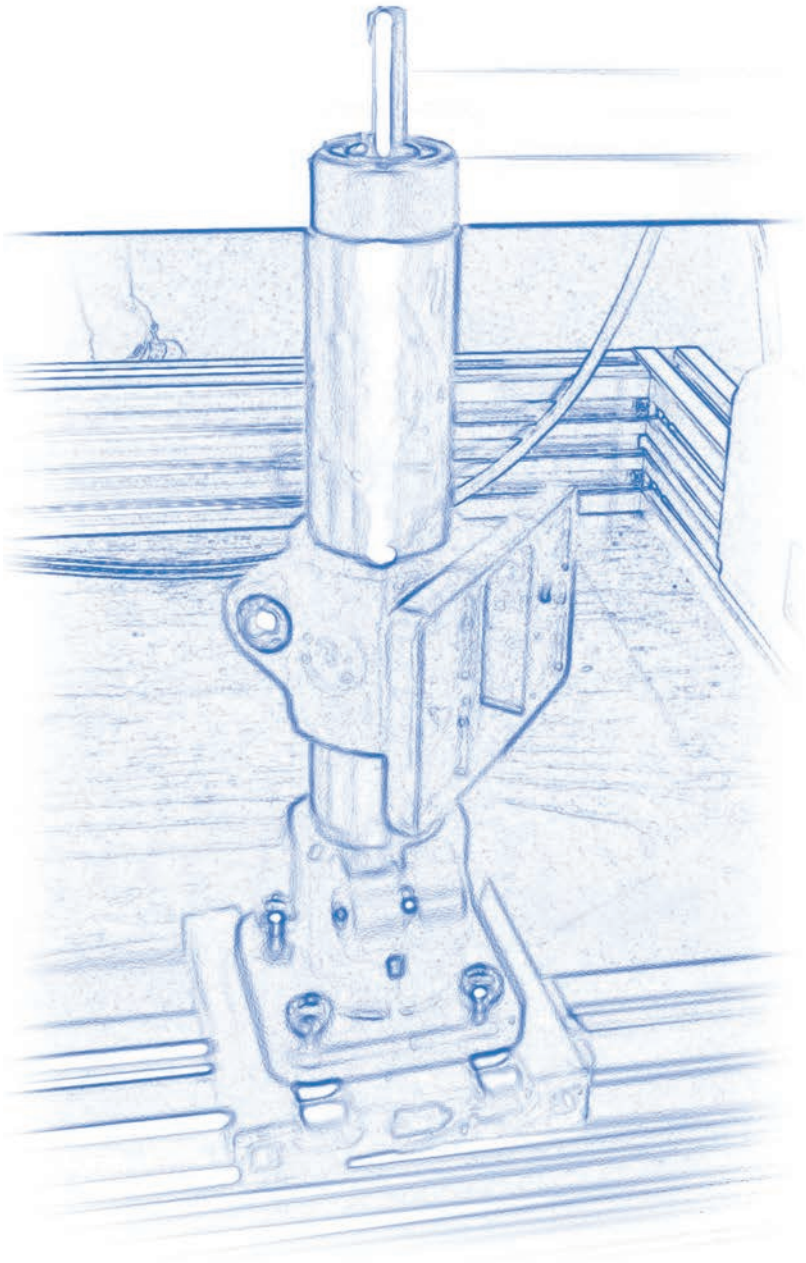
Carriage/fixing elements
- Wide range of models facilitates connection to your set-up

Standard lengths

48 h
ready for delivery

Features:
- Unit for “light” moving applications
- Low-cost manual adjustment
- For applications where the focus is on “weight reduction”
- Suitable for use in areas susceptible to corrosion

Options:
- Additional non driven carriage as torque support



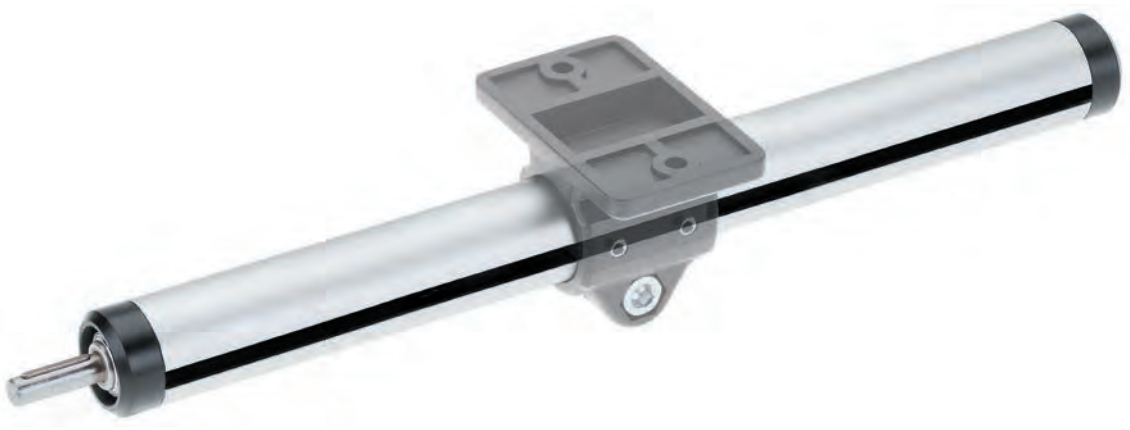
Versions

Order instructions:

- Choice of carriage - this must be ordered separately
- Standard lengths in stock! Take advantage of our fast delivery times.

Version

- Standard lengths
- Righthand thread



Standard lengths

48 h
ready for delivery

Standard lengths

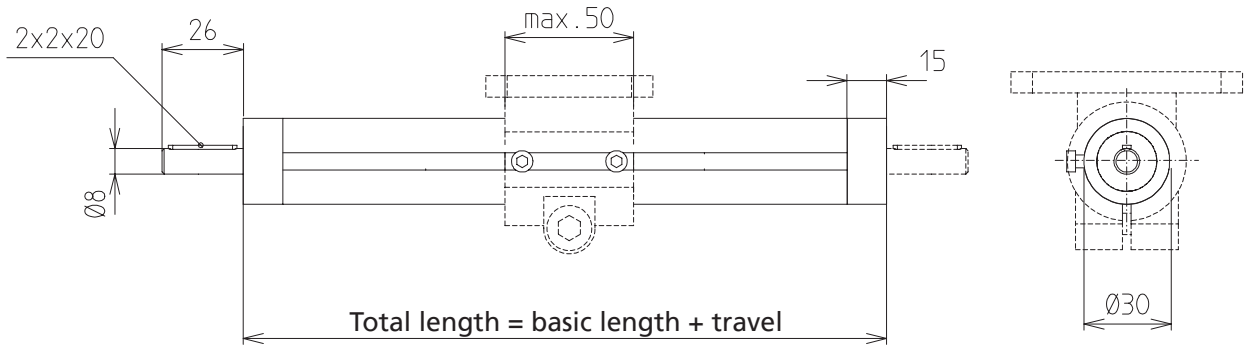
- Guiding tube clear anodised: Total length 300, 500, 800 or 1000 mm
- Guiding tube black anodised: Total length 300 mm
- Righthand thread screw with a drive shaft

[mm]

Code No.	Type	Screw	Travel	Total length	Mass [kg]
TFA 3000 T_0300	30	14 x 3	220	300	0.31
TFA 3000 TA0500	30	14 x 3	420	500	0.51
TFA 3000 TA0800	30	14 x 3	720	800	0.81
TFA 3000 TA1000	30	14 x 3	920	1000	1.01

Guiding tube
A = clear anodised
C = black anodised

Version
- Variable lengths
- Right or lefthand thread



Variable lengths

[mm]

Code No.	Type	Screw	Basic length	Max. travel	Mass [kg]	
					Basic length	per 100 mm travel
TF_ 3000 _ _	30	14 x 3	80	920	0.097	0.099

_ _ _ _ Total length = basic length + travel [mm]

Guiding tube
A = clear anodised
C = black anodised

Shafts:
T = 1 shaft
U = 2 shafts

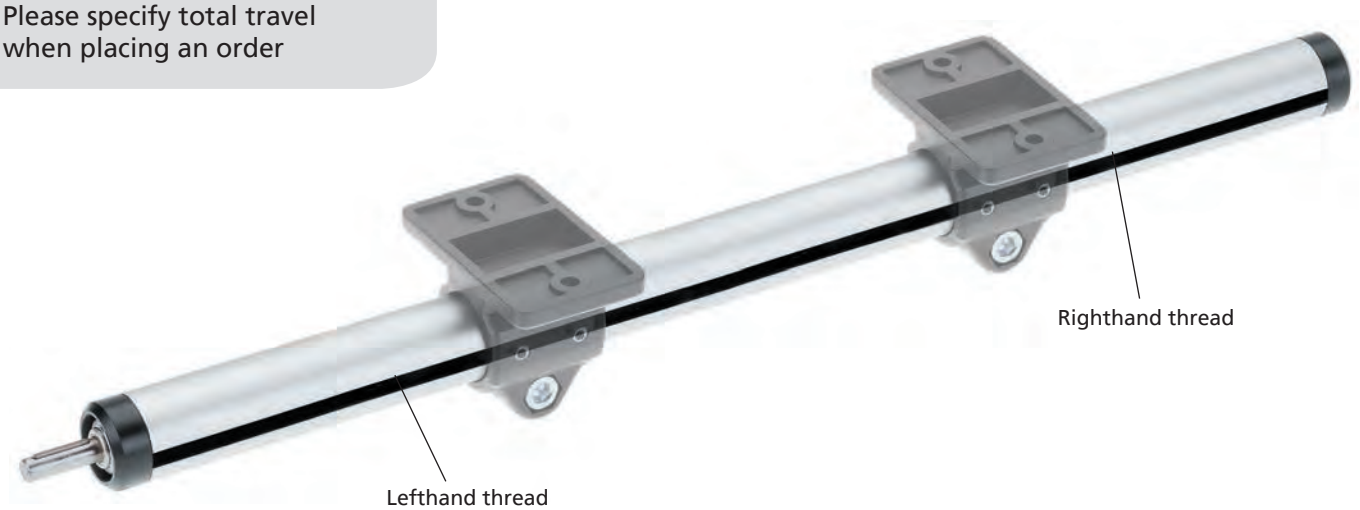
Screw:
A = righthand thread
H = lefthand thread

Versions

Order instructions:

- Choice of carriage - this must be ordered separately
- Please specify total travel when placing an order

Version ● Right and lefthand thread



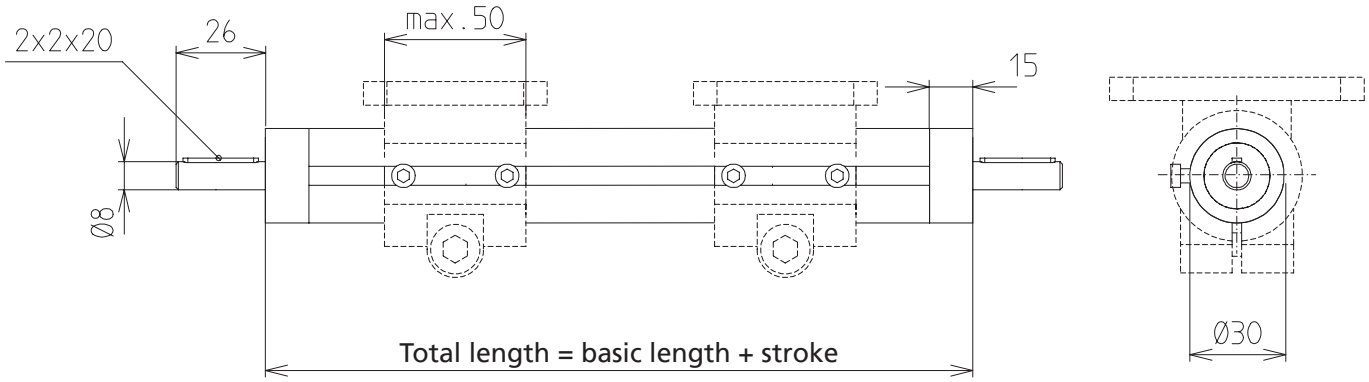
[mm]

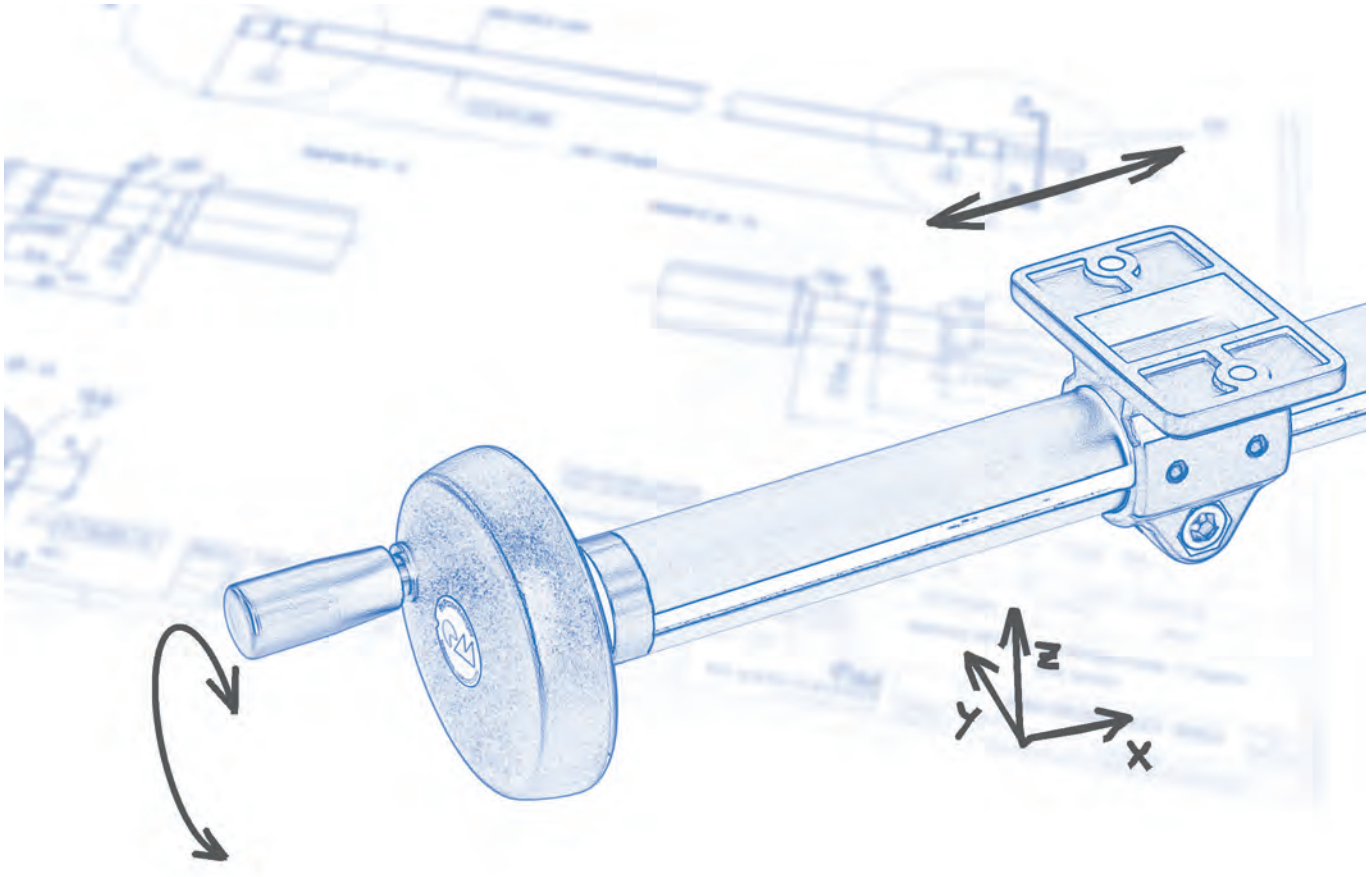
Code No.	Type	Screw	Basic length	Max. travel	Mass [kg]	
					Basic length	per 100 mm travel
TFC 3000 _ _	30	14 x 3	130	870	0.113	0.099

_ _ _ _ Total length = basic length + total travel [mm]

Guiding tube
A = clear anodised
C = black anodised

Screw:
S = 1 shaft on the lefthand thread side
T = 1 shaft on the righthand thread side
U = 2 shafts

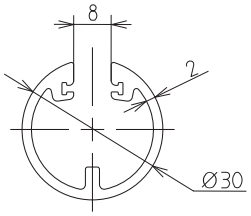

2x2x20
26
max. 50
15
Ø8
Total length = basic length + stroke
Ø30


Z
Y
X

Individual components

Guide profile

- Guide profile clear or black anodised



Standard lengths

[mm]

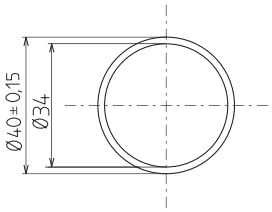
Code No.	Type	Standard length
8P030026116080	Guide profile 30 mm, Bar 6m, clear anodised	6000
8P030026126080	Guide profile 30 mm, Bar 6m, black anodised	6000
8P03002611_ _ _ _	Guide profile 30 mm, Cut, clear anodised	max. 1500
8P03002612_ _ _ _	Guide profile 30 mm, Cut, black anodised	max. 1500

required length [mm]

Order instructions

- Cut to size or standard lengths
- black anodized on request

Aluminum tube



[mm]

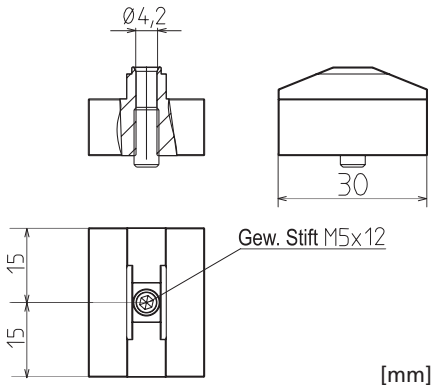
Code No.	Type	Total length
824030_ _ _ _ _	Aluminum tube 40x3 mm, Cut, clear anodised	max. 6000

required length [mm]

Version:
1 = natural AlMgSi0,5
2 = clear anodized AlMgSi0,5

Positioning element G

- also stabilises the profile cross-section



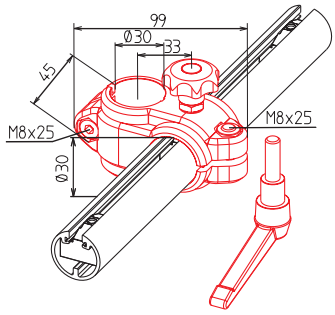
[mm]

Code No.	Lot sizes	Weight
9850004	3, 6, 9... pcs	24 g

Guide carriage

Guide carriage for RK LightUnit-G / telescope

K-KU-G



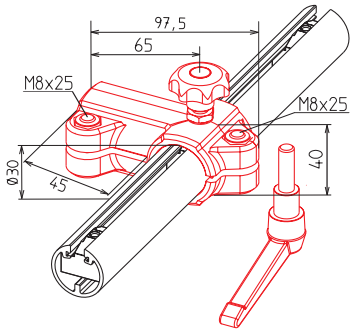
Material:
Reinforced polyamide, black;
Fastening material galvanized.

Scope of delivery:
Clamping lever unmounted
included in the scope of delivery.

[mm]

Code No.	Type	Lot sizes	Weight
K3001200CSR30	K-KU 30	1, 2, 3... pcs	130 g

W-KU-G



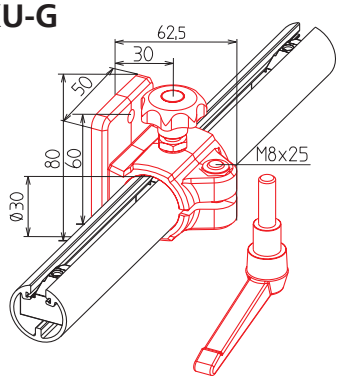
Material:
Reinforced polyamide, black;
Fastening material galvanized.

Scope of delivery:
Clamping lever unmounted
included in the scope of delivery.

[mm]

Code No.	Type	Lot sizes	Weight
K3007200CSR30	W-KU 30	1, 2, 3... pcs	129 g

FK-KU-G



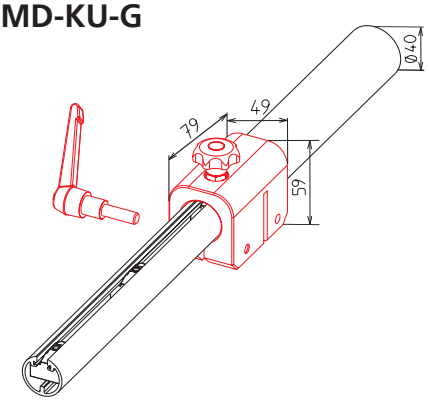
Material:
Reinforced polyamide, black;
Fastening material galvanized.

Scope of delivery:
Clamping lever unmounted
included in the scope of delivery.

[mm]

Code No.	Type	Lot sizes	Weight
K3009200CS	FK-KU 30	1, 2, 3... pcs	94 g

MD-KU-G



Material:
POM, black;
Fastening material galvanized.

Scope of delivery:
Clamping lever unmounted
included in the scope of delivery.

[mm]

Code No.	Type	Lot sizes	Weight
K3027200CSR40	MD-KU-G 40x30	1, 2, 3... pcs	226 g

Fixing elements

Order instructions:

- The fastening elements are fitted with screws as standard. These can be replaced with clamping levers if required.
- **A positioning element G is requi red for each fastening element in order to stabilise the guide profile.**

- A special reducing bush system allows different tube diameters to be connected
- The range of different versions makes for easy mounting

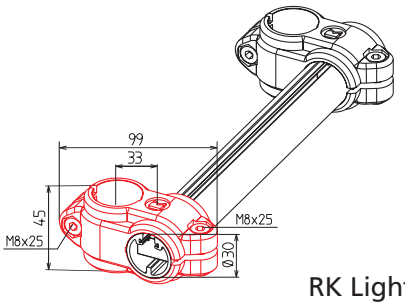
Material:
Sizes 30:
Reinforced polyamide, black; galvanized fastening material.

Sizes 40:
Cast aluminum

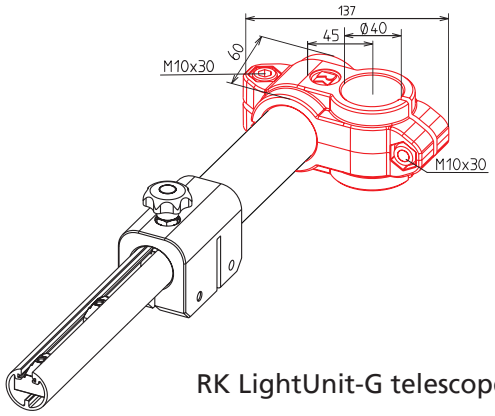
K-KU / K

[mm]

Code No.	Type	Weight	Lot sizes
K00030ACSR30R30	K-KU 30	132 g	5, 10, 15... pcs
104000000200	K 40	527 g	- - -



RK LightUnit-G

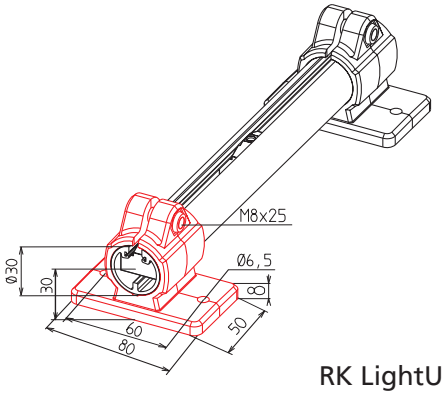


RK LightUnit-G telescope

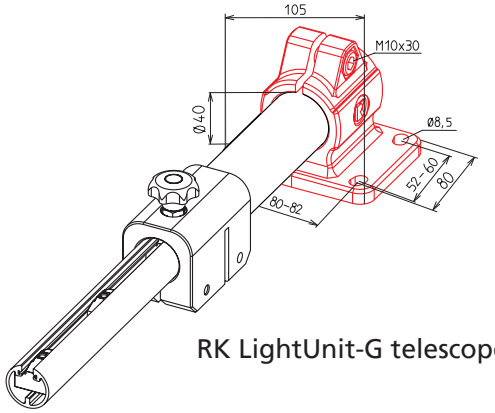
FK-KU / FK

[mm]

Code No.	Type	Weight	Lot sizes
K20030ACSR30	FK-KU 30	84 g	5, 10, 15... pcs
12400000020	FK 40	404 g	- - -



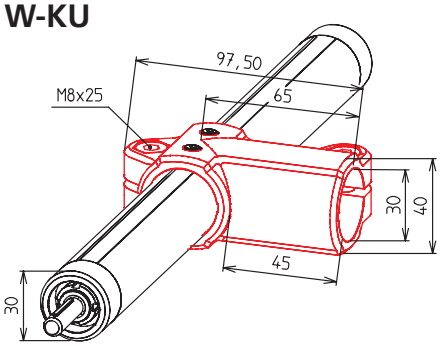
RK LightUnit-G



RK LightUnit-G telescope

W-KU

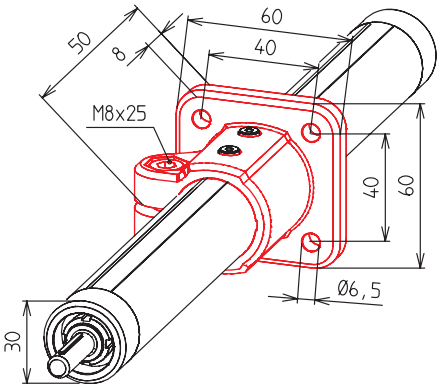
[mm]



Code No.	Type
13007200CSR30	W-KU 30

FS-KU

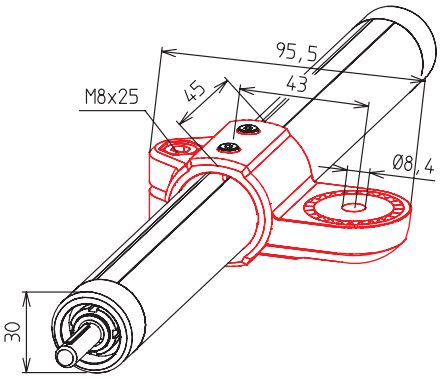
[mm]



Code No.	Type
13011200CS	FS-KU 30

LW-KU

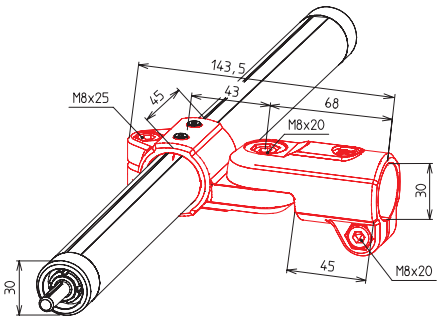
[mm]



Code No.	Type
13014200CS	LW-KU 30

GW-KU

[mm]



Code No.	Type
13016200CSR30	GW-KU 30

Fixing elements

Order instructions

- The carriages are fitted with screws as standard. These can be replaced with clamping levers if required. For clamping lever, please see page 48.
- Purchase only in lot sizes and a multiple of that, see product table below

- A special reducing sleeve system enables the connection of different pipe diameters
- Different design variants enable simple system connection

- Size 30 is compatible with both the RK LightUnit and the RK LightUnit-G

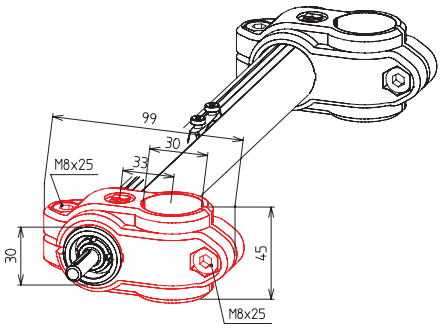
Material: Reinforced polyamide, black; fastenings zinc plated or stainless steel

Fixing elements

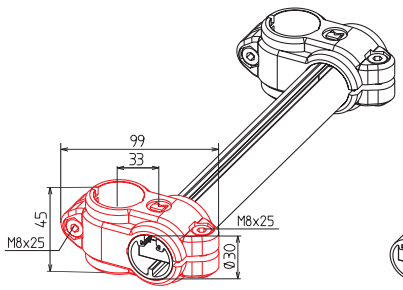
K-KU / K

[mm]

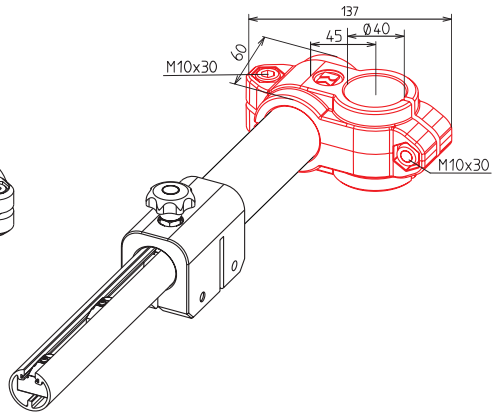
Code No.	Type	Weight	Order quantity graduation
K00030ACSR30R30	K-KU 30	132 g	5, 10, 15... Stück
104000000200	K 40	527 g	- - -



RK LightUnit



RK LightUnit-G

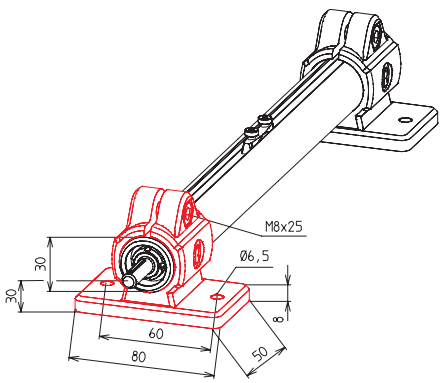


RK LightUnit-G telescope

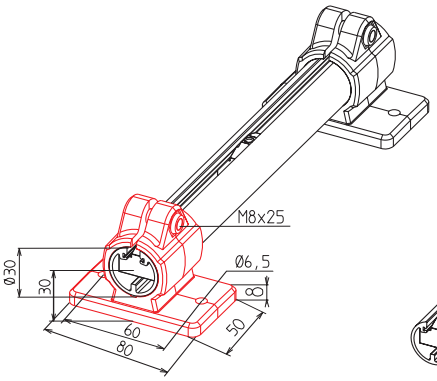
FK-KU / FK

[mm]

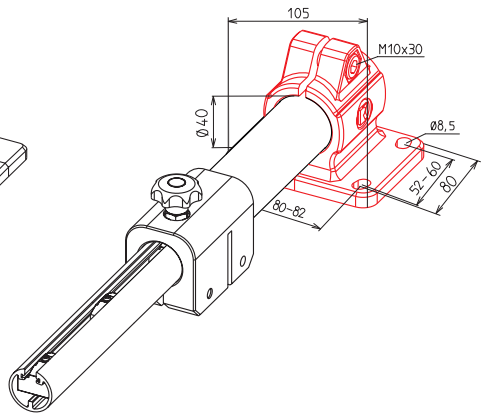
Code No.	Type	Weight	Order quantity graduation
K20030ACSR30	FK-KU 30	84 g	5, 10, 15... Stück
12400000020	FK 40	404 g	- - -



RK LightUnit



RK LightUnit-G

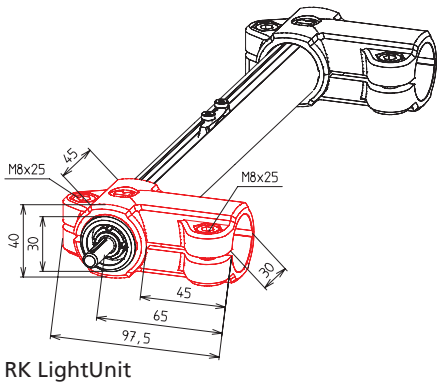


RK LightUnit-G telescope

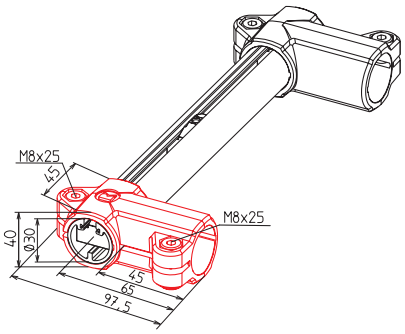
W-KU / W

[mm]

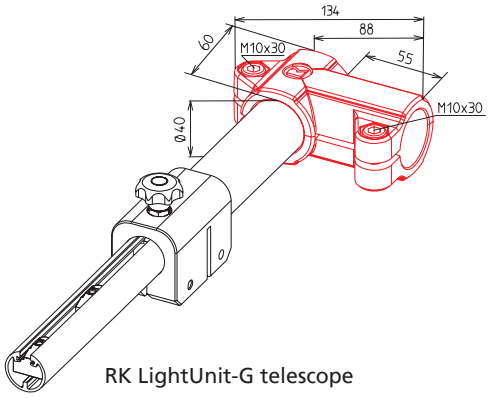
Code No.	Type	Weight	Order quantity graduation
K10030ACSR30R30	W-KU 30	115 g	5, 10, 15... Stück
114000000200	W 40	530 g	- - -



RK LightUnit



RK LightUnit-G

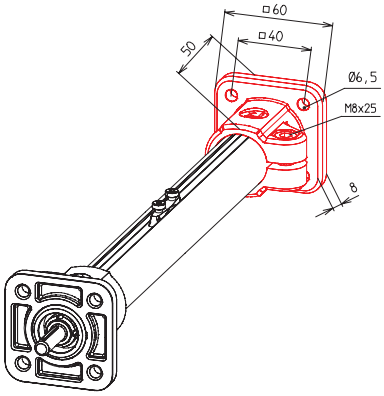


RK LightUnit-G telescope

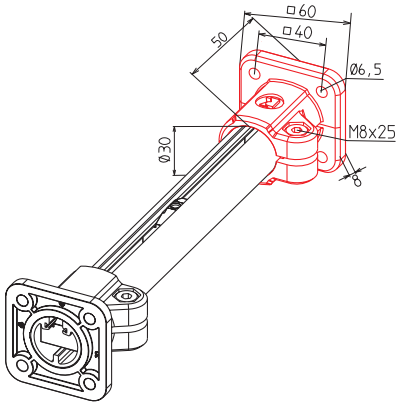
FS-KU / FS

[mm]

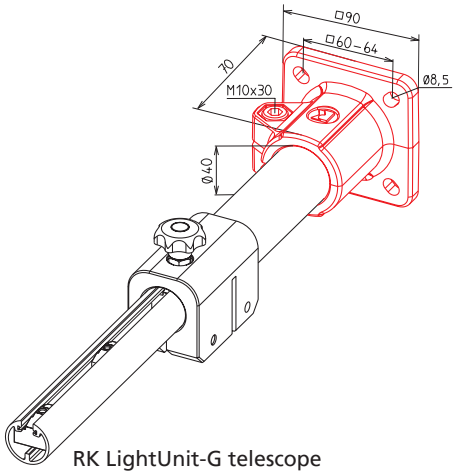
Code No.	Type	Weight	Order quantity graduation
K30030ACSR30	FS-KU 30	75 g	5, 10, 15... Stück
13400000020	FS 40	385 g	- - -



RK LightUnit



RK LightUnit-G

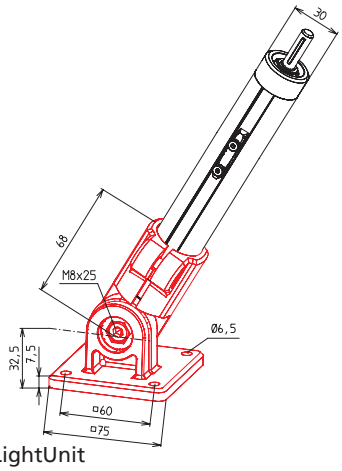


RK LightUnit-G telescope

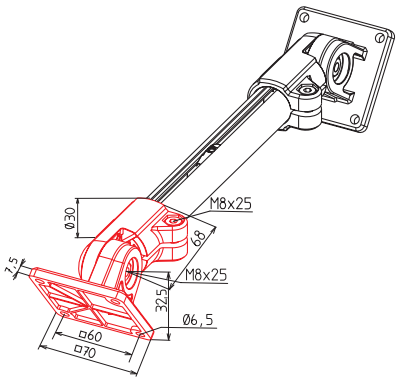
GF-KU

[mm]

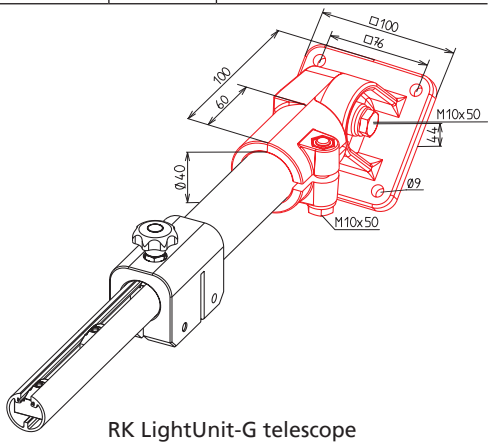
Code No.	Type	Weight	Order quantity graduation
K80230ACSR30	GF-KU 30	184 g	5, 10, 15... Stück
18400002020	GF 40	827 g	- - -



RK LightUnit



RK LightUnit-G



RK LightUnit-G telescope

Accessories

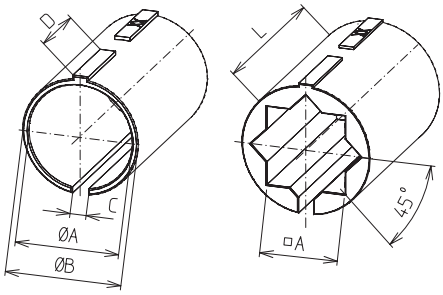
Order instructions:

- Order quantities are partly subject to fixed scaling according to table

Reducing bushes

- The clamping diameter can be changed for further connection by simply replacing the reducing bushes.

Material:
PA6.6 GF30

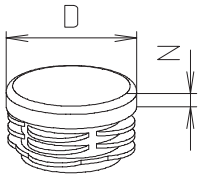


Version „R" Version „V"

[mm]

Code No.	Type	Version	Lot sizes	A+0,1	B	C	D	L
96204AC	30	R20	5, 10, 15... Stück	20,25	30	3,5	18,9	45
96206AC	30	R25	5, 10, 15... Stück	25,25	30	3,5	18,9	45
96208AC	30	V20	5, 10, 15... Stück	20,25	30	3,5	18,9	45

Round tube stopper



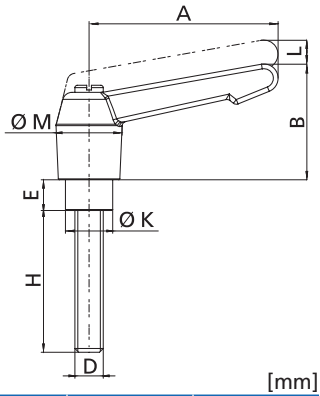
[mm]

Code No.	Type	Ø D	N	Weight	Lot sizes
Polyethylen schwarz					
9850005	30x2	30	5	1 g	2, 4, 6... pcs
90306	40x3	40	5	2 g	10, 20, 30... pcs

Clamping lever

- The listed clamping levers allow the plastic elements to be retrofitted by simply replacing the hexagon socket screws.
- When the handle is lifted, the serration is revealed and the clamping lever can be swivelled into the optimum clamping position. When released, the handle latches again automatically.

Material:
Handle made of PA, black,
Stainless steel screw insert



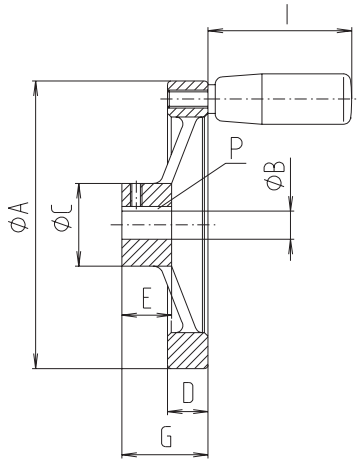
[mm]

Code No.	Type	A	B	D	E	H	K	L	M
902381	30	65	35	M8	14	25	13	4	19,5

Handwheel

Ø80

- Rotating cylindrical grip
- Fully turned wheel rim
- Machined hub



Material: Aluminium die cast, black powder-coated

[mm]

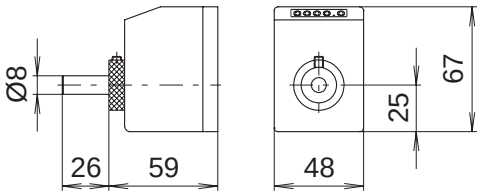
Code No.	Type	A	B	C	D	E	G	P	I
90903	30	80	8	23	11	17	35	2x2	42

Positioning indicator

Installation position: horizontal

Installation position: vertical

- max. ambient temperature +80°C
- Figure height 6 mm
- Indicating accuracy ± 0.1 mm

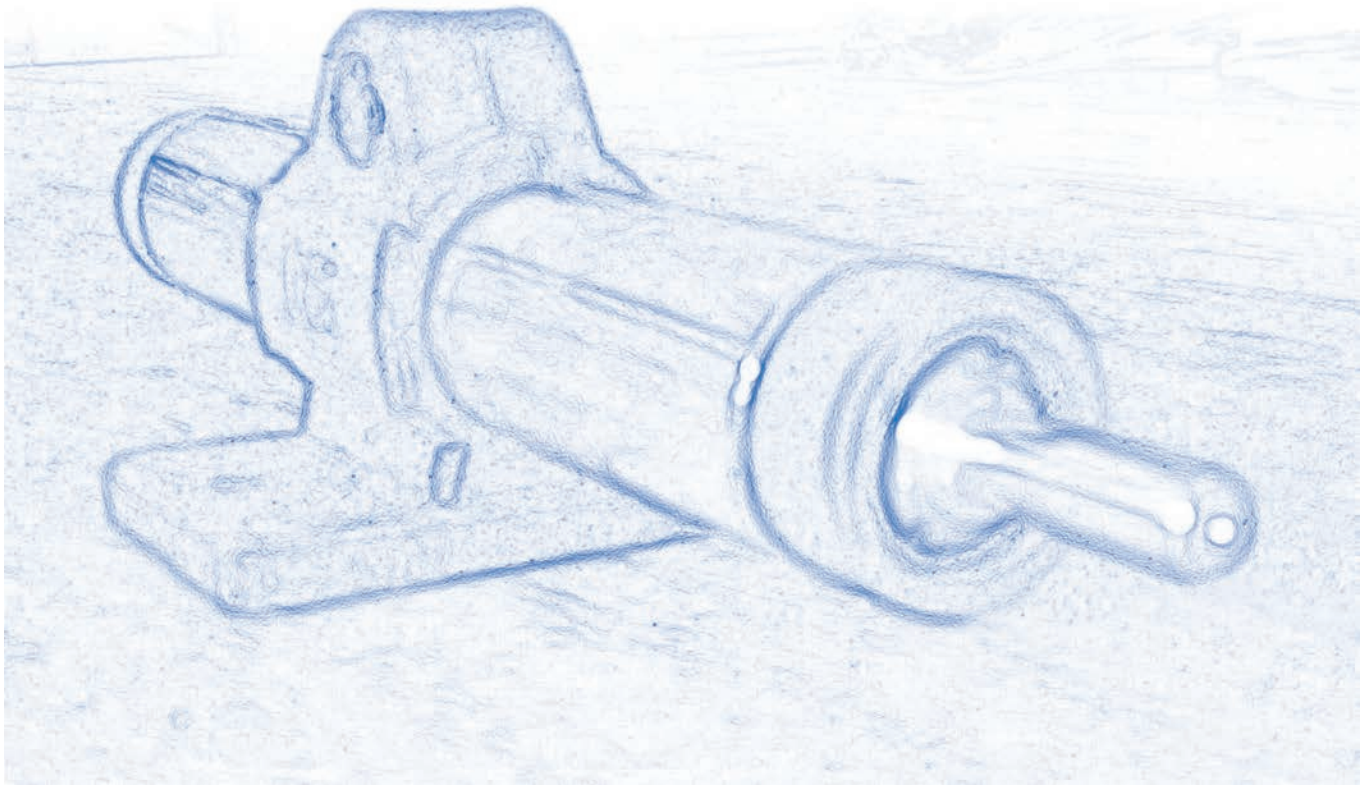


Material: Housing polyamide 6 Orange RAL 2004,
Steel parts, corrosion protected

Scope of delivery: Positioning indicator, clamping ring, shaft extension and fastenings

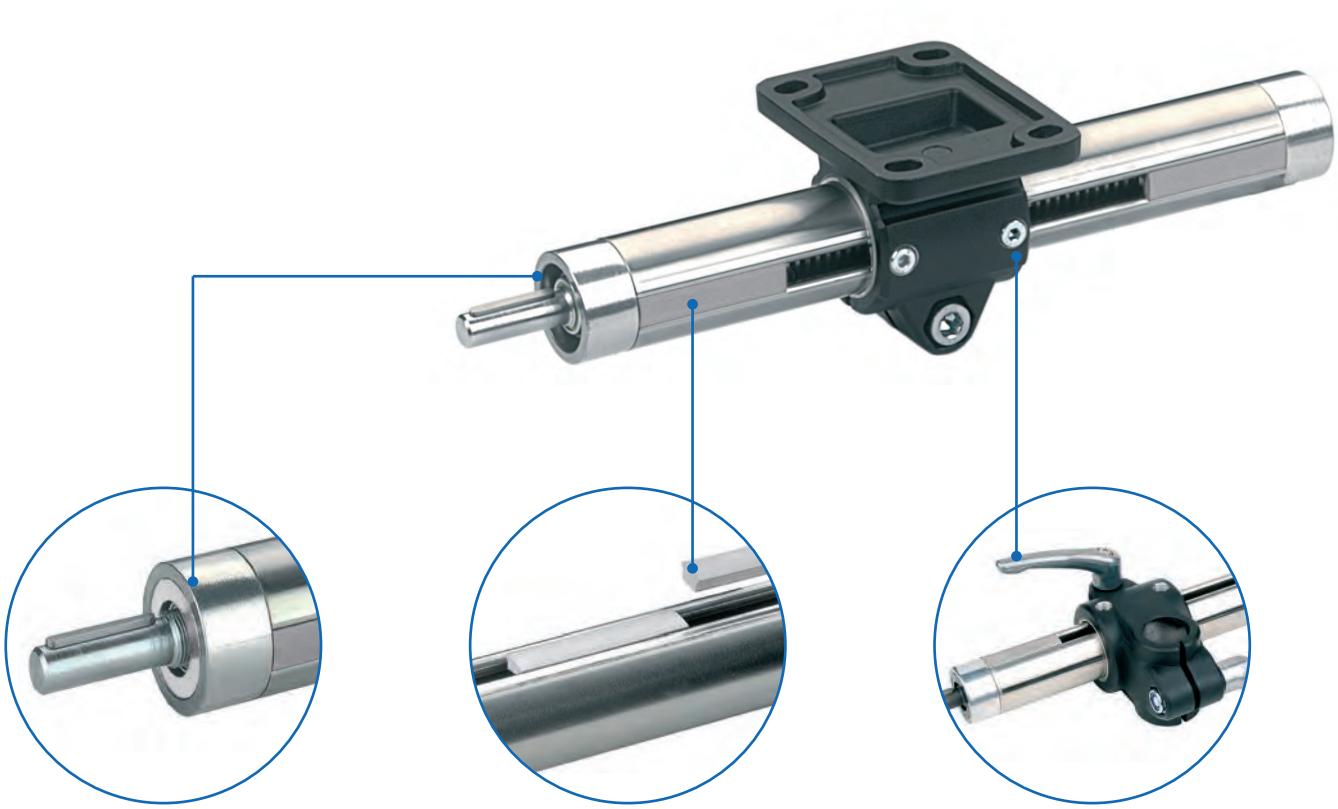
Note: "rising" and "falling" versions refer to the clockwise rotation of the drive shaft.

Code No.	Installation position	Version*
91043	Horizontal	3 mm rising
91053		3 mm falling
91063	Vertical	3 mm rising
91073		3 mm falling
91010	Horizontal	6 mm rising
91029		6 mm falling
91020	Vertical	6 mm rising
91019		6 mm falling



Single tube actuator – E linear unit

Flexible all-rounder – with an unrivalled price-performance ratio



Bearing cover
- Dust/spray protection on Type 30-60
- Option of screw with slide bearing (resistant to fine dust/ abrasions)

Covers
- Slot cover, as dust protection or stroke limitation

Carriages/fixing elements
- Wide range of models facilitates connection to your designs
- Option of carriage with slide bushing (lower input torque, wear minimized)

48 h
ready for delivery

Features:
- Units for light to heavy moving applications
- Manual and motor-driven ad justments supported
- Different sizes can be combined
- Comprehensive range of accessories

Options:
- Corrosion-protected variant E-II-stainless steel (see page: 86)
- Second free-running carriage

Table of contents

RK ROSE+KRIEGER

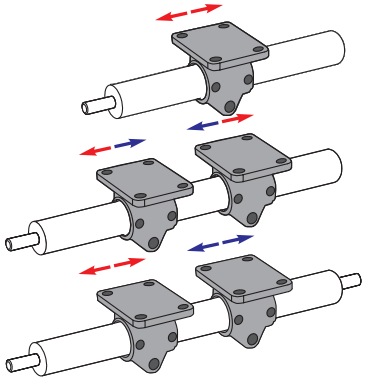
Properties/Technnical data

General information/operating conditions Page 54

Load data Page 55

No-load torques Page 54

Versions
(Dimensions, order numbers)



Right *or* lefthand thread Page 56

Right *and* lefthand thread Page 58

Split screw Page 60

Accessories
Fixing

Carriage Page 66

Fixing elements Page 68

Covers for E-II Page 72

Clamping lever Page 73

Drive

Handwheel Page 74

Chain wheel Page 75

Timing-belt pulley Page 75

Angular drive Page 76

Flange bearing unit Page 79

Transmission unit Page 71

Motor adaptor/coupling Page 80

Position determination

Scale/positioning indicator Page 82

Limit switches Page 84

Technical data

General information/operating conditions

Design	Actuator with ACME screw in a slotted tube
Guide	Slide guide, optional carriage with slide guide available
Guide tube	Stainless steel for sizes 30 - 60, galvanized for sizes 18 and 80
Installation position	Any position
Positioning accuracy	± 0.2 mm/300 mm stroke
Self-locking	Yes*
Ambient temperature	0°C to + 60°C

* see Glossary under item Self-locking

Screw lead

Type	Screw lead [mm]	Speed with slide bearing 80 rpm [mm/s]	Speed with ball bearing 250 rpm [mm/s]
E 18	2	2,7	8,3
E-II 30	3	4	12,5
E-II 40	4	5,3	16,7
E-II 50	4	5,3	16,7
E-II 60	5	6,7	20,8
E 80	6	8	25

$$\text{Required screw speed* n [rpm]} = \frac{\text{speed [m/min] x 1000}}{\text{screw lead [mm]}}$$

Max. screw speed with slide bearing 80 rpm
with ball bearing 250 rpm

No-load torque

[Nm]

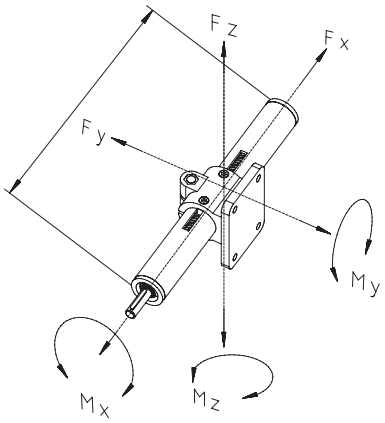
Type	Screw with slide bearing	Screw with ball bearing
E 18	–	0.20
E-II 30	0.45	0.35
E-II 40	0.65	0.50
E-II 50	1.20	0.90
E-II 60	–	1.10
E 80	–	0.90

Load data*

F Force [N]

M Moment [Nm]

I Geometric moment of inertia [cm^4]



* with reference to carriage (deflection of guide element f = 0.5 mm, static, end elements supported)

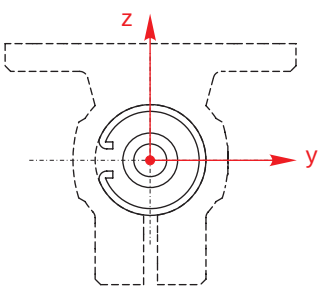
	Fx	Fy*			Fz*			Mx	My	Mz
Total length [mm]		500	1000	1500	500	1000	1500			
Type										
E 18	400	90	10	–	60	8	–	1.5	4	4
E-II 30	800	500	60	10	500	50	9	6	15	15
E-II 40	1000	2100	250	60	1900	140	50	14	40	40
E-II 50	1700	3000	600	140	3000	600	140	30	65	65
E-II 60	2500	4500	1500	380	4500	1300	320	45	120	120
E 80	4500	5500	2300	550	5650	2500	650	70	170	170

Note:
Linear units that support higher torques available on request!

Geometric moment of inertia

[cm^4]

Type	Iy	Iz
E 18	0.22	0.27
E-II 30	1.34	1.56
E-II 40	4.58	5.24
E-II 50	11.31	12.32
E-II 60	23.11	24.98
E 80	98.72	118.53



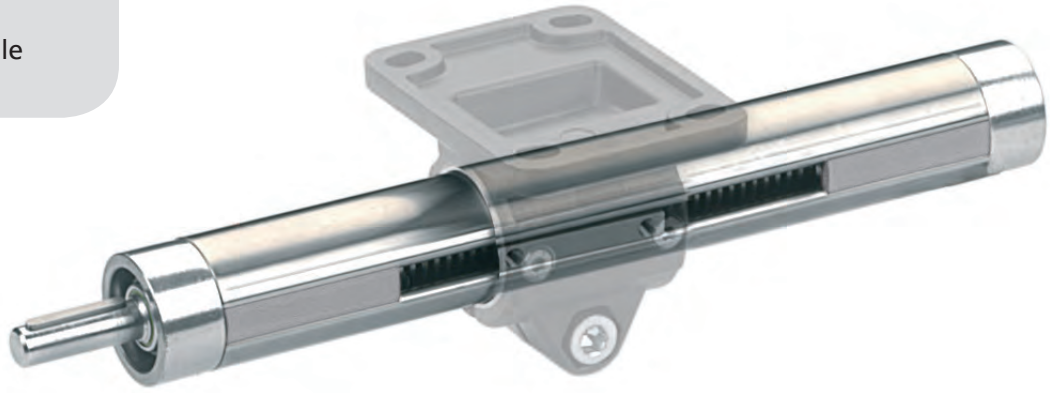
Versions

Order instructions:

- Choice of carriage - this must be ordered separately
- Different "R" dimensions available on request
- Corrosion-protected units available on request
- Other screw leads available on request

Version ● Right or lefthand thread

Type 30-60
48 h
ready for delivery

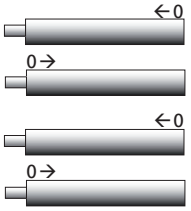


Code No.	Type	Screw	Basic length	B	D 1	D 2	J
70 _ 181 1	18	Tr 10x2	134	18	6	–	24
70 _ 183 1	18					6	
78 _ 301 _	30	Tr 14x3	198	30	8	–	38
78 _ 303 _	30					8	
78 _ 401 _	40	Tr 20x4	209	40	12	–	55
78 _ 403 _	40					12	
78 _ 501 _	50	Tr 20x4	230	50	12	–	60
78 _ 503 _	50					12	
78 _ 601 1	60	Tr 24x5	275	60	14	–	75
78 _ 603 1	60					14	
70 _ 811 1	80	Tr 32x6	300	80	20	–	100
70 _ 813 1	80					20	

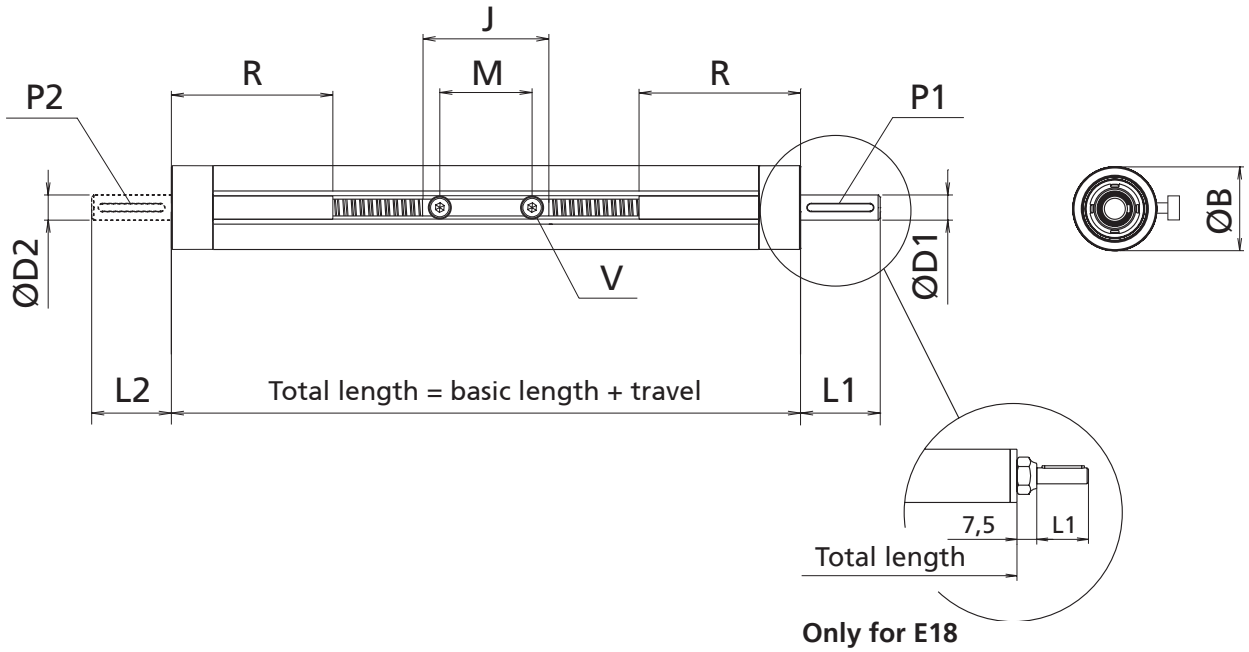
_ _ _ _ Total length = basic length + travel [mm]

Screw bearing:
0 = screw with slide bearing
1 = screw with ball bearing

Version:
1 = righthand thread
2 = lefthand thread
A = righthand thread with scale at 270° *
B = righthand thread with scale at 270° *
C = lefthand thread with scale at 270° *
D = lefthand thread with scale at 270° *



*Scale only for Type 30-60. Details see page 82



Only for E18

[mm]

L 1	L 2	M	P 1	P 2	R	V	Max. travel	Mass [kg]	
								Basic length	per 100 mm travel
17	–	18	2 x 2 x 12	–	55*	M3 x 5	1033	0.225	0.097
	17			2 x 2 x 12			1016	0.229	0.097
26	–	28	2 x 2 x 20	–	80	M4 x 8	1376	0.610	0.212
	26			2 x 2 x 20			1350	0.620	0.212
38	–	44	4 x 4 x 32	–	77	M6 x 10	2831	1.305	0.432
	38			4 x 4 x 32			2831	1.336	0.432
38	–	44	4 x 4 x 32	–	85	M6 x 10	2820	1.955	0.539
	38			4 x 4 x 32			2820	1.990	0.539
38	–	50	5 x 5 x 32	–	100	M8 x 12	2777	3.211	0.764
	38			5 x 5 x 32			2777	3.257	0.764
31.5	–	70	6 x 6 x 22	–	100	M8 x 25	2416	10.00	1.940
	31.5			6 x 6 x 22			2416	10.10	1.940

* For total lengths < 300 mm, dimension R = 25 mm

Versions

Order instructions:

- Choice of carriage - this must be ordered separately
- Please specify total travel when placing an order
- Different "R" dimensions available on request
- Corrosion-protected units available on request
- Other screw leads available on request

Version ● Right and lefthand thread

Type 30-60

48 h
ready for delivery

Code No.	Type	Screw	Basic length	B	D1	D2	J
70318_1	18	TR 10x2	195	18	6	6	24
78_30_ _	30	TR 14x3	261	30	8	8	38
78_40_ _	40	TR 20x4	287	40	12	12	55
78_50_ _	50	TR 20x4	319	50	12	12	60
78_60_ 1	60	TR 24x5	379	60	14	14	75
70381_ 1	80	TR 32x6	465	80	20	20	100

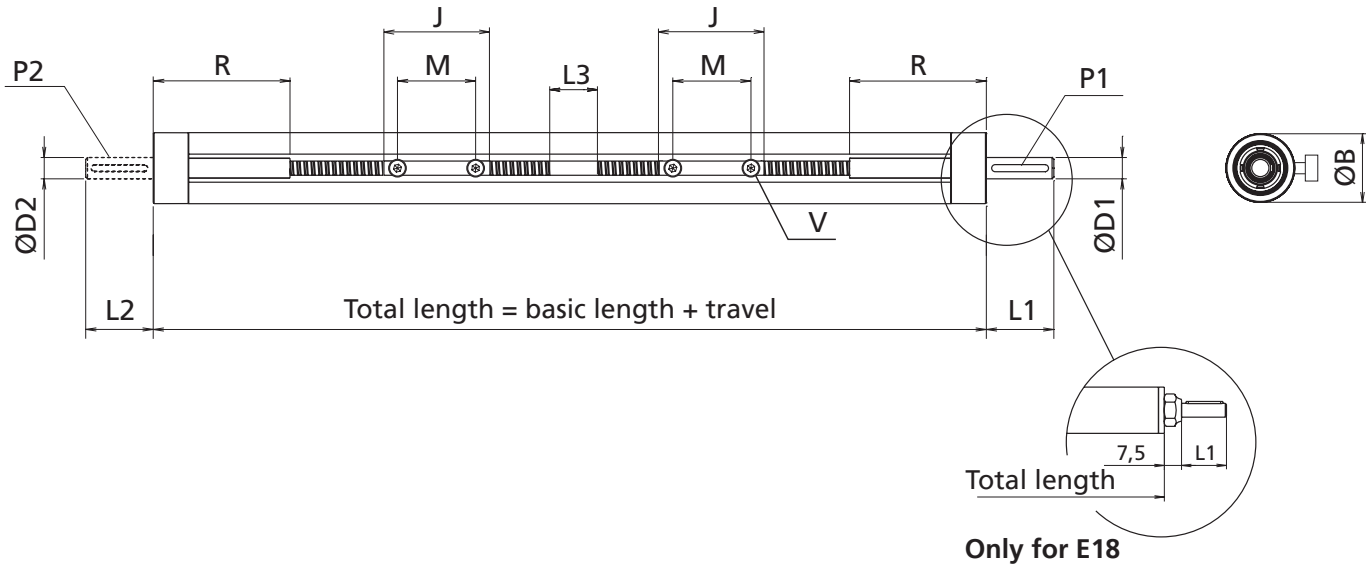
_ _ _ _ Total length = basic length + total travel [mm]

Screw bearing:
0 = screw with slide bearing
1 = screw with ball bearing

Version:
1 = 1 drive shaft at lefthand thread end
2 = 1 drive shaft at righthand thread end
3 = 2 drive shafts

Version:
3 = Right and lefthand thread (RH/LH)
N = RH/LH with scale at 270° *

*Scale only for Type 30-60. Details see page 82



[mm]

L 1	L 2	L 3	M	P 1	P 2	R	V	Max. travel	Mass [kg]	
									Basic length	per 100 mm travel
17	17	37**	18	2 x 2 x 12	2 x 2 x 12	55*	M3 x 5	1309	0.330	0.097
26	26	25	28	2 x 2 x 20	2 x 2 x 20	80	M4 x 8	1739	0.798	0.212
38	38	23	44	4 x 4 x 32	4 x 4 x 32	77	M6 x 10	2713	1.742	0.432
38	38	29	44	4 x 4 x 32	4 x 4 x 32	85	M6 x 10	2681	2.725	0.539
38	38	29	50	5 x 5 x 32	5 x 5 x 32	100	M8 x 12	2621	4.306	0.764
31.5	31.5	65**	70	6 x 6 x 22	6 x 6 x 22	100	M8 x 25	2251	13.290	1.940

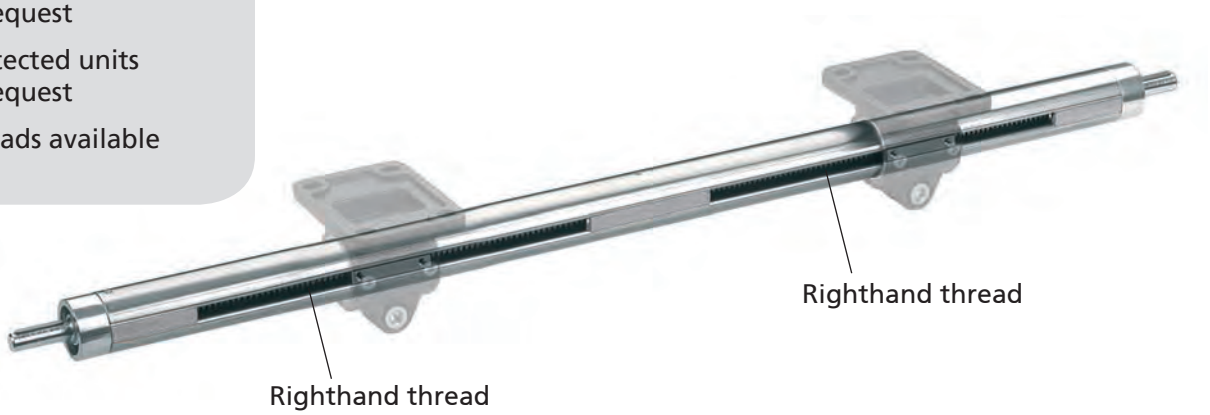
* For total lengths < 300 mm, dimension R = 25 mm
** From a total length of 1000 mm

Versions

Order instructions:

- Choice of carriage - this must be ordered separately
- Please specify total travel when placing an order
- Different “R” dimensions available on request
- Corrosion-protected units available on request
- Other screw leads available on request

Version ● Split screw



Type 30-60

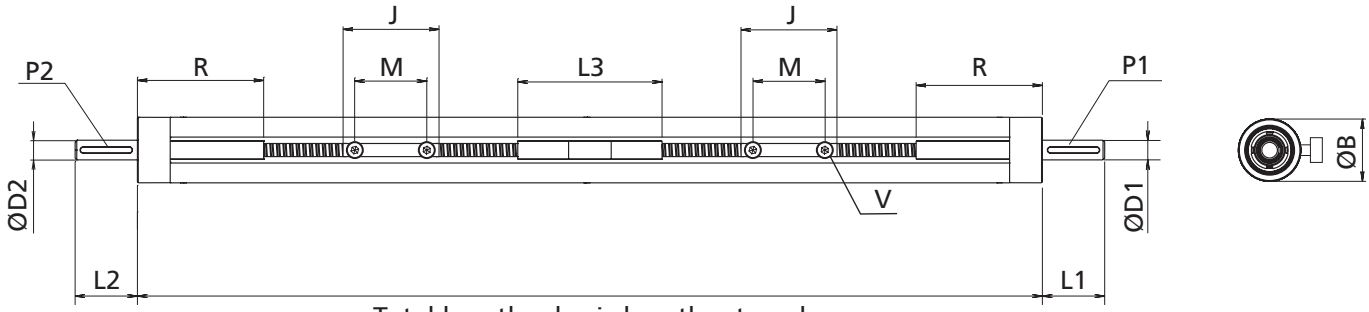
48 h
ready for delivery

Code No.	Type	Screw	Basic length	B	D1	D2	J
78_3031	30	TR 14x3	280	30	8	8	38
78_4031	40	TR 20x4	308	40	12	12	55
78_5031	50	TR 20x4	334	50	12	12	60
78_6031	60	TR 24x5	394	60	14	14	75
7048131	80	TR 32x6	450	80	20	20	100

7048131 _ _ _ _ Total length = basic length + total travel [mm]

Version:
4 = Split screw
U = Split screw with scale at 270° *

*Scale only for Type 30-60. Details see page 82



Total length = basic length + travel

[mm]

L 1	L 2	L 3	M	P 1	P 2	R	V	Max. travel/end	Mass [kg]	
									Basic length	per 100 mm travel
26	26	44	28	2 x 2 x 20	2 x 2 x 20	80*	M4 x 8	1377	0.673	0.212
38	38	44	44	4 x 4 x 32	4 x 4 x 32	77	M6 x 10	1366	2.317	0.432
38	38	44	44	4 x 4 x 32	4 x 4 x 32	85	M6 x 10	1358	3.169	0.539
38	38	44	50	5 x 5 x 32	5 x 5 x 32	100	M8 x 12	1329	3.571	0.764
31.5	31.5	50	70	6 x 6 x 22	6 x 6 x 22	100	M8 x 25	1133	15.970	1.940

* For total lengths < 300 mm, dimension R = 53 mm

Fixing

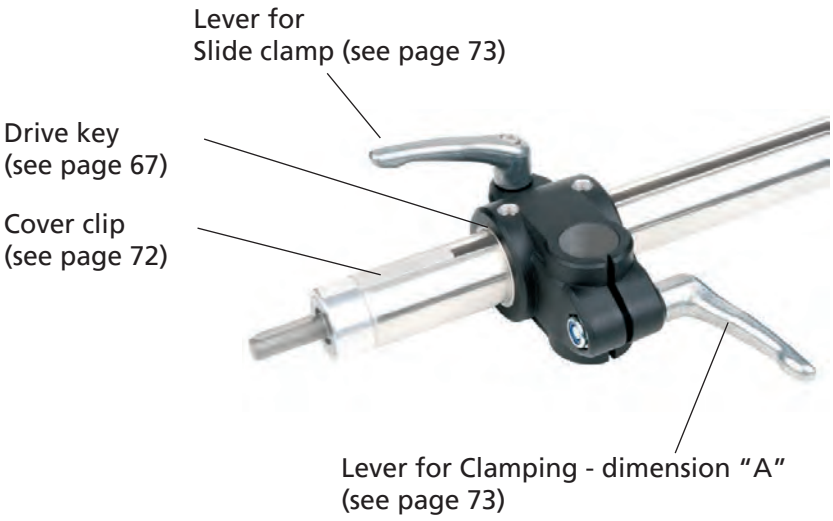
Order instructions:

- Coloured powder-coating available on request.
- A rotation locking device (drive key) is included in the scope of delivery of the linear unit. Additional drive keys (e.g. for free-running carriages) can also be ordered as an optional extra
- Clamping levers have to be ordered separately. Delivery unassembled. See table last column and page 73
- For further dimensions, please refer to the catalogue “Connecting Technology”

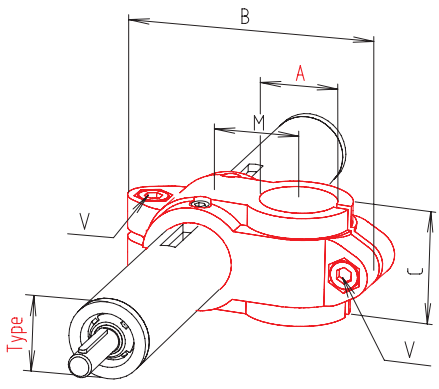
Carriages

- A range of different versions facilitate mounting

Scope of delivery:
Carriages with screws, losely enclosed



K*



[mm]

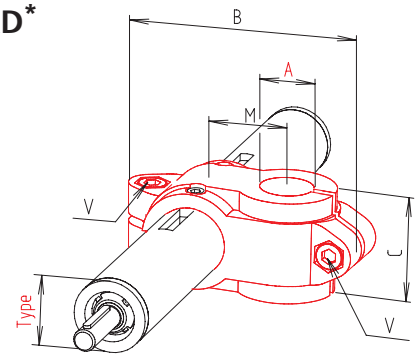
Code No.	Type	A	B	C	M	Clamping levers V Code No. VA
11801_ 00	18	18	66	25.5	20	90209
13093_ 0_	30	20	99	40	33	9022201
12501_ 0_	30	25	99	40	33	9022201
13001_ 0_	30	30	99	40	33	9022201
14001_ 0_	40	40	137	60	45	90250
15003_ 0_	50	40	154	70	53	90251
15001_ 0_	50	50	154	70	53	90251
16001_ 0_	60	60	190	80	65	9025301
18101_ 00	80	80	255	120	90	9027001

0 = without scale
A = scale at 270°

0 = without slide bushing
1 = with slide bushing

* The external diameters of fixing plates are the same while the internal diameters of fixing holes may vary. Please also refer to KD range.

KD*

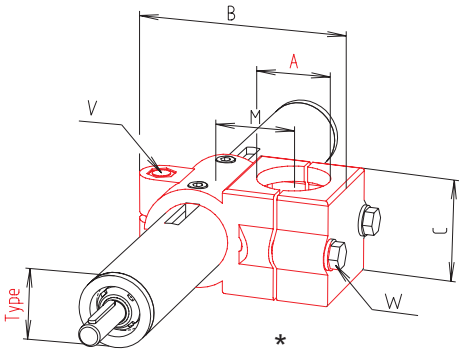


[mm]

Code No.	Type	A	B	C	M	V1	V2
						Clamping levers Code No.	
11803_ 00	18	30	84	40	27	90209	9022201
13003_ 0_	30	14	84	33	27	9022201	90209
13004_ 0_	30	40	137.5	65	45	90251	
14003_ 0_	40	20	110	50	36	90250	9022201
14004_ 0_	40	30	137.5	65	45	90251	
15004_ 0_	50	30	137.5	65	45	90251	
16004_ 00	60	50	180	80	60	9025301	9025501

* Different external diameters of the fixing plates and different internal diameters of fixing holes. Please also refer to K range.

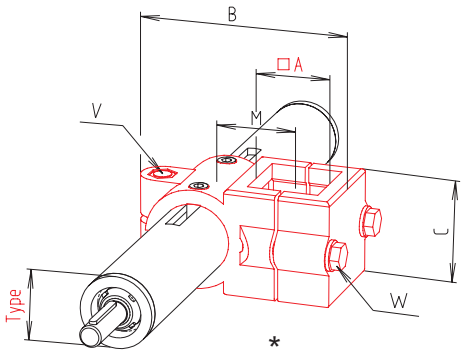
KR



[mm]

Code No.	Type	A	B	C	M	V	W
						Clamping levers Code No.	
13005_ 0_	30	30	86	45	33	9022401	
14005_ 0_	40	40	117	60	47	9024301	9022501
25005_ 0_	50	50	126	86	53	9022601	

KVR



[mm]

Code No.	Type	A	B	C	M	V	W
						Clamping levers Code No.	
13006_ 0_	30	30	86	45	33	9022401	
14006_ 0_	40	40	117	60	47	9024301	9022501
25006_ 0_	50	50	126	86	53	9022601	

0 = without scale
A = scale at 270°

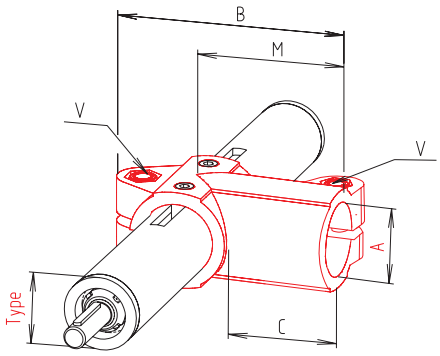
0 = without slide bushing
1 = with slide bushing

* Type 50 (image similar)

Fixing

Carriages

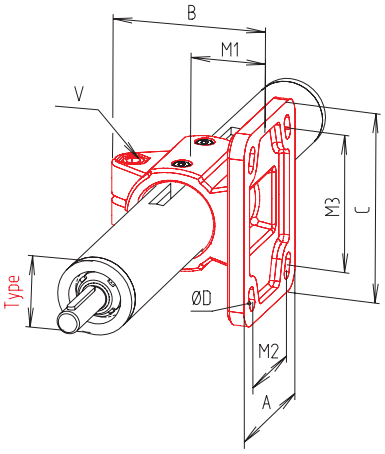
W



[mm]

Code No.	Type	A	B	C	M	Clamping levers V Code No.
11807_ 00	18	18	66	30	43	90209
13007_ 0_	30	30	93	40	60	9022201
14007_ 0_	40	40	134	60	88	90250
15007_ 0_	50	50	149	65	98	90251
16007_ 0_	60	60	183	80	120	9025301

FK



[mm]

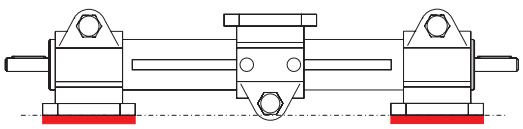
Code No.	Type	A	B	C	D	M1	M2*	M3*	Clamping levers V Code No.
11809 _ 00	18	35	41	50	5.5	18	–**	40	90209
13009 _ 0_	30	55	63	78	6.5	30	–**	53-60	9022201
13023 _ 0_	30-4	55	63	78	6.5	30	35-40	53.60	9022201
14009 _ 0_	40	80	87	105	8.5	42	52-60	80-82	90250
15009 _ 0_	50	90	98	128	10.5	50	60-62	98-100	90251
16009 _ 0_	60	110	123	150	10.5	60	74-80	100-118	9025301
18109 _ 00	80	164.7	162.4	180	17.5	80	120	140	9027001

0 = without scale
A = scale at 270°

0 = without slide bushing
1 = with slide bushing

* Type 30-60 with slot
** Type 18-30 with central holes

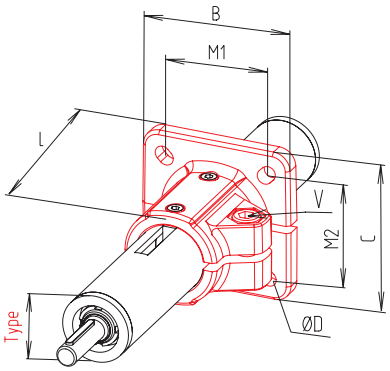
If using FK elements as carriages and fixing elements, spacers provide the necessary clearance.



[mm]

Code No.	Type	Spacer
96713	30	5 mm plate thickness, vibratory finished
96714	40	
96716	60	

FS

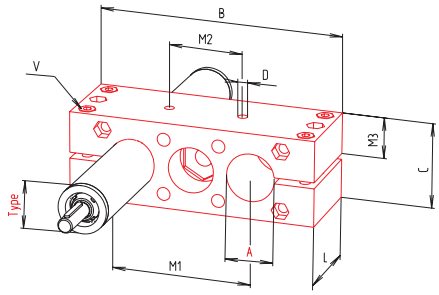


[mm]

Code No.	Type	B	C	D	L	M1*	M2*	Clamping levers V Code No.
11811_00	18	42	42	5.5	37	28-30	28-30	90209
13011_0_	30	60	60	6.5	50	40-42	42-45	9022201
14011_0_	40	90	90	8.5	70	60-64	60-64	90250
15011_0_	50	105	105	10.5	85	74-80	74-80	90251
16011_0_	60	120	120	10.5	100	80-89	80-89	9025301
18111_00	80	170	174.5	17.5	141.4	120	120	9027001

* Type 30-60 with slot

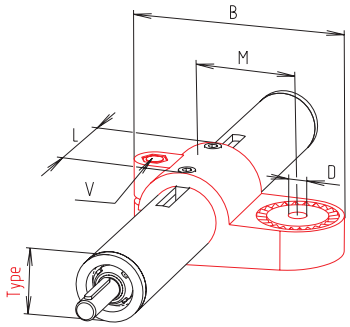
PB



[mm]

Code No.	Type	A	B	C	D	M1	M2	M3	L	Clamping levers V Code No.
11813_00	18	18	82	28	M 5	40	18	14.5	28.5	9302501
23013_0_	30	30	130	52	M 6	70	42	27	50	9021501
14013_0_	40	40	180	62	M 8	90	62	32	61	9022501
25013_0_	50	50	206	72	M 8	100	62	37	72	9022801
26013_0_	60	60	240	86.5	M10	130	74	44	80	9023001

LW



[mm]

Code No.	Type	B	D	L	M	Clamping levers V Code No.
11814_00	18	59	M 6	25	27	90210
13014_0_	30	93.5	M 8	40	43	9022401
14014_0_	40	127	M10	56	60	9024301
15014_0_	50	148	M10	66	70	9024401

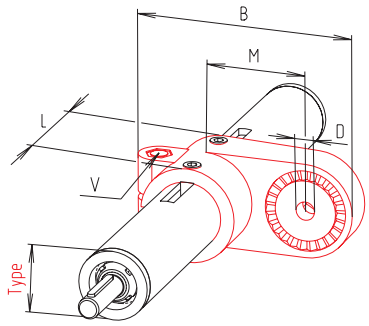
0 = without scale
A = scale at 270°

0 = without slide bushing
1 = with slide bushing

Fixing

Carriages

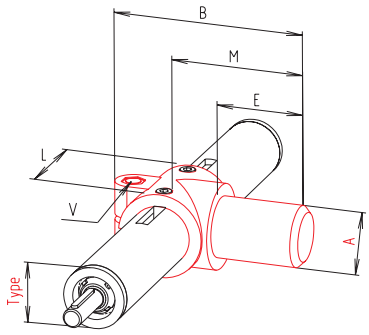
LQ



[mm]

Code No.	Type	B	D	L	M	Clamping levers V Code No.
13015 _ 0 _	30	93.5	M 8	45	43	9022401
14015 _ 0 _	40	128	M10	60	60	9024301

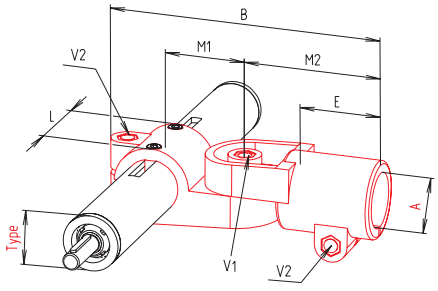
S



[mm]

Code No.	Type	A	B	E	L	M	Clamping levers V Code No.
11818 _ 00	18	18	72.5	33	32	48	90210
13018 _ 0 _	30	30	100	42	45	67	9022201
14018 _ 0 _	40	40	135	57	60	88	90250
15018 _ 0 _	50	50	148	67	70	103	90251
16018 _ 0 _	60	60	188	82	85	125	9025301

GW



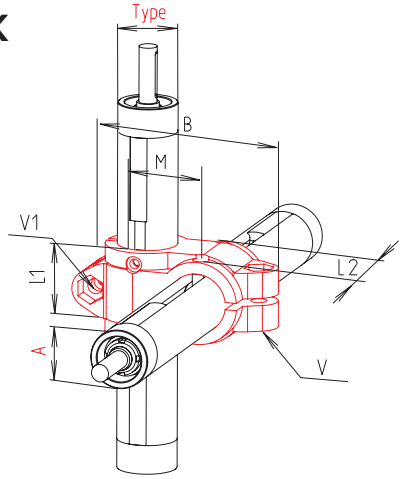
[mm]

Code No.	Type	A	B	E	L	M1	M2	V1 / V2 Clamping levers V Code No.
11816 _ 00	18	18	90.5	25	25	27	44	90210
13016 _ 0 _	30	30	146.5	45	40	43	73	9022401
14016 _ 0 _	40	40	200	60	56	60	100	9024301
15016 _ 0 _	50	50	230	70	66	70	115	9024401

0 = without scale
A = scale at 270°

0 = without slide bushing
1 = with slide bushing

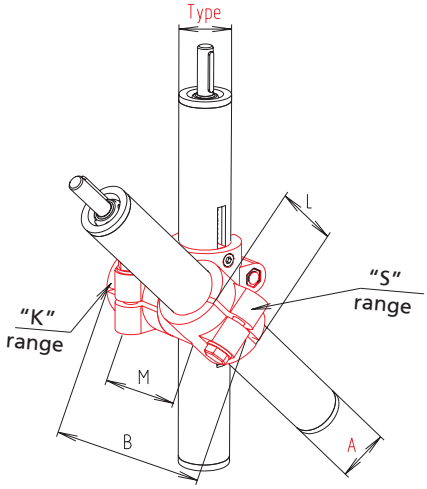
EK



[mm]

Code No.	Type	A	B	L1	L2	M	V1	V
							Clamping levers Code No.	
11819 _ 00	18	18	66	25.5	25.5	20	90209	
13020 _ 0_	30	18	84	40	30	27	9022201	90209
13019 _ 0_	30	30	99	40	40	33	9022201	
14020 _ 0_	40	30	137	65	65	45	90251	
14019 _ 0_	40	40	137	60	60	45	90250	
15020 _ 0_	50	40	137.5	65	65	45	90251	
15019 _ 0_	50	50	137.5	65	65	45	90251	
16020 _ 0_	60	50	180	80	50	60	9025301	9025501
16019 _ 0_	60	60	190	80	80	65	9025301	
18119 _ 00	80	80	255	120	120	90	9027001	

EKS



[mm]

Code No.	Type	A	B	L	M	Range K	Range S
						Clamping levers Code No.	
13022 _ 0_	30	18	65	25	29	9022201	90210
13021 _ 0_	30	30	94	45	43	9022201	
14022 _ 0_	40	30	119	45	56	90251	9022201
14021 _ 0_	40	40	132	60	61	90250	
15022 _ 0_	50	40	169	60	64	90251	
15021 _ 0_	50	50	169	70	69	90251	
16022 _ 0_	60	50	151	70	76	9025501	
16021 _ 0_	60	60	186	85	65	9025301	

0 = without scale
A = scale at 270°

0 = without slide bushing
1 = with slide bushing

Drive key for carriages

- Rotation locking for additional free-running carriages

Note: The order number of the linear unit includes a drive key

[mm]

Code No.	Type	Installation length
95990	E 18	24
95987	E-II 30	38
95997	E-II 40	55
95998	E-II 40 x 20*	55
95988	E-II 50	60
95989	E-II 60	75
95996	E 80	100

* For carriage KD 40 x 20

Fixing

Fixing elements

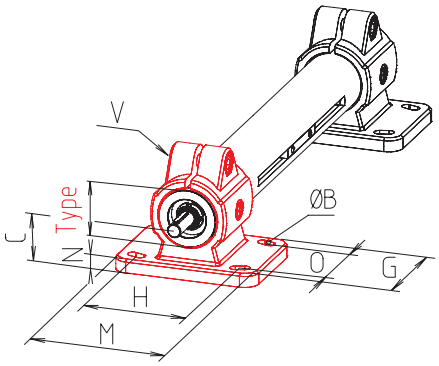
- Clamping elements for the simple fixing of E units
- For further elements, please refer to the catalogue "Connecting Technology"

Material: Gk Al Si 12, vibratory polished

Coloured powder-coatings available on request.

For further dimensions, please refer to the catalogue "Connecting Technology"

FK

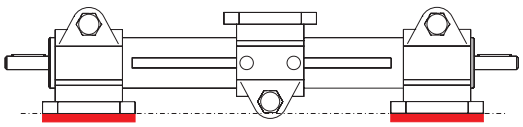


[mm]

Code No.	Type	B	C	G	H*	M	N	O*	Clamping levers V Code No.
12180000020	18	5.5	18	37	40	50	5	–**	90209
12300000020	30	6.5	30	55	53-60	78	7	–**	9022201
12300100020	30-4	6.5	30	55	53-60	78	7	35-40	9022201
12400000020	40	8.5	42	80	80-82	105	10	52-60	90250
12500000020	50	10.5	50	90	98-100	128	14	60-62	90251
12600000020	60	10.5	60	110	100-118	150	15	74-80	9025301
12800000020	80	17.5	80	164.7	140	180	20	120	9027001

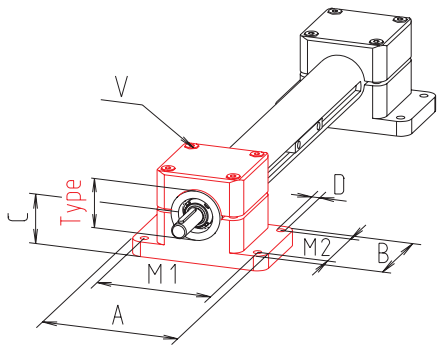
* Type 30-60 with slot
**Type 18-30 with central drill holes

If using FK elements as carriages and fixing elements, spacers provide the necessary clearance.



Code No.	Type	Spacer
96713	30 (not for FK 30-4)	5 mm plate thickness, vibratory finished
96714	40	
96716	60	

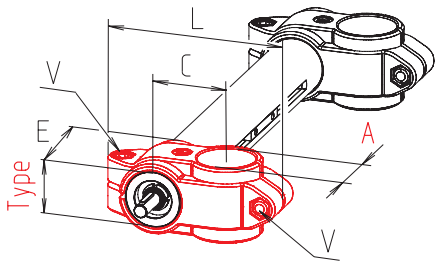
FKR



[mm]

Code No.	Type	A	B	C	D	M1	M2	Clamping levers V Code No.
22300003026	30	100	60	30	6.5	82	42	9021501
22400003026	40	110	70	40	6.5	92	52	9021701
22500003026	50	125	125	50	8.5	98	98	9023001
22600003026	60	144	100	60	8.5	122	78	9023101

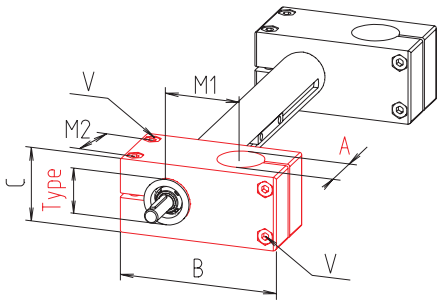
K



[mm]

Code No.	Type	A	C	E	L	Clamping levers V Code No.
101800000200	18	18	20	25.5	66	90209
103000000200	30	30	33	40	99	9022201
104000000200	40	40	45	60	137	90250
105000000200	50	50	53	70	154	90251
106000000200	60	60	65	80	190	9025301
108000000200	80	80	90	120	255	9021701

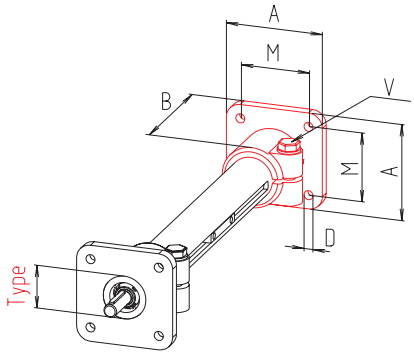
KRR



[mm]

Code No.	Type	A	B	C	E	M1	M2	Clamping levers V Code No.
203000030266	30	30	82,5	45	63	37.5	44	9021301
204000030266	40	40	110	60	75	50	53	9021501
205000030266	50	50	149	86	86	70	65	9022801
206000030266	60	60	170	100	100	80	78	9022801

FS

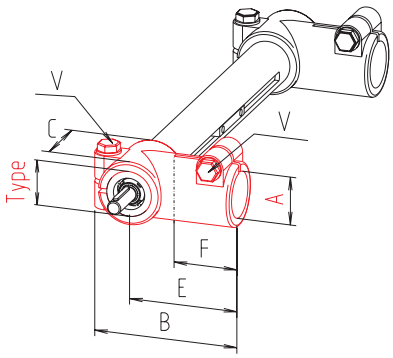


[mm]

Code No.	Type	D	M	B	A	Clamping levers V Code No.
13180000020	18	5.8	30	37	42	90209
13300000020	30	6.5	40-42	50	60	9022201
13400000020	40	8.5	60-64	70	90	90250
13500000020	50	10.5	74-80	85	105	90251
13600000020	60	10.5	80	100	120	905301
13800000020	80	17.5	120	141.4	174.5	9027001

* Type 30-50 with slot

W



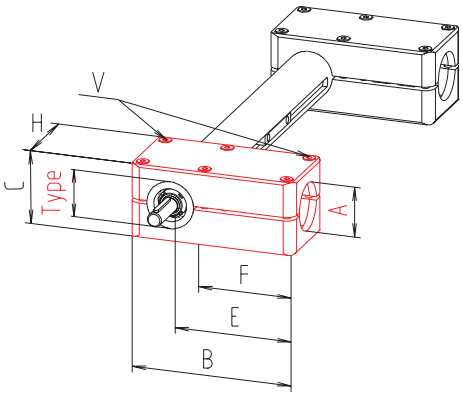
[mm]

Code No.	Type	A	C	E	L	M	Clamping levers V Code No.
111800000200	18	18	30	32	67.5	43	90209
113000000200	30	30	40	45	93	60	9022201
114000000200	40	40	60	60	134	88	90250
115000000200	50	50	65	70	149	98	90251
116000000200	60	60	80	80	183	120	9025301
118000000200	80	80	121.7	123	259	176.8	9027001

Fixing

Fixing elements

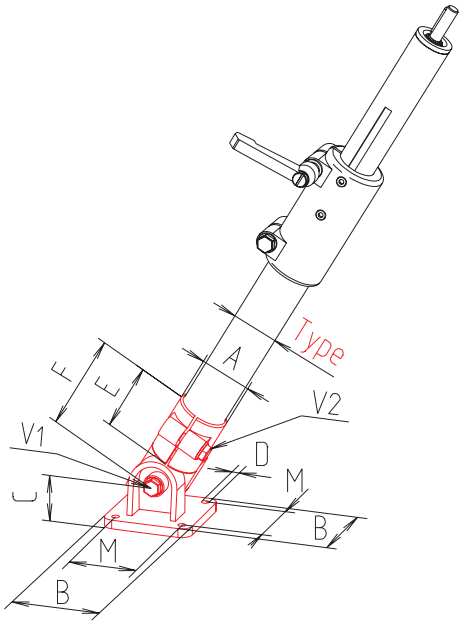
WR



[mm]

Code No.	Type	A	B	C	E	F	H	Clamping levers V Code No.
214000030266	40	40	140	62	105	70	70	9021601
215000030266	50	50	161	79	118	85	86	9022901
216000030266	60	60	190	90	140	100	100	9023001

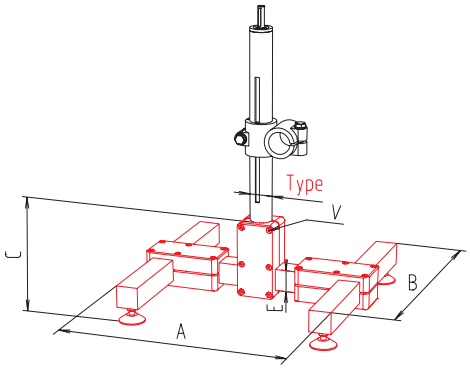
GF



[mm]

Code No.	Type	A	B	C	D	E	F	M	V1 / V2 Clamping levers Code No.
18180002020	18	18	35x50	20	5.3	25	44	38	90210
18250002020	25	25	75	32.5	6.5	45	73	57	9022401
18300002020	30	30	75	32.5	6.5	45	73	57	9022401
18320002020	32	32	100	44	8.5	60	100	76	9024301
18400002020	40	40	100	44	8.5	60	100	76	9024301
18500002020	50	50	125	52	8.5	70	115	98	9024401

FHR

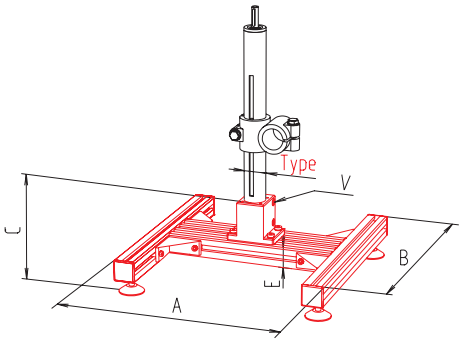


[mm]

Code No.	Type	A	B	C Roller	C min. Foot	Adjustment range foot	E	Clamping levers V Code No.
23300020026_	30	350	350	203	148	+25	30	9021401
23400020026_	40	400	400	223	145	+28	40	9021601
23500020026_	50	500	500	241	168	+30	50	9022901
23600020026_	60	600	600	268	204	+51	60	9023001

Version:
3 = Foot
4 = Steering roller with brake

FHNR

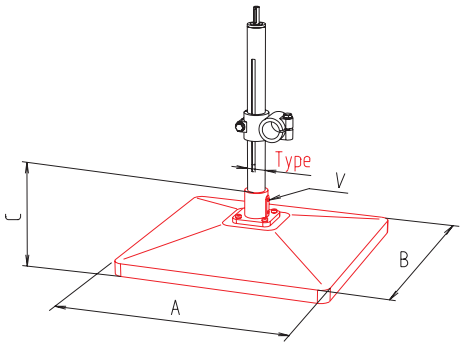


[mm]

Code No.	Type	A	B	C Roller	C Foot	Adjustment range foot	E	Clamping levers V Code No.
23300022026_	30	350	350	159	130	0	40	9022201
23400022026_	40	400	400	179	150	0	40	90250
13500022020_	50	500	500	214	185	0	60	90251
23600022026_	60	600	600	229	200	0	60	9025301

Version:
3 = Foot
4 = Steering roller with brake

FPFS*



[mm]

Code No.*	Type	A	B	C	Clamping levers V Code No.
134000120 _ _ _ _	40	500	500	150	90250
135000120 _ _ _ _	50	500	500	165	90251
136000120 _ _ _ _	60	500	500	180	9025301

* For versions, please also refer to the catalogue "Connecting Technology"

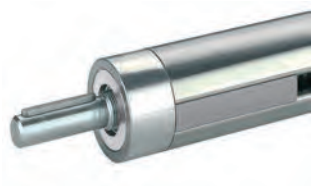
Fixing

Covers

- Slot covers, can be used as dust protection or stroke limitation
- Can be shortened or lengthened if required

Material: Stainless steel
Scope of delivery: Pack of 2 cover strips or as bar material

The covers are available as a pack of two, or as bar material.



The linear unit comes with two covers for the bearing seats.

Additional covers can be inserted in the guide slot.

Code No.	Type	Length [mm]
Covers, pack of 2		
90440	30	63
90441	40	57
90442	50	60
90443	60	74
Cover, bar material		
90445	30	3010
90446	40	3010
90447	50	3010
90448	60	3010

Clamping lever

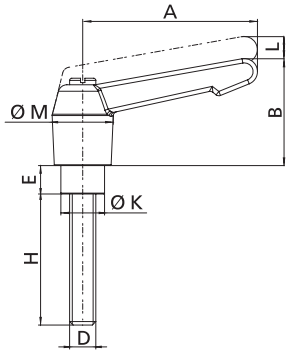
- For the equipping of fixing elements and carriages

Material: Zinc die cast handle
Steel parts zinc plated

Stainless steel lever available on request.

Lever for slide clamp

Lever for component clamp



[mm]

Code No.	Type	A	B	D	E	H	K	L	M
93025	M5x20	40	27	M5	5,5	20	7,5	3	14
90210	M6x16	40	27	M6	6,5	16	10	3	14
90209	M6x18	40	27	M6	6,5	18	10	3	14
9024901	M6x20	40	27	M6	6,5	20	10	3	14
9021501	M6x45	40	27	M6	6,5	45	10	3	14
9021601	M6x55	65	36	M6	6,5	55	10	3	19
9022201	M8x25	65	36	M8	8,5	25	13	3	19
9022401	M8x35	65	36	M8	8,5	35	13	3	19
9022501	M8x45	65	36	M8	8,5	45	13	3	19
9022601	M8x50	65	36	M8	8,5	50	13	3	19
9022801	M8x60	65	36	M8	8,5	60	13	3	19
9022901	M8x70	80	44,5	M8	8,5	70	13	4	22
9023001	M8x80	80	44,5	M8	8,5	80	13	4	22
90250	M10x30	80	44,5	M10	11	30	16	4	22
90251	M10x35	80	44,5	M10	11	35	16	4	22
9024301	M10x50	80	44,5	M10	10	50	16	4	22
9024401	M10x60	95	53	M10	10	60	16	4,5	27,5
9025501	M12x40	95	53	M12	10	40	19	4,5	27,5
9025301	M12x45	95	53	M12	13,5	45	18	4,5	27,5
9027001	M16x72	110	60	M16	12	72	23	5	32,5

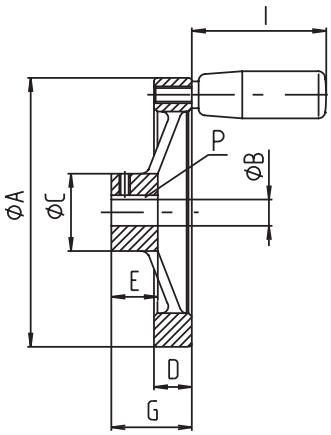
Drive

Handwheel

Material: Die-cast aluminium
black powder-coating

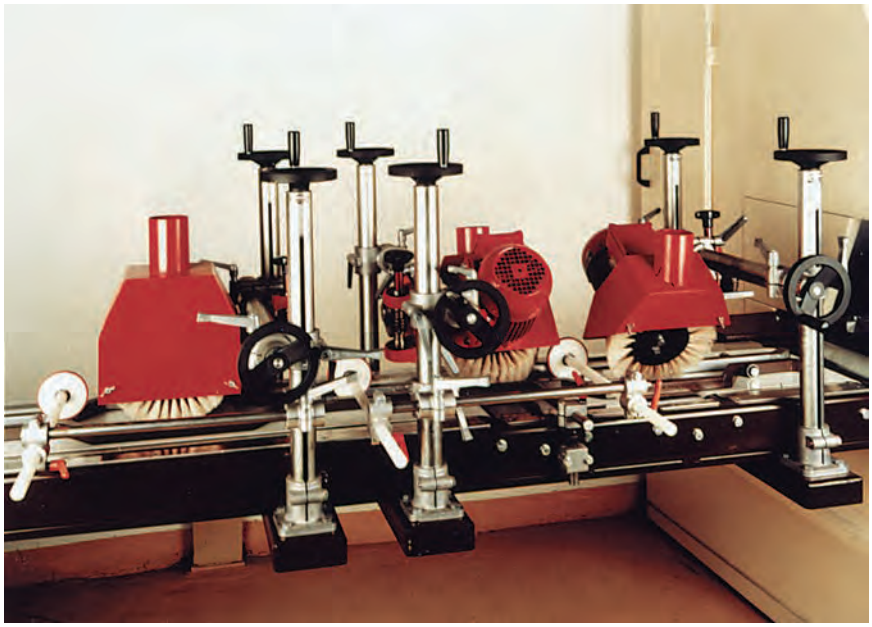
Diam. 140-200

Diam. 60-100



[mm]

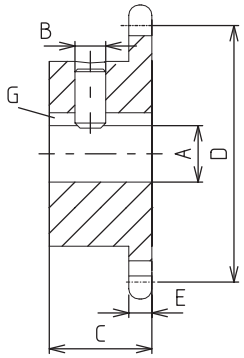
Code No.	Type	Diam. A	B	C	D	E	G	P	I
90901	18	60	6	18	13	16	22	2 x 2	28
90913	30	100	8	28	14	17	30	2 x 2	52
90915	40-50	100	12	28	14	17	30	4 x 4	52
90905	40-50	140	12	36	16.5	19.5	36	4 x 4	66
90906	60	140	14	36	16.5	19.5	36	5 x 5	66
90918	60	160	14	36	18	20	39	5 x 5	80
90929	80	200	20	42	20.5	24	45	6 x 6	80



Chain wheel

- Other sizes on request

Material: Steel, 500 N/mm^2 min



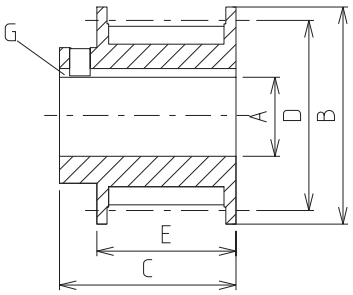
[mm]

Code No.	Type	A	B	C	D	E	G	No. of teeth	Size
91703	30	8	M6	18	41.1	4.5	2 x 2	10	1/2 x 3/16"
91704	40	12	M6	20	53	4.5	4 x 4	13	1/2 x 3/16"
91705	50	12	M6	20	61	4.5	4 x 4	15	1/2 x 3/16"
91706	60	14	M6	25	85	4.5	5 x 5	21	1/2 x 3/16"
91708	80	20	M6	25	85	4.5	6 x 6	21	1/2 x 3/16"

HTD timing-belt pulley

- Suitable for maintenance-free continuous operation
- Excellent accuracy and zero backlash during change of direction
- Can be clamped on feather key

Material: Steel



[mm]

Code No.	Type	A	B	C	D	E	G	Pull force	Pitch
92103	30	8	23	20	19.09	14.5	2 x 2	220 N	5
92105	40/50	12	32	26	28.65	20.5	4 x 4	330 N	5
92106	60	14	32	26	28.65	20.5	5 x 5	330 N	5

Technical data

Order instruction:

- When using angle drives, only use linear units with ball bearings

Angular drive

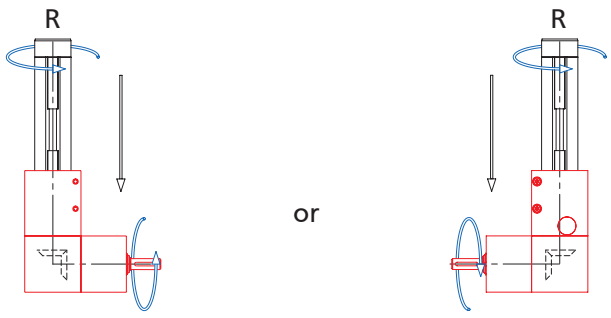
- Fits all E and E-II linear units 30-60
- Can be retrofitted
- Low noise level
- Suitable for manual adjustment and motorized via EHL or unit drive LZ

Technical data

Angular Drive												
Type	Duty cycle		Ambient temperature		Drive speed		Nominal torque [Nm]		Max. torque* [Mm]		Efficiency [%]	
	L	T	L	T	L	T	L	T	L	T	L	T
30	S3 30% basic 1h		0°C to +60°C		0 to 350 min^{-1}		1,90	0,95	8		95	90
40							2,90	1,45	12		95	90
50							4,70	2,35	17		95	90
60							6,70	3,35	17		95	90

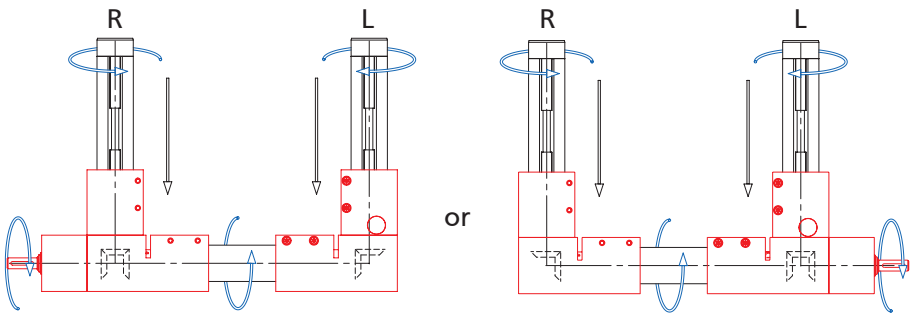
*Briefly. Not a permanent moment. Block travel not permitted.

Configuration examples



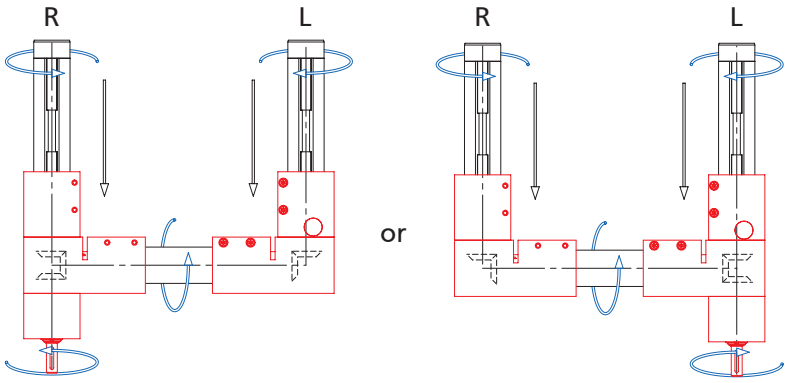
Components needed:

1x E-II with righthand thread
1x Angular drive – L
1x Flange bearing unit



Components needed:

1x E-II with righthand thread
1x E-II with lefthand thread
2x Angular drive – T
1x Flange bearing unit
1x Transmission unit



Components needed:

1x E-II with righthand thread
1x E-II with lefthand thread
2x Angular drive – T
1x Flange bearing unit
1x Transmission unit

Drive

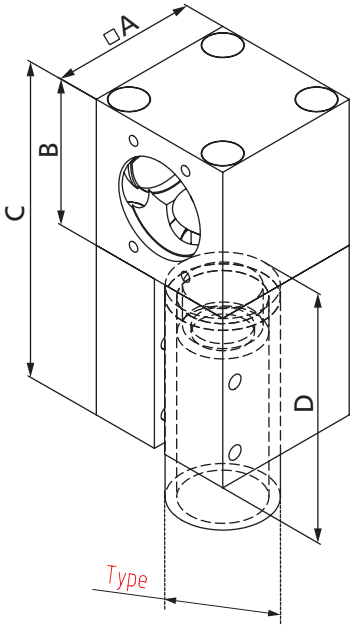
Order instruction:

- When adapting an handwheel or positioning-indicator a flange bearing unit is still required

Angular drive – L

- For 90° arrangement of the hand wheel, EHL or unit drive LZ on an E-II linear unit

Scope of delivery:
Housing, 1 Plastic-bevel gear with adjusting ring, screws and closing caps



[mm]

Code No.	Type	i	A	B	C	D
91520F1F1A	30	1:1	52	52	100	39
91521F1F1A	40	1:1	62	62	134	55
91522F1F1A	50	1:1	72	72	153	66
91523F1F1A	60	1:1	82	82	170	80

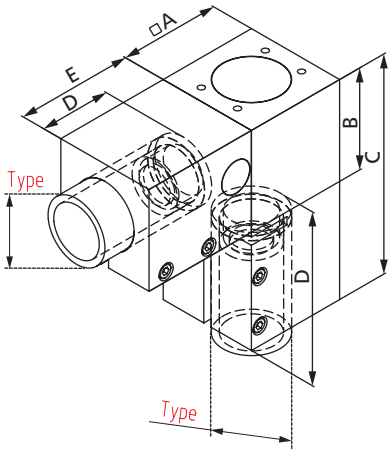
Order instruction:

- When adapting an hand wheel or positioning-indicator a flange bearing unit is still required

Angular drive – T

- For synchronization of two E-II linear units
- Suitable for manual adjustment, via EHL or unit drive LZ

Scope of delivery:
Housing, 2 Plastic-bevel gears with adjusting rings, screws and closing caps



[mm]

Code No.	Type	i	A	B	C	D	E
91520G1F1A	30	1:1	52	52	102	39	48
91521G1F1A	40	1:1	62	62	134	55	72
91522G1F1A	50	1:1	72	72	153	66	81
91523G1F1A	60	1:1	82	82	172	80	88

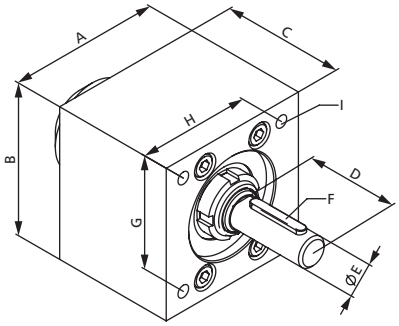
Order instruction:

- When adapting an EHL or the unit drive LZ S, a motor ad apter is still required

- For adaptation of the hand wheel or position indicator on the angular drive

Scope of delivery:
Housing, 1 Plastic-bevel gear with shim rings and screws

Flange bearing unit



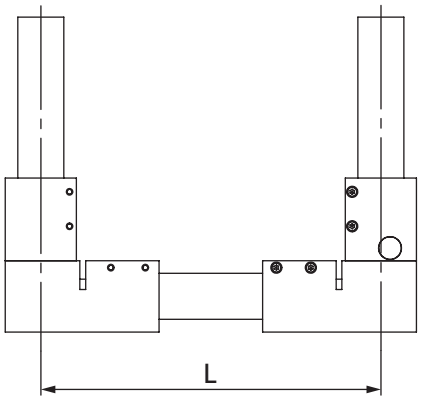
[mm]

Code No.	Type	A	B	C	D	E	F	G	H	I
91540H1F1A	30	52	52	40	24	8	2x2x20	30	40	4xM6-12 deep
91541H1F1A	40	62	62	50	38	12	4x4x25	46	46	4xM6-12 deep
91542H1F1A	50	72	72	74	38	12	4x4x32	46	46	4xM8-16 deep
91543H1F1A	60	82	82	68	33	14	5x5x32	55	55	4xM8-16 deep

Transmission unit

- For torque transmission with parallel linear units

Material:
Tube and bearing elements zinc plated steel, shaft bright



Note:
When ordering, please be sure to subtract the appropriate dimension from the overall length (L) table to determine the required length of the transmission unit.

[mm]

Code No.	Type	Basic length (minimum length)	Max. Length	Required length
92523_ _ _ _	30	160	3074	L – 74
92544_ _ _ _	40	210	3096	L – 96
92555_ _ _ _	50	240	3102	L – 102
92506_ _ _ _	60	270	3102	L – 102

Order example:
Total length (L): 500mm
Type: 30 mm
Required length: 500 mm -74 mm = 426 mm
Code No.: 92523 0426

required length[mm]

Drive

Selection table - motor adaptor/coupling

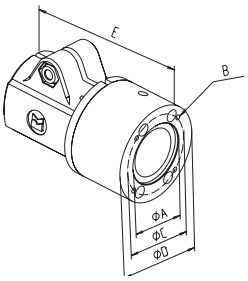
Type	Three-phase motor		EHL electr. handwheel	Drive unit	
	90/120 W	180/250 W		LZ S	LZ P
E 30	949983	–	92663	949700	949701
	9109200812	–	–	9109200810	9109200810
E 40	949984	–	92664	949702	949703
	9114301212	–	–	9114301012	9114301012
E 50	949985	–	92684	949704	949705
	9114301212	–	–	9114301012	9114301012
E 60	–	949606	949666	949706	–
	–	9119401414	–	9114301014	–
E 80	–	950001	92682	on request	–
	–	9119401420	–	9119401020	–

Code No. Motor adaptor:
950001

Code No. Coupling with specification of shaft diameter
1st end = 12 mm
2nd end = 12 mm:
9114301212

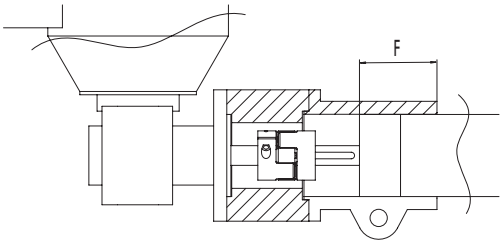
Note:
For further details on motor versions, please refer to the chapter "Motors and controls"

Motor adaptor for three-phase motor



- Clampable adaptor
- Flange surface machined

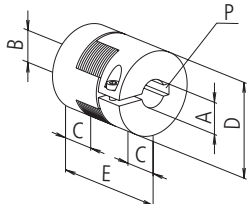
Material: Die-cast aluminium



[mm]

Code No.	Type	A	B	C	D	E	F
949983	30	50	M5	65	80	102,5	36,5
949984	40	50	M5	65	80	128	47
949985	50	50	M5	65	80	128	47
949606	60	80	M6	100	120	136	50
950001	80	80	M6	100	120	199,5	120

Coupling



- Small size
- Shaft connection without backlash
- Maintenance-free
- Easy plug-in assembly

Material: Hub – aluminium
Spider ring – polyurethane

To ensure proper function of the coupling, a clearance of **D + 3 mm** is required.

[mm]

Code No.	Type	A	B	C	D	E	P	Torque [Nm]	
								with feather key	without feather key
9109200812	30	8	12	10	22	30	2 x 2/4 x 4	5	3
9114301212	40/50	12	12	11	30	35	4 x 4/4 x 4	12	6
9119401414	60	14	14	25	40	65	5 x 5/5 x 5	17	10
9119401420	80	14	20	25	40	65	5 x 5/6 x 6	17	10

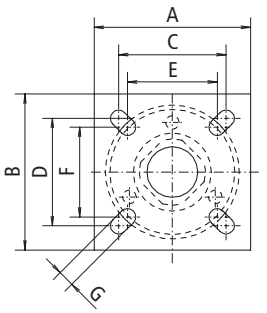
Motor adaptor for EHL electronic handwheel

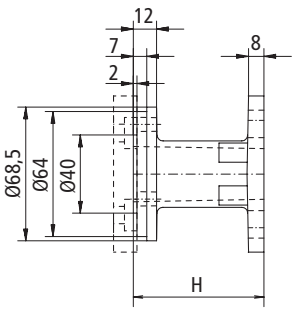
- Clampable adaptor
- Incl. coupling

Note:

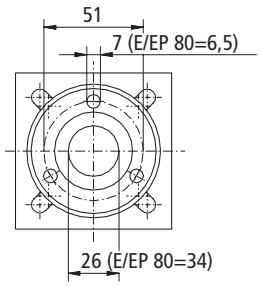
To mount the motor adaptor on a Type E linear unit, a sleeve clamp is required. (this is included with the adaptor)
Please note that the stroke may be limited.

Linear unit connection

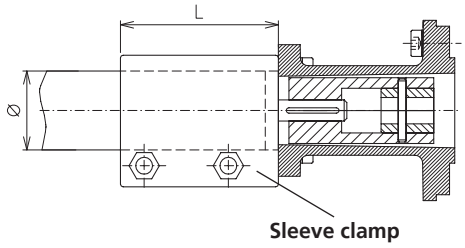


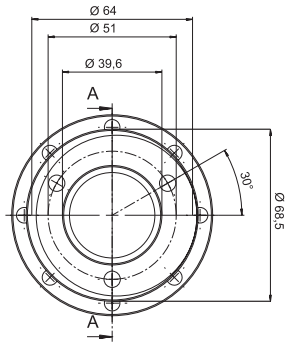


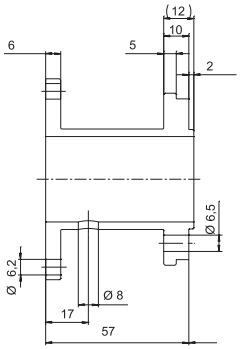
EHL connection

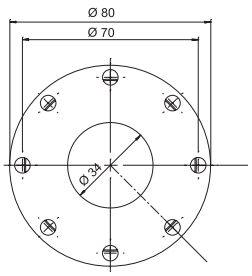


Only for linear unit Type E









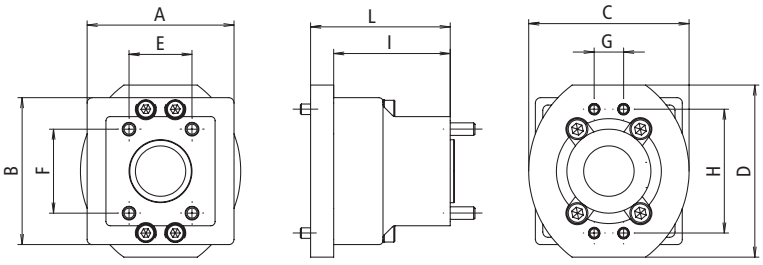
Other adapters available on request

[mm]

Code No.	for linear unit	Shaft diam. unit	A	B	C	D	E	F	G	H	L	Diam-eter
92663	E 30	8	50	50	30	40	30	30	6	67	60	30
92664	E 40	12	60	60	46	46	36	36	7	67	75	40
92684	E 50	12	65	65	46	46	–	–	9	67	67	60
949666	E 60	14	80	80	55	55	46	46	9	67	93	60
92682	E 80	20	80	80	70	70	–	–	6.2	59		80

Motor adaptor for LZ S/P drive unit

- Clampable adaptor



[mm]

Linear unit	LZ S Code No.	LZ P Code No.	Coupling Code No.	A	B	C	D	E	F	G	H	I	L
E 30	949700	949701	9109200810	56	74	76.4	82	–	–	56.5	39.6	65	134
E 40	949702	949703	9114301012	89.2	66	76.4	82	–	–	56.5	39.6	78	129
E 50	949704	949705	9114301012	66	84	76.4	82	–	–	56.5	39.6	78	129
E 60	949706	–	9114301014	80	103	76.4	82	–	–	52.3	52.3	92	143
E 80	on request		9119401020	on request									

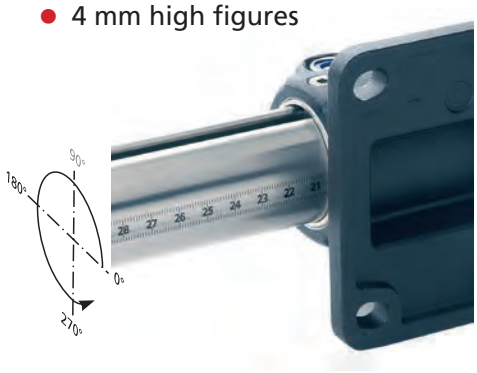
Position determination

Order instruction:

- Position of scale on 0° or 180° as option

Scale

- Self-adhesive
- Width:10 mm
- 4 mm high figures



Material: High-performance film, transparent

Image shows scale mounted at 0°, to be read from right to left. Standard mounting at 270° (Type 30-60: 90° not technically possible, Type 80: (90° and 180° not technically possible)

[mm]

Type	Can be read from	Length	Version
30-60*	left to right	0-2000	fitted
	right to left	0-2000	fitted

* Type 18 and 80 available on request.

Positioning indicator

- Max ambient temperature +80°C
- Figure height 6 mm
- Reading accuracy ± 0.1 mm
- If positioning indicators are fitted, the linear units are delivered exclusively with ball bearings

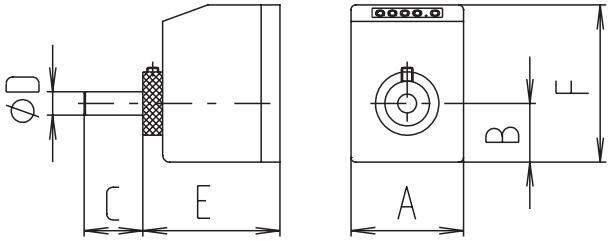
Material: Housing polyamide 6
Orange RAL 2004,
Steel parts, corrosion protected

Scope of delivery: Positioning indicator, clamping ring, shaft extension and fastenings

Note: "rising" and "falling" versions refer to the clockwise rotation of the drive shaft.

Installation position: horizontal

Installation position: vertical



[mm]

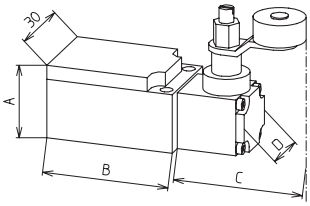
Type	Installation position	Connection	Code No.	Version	Code No.	Version	A	B	C	D	E	F
18	horizontal	Directly to E-II	91001	2mm rising	910129	4mm rising	48	29	17	6	60	67
18			91011	2mm falling	910130	4mm falling	48	29	17	6	60	67
18	vertical		91021	2mm rising	910131	4mm rising	48	29	17	6	60	67
18			91031	2mm falling	910132	4mm falling	48	29	17	6	60	67
30	horizontal	Directly to E-II or on angular drive	91043	3mm rising	91010	6mm rising	48	25	18	8	59	67
30			91053	3mm falling	91029	6mm falling	48	25	18	8	59	67
30	vertical		91063	3mm rising	91020	6mm rising	48	25	18	8	59	67
30			91073	3mm falling	91019	6mm falling	48	25	18	8	59	67
40	horizontal	Directly to E-II or on angular drive	91004	4mm rising	91030	8mm rising	48	25	38	12	59	67
40			91014	4mm falling	91039	8mm falling	48	25	38	12	59	67
40	vertical		91024	4mm rising	91040	8mm rising	48	25	38	12	59	67
40			91034	4mm falling	91041	8mm falling	48	25	38	12	59	67
50	horizontal	Directly to E-II or on angular drive	91045	4mm rising	91046	8mm rising	48	25	38	12	59	75
50			91055	4mm falling	91047	8mm falling	48	25	38	12	59	75
50	Vertikal		91065	4mm rising	91048	8mm rising	48	25	38	12	59	75
50			91075	4mm falling	91049	8mm falling	48	25	38	12	59	75
60	horizontal	Only on angular drive	910120	5mm rising	910124	10mm rising	48	25	38	14	60	81
60			910121	5mm falling	910125	10mm falling	48	25	38	14	60	81
60	vertical		910122	5mm rising	910126	10mm rising	48	25	38	14	60	81
60			910123	5mm falling	910127	10mm falling	48	25	38	14	60	81
60	horizontal	Directly to E-II	91006	5mm rising	91056	10mm rising	48	25	38	14	60	81
60			91016	5mm falling	91057	10mm falling	48	25	38	14	60	81
60	vertical		91026	5mm rising	91058	10mm rising	48	25	38	14	60	81
60			91036	5mm falling	91059	10mm falling	48	25	38	14	60	81
80	horizontal	Directly to E-II	91101	6mm rising	910133	12mm rising	64	29	31	20	60	94
80			91102	6mm falling	910134	12mm falling	64	29	31	20	60	94
80	vertical		91103	6mm rising	910135	12mm rising	64	29	31	20	60	94
80			91104	6mm falling	910136	12mm falling	64	29	31	20	60	94

Position determination

Mechanical limit switch

Material: Thermoplastic, fully insulated

Type	18-60	80
Max. voltage	250 V AC	230 V AC
Max. switching current	6 A	4 A
Max. starting current	16 A	–
Operating frequency	Max. 6000/h	Max. 5000/h
Mechanical lifetime	10 million switching cycles	20 million switching cycles
Axis lever adjustment	locking at 10° increments	
Protection class	IP 65	IP 67
Ambient temperature	-30°C to +80°C	



[mm]

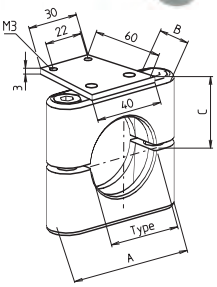
Code No.	Type	Switching function	A	B	C	D
91905	18-60	NC/NO	26.5	45	45.5	21
91908	80	NC/NO	30	58.5	46	20

E limit switch holder

- Limit switch can be moved and fixed axially

Scope of delivery: Holder with limit switch

Material: Aluminium



[mm]

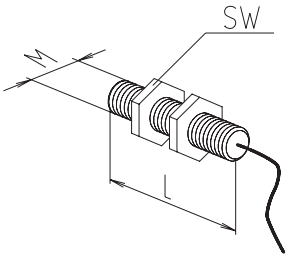
Code No.	Type	A	B	C	D	E	F	G	H
92764	30	60	16	28	M4	3	30	60	40
92766	40	75	20	37	M4	3	30	60	40
92768	50	85	20	42.5	M4	3	30	60	40
92769	60	100	22	48	M4	3	30	60	40
927101	80	130	30	71	M4	10	70	70	70

Inductive limit switch

- Maintenance-free

Material: Housing - brass, chrome-plated

Type	18-60	80
Voltage	10 - 30 V DC	
Max. switching current	200 mA	150 mA
Operating distance	4 mm for steel	2 mm for steel
Protection class	IP 67	
Ambient temperature	-25°C to +70°C	
Cable lengths	2m	

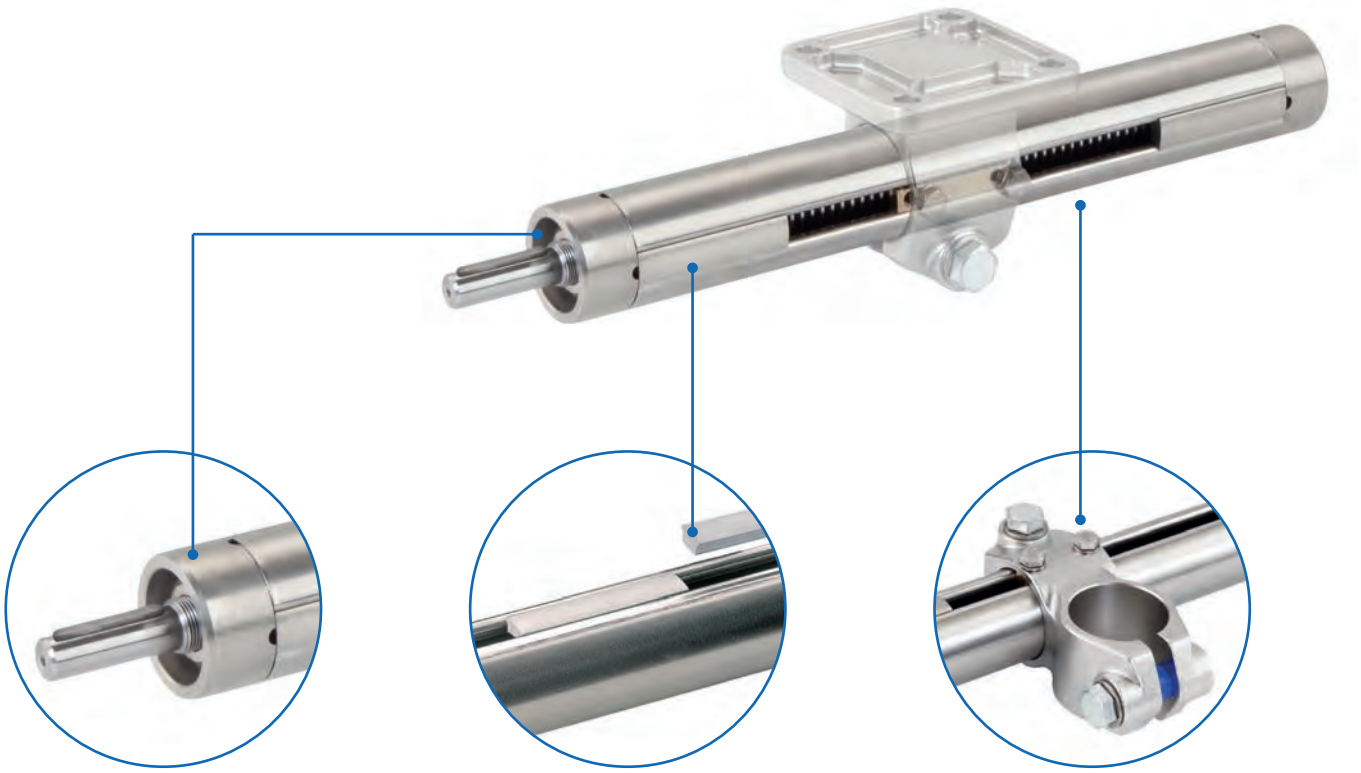


[mm]

Code No.	Type	Switching function	L	M	Wrench size (SW)
92825	18-60	Changeover	50	12x1	17
92826	80	Changeover	40	8x1	13

Positioning of a labelling machine via a crossing E tubular linear unit

Flexible all-rounder – now also corrosion-resistant



End element
- Stainless steel ball bearing as screw bearing
- With drain hole as standard

Covers
- Slot cover as dust protection or stroke limitation

Guide carriage/fixing elements
- Range of variants facilitates connection to your design
- Made from stainless steel, guide carriages with slide bush as standard

Features:
- Units for light to heavy movement applications
- Corrosion-resistant to media, e.g. water
- Suitable for washing down
- FDA-approved lubricants

Options:
- Second free-running guide carriage
- Higher temperature range up to 150°C

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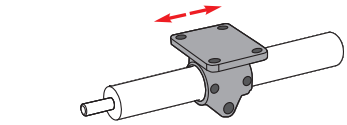
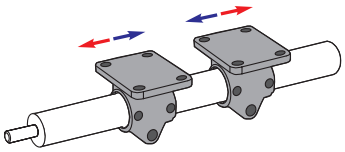
Versions
(Dimensions, order numbers)



Right *or* lefthand thread Page 90



Right *and* lefthand thread Page 92

Accessories
(Fixing)

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Clamping lever Page 90

Covers for E-II-stainless steel Page 90

Handwheel Page 91

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Scale/positioning indicator Page 92

Positionsbestimmung

Technical data

General information/operating conditions

Design	Actuator with trapezoidal screw in a slotted tube
Guide	Guide carriage with slide bushing
Installation position	Any position
Positioning accuracy	± 0.2 mm / 300 mm stroke
Self-locking	Yes*
Ambient temperature	-30°C to + 80°C

Material

	DIN EN ISO	AISI
Ball bearing	1.4301	304
Trapezoidal screw (-30°C to +80°C)	1.4104	430
Trapezoidal screw (-30°C to +150°C)	1.4301	304
Guide tube		
Bearing		
Screws		
Sealing profile		
End element	1.4305	303
Lead nut	Brass alloy	
Driver key		

Screw lead

Type	Screw lead [mm]	Speed with ball bearing 250 rpm [mm/s]
E-II 30-stainless	3	12.5
E-II 40-stainless	4	16.7

$$\text{Required screw speed* n [rpm]} = \frac{\text{speed [m/min] x 1000}}{\text{screw lead [mm]}}$$

*max. screw speed with ball bearing 250 rpm

No-load torque

[Nm]

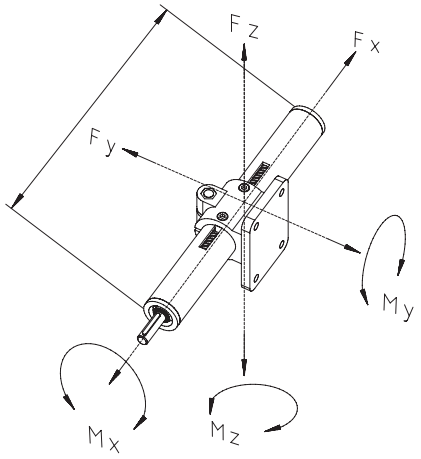
Type	Screw with ball bearing
E-II 30-stainless	0.35
E-II 40-stainless	0.50

Load data*

F Force [N]

M Moment [Nm]

I Geometric moment of inertia [cm^4]

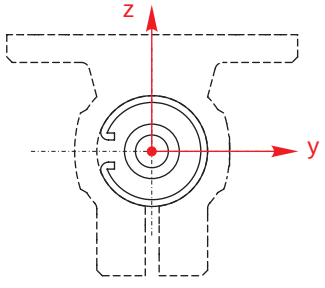


Type / Total lenght [mm]	Fx	Fy*			Fz*			Mx	My	Mz
		500	1000	1500	500	1000	1500			
E-II 30-stainless	800	500	60	10	500	50	9	6	15	15
E-II 40-stainless	1000	2100	250	60	1900	140	50	14	40	40

Geometric moment of inertia

[cm^4]

Type	Iy	Iz
E-II 30-stainless	1.34	1.56
E-II 40-stainless	4.58	5.24



Versions

Order instructions:

- Choice of carriage - this must be ordered separately
- Different “R” dimensions available on request
- Higher temperature range available on request

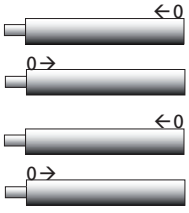
Version ● Right- or lefthand thread

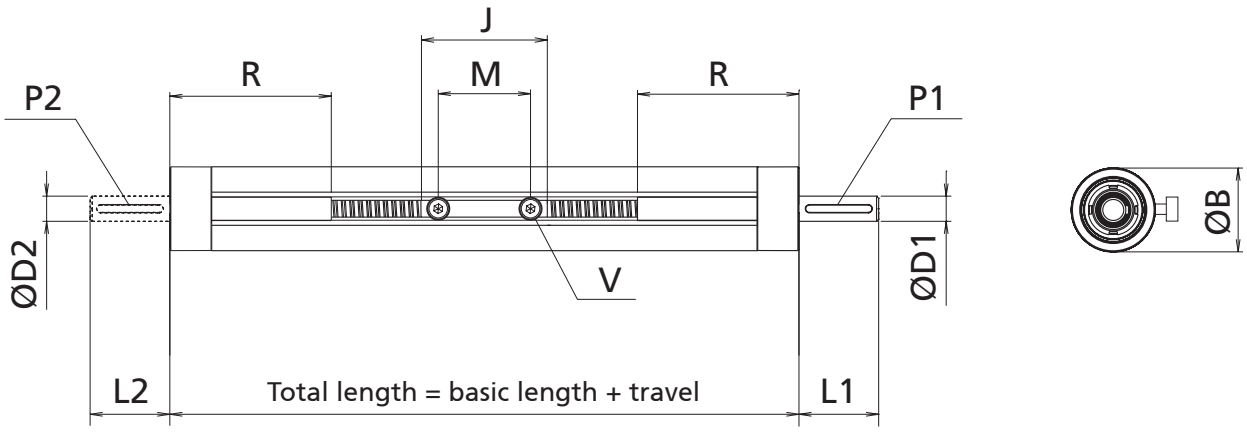
Code No.	Type	Screw	Basic length	B	D 1	D 2	J
78 _ 304 _	30	Tr 14x3	191	30	8	–	31
78 _ 306 _	30					8	
78 _ 404 _	40	Tr 20x4	193	40	12	–	39
78 _ 406 _	40					12	

_ _ _ _ Total length = basic length + travel [mm]

V = Temperature range (-30°C to +80°C)
H = Temperature range (-30°C to +150°C)

Version:
1 = righthand thread
2 = lefthand thread
A = righthand thread with scale at 270° *
B = righthand thread with scale at 270° *
C = lefthand thread with scale at 270° *
D = lefthand thread with scale at 270° *





[mm]

L 1	L 2	M	P 1	P 2	R	V	Max. travel	Mass [kg]	
								Basic length	per 100 mm travel
26	–	22	2x2x20	–	80	M4x8	1283	0.610	0.212
	26			2x2x20			1257	0.620	0.212
38	–	28	4x4x32	–	77	M6x10	2769	1.305	0.432
	38			4x4x32			2731	1.336	0.432

Versions

Order instructions:

- Choice of guide carriage, this must be ordered separately
- The total length (total travel + basic length) in millimetres has to be specified when ordering
- Different "R" dimensions available on request
- Higher temperature range available on request

Version ● Right- and lefthand thread

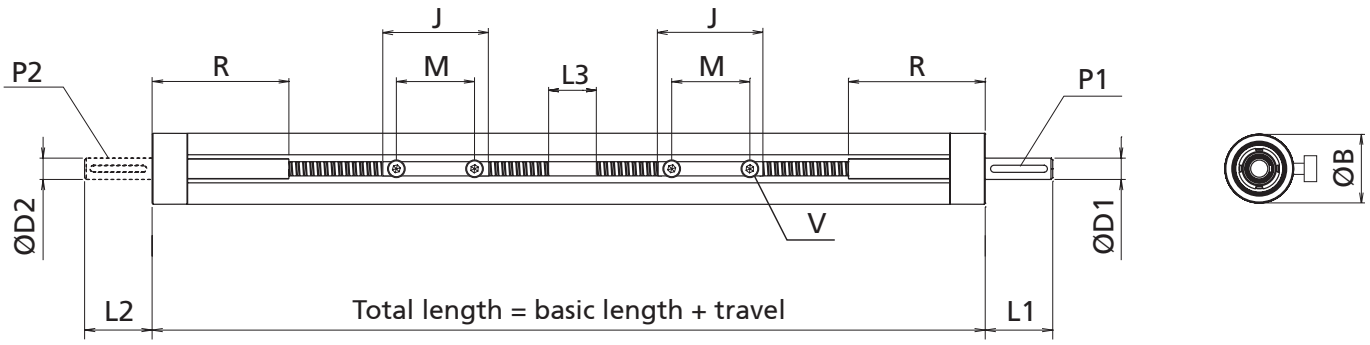
Code No.	Type	Screw	Basic length	B	D1	D2	J
78_30_ _	30	TR 14x3	247	30	8	8	31
78_40_ _	40	TR 20x4	255	40	12	12	39

_ _ _ _ Total length = basic length + total travel [mm]

V = Temperature range (-30°C to +80°C)
H = Temperature range (-30°C to +150°C)

Version:
4 = 1 drive shaft at lefthand thread end
5 = 1 drive shaft at righthand thread end
6 = 2 drive shafts

Version:
3 = Right and lefthand thread (RH/LH)
N = RH/LH with scale at 270° *



[mm]

L 1	L 2	L 3	M	P 1	P 2	R	V	Max. travel	Mass [kg]	
									Basic length	per 100 mm travel
26	26	25	28	2x2x20	2x2x20	80	M4x8	1753	0.798	0.212
38	38	23	44	4x4x32	4x4x32	77	M6x10	2745	1.742	0.432

Fixing

Order instructions:

- A rotation locking device (drive key) is included in the scope of delivery of the linear unit. Additional drive keys (e.g. for free-running guide carriages) can also be ordered as an optional extra
- For further dimensions, please refer to the catalogue **"Connecting Technology"**

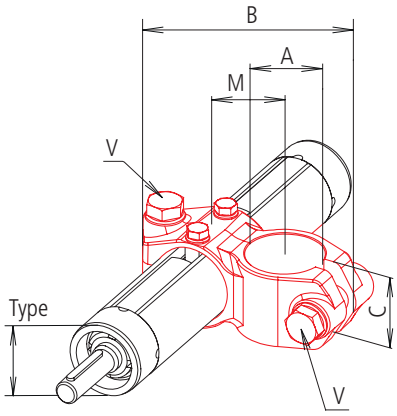
Guide carriage

- A range of different versions facilitate simple system mounting

Scope of delivery:
Guide carriage with screws, losely enclosed

Material: Precision cast stainless steel 1.4308 (AISI CF-8), electropolished finish

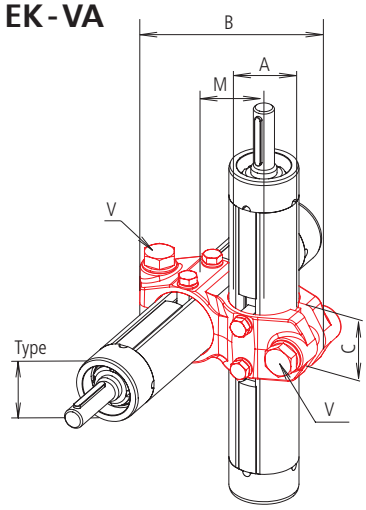
K - VA



[mm]

Code No.	Type	A	B	C	M	V	Clamping levers V Code No.
13001_0_	30	30	92	32.4	33	M8x30	93027
14001_0_	40	40	118	40	42	M10x35	93026

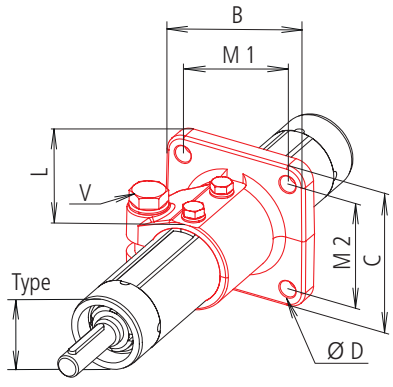
EK - VA



[mm]

Code No.	Type	A	B	C	M	V	Clamping levers V Code No.
13019_00	30	30	92	32.4	33	M8x30	93027
14019_00	40	40	118	40	42	M10x35	93026

FS - VA



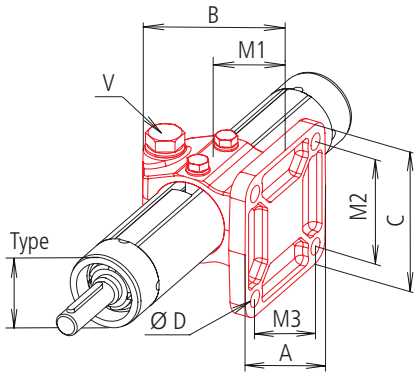
[mm]

Code No.	Type	B	C	D	L	M1	M2	V	Clamping levers V Code No.
13011_0_	30	60	60	7	50	40	40	M8x30	93027
14011_0_	40	80	80	9	60	60	60	M10x35	93026

0 = without scale
A = scale at 270°

3 = Temperature range (-30°C to +80°C)
A = Temperature range (-30°C to +150°C)

FK - VA



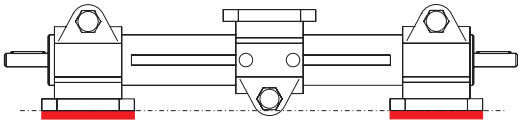
[mm]

Code No.	Type	A	B	C	D	M1	M2	M3	V	Clamping levers V Code No.
13023_0_	30	55	59	78	7	30	60	40	M8x30	93027
14009_0_	40	80	80	80	9	42	60	60	M10x35	93026

0 = without scale
A = scale at 270°

3 = Temperature range (-30°C to +80°C)
A = Temperature range (-30°C to +150°C)

If using FK elements as guide carriages and fixing elements, spacers provide the necessary clearance.



[mm]

Code No.	Type	Spacer
96733	30	5 mm panel thickness, stainless steel 1.4301 (AISI 304)
96734	40	

Drive key for carriages

- Rotation locking for additional free-running carriages

Note: The order number of the linear unit includes a drive key

Material: Brass alloy

[mm]

Code No.	Type	Installation length
95986	30	31
95985	40	39

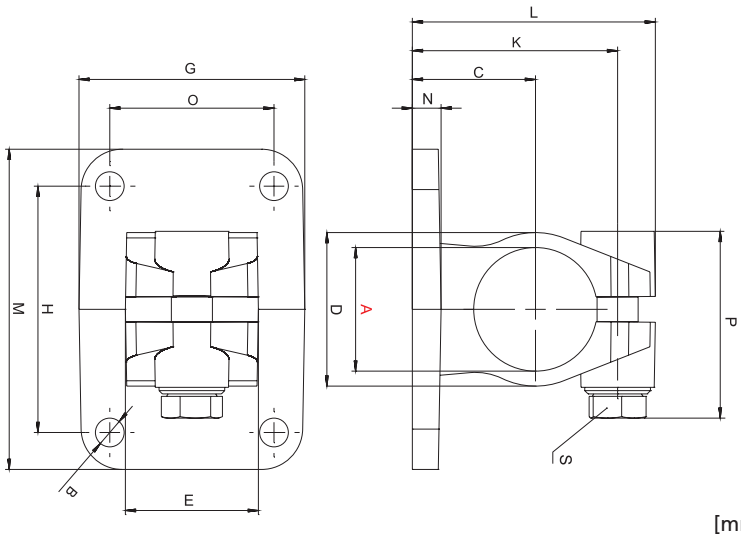
Fixing

Fixing element

- Clamping elements for the simple fixing of Linear units E-II-stainless

Material: Precision cast stainless steel 1.4308 (AISI CF-8), electropolished finish

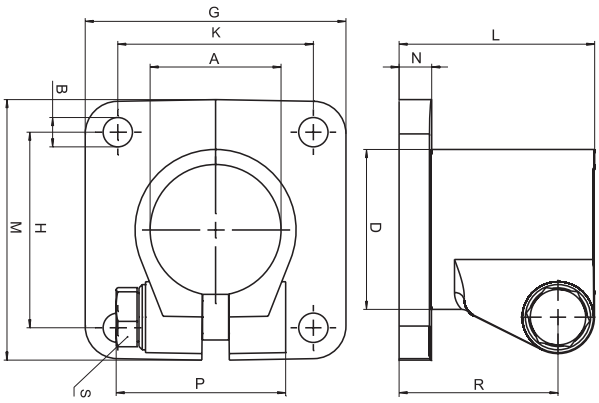
FK - VA



[mm]

Code No.	Type	A	B	C	D	E	G	H	K	L	M	N	O	P	m [g]	Clamping lever S Code No.
12300000390	FK-VA 30	30.1	7	30	37.4	32.4	55	60	50	59.2	78	7	40	45.5	370	93027
12400000390	FK-VA 40	40.17	9	42	49.4	46.4	80	60	69	80	80	10	60	52	849	93026

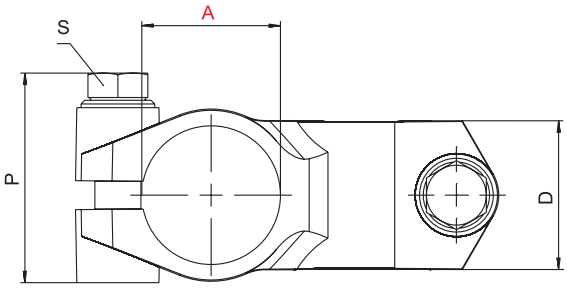
FS - VA

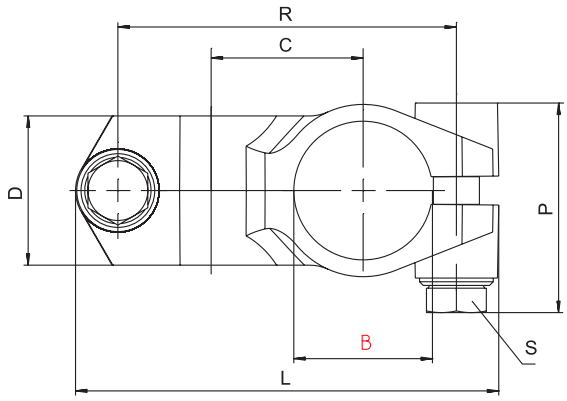


[mm]

Code No.	Type	A	B	D	G	H	K	L	M	N	P	R	m [g]	Clamping lever S Code No.
13300000390	FS-VA 30	30.1	7	37.4	60	40	40	50	60	7	45.5	41	316	93027
13400000390	FS-VA 40	40.17	9	49.4	80	60	60	60	80	10	52	90	629	93026

K-VA

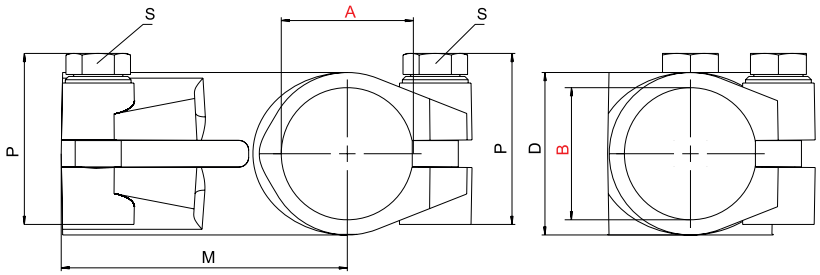


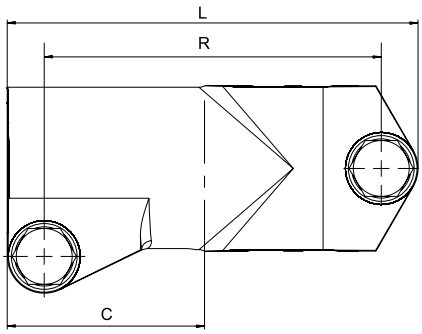


[mm]

Code No.	Type	A	B	C	D	L	P	R	m [g]	Clamping lever S Code No.
103000003900	K-VA 30	30.1	30.1	33	32.4	92	45.5	73.5	348	93027
104000003900	K-VA 40	40.17	40.17	42	40.4	118	52	95.5	647	93026

W-VA 30, 40





[mm]

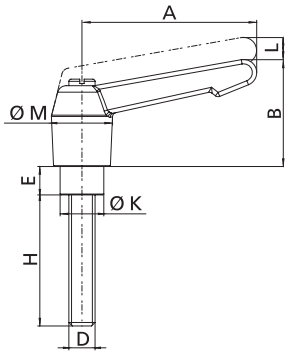
Code No.	Type	A	B	C	D	L	M	P	R	m [g]	Clamping lever S Code No.
113000003900	W-VA 30	30.1	30.1	40	38.4	87	58	45.5	69	403	9300201
114000003900	W-VA 40	40.17	40.17	60	50.4	124.9	87	54	102.5	875	93023

Fixing / Drive

Clamping lever

(Symbolic representation)

- Accessory for fixing elements and guide carriages



Material: Handle – precision cast stainless steel 1.4308 (AISI CF-8), electropolished finish.
Other parts – stainless steel 1.4305 (AISI 303)

Note: A washer (delivery scope of clamp) must be used if lever M10x40 shall be assembled

[mm]

Code No.	Type	A	B	D	E	H	K	L	M
93027	M8x30	65	36	M8	6,5	30	13,5	3	19
93026	M10x40	65	36	M10	6,5	40	13,5	3	19

Covers

- Slot covers, can be used as dust protection or stroke limitation
- Can be shortened or lengthened if required

Material: Stainless steel 1.4301 (AISI 304)

Scope of delivery: Pack of 2 cover strips or as bar material

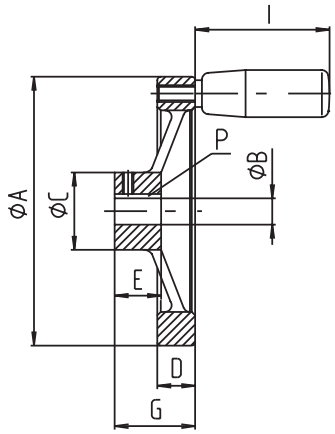
The covers are available as a pack of two, or as bar material.

The linear unit comes with two covers for the bearing seats.

Additional covers can be inserted in the guide slot.

Code No.	Type	Length [mm]
	Covers, pack of 2	
90440	30	63
90441	40	57
	Cover, bar material	
90445	30	3010
90446	40	3010

Handwheel (to +80°C)

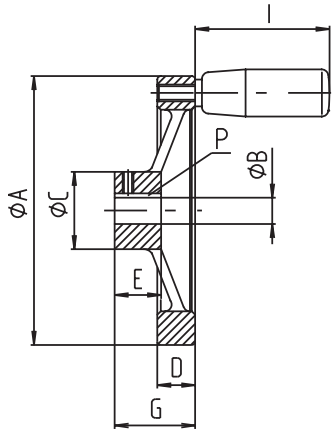


Material: Duroplast PF31 black, hub made of stainless steel 1.4305 (AISI 303)
Handle (rotating), stainless steel 1.4305 (AISI 303)

[mm]

Code No.	Type	ØA	B	C	D	E	G	P	I
90971	30	100	8	22	19	29.5	39	2x2	54.7
90972	40	100	12	22	19	29.5	39	4x4	54.7

Handwheel (to +150°C)



Material: Stainless steel 1.4301 (AISI 304)

[mm]

Code No.	Type	ØA	B	C	D	E	G	P	I
90990	30	101,6	8	25,9	7,87	18,03	31,7	2x2	39,88
90991	40	101,6	12	25,9	7,87	18,03	31,7	4x4	39,88

Position determination

Order instruction:

- Position of scale on 0° or 180° as option

- Self-adhesive
- Width:10 mm
- 4 mm high figures

Material:
High-performance film
transparent – (-30°C to +80°C)
white – (-30°C to +150°C)

Scale

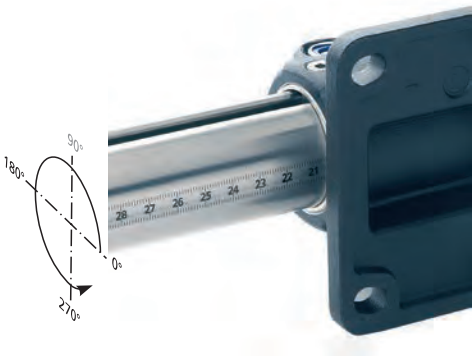


Image shows scale mounted at 0°, to be read from right to left. Standard mounting at 270° (90° not technically possible)

[mm]

Type	Can be read from	Length	Version
30-40	left to right	0-2000	fitted
	right to left	0-2000	fitted

Positioning indicator

- You will find the corresponding positioning indicator in the **"Linear technology"** general catalogue

Installation position: horizontal

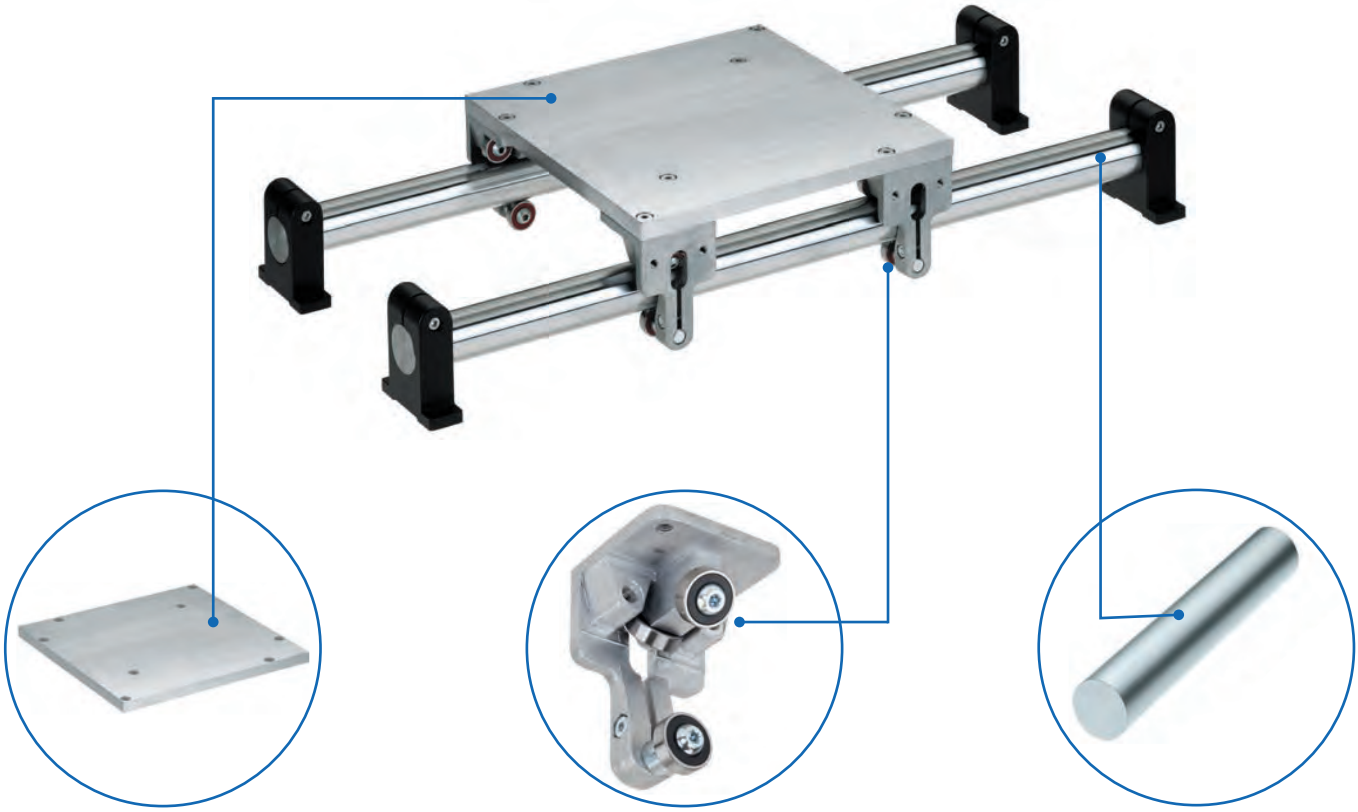
(Symbolic representation)

Installation position: vertical

(Symbolic representation)

Linear unit E-II-stainless – Corrosion resistant

Robust guide
for simple adjustment of medium loads



Fixing plate
- Large plate for the simple connection of components

Rollers
- Can be adjusted with zero backlash

Guide element
- As hardened shaft

Features:
- Simple and robust design
- Cost-effective

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(Dimensions, order numbers)

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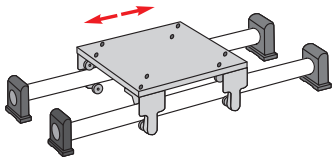


Accessories
(Fixing)

Fixing plate Page 108

FKW shaft bracket Page 108

Guide shaft Page 108

Drive

RF/RL roller guide element Page 109

Technical data

General information/operating conditions

Design	Simple and robust twin tube guide unit
Guide	Roller guide, can be adjusted with zero backlash
Installation position	Any position
Max. travel speed	2.5 m/s
Self-locking	No
Ambient temperature	0°C to +60°C

Load data

F Force [N]

M Moment [Nm]

I Geometric moment of inertia [cm^4]

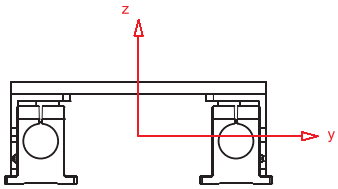
* with reference to carriage (deflection of guide element f = 1.0 mm, static, end elements supported)

Type	Fy*	Fz*				Mx	My	Mz
Total length [mm]		1500	2000	2500	3000			
RE 30	330	1600	400	200	125	65	65	20
RE 40	600	2400	1050	650	400	155	155	65

Geometric moment of inertia

[cm^4]

Type	Iy	Iz
RE 30	8.0	700.0
RE 40	25.1	3348.0



Versions

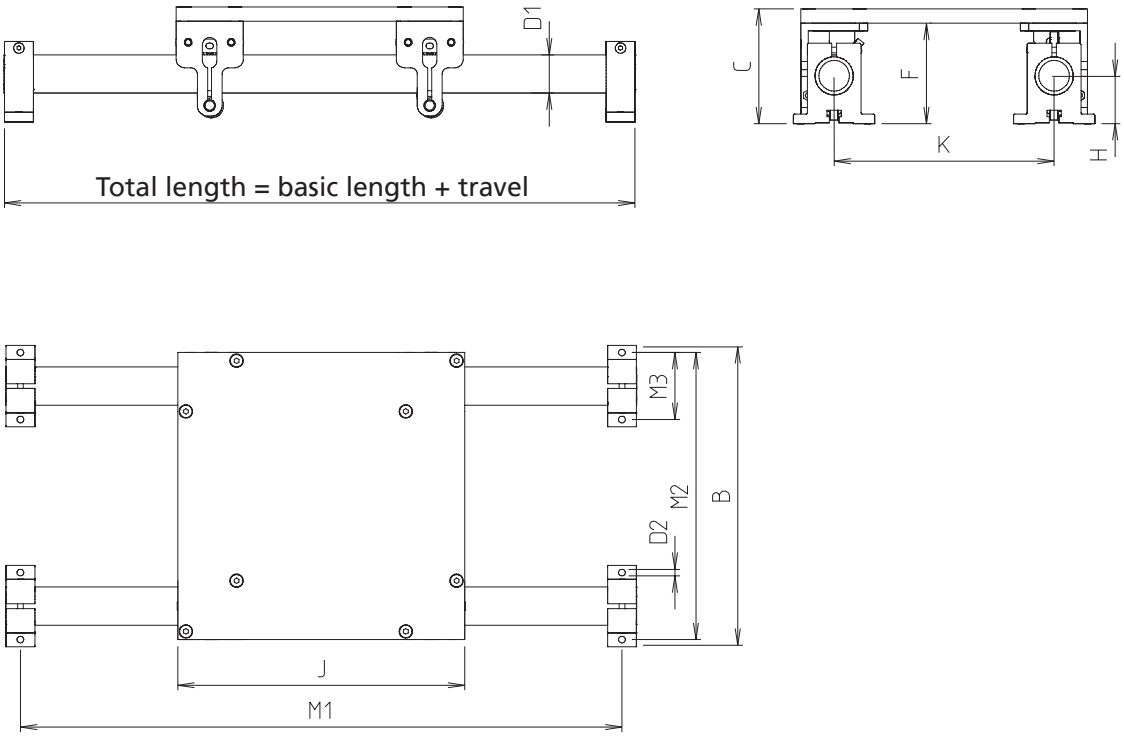
Order instruction:

- Longer travel lengths on request

Version ● Guide

Code No.	Type	Rollers	Guide element	Basic length	B	C	ØD1	ØD2	F	H
MEA3000AA	RE 30	Steel	Shaft, hardened	250	210	98	30	7	86	40
MEA4000AA	RE 40	Steel	Shaft, hardened	360	315	120	40	7	105	50

_ _ _ _ Total length = basic length + travel [mm]



[mm]

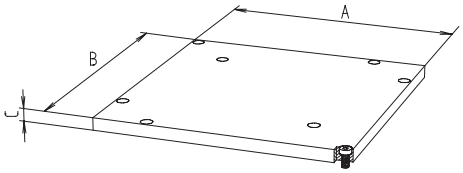
I	J	K	M1	M2	M3	max. travel	Mass [kg]	
							Basic length	per 100 mm travel
200	200	140	225	196	56	3000	5,7	1,1
300	300	230	330	300	70	3000	13,5	2,0

Fixing/Drive

Fixing plate

- Connecting plate for roller guide elements

Material:
Al-K100, surface-ground, surface roughness ≈ 2µm



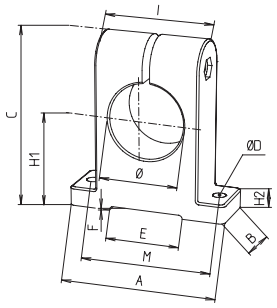
[mm]

Code No.	A ± 0.4	B ± 0.4	C ± 0.15
6821272020	200	200	12
6821272030	200	300	12
6821573030	300	300	15
6821573040	300	400	15

FKW shaft bracket

- Fixing element for guide shafts/ tube

Material:
Body of element, aluminium die casting, black powder-coating, VA screws

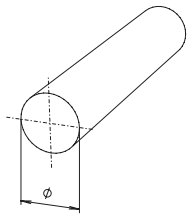


[mm]

Code No.	Type	Ø h8	A	B	C	Ø D	H1 ± 0.1	H2	I	M
52300013030	FKW 30	30	70	25	72.5	7	40	7	42	56
52400013030	FKW 40	40	85	30	92	7	50	10	56	70

Guide shaft

- Shaft, induction hardened, ground and polished
- Hardness: 62 HRC.
- Roughness value Ra ≤ 0.35 mm



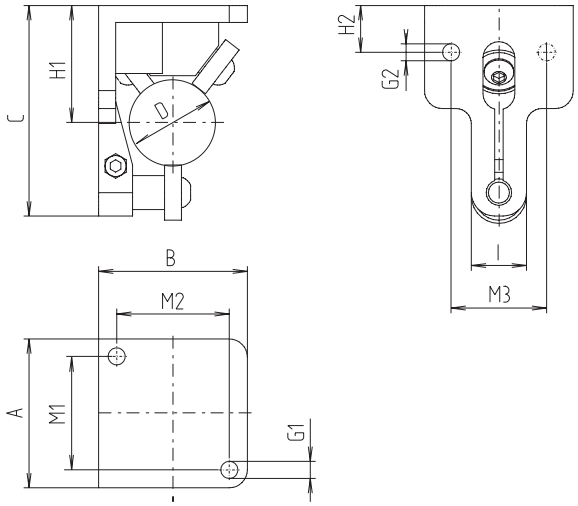
[mm]

Code No.	Diameter	Material	Tolerance	max. length
Guide shaft				
8030005	30	Cf53 hard chrome-plated	h7	6000
8040005	40	Cf53 hard chrome-plated	h7	6000

RF roller guide element -fixed bearing-

- Ready-to-install element
- Can be adjusted with zero backlash
- Steel rollers

Material: Body of element, aluminium die casting, vibratory finished
Steel parts zinc plated



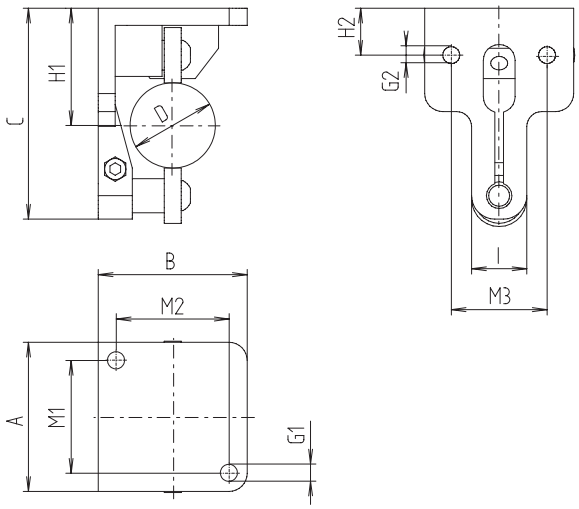
[mm]

Code No.	Type	Rollers	Max. load [N]	A	B	C	D	G1	G2	H1	H2	I	M1	M2	M3
6023014	RF 30	Steel	700	60	60	83	30	M8-8 deep		46	20	22	44	44	38
6024014	RF 40	Steel	1000	70	70	99	40	M8-8 deep		55	22	26	53	53	45

RL roller guide element -floating bearing-

- Ready-to-install element
- Can be adjusted with zero backlash
- Steel rollers

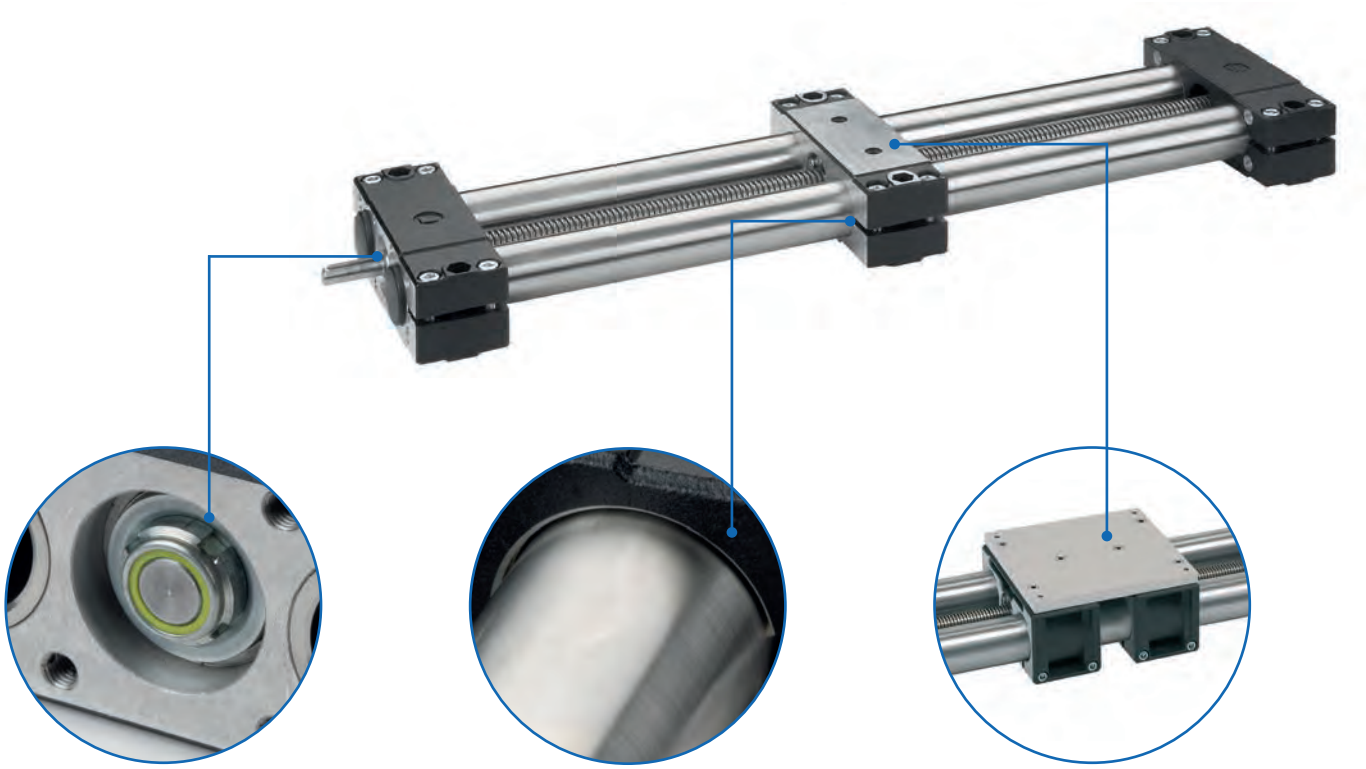
Material: Body of element, aluminium die casting, vibratory finished
Steel parts zinc plated



[mm]

Code No.	Type	Rollers	Max. load [N]	A	B	C	D	G1	G2	H1	H2	I	M1	M2	M3
6023024	RL 30	Steel	700	60	60	83	30	M8-8 deep		46	20	22	44	44	38
6024024	RL 40	Steel	1000	70	70	99	40	M8-8 deep		55	22	26	53	53	45

The robust twin tube unit – compensates for high bending moments during hand and motor-driven adjustments



Screw with choice of slide bearing or ball bearing

- Ideal for use in environments with fine dust/abraded particles due to slide bearings

Carriages available with optional slide bushing

- Lower input torque at shaft
- Wear minimised on carriage

Large fixing plate

- The EPX version is equipped with two carriages that are connected via a large fixing plate
- Enables high moments

Features:

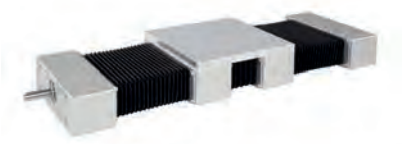
- Enables high moments
- Version available with large fixing plate

Options:

- Corrosion-protected units
- Bellows
- Second not driven carriage

Varianten:

- EP-II 30/40 Protect and EPX-II 30/40 Protect with bellows (Protection class IP 40)



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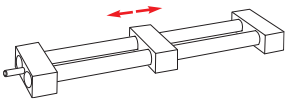
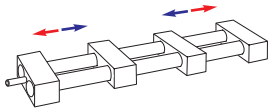
(Dimensions, order numbers)



EP right or lefthand thread ..... Page 114



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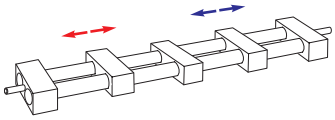
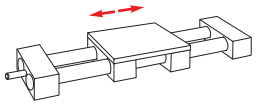


EPX right or lefthand thread..... Page 120 - 121



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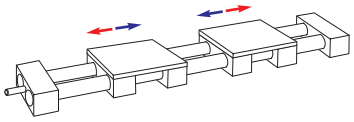

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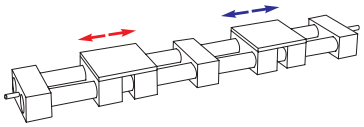

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Positionsbestimmung

Positioning indicator..... Page 141

Limit switch..... Page 142 - 143

Technical data

General information/operating conditions

Design	Twin tube actuator with ACME screw/For EP 18 and EPX 18 solid shaft instead of tube
Guide	Slide guide, optional carriage with slide guide available
Installation position	Any position
Lead accuracy	± 0.2 mm/300 mm stroke
Self-locking	Yes*
Ambient temperature	0°C to +60°C

* see Glossary under item Self-locking

Screw lead

Type	Screw lead [mm]	Speed with slide bearing [mm/s]	Speed with ball bearing [mm/s]
EP / EPX 18	2	2.7	8.3
EP / EPX 30	3	4	12.5
EP / EPX 40	4	5.3	16.7
EP / EPX 50	4	5.3	16.7
EP / EPX 60	5	6.7	20.8
EP / EPX 80	6	8	25

$$\text{Required screw speed* n [rpm]} = \frac{\text{speed [m/min] x 1000}}{\text{screw lead [mm]}}$$

Max. screw speed with slide bearing 80 rpm
with ball bearing 250 rpm

No-load torque

[Nm]

Type	with ball bearing	with slide bearing
EP 18	0.30	*
EP 30	0.60	0.75
EP 40	0.70	0.85
EP 50	1.10	1.25
EP 60	1.40	*
EP 80	1.00	*

[Nm]

Type	with ball bearing	with slide bearing
EPX 18	0.40	*
EPX 30	0.70	0.75
EPX 40	0.80	0.85
EPX 50	1.20	1.25
EPX 60	1.50	*
EPX 80	1.40	*

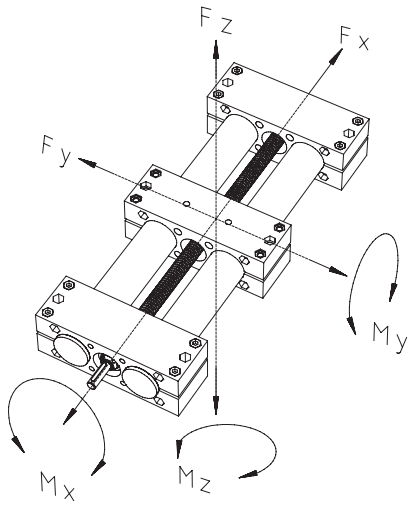
* Type 18, 60 and 80 spindle only available with ball bearing

Load data*

F Force [N]

M Moment [Nm]

I Geometric moment of inertia [cm^4]



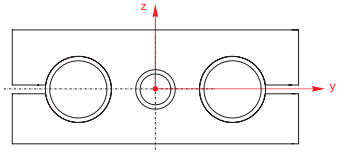
* with reference to carriage (deflection of guide element f = 0.5 mm, static, end elements supported)

Type	Fx	Fy*			Fz*			Mx	My	Mz
Total length [mm]		500	1000	1500	500	1000	1500			
EP 18	400	200	100	–	100	70	–	20	30	35
EP 30	800	1000	800	500	550	300	100	60	60	75
EP 40	1000	3500	2300	1300	2000	580	120	120	130	150
EP 50	1700	3800	2600	2050	3000	670	170	160	200	260
EP 60	2500	6600	5400	4900	6000	2600	330	300	340	480
EP 80	4500	11000	9000	7500	8000	3700	700	400	530	620
EPX 18	400	270	170	–	130	100	–	40	45	70
EPX 30	800	1400	1200	700	650	450	200	80	110	140
EPX 40	1000	6000	3100	1800	2200	680	220	160	190	240
EPX 50	1700	7700	5000	2500	3300	830	310	240	345	510
EPX 60	2500	11000	9000	7800	7000	2900	580	520	610	910
EPX 80	4500	14000	11700	10100	9100	4800	750	650	780	1100

Geometric moment of inertia

[cm^4]

Type	Iy	Iz
EP(X) 18	1.03	21.39
EP(X) 30	3.47	46.57
EP(X) 40	14.84	198.06
EP(X) 50	30.81	319.84
EP(X) 60	65.88	795.90
EP(X) 80	237.41	3168.98



Versions

Order instructions:

- Corrosion-protected units available on request
- Second free-running carriage available on request
- Bellows version available as optional extra
- Other screw leads available on request

Version ● Right or lefthand thread

Type 18-60 (image similar)

Type 80

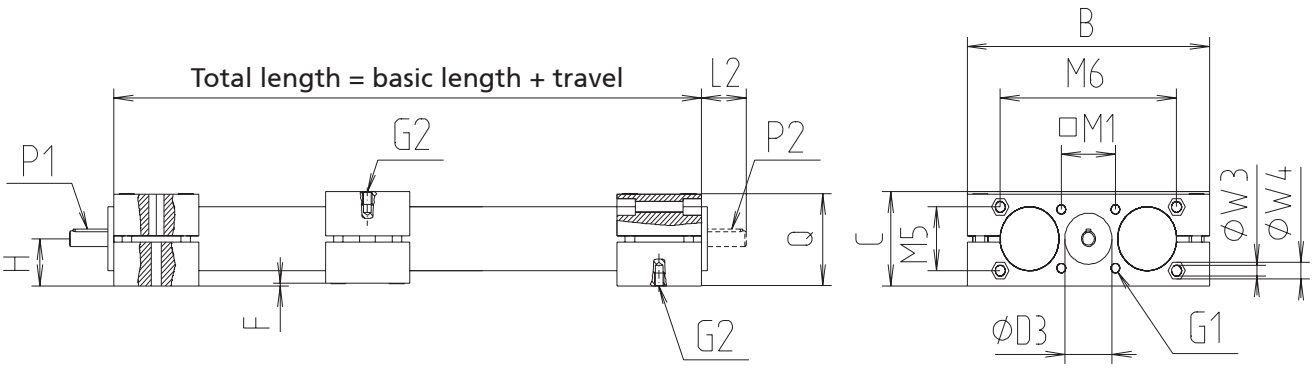
Code No.	Type	Spindle	Basic length	B	C	D1	D2	D3	F	G1**	G2	H	J	L1	L2	M1	M2	M3	M4
72_181_	18	10x2	87	82	29	6	–	16 ^{H7}	1	–	M5/5 deep	14.5	28	17	–	–	68	40	18
72_183_							6								17				
72_301_	30	14x3	150	130	54	8	–	30 ^{H8}	2	M6 / 12 deep	M6/9 deep	27	50	26	–	40x 30	114.5	70	42
72_303_							8								26				
72_401_	40	20x4	180	180	63	12	–	40 ^{H8}	3	M8 / 20 deep	M8/8 deep	31.5	60	38	–	46	160	90	62
72_403_							12								38				
72_501_	50	20x4	216	206	73	12	–	40 ^{H8}	1	M8 / 30 deep	M8/8 deep	36.5	72	38	–	46	184	100	62
72_503_							12								38				
72_601_	60	24x5	240	240	88	14	–	50 ^{H8}	2	M8 / 20 deep	M10/10 deep	44	80	38	–	55	216	130	74
72_603_							14								38				
72_801_	80	32x6	360	302	143	20	–	70 ^{H7}	4.5	M8 / 20 deep	M10/20 deep	71.5	120	31.5	–	64	–	180	–
72_803_							20								31.5				

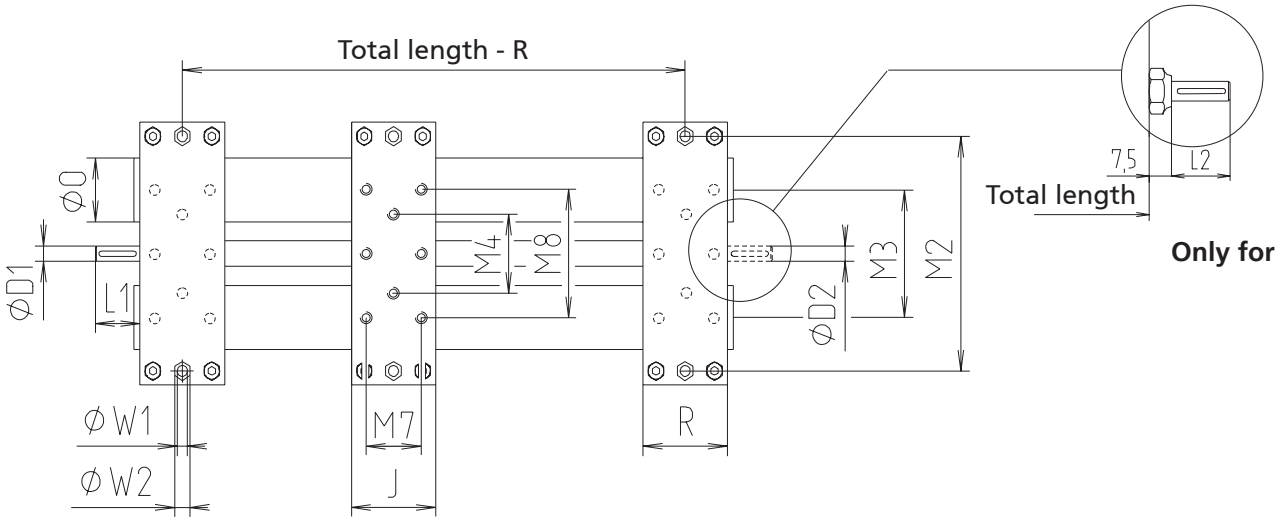
_ _ _ _ Total length = basic length + travel [mm]

Bearing:
0 = spindle with slide bearing*
1 = spindle with ball bearing
2 = spindle with slide bearing* and carriage with slide bushing
3 = spindle with ball bearing and carriage with slide bushing

Version:
1 = righthand thread
2 = lefthand thread

* Type 18, 60 and 80 spindle only available with ball bearing
** G1 thread only available on spindle with ball bearing





Only for EP18

[mm]

M 5	M 6	M 7	M 8	O	P 1	P 2	Q	R	W 1	W 2	W 3	W 4	Max. travel	Mass [kg]	
														Basic length	per 100 mm travel
–	–	–	–	18	2x2x12	–	28	28	5.5	A/F 8/6.5 deep	–	–	1080	0.775	0.45
						2x2x12							1063	0.779	0.45
35	92	–	–	30	2x2x20	–	52	50	6.5	A/F 10 / 26.5 deep	–	–	1424	2.065	0.33
						2x2x20							1398	2.075	0.33
38	132	–	–	40	4x4x32	–	60	60	8.5	A/F 13 / 32 deep	6.5	A/F 11/7 deep	2820	4.925	0.90
						4x4x32							2820	4.960	0.90
50	150	–	–	50	4x4x32	–	72	72	8.5	A/F 13 / 37.5 deep	8.5	A/F 13/8.5 deep	2784	7.438	1.10
						4x4x32							2784	7.473	1.10
60	185	–	–	60	5x5x32	–	86	80	10.5	A/F 17 / 44.5 deep	8.5	A/F 13/8.5 deep	2760	13.420	1.63
						5x5x32							2760	13.466	1.63
–	–	80	180	80	6x6x22	–	138.5	–	–	–	–	–	2640	35.920	3.47
						6x6x22							2640	36.010	3.47

Versions

Order instructions:

- Please specify total travel when placing an order
- Corrosion protected units available on request
- Second free running carriage available on request
- Bellows version available as optional extra
- Other screw leads available on request

Version ● Right and lefthand thread

Type 18-60 (image similar)

Type 80

Righthand thread

Lefthand thread (shaft end L1)

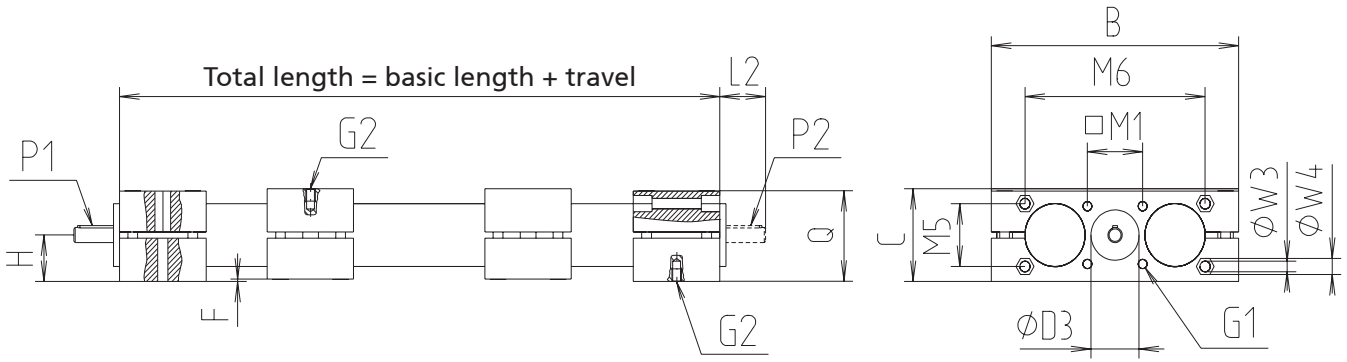
Code No.	Type	Spindle	Basic length	B	C	D 1	D 2	D 3	F	G 1**	G 2	H	J	L 1	L 2	M 1	M 2	M 3	M 4
72318_ _	18	10x2	118	82	29	6	6	16^{H7}	1	–	M5/5 deep	14.5	28	17	17	–	68	40	18
72330_ _	30	14x3	200	130	54	8	8	30^{H8}	2	M6/12 deep	M6/9 deep	27	50	26	26	40x 30	114.5	70	42
72340_ _	40	20x4	240	180	63	12	12	40^{H8}	3	M8 / 20 deep	M8/8 deep	31.5	60	38	38	46	160	90	62
72350_ _	50	20x4	288	206	73	12	12	40^{H8}	2	M8 / 30 deep	M8/8 deep	36.5	72	38	38	46	184	100	62
72360_ _	60	24x5	320	240	88	14	14	50^{H8}	2	M8 / 20 deep	M10/20 deep	44	80	38	38	55	216	130	74
72380_ _	80	32x6	480	302	143	20	20	70^{H7}	4.5	M8 / 20 deep	M10/20 deep	71.5	120	31.5	31.5	64	–	180	180

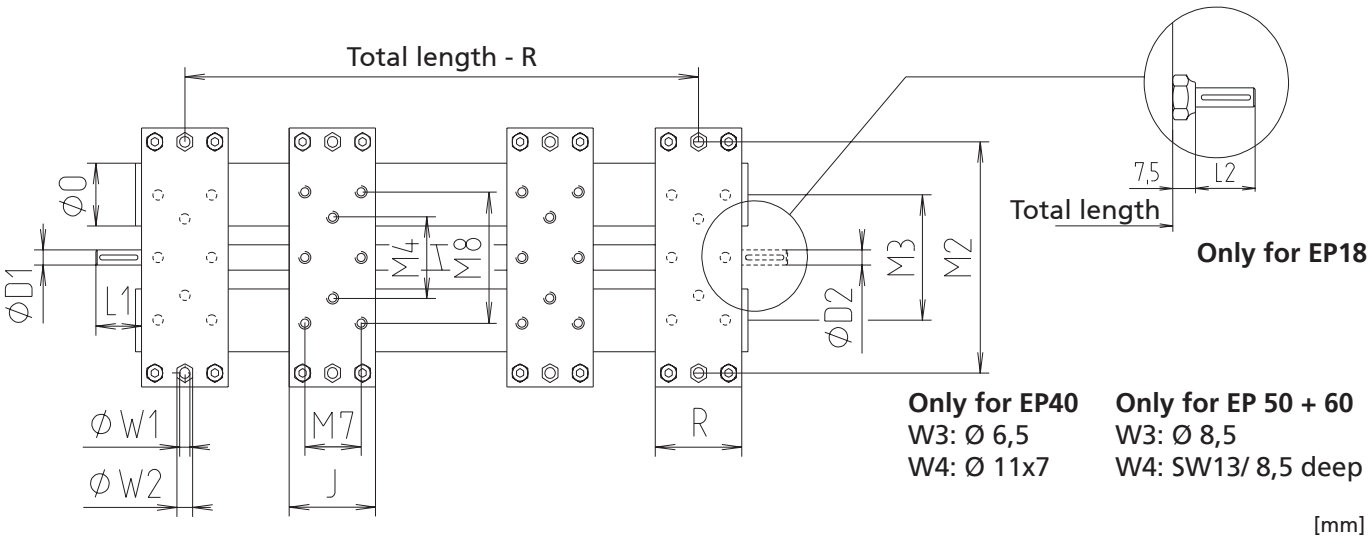
_ _ _ _ Total length = basic length + total travel [mm]

Bearing:
0 = spindle with slide bearing*
1 = spindle with ball bearing
2 = spindle with slide bearing* and carriage with slide bushing
3 = spindle with ball bearing and carriage with slide bushing

Version:
1 = 1 drive shaft at lefthand thread end
2 = 1 drive shaft at righthand thread end
3 = 2 drive shafts

* Type 18, 60 and 80 spindle only available with ball bearing
** G1 thread only available on spindle with ball bearing





Only for EP40
W3: Ø 6,5
W4: Ø 11x7

Only for EP 50 + 60
W3: Ø 8,5
W4: SW13/ 8,5 deep

[mm]

M 5	M 6	M 7	M 8	O	P 1	P 2	Q	R	W 1	W 2	W 3	W 4	Max. travel	Mass [kg]	
														Basic length	per 100 mm travel
–	–	–	–	18	2x2x12	2x2x12	28	28	5.5	A/F 8/6.5 deep	–	–	1386	1.014	0.45
35	92	–	–	30	2x2x20	2x2x20	52	50	6.5	A/F 10 / 26.5 deep	–	–	1800	2.440	0.33
38	132	–	–	40	4x4x32	4x4x32	60	60	8.5	A/F 13 / 32 deep	6.5	Ø 11x7	2760	5.585	0.90
50	150	–	–	50	4x4x32	4x4x32	72	72	8.5	A/F 13 / 37.5 deep	8.5	A/F 13 / 8.5 deep	2712	8.633	1.10
60	185	–	–	60	5x5x32	5x5x32	86	80	10.5	A/F 17 / 44.5 deep	8.5	A/F 13 / 8.5 deep	2680	18.182	1.63
–	–	80	180	80	6x6x22	6x6x22	138.5	120	–	–	–	–	2520	48.480	3.47

Versions

Order instructions:

- Please specify total travel when placing an order
- Corrosion protected units available on request
- Second free running carriage available on request
- Bellows version available as optional extra
- Other screw leads available on request

Version ● Split screw

Type 18-60 (image similar)

Type 80

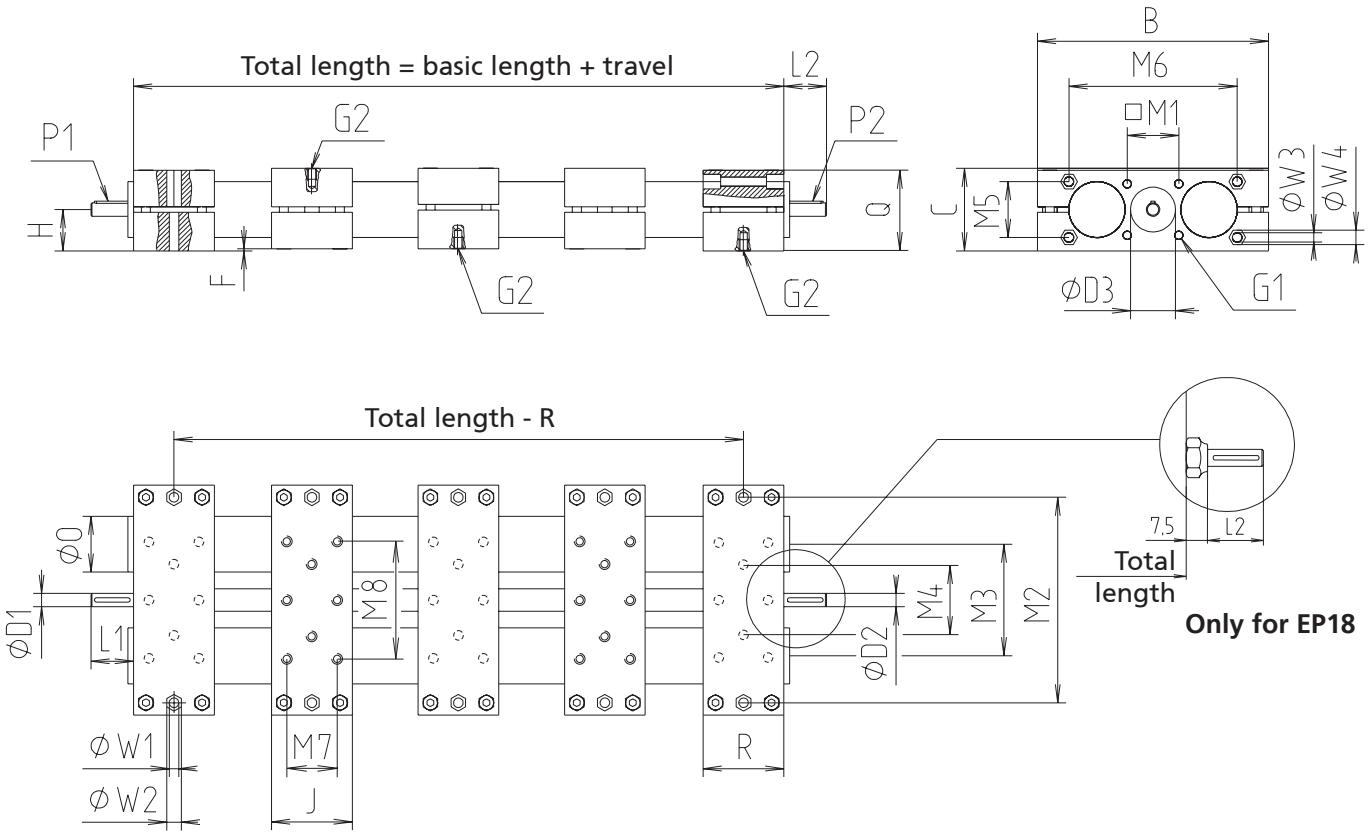
Righthand thread

Righthand thread

Code No.	Type	Spindle	Basic length	B	C	D 1	D 2	D 3	F	G 1**	G 2	H	J	L 1	L 2	M 1	M 2	M 3	M 4
724183 _	18	10x2	146	82	29	6	6	16^{H7}	1	–	M5 / 5 tief	14.5	28	17	17	–	68	40	18
724303 _	30	14x3	250	130	54	8	8	30^{H8}	2	M6 / 12 deep	M6 / 9 deep	27	50	26	26	40x30	114.5	70	42
724403 _	40	20x4	300	180	63	12	12	40^{H8}	3	M8 / 20 deep	M8 / 8 deep	31.5	60	38	38	46	160	90	62
724503 _	50	20x4	360	206	73	12	12	40^{H8}	2	M8 / 30 deep	M8 / 8 deep	36.5	72	38	38	46	184	100	62
724603 _	60	24x5	400	240	88	14	14	50^{H8}	2	M8 / 20 deep	M10/10 deep	44	80	38	38	55	216	130	74
724803 _	80	32x6	600	302	143	20	20	70^{H7}	4.5	M8 / 20 deep	M10/20 deep	71.5	120	31.5	31.5	64	–	180	180

_ _ _ _ Total length = basic length + total travel [mm]

Bearing:
1 = spindle with ball bearing and carriage without slide bushing
3 = spindle with ball bearing and carriage with slide bushing



[mm]

M 5	M 6	M 7	M 8	O	P 1	P 2	Q	R	W 1	W 2	W 3	W 4	Max. travel/end	Mass [kg]	
														Basic length	per 100 mm travel
–	–	–	–	18	2 x 2 x 12	2 x 2 x 12	28	28	5.5	A/F 8/6.5 deep	–	–	927	1.245	0.45
35	92	–	–	30	2 x 2 x 20	2 x 2 x 20	52	50	6.5	A/F 10/26.5 deep	–	–	1375	2.645	0.33
38	132	–	–	40	4x4x32	4x4x32	60	60	8.5	A/F 13/32 deep	6.5	A/F 11/7 deep	1350	8.020	0.90
50	150	–	–	50	4 x 4 x 32	4 x 4 x 32	72	72	8.5	A/F 13/37.5 deep	8.5	A/F 13/8.5 deep	1320	12.760	1.10
60	185	–	–	60	5 x 5 x 32	5 x 5 x 32	86	80	10.5	A/F 17/44.5 deep	8.5	A/F 13/8.5 deep	1300	22.532	1.63
–	–	80	180	80	6 x 6 x 20	6 x 6 x 20	138.5	120	–	–	–	–	1200	60.110	3.47

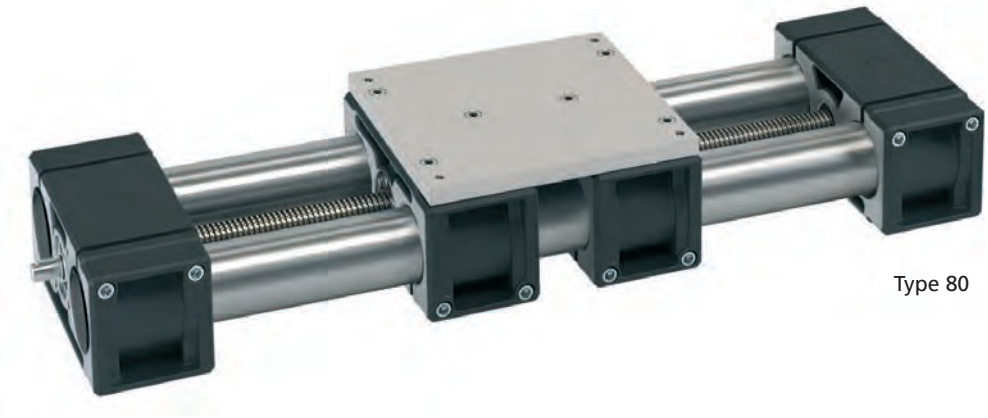
Versions

Order instructions:

- Corrosion-protected units available on request
- Second free-running carriage available on request
- Bellows version available as optional
- Other screw leads available on request

Version ● Right or lefthand thread

Type 18-60 (image similar)



Type 80

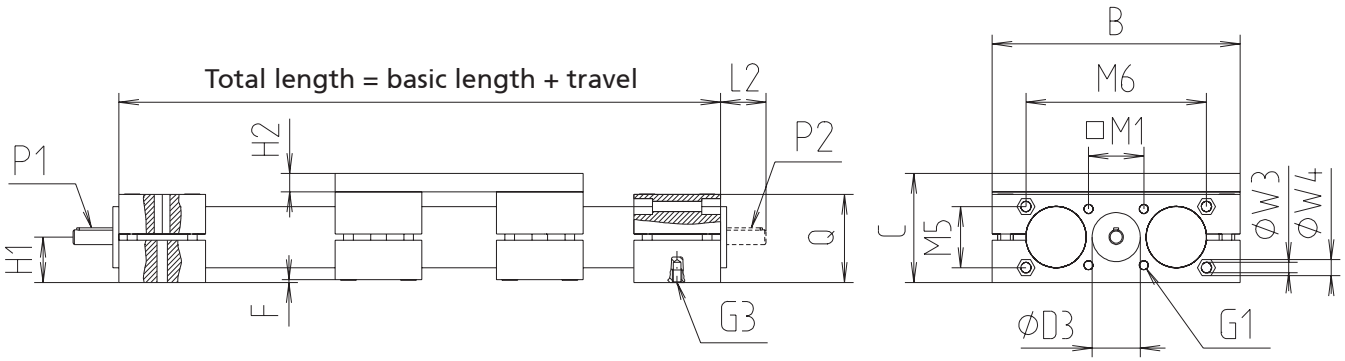
Code No.	Type	Spindle	Basic length	B	C	D 1	D 2	D 3	F	G 1**	G 2	G 3	H 1	H 2	J	L 1	L 2	M 1	M 2	M 3	M 4
72 _ 181 _	18	10 x 2	139	82	37	6	–	16^{H7}	1	–	M6	M5/5 deep	14.5	8	80	17	–	–	68	40	18
72 _ 183 _	18						6										17				
72 _ 301 _	30	14 x 3	230	130	64	8	–	30^{H8}	2	M6/12 deep	M6	M6/9 deep	27	10	130	26	–	40 x 30	114.5	70	42
72 _ 303 _	30						8										26				
72 _ 401 _	40	20 x 4	300	180	75	12	–	40^{H8}	3	M8 / 20 deep	M8	M8 / 8 deep	31.5	12	180	38	–	46	160	90	62
72 _ 403 _	40						12										38				
72 _ 501 _	50	20 x 4	350	206	88	12	–	40^{H8}	2	M8/30 deep	M8	M8/8 deep	36.5	15	206	38	–	46	184	100	62
72 _ 503 _	50						12										38				
72 _ 601 _	60	24 x 5	400	240	103	14	–	50^{H8}	2	M8/20 deep	M10	M10/10 deep	44	15	240	38	–	55	216	130	74
72 _ 603 _	60						14										38				
72 _ 801 _	80	32 x 6	550	302	162	20	–	70^{H7}	4.5	M8/20 deep	M10	M10/20 deep	71.5	19	310	31.5	–	64	–	180	180
72 _ 803 _	80						20										31.5				

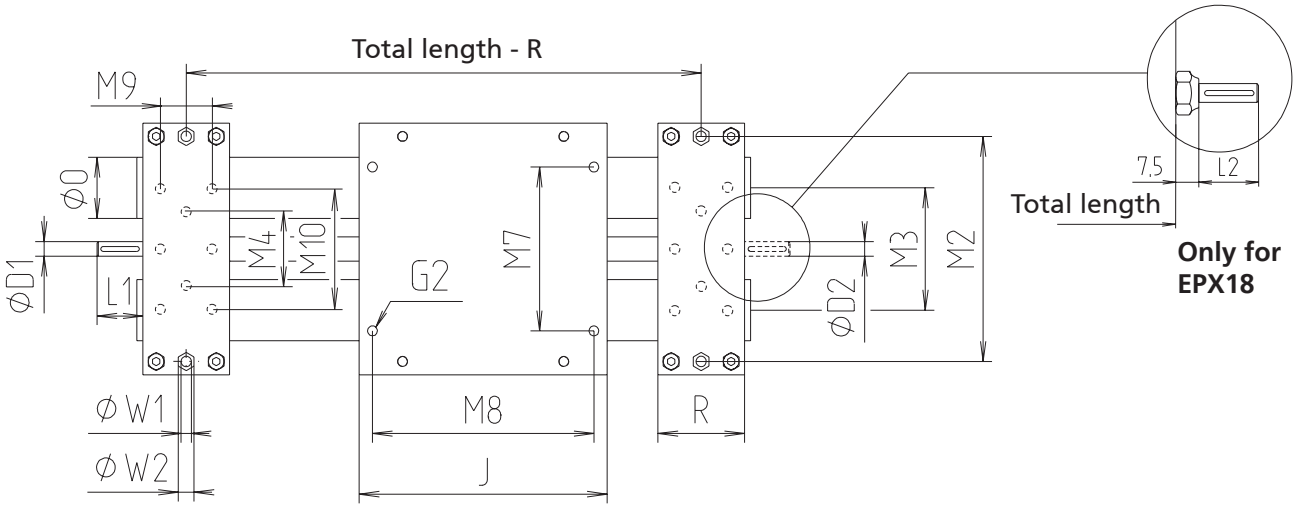
_ _ _ _ Total length = basic length + travel [mm]

Bearing:
0 = spindle with slide bearing*
1 = spindle with ball bearing
2 = spindle with slide bearing* and carriage with slide bushing
3 = spindle with ball bearing and carriage with slide bushing

Version:
5 = righthand thread
6 = lefthand thread

* Type 18, 60 and 80 spindle only available with ball bearing
** G1 thread only available on spindle with ball bearing





[mm]

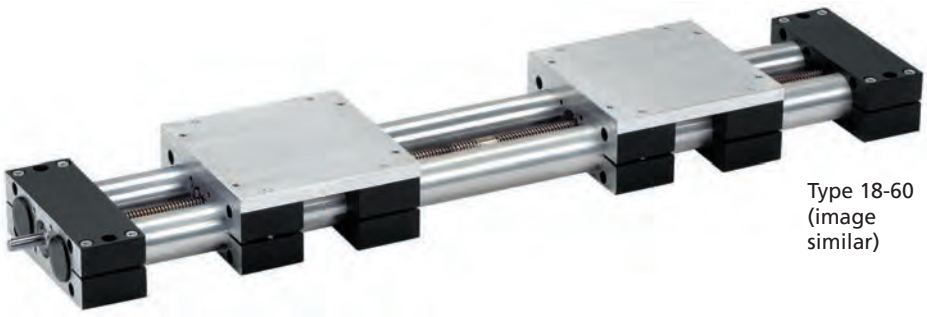
M 5	M 6	M 7	M 8	M 9	M 10	O	P 1	P 2	Q	R	W 1	W 2	W 3	W 4	Max. travel	Mass [kg]	
																Basic length	per 100 mm travel
–	–	56	28	–	–	18	2 x 2 x 12	–	28	28	5.5	A/F 8/6.5 deep	–	–	1028	1.261	0.45
								2 x 2 x 12							1011	1.265	0.45
35	92	80	114	–	–	30	2 x 2 x 20	–	52	50	6.5	A/F 10/26.5 deep	–	–	1344	3.519	0.33
								2 x 2 x 20							1318	3.529	0.33
38	132	120	160	–	–	40	4 x 4 x 32	–	60	60	8.5	A/F 13/32 deep	6.5	A/F 11 / 7 deep	2700	8.105	0.90
								4 x 4 x 32							2700	8.140	0.90
50	150	134	184	–	–	50	4 x 4 x 32	–	72	72	8.5	A/F 13/37.5 deep	8.5	A/F 13/8.5 deep	2650	12.525	1.10
								4 x 4 x 32							2650	12.560	1.10
60	185	160	216	–	–	60	5 x 5 x 32	–	86	80	10.5	A/F 17/44.5 deep	8.5	A/F 13/8.5 deep	2600	21.426	1.63
								5 x 5 x 32							2600	21.472	1.63
–	–	250	270	80	180	80	6 x 6 x 20	–	138.5	120	–	–	–	–	2450	54.760	3.47
								6 x 6 x 20							2450	54.860	3.47

Versions

Order instructions:

- Please specify total travel when placing an order
- Corrosion protected units available on request
- Second free running carriage available on request
- Bellows version available as optional extra
- Other screw leads available on request

Version ● Right and lefthand thread



Type 18-60 (image similar)

Type 80

Righthand thread

Lefthand thread (shaft end L1)

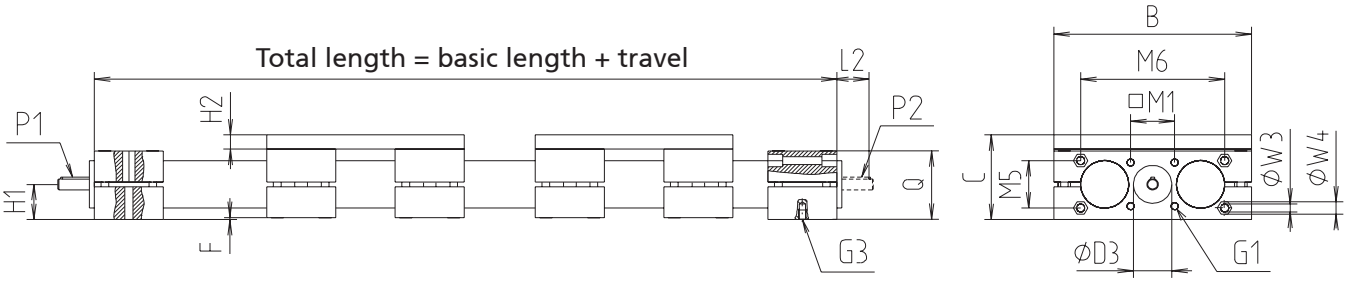
Code No.	Type	Spindle	Basic length	B	C	D 1	D 2	D 3	F	G 1**	G 2	G 3	H 1	H 2	J	L 1	L 2	M 1	M 2	M 3	M 4
72718_ _	18	10 x 2	222	82	37	6	6	16^{H7}	1	–	M6	M5/5 deep	14.5	8	80	17	17	–	68	40	18
72730_ _	30	14 x 3	360	130	64	8	8	30^{H8}	2	M6/12 deep	M6	M6/9 deep	27	10	130	26	26	40 x 30	114.5	70	42
72740_ _	40	20 x 4	480	180	75	12	12	40^{H8}	3	M8/20 deep	M8	M8 / 8 deep	31.5	12	180	38	38	46	160	90	62
72750_ _	50	20 x 4	556	206	88	12	12	40^{H8}	2	M8/30 deep	M8	M8/8 deep	36.5	15	206	38	38	46	184	100	62
72760_ _	60	24 x 5	640	240	103	14	14	50^{H8}	2	M8/20 deep	M10	M10/10 deep	44	15	240	38	38	55	216	130	74
72780_ _	80	32 x 6	860	302	162	20	20	70^{H7}	4.5	M8/20 deep	M10	M10/20 deep	71.5	19	310	31.5	31.5	64	–	180	180

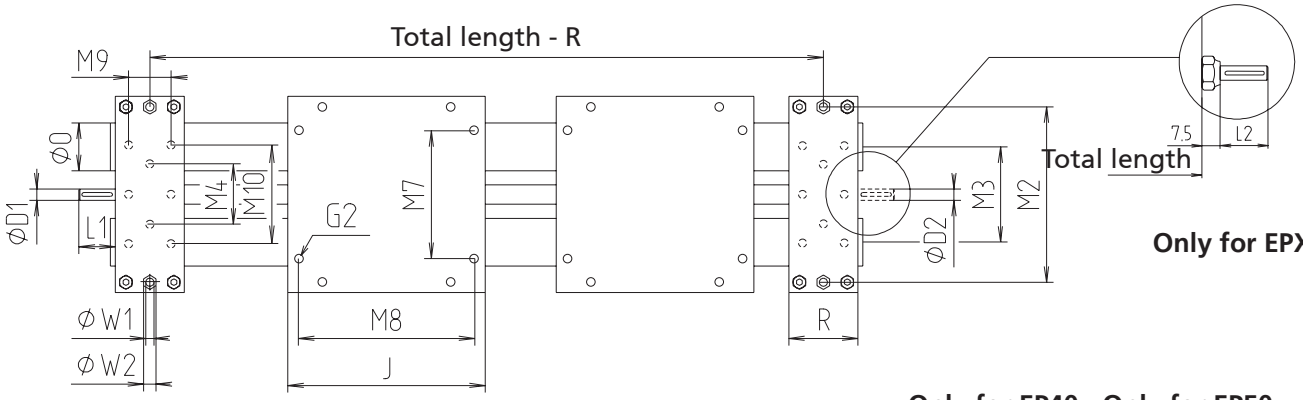
_ _ _ _ Total length = basic length + total travel [mm]

Bearing:
0 = spindle with slide bearing*
1 = spindle with ball bearing
2 = spindle with slide bearing* and carriage with slide bushing
3 = spindle with ball bearing and carriage with slide bushing

Version:
1 = 1 drive shaft at lefthand thread end
2 = 1 drive shaft at righthand thread end
3 = 2 drive shafts

* Type 18, 60 and 80 spindle only available with ball bearing
** G1 thread only available on spindle with ball bearing





Only for EPX18

Only for EP40
W3: Ø 6,5
W4: Ø 11x7

Only for EP50 + 60
W3: Ø 8,5
W4: SW13/ 8,5 deep

[mm]

M 5	M 6	M 7	M 8	M 9	M 10	O	P 1	P 2	Q	R	W 1	W 2	W 3	W 4	Max. travel	Mass [kg]	
																Basic length	per 100 mm travel
–	–	56	28	–	–	18	2 x 2 x 12	2 x 2 x 12	28	28	5.5	A/F 8/6.5 deep	–	–	1282	1.983	0.45
35	92	80	114	–	–	30	2 x 2 x 20	2 x 2 x 20	52	50	6.5	A/F 10/26.5 deep	–	–	1640	5.588	0.33
38	132	120	160	–	–	40	4 x 4x32	4x4x32	60	60	6.5	SW 13 / 32 deep	6.5	Ø 11x7	2520	13.030	0.90
50	150	134	184	–	–	50	4 x 4 x 32	4 x 4 x 32	72	72	8.5	A/F 13/37.5 deep	8.5	A/F 13/8.5 deep	2444	20.166	1.10
60	185	160	216	–	–	60	5 x 5 x 32	5 x 5 x 32	86	80	10.5	A/F 17/44.5 deep	8.5	A/F 13/8.5 deep	2360	34.244	1.63
–	–	250	270	80	180	80	6 x 6 x 20	6 x 6 x 20	138.5	120	–	–	–	–	2140	86.070	3.47

Versions

Order instructions:

- Please specify total travel when placing an order
- Corrosion protected units available on request
- Second free running carriage available on request
- Bellows version available as optional extra
- Other screw leads available on request

Version ● Split screw

Type 18-60 (image similar)

Type 80

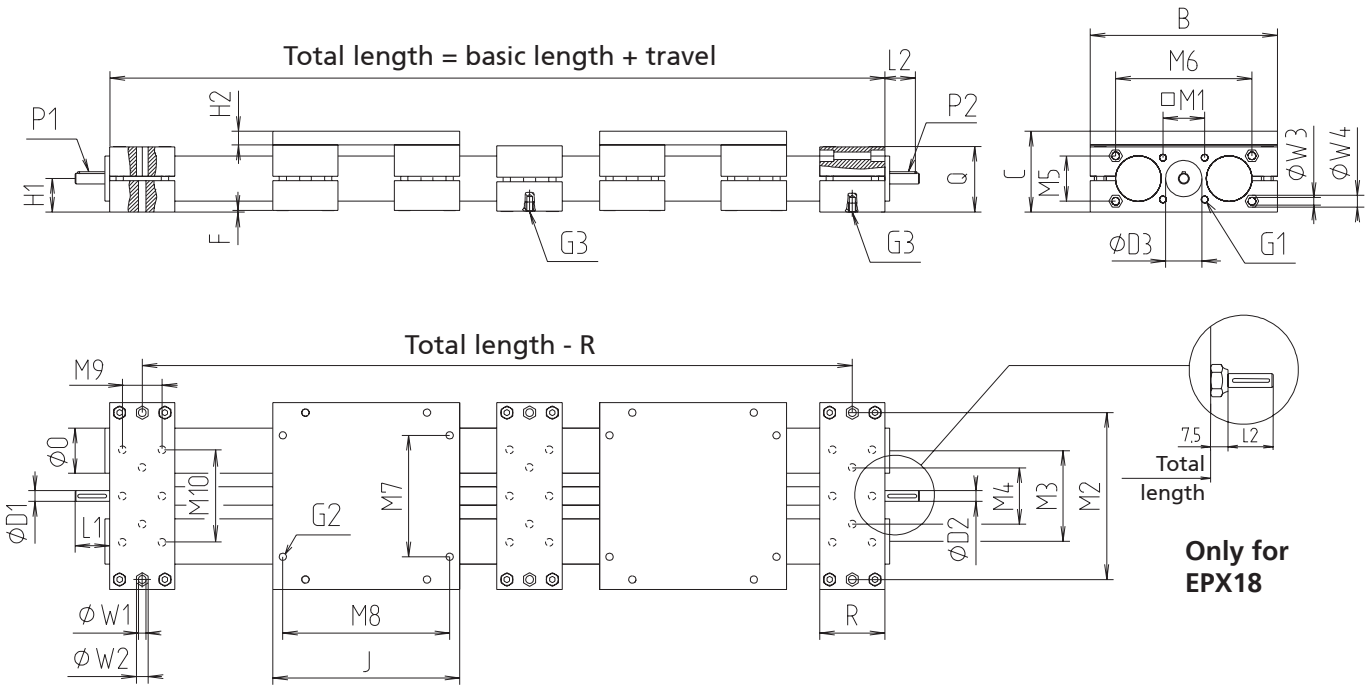
Righthand thread

Righthand thread

Code No.	Type	Spindle	Basic length	B	C	D 1	D 2	D 3	F	G 1**	G 2	G 3	H 1	H 2	J	L 1	L 2	M 1	M 2	M 3	M 4
728183_	18	10 x 2	250	82	37	6	6	16^{H7}	1	–	M6	M5/5 deep	14.5	8	80	17	17	–	68	40	18
728303_	30	14 x 3	410	130	64	8	8	30^{H8}	2	M6/12 deep	M6	M6/9 deep	27	10	130	26	26	40 x 30	114.5	70	42
728403_	40	20 x 4	540	180	75	12	12	40^{H8}	3	M8/20 deep	M8	M8 / 8 deep	31.5	12	180	38	38	46	160	90	62
728503_	50	20 x 4	628	206	88	12	12	40^{H8}	2	M8/30 deep	M8	M8/8 deep	36.5	15	206	38	38	46	184	100	62
728603_	60	24 x 5	720	240	103	14	14	50^{H8}	2	M8/20 deep	M10	M10/10 deep	44	15	240	38	38	55	216	130	74
728803_	80	32 x 6	980	302	162	20	20	70^{H7}	4.5	M8/20 deep	M10	M10/20 deep	71.5	19	310	31.5	31.5	64	–	180	180

_ _ _ _ Total length = basic length + total travel [mm]

Bearing:
1 = spindle with ball bearing and carriage without slide bushing
3 = spindle with ball bearing and carriage with slide bushing



[mm]

M 5	M 6	M 7	M 8	M 9	M 10	O	P 1	P 2	Q	R	W 1	W 2	W 3	W 4	Max. travel/ end	Mass [kg]	
																Basic length	per 100 mm travel
–	–	56	28	–	–	18	2 x 2 x 12	2 x 2 x 12	28	28	5.5	A/F 8/6.5 deep	–	–	875	2.215	0.45
35	92	80	114	–	–	30	2 x 2 x 20	2 x 2 x 20	52	50	6.5	A/F 10/26.5 deep	–	–	1295	6.247	0.33
38	132	120	160	–	–	40	4 x4 x32	4 x 4 x 32	60	60	8.5	AF 13/ 32 deep	6.5	SW 11 / 7 deep	1230	14.620	0.90
50	150	134	184	–	–	50	4 x 4 x 32	4 x 4 x 32	72	72	8.5	A/F 13/37.5 deep	8.5	A/F 13/8.5 deep	1186	22.608	1.10
60	185	160	216	–	–	60	5 x 5 x 32	5 x 5 x 32	86	80	10.5	A/F 17/44.5 deep	8.5	A/F 13/8.5 deep	1140	38.548	1.63
–	–	250	270	80	180	80	6 x 6 x 20	6 x 6 x 20	138.5	120	–	–	–	–	1010	97.700	3.47

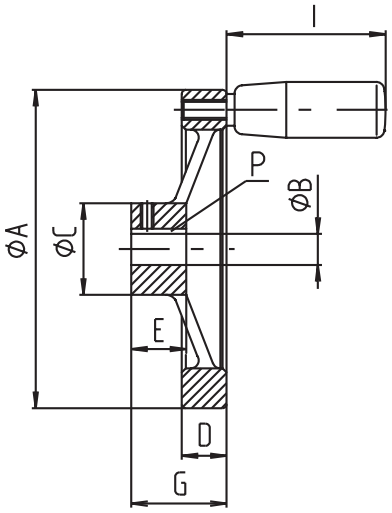
Drive

Handwheel

Material: Die-cast aluminium
black powder-coating

Diam. 140-200

Diam. 60-100



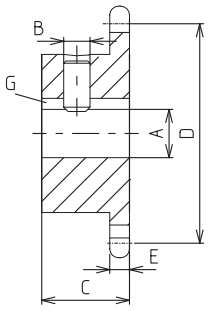
[mm]

Code No.	Type	Diam. A	B	C	D	E	G	P	I
90901	18	60	6	18	13	16	22	2 x 2	28
90913	30	100	8	28	14	17	30	2 x 2	52
90915	40-50	100	12	28	14	17	30	4 x 4	52
90905	40-50	140	12	36	16.5	19.5	36	4 x 4	66
90906	60	140	14	36	16.5	19.5	36	5 x 5	66
90918	60	160	14	36	18	20	39	5 x 5	80
90929	80	200	20	42	20.5	24	45	6 x 6	80

Chain wheel

- Other sizes on request

Material: Steel 500 N/mm^2, min.



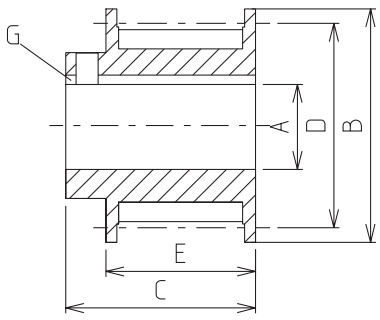
[mm]

Code No.	Type	A	B	C	D	E	G	No. of teeth	Size
91703	30	8	M6	18	41.1	4.5	2 x 2	10	1/2 x 3/16"
91704	40	12	M6	20	53	4.5	4 x 4	13	1/2 x 3/16"
91705	50	12	M6	20	61	4.5	4 x 4	15	1/2 x 3/16"
91706	60	14	M6	20	85	4.5	5 x 5	21	1/2 x 3/16"
91708	80	20	M6	25	85	4.5	6 x 6	21	1/2 x 3/16"

HTD timing-belt pulley

- Suitable for maintenance-free continuous operation
- Excellent accuracy and zero backlash during change of direction
- Can be clamped on feather key

Material: Steel



[mm]

Code No.	Type	A	B	C	D	E	G	Pull force	Pitch
92103	30	8	23	20	19.09	14.5	2 x 2	220 N	5
92105	40/50	12	32	26	28.65	20.5	4 x 4	330 N	5
92106	60	14	32	26	28.65	20.5	5 x 5	330 N	5

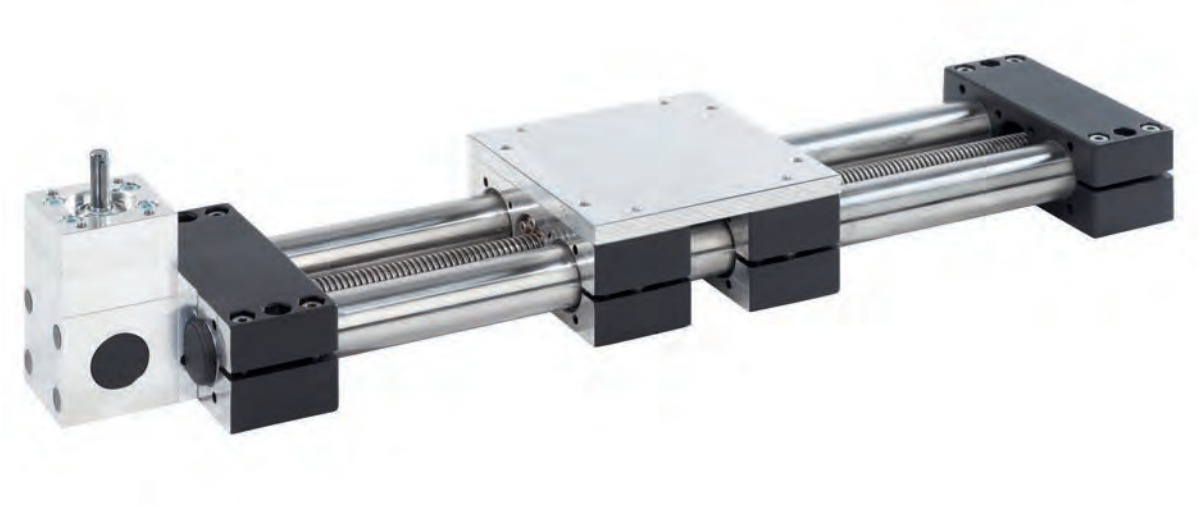
Drive

Order instruction:

- When using angle drives, only use linear units with ball bearings

Angular drive

- Fits all EP(X) linear units 30-60
- No shaft extension or adapter necessary
- Can be retrofitted
- Low noise level
- Suitable for manual adjustment and motorized via EHL or unit drive LZ

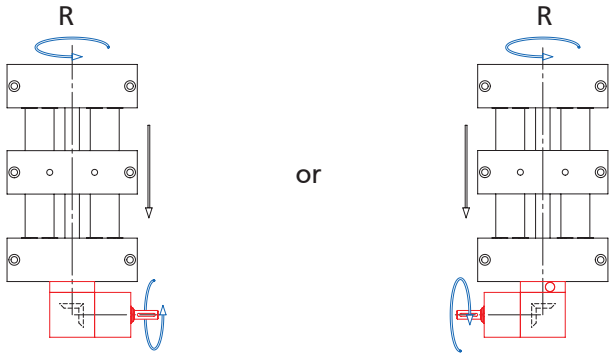


Technical data

Angular Drive												
Type	Duty cycle		Ambient temperature		Drive speed		Nominal torque [Nm]		Max. torque* [Mm]		Efficiency [%]	
	L	T	L	T	L	T	L	T	L	T	L	T
30	S3 30% basic 1h		0°C to +60°C		0 to 350 min^{-1}		1,90	0,95	8		95	90
40							2,90	1,45	12		95	90
50							4,70	2,35	17		95	90
60							6,70	3,35	17		95	90

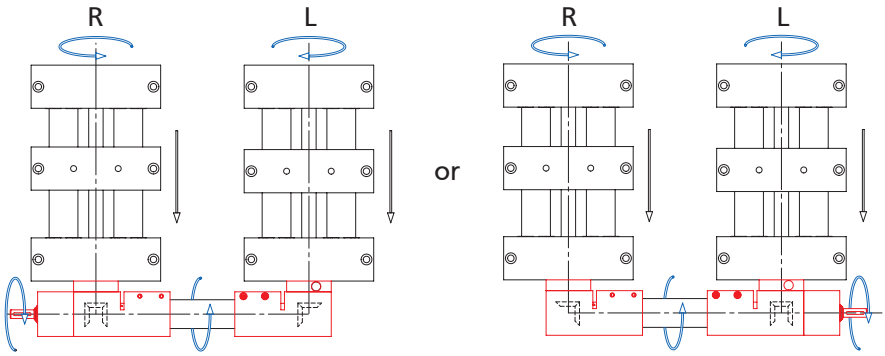
*Briefly. Not a permanent moment. Block travel not permitted.

Configuration examples



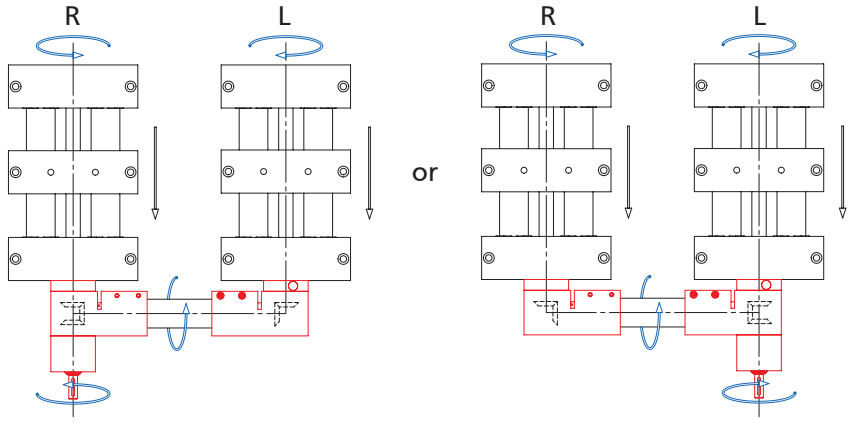
Components needed:

1x EP(X) with righthand thread
1x Angular drive – L
1x Flange bearing unit



Components needed:

1x EP(X) with righthand thread
1x EP(X) with lefthand thread
2x Angular drive – T
1x Flange bearing unit
1x Transmission unit



Components needed:

1x EP(X) with righthand thread
1x EP(X) with lefthand thread
2x Angular drive – T
1x Flange bearing unit
1x Transmission unit

Drive

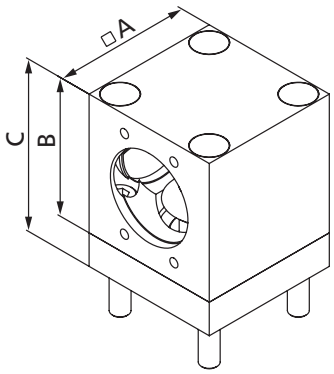
Order instruction:

- When adapting an hand wheel or positioningindicator a flange bearing unit is still required

- For 90° arrangement of the hand wheel, EHL or unit drive LZ on an EP(X) linear unit

Scope of delivery:
Housing, 1 Plastic-bevel gear with adjusting ring, screws and closing caps

Angular drive – L



[mm]

Code No.	Type	i	A	B	C
91530F1F1A	30	1:1	52	52	61
91531F1F1A	40	1:1	62	62	77
91532F1F1A	50	1:1	72	72	87
91533F1F1A	60	1:1	82	82	94

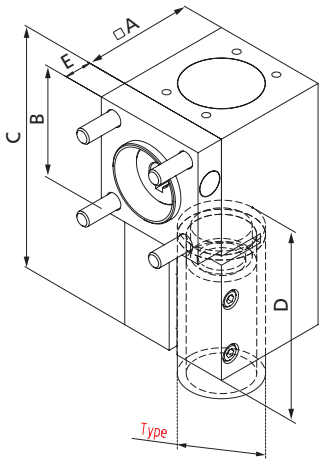
Order instruction:

- When adapting an hand wheel or positioningindicator a flange bearing unit is still required

- For synchronization of two EP(X) linear units
- Suitable for manual adjust ment, via EHL or unit drive LZ

Scope of delivery:
Housing, 2 Plastic-bevel gears with adjusting rings, screws and closing caps

Angular drive – T



[mm]

Code No.	Type	i	A	B	C	D	E
91530G1F1A	30	1:1	52	52	102	39	9
91531G1F1A	40	1:1	62	62	134	55	15
91532G1F1A	50	1:1	72	72	153	66	15
91533G1F1A	60	1:1	82	82	172	80	12

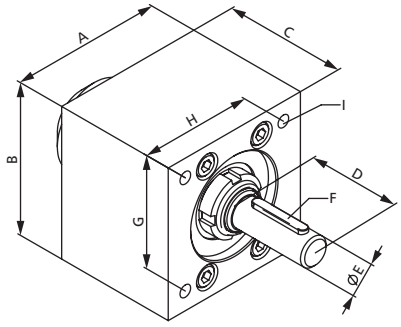
Order instruction:

- When adapting an EHL or the unit drive LZ S, a motor adapter is still required

- For adaptation of the hand wheel or position indicator on the angular drive
- When adapting an EHL or the unit drive LZ S, a motor adapter is still required

Scope of delivery:
Housing, 1 Plastic-bevel gear with shim rings and screws

Flange bearing unit



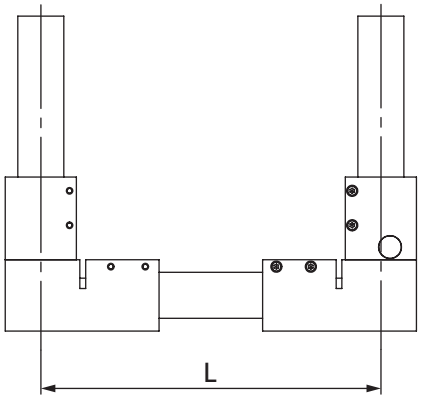
[mm]

Code No.	Type	A	B	C	D	E	F	G	H	I
91540H1F1A	30	52	52	40	24	8	2x2x20	30	40	4xM6-12 deep
91541H1F1A	40	62	62	50	38	12	4x4x25	46	46	4xM6-12 deep
91542H1F1A	50	72	72	74	38	12	4x4x32	46	46	4xM8-16 deep
91543H1F1A	60	82	82	68	33	14	5x5x32	55	55	4xM8-16 deep

Transmission unit

- For torque transmission with parallel linear units

Material:
Tube and bearing elements zinc plated steel, shaft bright



Note:
When ordering, please be sure to subtract the appropriate dimension from the overall length (L) table to determine the required length of the transmission unit.

[mm]

Code No.	Type	Basic length (minimum length)	Max. Length	Required length
92523_ _ _ _	30	160	3074	L – 74
92544_ _ _ _	40	210	3096	L – 96
92555_ _ _ _	50	240	3102	L – 102
92506_ _ _ _	60	270	3102	L – 102

required length[mm]

Order example:
Total length (L): 500mm
Type: 30 mm
Required length: 500 mm -74 mm = 426 mm
Code No.: 92523 0426

Drive

Order instruction:

- When using angle drives, only use linear units with ball bearings

Angular drive

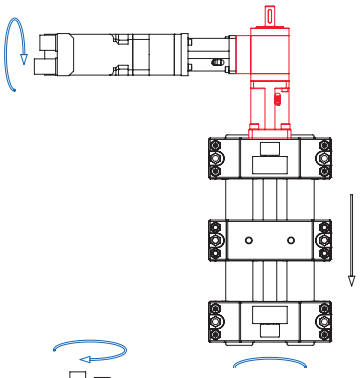
- Fits all EP(X) linear units 30-60
- No shaft extension or adapter necessary
- Can be retrofitted
- Low noise level
- Suitable for adjustment with servo, stepper or three-phase motor

Technical data angular drive

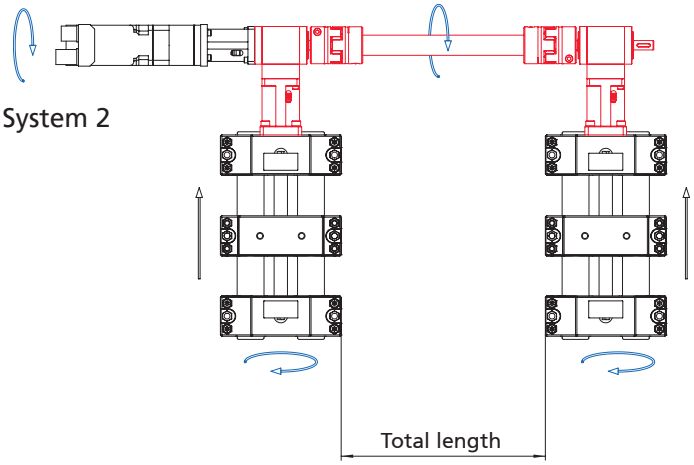
	For EP(X) 30–60	
Reduction		1:1
Drive speed	min^{-1}	0–350
Duty cycle		S3 30% Basis 1h
Efficiency at full load	%	System 1: 90 System 2–3: 81
Ambient temperature	°C	0 to +60

Angular drive for EP(X)

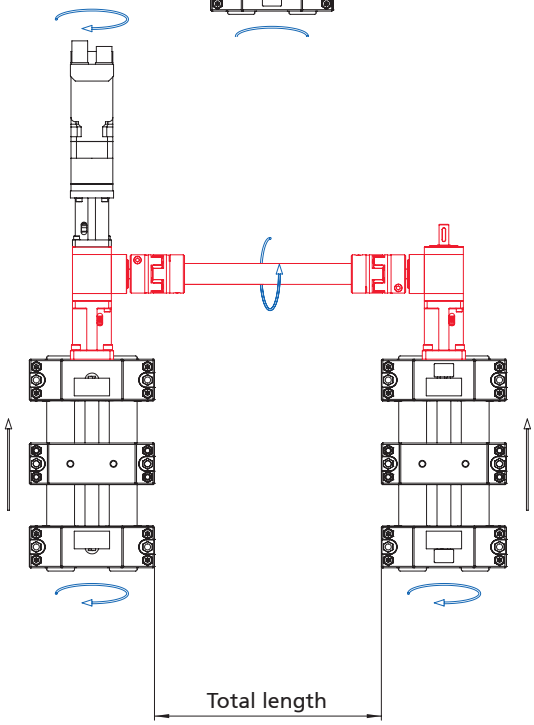
System 1



System 2



System 3



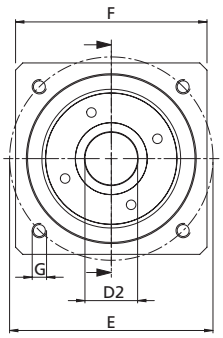
Code No.	Type	Size	Basic length (minimum length)	Max. length (clearance)	Weight [kg]	
					Basic length	per 100 mm travel
982_ _ C1A0000	Angular gear system 1	30	–	–	0,62	–
		40			1,59	
		50			1,59	
		60			1,65	
982_ _ C1B_ _ _ _	Angular gear system 2	30	53	2000	1,28	0,06
		40	69	2800	3,57	0,18
		50	43	2800	3,57	0,18
		60	9	2800	3,68	0,18
982_ _ C1C_ _ _ _	Angular gear system 3	30	53	2000	1,28	0,06
		40	91	2800	3,57	0,18
		50	65	2800	3,57	0,18
		60	31	2800	3,68	0,18

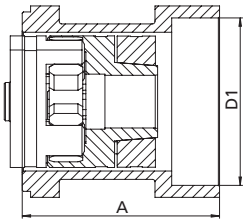
Total length (mm)

60 = EP(X) 30
61 = EP(X) 40
62 = EP(X) 50
63 = EP(X) 60

Drive

Selection table - motor adaptor/coupling EP(X) for servo motors without gear





Manufacturers	Motor	EP(X) 30	EP(X) 40	EP(X) 50	EP(X) 60
RK Rose + Krieger	RK-AC 118	949200	949201	949201	–
		911430 0811	911430 1112	911430 1112	
	RK-AC 240	–	949221	949221	949223
			911430 1214	911430 1214	911940 1414
	RK-AC 470	–	–	–	949239
					911940 1419
Baumüller	DSD2-036	949200	949201	949201	–
		911430 0811	911430 1112	911430 1112	
	DSD2-045	–	949221	949221	949223
			911430 1214	911430 1214	911940 1414
Beckhoff	AM8031, AM8032, AM8033	On request	On request	On request	–
	AM8041, AM8042, AM8043	–			
Bosch	MSK040B, MSK040C, MSK043C	–	On request	On request	–
	MSK050B, MSK050C		–	–	949239
					911940 1419
Kollmorgen	AKM2G-31, AKM2G-32, AKM2G-33, AKM2G-34	On request	On request	On request	–
	AKM2G-41, AKM2G-42, AKM2G-43, AKM2G-44	–			
Lenze	MCS06I, MCS06F	949200	949201	949201	–
		911430 0811	911430 1112	911430 1112	
	MCS09D, MCS09F, MCS09H, MCS09L	–	949221	949221	949223
			911430 1214	911430 1214	911940 1414
Lti/Keba	LSP10	–	–	–	949239
					911940 1419
Mitsubishi	HG-JR53,(4), HG-JR 73(4), HG-JR103(4), HG-JR153(4), HG-JR203(4)	On request	On request	On request	–
Parker	SMH 60, SMHA 60	949200	949201	949201	–
		911430 0811	911430 1112	911430 1112	
	SMH 82, SMHA 82	–	949221	949221	949223
			911430 1214	911430 1214	911940 1414
	SMH 100, SMHA 100		–	–	949239
					911940 1419
SEW	CMP50S, CMP50M, CMP50L	949200	949201	949201	–
		911430 0811	911430 1112	911430 1112	
	CMP63S, CMP63M, CPM63L	–	949221	949221	949223
			911430 1214	911430 1214	911940 1414
Siemens	1FK7032, 1FK7033, 1FK7034	On request	On request	On request	–
	1FK7040, 1FK042, 1FK043, 1FK2205	–			
	1FK2105	–	–	–	949239
					911940 1419

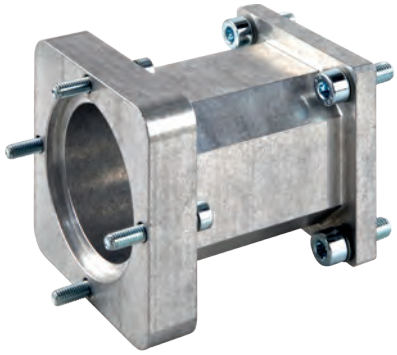
EP(X) 80	Motor flange	A	D1	D2	E	F	G	Mass [kg]
–	IM B5 56	64/74/74	Ø 60 H8 4,5 deep	Ø11x23	Ø 75	□70	M5 13 deep	0,53/0,65
949903		83/83/86/79	Ø 80 H8 5,7 deep	Ø14x30	Ø 100	□90	M6 14,6 deep	0,73/0,73/0,69/1,07
911940 1420								
949905	IM B5 63	96/86	Ø 95 H8 4 deep	Ø19x40	Ø 115	□115	M8 20 deep	1,44
911940 1920								
–	IM B5 56	64/74/74	Ø 60 H8 4,5 deep	Ø11x23	Ø 75	□70	M5 13 deep	0,53 / 0,65
949903		83/83/86/79	Ø 80 H8 5,7 deep	Ø14x30	Ø 100	□90	M6 14,6 deep	0,73/0,73/0,69/1,07
911940 1420								
–	IM B5 56			Ø14x30				
				Ø19x40				
–	–			Ø14x30				
949905	IM B5 63	96/86	Ø 95 H8 4 deep	Ø19x40	Ø 115	□115	M8 20 deep	1,44
911940 1920								
–	IM B5 56			Ø14x30				
				Ø19x40				
–	IM B5 56	64/74/74	Ø 60 H8 4,5 deep	Ø11x23	Ø 75	□70	M5 13 deep	0,53 / 0,65
949903		83/83/86/79	Ø 80 H8 5,7 deep	Ø14x30	Ø 100	□90	M6 14,6 deep	0,73/0,73/0,69/1,07
911940 1420								
949905	IM B5 63	96/86	Ø 95 H8 4 deep	Ø19x40	Ø 115	□115	M8 20 deep	1,44
911940 1920								
–	IM B5 56			Ø16x40				
–	IM B5 56	64/74/74	Ø 60 H8 4,5 deep	Ø11x23	Ø 75	□70	M5 13 deep	0,53 / 0,65
949903		83/83/86/79	Ø 80 H8 5,7 deep	Ø14x30	Ø 100	□90	M6 14,6 deep	0,73/0,73/0,69/1,07
911940 1420								
949905	IM B5 63	96/86	Ø 95 H8 4 deep	Ø19x40	Ø 115	□115	M8 20 deep	1,44
911940 1920								
–	IM B5 56	64/74/74	Ø 60 H8 4,5 deep	Ø11x23	Ø 75	□70	M5 13 deep	0,53 / 0,65
949903		83/83/86/79	Ø 80 H8 5,7 deep	Ø14x30	Ø 100	□90	M6 14,6 deep	0,73/0,73/0,69/1,07
911940 1420								
–	IM B5 56			Ø14x30				
				Ø19x40				
949905	IM B5 63	96/86	Ø 95 H8 4 deep	Ø19x40	Ø 115	□115	M8 20 deep	1,44
911940 1920								

Code No. Motor adaptor: **949905**

Code No. Coupling with specification of shaft diameter 1st end = 19 mm / 2st end = 20 mm **911940 1920**

Drive

Selection table - motor adaptor/coupling EP(X) for three-phase motor



Manufacturers	Motor	EP(X) 30	EP(X) 40	EP(X) 50	EP(X) 60	EP(X) 80
RK Rose + Krieger	90/120W	949996	949614	949614	–	–
		9114300812	911430 1212	911430 1212		
	180/250W	–	949414	949414	949616	949909
			911430 1214	911430 1214	911940 1414	911940 1420

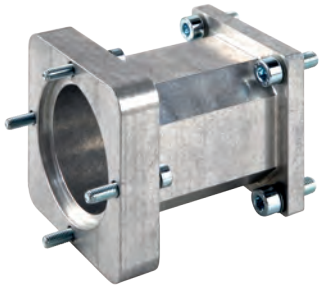
Code No. Motor adaptor:
949414

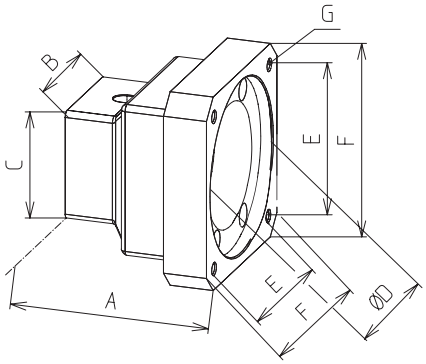
Code No. Coupling with specification of shaft diameter
1st end = 12 mm
2st end = 14 mm
911430 1214

Motor adaptor

- Simple assembly
- Exact fit due to centering shoulders

Material: Aluminium





[mm]

Code No.	Type	A	B	C	D	E	F	G
949200	30	64	53,5	53,5	60	53	70	M5
949996	30	64	53,5	53,5	50	65	80	M5
949201	40/50	74	60	60	60	53	70	M5
949221	40/50	83	60	60	80	70,7	90	M6
949614	40/50	83	60	60	50	46	80	M5
949414	40/50	83	60	60	80	100	Ø120	Ø6,6
949223	60	86	80	80	80	70,7	90	M6
949239	60	96	80	80	95	81,3	115	M8
949616	60	86	80	80	80	100	Ø120	Ø6,6
949905	80	86	80	80	80	81,3	115	M8
949909	80	81	80	80	80	100	Ø120	Ø6,6

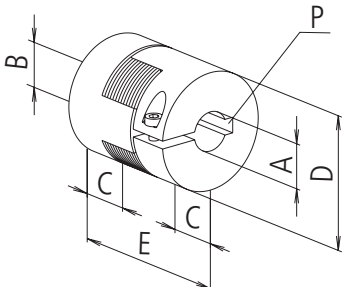
Drive

Coupling

- Small size
- Shaft connection without backlash
- Maintenance-free
- Easy plug-in assembly

Material: Hub – aluminium
Spider ring – polyurethane

To ensure the smooth running of the coupling, a clearance of **D + 3 mm** is required.



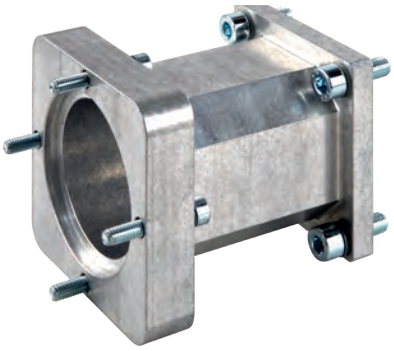
[mm]

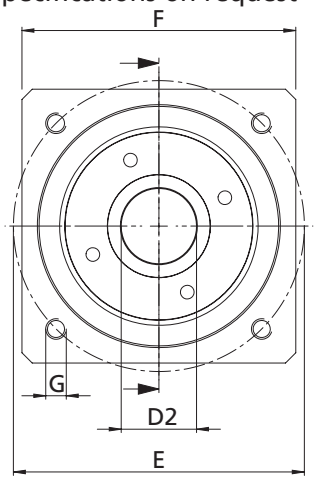
Code No.	A	B	C	D	E	P	Torque [Nm]	
							with feather key	without feather key
9109200612	6	12	10	22	30	2x2 / 4x4	5	3
9109200895	8	9,5	10	20	30	2x2 / –	5	3
9114300811	8	11	11	30	35	2x2 / 4x4	12	6
9114300816	8	16	11	30	35	2x2 / 5x5	12	6
9114300812	8	12	11	30	35	2x2 / 4x4	12	6
9114309512	9,5	12	11	30	35	– / 4x4	12	6
9114309514	9,5	14	11	30	35	– / 5x5	12	6
9114301112	11	12	11	30	35	4x4 / 4x4	12	6
9114301114	11	14	11	30	35	4x4 / 5x5	12	6
9114301212	12	12	11	30	35	4x4 / 4x4	12	6
9114301214	12	14	11	30	35	4x4 / 5x5	12	6
9114301216	12	16	11	30	35	4x4 / 5x5	12	6
9119400812	08	12	25	40	65	2x2 / 4x4	17	10
9119401414	14	14	25	40	65	5x5 / 5x5	17	10
9119401416	14	16	25	40	65	5x5 / 6x6	17	10
9119401419	14	19	25	40	65	5x5 / 6x6	17	10
9119401620	16	20	25	40	65	6x6 / 6x6	17	10
9119401920	19	20	25	40	65	6x6 / 6x6	17	10

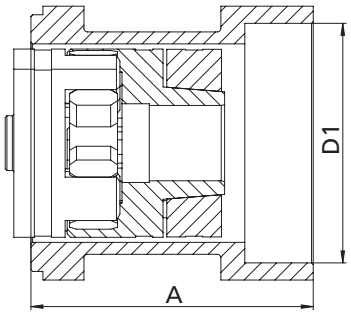
Motor adapter kits on angular gear

- Three-phase- or servomotors with gear from popular manu facturers 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 fixation material







Selection table motor adapter kits for three-phase motor

Manufacturers	Motor	Angular gear system 1-3 EP(X) 30	Angular gear system 1-3 EP(X) 40 / 50 / 60	A	D1	D2	E	F	G	Mass [kg]
RK Rose + Krieger	90/120W	949766	949769	78 / 75,4	Ø 50^{H8} 3 deep/4 deep	Ø 12 x 30	Ø 65	Ø 80	M5 - 15 deep	0,55/0,52

Selection table motor adapter kits servo motors with gear

Manufacturers	Gear	Angular gear system 1-3 EP(X) 30	Angular gear system 1-3 EP(X) 40 / 50 / 60	A	D1	D2	E	F	G	Mass [kg]
Neugart	PLE 60	949768	949771	82,9 / 80,4	Ø 40^{H7} 3 deep/4 deep	Ø 14 x 30	Ø 52	□70 / Ø 62	Ø 5,5	0,58 / 0,25
Eppinger	PE065	949768	949771	82,9 / 80,4	Ø 40^{H7} 3 deep/4 deep	Ø 14 x 30	Ø 52	□70 / Ø 62	Ø 5,5	0,58 / 0,25
Ruhrgetriebe	RPS060	949768	949771	82,9 / 80,4	Ø 40^{H7} 3 deep/4 deep	Ø 14 x 30	Ø 52	□70 / Ø 62	Ø 5,5	0,58 / 0,25
SPN Schwaben Präzision	SPN-ECO (E2) EZ 23	949768	949771	82,9 / 80,4	Ø 40^{H7} 3 deep/4 deep	Ø 14 x 30	Ø 52	□70 / Ø 62	Ø 5,5	0,58 / 0,25
Wittenstein	Alpha CP015 MF	949768	949771	82,9 / 80,4	Ø 40^{H7} 3 deep/4 deep	Ø 14 x 30	Ø 52	□70 / Ø 62	Ø 5,5	0,58 / 0,25

Selection table motor adapter kits for motors with NEMA-Flange

Manufacturers	Motor	Angular gear system 1-3 EP(X) 30	Angular gear system 1-3 EP(X) 40 / 50 / 60	Motor-flange	A	D1	D2	E	F	G	Mass [kg]
RK Rose + Krieger	Stepper motor PD6S	949767	949770	NEMA 34	84,9/82,4	Ø 73^{H8} 4 deep/3 deep	Ø 14 x 35	□ 69,5	□ 86	M6 - 15 deep	0,76/0,75
Various	All motors with NEMA 34 motor flange	949767	949770	NEMA 34	84,9/82,4	Ø 73^{H8} 4 deep/3 deep	Ø 14 x 35	□ 69,5	□ 86	M6 - 15 deep	0,76/0,75

Position determination

Scale

- Self-adhesive
- 4 mm high figures

Material:
Steel band, plastic-coated

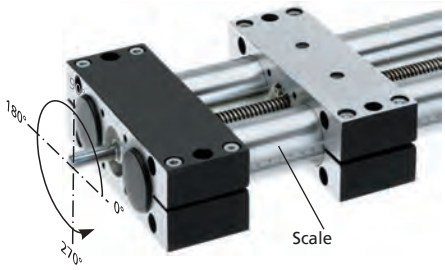


Image shows scale to be read from left to right. Standard mounting at 0° (180° mounting of the left guiding tube, to be read from right to left)

[mm]

Code No.	Type	Can be read from	Length	B	Version
On request	30*	left to right	0-1000	8	fitted
	40-60*	right to left	0-1000	10	fitted
		left to right	0-1000	10	fitted
		left to right	0-2000	10	fitted
		right to left	0-2000	10	fitted

* In the case of Type 18, a scale can be engraved in the guiding tube if required Please specify the position on the tube if relevant.
Type 80 available on request

Positioning indicator

- Permitted ambient temperature +80°C
- Figure height 6 mm
- Indication accuracy ± 0.1 mm
- If positioning indicators are fitted, the linear units are delivered exclusively with ball bearings

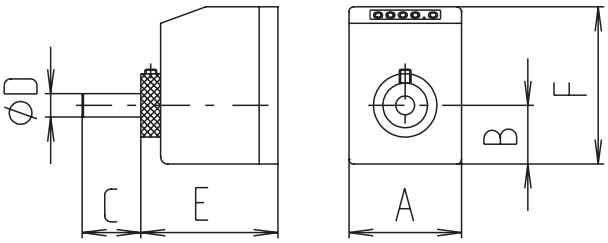
Material: Housing polyamide 6
Orange RAL 2004,
Steel parts, corrosion-protected

Scope of delivery: Positioning indicator, clamping ring, shaft extension and fastenings

Note: "rising" and "falling" versions refer to the clockwise rotation of the drive shaft.

Installation position: horizontal

Installation position: vertical



[mm]

Type	Installation position	Connection	Code No.	Version	Code No.	Version	A	B	C	D	E	F
18	horizontal	Directly to EP(X)	91061	2mm rising	91012	4mm rising	48	29	17	6	60	67
18			91071	2mm falling	910137	4mm falling	48	29	17	6	60	67
18	vertical		91081	2mm rising	910138	4mm rising	48	29	17	6	60	67
18			91091	2mm falling	910139	4mm falling	48	29	17	6	60	67
30	horizontal	Directly to EP(X) or on angular drive	91043	3mm rising	91010	6mm rising	48	25	18	8	59	67
30			91053	3mm falling	91029	6mm falling	48	25	18	8	59	67
30	vertical		91063	3mm rising	91020	6mm rising	48	25	18	8	59	67
30			91073	3mm falling	91019	6mm falling	48	25	18	8	59	67
40	horizontal	Directly to EP(X) or on angular drive	91004	4mm rising	91030	8mm rising	48	25	38	12	59	67
40			91014	4mm falling	91039	8mm falling	48	25	38	12	59	67
40	vertical		91024	4mm rising	91040	8mm rising	48	25	38	12	59	67
40			91034	4mm falling	91041	8mm falling	48	25	38	12	59	67
50	horizontal	Directly to EP(X) or on angular drive	91045	4mm rising	91046	8mm rising	48	25	38	12	59	75
50			91055	4mm falling	91047	8mm falling	48	25	38	12	59	75
50	vertical		91065	4mm rising	91048	8mm rising	48	25	38	12	59	75
50			91075	4mm falling	91049	8mm falling	48	25	38	12	59	75
60	horizontal	Directly to EP(X) or on angular drive	910120	5mm rising	910124	10mm rising	48	25	38	14	60	81
60			910121	5mm falling	910125	10mm falling	48	25	38	14	60	81
60	vertical		910122	5mm rising	910126	10mm rising	48	25	38	14	60	81
60			910123	5mm falling	910127	10mm falling	48	25	38	14	60	81
80	horizontal	Directly to EP(X)	91110	6mm rising	910140	12mm rising	64	29	31	20	60	94
80			91111	6mm falling	910141	12mm falling	64	29	31	20	60	94
80	vertical		91112	6mm rising	910142	12mm rising	64	29	31	20	60	94
80			91113	6mm falling	910143	12mm falling	64	29	31	20	60	94

*Version with double lead e.g. for installation on righthand/ lefthand thread screws

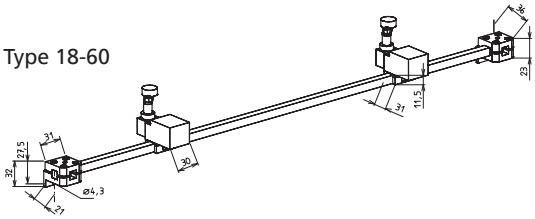
Position determination

Holder for mechanical limit switch

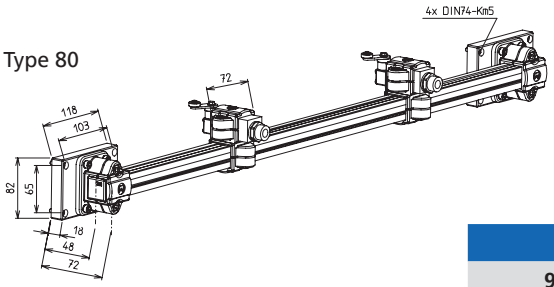
- Limit switch can be moved and fixed axially

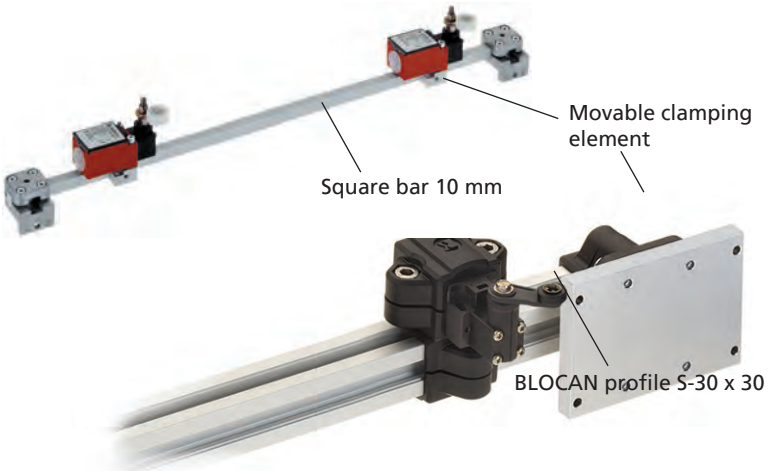
Type	18-60	80
Max. voltage	250 V AC	230 V AC
Max. switching current	6 A	4 A
Max. starting current	16 A	–
Operating frequency	Max. 6000/h	Max. 5000/h
Mechanical lifetime	10 million switching cycles	20 million switching cycles
Axis lever adjustment	locking at 10° increments	
Protection class	IP 65	IP 67
Ambient temperature	-30°C to +80°C	

Type 18-60



Type 80

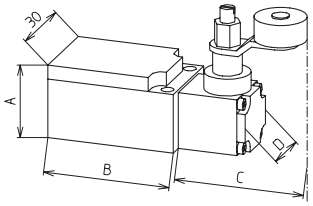




Code No.	Type	Basic length	Version
92961_ _ _ _	18-60	245	with switch
92962_ _ _ _	18-60	245	without switch
92933_ _ _ _	80	380	with switch
92934_ _ _ _	80	380	without switch

Total length of linear unit

Mechanical limit switch



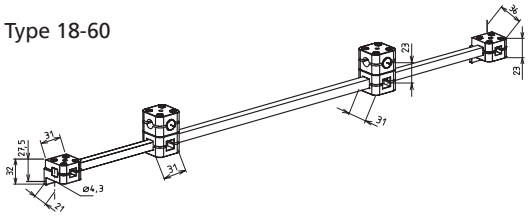
[mm]

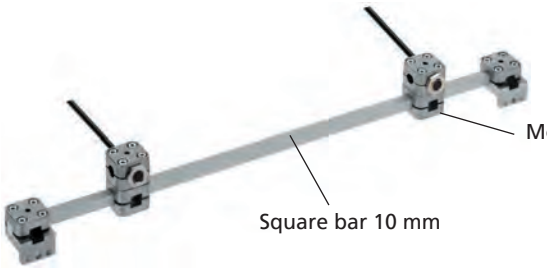
Code No.	Type	Switching function	A	B	C	D
91905	18-60	NC/NO	26.5	45	45.5	21
91908	80	NC/NO	30	58.5	46	20
91907	Clamping element 18-60 for limit switch					
91904	Clamping element 80 for limit switch					

Holder for inductive limit switch

- Limit switch can be moved and fixed axially

Type 18-60

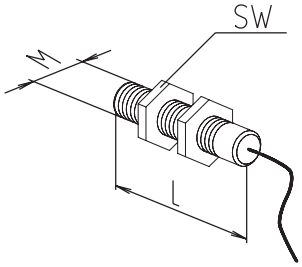




Code No.	Type	Basic length	Version
92965_ _ _ _	18-60	125	without switch

Total length of linear unit

Inductive limit switch



Type	18-60	80
Voltage	10 - 30 V DC	
Max. switching current	200 mA	150 mA
Operating distance	4 mm for steel	2 mm for steel
Protection class	IP 67	
Ambient temperature	-25°C to +70°C	
Cable lengths	2m	

[mm]

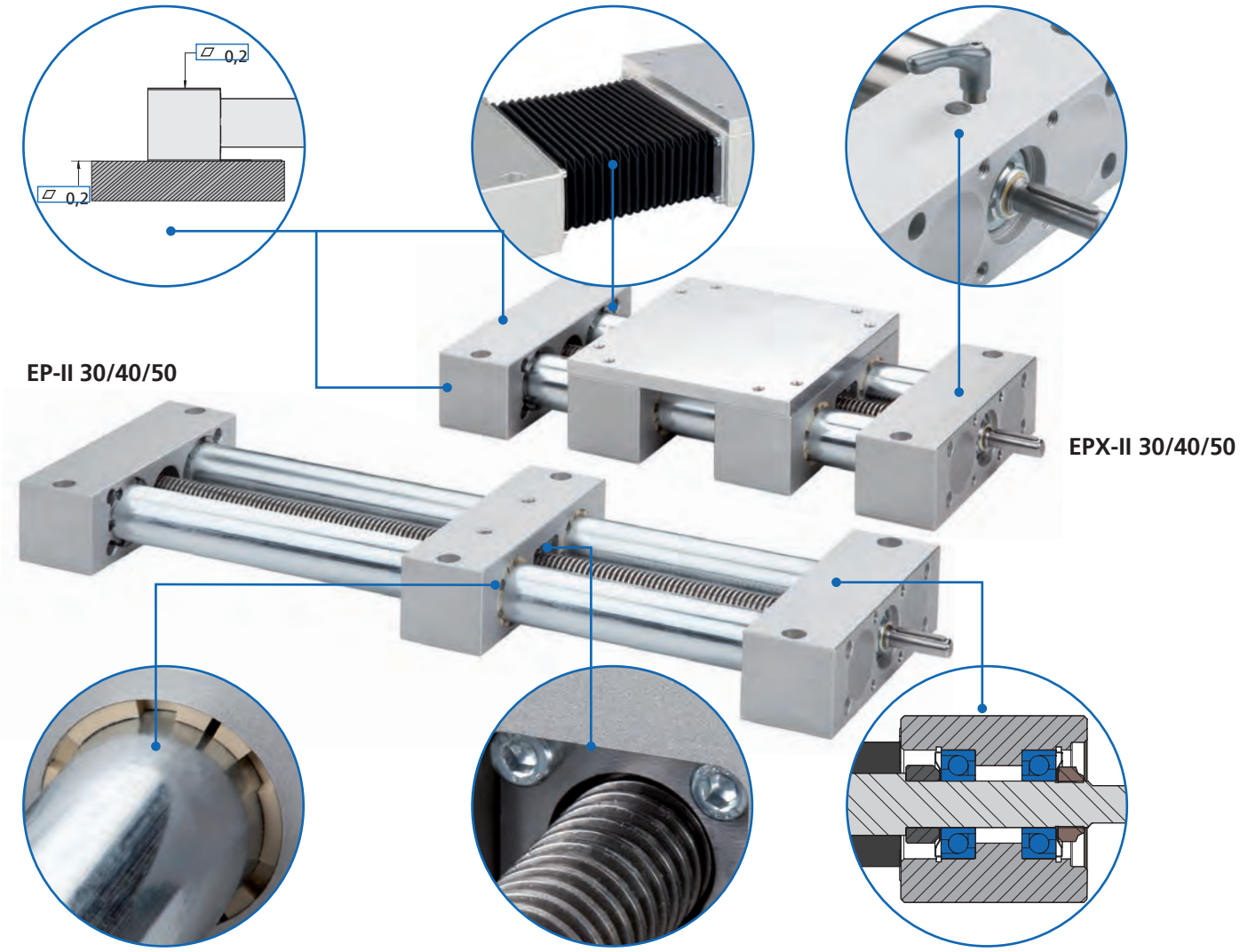
Code No.	Type	Switching function	L	M	Wrench size (SW)
92826	18-60	Changeover	40	8x1	13
92825	80	Changeover	50	12x1	17
92802	Clamping element 18-60 for limit switch				
92804	Clamping element 80 for limit switch				

The latest generation of EP(X)-II 30/40/50 twin tube units – compensates for high bending moments during hand and motor-driven adjustments

Precise / plane mounting surface
- Distortion-free installation

Bellows
- Protection class IP 40

Integrated spindle clamping
- Manual force locking spindle clamping optional



Carriage with slide bushings as standard
- Longer lifetime due sleeves made of high performance material

New guide nut concept
- Split nuts, simple replacement – no need to dismantle the linear unit
- Longer lifetime due to high performance materials

Reduced axial play
- Optimised lead screw with fixed bearing in end element

Features:
- High moment capacity
- Version available with large fixing plate
- Identical connection sizes as previous version

Versions – size 30/40/50
- EP-II 30/40
  Right or lefthand thread
  Right and lefthand thread
  Split Screw
- EPX-II 30/40/50
  Right or lefthand thread
  Right and lefthand thread
  Split Screw

Options:
- Corrosion-protected units
- Second free-running carriage
- Protect: with bellows and protection class IP 40
- Spindle clamping only at ballscrew spindle units

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RK ROSE+KRIEGER

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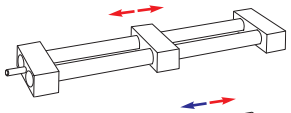
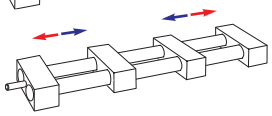
Geometric moments of inertia ..... Page 146

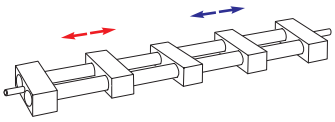
Versions
(Dimensions, order numbers)



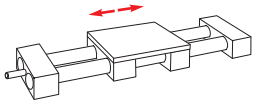
EP-II 30/40/50 right or lefthand thread ..... Page 148



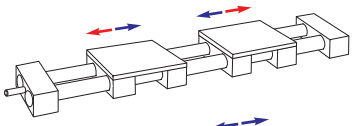
EP-II 30/40/50 right and lefthand thread ..... Page 150



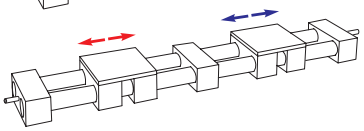
EP-II 30/40/50 split screw ..... Page 152



EPX-II 30/40/50 right or lefthand thread..... Page 154



EPX-II 30/40/50 right and lefthand thread..... Page 156



EPX-II 30/40/50 split screw..... Page 158

Accessories

Drive

Handwheel ..... Page 160

Chain wheel..... Page 161

Timing-belt pulley ..... Page 161

Angle drive ..... Page 166

Flange bearing unit..... Page 165

Transmission unit..... Page 165

Motor adapter / coupling ..... Page 168

Position determination

Positioning indicator..... Page 174

Limit switch..... Page 175

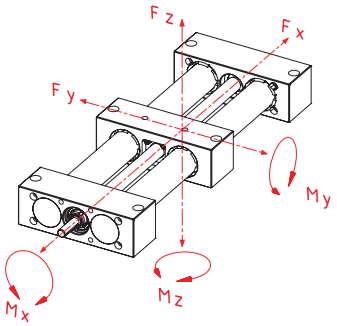
Technical data

General information / operating conditions

	EP-II 30	EPX-II 30	EP-II 40	EPX-II 40	EP-II 50	EPX-II 50
Guide	Slide guide					
Installation position	Any position					
Max. speed	0.015 m/s (stroke independent)		0.02 m/s (stroke independent)			
Max. acceleration	3 m/s²					
Repeatability	± 0,1 mm					
Max. no-load torque	0,6 Nm	0,7 Nm	0,7 Nm	0,8 Nm	1,1 Nm	1,2 Nm
Drive	Trapezoidal screw, Ø 14, pitch 3		Trapezoidal screw, Ø 20, pitch 4			
Lead accuracy	(± 0,1 / 300 mm)					
Duty cycle	S3, 30%, base 1h					
Ambient temperature	0 to +60°C					
Protection class	Basic: no / Protect: IP 40					

Static load data*

F Force [N]
M Moment [Nm]
I Geometric moment of inertia [cm⁴]



* with reference to carriage (deflection of guide element f = 0.5 mm, static, end elements supported)

Type	Fx	Fy			Fz			Mx	My	Mz
Total length [mm]		**500**	**1000**	**1500**	**500**	**1000**	**1500**			
EP-II 30	800	1000	800	500	550	300	100	60	60	75
EPX-II 30	800	1400	1200	700	650	450	200	80	110	140
EP-II 40	1000	3500	2300	1300	2000	580	120	120	130	150
EPX-II 40	1000	6000	3100	1800	2200	680	220	160	190	240
EP-II 50	1700	3800	2600	2050	3000	670	170	160	200	260
EPX-II 50	1700	7700	5000	2500	3300	830	310	240	345	510

Geometric moment of inertia

Type	Iy	Iz
EP(X)-II 30	3.47	46.57
EP(X)-II 40	14.84	198.06
EP(X)-II 50	30.81	319.84

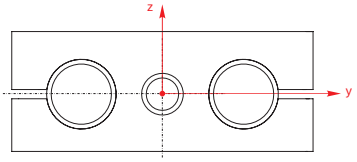


Image shows different versions of the EP(X)-II series:
EPX-II 30 with righthand thread, EP-II 40 with righthand thread and EP-II 50 with right and lefthand thread

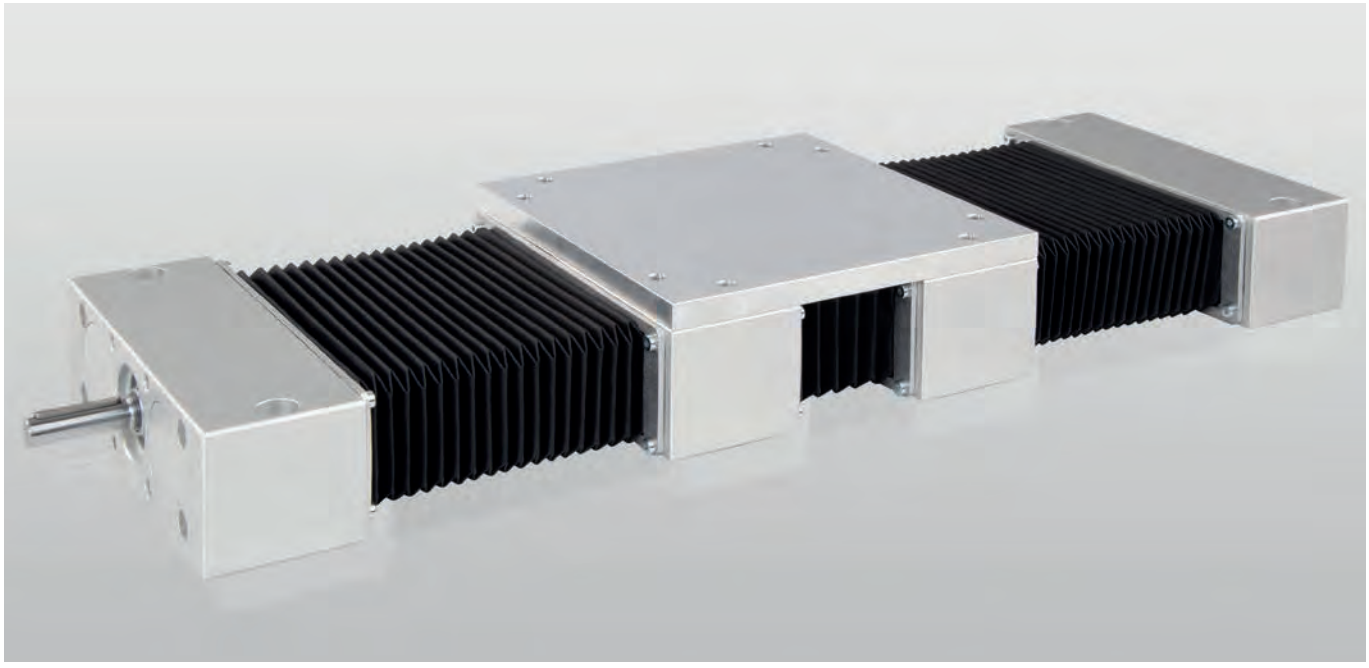


Image shows an EPX in the Protect version (with bellows)

Dimensions / ordering data

Order informations:

- Corrosion-protected units available on request
- Second non driven carriage available on request
- Scale upon request
- Other screw leads available on request

Version ● Right or lefthand thread

Code No.	Type	Spindle	Basic length	B	C	D1	D2	D3	F	G1	G2	H	J	L1	L2	M1	M2	M3
79_301_ _ _AA_ _ _ _	30	Tr 14x3	150	130	54	8	–	30 ^{H8}	2	M6 / 12 deep	M6 / 9 deep	27	50	26	–	40x30	114	70
79_303_ _ _AA_ _ _ _							8								26			
79_401_ _ _AA_ _ _ _	40	Tr 20x4	180	180	63	12	–	40 ^{H8}	3	M8 / 20 deep	M8 / 8 deep	31,5	60	38	–	46	160	90
79_403_ _ _AA_ _ _ _							12								38			
79_5011 _ _AA_ _ _ _	50	Tr 20x4	216	206	73	12	–	40 ^{H8}	1	M8 / 30 deep	M8 / 8 deep	36,5	72	38	–	46	184	100
79_5031 _ _AA_ _ _ _							12								38			

_ _ _ _ Total length = basic length + travel [mm] **(Minimum travel: Basic 25 mm, Protect 120 mm)**

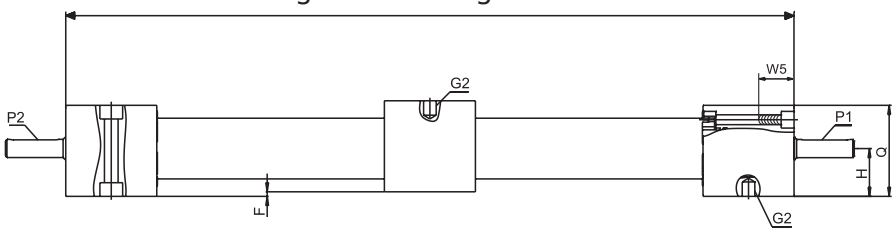
Version:
1 = Basic
2 = Protect **(For the Protect version, the stroke must be ordered longer than required by a factor of 1.5 due to the space required for installation of the bellows. The maximum stroke is reduced accordingly by the same factor.)**

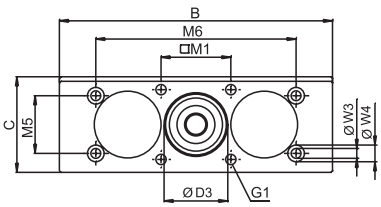
A = standard
B = c/w integrated spindle clamping (Only with spindle bearing ball bearing)

Spindle bearing:
1 = ball bearing
0 = slide bearing

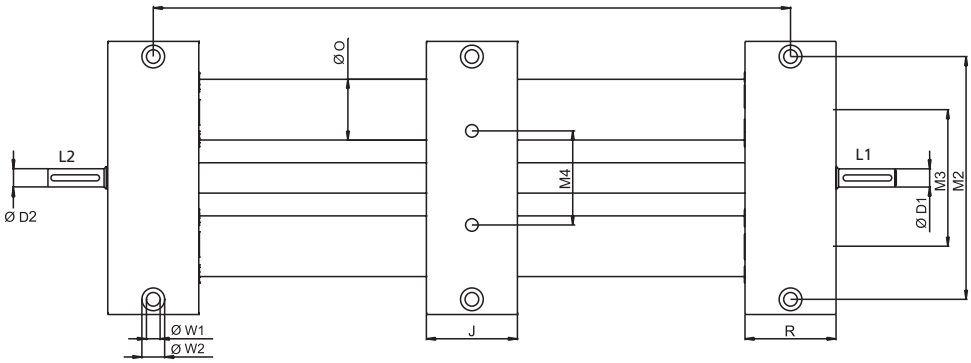
Spindle version:
1 = righthand thread
2 = lefthand thread

Total length = basic length + travel





Total length – R



[mm]

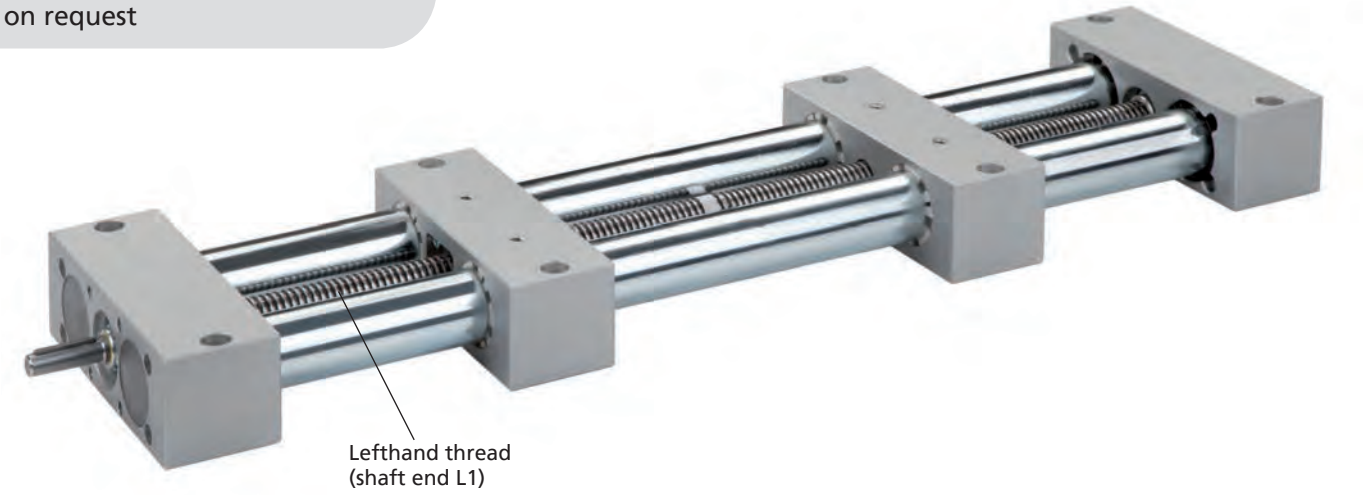
M4	M5	M6	O	P1	P2	Q	R	W1	W2	W3	W4	W5	Max. travel	Mass [kg]	
														Basic length	per 100 mm travel
42	–	–	30	2x2x20	– 2x2x20	52	50	7	11 / 7 deep	–	–	–	1424 1398	2,6	0,4
62	38	132	40	4x4x32	– 4x4x32	60	60	9	15 / 9 deep	6,5	11 / 8,5 deep	M8 / 25 deep	2820	5,53	0,96
62	50	150	50	4x4x32	– 4x4x32	72	72	9	15 / 9 deep	9,3	15 / 10 deep	M10 / 30 deep	2784	8,37	1,15

Dimensions / ordering data

Order instructions:

- Please specify basic length and total travel when placing an order
- Corrosion-protected units available on request
- Second non driven carriage available on request
- Scale upon request
- Protect: version with bellows optional (IP 40)
- Other screw leads available on request

Version ● Right and lefthand thread



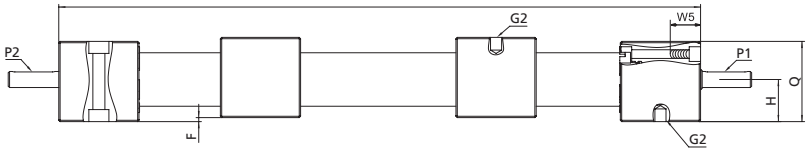
Code No.	Type	Spindle	Basic length	B	C	D1	D2	D3	F	G1	G2	H	J	L1	L2	M1	M2	M3
793301_ _1AA_ _ _ _	30	Tr 14x3	200	130	54	8	–	30 H8	2	M6 / 12 deep	M6 / 9 deep	27	50	26	–	40x30	114	70
793303_ _1AA_ _ _ _							8								26			
793401_ _1AA_ _ _ _	40	Tr 20x4	240	180	63	12	–	40 H8	3	M8 / 20 deep	M8 / 8 deep	31,5	60	38	–	46	160	90
793403_ _1AA_ _ _ _							12								38			
7935011 _1AA_ _ _ _	50	Tr 20x4	288	206	73	12	–	40 H8	1	M8 / 30 deep	M8 / 8 deep	36,5	72	38	–	46	184	100
7935031 _1AA_ _ _ _							12								38			

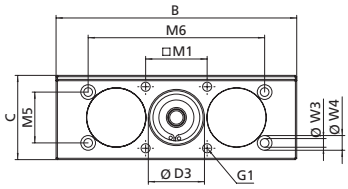
_ _ _ _ Total length = basic length + total travel [mm] **(minimum total travel 50 mm)**

A = standard
B = c/w integrated spindle clamping (Only with spindle bearing ball bearing)

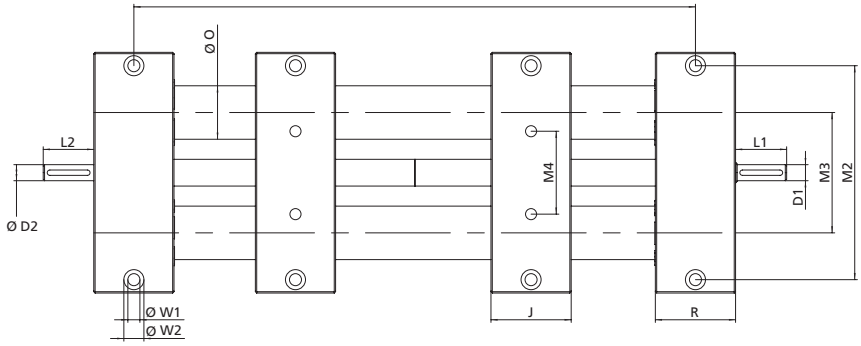
Spindle bearing:
1 = ball bearing
0 = slide bearing

Total length = basic length + travel





Total length – R



[mm]

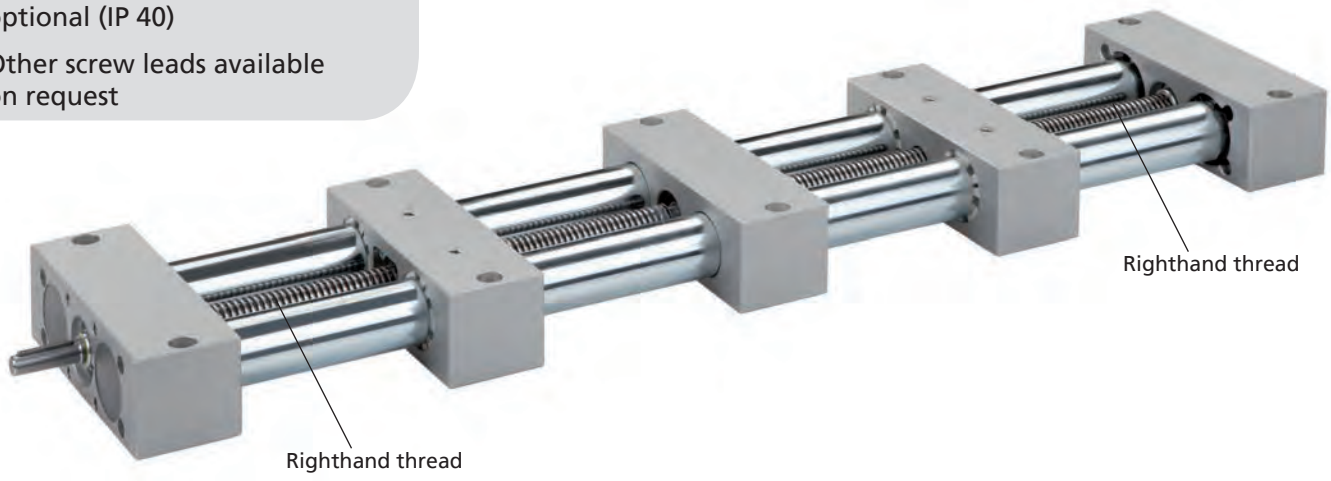
M4	M5	M6	O	P1	P2	Q	R	W1	W2	W3	W4	W5	Max. travel	Mass [kg]	
														Basic length	per 100 mm Hub
42	–	–	30	2x2x20	– 2x2x20	52	50	7	11 / 7 deep	–	–	–	1800	3,43	0,4
62	38	132	40	4x4x32	– 4x4x32	60	60	9	15 / 9 deep	6,5	11 / 8,5 deep	M8 / 25 deep	2760	7,73	0,96
62	50	150	50	4x4x32	4x4x32	72	72	9	15 / 9 deep	9,3	15 / 10 deep	M10 / 30 deep	2712	11,07	1,15

Dimensions / ordering data

Order instructions:

- Please specify basic length and total travel when placing an order
- Corrosion-protected units available on request
- Second non driven carriage available on request
- Scale upon request
- Protect: version with bellows optional (IP 40)
- Other screw leads available on request

Version ● Split screw

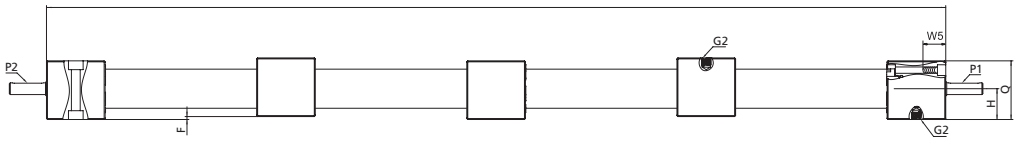


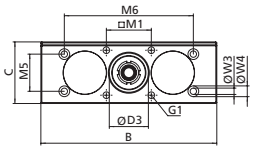
Code No.	Type	Spindle	Basic length	B	C	D1	D2	D3	F	G1	G2	H	J	L1	L2	M1	M2	M3
7943031_1AA_ _ _ _	30	Tr 14x3	250	130	54	8	8	30 ^{H8}	2	M6 / 12 deep	M6 / 9 deep	27	50	26	26	40x30	114	70
7944031_1AA_ _ _ _	40	Tr 20x4	300	180	63	12	12	40 ^{H8}	3	M8 / 20 deep	M8 / 8 deep	31,5	60	38	38	46	160	90
7945031_1AA_ _ _ _	50	Tr 20x4	360	206	73	12	12	40 ^{H8}	1	M8 / 30 deep	M8 / 8 deep	36,5	72	38	38	46	184	100

_ _ _ _ Total length = basic length + total travel [mm] **(minimum total travel 50 mm)**

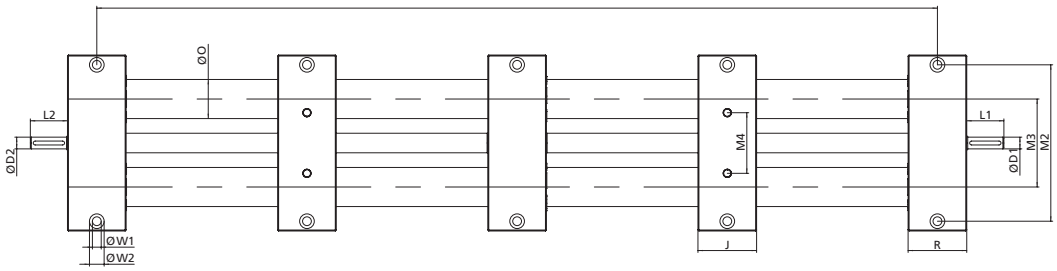
A = standard
B = c/w integrated spindle clamping

Total length = basic length + travel





Total length – R



[mm]

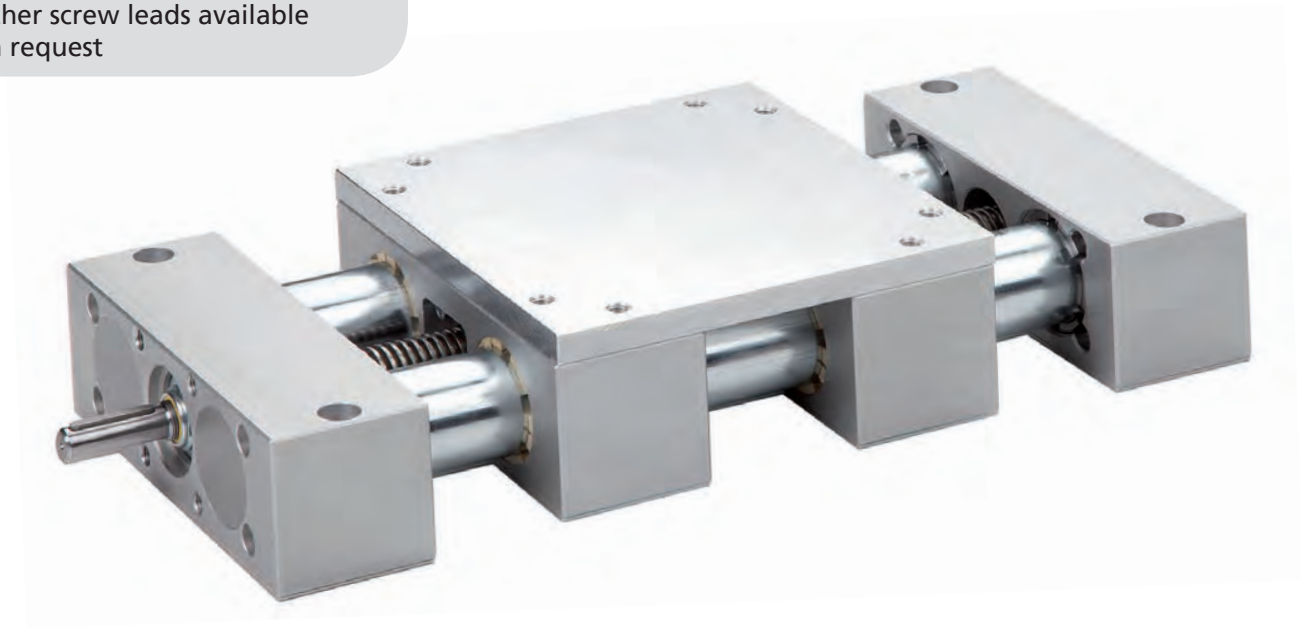
M4	M5	M6	O	P1	P2	Q	R	W1	W2	W3	W4	W5	Max. travel	Mass [kg]	
														Basic length	per 100 mm travel
42	–	–	30	2x2x20	2x2x20	52	50	7	11 / 7 deep	–	–	–	1375	4,2	0,4
62	38	132	40	4x4x32	4x4x32	60	60	9	15 / 9 deep	6,5	11 / 8,5 deep	M8 / 25 deep	2700	9,32	0,96
62	50	150	50	4x4x32	4x4x32	72	72	9	15 / 9 deep	9,3	15 / 10 deep	10 / 30 deep	2640	14,11	1,15

Dimensions / ordering data

Order informations:

- Corrosion-protected units available on request
- Second non driven carriage available on request
- Scale upon request
- Other screw leads available on request

Version ● Right or lefthand thread



Code No.	Type	Spindle	Basic length	B	C	D1	D2	D3	F	G1	G2	G3	H	H2	J	L1	L2	M1	M2
79_301_ _ _AA_ _ _ _	30	Tr 14x3	230	130	64	8	–	30 H8	2	M6 / 12 deep	M6	M6 / 9 deep	27	10	130	26	–	40x30	114
79_303_ _ _AA_ _ _ _							8										26		
79_401_ _ _AA_ _ _ _	40	Tr 20x4	300	180	75	12	–	40 H8	3	M8 / 20 deep	M8	M8 / 8 deep	31,5	12	180	38	–	46	160
79_403_ _ _ AA_ _ _ _							12										38		
79_5011 _ _AA_ _ _ _	50	Tr 20x4	350	206	73	12	–	40 H8	1	M8 / 30 deep	M8	M8 / 8 deep	36,5	15	206	46	184	46	184
79_5031 _ _ AA_ _ _ _							12												

_ _ _ _ Total length = basic length + travel [mm] **(Minimum travel: Protect 120 mm)**

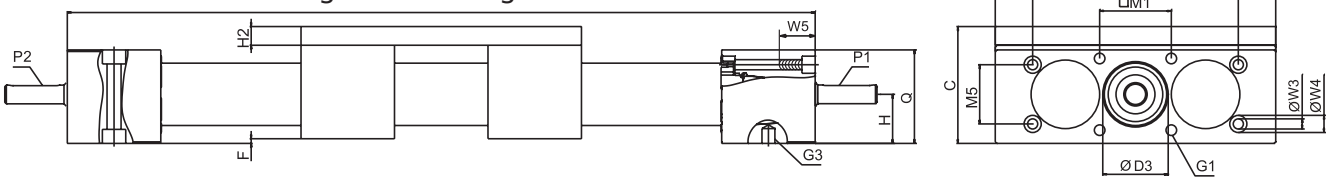
Version:
1 = Basic
2 = Protect **(For the Protect version, the stroke must be ordered longer than required by a factor of 1.5 due to the space required for installation of the bellows. The maximum stroke is reduced accordingly by the same factor.)**

A = standard
B = c/w integrated spindle clamping (Only with spindle bearing ball bearing)

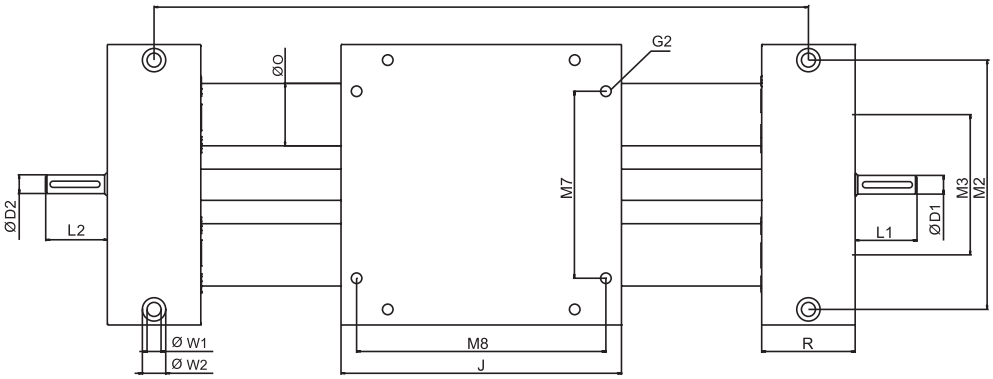
Spindle bearing:
1 = ball bearing
0 = slide bearing

Spindle version:
5 = righthand thread
6 = lefthand thread

Total length = basic length + travel



Total length – R



[mm]

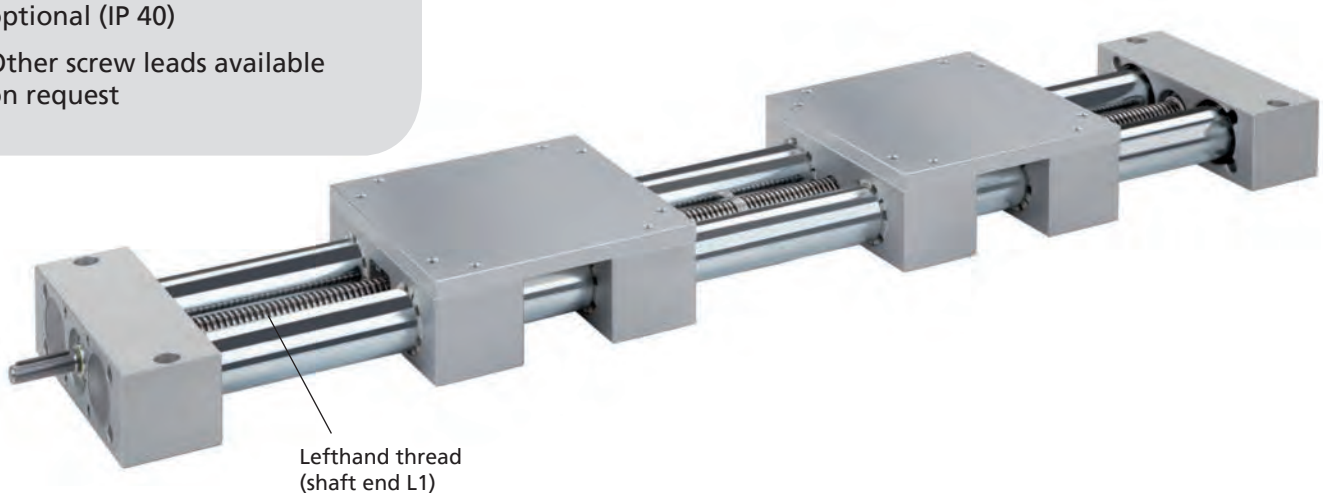
M3	M5	M6	M7	M8	O	P 1	P 2	Q	R	W1	W2	W3	W4	W5	Max. travel	Mass [kg]	
																Basic length	per 100 mm travel
70	–	–	80	114	30	2x2x20	– 2x2x20	52	50	7	11 / 7 deep	–	–	–	1344 1318	4,1	0,4
90	38	132	120	160	40	4x4x32	– 4x4x32	60	60	9	15 / 9 deep	6,5	11 / 8,5 deep	M8 / 25 deep	2700	8,95	0,96
100	50	150	134	184	50	4x4x32	– 4x4x32	72	72	9	15 / 9 deep	9,3	15 / 10 deep	M10 / 30 deep	2650	13,56	1,15

Dimensions / ordering data

Order instructions:

- Please specify basic length and total travel when placing an order
- Corrosion-protected units available on request
- Second non driven carriage available on request
- Scale upon request
- Protect: version with bellows optional (IP 40)
- Other screw leads available on request

Version ● Right and lefthand thread



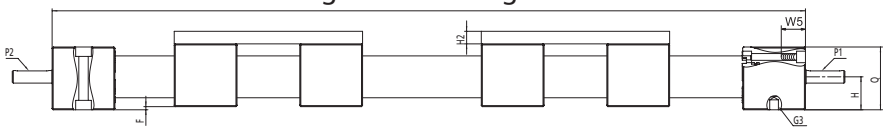
Code No.	Type	Spindle	Basic length	B	C	D1	D2	D3	F	G1	G2	G3	H	H2	J	L1	L2	M1	M2
797301_ _1AA_ _ _ _	30	Tr 14x3	360	130	64	8	–	30 H8	2	M6 / 12 deep	M6	M6 / 9 deep	27	10	130	26	–	40x30	114
797303_ _1AA_ _ _ _							8										26		
797401_ _1AA_ _ _ _	40	Tr 20x4	480	180	75	12	–	40 H8	3	M8 / 20 deep	M8	M8 / 8 deep	31,5	12	180	38	–	46	160
797403_ _1AA_ _ _ _							12										38		
7975011 _1AA_ _ _ _	50	Tr 20x4	556	206	73	12	–	40 H8	1	M8 / 30 deep	M8	M8 / 8 deep	36,5	15	206	46	184	46	184
7975031 _1AA_ _ _ _							12												

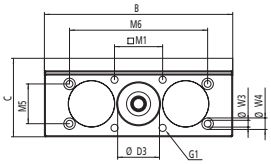
_ _ _ _ Total length = basic length + travel [mm]

A = standard
B = c/w integrated spindle clamping (Only with spindle bearing ball bearing)

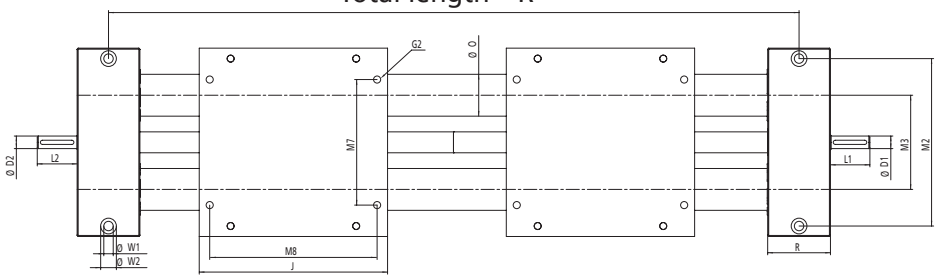
Spindle bearing:
1 = ball bearing
0 = slide bearing

Total length = basic length + travel





Total length – R



[mm]

M3	M5	M6	M7	M8	O	P 1	P 2	Q	R	W1	W2	W3	W4	W5	Max. travel	Mass [kg]	
																Basic length	per 100 mm Hub
70	–	–	80	114	30	2x2x20	– 2x2x20	52	50	7	11 / 7 deep	–	–	–	1640	6,3	0,4
90	38	132	120	160	40	4x4x32	– 4x4x32	60	60	9	15 / 9 deep	6,5	11 / 8,5 deep	M8 / 25 deep	2520	14,17	0,96
100	50	150	134	184	50	4x4x32	– 4x4x32	72	72	9	15 / 9 deep	9,3	15 / 10 deep	15 / 10 deep	2444	21,46	1,15

Dimensions / ordering data

Order instructions:

- Please specify basic length and total travel when placing an order
- Corrosion-protected units available on request
- Second non driven carriage available on request
- Scale upon request
- Protect: version with bellows optional (IP 40)
- Other screw leads available on request

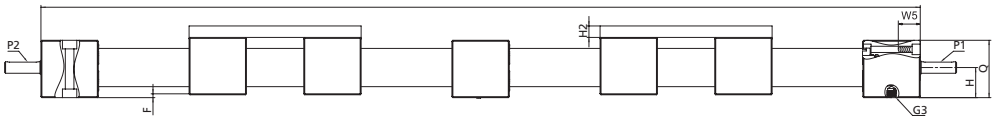
Version ● Split screw

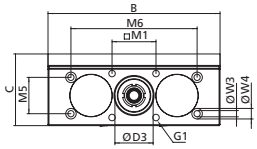
Code No.	Type	Spindle	Basic length	B	C	D1	D2	D3	F	G1	G2	G3	H	H2	J	L1	L2	M1	M2
7983031_1AA_ _ _ _	30	Tr 14x3	410	130	64	8	8	30 ^{H8}	2	M6 / 12 deep	M6	M6 / 9 deep	27	10	130	26	26	40x30	114
7984031_1AA_ _ _ _	40	Tr 20x4	540	180	75	12	12	40 ^{H8}	3	M8 / 20 deep	M8	M8 / 8 deep	31,5	12	180	38	38	46	160
7985031_1AA_ _ _ _	50	Tr 20x4	628	206	73	12	12	40 ^{H8}	1	M8 / 20 deep	M8	M8 / 8 deep	36,5	15	206	46	184	46	184

_ _ _ _ Total length = basic length + travel [mm]

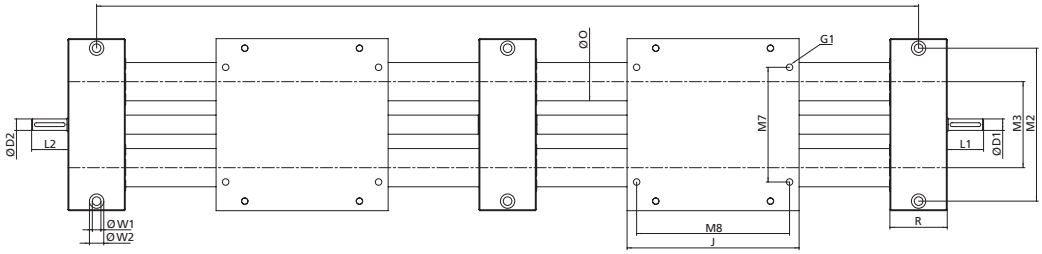
A = standard
B = c/w integrated spindle clamping

Total length = basic length + travel





Total length – R



[mm]

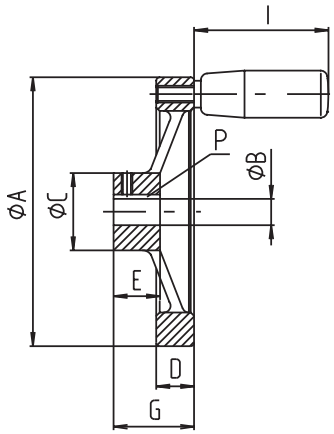
M3	M5	M6	M7	M8	O	P 1	P 2	Q	R	W1	W2	W3	W4	W5	Max. travel	Mass [kg]	
																Basic length	per 100 mm travel
70	–	–	80	114	30	2x2x20	2x2x20	52	50	7	11 / 7 deep	–	–	–	1295	7,2	0,4
90	38	132	120	160	40	4x4x32	4x4x32	60	60	9	15 / 9 deep	6,5	11 / 8,5 deep	M8 / 25 deep	2460	16,16	0,96
100	50	150	134	184	50	4x4x32	4x4x32	72	72	9	15 / 9 deep	9,3	15 / 10 deep	10 / 30 deep	2372	24,5	1,15

Drive

Handwheel

Diam. 140-200

Diam. 60-100



Material: Die-cast aluminium, black powder-coated

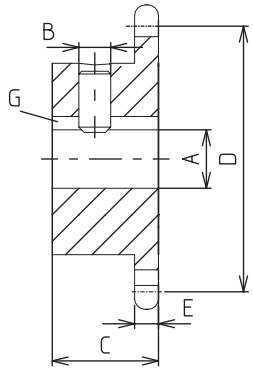
[mm]

Code No.	Type	ØA	B	C	D	E	G	P	I
90913	30	100	8	28	14	17	30	2x2	52
90915	40/50	100	12	28	14	17	30	4x4	52
90905	40/50	140	12	36	16,5	19,5	36	4x4	66

Chain wheel

- Other sizes on request

Material: Steel, 500 N/mm² min.



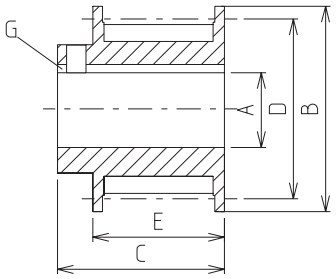
[mm]

Code No.	Type	A	B	C	D	E	G	No. of teeth	Size
91703	30	8	M6	18	41.1	4.5	2x2	10	1/2 x 3/16"
91704	40	12	M6	20	53	4.5	4x4	13	1/2 x 3/16"
91705	50	12	M6	20	61	4.5	4x4	15	1/2 x 3/16"

HTD timing belt pulley

- Suitable for maintenance-free continuous operation
- Excellent accuracy and zero backlash during change of direction
- Clampable on feather key

Material: Steel



[mm]

Code No.	Type	A	B	C	D	E	G	Tensile force	Pitch
92103	30	8	23	20	19.09	14.5	2x2	220 N	5
92105	40/50	12	32	26	28.65	20.5	4x4	330 N	5

Drive

Order instruction:

- When using angle drives, only use linear units with ball bearings

Angular drive

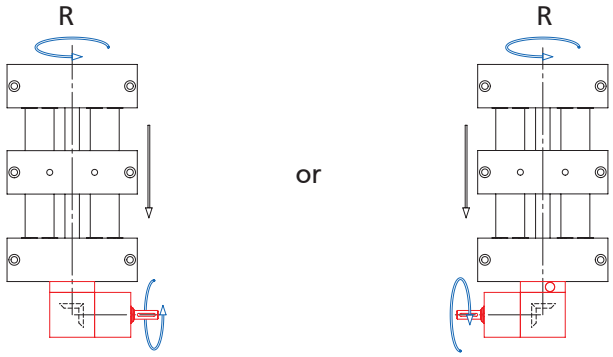
- Fits all EP(X)-II linear units 30 – 50 with trapezoidal screw
- No shaft extension or adapter necessary
- Can be retrofitted
- Low noise level
- Suitable for manual adjustment and motorized via EHL or unit drive LZ

Technical data

Angular Drive												
Type	Duty cycle		Ambient temperature		Drive speed		Nominal torque [Nm]		Max. torque* [Mm]		Efficiency [%]	
	L	T	L	T	L	T	L	T	L	T	L	T
30	S3 30% basis 1h		0°C to +60°C		0 to 350 min^{-1}		1.90	0.95	8		95	90
40							2.90	1.45	12		95	90
50							4.70	2.35	17		95	90

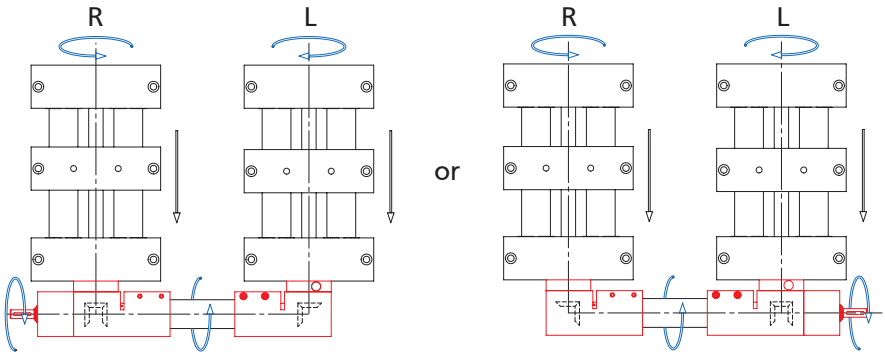
*Briefly. Not a permanent moment. Block travel not permitted.

Configuration examples



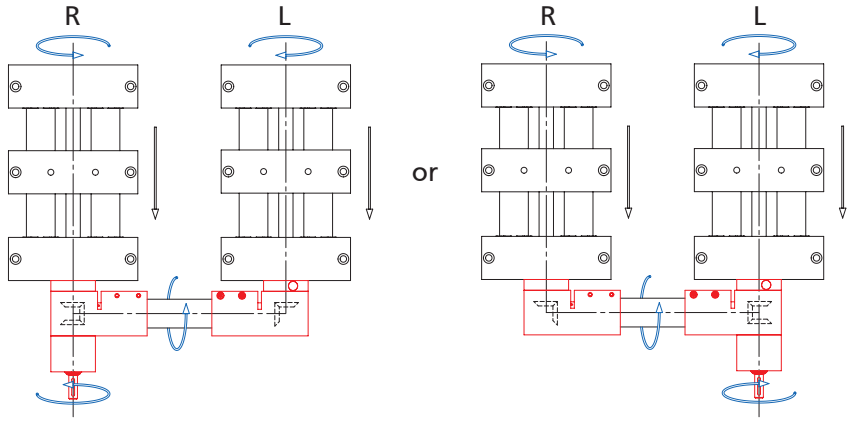
Components needed:

1x EP(X)-II with righthand thread
1x Angular drive – L
1x Flange bearing unit



Components needed:

1x EP(X)-II with righthand thread
1x EP(X)-II with lefthand thread
2x Angular drive – T
1x Flange bearing unit
1x Transmission unit



Components needed:

1x EP(X)-II with righthand thread
1x EP(X)-II with lefthand thread
2x Angular drive – T
1x Flange bearing unit
1x Transmission unit

Drive

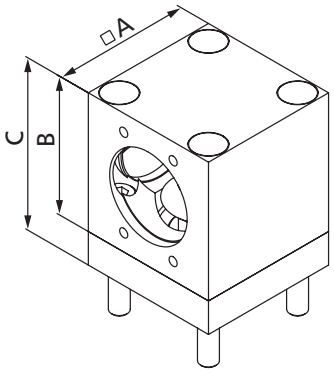
Order instruction:

- When adapting an handwheel or positioningindicator a flange bearing unit is still required

- For 90° arrangement of the hand wheel, EHL or unit drive LZ on an EP(X)-II linear unit

Scope of delivery:
Housing, 1 Plastic-bevel gear with adjusting ring, screws and closing caps

Angular drive – L



[mm]

Code No.	Type	i	A	B	C
91530F1F1A	30	1:1	52	52	61
91531F1F1A	40	1:1	62	62	77
91532F1F1A	50	1:1	72	72	87

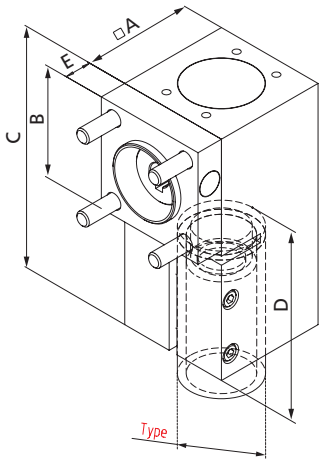
Order instruction:

- When adapting an handwheel or positioningindicator a flange bearing unit is still required

- For synchronization of two EP(X)-II linear units
- Suitable for manual adjust ment, via EHL or unit drive LZ

Scope of delivery:
Housing, 2 Plastic-bevel gears with adjusting rings, screws and closing caps

Angular drive – T



[mm]

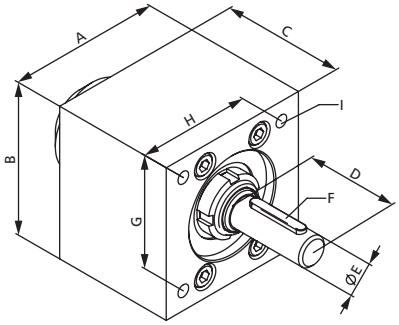
Code No.	Type	i	A	B	C	D	E
91530G1F1A	30	1:1	52	52	102	39	9
91531G1F1A	40	1:1	62	62	134	55	15
91532G1F1A	50	1:1	72	72	153	66	15

Order instruction:

- When adapting an EHL or the nit drive LZ S, a motor adapter is still required

Flange bearing unit

- For adaptation of the hand wheel or position indicator on the angular drive
- When adapting an EHL or the unit drive LZ S, a motor adapter is still required



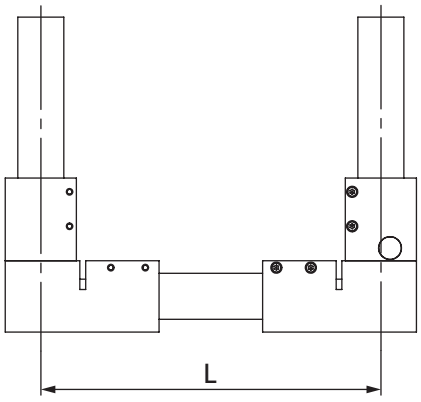
Scope of delivery:
Housing, 1 Plastic-bevel gear with shim rings and screws

[mm]

Code No.	Type	A	B	C	D	E	F	G	H	I
91540H1F1A	30	52	52	40	24	8	2x2x20	30	40	4xM6-12 deep
91541H1F1A	40	62	62	50	38	12	4x4x25	46	46	4xM6-12 deep
91542H1F1A	50	72	72	74	38	12	4x4x32	46	46	4xM6-16 deep

Transmission unit

- For torque transmission with parallel linear units



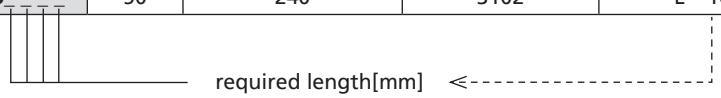
Material:
Tube and bearing elements zinc plated steel, shaft bright

Note:
When ordering, please be sure to subtract the appropriate dimension from the overall length (L) table to determine the required length of the transmission unit.

[mm]

Code No.	Type	Basic length (minimum length)	Max. Length	Required length
92523_ _ _ _	30	160	3074	L – 74
92544_ _ _ _	40	210	3096	L – 96
92555_ _ _ _	50	240	3102	L – 102

Order example:
Total length (L): 500mm
Type: 30 mm
Required length: 500 mm -74 mm = 426 mm
Code No.: 92523 0426



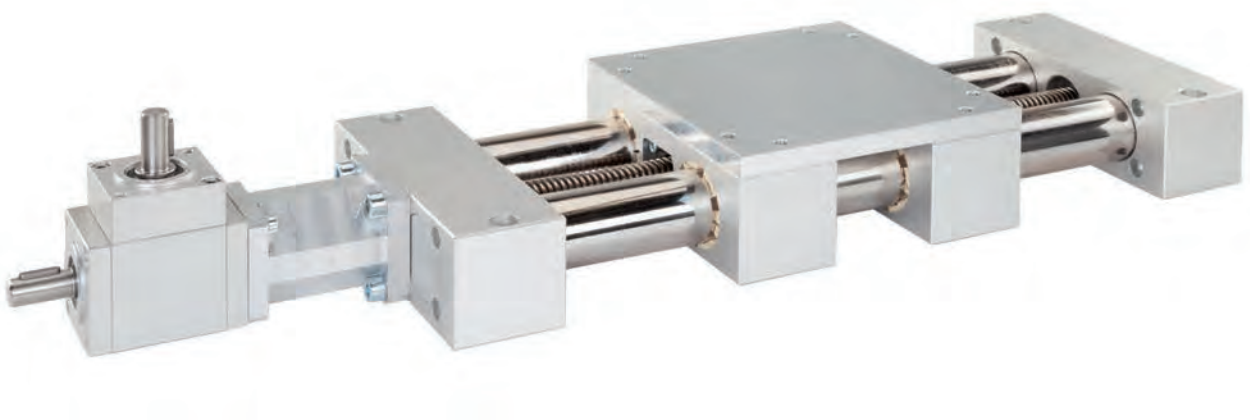
Drive

Order instruction:

- When using angle drives, only use linear units with ball bearings

Angular drive

- Fits all EP(X)-II linear units 30 - 50 with trapezoidal screw
- No shaft extension or adapter necessary
- Can be retrofitted
- Low noise level
- Suitable for adjustment with servo, stepper or three-phase motor

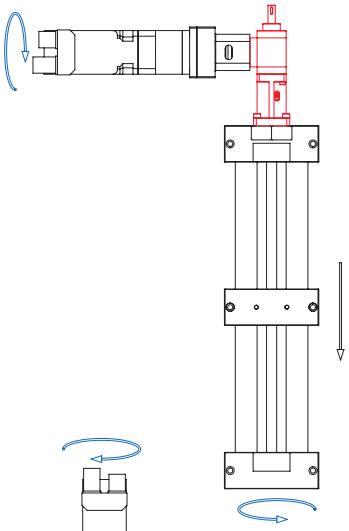


Technical data angular drive

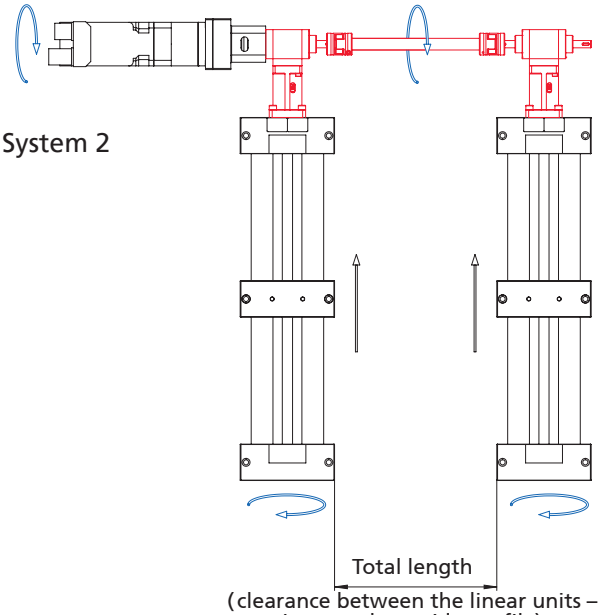
	For EP(X)-II 30 - 50	
Reduction		1:1
Drive speed	min^{-1}	0–350
Duty cycle		S3 30% Basis 1h
Efficiency at full load	%	System 1: 90 System 2–3: 81
Ambient temperature	°C	0 to +60

Angular drive for EP(X)-II

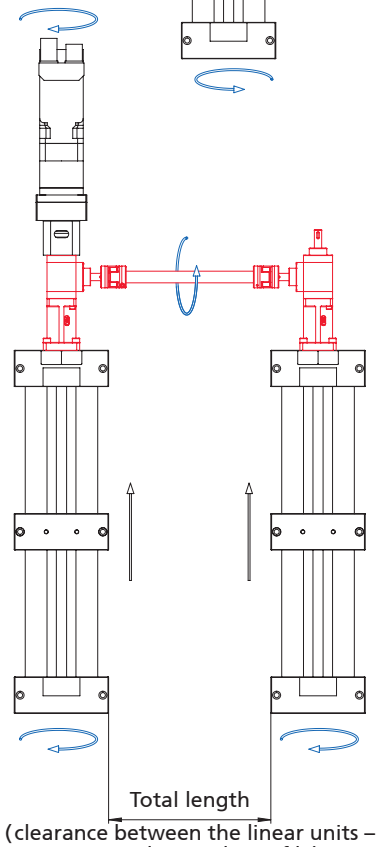
System 1



System 2



System 3



[mm]

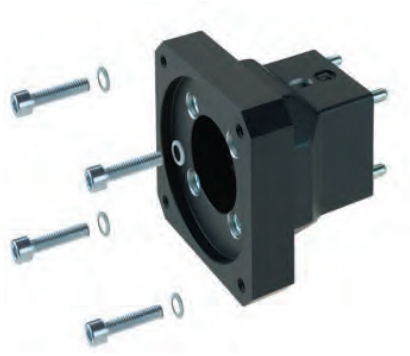
Code No.	Type	Size	Basic length (minimum length)	Max. length (clearance)	Weight [kg]	
					Basic length	per 100 mm travel
982_ _ C1A0000	Angular gear system 1	30	–	–	0.62	–
		40			1.59	
		50			1.59	
982_ _ C1B_ _ _ _	Angular gear system 2	30	53	2000	1.28	0.06
		40	69	2800	3.57	0.18
		50	43			
982_ _ C1C_ _ _ _	Angular gear system 3	30	53	2000	1.28	0.06
		40	91	2800	3.57	0.18
		50	65			

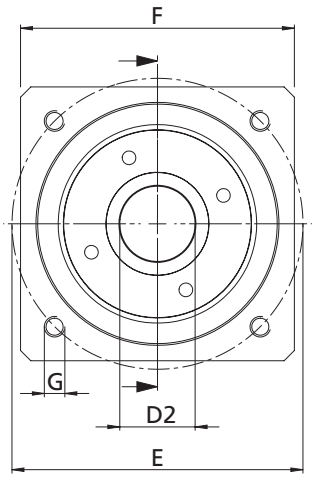
Total length (mm)

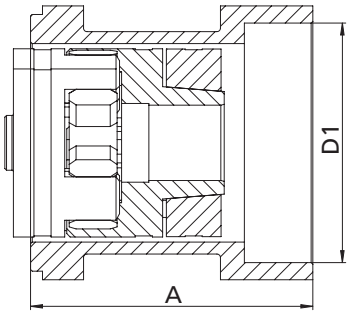
60 = EP(X)-II 30
61 = EP(X)-II 40
62 = EP(X)-II 50

Drive

Selection table - motor adaptor/coupling EP(X) -II for three-phase motor







Manufacturers	Motor	EP(X)-II 30	EP(X)-II 40	EP(X)-II 50
RK Rose+Krieger	90/120W	949996	949614	
		911430 0812	911430 1212	
	180/250W	–	949414	
		–	911430 1214	

Code No. Motor adaptor: **949996**
Code No. Coupling with specification of shaft diameter 1st end=08 mm 2st end=12 mm **911430 0812**

Selection table - motor adaptor/coupling EP(X) -II for servo motors without gear

Manufacturers	Motor	EP(X)-II 30	EP(X)-II 40	EP(X)-II 50	Motor-flange	A	D1	D2	E	F	G	Mass [kg]
RK Rose+Krieger	RK-AC 118	949200	949201	949201	IM B5 56	64/74/74	Ø 60 H8 4,5 prof.	Ø11 x 23	Ø 75	□70	M5 13 prof.	0,53/0,65
		911430 0811	911430 1112	911430 1112								
	RK-AC 240	–	949221	949221		83/83/86/79	Ø 80 H8 5,7 prof.	Ø14 x 30	Ø 100	□90	M6 14,6 prof.	0,73/0,73/ 0,69/1,07
			911430 1214	911430 1214								
Baumüller	DSD2-036	949200	949201	949201	IM B5 56	64/74/74	Ø 60 H8 4,5 prof.	Ø11 x 23	Ø 75	□70	M5 13 prof.	0,53 / 0,65
		911430 0811	911430 1112	911430 1112								
	DSD2-045	–	949221	949221		83/83/86/79	Ø 80 H8 5,7 prof.	Ø14 x 30	Ø 100	□90	M6 14,6 prof.	0,73/0,73/ 0,69/1,07
			911430 1214	911430 1214								
Beckhoff	AM8031, AM8032, AM8033	On request	On request	On request	IM B5 56			Ø14 x 30				
	AM8041, AM8042, AM8043	–						Ø19 x 40				
Bosch	MSK040B, MSK040C, MSK043C	–	On request	On request	–			Ø14 x 30				
Kollmorgen	AKM2G-31, AKM2G-32, AKM2G-33, AKM2G-34	On request	On request	On request	IM B5 56			Ø14 x 30				
	AKM2G-41, AKM2G-42, AKM2G-43, AKM2G-44	–						Ø19 x 40				
Lenze	MCS06I, MCS06F	949200	949201	949201	IM B5 56	64/74/74	Ø 60 H8 4,5 prof.	Ø11 x 23	Ø 75	□70	M5 13 prof.	0,53/0,65
		911430 0811	911430 1112	911430 1112								
	MCS09D, MCS09F, MCS09H, MCS09L	–	949221	949221		83/83/86/79	Ø 80 H8 5,7 prof.	Ø14 x 30	Ø 100	□90	M6 14,6 prof.	0,73/0,73/ 0,69/1,07
			911430 1214	911430 1214								
Mitsubishi	HG-JR53,(4), HG-JR 73(4), HG-JR103(4), HG-JR153(4), HG-JR203(4)	On request	On request	On request	IM B5 56			Ø16 x 40				
Parker	SMH 60, SMHA 60	949200	949201	949201	IM B5 56	64/74/74	Ø 60 H8 4,5 prof.	Ø11 x 23	Ø 75	□70	M5 13 prof.	0,53/0,65
		911430 0811	911430 1112	911430 1112								
	SMH 82, SMHA 82	–	949221	949221		83/83/86/79	Ø 80 H8 5,7 prof.	Ø14 x 30	Ø 100	□90	M6 14,6 prof.	0,73/0,73/ 0,69/1,07
			911430 1214	911430 1214								
SEW	CMP50S, CMP50M, CMP50L	949200	949201	949201	IM B5 56	64/74/74	Ø 60 H8 4,5 prof.	Ø11 x 23	Ø 75	□70	M5 13 prof.	0,53 / 0,65
		911430 0811	911430 1112	911430 1112								
	CMP63S, CMP63M, CPM63L	–	949221	949221		83/83/86/79	Ø 80 H8 5,7 prof.	Ø14 x 30	Ø 100	□90	M6 14,6 prof.	0,73/0,73/ 0,69/1,07
			911430 1214	911430 1214								
Siemens	1FK7032, 1FK7033, 1FK7034	On request	On request	On request	IM B5 56			Ø14 x 30				
	1FK7040, 1FK042, 1FK043, 1FK2205	–						Ø19 x 40				

Code No. Motor adaptor:
949221

Code No. Coupling with specification of shaft diameter
1st end= 12 mm
2st end=14 mm
911430 1214

For dimensions and order data for motor adaptor and coupling, please refer to next page.

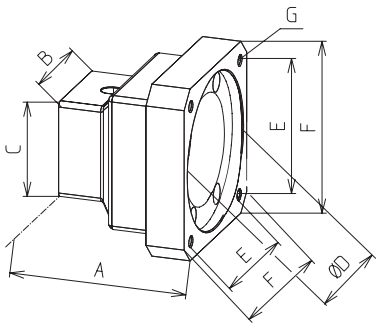
Note:
For further details on motor versions, please refer to the chapter "Motors and controls"

Drive

Motor adaptor

- Simple assembly
- Exact fit due to centering shoulders

Material: Aluminium

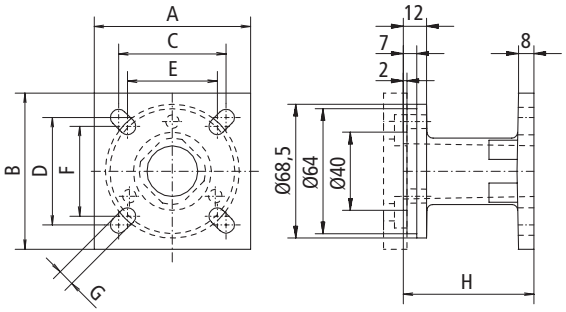


[mm]

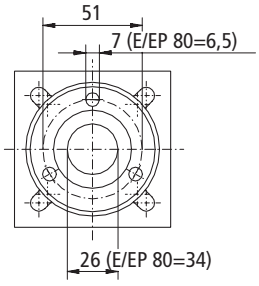
Code No.	Type	A	B	C	D	E	F	G
949200	30	64	53.5	53.5	60	53	70	M5
949996	30	64	53.5	53.5	50	65	80	M5
949201	40/50	74	60	60	60	53	70	M5
949221	40/50	83	60	60	80	70.7	90	M6
949614	40/50	83	60	60	50	46	80	M5
949414	40/50	83	60	60	80	100	Ø120	Ø6.6

Motor adaptor for EHL

Linear unit connection



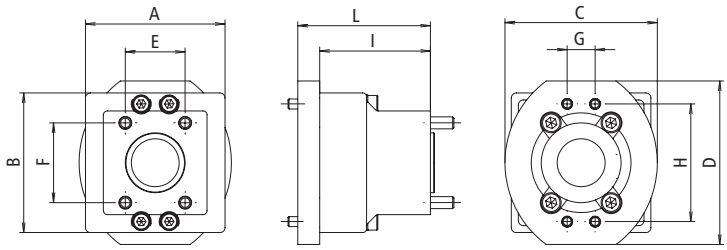
EHL connection



[mm]

Code No.	for linear unit	PinØ unit	A	B	C	D	E	F	G	H	L	Ø
92667	EP(X)-II 30	8	50	50	30	40	30	30	6	67	–	–
92668	EP(X)-II 40	12	60	60	46	46	36	36	7	67	–	–
92669	EP(X)-II 50	12	65	65	46	46	–	–	9	67	–	–

Motor adaptor for LZ S/P linear units



[mm]

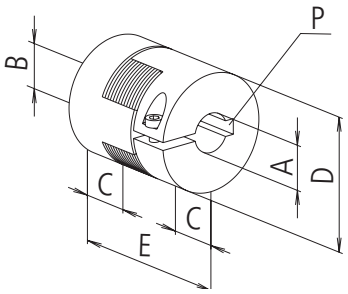
Linear unit	LZ S Code No.	LZ P Code No.	Coupling Code No.	A	B	C	D	E	F	G	H	I	L
EP(X)-II 30	949711		9109200810	70	70	76.4	82	30	40	14	59	55.5	66.5
EP(X)-II 40/50	949713		9114301012	70	70	76.4	82	46	46	52.3	52.3	73.5	81.5

Coupling

- Small size
- Shaft connection without backlash
- Maintenance-free
- Easy plug-in assembly

Material: Hub – aluminium
Gear ring – polyurethane

To ensure the smooth running of the coupling, a clearance of **D+3 mm** is required.



[mm]

Code No.	A	B	C	D	E	P	Torque [Nm]	
							with feather key	without feather key
9109200895	8	9,5	10	20	30	2x2 / –	5	3
9114300811	8	11	11	30	35	2x2 / 4x4	12	6
9114300816	8	16	11	30	35	2x2 / 5x5	12	6
9114300812	8	12	11	30	35	2x2 / 4x4	12	6
9114309512	9.5	12	11	30	35	– / 4x4	12	6
9114301112	11	12	11	30	35	4x4 / 4x4	12	6
9114301212	12	12	11	30	35	4x4 / 4x4	12	6
9114301214	12	14	11	30	35	4x4 / 5x5	12	6
9114301216	12	16	11	30	35	4x4 / 5x5	12	6
9119400812	08	12	25	40	65	2x2 / 4x4	17	10

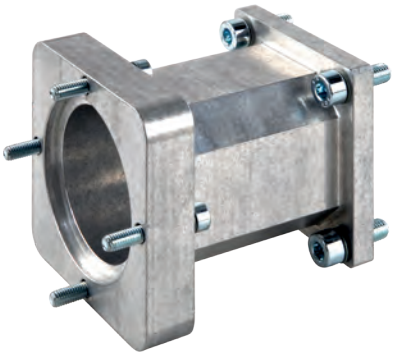
Further information for adaption and drives see catalogue linear technology, chapter motors & controls from page 577

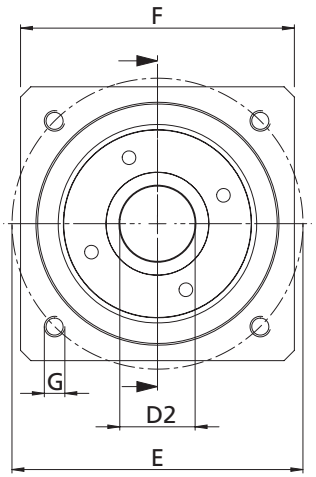
Drive

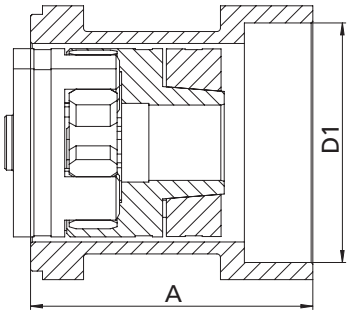
Motor adapter kits on angular gear

- Three-phase- or servomotors with gear from popular manu facturers 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 fixation material







Selection table motor adapter kits for three-phase motor

Manufacturers	Motor	Angular gear System 1-3 EP(X)-II 30 TR	Angular gear System 1-3 EP(X)-II 40/50 TR	A	D1	D2	E	F	G	Mass [kg]
RK Rose+Krieger	90/120W	949766	949769	78/75.4	Ø 50^{H8} 3 deep/4 deep	Ø 12 x 30	Ø 65	Ø 80	M5 - 15 deep	0.55 / 0.52

Selection table motor adapter kits servo motors with gear

Manufacturers	Gear	Angular gear System 1-3 EP(X)-II 30 TR	Angular gear System 1-3 EP(X)-II 40/50 TR	A	D1	D2	E	F	G	Mass [kg]
Neugart	PLE 60	949768	949771	82.9 / 80.4	Ø 40^{H7} 3 deep / 4 deep	Ø 14 x 30	Ø 52	□70 / Ø 62	Ø 5.5	0.58 / 0.25
Eppinger	PE065	949768	949771	82.9 / 80.4	Ø 40^{H7} 3 deep / 4 deep	Ø 14 x 30	Ø 52	□70 / Ø 62	Ø 5.5	0.58 / 0.25
Ruhrgetriebe	RPS060	949768	949771	82.9 / 80.4	Ø 40^{H7} 3 deep / 4 deep	Ø 14 x 30	Ø 52	□70 / Ø 62	Ø 5.5	0.58 / 0.25
SPN Schwaben Präzision	SPN-ECO (E2) EZ 23	949768	949771	82.9 / 80.4	Ø 40^{H7} 3 deep / 4 deep	Ø 14 x 30	Ø 52	□70 / Ø 62	Ø 5.5	0.58 / 0.25
Wittenstein	Alpha CP015 MF	949768	949771	82.9 / 80.4	Ø 40^{H7} 3 deep / 4 deep	Ø 14 x 30	Ø 52	□70 / Ø 62	Ø 5.5	0.58 / 0.25

Selection table motor adapter kits for motors with NEMA-Flange

Manufacturers	Motor	Angular gear System 1-3 EP(X)-II 30 TR	Angular gear System 1-3 EP(X)-II 40/50 TR	Motor-flange	A	D1	D2	E	F	G	Mass [kg]
RK Rose+Krieger	Stepper motor PD6S	949767	949770	NEMA 34	84.9/82.4	Ø 73^{H8} 4 deep/3 deep	Ø 14 x 35	□ 69.5	□ 86	M6 - 15 deep	0.76/0.75
Various	All motors with NEMA 34 motor flange	949767	949770	NEMA 34	84.9/82.4	Ø 73^{H8} 4 deep/3 deep	Ø 14 x 35	□ 69.5	□ 86	M6 - 15 deep	0.76/0.75

Drive

Positioning indicator

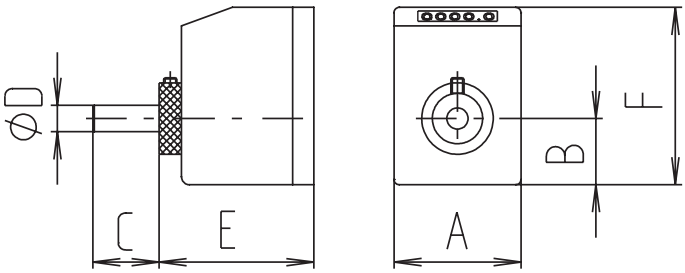
- Permitted ambient temperature +80° C
- Figure height 6 mm
- Reading accuracy ± 0.1 mm
- If positioning indicators are fitted, the linear units are delivered exclusively with ball bearings

Material: Housing polyamide 6 Orange RAL 2004,
Steel parts corrosion-protected

Scope of delivery: Positioning indicator, clamping ring, shaft extension and fastenings

Note: "rising" and "falling" versions refer to the clockwise rotation of the drive shaft.

Installation position: horizontal



Installation position: vertical

[mm]

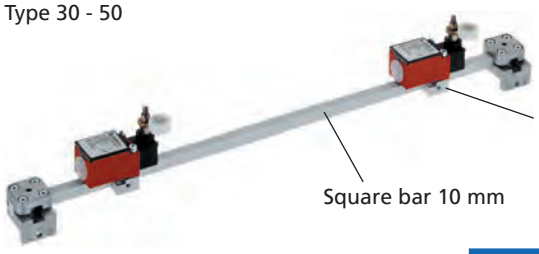
Type	Installation position	Code No.	Version	Code No.	Version*	A	B	C	D	E	F
30	horizontal	91043	3 mm rising	91010	6 mm rising	48	25	18	8	59	67
30		91053	3 mm falling	91029	6 mm falling	48	25	18	8	59	67
30	vertical	91063	3 mm rising	91020	6 mm rising	48	25	18	8	59	67
30		91073	3 mm falling	91019	6 mm falling	48	25	18	8	59	67
40	horizontal	91004	4 mm rising	91030	8 mm rising	48	25	38	12	59	67
40		91014	4 mm falling	91039	8 mm falling	48	25	38	12	59	67
40	vertical	91024	4 mm rising	91040	8 mm rising	48	25	38	12	59	67
40		91034	4 mm falling	91041	8 mm falling	48	25	38	12	59	67
50	horizontal	91045	4 mm rising	91046	8 mm rising	48	25	38	12	59	75
50		91055	4 mm falling	91047	8 mm falling	48	25	38	12	59	75
50	vertical	91065	4 mm rising	91048	8 mm rising	48	25	38	12	59	75
50		91075	4 mm falling	91049	8 mm falling	48	25	38	12	59	75

* Version with double lead e.g. for installation on righthand/lefthand thread screws

Holder for mechanical limit switch

- Limit switch can be moved and fixed axially

Type 30 - 50

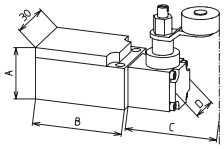


Type	30 - 50
Max. voltage	250 V AC
Max. switching current	6 A
Max. starting current	16 A
Lifetime	10 million switching cycles
Axis lever adjustment	locking at 10° increments
Protection rating	IP 65
Ambient temperature	-30°C to +80°C

Code No.	Type	Basic length	Version
92961_ _ _ _	30 - 50	245	with switch
92962_ _ _ _	30 - 50	245	without switch

Total length of linear unit

Mechanical limit switch



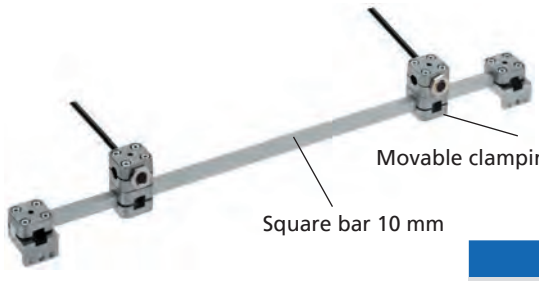
[mm]

Code No.	Type	Switching function	A	B	C	D
91905	30 - 50	NC contact / NO contact	26.5	45	45.5	21

Holder for inductive limit switch

- Limit switch can be moved and fixed axially

Type 30 - 50

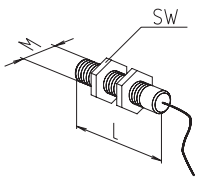


Type	30 - 50
Voltage	10 - 30 V DC
Max. switching current	200 mA
Operating distance	4 mm for steel
Protection rating	IP67
Ambient temperature	-25°C to +70°C
Cable lengths	2m

Code No.	Type	Basic length	Version
92965_ _ _ _	30 - 50	125	without switch

Total length of linear unit

Inductive limit switch

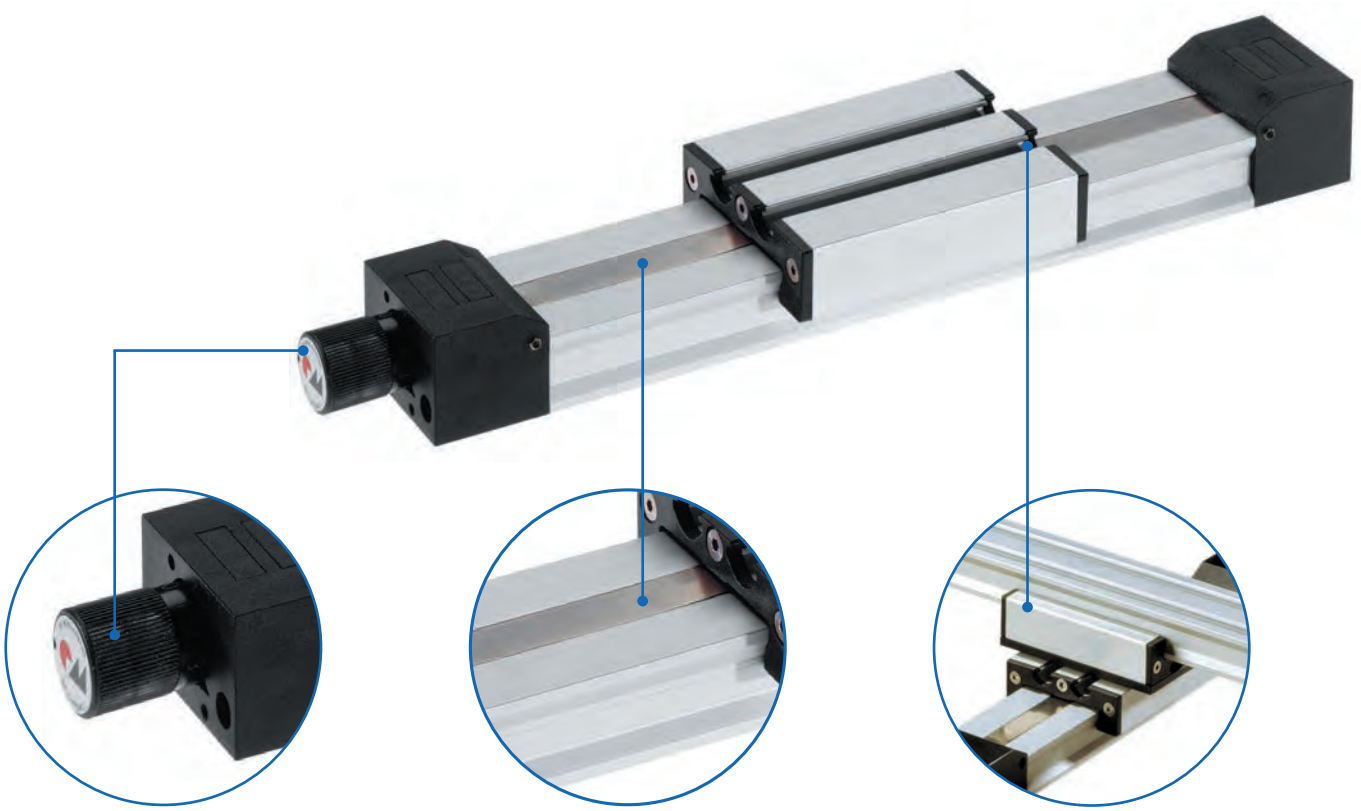


[mm]

Code No.	Type	Switching function	L	M	Wrench size (SW)
92825	30 - 50	Changeover	50	12x1	17

PLM

The small range for positioning small loads



Control knob with vernier
- Simple adjustment of carriage

Screw cover
- Protection of drive screw against contamination

Connecting plates
- Simple connection of 2-axis systems

Features:
- Covered screw
- Sizes can be combined using standard accessories

Options:
- Second free-running carriage

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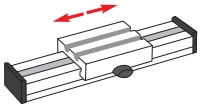
Versions
(Dimensions, order numbers)



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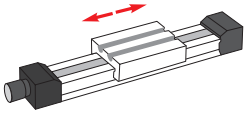
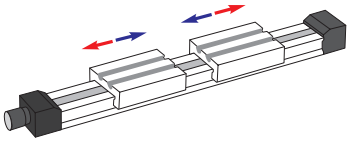
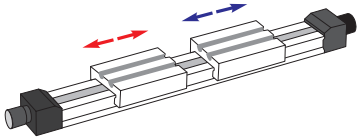


Right or lefthand thread ... Page 182 - 183



Right and lefthand thread ... Page 184 - 185



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Accessories
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Drive

Handwheel ... Page 191

Motor adaptor/coupling ... Page 191

Position determination

Positioning indicator ... Page 192

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Technical data

General information/operating conditions

Design	Profile linear unit, steel cover strip
Guide	Adjustable slide guide
Installation position	Any position
Lead accuracy	± 0.1 mm/300 mm travel
Self-locking	Yes
Ambient temperature	0°C to + 60°C

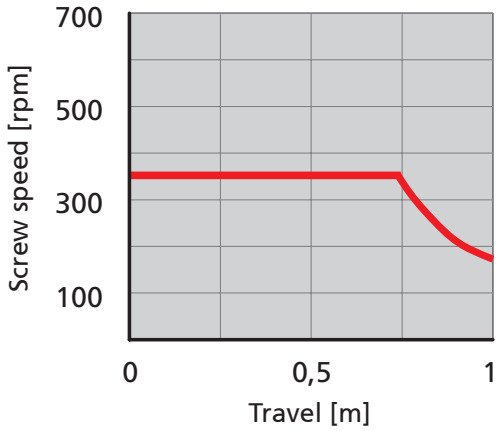
Screw lead

[mm]

Type	Screw lead
PLM 20 x 20	1
PLM 40 x 20	1

$$\text{Required screw speed n [rpm]} = \frac{\text{speed [m/min] x 1000}}{\text{screw lead [mm]}}$$

Critical screw speed



No-load torque

[Nm]

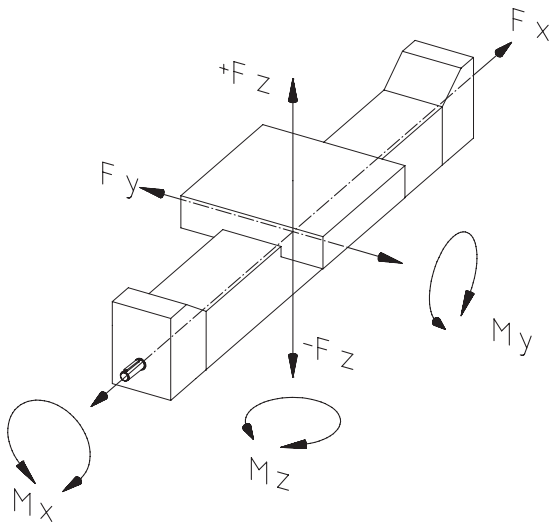
Type	No-load torque
PLM 20 x 20	0.20
PLM 40 x 20	0.20

Load data*

F Force [N]

M Moment [Nm]

I Geometric moment of inertia [cm^4]



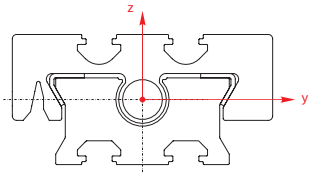
* With reference to carriage (static values, guide element resting on full surface)

Type	Fx	Fy	+Fz	-Fz	Mx	My	Mz
PLM 20 x 20	125	160	90	180	3	10	10
PLM 40 x 20	125	200	110	220	4	14	14

Geometric moment of inertia

[cm^4]

Type	Iy	Iz
PLM 20 x 20	0.64	0.74
PLM 40 x 20	1.32	5.01



Versions

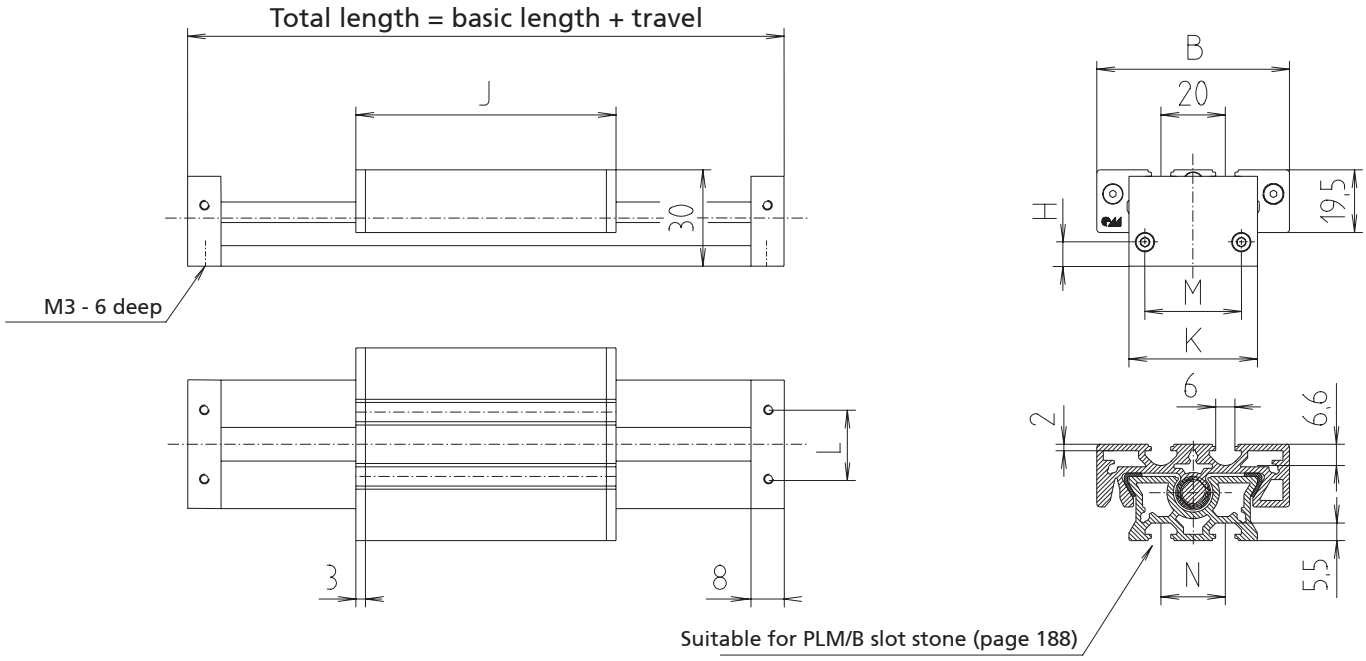
Order instructions:

- Longer travel lengths on request
- Second carriage available on request

Version ● Guide

Code No.	Type	Basic length	B	H	J	K	L	M	N
MKA2020AA	20	77	40	7.5	61	20	0	10	0
MKA4020AA	40 x 20	97	60	7.5	81	40	20	30	20

_ _ _ _ Total length = basic length + travel [mm]



[mm]

Max. travel	Mass [kg]	
	Basic length	per 100 mm travel
2935	0.09	0.03
2915	0.19	0.07

Versions

Order instruction:

- Longer travel lengths on request

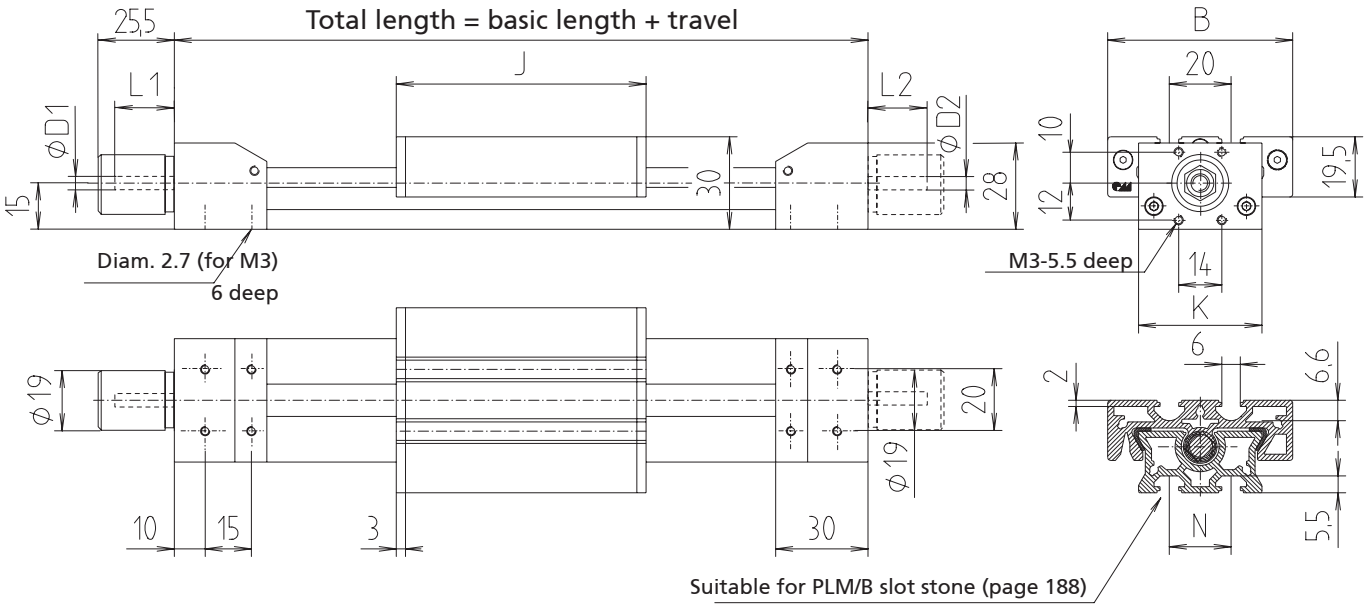
Version

- Right or lefthand thread actuator

Code No.	Type	Screw	Basic length	B	D1	D2	J	K	L1	L2	N
FP_2020TA	20x20	M 8x1	121	40	5	–	61	20	21	–	0
FP_2020UA	20x20	M 8x1	121	40	5	5	61	20	21	21	0
FP_4020TA	40x20	M 8x1	141	60	5	–	81	40	21	–	20
FP_4020UA	40x20	M 8x1	141	60	5	5	81	40	21	21	20

_ _ _ _ Total length = basic length + travel [mm]

Version:
A = righthand thread
H = lefthand thread



[mm]

Max. travel	Mass [kg]	
	Basic length	per 100 mm travel
870	0,15	0,06
835	0,15	0,06
850	0,27	0,10
815	0,27	0,10

Versions

Order instructions:

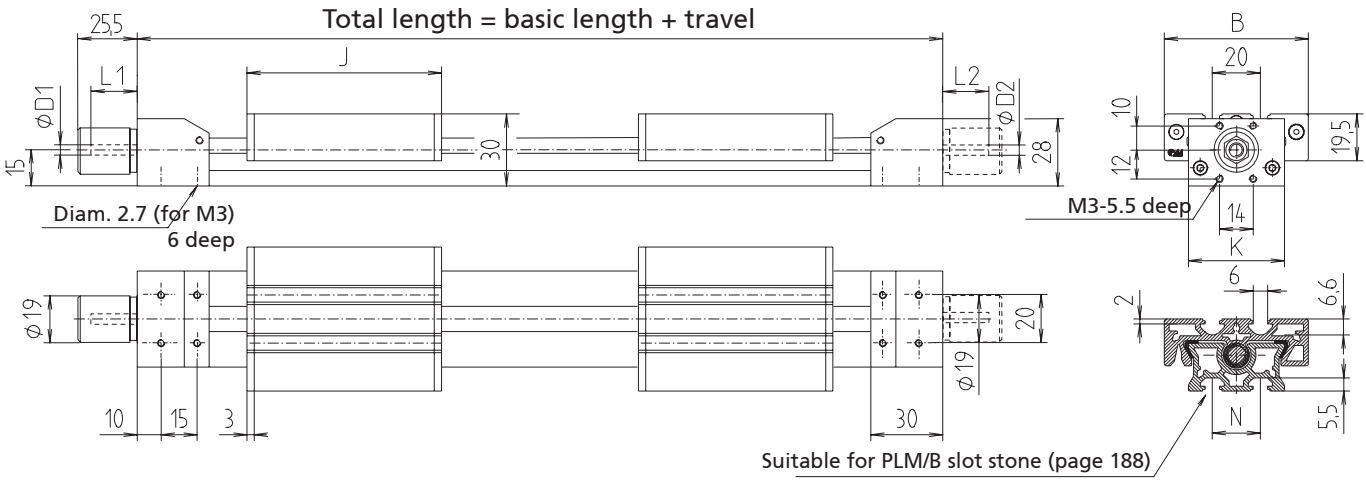
- Please specify total travel when placing an order
- Longer travel lengths on request

Version

- Right and lefthand thread actuator

Code No.	Type	Screw	Basic length	B	D1	D2	J	K	L1	L2	N
FPC2020SA	20x20	M 8x1	182	40	5	–	61	20	21	–	0
FPC2020TA	20x20	M 8x1	182	40	–	5	61	20	–	21	0
FPC2020UA	20x20	M 8x1	182	40	5	5	61	20	21	21	0
FPC4020SA	40x20	M 8x1	222	60	5	–	81	40	21	–	20
FPC4020TA	40x20	M 8x1	222	60	–	5	81	40	–	21	20
FPC4020UA	40x20	M 8x1	222	60	5	5	81	40	21	21	20

_ _ _ _ Total length = basic length + travel [mm]



[mm]

Max. travel	Mass [kg]	
	Basic length	per 100 mm travel
780	0,32	0,05
780	0,32	0,05
745	0,32	0,05
740	0,41	0,09
740	0,41	0,09
705	0,41	0,09

Versions

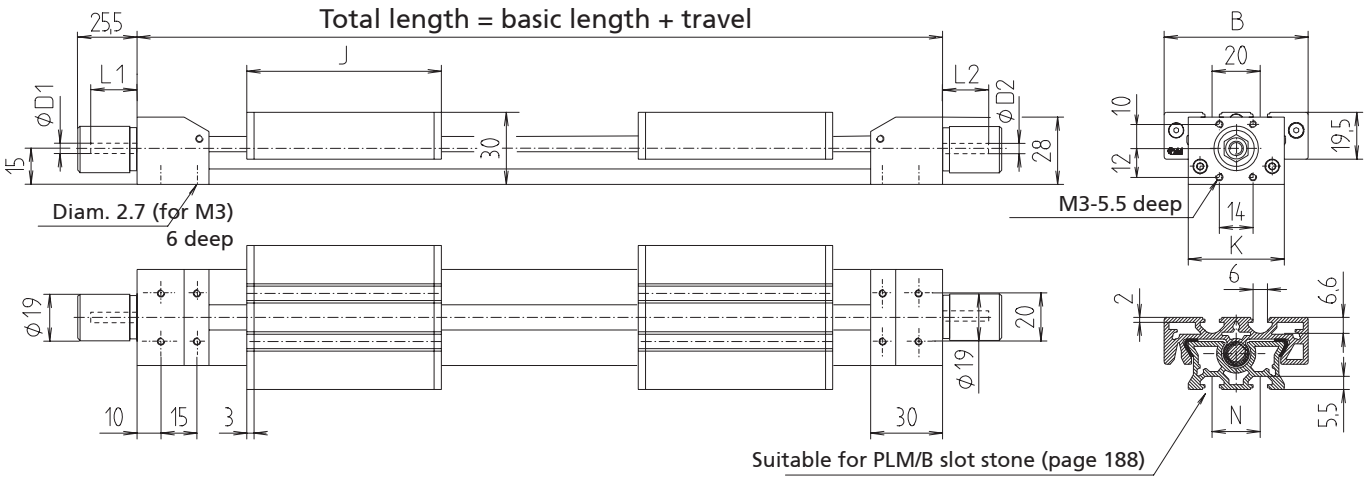
Order instructions:

- Please specify total travel when placing an order
- Longer travel lengths on request

Version ● Split screw actuator

Code No.	Type	Screw	Basic length	B	D1	D2	J	K	L1	L2	N
FPD2020UA	20 x 20	M8 x 1	182	40	5	5	61	20	21	21	0
FPD4020UA	40 x 20	M8 x 1	222	60	5	5	81	40	21	21	20

_ _ _ _ Total length = basic length + travel [mm]



[mm]

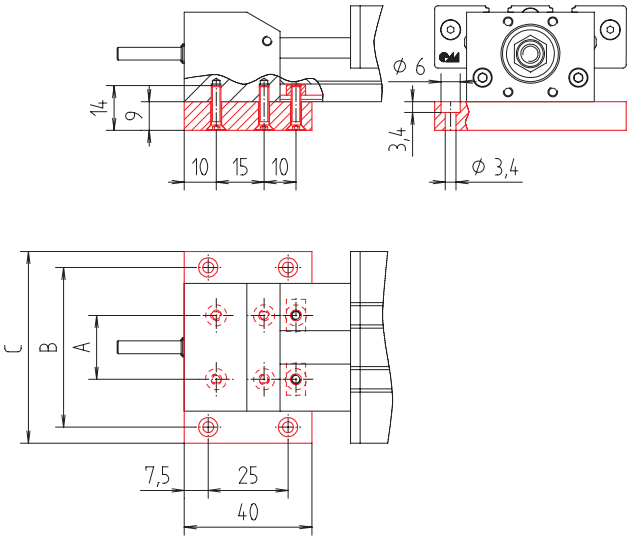
Max. travel	Mass [kg]	
	Basic length	per 100 mm travel
770	0.32	0.05
730	0.41	0.09

Fixing

Fixing plate

- Incl. fastenings
- Freewheel for limit switch holder

Material: AlMgSi, black anodised



[mm]

Code No.	Type	A	B	C
94320	PLM 20 x 20	–	30	40
94321	PLM 40 x 20	20	50	60

Order instruction square nut:

- Purchase only in lot sizes and a multiple of that, see product table below

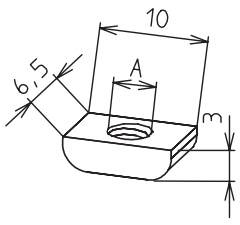
- Slot stones can be inserted and positioned on the guide profile and carriage

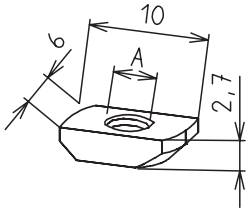
Material: zinc plated steel

Slot stones

Slot stone -PLM-
can be slid into the slot

Slot stone -B-
can be swivelled into the slot





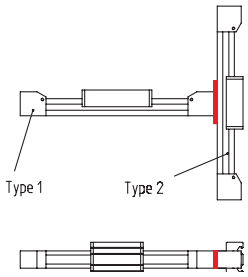
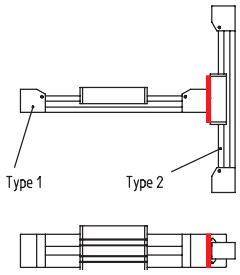
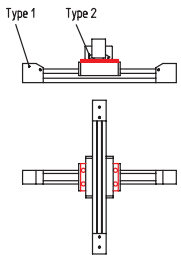
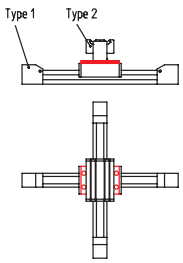
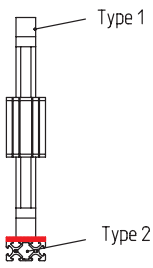
[mm]

Code No.	Type	lot sizes	A
E00037CEE	-PLM-	10, 20, 30... pcs	M 3
E00038CEE	-PLM-	10, 20, 30... pcs	M 4
E00039CEE	-PLM-	10, 20, 30... pcs	M 5
E00017CEE	-B-	10, 20, 30... pcs	M 3
E00058CEE	-B-	10, 20, 30... pcs	M 4

Connecting plate

- Simple connection of 2-axis systems
- Incl. fastenings
- Thickness of connecting plates: 4 mm

Material: AlMgSi, black anodised
Steel parts zinc plated

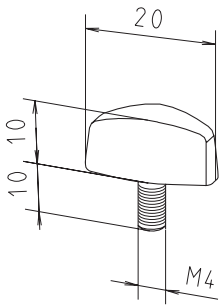
	Code No.	Version	Type 1	Type 2
	94331	Bearing element on guide profile	PLM 20 x 20	PLM 20 x 20
	94330		PLM 40 x 20	PLM 20 x 20
	94334		PLM 40 x 20	PLM 40 x 20
	94333	Bearing element on carriage	PLM 20 x 20	PLM 20 x 20
	94332		PLM 40 x 20	PLM 20 x 20
	94335		PLM 40 x 20	PLM 40 x 20
	94340	Carriage on carriage	PLM 20 x 20	PLM 20 x 20 PLM-G 20 x 20
	94344		PLM 40 x 20	PLM 20 x 20 PLM-G 20 x 20
	94342		PLM 40 x 20	PLM 40 x 20 PLM-G 40 x 20
	94341	Carriage on guide profile	PLM 20 x 20	PLM 20 x 20 PLM-G 20 x 20
	94345		PLM 40 x 20	PLM 20 x 20 PLM-G 20 x 20
	94343		PLM 40 x 20	PLM 40 x 20 PLM-G 40 x 20
	94350	Bearing element on guide profile	PLM 20 x 20	F-20 x 20
	94351		PLM 20 x 20	F-40 x 20
	94352		PLM 40 x 20	F-40 x 20

Fixing/Drive

Wing screw

- Slide clamp for PLM 20 x 20 and 40 x 20

Material: Polyamide
zinc plated thread

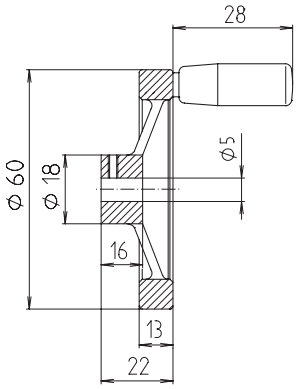


[mm]

Code No.	Type
90291	PLM 20 x 20/40 x 20

Handwheel

Material: Aluminium die casting
Wheel body, plastic-coated

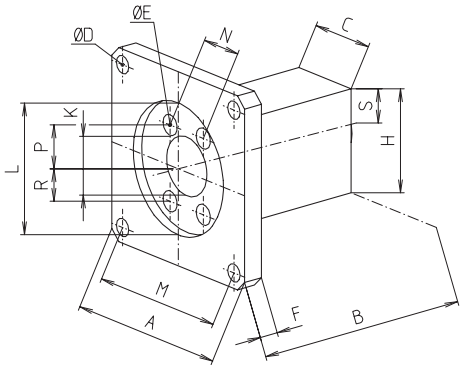


[mm]

Code No.	Type
909200	PLM 20/40 x 20

Motor adaptor/coupling

Material: Aluminium,
zinc plated screws



[mm]

Code No.	Type/motor	□A	B	C	D	E	F	H	K	L	□M	N	P	R	S
Motor adaptor															
91462	PLM/ NEMA 17	41	55,5	22	3,5	3,5 / 6	6	30	17	22^{H7}/3 deep	31	14	10	12	14
91472	PLM/ NEMA 23	56	52	22	5,2	3,5 / 6	6	30	17	38,1/3 deep	47	14	10	12	14
Coupling															
9107140505	For motor acc. to NEMA 17, diam. 5/diam. 5														
9107140506	For motor acc. to NEMA 23, diam. 5/diam. 6.3														

Position determination

Positioning indicator

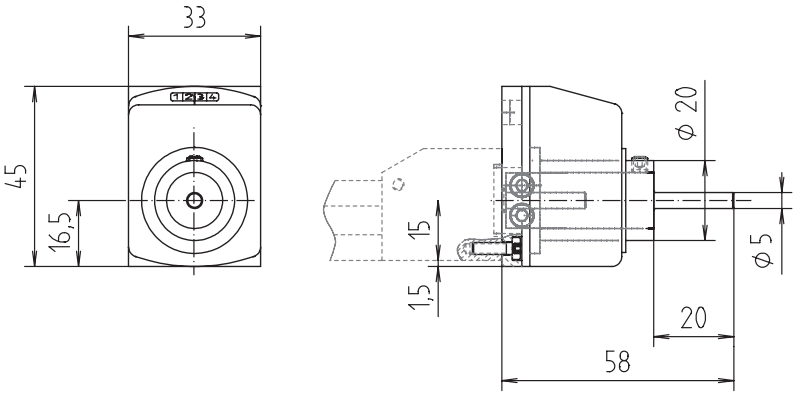
- Max ambient temperature +80°C
- Figure height 6 mm
- Reading accuracy ± 0.1 mm

Material: Housing made of polyamide 6
Orange RAL 2004
Steel parts zinc plated

Scope of delivery: Positioning indicator, clamping ring, shaft extension and fastenings

Note: "rising" and "falling" versions refer to the clockwise rotation of the drive shaft.

Installation position: horizontal



Installation position: vertical

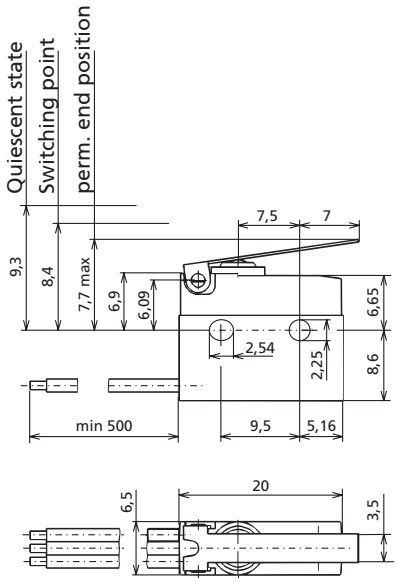
Code No.	Type	Version	Installation position
9101000	PLM 20 x 20/40 x 20	1 mm rising	Horizontal
9101010		1 mm falling	Horizontal
9101020		1 mm rising	Vertical
9101030		1 mm falling	Vertical

Position determination

Mechanical limit switch

- Single-pole changeover contact
- Compact design

Material: Housing, thermoplastic



Max. voltage	24 V (12 V)
Max. switching current	3 A (6 A)
Mechanical lifetime	1 x 10^6 switching cycles
Protection class	IP 67
Ambient temperature	-40°C to +85°C
Connecting leads	0.75 mm^2, encapsulated in the switch

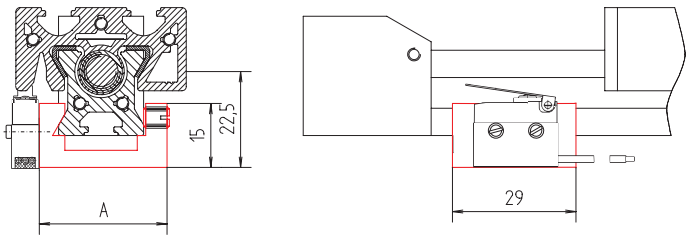
Code No.	Version
91923	**PLM**

Limit switch holder

- Holder for guide profile
- Can be moved and fixed axially

Material: AlMgSi, black anodised
Steel parts zinc plated

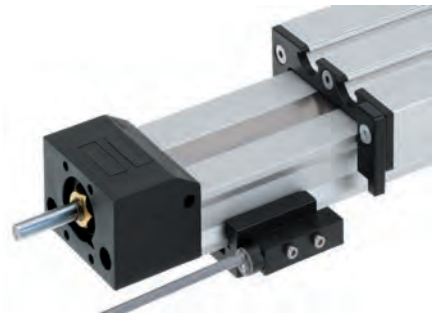
Note: The Order No. does not include the limit switch!



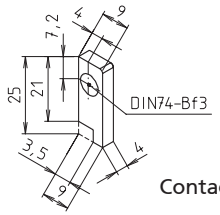
[mm]

Code No.	Type	A
92940	PLM 20 x 20	30
92941	PLM 40 x 20	50

Inductive limit switch



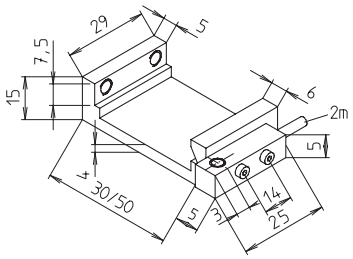
- The holder can be moved along the guide profile and fixed



Contact plate

Material: Holder and contact plate made of black anodised aluminium, zinc plated fastenings

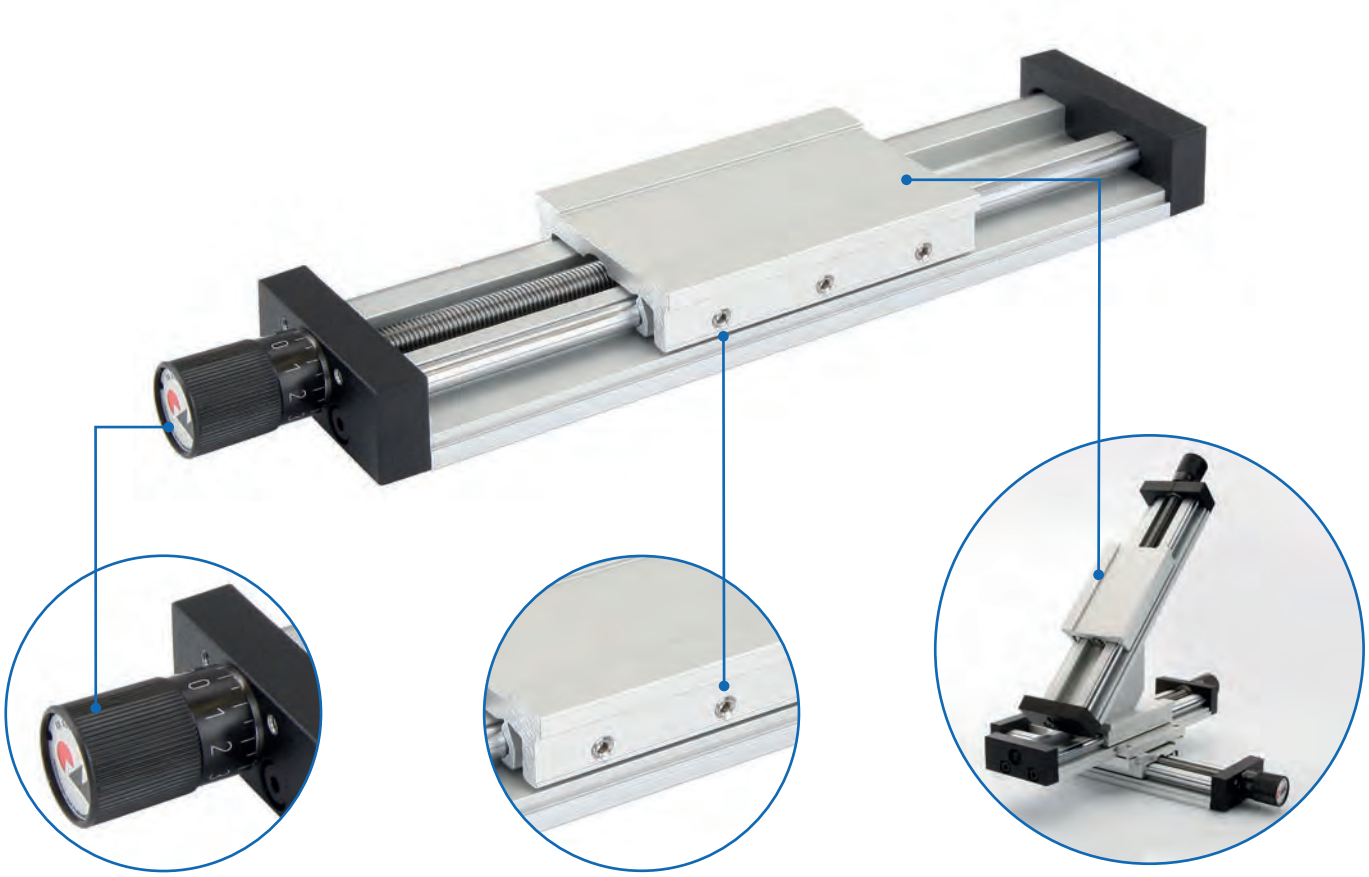
Scope of delivery: 1 limit switch with complete holder, contact plate and fastenings



Operating distance	2 mm
Voltage range:	10/-30 V DC
Current consumption:	< 18 mA
Max. switching frequency:	5 khz
Output:	PNP NC contact
Ambient temperature:	-25°C to +75°C

Code No.	Type	Version
92812	PLM 20 x 20	Right
92822	PLM 20 x 20	Left
928142	PLM 40 x 20	Right
928242	PLM 40 x 20	Left

Slimline short-stroke linear actuator for hand adjustment – with excellent price-performance ratio



Control knob with vernier
- Simple adjustment of carriage

- Backlash of carriage adjustable

Multiple axis combinations
- Standard accessories support the simple configuration of multiple axis combinations

Standard strokes

48 h
ready for delivery

Features:
- Wide range of accessories for combining multiple axes
- Standard version with control knob
- Standard strokes ex warehouse

Options:
- Longer stroke lengths
- Second free-running carriage

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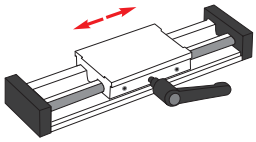
Properties/Technical data

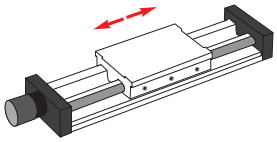
General information/operating conditions ... Page 198

Load data ... Page 199

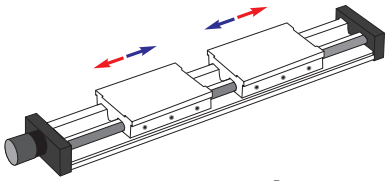
Versions
(Dimensions, order numbers)



RK Compact G guide unit ... Page 200 - 201



Right *or* lefthand thread ... Page 202 - 203



Right *and* lefthand thread ... Page 204 - 205

Accessories

Fixing

Clamping lever ... Page 206

Clamping brackets ... Page 207

Combination angle ... Page 208

Combination plate ... Page 208

Fixing plate for BLOCAN® profiles ... Page 209

Drive

Handwheel ... Page 210

Motor adaptor/coupling ... Page 210

Limit switches ... Page 211

Position determination

Positioning indicator ... Page 211

Technical data

General information/operating conditions

Design	Profile linear unit with extruded guide profile/carriage
Guide	Adjustable slide guide
Installation position	Any position
Lead accuracy	Threaded screw ± 0.1 mm/300 mm travel, ball screw drive ± 0.05 mm/300 mm travel
Self-locking	Yes, for threaded screw. No, for ball screw drive
Ambient temperature	0°C to +60°C

Screw lead

[mm]

Threaded screw	
Type	**Screw lead**
RK Compact 30	0.5
RK Compact 50-120	1

[mm]

Ball screw drive	
Type	**Screw lead**
RK Compact 80-120	1

$$\text{Required screw speed n [rpm]} = \frac{\text{speed [m/min] x 1000}}{\text{screw lead [mm]}}$$

* max. screw speed with threaded screw 500 rpm
with ball screw drive 1000 rpm

No-load torque

[Nm]

Type	No-load torque
RK Compact	0.20

Load data*

F Force [N]

M Moment [Nm]

I Geometric moment of inertia [cm^4]

* With reference to carriage (static values, guide element resting on full surface)

Type	Fx	Fy	Fz	Mx	My	Mz
RK Compact 30	50	160	160	3	3	3
RK Compact 50	125	350	350	6	7.5	7.5
RK Compact 80	215	600	600	12	18	18
RK Compact 120	215	1150	1150	32	59	59

Geometric moment of inertia

[cm^4]

Type	Iy	Iz
RK Compact 30	0.09	0.90
RK Compact 50	0.46	7.44
RK Compact 80	3.68	47.14
RK Compact 120	9.85	214.84

Versions

Order instruction:

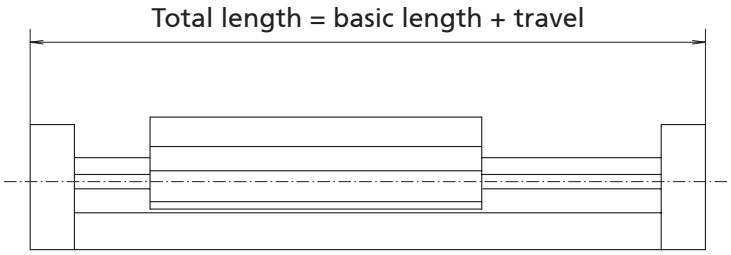
- Longer travel lengths on request

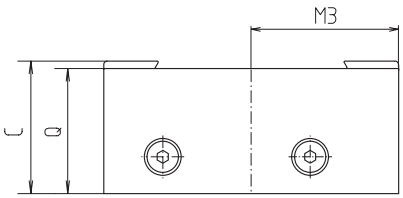
Version ● Guide

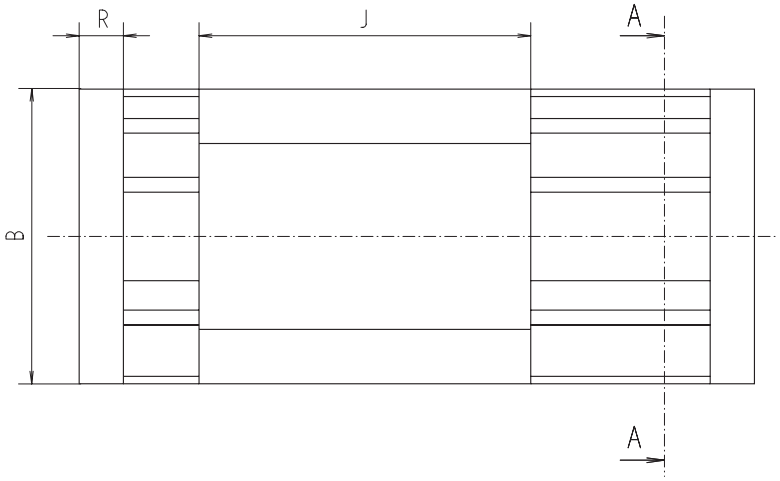
Clamping lever for sizes 50-120
is included with

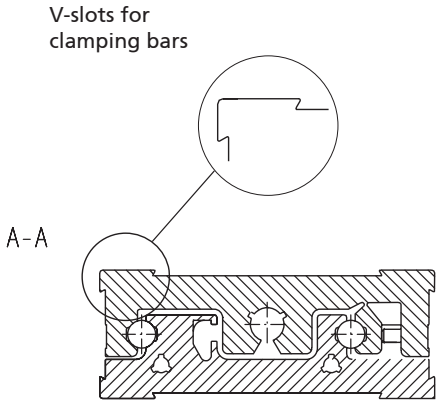
Code No.	Type	Basic length	B	C	J
MLA3017AA	30	59	30	17	45
MLA5023AA	50	95	50	23	75
MLA8036AA	80	144	80	36	120
MLA1246AA	120	204	120	46	180

_ _ _ _ Total length = basic length + travel [mm]









[mm]

M3	Q	R	Max. travel	Mass [kg]	
				Basic length	per 100 mm travel
17.1	16	7	300	0.06	0.07
26.5	21.5	10	350	0.27	0.14
40	34	12	350	0.29	0.29
60	44	12	400	2.62	0.63

Versions

Order instructions:

- Standard strokes in stock! Take advantage of our fast delivery times and lower prices
- Longer travel lengths on request
- Slide clamp page 206

Version ● Right or lefthand thread

48 h ready for delivery

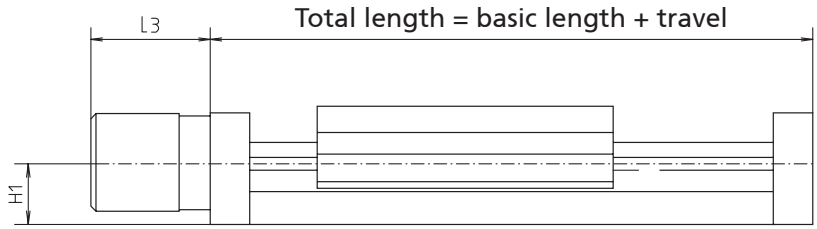
For standard strokes

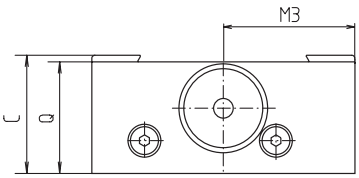
- Righthand threaded screw
- Type 30: 10, 20, 30, 50 mm
- Type 50-120: 25, 50, 75, 100 mm

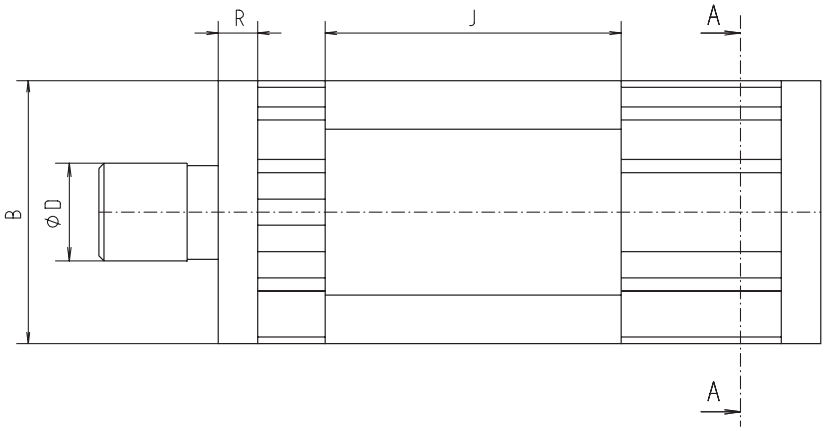
Code No.	Type	Spindle	Basic length	Standard stroke	B	C	D	H1
Threaded screw								
FN_ 3017 TA	30	M5 x 0.5	59	10,20,30,50	30	17	13.5	8
FN_ 5023 TA	50	8 x 1	95	25	50	23	19	13
FN_ 8036 TA	80	8 x 1	144	50 75	80	36	27	20.5
FN_ 1246 TA	120	8 x 1	204	100	120	46	35	26.5
Ball screw drive								
FO_ 8036 TA	80	8 x 1	144	–	80	36	27	20.5
FO_ 1246 TA	120	8 x 1	204	–	120	46	35	26.5

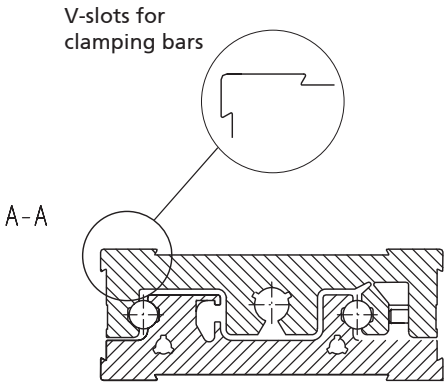
_ _ _ _ Total length = basic length + travel [mm]

Version:
A = righthand thread
H = lefthand thread









[mm]

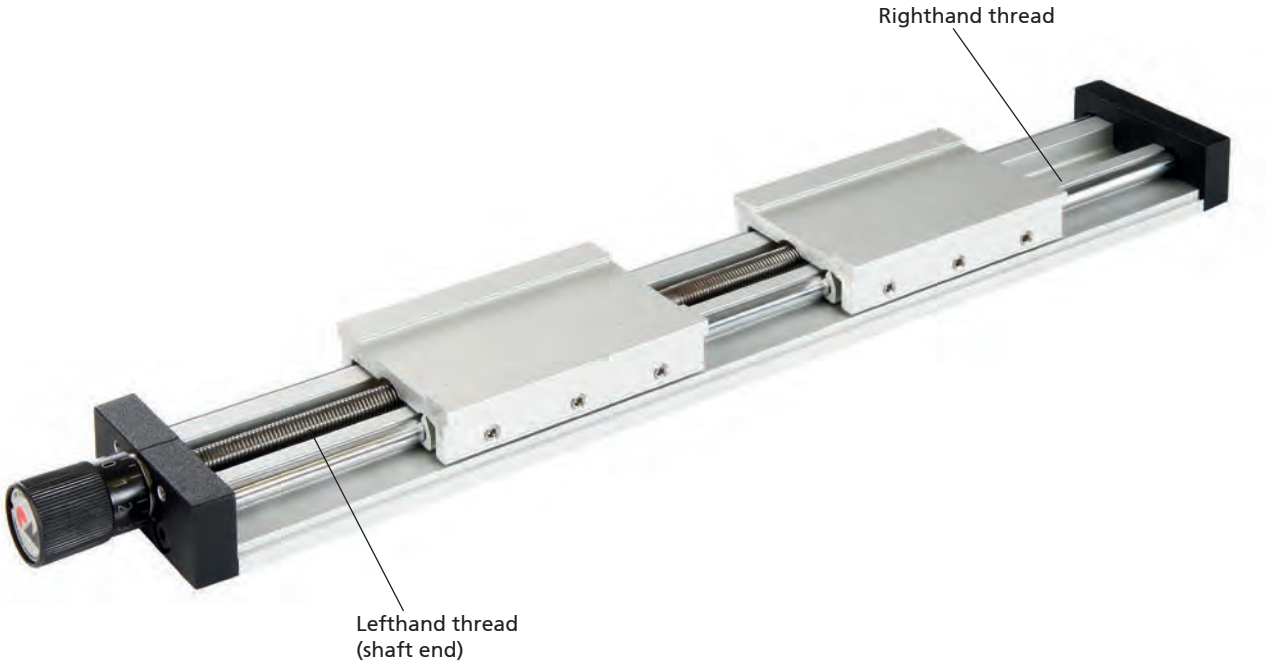
J	C	M3	Q	R	Max. travel	Mass [kg]	
						Basic length	per 100 mm travel
45	21	17.1	16	7	130	0.08	0.07
75	22.5	26.5	21.5	10	350	0.29	0.18
120	30.5	40	34	12	350	0.99	0.33
180	35.5	60	44	12	400	2.76	0.67
120	30.5	40	34	12	199	0.99	0.33
180	35.5	60	44	12	199	2.76	0.67

Versions

Order instructions:

- Longer travel lengths on request
- Slide clamp page 206

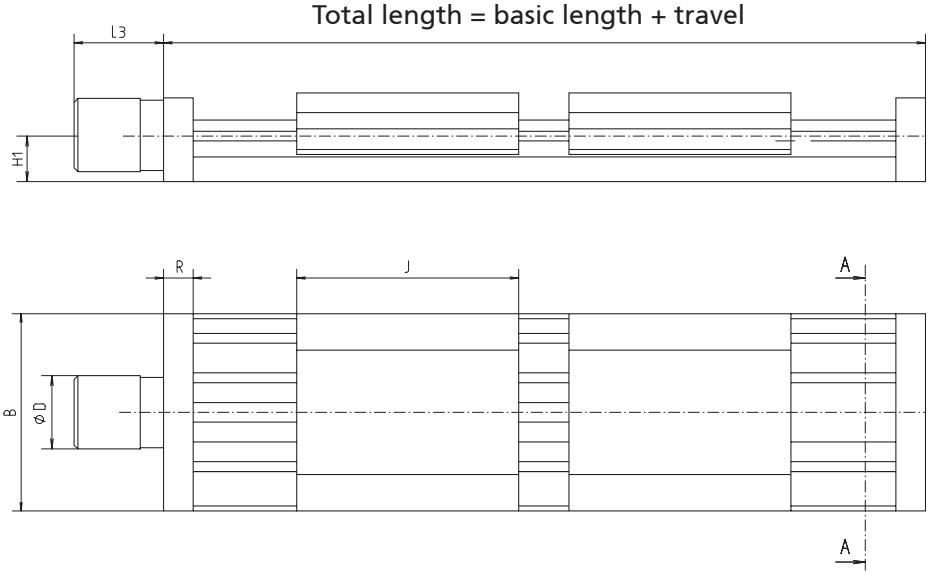
Version ● Right and lefthand thread

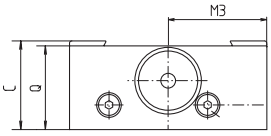


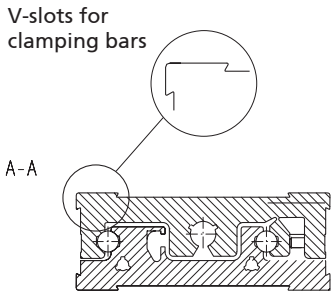
Code No.	Type	Spindle	Basic length	B	C	D	H1
				Threaded screw			
FNC 3017 TA	30	M5 x 0.5	104	30	17	13.5	8
FNC 5023 TA	50	8 x 1	170	50	23	19	13
FNC 8036 TA	80	8 x 1	264	80	36	27	20.5
FNC 1246 TA	120	8 x 1	384	120	46	35	26.5

_ _ _ _ Total length = basic length + total travel [mm]

Total length = basic length + travel







[mm]

J	C	M3	Q	R	Max. travel	Mass [kg]	
						Basic length	per 100 mm travel
45	21	17.1	16	7	85	0.13	0.08
75	25.5	26.5	21.5	10	275	0.29	0.18
120	30.5	40	34	12	230	0.99	0.33
180	35.5	60	44	12	220	2.76	0.67

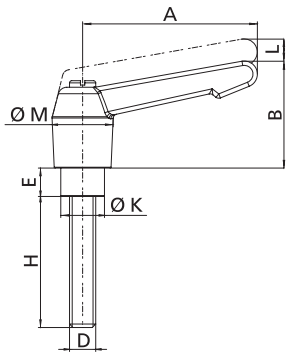
Fixing

Clamping lever

- For the equipping of fixing elements and carriages

Material: Handle made of die cast zinc, plastic-coated

(Symbolic representation)



[mm]

Code No.	Type	A	B	D	E	H	K	L	M
90292	50	40	27	M4	7,5	10	7	3	14
90293	80	40	27	M5	4	15	10	3	14
90294	120	40	27	M6	4	20	10	3	14

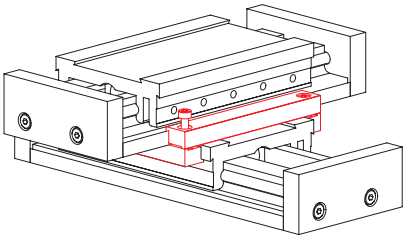
Clamping brackets

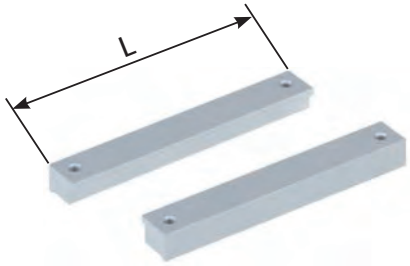
- Complete set for mounting on cross table
- Fixing of linear unit on an existing design
- Fixing of auxiliary devices and tools to the carriage

Material: Aluminium clear anodised, zinc plated fastenings

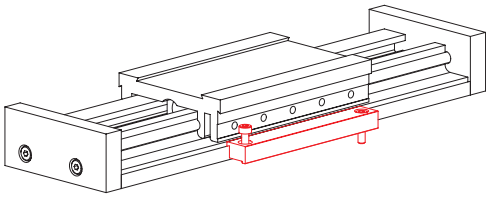
Scope of delivery: 1 set contains 2 clamping bars. Version with counterbore includes fixing screws

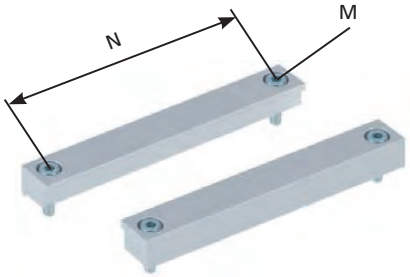
Version: crossing, complete



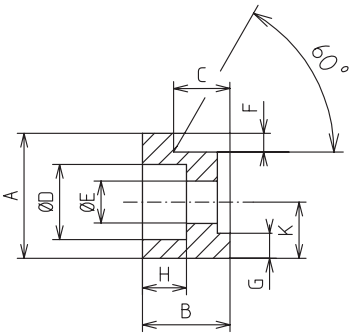


Version: with thread





Version: with counterbore



[mm]

Code No.	Type	Version	A	B	C	D	E	F	G	H	K	L	M	N
91879	30	with counterbore	6.6	4.2	3	5	2.9	1	0.9	2.9	2.9	41.2	M2,5 x 6	35.4
91880	30	with thread	6.6	4.2	3	–	M2.5	1	0.9	–	2.9	41.2	M2,5 x 6	35.4
91881	30	crossing, complete												
91882	30/50	crossing, complete												
91845	50	with counterbore	10	7	4.5	6	3.4	1.5	2	4	4.5	67	M3 x 10	58
91846	50	with thread	10	7	4.5	–	M3	1.5	2	–	4.5	67	–	58
91847	50	crossing, complete												
91857	50/80	crossing, complete												
91848	80	with counterbore	14.5	10	8	8	4.5	2	2.5	5	6.5	105	M4 x 14	92
91849	80	with thread	14.5	10	8	–	M4	2	2.5	–	6.5	105	–	92
91850	80	crossing, complete												
91858	80/120	crossing, complete												
91851	120	with recess	14.5	10	8	10	5.5	2	2.5	5.7	6.5	145	M5 x 14	132
91852	120	with thread	14.5	10	8	–	M5	2	2.5	–	6.5	145	–	132
91853	120	crossing, complete												

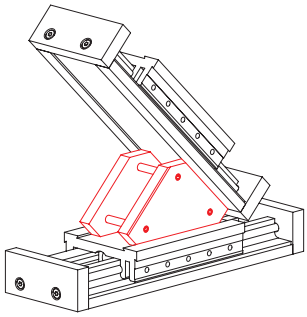
Fixing

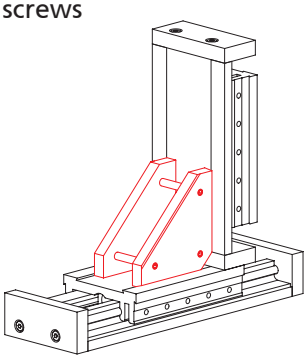
Combination angle

- Combination angle for the creation of 2-axis combinations below 45° and 90°
- Simple assembly and centring due to prism geometry

Material: Aluminium, clear anodised
Stainless-steel set screws

Scope of delivery:
2 angled halves (1 x with thread, 1 x without thread)
3 set screws





[mm]

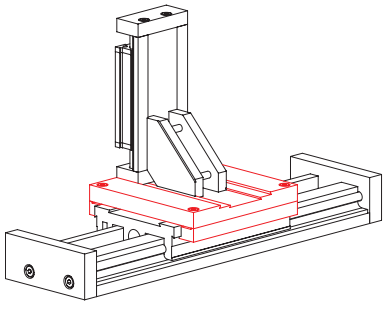
Code No.	Type	A	B	C	D	E	F	G	H
91883	30	7	21	25	M4	9.3	1	4	17.2
91854	50	11	40	50	M5	13	1.5	8	31.7
91855	80	15	65	80	M6	16	2	10	52.3
91856	120	18	100	120	M8	16	2	12	82.3

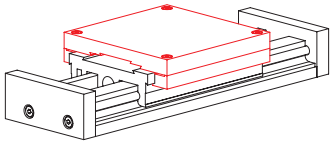
Combination plate

- The combination plate enables the drilling of holes for the fixing of a superstructure
- Used together with the combination angle, it allows the combination of different sizes and movement of the axes by 90°

Material: Aluminium, clear anodised, zinc plated fastenings

Scope of delivery:
1 combination plate
1 set of clamping bars (thread)
Fastenings





[mm]

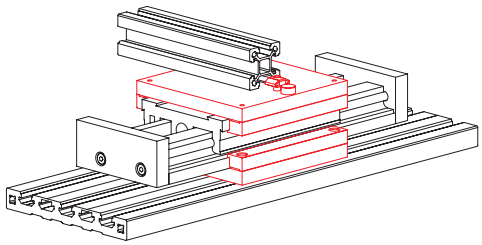
Code No.	Type	A	B	C	D	E	F	G	H	K	L
94365	30	41.2	35.4	5	2.9	5 (90°)	16	–	–	1	–
94362	50	67	58	8	3.4	6	30	–	2.5	1.5	–
94363	80	105	92	12	4.5	8	30	50	4	2	3.5
94364	120	145	132	15	5.5	10	50	80	4.5	2	4

Fixing plate for BLOCAN® profiles

- For connecting a linear unit to a design made of BLOCAN® pro files
- Centring pins facilitate the assembly and alignment of the profiles

Material: Aluminium, clear anodised,
Centring pins, polyamide, zinc plated fastenings

Scope of delivery:
1 fixing plate
2 centring pins
1 set of clamping bars with clamping
2 or 3 slot stones -F- Fastenings



[mm]

Code No.	Type	Version	A	B	C	D	E	G	H	K
94356	50	up to S/F-30	67	58	8	M3	34	3.9	4.5	8
94357	50	from S/F-40	67	58	8	M3	34	3.9	4.5	8
94358	80	up to S/F-30	105	92	10	M4	70	4.7	5.5	10
94359	80	from S/F-40	105	92	10	M4	70	4.7	5.5	10
94360	120	up to S/F-30	145	132	12	M5	110	4.9	6.6	11
94361	120	from S/F-40	145	132	12	M5	110	4.9	6.6	11

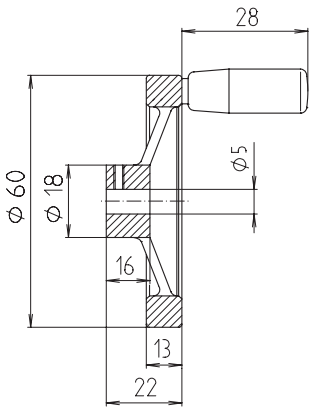
Camera adjustment via RK Compact 3-axis system, fixing via standard accessories

Drive/Position determination

Handwheel

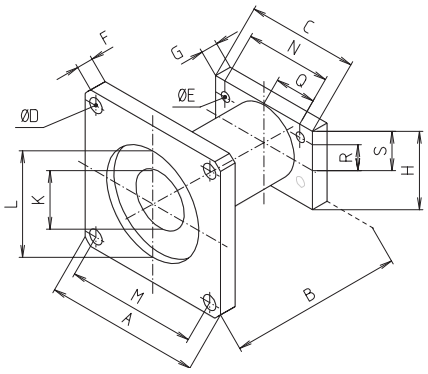
- Rotating cylindrical grip
- Fully turned wheel rim
- Machined hub

Material: Aluminium die casting. Wheel body, completely plastic-coated



Code No.	Type
909200	50/80/120

Motor adaptor

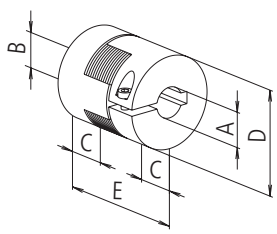


Material: Aluminium, zinc plated fastenings

[mm]

Code No.	Type	□ A	B	C	D	E	F	G	H	K	L	□ M	N	Q	R	S
91301	RK Compact 80/ NEMA 17	41	55,5	70	3,5	5,5	6	6	34	20	22^{H7}/3deep	31	40	16	10	20,5
91302	RK Compact 80/ NEMA 23	56	52	70	5,2	5,5	6	6	34	20	38,1/3deep	47	40	16	10	20,5
91303	RK Compact 120/ NEMA 17	41	55,5	90	3,5	6,6	6	6	34	20	22^{H7}/3deep	31	61	–	12	26,5
91309	RK Compact 120/ NEMA 23	56	52	90	5,2	6,6	6	6	34	20	38,1/3deep	47	61	23	12	26,5

Coupling



Code No.	Type	A	B	C	D	E
9107140505	Coupling for motor acc. to NEMA 17	5	5	7	14	22
9107140506	Coupling for motor acc. to NEMA 23		6,3			

Positioning indicator

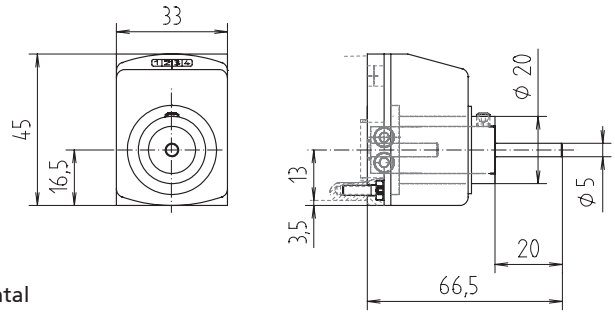
- Permitted ambient temperature +80°C
- Figure height 6 mm
- Reading accuracy ± 0.1 mm

Material: Housing made of polyamide 6
Orange RAL 2004
Steel parts zinc plated

Scope of delivery: Positioning indicator, clamping ring, shaft extension and fastenings

Note: If using a positioning indicator, the rotary knob delivered with the RK Compact must be replaced with the handwheel shown on the left.
"Rising" and "falling" versions refer to the clockwise rotation of the drive shaft.

Installation position: horizontal

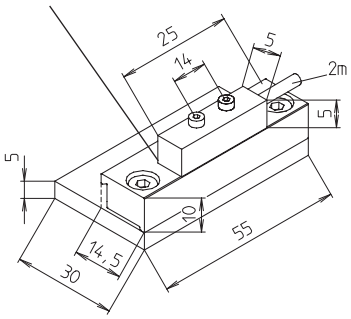


Installation position: vertical

Code No.	Type	Version	Installation position
910031	50	1 mm rising	Horizontal
910032		1 mm falling	Horizontal
910033		1 mm rising	Vertical
910034		1 mm falling	Vertical
910035	80	1 mm rising	Horizontal
910036		1 mm falling	Horizontal
910037		1 mm rising	Vertical
910038		1 mm falling	Vertical
910039	120	1 mm rising	Horizontal
910040		1 mm falling	Horizontal
910041		1 mm rising	Vertical
910042		1 mm falling	Vertical

Inductive limit switch

Additional spacer
for Type 120, height 9.5 mm



- The holder can be moved along the guide profile and fixed

Material: Holder made of aluminium, clear anodised, zinc plated fastenings

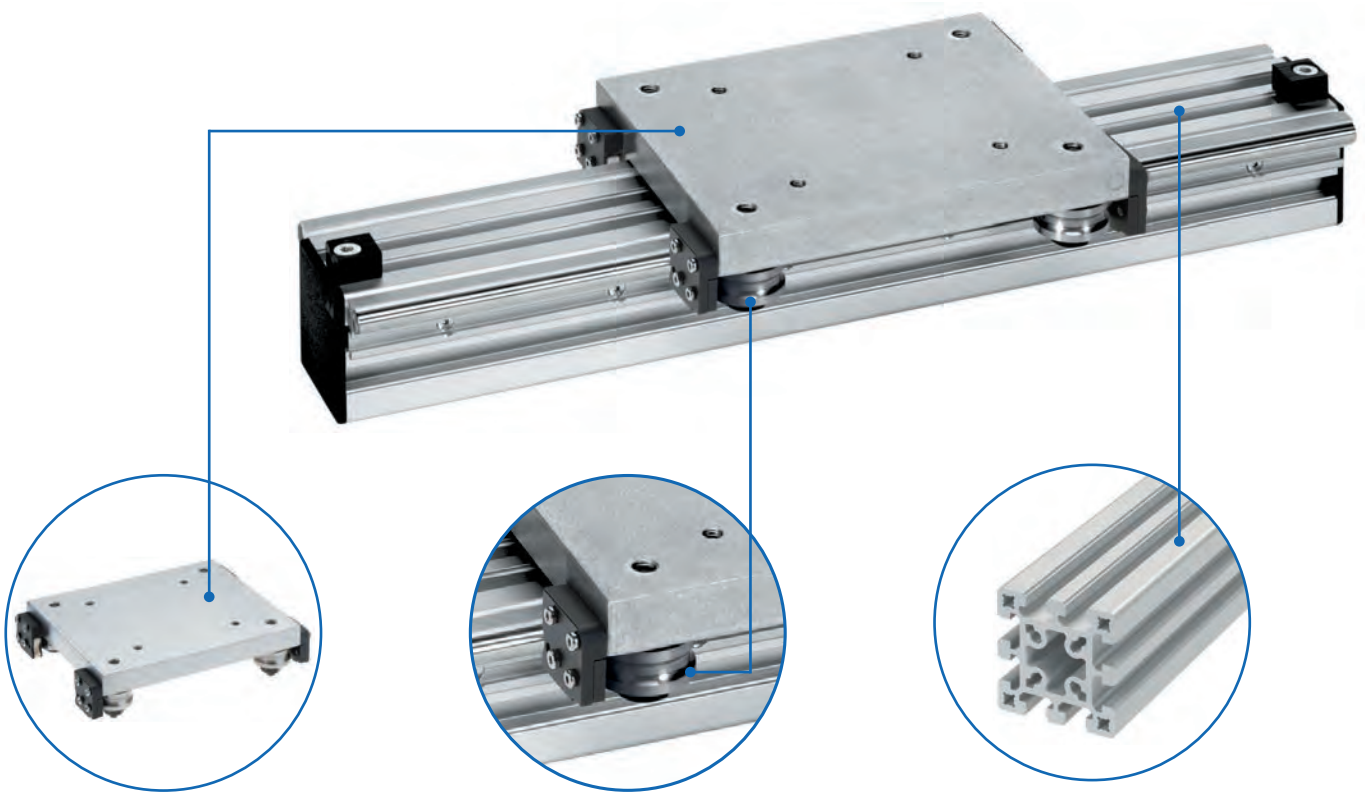
Scope of delivery: 1 limit switch with complete holder and fastenings

Code No.	Type
92818	RK Compact 80
928112	RK Compact 120

Voltage	10 - 30 V DC
Max. switching current	200 mA
Max. starting current	2 A for approx. 2 ms
Operating frequency	700 Hz DIN EN 50010
Mechanical lifetime	independent of operating cycles
Operating distance	4 mm for steel
Protection class	IP 67
Ambient temperature	-25°C to +80°C

Profile guide – SQL

Low-cost guide
for medium to heavy loads



Large carriage
- Simple connection

Adjustable rollers
- Simple adjustment with zero backlash

BLOCAN basic profile
- Quick and easy fixing thanks to profile slots

Features:
- Guide profile made using BLOCAN® slot geometry
- Large, slimline carriage

Options:
- Longer stroke lengths
- Second carriage

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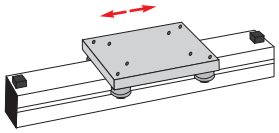
Properties/Technical data

General information/operating conditions ... Page 214

Load data ... Page 215

Versions
(Dimensions, order numbers)



SQL linear guide ... Page 216 - 217

Accessories
Drive

Carriage ... Page 218

Wiper set ... Page 219

Technical data

General information/operating conditions

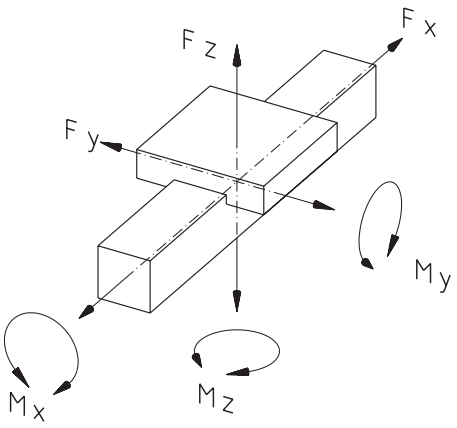
Design	Guide element made using BLOCAN® profile, slimline carriage
Guide	Adjustable roller guide
Installation position	Any position
Ambient temperature	0°C to +60°C

Load data*

F Force [N]

M Moment [Nm]

I Geometric moment of inertia [cm^4]



* With reference to carriage (static values, guide element resting on full surface)

Type	Fy	Fz	Mx	My	Mz
SQL 40	1500	1000	50	70	140
SQL 40 x 80	1500	1000	50	70	140
SQL 60	2500	1500	66	95	169
SQL 60 x 120	2500	1500	66	95	169
SQL 80 x 40	2500	1500	82	88	200
SQL 80	2500	1500	82	113	200
SQL 80 x 160	2500	1500	82	113	200
SQL 120 x 60	2500	1500	100	121	243
SQL 160 x 80	2500	1500	134	82	243

Geometric moment of inertia

[cm^4]

Type	Iy	Iz
SQL 40	11,9	11,9
SQL 40 x 80	19.4	76.0
SQL 60	51.2	51.2
SQL 60 x 120	94.7	372.3
SQL 80 x 40	76.0	19.4
SQL 80	155.3	155.3
SQL 80 x 160	292.4	1090.0
SQL 120 x 60	372.3	94.7
SQL 160 x 80	1090.0	292.4

Versions

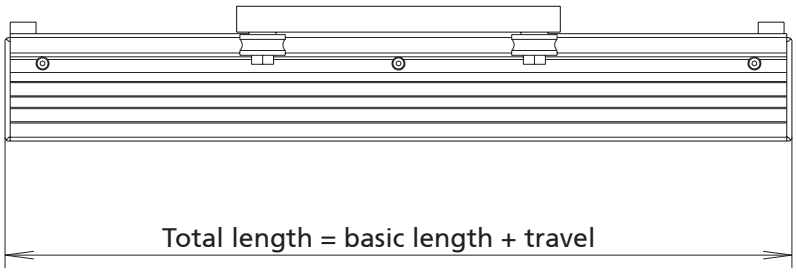
Order instruction:

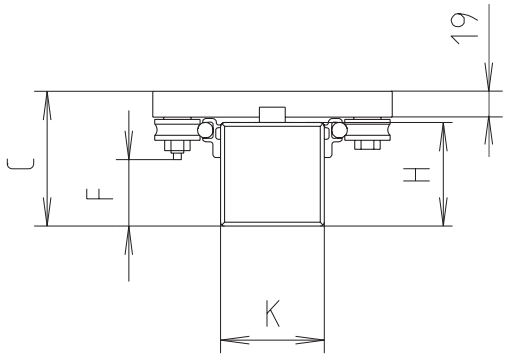
- Longer travel lengths on request

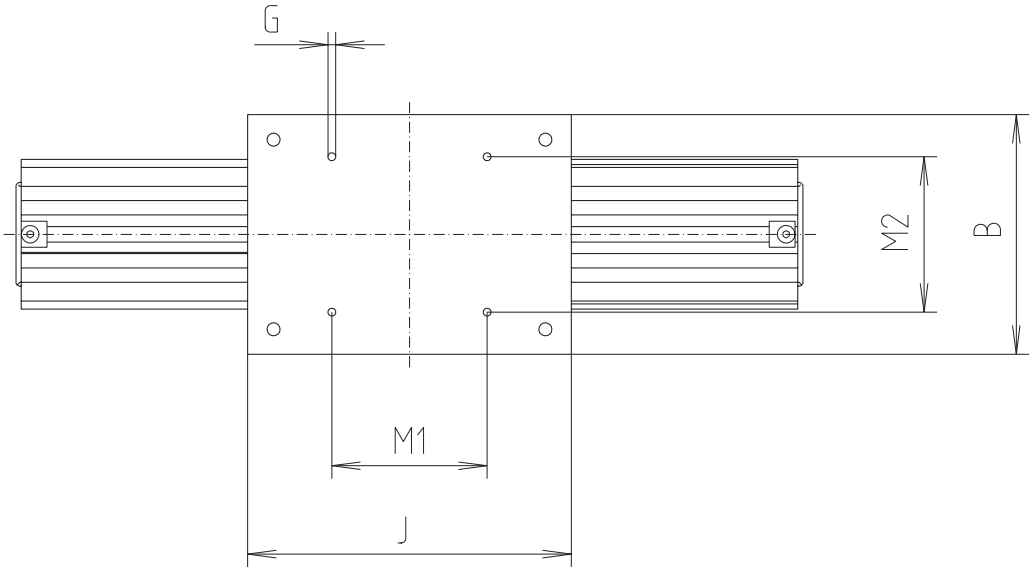
Version ● Guide

Code No.	Type	Basic length	B	C	F	G	H
MCA4040AA	SQL 40 x 40	250	145	63	11	M8-20 deep	40
MCA4080AA	SQL 40 x 80	250	145	103	51	M8-20 deep	80
MCA6060AA	SQL 60	250	165	83	31	M8-20 deep	60
MCA6012AA	SQL 60 x 120	250	165	143	91	M8-20 deep	120
MCA8040AA	SQL 80 x 40	300	185	63	11	M8-20 deep	40
MCA8080AA	SQL 80	300	185	103	51	M8-20 deep	80
MCA8016AA	SQL 80 x 160	300	185	183	131	M8-20 deep	160
MCA1260AA	SQL 120 x 60	350	225	83	31	M8-20 deep	60
MCA1680AA	SQL 160 x 80	400	265	103	51	M8-20 deep	80

_ _ _ _ Total length = basic length + travel [mm]







[mm]

J	O	M1	M2	Max. travel	Mass [kg]	
					Basic length	per 100 mm travel
200	40	80	80	5750	3.61	0.41
200	40	80	80	5750	4.00	0.58
200	60	100	100	5750	4.18	0.72
200	60	100	100	5750	5.07	1.06
250	80	120	120	5700	4.63	0.65
250	80	120	120	5700	5.94	1.00
250	80	120	120	5700	7.50	1.52
300	120	245	160	5650	5.07	1.06
350	160	285	200	5600	7.50	1.52

Drive

Carriage

- Suitable for SQL manufactured from 03/96 onwards

Material: Al Mg Si, vibratory finished

Scope of delivery: Complete with mounting screws, wipers and rollers

Code No.	Type
94451	SQL 40/40 x 80
94452	SQL 60/60 x 120
94453	SQL 80 x 40
94454	SQL 80/80 x 160
94455	SQL 120 x 60
94456	SQL 160 x 80

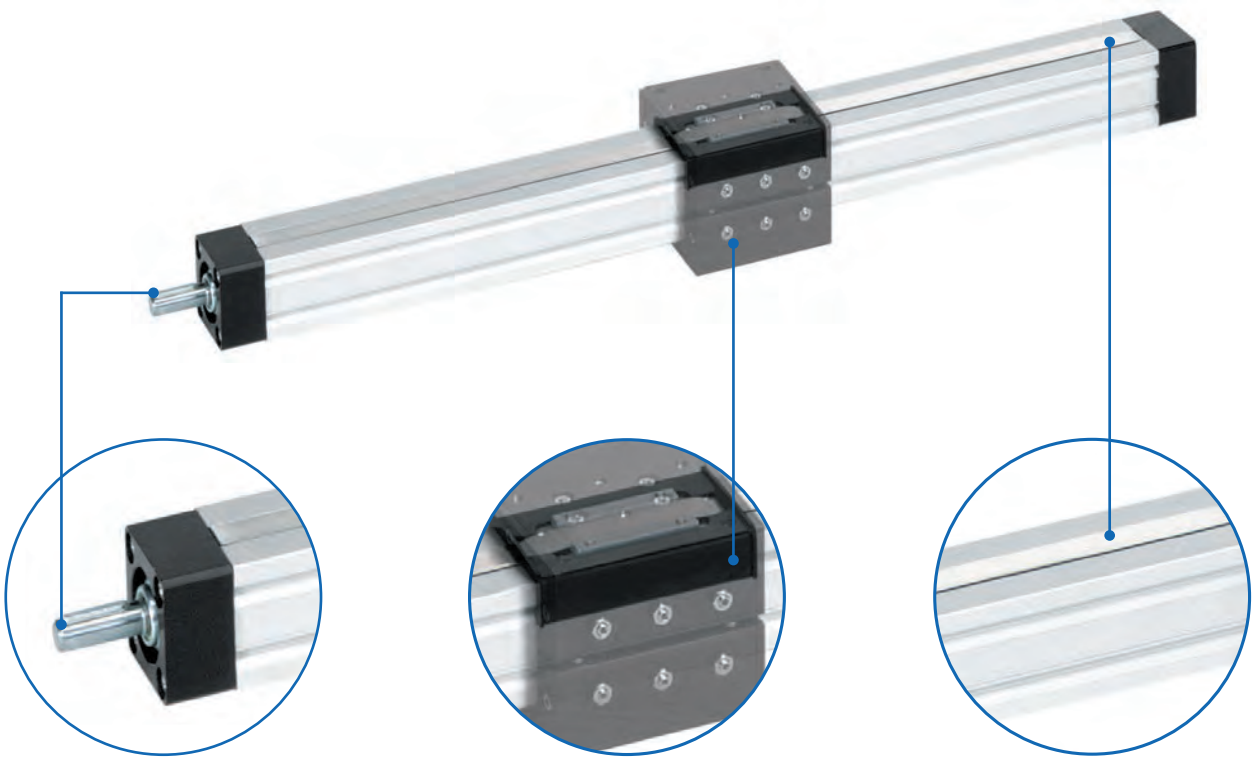
Wiper set

- Complete upgrade kit for SQL carriage.
- The wipers can be screwed to the existing carriage without the need for any modification (on devices manufactured from 06/96 onwards).

Scope of delivery: Complete set for one carriage, 2 x left wipers, 2 x right wipers with fastenings

Code No.	Type
93921	All SQL

Compact and versatile linear actuator for motor-driven and manual adjustment of medium loads



Shafts
- Choice of 1 or 2 ball-bearing shafts

Choice of carriages
- Wide range of models sup ports optimum integration in existing designs
- Adjustable slide guide

Cover strip
- The drive screw is protected against contamination

Features:
- Screw covered by steel band
- Wide range of carriage and fixing elements
- Comprehensive range of accessories

Options:
- Second free-running carriage
- Longer stroke lengths

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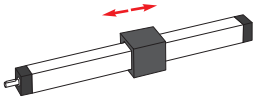
RK ROSE+KRIEGER

Properties/Technical data

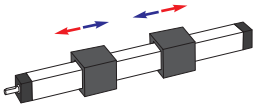
General information/operating conditions ... Page 222

Load data ... Page 223

Versions
(Dimensions, order numbers)

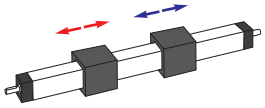


EV right or lefthand thread ... Page 224



EV right and lefthand thread ... Page 226

EV split screw ... Page 228



EV crossing righthand thread ... Page 230

Accessories Fixing

Carriage ... Page 232

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Clamping lever ... Page 239

Drive

Handwheel ... Page240

HTD timing belt pulley ... Page 241

Angular drive/bevel gear set ... Page 242

Combination flange/combination cube ... Page 243

Connecting and transmission unit ... Page 244

Motor adaptor/coupling ... Page 247

Position determination

Scale/positioning indicator ... Page 250

Limit switch ... Page 252

Technical Data

General information/operating conditions

Design	Linear actuator with extruded guide profile, choice of carriage models
Guide	Adjustable slide guide
Installation position	Any position
Lead accuracy	± 0.15 mm/300 mm travel
Self-locking	Yes*
Duty cycle	S3 30% Basic 1h
Ambient temperature	0°C to +60°C

*see Glossary under point Self-locking

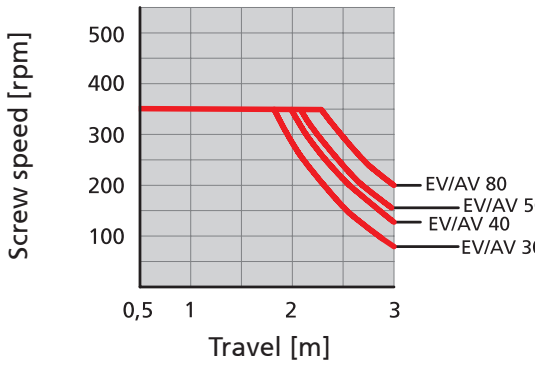
Screw lead

[mm]

Type	Screw lead
EV 30	3
EV 40	4
EV 50	4
EV 60	4
EV 80	5

$$\text{Required screw speed n [rpm]} = \frac{\text{speed [m/min] x 1000}}{\text{screw lead [mm]}}$$

Critical screw speed



No-load torque

[Nm]

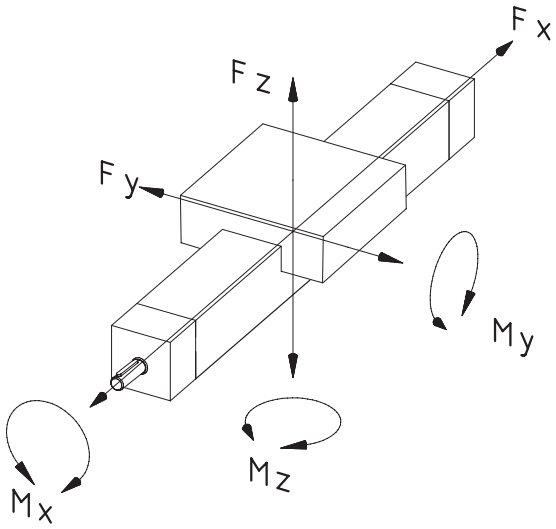
Type	"Open" carriage	"Closed" carriage
EV 30	0.30	0.45
EV 40	0.45	0.55
EV 50	0.50	0.60
EV 60	0.65	0.75
EV 80	0.80	0.90

Load data*

F Force [N]

M Moment [Nm]

I Geometric moment of inertia [cm^4]



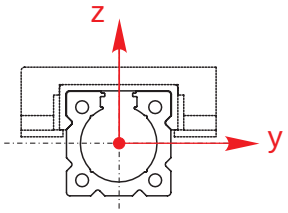
* referring to the "closed" guide table (guide element deflection f= 0,5 mm, static, end elements supported)

Type	Fx	Fy*			Fz*			Mx	My	Mz
Total length [mm]		500	1000	1500	500	1000	1500			
EV 30	800	600	70	–	600	70	–	6	11	8
EV 40	1200	1500	110	35	1480	110	33	25	45	30
EV 50	1800	2220	550	140	2300	550	135	55	74	50
EV 60	2100	4070	1350	400	4090	1350	390	65	100	60
EV 80	2500	6000	2300	720	6000	2300	715	80	140	85

Geometric moment of inertia

[cm^4]

Type	Iy	Iz
EV 30	4.13	4.71
EV 40	13.33	13.79
EV 50	33.72	34.31
EV 60	64.22	60.33
EV 80	200.00	192.72

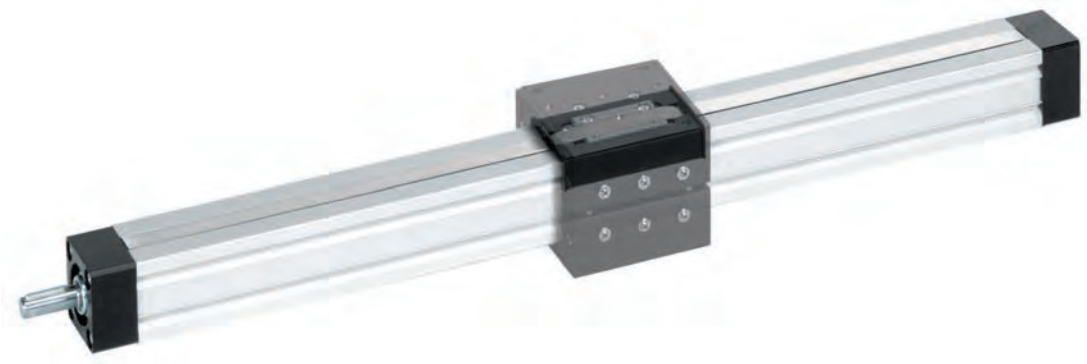


Versions

Order instruction:

- Second free-running carriage available on request

Version ● Right or lefthand thread



Code No.	Type	Spindle	Basic length	B	D 1	D 2	D 3	J
30_3000_ _ _ _ 0 _ _ _ _	30	Tr 14x3	96	30	8	–	22 H7	60
30_3002_ _ _ _ 0 _ _ _ _	30	Tr 14x3	96	30	8	8	22 H7	60
30_4000_ _ _ _ 0 _ _ _ _	40	Tr 18x4	115	40	10	–	28 J6	71
30_4002_ _ _ _ 0 _ _ _ _	40	Tr 18x4	115	40	10	10	28 J6	71
30_5000_ _ _ _ 0 _ _ _ _	50	Tr 20x4	140	50	12	–	35 J6	90
30_5002_ _ _ _ 0 _ _ _ _	50	Tr 20x4	140	50	12	12	35 J6	90
30_6000_ _ _ _ 0 _ _ _ _	60	Tr 20x4	199	60	12	–	35 J6	115
30_6002_ _ _ _ 0 _ _ _ _	60	Tr 20x4	199	60	12	12	35 J6	115
30_8000_ _ _ _ 0 _ _ _ _	80	Tr 24x5	218	80	14	–	50 H7	136
30_8002_ _ _ _ 0 _ _ _ _	80	Tr 24x5	218	80	14	14	50 H7	136

Total length = basic length + travel [mm]

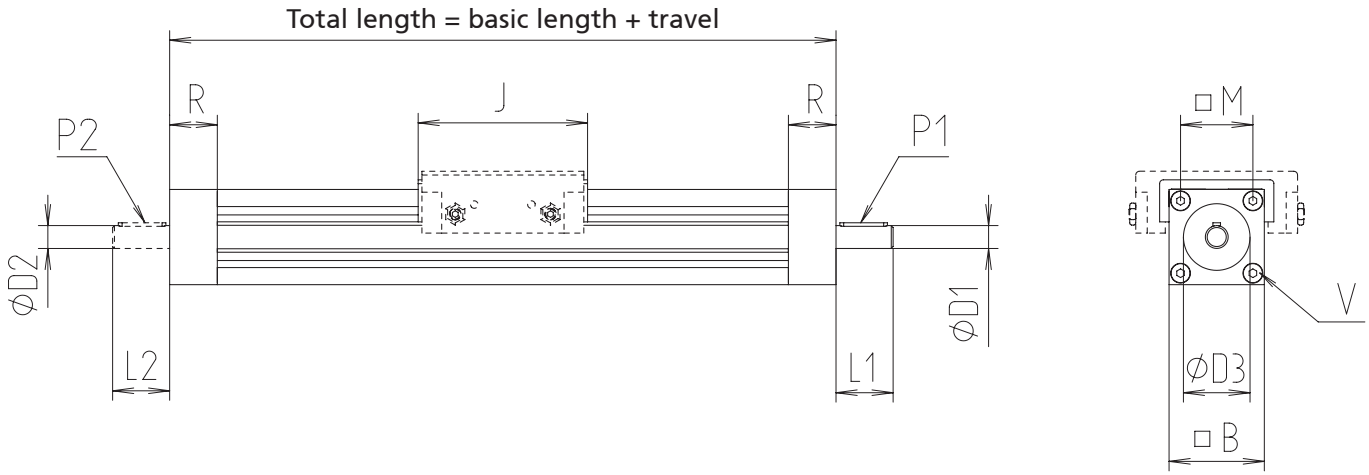
Carriage see page 232 - 235

Version:
1 = righthand thread
2 = lefthand thread

Order example:

1x EV 30 Right-hand thread,
length 500 mm, with Carriage V-G

Code No.: 3013000 5302 0 0500



[mm]

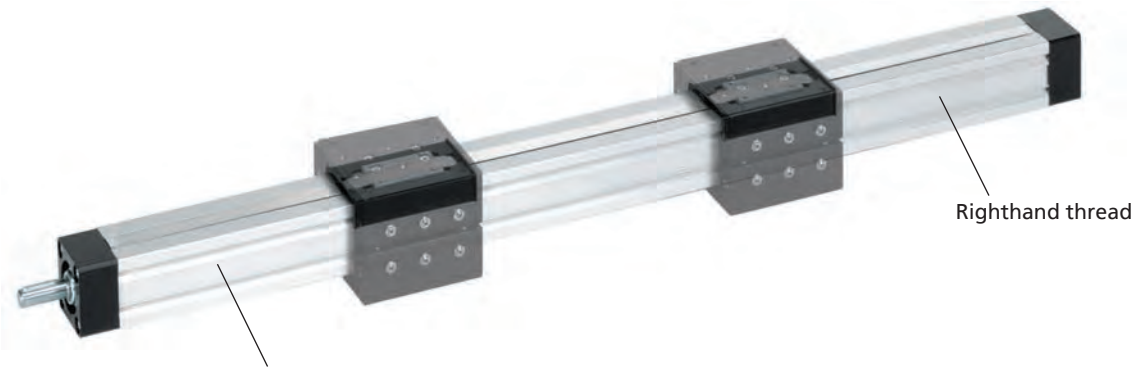
L 1	L 2	M	P 1	P 2	R	V	Max. travel	Mass [kg]	
								Basic length	per 100 mm travel
25	–	21	2x2x20	–	18	M 4x25	1479	0,300	0,220
25	25	21	2x2x20	2x2x20	18	M 4x25	1454	0,310	0,220
28	–	29	3x3x20	–	22	M 5x30	1942	0,690	0,400
28	28	29	3x3x20	3x3x20	22	M 5x30	1942	0,705	0,400
30	–	38	4x4x25	–	25	M 6x30	2287	1,410	0,530
30	30	38	4x4x25	4x4x25	25	M 6x30	2287	1,445	0,530
30	–	43	4x4x25	–	42	M 6x55	2358	2,023	0,605
30	30	43	4x4x25	4x4x25	42	M 6x55	2358	2,083	0,605
38	–	64	5x5x32	–	41	M 8x60	2894	4,250	1,000
38	38	64	5x5x32	5x5x32	41	M 8x60	2894	4,300	1,000

Versions

Order instruction:

- Second free-running carriage available on request

Version ● Right and lefthand thread



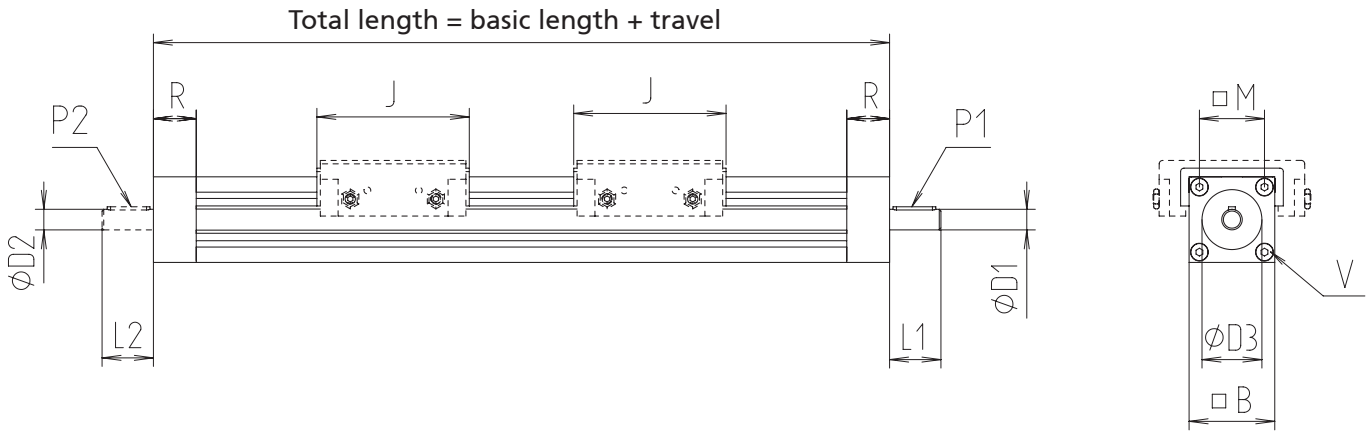
Code No.	Type	Spindle	Basic length	B	D 1	D 2	D 3	J
3033000_ _ _ _ 0 _ _ _ _	30	Tr 14x3	156	30	8	–	22 ^{H7}	60
3033001_ _ _ _ 0 _ _ _ _	30	Tr 14x3	156	30	–	8	22 ^{H7}	60
3033002_ _ _ _ 0 _ _ _ _	30	Tr 14x3	156	30	8	8	22 ^{H7}	60
3034000_ _ _ _ 0 _ _ _ _	40	Tr 18x4	186	40	10	–	28 ^{J6}	71
3034001_ _ _ _ 0 _ _ _ _	40	Tr 18x4	186	40	–	10	28 ^{J6}	71
3034002_ _ _ _ 0 _ _ _ _	40	Tr 18x4	186	40	10	10	28 ^{J6}	71
3035000_ _ _ _ 0 _ _ _ _	50	Tr 20x4	230	50	12	–	35 ^{J6}	90
3035001_ _ _ _ 0 _ _ _ _	50	Tr 20x4	230	50	–	12	35 ^{J6}	90
3035002_ _ _ _ 0 _ _ _ _	50	Tr 20x4	230	50	12	12	35 ^{J6}	90
3036000_ _ _ _ 0 _ _ _ _	60	Tr 20x4	314	60	12	–	35 ^{J6}	115
3036001_ _ _ _ 0 _ _ _ _	60	Tr 20x4	314	60	–	12	35 ^{J6}	115
3036002_ _ _ _ 0 _ _ _ _	60	Tr 20x4	314	60	12	12	35 ^{J6}	115
3038000_ _ _ _ 0 _ _ _ _	80	Tr 24x5	354	80	14	–	50 ^{H7}	136
3038001_ _ _ _ 0 _ _ _ _	80	Tr 24x5	354	80	–	14	50 ^{H7}	136
3038002_ _ _ _ 0 _ _ _ _	80	Tr 24x5	354	80	14	14	50 ^{H7}	136

Total length = basic length + total travel [mm]

Carriage see page 232 - 235

Order example:
1x EV 30 Right and lefthand thread, length 850 mm, with Carriage V-O

Code No.: 3033000 5301 0 0850



[mm]

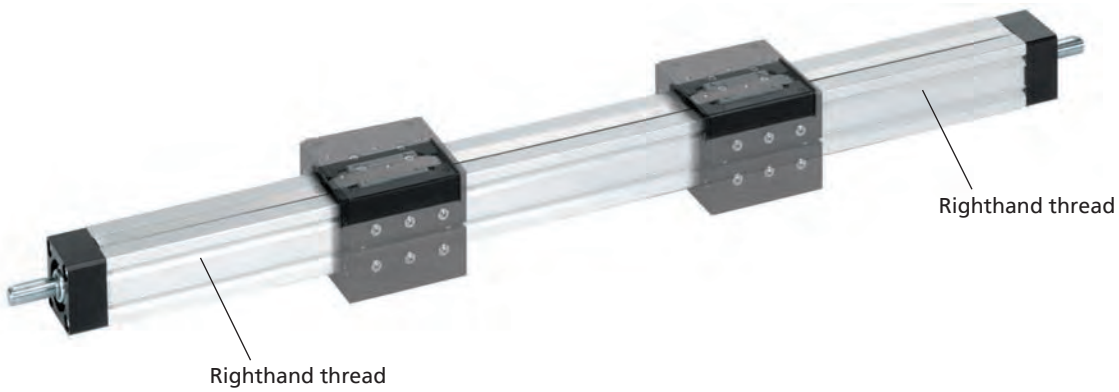
L 1	L 2	M	P 1	P 2	R	V	Max. travel	Mass [kg]	
								Basic length	per 100 mm travel
25	–	21	2x2x20	–	18	M 4x25	1846	0,330	0,220
–	25	21	–	2x2x20	18	M 4x25	1846	0,330	0,220
25	25	21	2x2x20	2x2x20	18	M 4x25	1846	0,330	0,220
28	–	29	3x3x20	–	22	M 5x30	2814	0,740	0,400
–	28	29	–	3x3x20	22	M 5x30	2814	0,740	0,400
28	28	29	3x3x20	3x3x20	22	M 5x30	2814	0,755	0,400
30	–	38	4x4x25	–	25	M 6x30	2786	1,460	0,530
–	30	38	–	4x4x25	25	M 6x30	2786	1,460	0,530
30	30	38	4x4x25	4x4x25	25	M 6x30	2786	1,495	0,530
30	–	43	4x4x25	–	42	M 6x55	2702	2,856	0,605
–	30	43	–	4x4x25	42	M 6x55	2702	2,856	0,605
30	30	43	4x4x25	4x4x25	42	M 6x55	2702	2,916	0,605
38	–	64	5x5x32	–	41	M 8x60	2646	4,320	1,000
–	38	64	–	5x5x32	41	M 8x60	2646	4,320	1,000
38	38	64	5x5x32	5x5x32	41	M 8x60	2646	4,370	1,000

Versions

Order instruction:

- Second free-running carriage available on request

Version ● Split screw



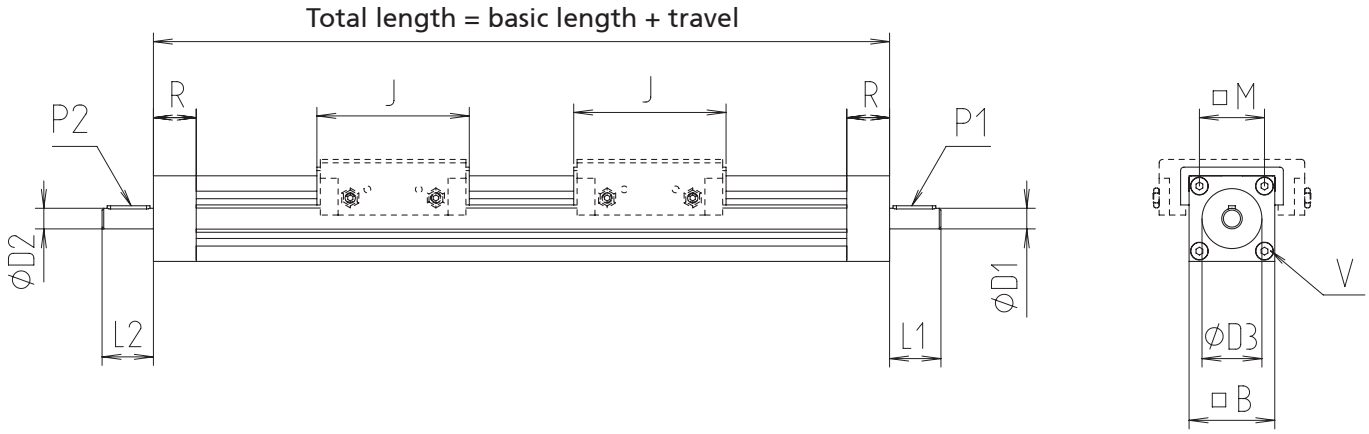
Code No.	Type	Spindle	Basic length	B	D 1	D 2	D 3	J
3043002_ _ _ _ 0 _ _ _ _	30	Tr 14x3	156	30	8	8	22 H7	60
3044002_ _ _ _ 0 _ _ _ _	40	Tr 18x4	186	40	10	10	28 J6	71
3045002_ _ _ _ 0 _ _ _ _	50	Tr 20x4	230	50	12	12	35 J6	90
3046002_ _ _ _ 0 _ _ _ _	60	Tr 20x4	314	60	12	12	35 J6	115
3048002_ _ _ _ 0 _ _ _ _	80	Tr 24x5	354	80	14	14	50 H7	136

Total length = basic length + total travel [mm]

Carriage see page 232 - 235

Order example:

1x EV 30 Split screw,
length 900 mm, with Carriage V-G
Code No.: 3043002 5302 0 0900



[mm]

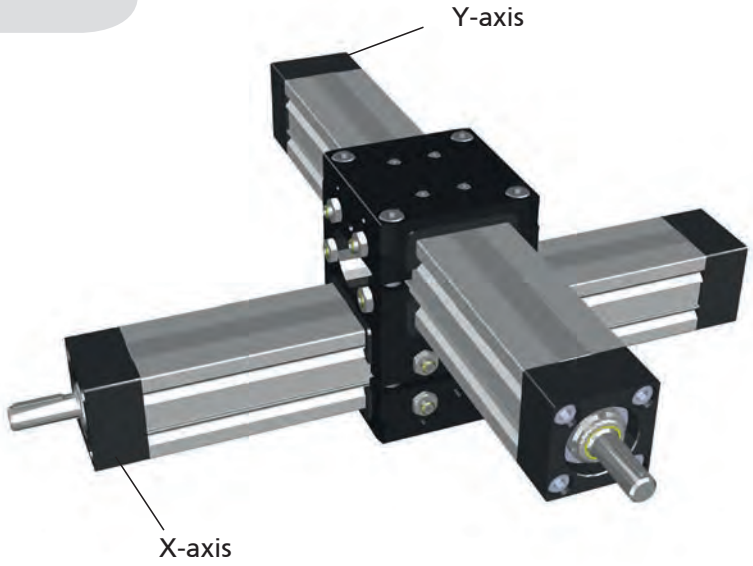
L 1	L 2	M	P 1	P 2	R	V	Max. travel/end	Mass [kg]	
								Basic length	per 100 mm travel
25	25	21	2x2x20	2x2x20	18	M 4x25	1422	0,380	0,220
28	28	29	3x3x20	3x3x20	22	M 5x30	1500	0,820	0,400
30	30	38	4x4x25	4x4x25	25	M 6x30	1885	1,560	0,530
30	30	43	4x4x25	4x4x25	42	M 6x55	1885	3,096	0,605
38	38	64	5x5x32	5x5x32	41	M 8x60	1885	4,655	1,000

Versions

Order instructions:

- The Y-axis is a moving axis (the carriage is stationary, the axis is moving!)
- You need to check the moments My for the Y-axis and Mx for the X-axis (see page 223)

Version ● Crossing righthand thread

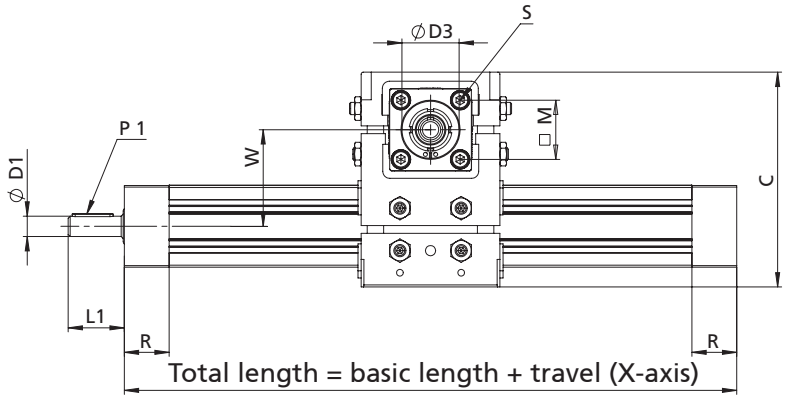


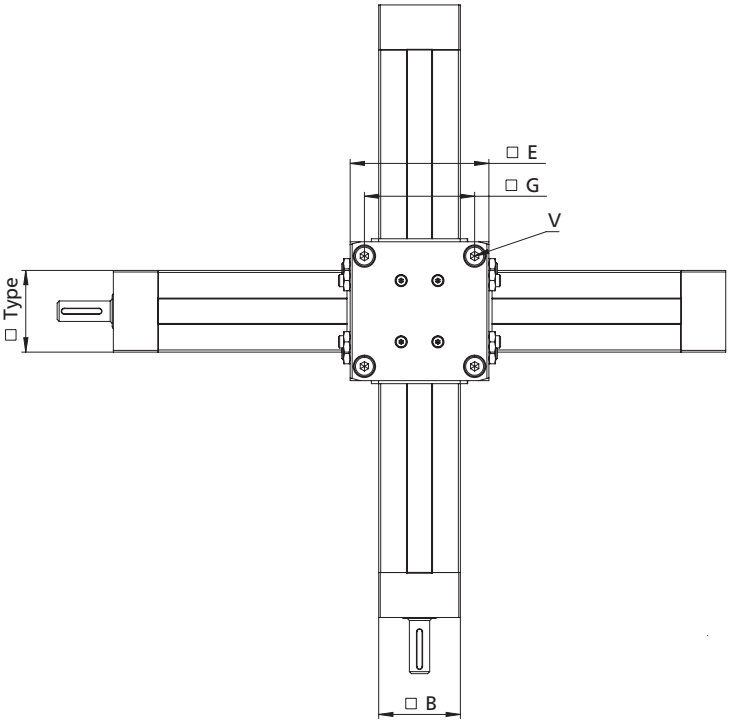
Code No.	Type	Screw	Basic length	B	C	D 1	D 3	E	G	J
3013020_ _ _ _ _ _ _ _	30	Tr 14x3	96	30	81	8	22 ^{H7}	56	42	60
3014020_ _ _ _ _ _ _ _	40	Tr 18x4	115	40	104	10	28 ^{J6}	68	54	71
3015020_ _ _ _ _ _ _ _	50	Tr 20x4	140	50	130	12	35 ^{J6}	85	67	90
3016020_ _ _ _ _ _ _ _	60	Tr 20x4	199	60	179	12	35 ^{J6}	105	85	115
3018020_ _ _ _ _ _ _ _	80	Tr 24x5	218	80	224	14	50 ^{H7}	126	105	136

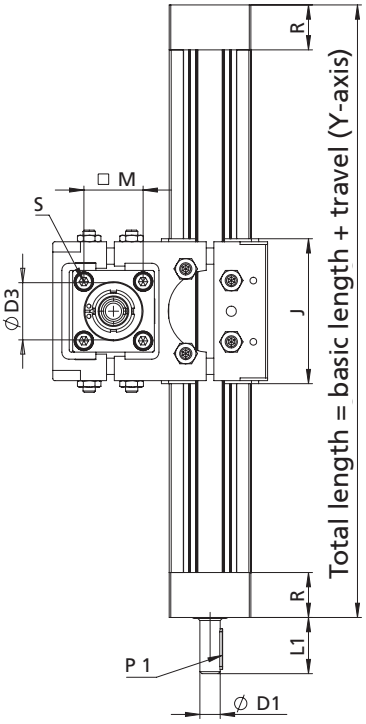
Total length Y-axis (total length + travel) [mm]

Total length X-axis (total length + travel) [mm]

Order example:
1x EV 30 crossing
X-axis length 500 mm,
Y-axis length 350 mm
Code No.: 3013020 0500 0 350







[mm]

L 1	M	P 1	R	S	V	W	Max. travel	Mass [kg]	
								Basic length	per 100 mm travel
25	21	2x2x20	18	M 4x25	M 6x30	37,6	1479	1	0,44
28	29	3x3x20	22	M 5x30	M 6x40	48,4	1942	2,05	0,8
30	38	4x4x25	25	M 6x30	M 8x45	59,6	2287	3,946	1,06
30	43	4x4x25	42	M 6x55	M 8x60	82,5	2358	7,162	1,21
38	64	5x5x32	41	M 8x60	M 10x70	109,9	2894	14,064	2

Carriage

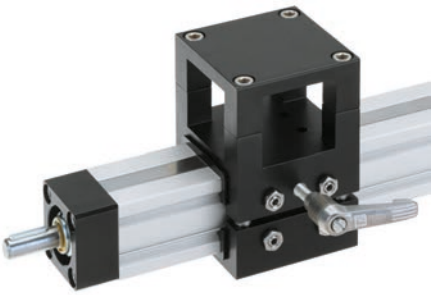
Order instructions:

- Second free-running carriage available on request
- Clamping levers component clamp have to be ordered separately. Delivery unassembled. See table last column and page 239
- Clamping levers slide clamp have to be ordered separately. Delivery unassembled. See page 239

Version

- A range of different versions facilitate mounting

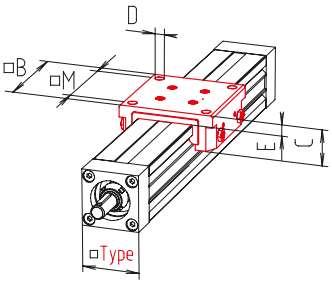
Material:
Al Mg Si, black anodised



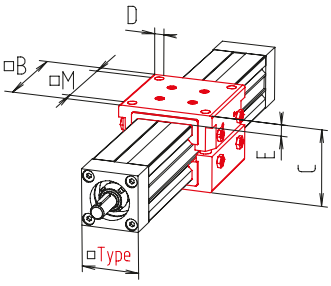
For slide clamp

For component clamp

V-O



V-G

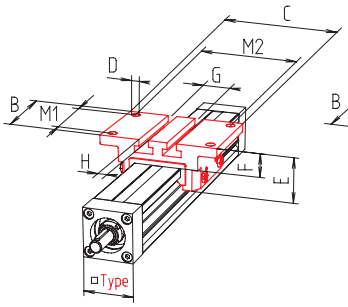


[mm]

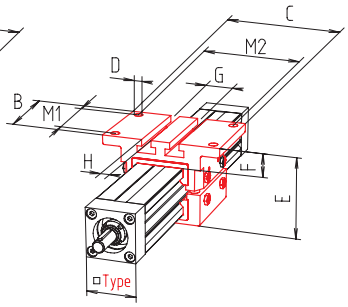
Code No.	Version	Type	B	C	D	E	M
5301	V-O	30	56	20	M 6	7	42
5302	V-G	30	56	44	M 6	7	42
5401	V-O	40	68	26	M 6	8	54
5402	V-G	40	68	56	M 6	8	54
5501	V-O	50	85	33	M 8	10	67
5502	V-G	50	85	70	M 8	10	67
5601	V-O	60	115	45	M 8	17,3	85
5602	V-G	60	115	94,5	M 8	17,3	85
5801	V-O	80	136	52	M10	16	105
5802	V-G	80	136	112	M10	16	105

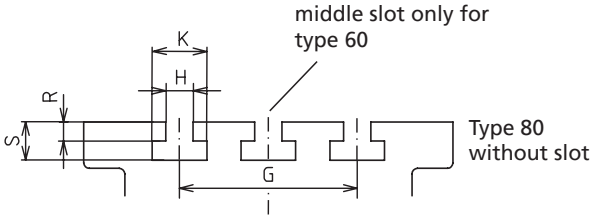
Carriage

FKV-O



FKV-G

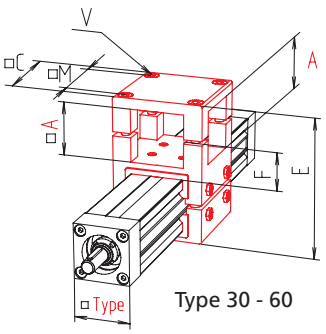




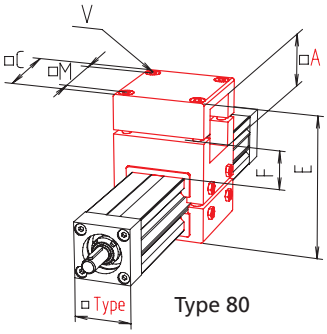
[mm]

Code No.	Version	Type	B	C	D	E	F	G	H	K	M1	M2	R	S
5303	FKV-O	30	56	84	7	29	16	20	6	10	40	70	4,5	9
5304	FKV-G	30	56	84	7	51	16	20	6	10	40	70	4,5	9
5403	FKV-O	40	68	97	7	38	20	28	10	15	54	83	6,5	13
5404	FKV-G	40	68	97	7	68	20	28	10	15	54	83	6,5	13
5503	FKV-O	50	85	125	9	48	25	30	10	20	65	105	7	14
5504	FKV-G	50	85	125	9	85	25	30	10	20	65	105	7	14
5603	FKV-O	60	105	145	9	59	31,3	65	10	20	80	120	7	14
5604	FKV-G	60	105	145	9	108,5	31,3	65	10	20	80	120	7	14
5803	FKV-O	80	126	170	11	68	31	–	–	19	100	148	8	20
5804	FKV-G	80	126	170	11	127	31	–	–	19	100	148	8	20

KV-G



Type 30 - 60



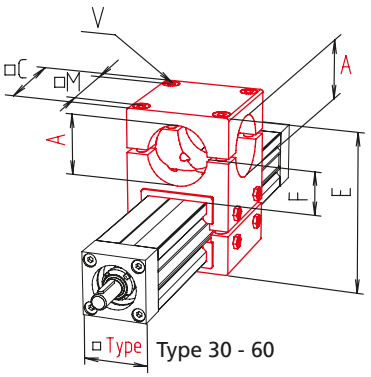
Type 80

[mm]

Code No.	Version	Type	A	C	E	F	M	Clamping levers V Code No. VA
5306	KV-G	30	30,2	56	78	22	42	9300101
5406	KV-G	40	40,4	68	104	28	54	9301401
5506	KV-G	50	50,4	85	130	35	67	9300401
5606	KV-G	60	60,4	105	174	48,3	85	93011
5806	KV-G	80	80,4	126	224	72	100	9300801

Carriage

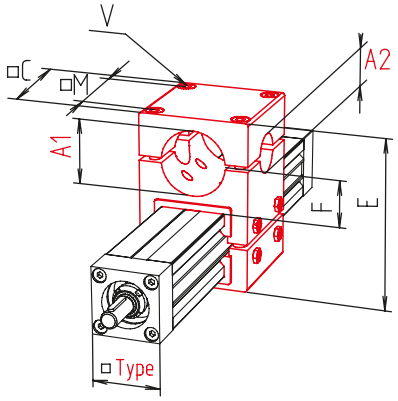
KVR-G



[mm]

Code No.	Version	Type	A	C	E	F	M	Clamping levers V Code No. VA
5308	KVR-G	30	30,1	56	78	22	42	**9300101**
5408	KVR-G	40	40,2	68	104	28	54	**9301401**
5508	KVR-G	50	50,3	85	130	35	67	**9300401**
5608	KVR-G	60	60,3	105	174	48,3	85	**93011**

KRD-G

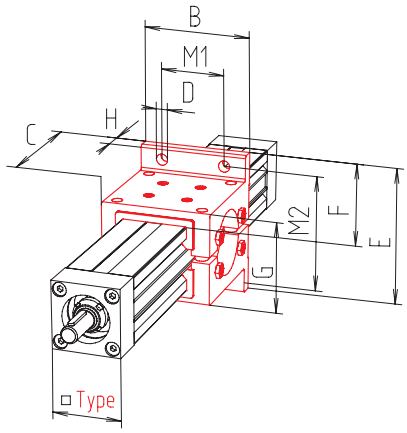


[mm]

Code No.	Version	Type	A1	A2	C	E	F	M	Clamping levers V Code No. VA
5410	KRD-G	40x30	40	30,1	68	104	28	54	**9301401**
5510	KRD-G	50x30	50	30,1	85	130	35	67	**9301401**
5610	KRD-G	60x30	60	30,1	105	196	42	85	**93011**

Carriage

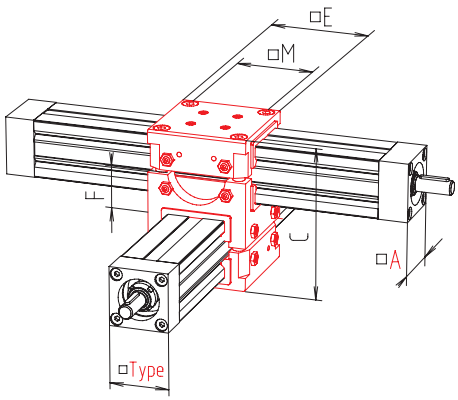
FV-G



[mm]

Code No.	Version	Type	B	C	D	E	F	G	H	M1	M2
5313	FV-G	30	56	58	7	70	18	42	6	28	56
5413	FV-G	40	68	74	7	85	23	56	8	40	70
5513	FV-G	50	84	92	9	110	30	70	10	50	90
5613	FV-G	60	105	112	9	135,5	37,8	95,5	11,5	80	120
5813	FV-G	80	126	142	11	156	73,8	112	16	80	135

EK-G



[mm]

Code No.	Version	Type	A	C	E	F	M
5314	EK-G	30	30	81	56	22	42
5414	EK-G	40	40	104	68	26,5	54
5514	EK-G	50	50	130	85	35	67
5614	EK-G	60	60	179	105	54,5	85

Fixing

Order instruction:

- Clamping levers have to be ordered separately. Delivery unassembled. See table last column and page 239.

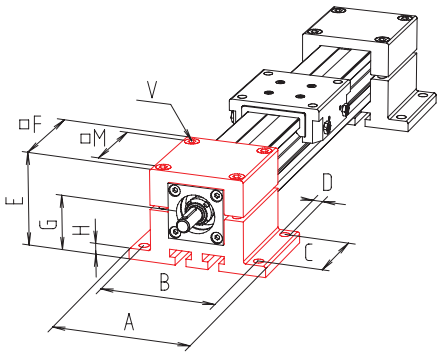
- Clamping elements for the simple fixing of EV units
- For further elements, please refer to the catalogue “Connecting Technology”

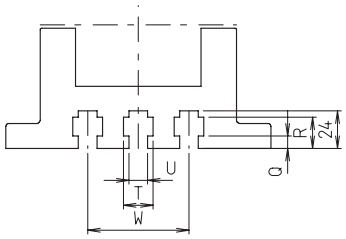
Material: Al Mg Si 0,5 F25, clear anodised
DIN 912 screws

For further dimensions, please refer to the catalogue “Connecting Technology”

Fixing elements

FKV



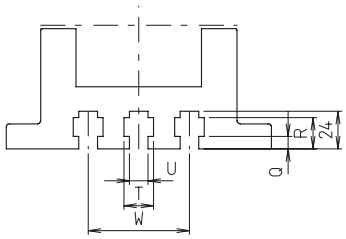


Centre slot only on types 60 and 80

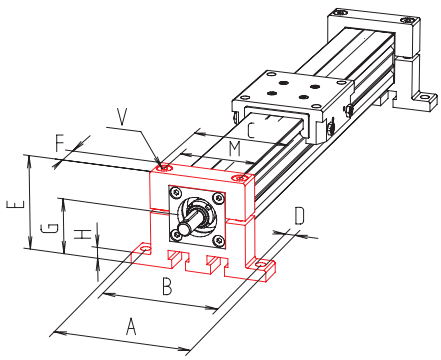
[mm]

Code No.	Version	Type	A	B	C	D	E	F	G	H	M	Q	R	T	U	W	Clamping levers V Code No. VA
52300005030	FKV	30	84	70	40	7	51	56	30	6	42	4,5	9	10	6	20	**9021201**
52400005030	FKV	40	97	83	54	7	68	68	40	8	54	6,5	13	15	10	28	**93014**
52500005030	FKV	50	125	105	65	9	85	85	50	10	67	7	14	20	10	30	**93004**
52600005030	FKV	60	145	120	80	9	111	105	62,5	12	80	7	14	20	10	65	**9301101**
52800005030	FKV	80	170	148	100	11	136	126	80	16	100	8	20	19	12	65	**9300801**

FKVH



Centre slot only on types 60 and 80

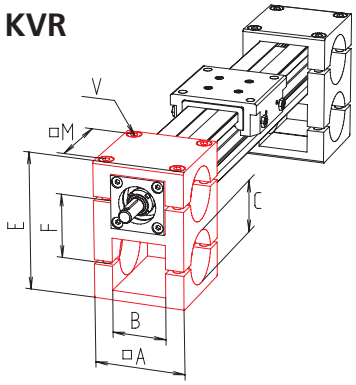


[mm]

Code No.	Version	Type	A	B	C	D	E	F	G	H	M	Q	R	T	U	W	Clamping levers V Code No. VA
52300010030	FKVH	30	84	70	56	7	51	16	30	6	42	4,5	9	10	6	20	**M6x25**
52400010030	FKVH	40	97	83	68	7	68	18	40	8	54	6,5	13	15	10	28	**M6x35**
52500010030	FKVH	50	125	105	85	9	85	20	50	10	67	7	14	20	10	30	**M8x45**
52600010030	FKVH	60	145	120	105	9	111	22	62,5	12	80	7	14	20	10	65	**M8x60**
52800010030	FKVH	80	170	148	126	11	136	24	80	16	100	8	20	19	12	65	**M10x70**

Fixing elements

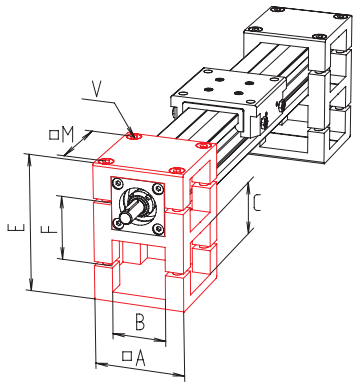
KVR



[mm]

Code No.	Version	Type	A	B	C	E	F	M	Clamping levers V Code No. VA
503000040300	KVR	30	56	30,1	30,1	78	36	42	9021201
504000040300	KVR	40	68	40,2	40,2	104	48	54	93014
505000040300	KVR	50	85	50,3	50,3	130	60	67	93004
506000040300	KVR	60	105	60,4	60,3	169	72	85	9301101

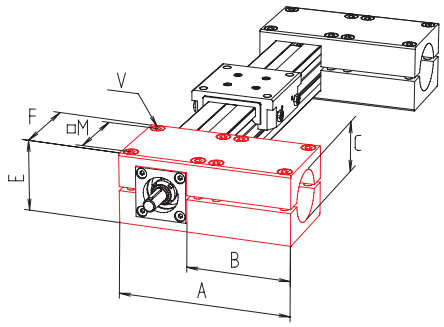
KV



[mm]

Code No.	Version	Type	A	B	C	E	F	M	Clamping levers V Code No. VA
503000050300	KV	30	56	30,2	30,2	78	36	42	9021201
504000050300	KV	40	68	40,4	40,4	104	48	54	93014
505000050300	KV	50	85	50,4	50,4	130	60	67	93004
506000050300	KV	60	105	60,4	60,4	169	72	85	9301101

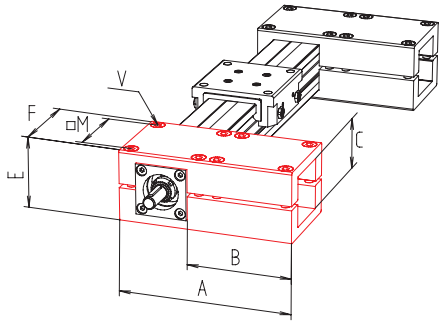
WVR



[mm]

Code No.	Version	Type	A	B	C	E	F	M	Clamping levers V Code No. VA
513000150300	WVR	30	112	69	30,2	42	56	42	9021201
514000150300	WVR	40	136	82	40,2	56	68	54	93041
515000150300	WVR	50	170	102	50,4	70	85	67	9300401
516000150300	WVR	60	210	127	60,3	97	105	85	9301101

WV

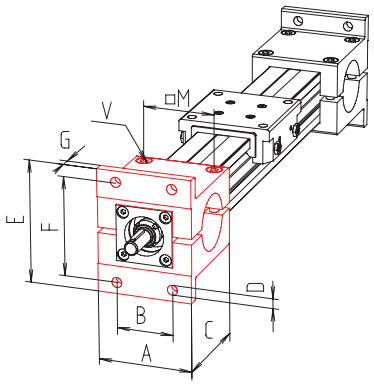


[mm]

Code No.	Version	Type	A	B	C	E	F	M	Clamping levers V Code No. VA
513000050300	WV	30	112	69	30,2	42	56	42	9021201
514000050300	WV	40	136	82	40,4	56	68	54	93014
515000050300	WV	50	170	102	50,4	70	85	67	9300401
516000050300	WV	60	210	127	60,4	97	105	85	9301101

Fixing

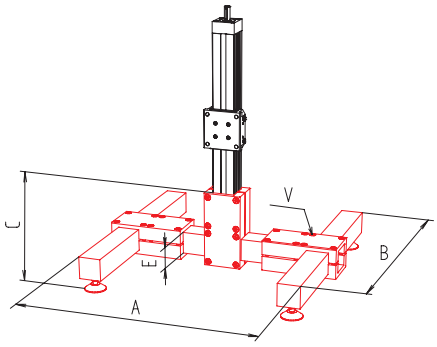
FV



[mm]

Code No.	Version	Type	A	B	C	D	E	F	G	M	Clamping levers V Code No. VA
53300005030	FV	30	56	28	58	7	70	56	6	42	9021201
53400005030	FV	40	68	40	74	7	85	70	8	54	93014
53500005030	FV	50	84	50	92	9	110	90	10	64	93004
53600005030	FV	60	105	80	112,5	9	137	120	12	85	9301101
53800005030	FV	80	126	80	142	11	156	135	16	100	9300801

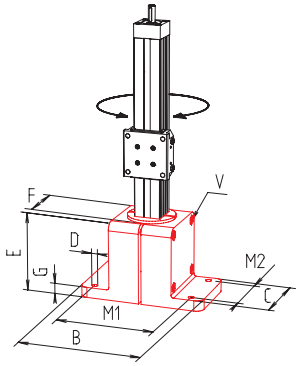
FHV



[mm]

Code No.	Version	Type	A	B	C min.	Adjustment range	E	Clamping levers V Code No. VA
53300008030	FHV	30	350	350	114	+15	30	9021201
53400008030	FHV	40	400	400	137	+15	40	93014
53500008030	FHV	50	500	500	175	+40	50	93004
53600008030	FHV	60	600	600	210	+50	60	9301101

FRS



[mm]

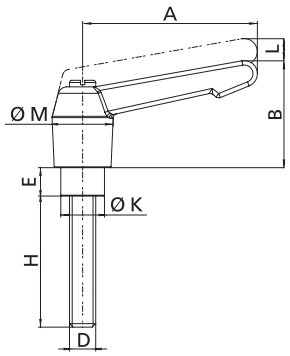
Code No.	Version	Type	B	C	D	E	F	G	M1	M2	Clamping levers V Code No. VA
53300018030	FRS	30	110	84	9	92	70	10	90	50	93004
53500018030	FRS	50	156	126	11	142	126	16	135	80	9300801

Clamping levers

- For the equipping of fixing elements and carriages

For slide clamp

For component clamp



[mm]

Code No. VA	Type	A	B	D	E	H	K	L	M
For slide clamp									
9302001	30	40	27	M5	5,5	15	7,5	3	14
9301901	40/50/60	40	27	M6	6,5	20	10	3	14
9301201	80	65	36	M8	8,5	25	13	3	19
For component clamp									
9021201	30	40	27	M6	6,5	25	10	3	14
9021301	40	40	27	M6	6,5	35	10	3	14
9022501	50	65	36	M8	8,5	45	13	3	19
9301101	60	65	36	M8	8,5	60	13	3	19
9300801	80	95	53	M10	10	70	16	4,5	27,5

Drive

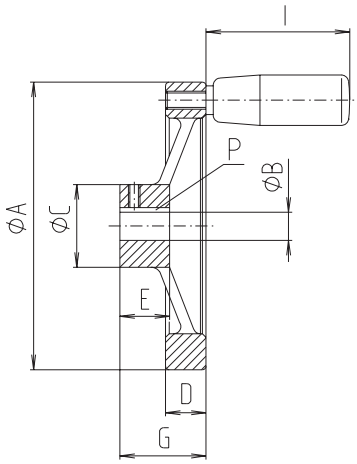
Handwheel

Ø 140-200

Ø 80-100

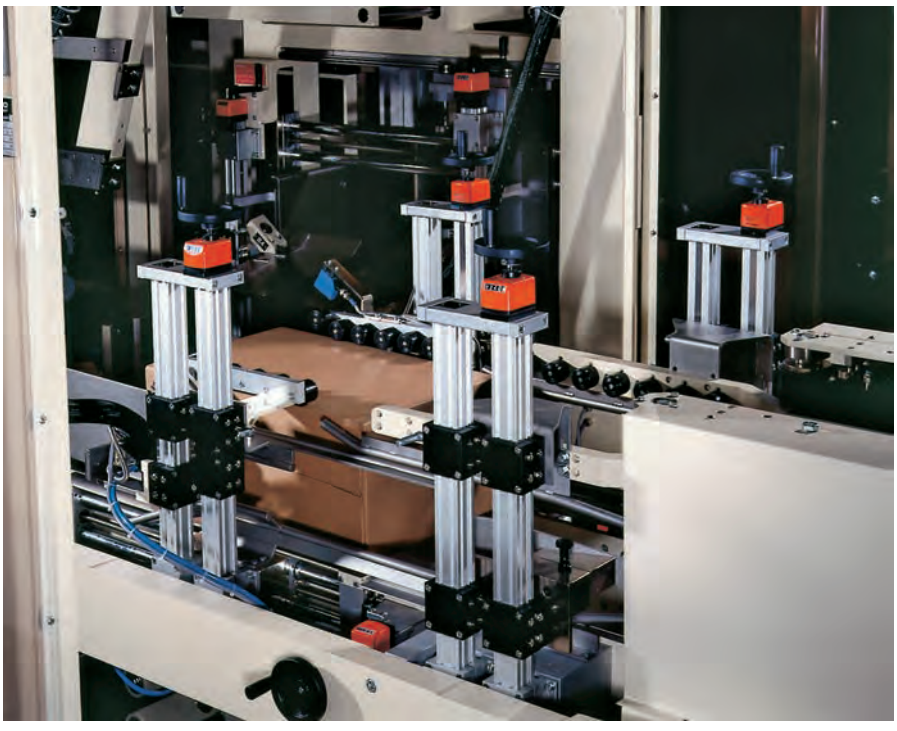
- Rotating cylindrical grip
- Fully turned wheel rim
- Machined hub

Material: Aluminium die cast, black powder-coated



[mm]

Code No.	Type	A	B	C	D	E	G	P	I
90903	30	80	8	23	11	17	35	2 x 2	42
90904	40	100	10	28	14	17	30	3 x 3	52
90915	50/60	100	12	28	14	17	30	4 x 4	52
90905	50/60	140	12	36	16.5	19	36	4 x 4	66
90906	80	140	14	36	16.5	19	36	5 x 5	66
90918	80	160	14	36	18	20	39	5 x 5	80
90928	80	200	14	43	20	24	44	5 x 5	80

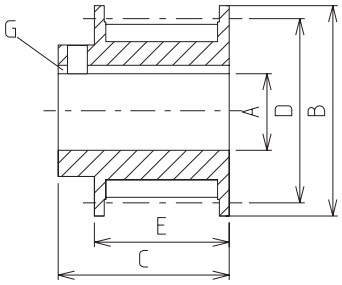


Format adjustment of a packaging system by means of quad EV linear unit

HTD timing-belt pulley

- Suitable for maintenance-free continuous operation
- Excellent accuracy and zero backlash during change of direction
- Can be clamped on feather key

Material: Steel

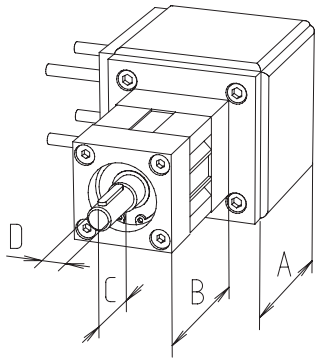


[mm]

Code No.	Type	A	B	C	D	E	G	Pull force	Pitch
92103	30	8	23	20	19.09	14.5	2x2	220 N	5
92104	40	10	28	20	23.87	14.5	3x3	220 N	5
92105	50/60	12	32	26	28.65	20.5	4x4	330 N	5
92106	80	14	32	26	28.65	20.5	5x5	330 N	5

Drive

Angular drive

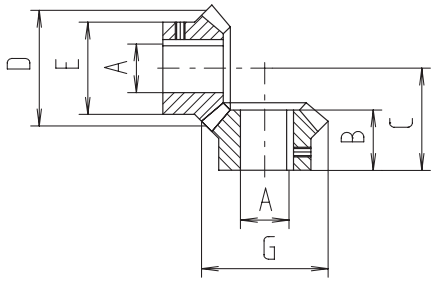


- Simple assembly
- Self-centring

[mm]

Code No.	Type	A	B	C	D	Ratio	Mod-ule	No. of teeth	Max. torque	Max. speed
91503	30	50	60	25	8	1:1	1.5	16	5.5 Nm	560 rpm
91513	30	50	60	25	8	1:1.5	1.5	16/24	5 Nm	373/560 rpm
91534	40	60	80	28	10	1:1	1.5	16	5.5 Nm	560 rpm
91524	40	60	80	28	10	1:1.5	1.5	16/24	5 Nm	373/560 rpm
91505	50	78	80	30	12	1:1	2.5	16	16 Nm	560 rpm
91515	50	78	80	30	12	1:1.5	2	16/24	10 Nm	373/560 rpm
91507	60	88	125	30	12	1:1	2.5	16	16 Nm	560 rpm
91517	60	88	125	30	12	1:1.5	2	16/24	10 Nm	373/560 rpm
91508	80	108	140	38	14	1:1	2.5	22	28 Nm	560 rpm
91518	80	108	140	38	14	1:1.5	2.5	16/24	23 Nm	373/560 rpm

Bevel gear set



- Straight toothed
- Pressure angle 20°
- Shaft angle 90°
- Crowned tooth faces
- Can be clamped on feather key

Material: Steel C45

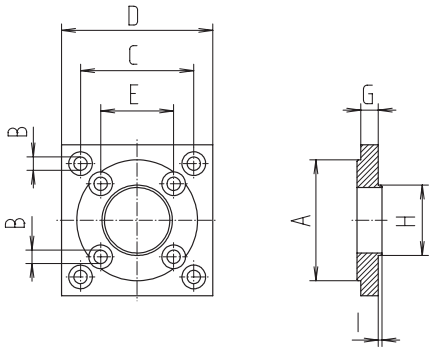
[mm]

Code No.	Type	A	B	C	D	E	G	Ratio	No. of teeth	Module
91603	Set 30	8	15	24	24	18	26.11	1:1	16	1.5
91613	Set 30	8	17/17.5	30/27	24/36	18/18	26.49/37.67	1:1.5	16/24	1.5
91623	Single component 30	8	15	24	24	18	26.11	1:1	16	1.5
91663	Single component 30	8	17	30	24	18	26.49	1:1.5	16	1.5
91673	Single component 30	8	17.5	27	36	18	37.67	1:1.5	24	1.5
91614	Set 40	10	16	27	28.5	24	30.62	1:1	19	1.5
91624	Set 40	10	17/17.5	30/27	24/36	20/26	26.49/37.67	1:1.5	16/24	1.5
91674	Single component 40	10	16	27	28.5	24	30.62	1:1	19	1.5
91684	Single component 40	10	17	30	24	20	26.49	1:1.5	16	1.5
91694	Single component 40	10	17.5	27	36	26	37.67	1:1.5	24	1.5
91605	Set 50	12	22	37	40	32	43.5	1:1	16	2.5
91615	Set 50	12	21/23	38/35	32/48	26/35	35.3/50.2	1:1.5	16/24	2
91625	Single component 50	12	22	37	40	32	43.5	1:1	16	2.5
91665	Single component 50	12	21	38	32	26	35.3	1:1.5	16	2
91645	Single component 50	12	23	35	48	35	50.2	1:1.5	24	2
91605	Set 60	12	22	37	40	32	43.5	1:1	16	2.5
91615	Set 60	12	21/23	38/35	32/48	26/35	35.3/50.2	1:1.5	16/24	2
91625	Single component 60	12	22	37	40	32	43.5	1:1	16	2.5
91665	Single component 60	12	21	38	32	26	35.3	1:1.5	16	2
91645	Single component 60	12	23	35	48	35	50.2	1:1.5	24	2
91608	Set 80	14	28	48	55	40	58.53	1:1	22	2.5
91618	Set 80	14	25/27	46/42	40/60	32/42	44.16/62.77	1:1.5	16/24	2.5
91648	Single component 80	14	28	48	55	40	58.53	1:1	22	2.5
91678	Single component 80	14	25	46	40	32	44.16	1:1.5	16	2.5
91668	Single component 80	14	27	42	60	42	62.77	1:1.5	24	2.5

Combination flange

- Simple assembly with linear units and combination cubes
- Exact fit due to centering shoulders

Material: AlMgSi, black anodised



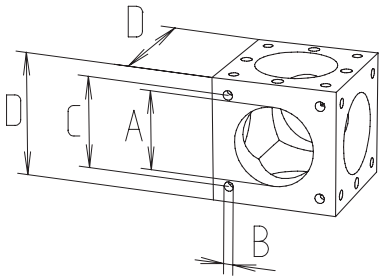
[mm]

Code No.	Type	A	B	C	D	E	G	H	I
92303	30	38_{f7}	4.3	36	50	21	6	22_{f7}	2
92304	40	48_{f7}	5.3	45	60	29	7	28_{f7}	1.5
92305	50	50_{f7}	6.6	58	78	38	8	35_{f7}	2
92307	60	60_{f7}	6.4	68	88	43	8	35_{f7}	2
92308	80	80_{f7}	9	88	108	46	9	50_{f7}	3

Combination cube

- Connecting or transmission module
- Machined all-round

Material: AlMgSi, black anodised



[mm]

Code No.	Type	A	B	C	D
92403	30	38^{H7}	M 4	36	50
92404	40	48^{H7}	M 5	45	60
92405	50	50^{H7}	M 6	58	78
92407	60	60^{H7}	M6	68	88
92408	80	80^{H7}	M 8	88	108

Cap for combination cube

- For contact-free mounting surfaces

Material: PE, black

[mm]

Code No.	Type	Cap thickness
92413	30	2
92414	40	3
92415	50	3
92417	60	3
92418	80	4

Drive

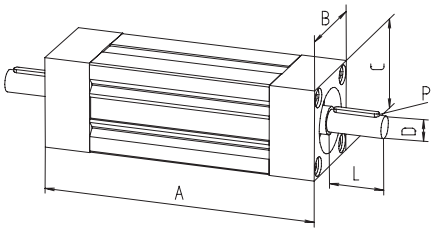
Connecting and transmission unit

- For the transmission of torques with shaft or as a connecting unit without shaft for parallel linear units

Material: End elements, AlMgSi, black anodised
Profile, AlMgSi, clear anodised

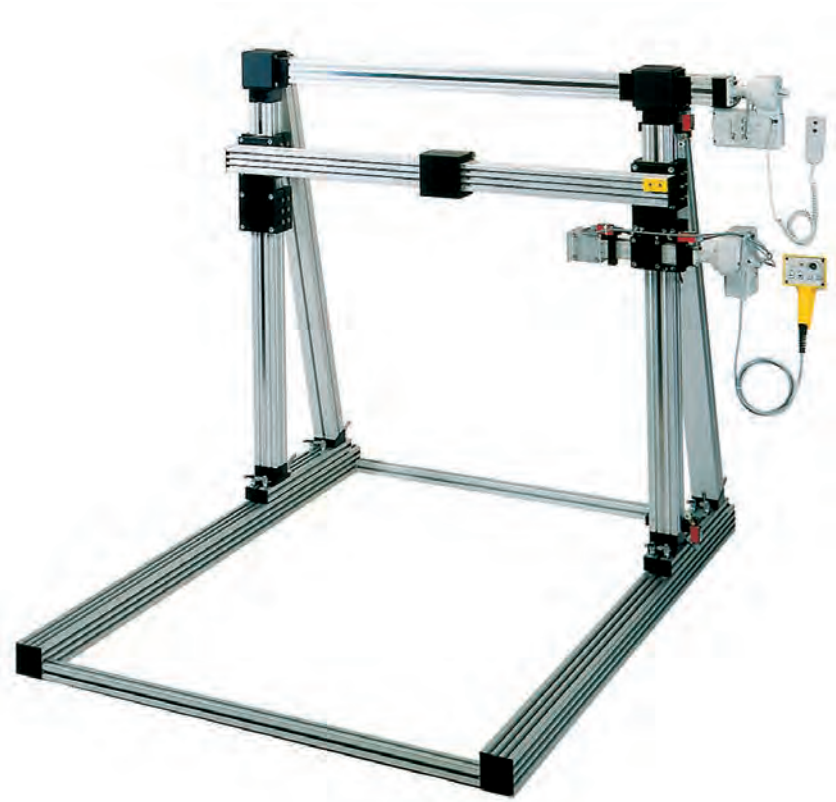
Transmission unit

Connecting unit



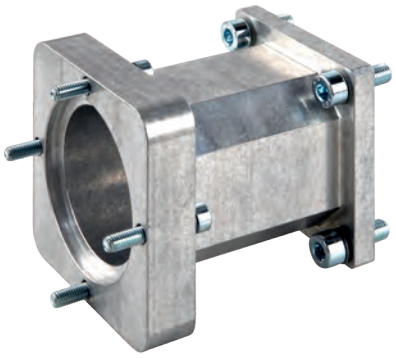
[mm]

Code No.	Type	Version	A (basic length)	A (max. length)	B	C	D	L	P
92503_ _ _ _	30	with shaft	60	3000	30	30	8	25	2x2x20
92513_ _ _ _	30	without shaft	60	6000	30	30	–	–	–
92504_ _ _ _	40	with shaft	80	3000	40	40	10	28	3x3x20
92514_ _ _ _	40	without shaft	80	6000	40	40	–	–	–
92505_ _ _ _	50	with shaft	80	3000	50	50	12	30	4x4x25
92515_ _ _ _	50	without shaft	80	6000	50	50	–	–	–
92507_ _ _ _	60	with shaft	125	3000	60	60	12	30	4x4x25
92517_ _ _ _	60	without shaft	125	6000	60	60	–	–	–
92508_ _ _ _	80	with shaft	140	4100	80	80	14	38	5x5x32
92518_ _ _ _	80	without shaft	140	6000	80	80	–	–	–



Drive

Selection table Motor adaptor/EV coupling for three-phase motor



Manufacturers	Motor	EV 30	EV 40	EV 50	EV 60	EV 80
RK Rose + Krieger	90/120W	949603	94937	949605	–	94958
		910920 0812	911430 1012	911940 1212	–	911940 1214
	180/250W	–	94916	94935	949077	94940
		–	911430 1014	911430 1214	911430 1214	911940 1414

Code No. Motor adaptor: **949077**
Code No. Coupling with specification of shaft diameter 1st end=12 mm 2st end=14 mm **911430 1214**

Selection table Motor adaptor/EV coupling for servomotors without gear

Manufacturers	Motor	EV 30	EV 40	EV 50	EV 60	EV 80	Motor flange	Motor shaft
RK Rose + Krieger	RK-AC 118	949204	949205	–	–	–	IM B5 56	Ø11x23
		911430 0811	911430 1011	–	–	–		
	RK-AC 240	–	949280	949225	949087	949226	IM B5 56	Ø14x30
		–	911430 1014	911430 1214	911940 1214	911940 1414		
	RK-AC 470	–	–	–	–	–	IM B5 63	Ø19x40
		–	–	–	–	–		
Baumüller	DSD2-036	949204	949205	–	–	–	IM B5 56	Ø11x23
		911430 0811	911430 1011	–	–	–		
	DSD2-045	–	949280	949225	949087	949226	IM B5 56	Ø14x30
		–	911430 1014	911430 1214	911940 1214	911940 1414		
Bosch	MSK050B, MSK050C	–	–	–	–	–	IM B5 63	Ø19x40
		–	–	–	–	–		
Lenze	MCS06I, MCS06F	949204	949205	–	–	–	IM B5 56	Ø11x23
		911430 0811	911430 1011	–	–	–		
	MCS09D, MCS09F, MCS09H, MCS09L	–	949280	949225	949087	949226	IM B5 56	Ø14x30
		–	911430 1014	911430 1214	911940 1214	911940 1414		
Lti / Keba	LSP10	–	–	–	–	–	IM B5 63	Ø19x40
		–	–	–	–	–		
Parker	SMH 60, SMHA 60	949204	949205	–	–	–	IM B5 56	Ø11x23
		911430 0811	911430 1011	–	–	–		
	SMH 82, SMHA 82	–	949280	949225	949087	949226	IM B5 56	Ø14x30
		–	911430 1014	911430 1214	911940 1214	911940 1414		
	SMH 100, SMHA 100	–	–	–	–	–	IM B5 63	Ø19x40
		–	–	–	–	–		
SEW	CMP50S, CMP50M, CMP50L	949204	949205	–	–	–	IM B5 56	Ø11x23
		911430 0811	911430 1011	–	–	–		
	CMP63S, CMP63M, CPM63L	–	949280	949225	949087	949226	IM B5 56	Ø14x30
		–	911430 1014	911430 1214	911940 1214	911940 1414		
Siemens	1FK2105	–	–	–	–	–	IM B5 63	Ø19x40
		–	–	–	–	–		

Code No. Motor adaptor:
949087

Code No. Coupling with specification of shaft diameter
1st end=12 mm
2st end=14 mm
911940 1214

For dimensions and order data for motor adaptor and coupling, please refer to next page.

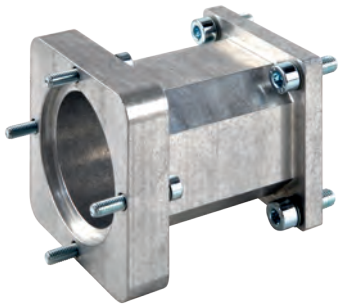
Note:
For further details on motor versions, please refer to the chapter "Motors and controls"

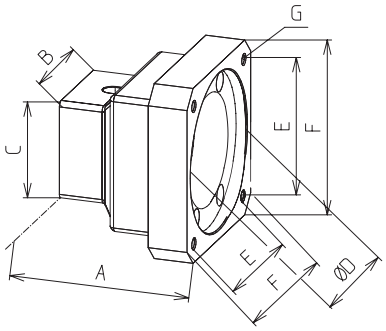
Drive

Motor adaptor

- Simple assembly
- Exact fit due to centering shoulders

Material: Aluminium,





[mm]

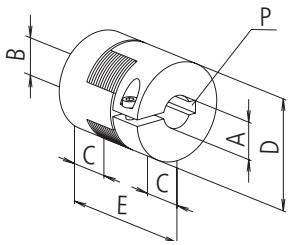
Code No.	Type	A	B	C	D	E	F	G
949204	30	63	40	40	60	53	70	M5
949603	30	65	40	40	50	46	80	M5
949205	40	65	50	50	60	53	70	M5
949280	40	73	50	50	80	70,7	90	M6
94937	40	73	50	50	50	46	80	M5
94916	40	73	50	50	80	100	Ø120	Ø6,6
949206	50	66	52	52	60	53	70	M5
949225	50	73	52	52	80	70,7	90	M6
949605	50	73	52	52	50	65	80	M5
94935	50	73	52	52	80	100	Ø120	Ø6,6
949052	60	66	60	60	60	53	70	M5
949087	60	81	60	60	80	70,7	90	M6
949077	60	75	60	60	80	100	Ø120	Ø6,6
949401	80	74	80	80	60	53	70	M5
949226	80	86	80	80	80	70,7	90	M6
94958	80	86	80	80	50	46	80	M5
94940	80	86	80	80	80	100	Ø120	Ø6,6

Coupling

- Small size
- Shaft connection without backlash
- Maintenance-free
- Easy plug-in assembly

Material: Hub – aluminium
Spider ring – polyurethane

To ensure the smooth running of the coupling, a clearance of **D + 3 mm** is required.



[mm]

Code No.	A	B	C	D	E	P	Torque [Nm]	
							with feather key	without feather key
9109200808	8	8	10	20	30	2x2 / 2x2	5	3
9109200895	8	9,5	10	20	30	2x2 / –	5	3
9109200810	8	10	10	20	30	2x2 / 3x3	5	3
9109200812	8	12	10	22	30	2x2 / 4x4	5	3
9114300811	8	11	11	30	35	2x2 / 4x4	12	6
9114309510	9,5	10	11	30	35	– / 3x3	12	6
9114309512	9,5	12	11	30	35	– / 4x4	12	6
9114301010	10	10	11	30	35	3x3 / 3x3	12	6
9114301011	10	11	11	30	35	3x3 / 4x4	12	6
9114301012	10	12	11	30	35	3x3 / 4x4	12	6
9114301014	10	14	11	30	35	3x3 / 5x5	12	6
9114301112	11	12	11	30	35	4x4/ 4x4	12	6
9114301114	11	14	11	30	35	4x4/ 5x5	12	6
9114301212	12	12	11	30	35	4x4 / 4x4	12	6
9114301214	12	14	11	30	35	4x4 / 5x5	12	6
9114301219	12	19	11	30	35	4x4 / 6x6	12	6
9119409514	9,5	14	25	40	65	– / 5x5	17	10
9119401212	12	12	25	40	65	4x4 / 4x4	17	10
9119401214	12	14	25	40	65	4x4 / 5x5	17	10
9119401414	14	14	25	40	65	5x5 / 5x5	17	10
9119401419	14	19	25	40	65	5x5 / 6x6	17	10

Position determination

Scale

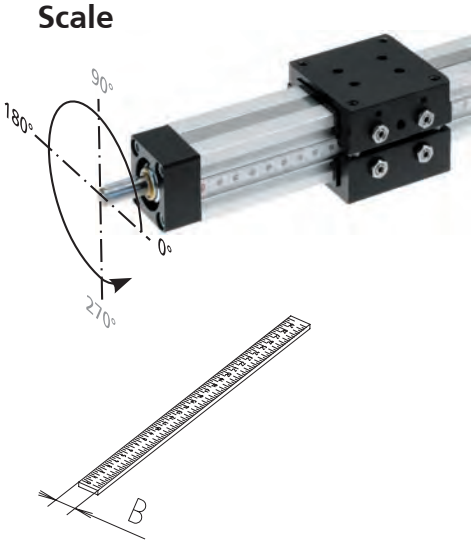


Image shows scale - to be read from left to right. Standard installation at 0° (90° and 270° not technically possible)

- Self-adhesive
- Can be retrofitted
- 4 mm font size

Material: Steel band, plastic-coated

[mm]

Code No.	Type	Can be read from	Length	B	Version
92015	30	left to right	0-1000	8	not fitted
92021	40-80	right to left	0-1000	10	not fitted
92031		left to right	0-1000	10	not fitted
92013		left to right	0-2000	10	not fitted
92033		right to left	0-2000	10	not fitted

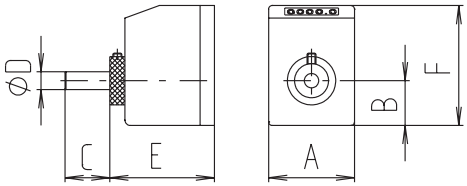
Positioning indicator

Installation position: horizontal

Installation position: vertical

* Version with double lead e.g. for installation on righthand/lefthand thread screws

- Permitted ambient temperature +80°C
- Figure height 6 mm
- Reading accuracy ± 0.1 mm
- Simple assembly

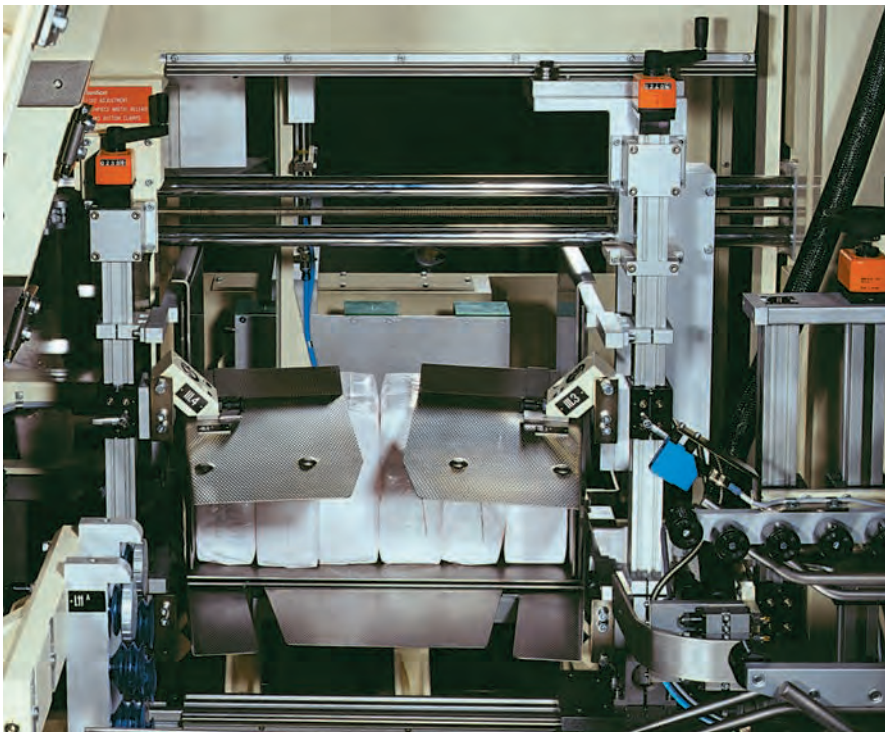


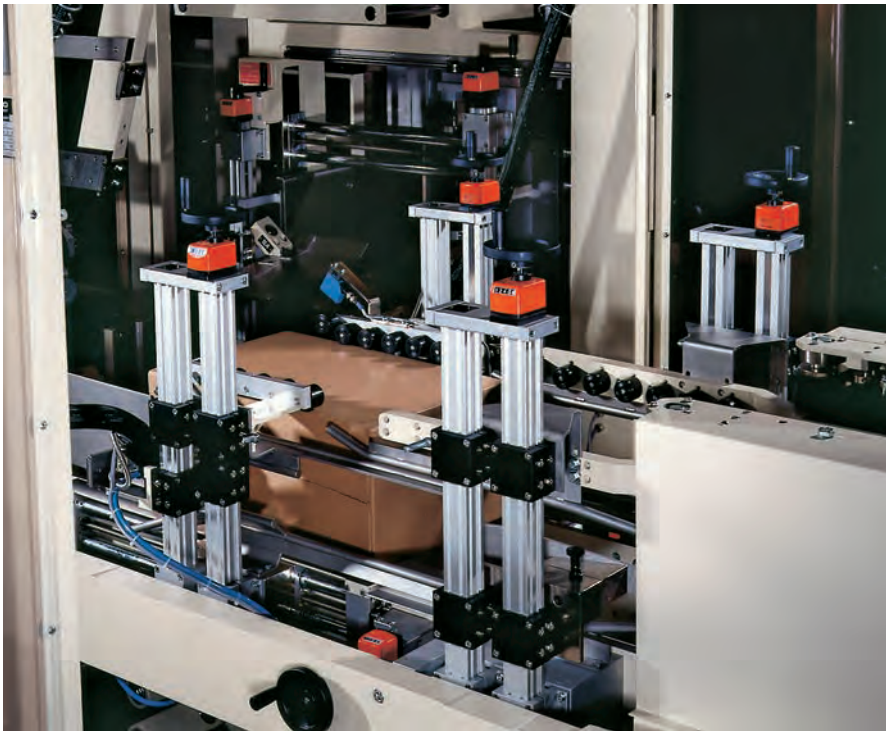
Material: Housing made of polyamide 6,
Orange RAL 2004
Steel parts zinc plated

Scope of delivery: Positioning indicator, clamping ring, shaft extension and fastenings
Note: "rising" and "falling" versions refer to the clockwise rotation of the drive shaft.

[mm]

Type	Installation position	Connection	Code No.	Version	Code No.	Version*	A	B	C	D	E	F
30	Horizontal	Directly on quad® EV or via angle drive	91003	3mm rising	91086	6mm rising	48	25	25	8	59	67
30	Horizontal		91013	3mm falling	91087	6mm falling	48	25	25	8	59	67
30	vertikal		91023	3mm rising	91088	6mm rising	48	25	25	8	59	67
30	vertikal		91033	3mm falling	91089	6mm falling	48	25	25	8	59	67
40	Horizontal		91054	4mm rising	91069	8mm rising	48	25	28	10	59	67
40	Horizontal		91064	4mm falling	91066	8mm falling	48	25	28	10	59	67
40	vertikal		91044	4mm rising	91067	8mm rising	48	25	28	10	59	67
40	vertikal		91074	4mm falling	91068	8mm falling	48	25	28	10	59	67
50/60	Horizontal		91005	4mm rising	91076	8mm rising	48	25	38	12	59	67
50/60	Horizontal		91015	4mm falling	91077	8mm falling	48	25	38	12	59	67
50/60	vertikal		91025	4mm rising	91078	8mm rising	48	25	38	12	59	67
50/60	vertikal		91035	4mm falling	91079	8mm falling	48	25	38	12	59	67
80	Horizontal		91008	5mm rising	91082	10mm rising	48	25	38	14	59	67
80	Horizontal		91018	5mm falling	91083	10mm falling	48	25	38	14	59	67
80	vertikal		91028	5mm rising	91084	10mm rising	48	25	38	14	59	67
80	vertikal		91038	5mm falling	91085	10mm falling	48	25	38	14	59	67





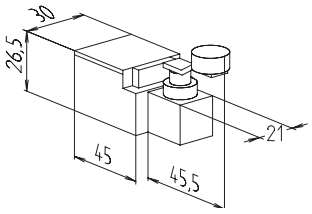
EV units enable simple format adjustment of a packaging machine

Position determination

Mechanical limit switch

- Limit switch with angle lever
- Compact design

Material: Thermoplastic, fully insulated



Max. voltage	250 V AC
Max. switching current	6 A
Max. starting current	16 A
Operating frequency	Max. 6000/h
Mechanical lifetime	10 million switching cycles
Axis lever adjustment	locking by 360°
Protection class	IP 65
Ambient temperature	-30°C to +80°C

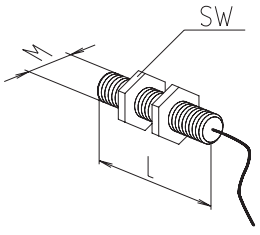
Code No.	Type	Switching function
91905	30-80	NC/NO

Inductive limit switch

- Maintenance-free

Material: Housing - brass, chrome-plated

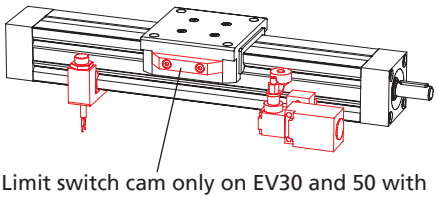
Type	30/40	50/80
Voltage	10 - 30 V DC	
Max. switching current	150 mA	200 mA
Operating distance	2 mm for steel	4 mm for steel
Protection class	IP 67	
Ambient temperature	-25°C to +70°C	
Cable lengths	2m	



[mm]

Code No.	Type	Switching function	L	M	Wrench size (SW)
92826	30/40	Changeover	40	8x1	13
92825	50/80	Changeover	50	12x1	17

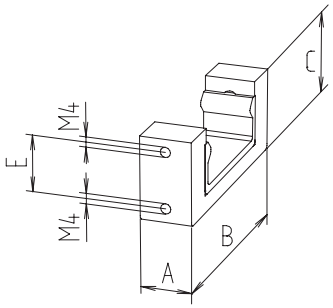
Holder for limit switch mechanical and inductive



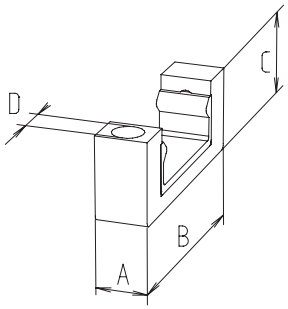
Limit switch cam only on EV30 and 50 with closed carriage

- Can be moved in the V-slots of the guide profile and fixed using a set screw
- Using a limit switch reduces the stroke by 25 mm (open elements) or 50 mm (closed elements)
- The limit switch holder cannot be used in conjunction with closed carriages. This version is available on request.

Material: AlMgSi, clear anodised



for limit switch



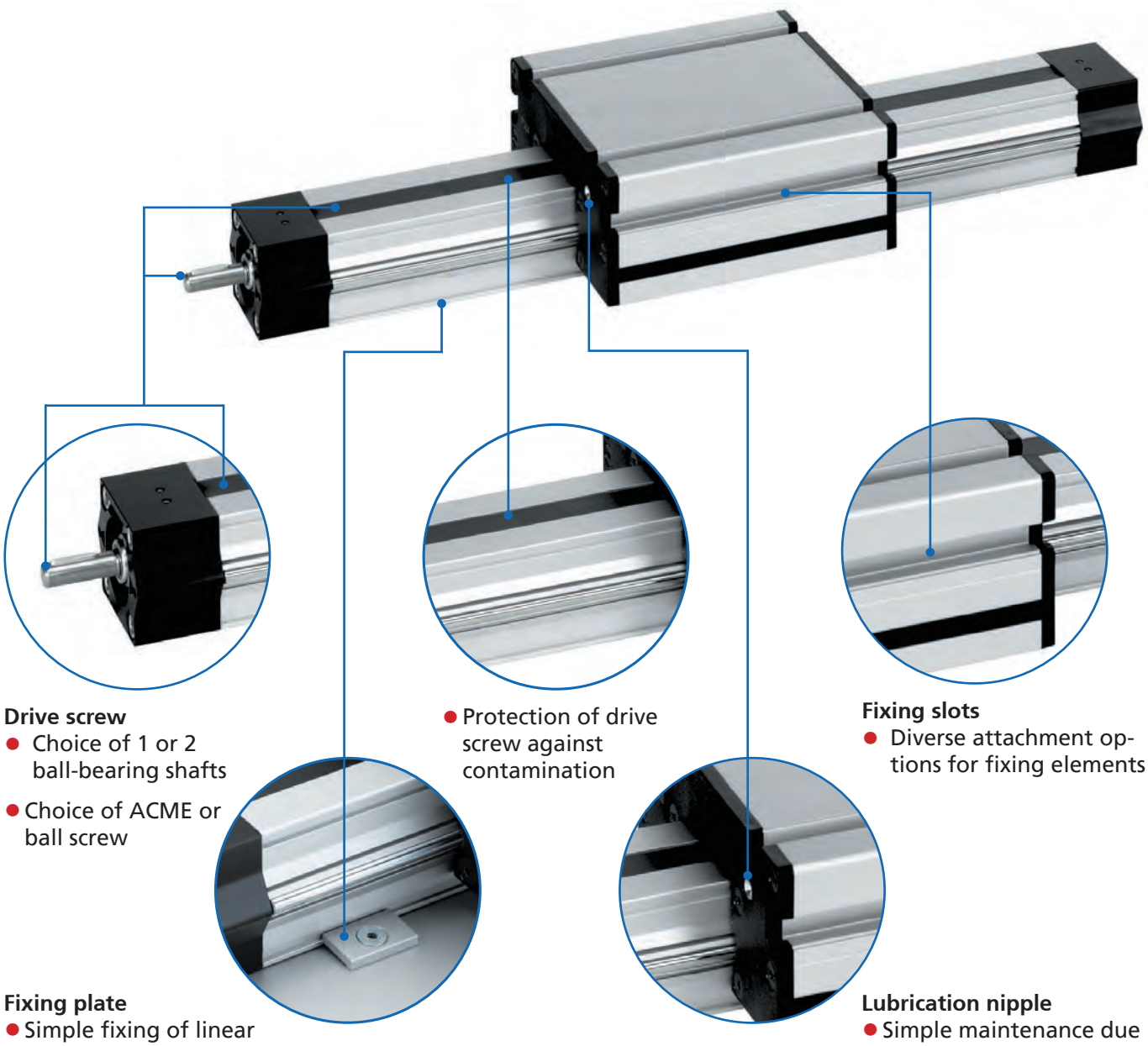
for limit switch

[mm]

Code No.	Type	A	B	C	D	E
Holder for mechanical limit switch						
92703	30*	16	56	20	–	22
92704	40*	16	76	26.5	–	22
92705	50	20	85	33	–	22
92736	60	26	105	40	M12 x 1	22
92708	80	26	126	53	M12 x 1	22
92713	30	Holder with limit switch				
92793	30	Holder with limit switch, closed carriage**				
92714	40	Holder with limit switch				
92715	50	Holder with limit switch				
92795	50	Holder with limit switch, closed carriage**				
92746	60	Holder with limit switch				
92718	80	Holder with limit switch				
Holder for inductive limit switch						
92903	30	16	56	20	M8 x 1	–
92904	40	16	68	26.5	M8 x 1	–
92905	50	20	85	33	M12 x 1	–
92736	60	26	105	40	M12 x 1	22
92908	80	26	126	53	M12 x 1	22
92913	30	Holder with limit switch changeover				
92924	40	Holder with limit switch changeover				
92915	50	Holder with limit switch changeover				
92956	60	Holder with limit switch changeover				
92918	80	Holder with limit switch changeover				

* with flange plate
** limit switch cam included in delivery

Motor-driven or manual adjustment of medium to heavy loads – easy for the PLS profile linear unit



Drive screw
- Choice of 1 or 2 ball-bearing shafts
- Choice of ACME or ball screw

- Protection of drive screw against contamination

Fixing slots
- Diverse attachment options for fixing elements

Fixing plate
- Simple fixing of linear unit on substructures

Lubrication nipple
- Simple maintenance due to central lubrication of lead nut and guide shafts

Features:
- Choice of ACME screw or ball screw drive
- Cover strip protects screw against contamination
- Adjustable roller guide
- External lubrication

Options:
- Longer stroke lengths
- Second free-running carriage
- Extended carriage

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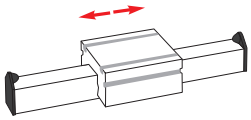
Versions
(Dimensions, order numbers)



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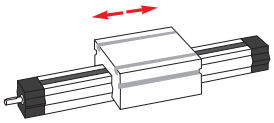
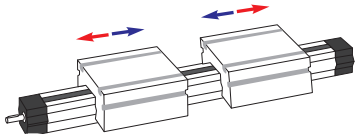


Right or lefthand thread ... Page 260 - 261



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Accessories

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Limit switch ... Page 273 - 275

Technical data

General information/operating conditions

Design	Profile linear unit with extruded carriage/guide profile
Guide	Adjustable roller guide
Installation position	Any position
Lead accuracy	± 0.1 mm/300 mm travel
Self-locking	Yes, for threaded screw*, no, for ball screw drive
Duty cycle	ACME: S3 30% Basic 1h / Ball screw: S3 100%
Ambient temperature	0°C to +60°C

*see Glossary under item Self-locking

Screw lead

[mm]

ACME screw	
Type	**Screw lead**
PLS 30	3
PLS 40	4
PLS 50	4
PLS 60	4
PLS 80	5

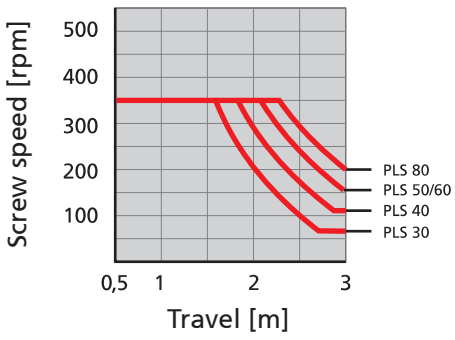
[mm]

Ball screw drive	
Type	**Screw lead**
PLS 30	3
PLS 40	4
PLS 50	5
PLS 60	5
PLS 80	5
PLS 80	10

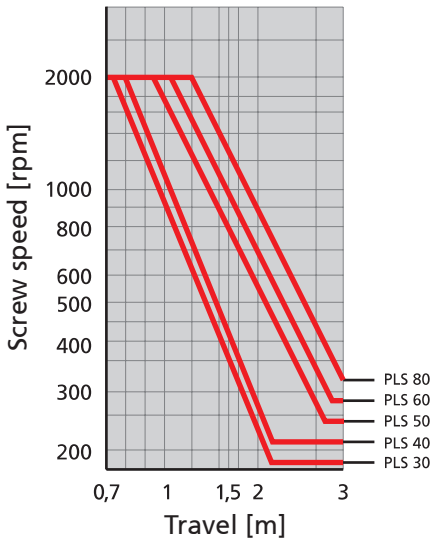
$$\text{Required screw speed n [rpm]} = \frac{\text{speed [m/min] x 1000}}{\text{screw lead [mm]}}$$

Critical screw speed

ACME screw



Ball screw drive



No-load torque

[Nm]

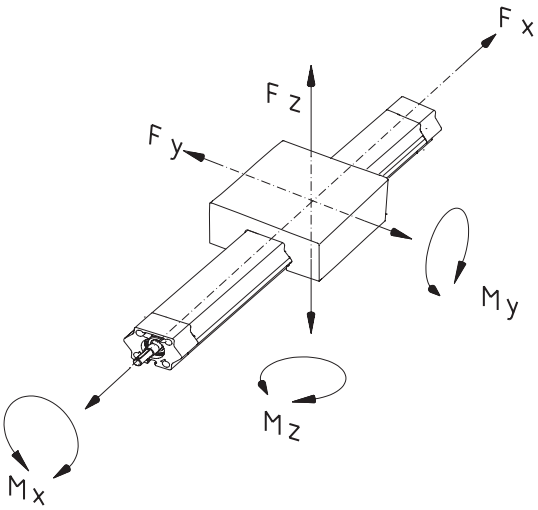
Type	ACME screw	Ball screw drive
PLS 30	0.10	0.10
PLS 40	0.20	0.15
PLS 50	0.25	0.20
PLS 60	0.30	0.25
PLS 80	0.40	0.35

Load data*

F Force [N]

M Moment [Nm]

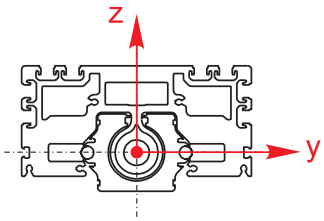
I Geometric moment of inertia [cm^4]



* With reference to carriage (static values, guide element resting on full surface)

Type	Fx	Fy	Fz	Mx	My	Mz
PLS 30	340	790	790	14	20	22
PLS 40	1675	1020	1020	23	33	33
PLS 50	1900	1020	1020	28	49	49
PLS 60	2400	2550	2550	99	143	143
PLS 80	3050	2550	2550	124	168	169

Type	Iy	Iz [cm^4]
PLS 30	4.30	6.36
PLS 40	14.36	19.85
PLS 50	35.45	44.27
PLS 60	77.28	111.53
PLS 80	201.86	280.73

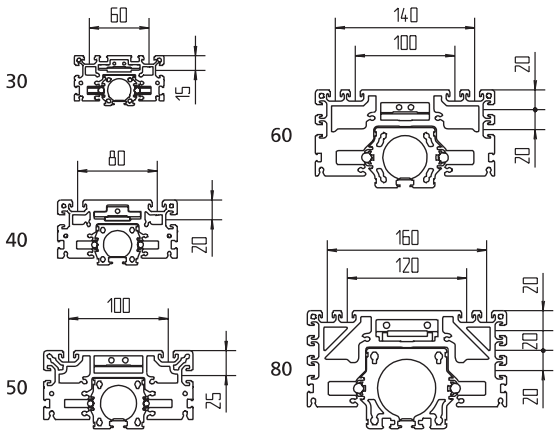


Versions

Order instructions:

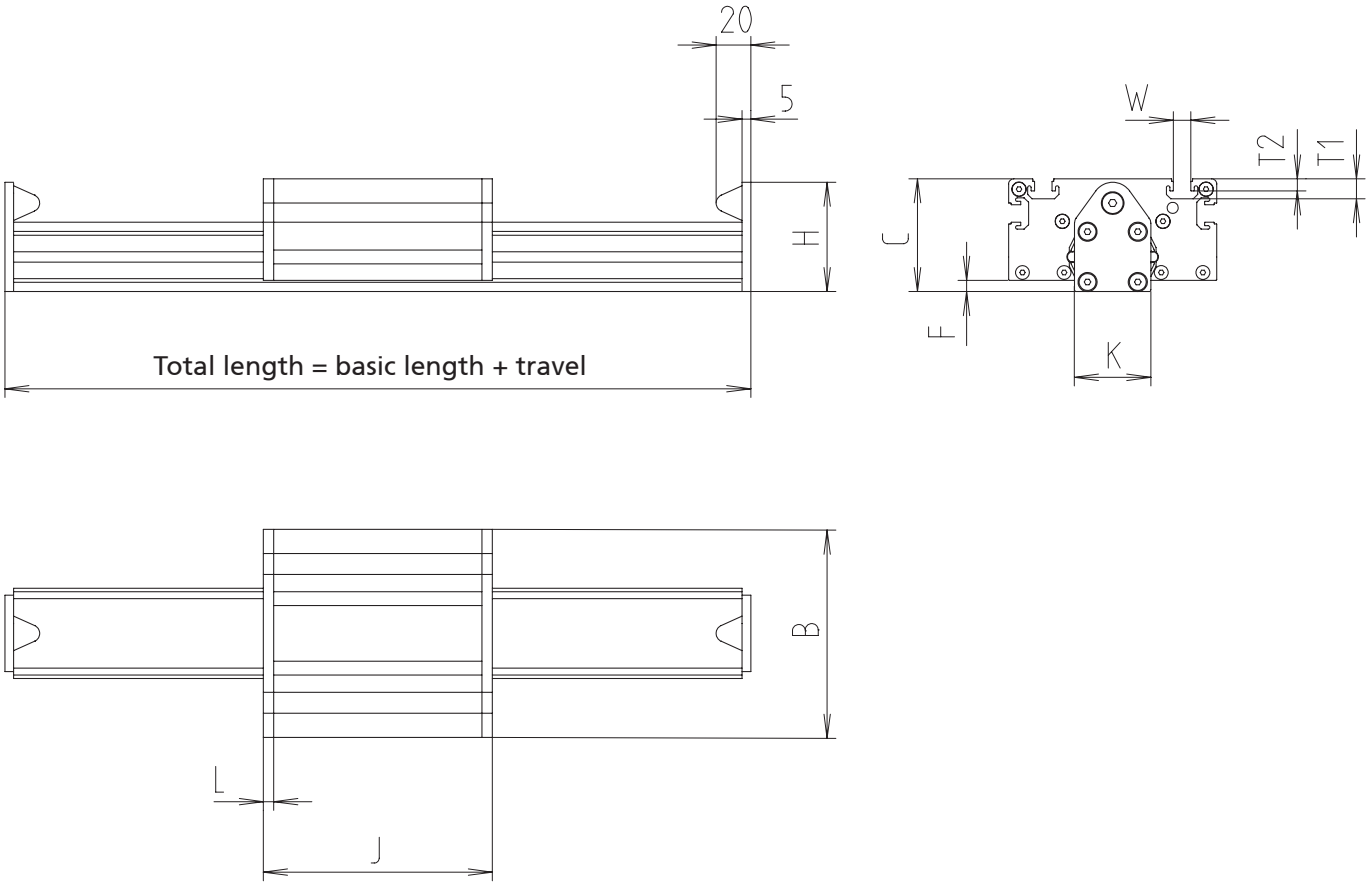
- Longer travel lengths on request
- Second or extended carriage available on request

Version ● Guide



Code No.	Type	Basic length	B	C	F	H	J	K
MMA3030AA	PL-II 30	142	90	50	4.5	50	102	34
MMA4040AA	PL-II 40	172	120	65	6.5	63	132	44
MMA5050AA	PL-II 50	202	150	78	9.0	74	162	54
MMA6060AA	PL-II 60	232	180	98	11.5	84	192	72
MMA8080AA	PL-II 80	252	200	118	21.5	104	212	92

_ _ _ _ Total length = basic length + travel [mm]



[mm]

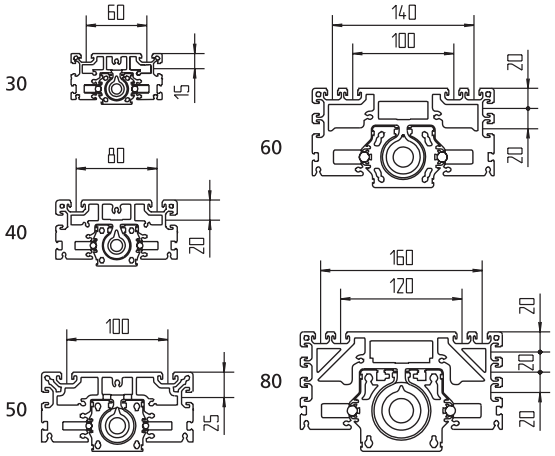
L	T1	T2	W	Max. travel	Mass [kg]	
					Basic length	per 100 mm travel
6	8.5	4.5	10.1	5860	1.0	0.16
6	11.5	7	10.1	5830	1.9	0.28
6	11.5	7	10.1	5800	3.5	0.41
6	11.5	7	10.1	5770	5.9	0.60
6	11.5	7	10.1	5750	7.9	0.90

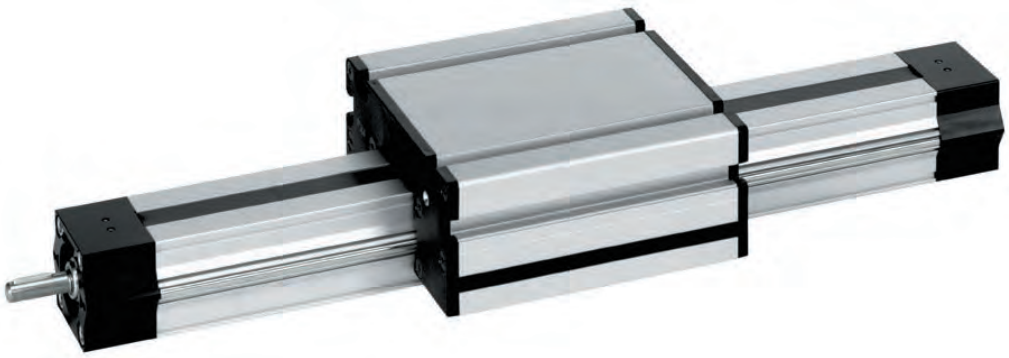
Versions

Order instructions:

- Longer travel lengths on request
- Second free-running carriage available on request
- Extended carriage available on request

Version ● Right or lefthand thread





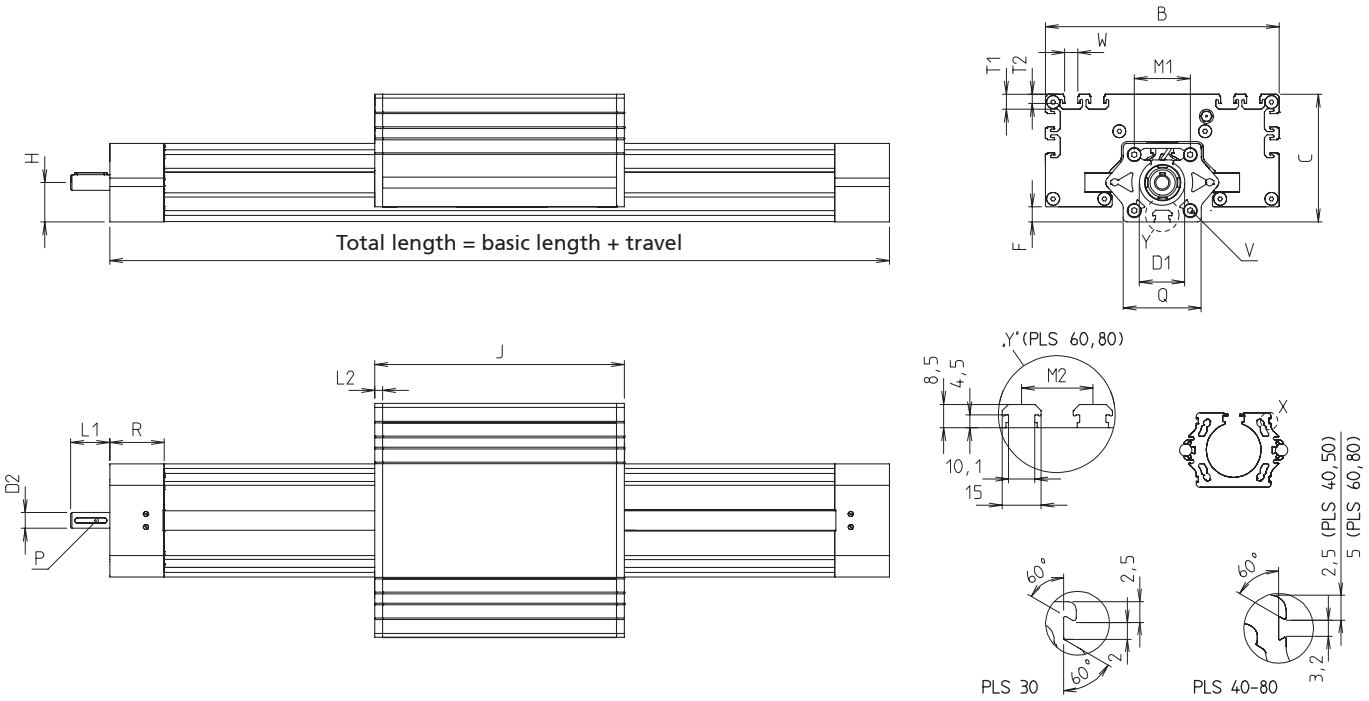
Code No.	Type	Spindle	Basic length	B	C	D1	D2	F	G	H	J
PLS with ACME screw											
FX _ 3030 _ A	PLS 30	12 x 3	162	90	50	22^{J6}	6	4.5	M5	15	102
FX _ 4040 _ A	PLS 40	16 x 4	204	120	65	30^{J6}	8	6.5	M5	20	132
FX _ 5050 _ A	PLS 50	20 x 4	238	150	78	35^{J6}	10	9	M5	25	162
FX _ 6060 _ A	PLS 60	20 x 4	276	180	98	35^{J6}	12	11.5	M5	30	192
FX _ 8080 _ A	PLS 80	24 x 5	308	200	118	50^{H7}	14	21.5	M5	40	212
PLS with ball screw drive											
FY A 3030 _ A	PLS 30	10 x 3	162	90	50	22^{J6}	6	4.5	M5	15	102
FY A 4040 _ A	PLS 40	12 x 4	204	120	65	30^{J6}	8	6.5	M5	20	132
FY A 5050 _ A	PLS 50	16 x 5	238	150	78	35^{J6}	10	9	M5	25	162
FY A 6060 _ A	PLS 60	20 x 5	276	180	98	35^{J6}	12	11.5	M5	30	192
FY A 8080 _ H	PLS 80	25 x 5	308	200	118	50^{H7}	14	21.5	M5	40	212
FY A 8080 _ A	PLS 80	25 x 10	308	200	118	50^{H7}	14	21.5	M5	40	212

FY A 8080 _ A

_ _ _ _ Total length = basic length + travel [mm]

Drive shafts:
T = 1 drive shaft
U = 2 drive shafts

Version:
A = righthand thread
H = lefthand thread



[mm]

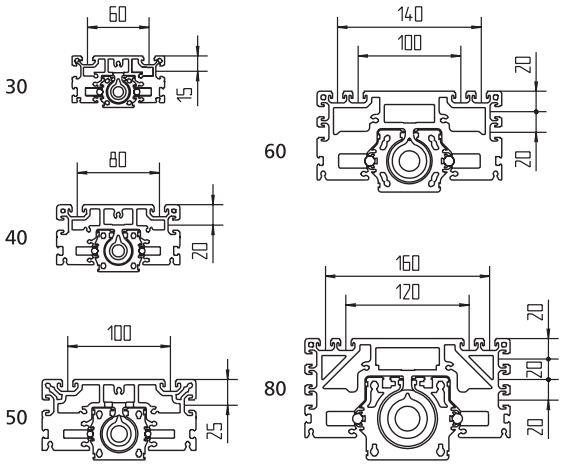
L1	L2	M1	M2	P	Q	R	T1	T2	V	W	Max. travel	Mass [kg]	
												Basic length	per 100 mm travel
25	6	21	–	2 x 2 x 20	30	30	8.5	4.5	M4	10.1	830	1.12	0.27
28	6	29	–	2 x 2 x 20	40	36	11.5	7	M5	10.1	1439	2.20	0.44
30	6	38	–	3 x 3 x 20	50	37	11.5	7	M6	10.1	1889	4.51	0.64
30	6	43	0	4 x 4 x 25	60	42	11.5	7	M6	10.1	2079	6.34	0.95
38	6	64	20	5 x 5 x 32	80	48	11.5	7	M6	10.1	2509	9.91	1.25
25	6	21	–	2 x 2 x 20	30	30	8.5	4.5	M4	10.1	757	1.09	0.26
28	6	29	–	2 x 2 x 20	40	36	11.5	7	M5	10.1	799	2.12	0.40
30	6	38	–	3 x 3 x 20	50	37	11.5	7	M6	10.1	926	4.50	0.60
30	6	43	0	4 x 4 x 25	60	42	11.5	7	M6	10.1	1022	6.18	0.90
38	6	64	20	5 x 5 x 32	80	48	11.5	7	M6	10.1	1120	9.59	1.19
38	6	64	20	5 x 5 x 32	80	48	11.5	7	M8	10.1	1120	9.59	1.19

Versions

Order instructions:

- Please specify total travel when placing an order
- Longer travel lengths on request
- Extended carriage available on request

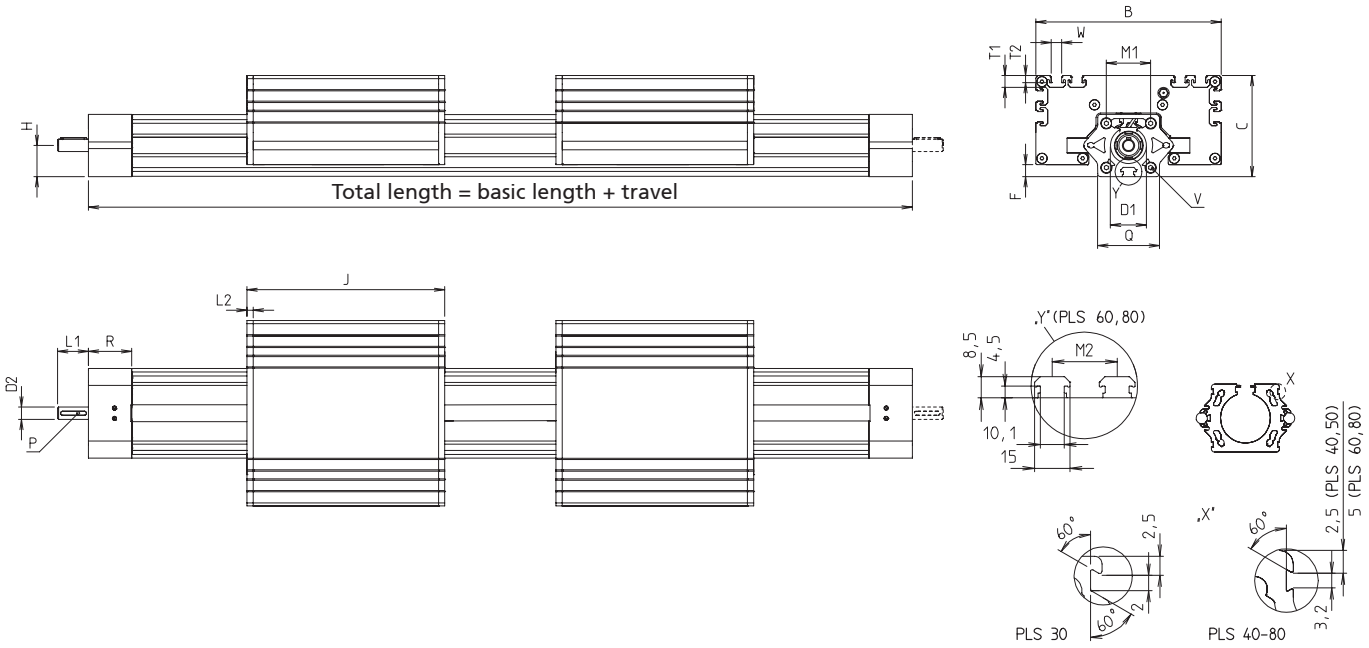
Version ● Right and lefthand thread



Code No.	Type	Spindle	Basic length	B	C	D1	D2	F	G	H	J
PLS with ACME screw											
FXC 3030 _ A	PLS 30	12 x 3	264	90	50	22J6	6	4.5	M5	15	102
FXC 4040 _ A	PLS 40	16 x 4	336	120	65	30J6	8	6.5	M5	20	132
FXC 5050 _ A	PLS 50	20 x 4	400	150	78	35J6	10	9	M5	25	162
FXC 6060 _ A	PLS 60	20 x 4	468	180	98	35J6	12	11.5	M5	30	192
FXC 8080 _ A	PLS 80	24 x 5	520	200	118	50H7	14	21.5	M5	40	212

_ _ _ _ Total length = basic length + travel [mm]

Version:
S = 1 drive shaft at lefthand thread end
T = 1 drive shaft at righthand thread end
U = 2 drive shafts



[mm]

L1	L2	M1	M2	P	Q	R	T1	T2	V	W	Max. travel	Mass [kg]	
												Basic length	per 100 mm travel
25	6	21	–	2 x 2 x 20	30	30	8.5	4.5	M4	10.1	728	1.95	0.27
28	6	29	–	2 x 2 x 20	40	36	11.5	7	M5	10.1	2868	4.08	0.44
30	6	38	–	3 x 3 x 20	50	37	11.5	7	M6	10.1	2838	7.75	0.64
30	6	43	0	4 x 4 x 25	60	42	11.5	7	M6	10.1	2772	10.99	0.95
38	6	64	20	5 x 5 x 32	80	48	11.5	7	M6	10.1	2704	16.66	1.25

Fixing/Drive

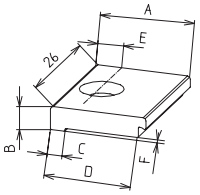
Order instruction fixing plate:

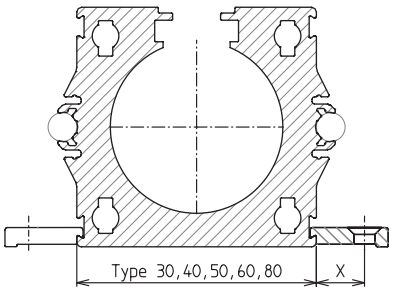
- Purchase only in lot sizes and a multiple of that,see product table below

- Plate for fixing the linear unit to a substructure
- The fixing plates can also be retrofitted and moved axially

Scope of delivery: without screws

Fixing plate





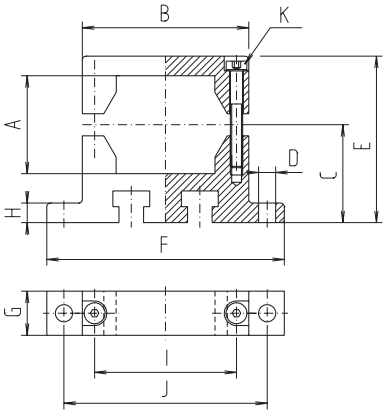
[mm]

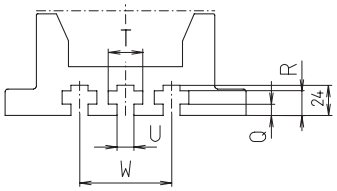
Code No.	Type	lot sizes	Version	A	B	C	D	E	F	X
955101	PL / PLS 30, 40, 50	10, 20, 30... pcs	Counterbore for M5 screw, DIN 79911	16,3	4	2,5	15	7	0,5	8
955111	PL / PLS 60, 80	10, 20, 30... pcs	Counterbore for M6 screw, DIN 7984	23,8	7,5	3,5	22,5	12,5	1	10

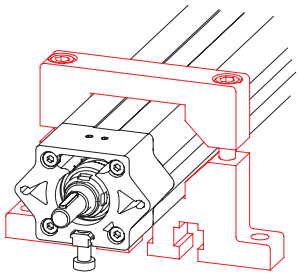
Fixing element

- Element for clamping the PLS to the guide profile or end element

Material: AlMgSi, clear, anodised
Steel parts zinc plated







[mm]

Code No.	Type	A	B	C	D	E	F	G	H	I	J	K	Q	R	T	U	W
95503	PLS 30	30	56	30	7	51	84	16	6	47	70	M5 x 30	4.5	9	10	6	20
95504	PLS 40	40	68	40	7	68	97	18	8	58	83	M5 x 40	6.5	13	15	10	28
95505	PLS 50	50	85	50	7	85	125	20	10	69	105	M6 x 45	7	14	20	10	30
95506	PLS 60	60	126	69.7	11	115.4	170	24	16	106	148	M10 x 60	8	20	19	12	65
95508	PLS 80	80	126	80	11	136	170	24	16	113	148	M6 x 70	8	20	19	12	65

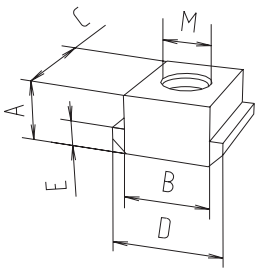
Order instruction square nut:

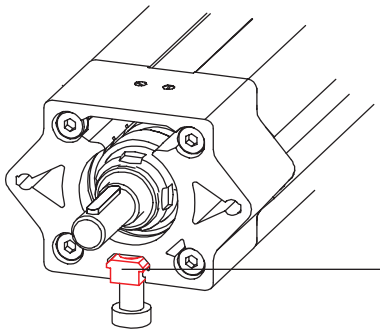
- Purchase only in lot sizes and a multiple of that, see product table below

- Slot stone for lateral insertion in the carriage
- For further slot stone versions, please refer to the catalogue BLOCAN® profile systems

Material: Steel, zinc plated

Slot stone -N-





* **Note:** Please use flat slot stones 30 for fixing in the end elements (only available for sizes 60 and 80).

[mm]

Code No.	Type	lot sizes	Version	A	B	C	D	E	M	F [N]
4006201	PLS 30	10, 20, 30... pcs	M5	5	10	13	13	3	M5	4000
4006203	PLS 30	10, 20, 30... pcs	M6	5	10	13	13	3	M6	4000
4006202	PLS 30	10, 20, 30... pcs	M8	5	10	13	13	3	M8	4000
4026207	PLS 40-80*	10, 20, 30... pcs	M5	8	10	13	15	4	M5	4000
4026203	PLS 40-80*	10, 20, 30... pcs	M6	8	10	13	15	4	M6	9000
4026206	PLS 40-80*	10, 20, 30... pcs	M8	8	10	13	15	4	M8	9000

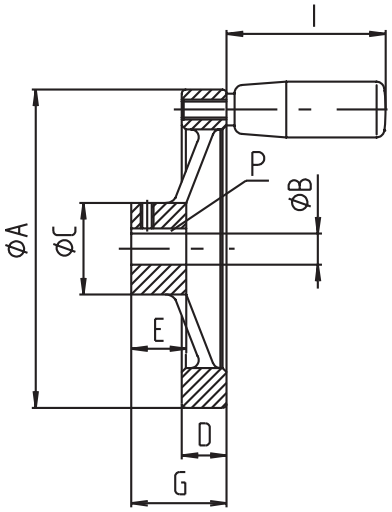
Handwheel

- Rotating cylindrical grip
- Fully turned wheel rim
- Hub machined

Material: Die-cast aluminium black powder-coating

Diam. 140-200

Diam. 60-100



[mm]

Code No.	Type	A	B	C	D	E	G	P	I
90901	30	60	6	18	13	16	22	2 x 2	28
90903	40	80	8	23	11	17	35	2 x 2	42
90904	50	100	10	28	14	17	30	3 x 3	52
90905	60	140	12	36	16.5	19	36	4 x 4	66
90918	80	160	14	36	18	20	36	5 x 5	80
90928	80	200	14	43	20	24	44	5 x 5	80

Drive

Order instruction:

- Reductions 1:1.5, 1:2, 1:3, 1:4 or 1:5 on request

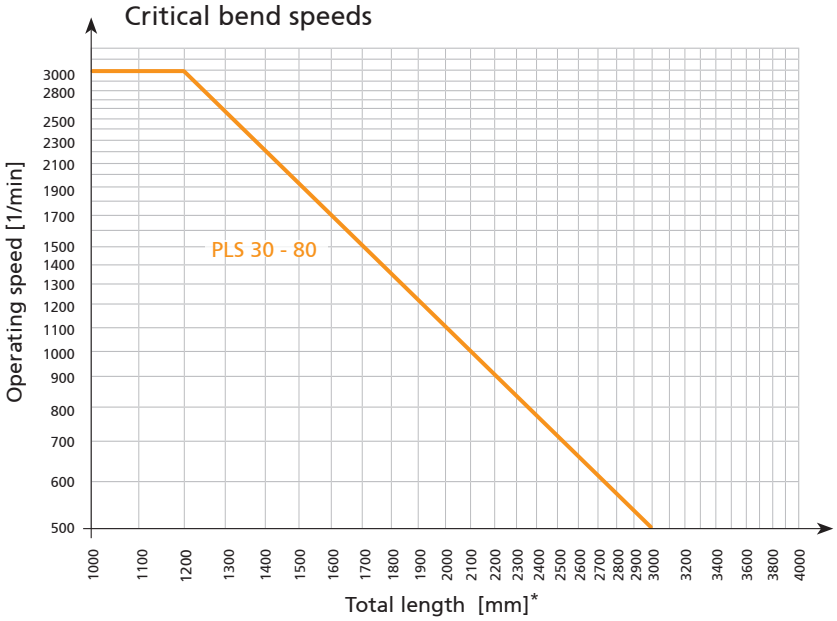
Angular gear

- Fits all on PLS
- Can be retrofitted
- Low torsional backlash
- Low noise level
- Spiral toothing

Scope of delivery:
Angular gear 1:1,
Fastenings on PLS and synchronisation shaft depending on system

Technical data angular gear

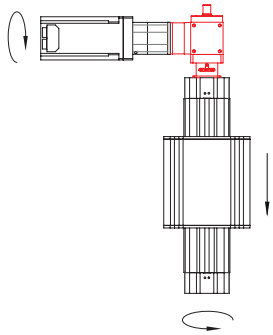
	For PLS 30-80	
Reduction		1:1
Drive speed	min^{-1}	3000
Torsional backlash at output shaft	arcmin	≤ 9
Efficiency at full load	%	> 98
Running noise at 1500 rpm	db(A)	≤ 70
Weight	Kg	4,5
Surface		Primer RAL 9005 – black matt
Geometric moment of inertia	$Kgcm^2$	1,79
Idle torque	Nm	0,4



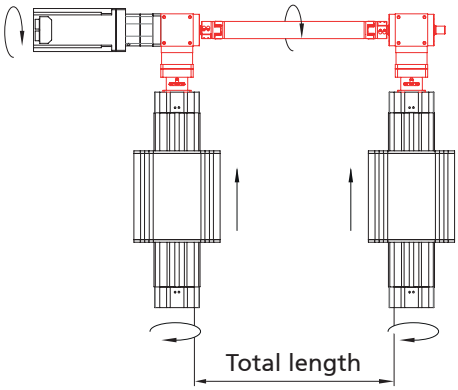
***To calculate the critical bending speed of system 4, use half of the total length.**

Angular gear for PLS

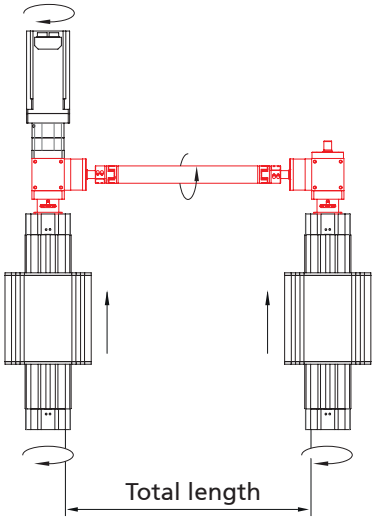
System 1



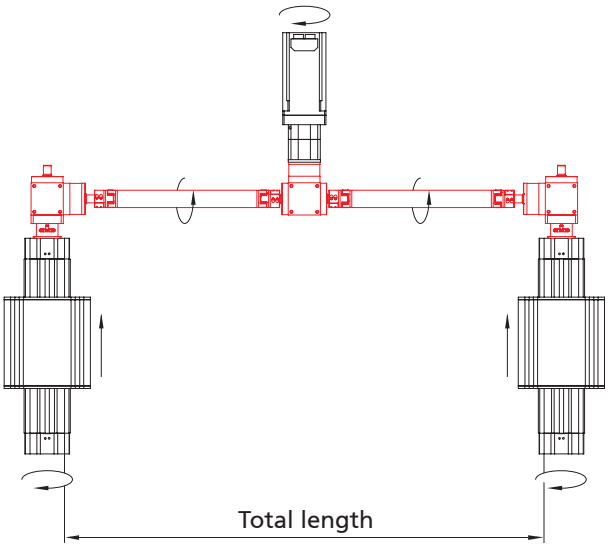
System 2



System 3



System 4



[mm]

Code No.	Type	Basic length (minimum length)	Max. length (clearance)	Weight [kg]	
				Basic length	per 100 mm travel
982_ _ A1A0000	Angular gear system 1	-	-	5,5	-
982_ _ A1B_ _ _ _	Angular gear system 2	229	2984	10,5	0,1
982_ _ A1C_ _ _ _	Angular gear system 3	334	3089	10,5	0,1
982_ _ A1D_ _ _ _	Angular gear system 4	593	6153	10,5	0,1

Total length (mm)

20 = PLS 30
21 = PLS 40
22 = PLS 50
23 = PLS 60
24 = PLS 80

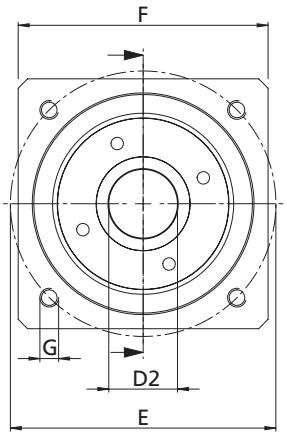
Note:
Additional information, dimensions, accessories and necessary tools for assembling the angular gears can be found
Chapter:
Motors and controls

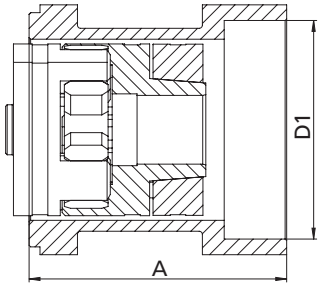
Drive

Selection table motor adaptor/coupling PLS for three phase motors

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

Motor adapter kit, servo coupling with zero backlash and fixation material





Manufacturers	Motor	PLS 30	PLS 40	PLS 50	PLS 60	PLS 80
RK Rose + Krieger	90/120W	94981	949100	949605	949107	94958
		910920 0612	911430 0812	911430 1012	911940 1212	911940 1214
	180/250W	–	949101	94935	949108	94940
		–	911430 0814	911430 1014	911430 1214	911940 1414

Code No. Motor adaptor:
949108

Code No. Coupling with specification of shaft diameter
1st end= 12 mm
2st end= 14 mm
911430 1214

Selection table Motor adaptor/PLS coupling for servomotors without gear

Manufacturers	Motor	PLS 30	PLS 40	PLS 50	PLS 60	PLS 80	Motor flange	Motor shaft
RK Rose + Krieger	RK-AC 118	949207 911430 0611	949208 911430 0811	–	–	–	IM B5 56	Ø11x23
	RK-AC 240	–	949227 911430 0814	949228 911430 1014	949229 911940 1214	949230 911940 1414	IM B5 56	Ø14x30
	RK-AC 470	–	–	–	949241 911940 1219	949242 911940 1419	IM B5 63	Ø19x40
Baumüller	DSD2-036	949207 911430 0611	949208 911430 0811	–	–	–	IM B5 56	Ø11x23
	DSD2-045	–	949227 911430 0814	949228 911430 1014	949229 911940 1214	949230 911940 1414	IM B5 56	Ø14x30
Bosch	MSK050B, MSK050C	–	–	–	949241 911940 1219	949242 911940 1419	IM B5 63	Ø19x40
Lenze	MCS06I, MCS06F	949207 911430 0611	949208 911430 0811	–	–	–	IM B5 56	Ø11x23
	MCS09D, MCS09F, MCS09H, MCS09L	–	949227 911430 0814	949228 911430 1014	949229 911940 1214	949230 911940 1414	IM B5 56	Ø14x30
Lti / Keba	LSP10	–	–	–	949241 911940 1219	949242 911940 1419	IM B5 63	Ø19x40
Parker	SMH 60, SMHA 60	949207 911430 0611	949208 911430 0811	–	–	–	IM B5 56	Ø11x23
	SMH 82, SMHA 82	–	949227 911430 0814	949228 911430 1014	949229 911940 1214	949230 911940 1414	IM B5 56	Ø14x30
	SMH 100, SMHA 100	–	–	–	949241 911940 1219	949242 911940 1419	IM B5 63	Ø19x40
SEW	CMP50S, CMP50M, CMP50L	949207 911430 0611	949208 911430 0811	–	–	–	IM B5 56	Ø11x23
	CMP63S, CMP63M, CPM63L	–	949227 911430 0814	949228 911430 1014	949229 911940 1214	949230 911940 1414	IM B5 56	Ø14x30
Siemens	1FK2105	–	–	–	949241 911940 1219	949242 911940 1419	IM B5 63	Ø19x40

Code No. Motor adaptor:
949241

Code No. Coupling with specification of shaft diameter
1st end=12 mm
2st end=19 mm
911940 1219

For dimensions and order data for motor adaptor and coupling, please refer to next page.

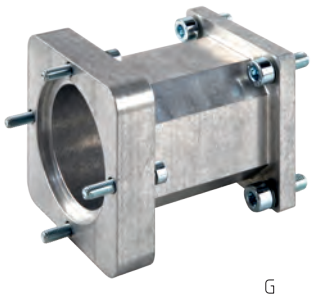
Note:
For further details on motor versions, please refer to the chapter "Motors and controls"

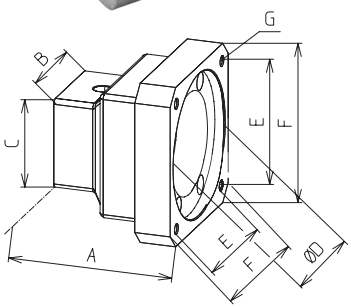
Drive

Motor adapter

- Simple assembly on linear unit and motor
- Exact fit due to centering shoulders

Material: Aluminium,





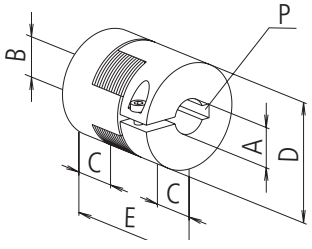
[mm]

Code No.	Type	A	B	C	D	E	F	G
949207	30	63	40	40	60	53	70	M5
94981	30	65	40	40	50	46	80	M5
949208	40	65	50	50	60	53	70	M5
949227	40	73	50	50	80	70,7	90	M6
949100	40	73	50	50	50	46	80	M5
949101	40	73	50	50	80	100	Ø120	Ø6,6
949209	50	66	52	52	60	53	70	M5
949228	50	73	52	52	80	70,7	90	M6
949605	50	73	52	52	50	65	80	M5
94935	50	73	52	52	80	100	Ø120	Ø6,6
949210	60	66	60	60	60	53	70	M5
949229	60	81	60	60	80	70,7	90	M6
949241	60	91	60	60	95	81,3	115	M8
949107	60	85	60	60	50	65	80	M5
949108	60	75	60	60	80	100	Ø120	Ø6,6
949404	80	74	80	80	60	53	70	M5
949230	80	86	80	80	80	70,7	90	M6
949242	80	96	80	80	95	81,3	115	M8
94958	80	86	80	80	50	46	80	M5
94940	80	86	80	80	80	100	Ø120	Ø6,6

Coupling

- Small size
- Shaft connection without backlash
- Maintenance-free
- Easy plug-in assembly

Material: Aluminium



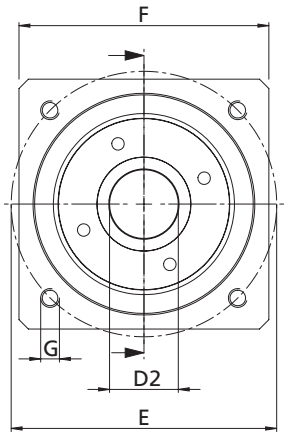
[mm]

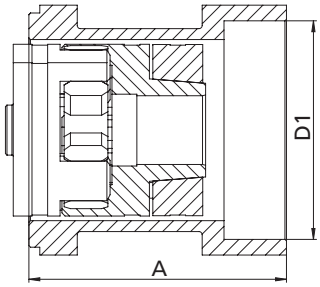
Code No.	ØA	ØB	C	ØD	E	P	Torque [Nm]	
							with feather key	without feather key
9109200695	6	9,5	10	20	30	2x2 / –	5	3
9109200612	6	12	10	22	30	2x2 / 3x3	5	3
9114300611	6	11	11	30	35	2x2 / 4x4	12	6
9114300895	8	9,5	11	30	35	2x2 / –	12	6
9114300811	8	11	11	30	35	2x2 / 4x4	12	6
9114300812	8	12	11	30	35	2x2 / 4x4	12	6
9114300814	8	14	11	30	35	2x2 / 5x5	12	6
9114309510	9,5	10	11	30	35	– / 3x3	12	6
9114309512	9,5	12	11	30	35	– / 4x4	12	6
9114301011	10	11	11	30	35	3x3 / 4x4	12	6
9114301012	10	12	11	30	35	3x3 / 4x4	12	6
9114301014	10	14	11	30	35	3x3 / 5x5	12	6
9114301112	11	12	11	30	35	4x4 / 4x4	12	6
9114301114	11	14	11	30	35	4x4 / 5x5	12	6
9114301212	12	12	11	30	35	4x4 / 4x4	12	6
9114301214	12	14	11	30	35	4x4 / 5x5	12	6
9119409514	9,5	14	25	40	65	– / 5x5	17	10
9119401214	12	14	25	40	65	4x4 / 5x5	17	10
9119401219	12	19	25	40	65	4x4 / 6x6	17	10
9119401414	14	14	25	40	65	5x5 / 5x5	17	10
9119401419	14	19	25	40	65	5x5 / 6x6	17	10

Motor adapter kits on angular gear

- Servo 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 fixation material





Selection table motor adapter kits for servo motors without gear an angular gear

Manufacturers	Motor	Angular gear system 1 + 4 PLS 30 – 80	Angular gear system 2 + 3 PLS 30 – 80	Motor flange	A	D1	D2	E	F	G	Mass [kg]
RK Rose + Krieger	RK-AC 240	949130	949139	IM B5 56	99/94	Ø 80 H7 4 deep	Ø14x30	Ø 100	□82	M6 12 deep	0,86
	RK-AC 470	949131	949140	IM B5 63	109/104	Ø 95 H7 4 deep	Ø19x40	Ø 115	□100	M8 22 deep	1,19/1,2
Baumüller	DSD2-045	949130	949139	IM B5 56	99/94	Ø 80 H7 4 deep	Ø14x30	Ø 100	□82	M6 12 deep	0,86
Beckhoff	AM8041, AM8042, AM8043	On request	On request	IM B5 56			Ø19x40				
Bosch	MSK040B, MSK040C, MSK043C	On request	On request				Ø14x30				
	MSK050B, MSK050C	949131	949140	IM B5 63	109/104	Ø 95 H7 4 deep	Ø19x40	Ø 115	□100	M8 22 deep	1,19/1,2
Kollmorgen	AKM2G-41, AKM2G-42, AKM2G-43, AKM2G-44	On request	On request	IM B5 56			Ø19x40				
Lenze	MCS09D, MCS09F, MCS09H, MCS09L	949130	949139	IM B5 56	99/94	Ø 80 H7 4 deep	Ø14x30	Ø 100	□82	M6 12 deep	0,86
Lti/Keba	LSP10	949131	949140	IM B5 63	109/104	Ø 95 H7 4 deep	Ø19x40	Ø 115	□100	M8 22 deep	1,19/1,2
Mitsubishi	HG-JR53(4), HG-JR 73(4), HG-JR103(4), HG-JR153(4), HG-JR203(4)	On request	On request	IM B5 56			Ø16x40				
Parker	SMH 82, SMHA 82	949130	949139	IM B5 56	99/94	Ø 80 H7 4 deep	Ø14x30	Ø 100	□82	M6 12 deep	0,86
	SMH 100, SMHA 100	949131	949140	IM B5 63	109/104	Ø 95 H7 4 deep	Ø19x40	Ø 115	□100	M8 22 deep	1,19/1,2
SEW	CMP63S, CMP63M, CPM63L	949130	949139	IM B5 56	99/94	Ø 80 H7 4 deep	Ø14x30	Ø 100	□82	M6 12 deep	0,86
Siemens	1FK7040, 1FK042, 1FK043, 1FK2205	On request	On request	IM B5 56			Ø19x40				
	1FK2105	949131	949140	IM B5 63	109/104	Ø 95 H7 4 deep	Ø19x40	Ø 115	□100	M8 22 deep	1,19/1,2

Position determination

Positioning indicator

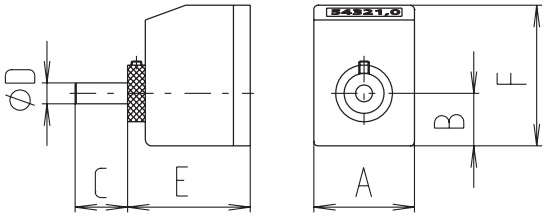
- Permitted ambient temperature +80°C
- Figure height 6 mm
- Reading accuracy ± 0.1 mm

Material: Housing made of polyamide 6
Orange RAL 2004
Steel parts zinc plated

Scope of delivery: Positioning indicator, clamping ring, shaft extension and fastenings

Note: "rising" and "falling" versions refer to the clockwise rotation of the drive shaft.

Installation position: horizontal



Installation position: vertical

[mm]

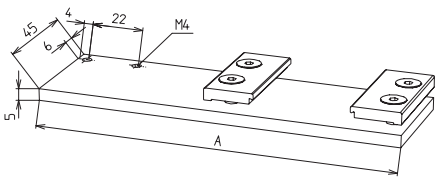
Type	Installation position	Code No.	Version	Code No.	Version*	A	B	C	D	E	F
30	Horizontal	91090	3 mm rising	910151	6 mm rising	48	25	17	6	59	67
30		91093	3 mm falling	910152	6 mm falling	48	25	17	6	59	67
30	Vertical	910110	3 mm rising	910153	6 mm rising	48	25	17	6	59	67
30		910111	3 mm falling	910154	6 mm falling	48	25	17	6	59	67
40	Horizontal	91094	4 mm rising	910155	8 mm rising	48	25	28	8	59	67
40		91095	4 mm falling	910156	8 mm falling	48	25	28	8	59	67
40	Vertical	910112	4 mm rising	910157	8 mm rising	48	25	28	8	59	67
40		910113	4 mm falling	910158	8 mm falling	48	25	28	8	59	67
50	Horizontal	91096	4 mm rising	910159	8 mm rising	48	25	30	10	59	67
50		91097	4 mm falling	910160	8 mm falling	48	25	30	10	59	67
50	Vertical	910114	4 mm rising	910161	8 mm rising	48	25	30	10	59	67
50		910115	4 mm falling	910162	8 mm falling	48	25	30	10	59	67
60	Horizontal	91005	4 mm rising	91076	8 mm rising	48	30	38	12	59	73
60		91015	4 mm falling	91077	8 mm falling	48	30	38	12	59	73
60	Vertical	91025	4 mm rising	91078	8 mm rising	48	30	38	12	59	73
60		91035	4 mm falling	91079	8 mm falling	48	30	38	12	59	73
80	Horizontal	91008	5 mm rising	91082	10 mm rising	48	25	38	14	59	81
80		91018	5 mm falling	91083	10 mm falling	48	25	38	14	59	81
80	Vertical	91028	5 mm rising	91084	10 mm rising	48	25	38	14	59	81
80		91038	5 mm falling	91085	10 mm falling	48	25	38	14	59	81

* Versions with double pitch, e.g. for mounting on righthand/lefthand screws

Holder for mechanical limit switch

- Clamping with fixing plates to guide profile
- Simple axial displacement and adjustment of holder is possible

Material: AlMgSi, clear, anodised, zinc plated fastenings



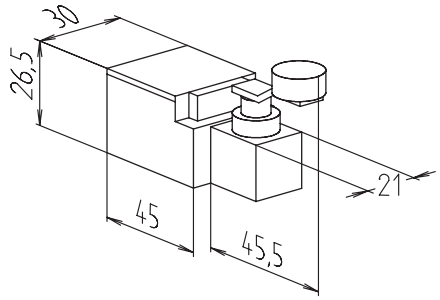
[mm]

Code No.	Type	Version	A
92784	PLS (PLZ) 30	Holder with fastenings without limit switch	110
92785	PLS (PLZ) 40		130
92786	PLS (PLZ) 50		150
92787	PLS (PLZ) 60		177
92788	PLS (PLZ) 80		197

Mechanical limit switch

- Limit switch with angle lever
- Compact design

Material: Thermoplastic, fully insulated



Max. voltage	250 V AC
Max. switching current	6 A
Max. starting current	16 A
Operating cycles	Max. 6,000/h
Mechanical lifetime	1 x 10^7 switching cycles
Axis lever adjustment	Engages at l 360°
Protection class	IP 65
Ambient temperature	-30°C to +80°C

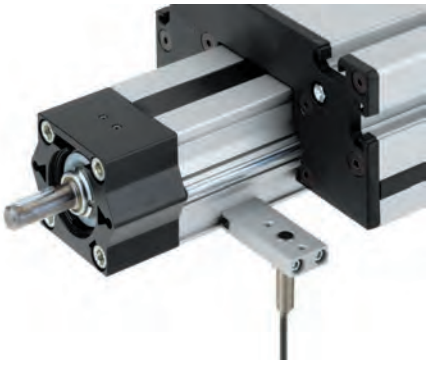
Code No.	Type	Switching function
91905	PLS 30-80	NC/NO

Position determination

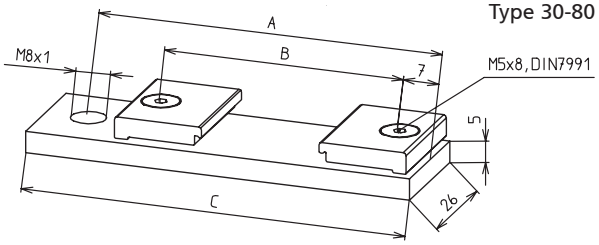
Holder for inductive limit switch

- Clamping on guide profile
- Simple axial displacement and adjustment of holder is possible
- Holder with fastenings without limit switch

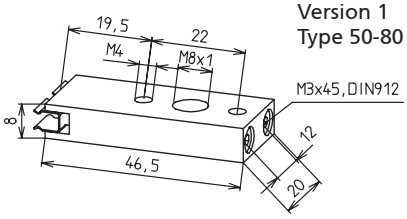
Material: AlMgSi, clear, anodised, zinc plated fastenings



Version 2
Type 30-80



Version 1
Type 50-80



[mm]

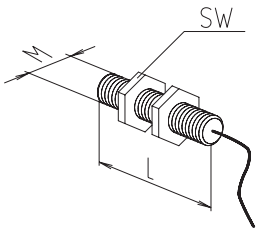
Code No.	Type	Version	A	B	C
92990	PLS 30	2	64.5	46	74
92991	PLS 40	2	80	56	90
92992	PLS 50	2	96	66	106
92993	PLS 60	2	80	80	123.5
92994	PLS 80	2	133.5	100	143.5
92986	PLS 50-80	1	–	–	–

Inductive limit switch

- Function indicator (LED)
- Maintenance-free

Material: Housing: stainless steel

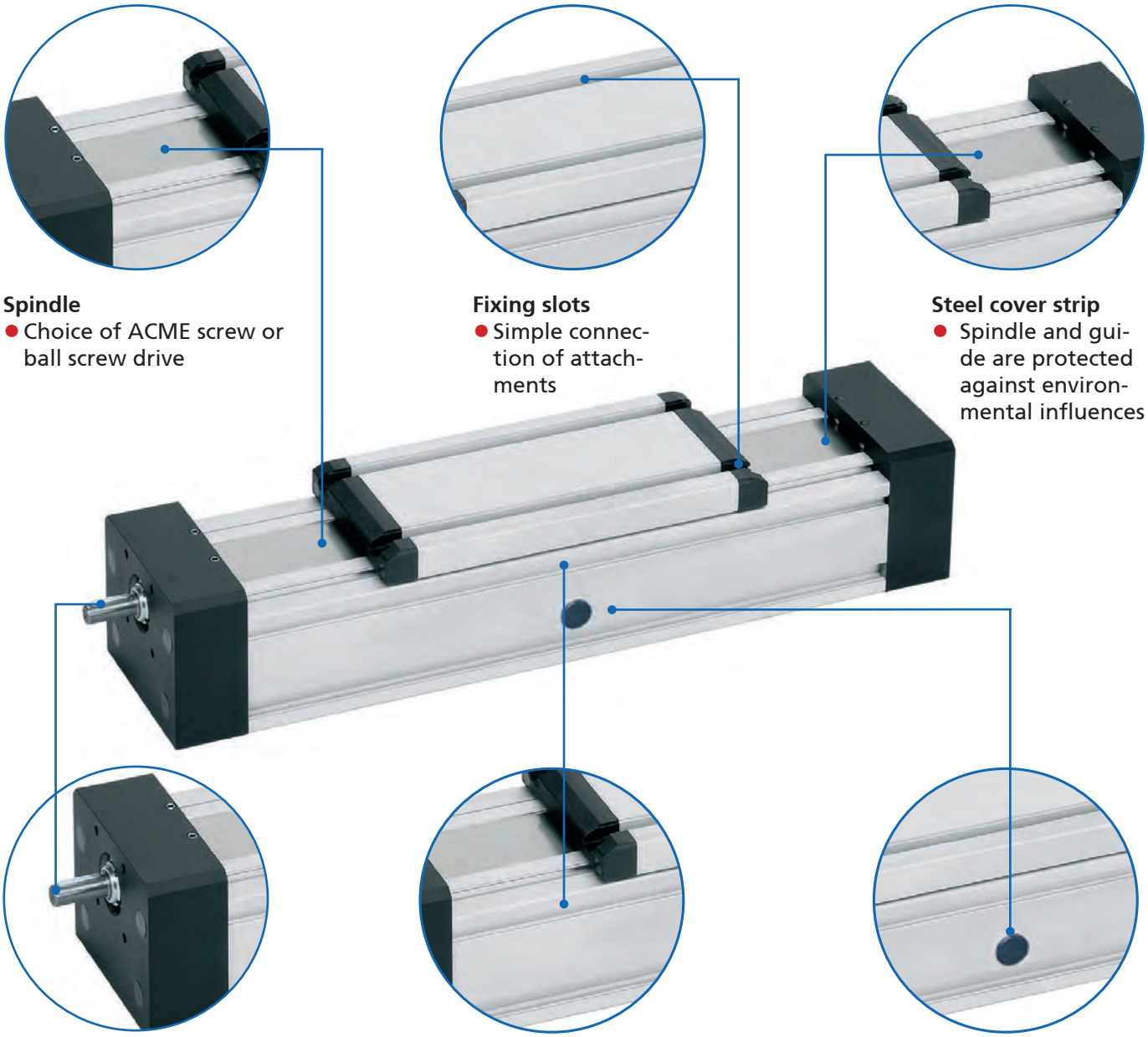
Type	30-80
Voltage	10 - 30 V DC
Max. switching current	150 mA
Operating distance	2 mm for steel
Protection class	IP 67
Ambient temperature	-25°C to +70°C
Cable lengths	2m



[mm]

Code No.	Type	Switching function	L	M	Wrench size (SW)
92826	PLS 30-80	Changeover	40	8x1	13

The all-rounder with encapsulated drive/guiding concept



Spindle
- Choice of ACME screw or ball screw drive

Fixing slots
- Simple connection of attachments

Steel cover strip
- Spindle and guide are protected against environmental influences

Shafts
- Choice of 1 or 2 shafts

Guide system
- Choice of ball rail guide or roller guide
- Completely integrated system

Central maintenance opening

Features:
- Choice of internal ball rail guide or roller guide
- Carriage and guide profile made of extruded aluminium
- Internal components covered Central maintenance opening for roller guide adjustment and lubrication
- Compact and flat design
- BLOCAN® slot geometries for fixing accessories and attachments

Options:
- Second free-running carriage
- Extended carriage
- Alternative screw leads

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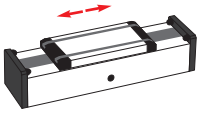
Properties/Technical data

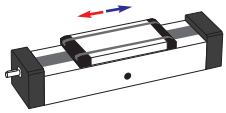
General information/operating conditions ... Page 278

Load data ... Page 279

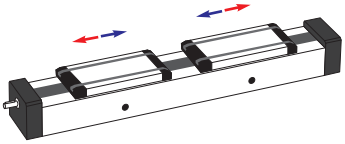
Versions
(Dimensions, order numbers)



RK DuoLine R guide unit ... Page 280 - 281



Righthand thread ... Page 282 -283



Right and lefthand thread ... Page 284 - 285

Accessories

Fixing

Slot stones ... Page 286

Threaded bar ... Page 287

Drive

Motor adaptor ... Page 288

Coupling ... Page 291

Angular drive ... Page 291

Position determination

Limit switches/holder ... Page 292

Technical data

General information/operating conditions

Design	Encapsulated drive and guiding concept, ACME screw drive
Guide	Choice of internal recirculating ball rail or rollers
Installation position	Any position
Lead accuracy	± 0.15 mm/300 mm travel
Self-locking	Yes*
Duty cycle	S3 30% Basic 1h
Ambient temperature	0°C to +60°C

*see Glossary under item Self-locking

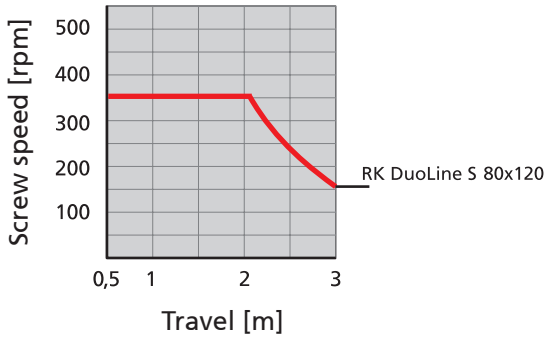
Screw lead

[mm]

Type	Screw lead
120 x 80, 120 x 80 II	4

$$\text{Required screw speed n [rpm]} = \frac{\text{speed [m/min] x 1000}}{\text{screw lead [mm]}}$$

Critical screw speed



No-load torque

[Nm]

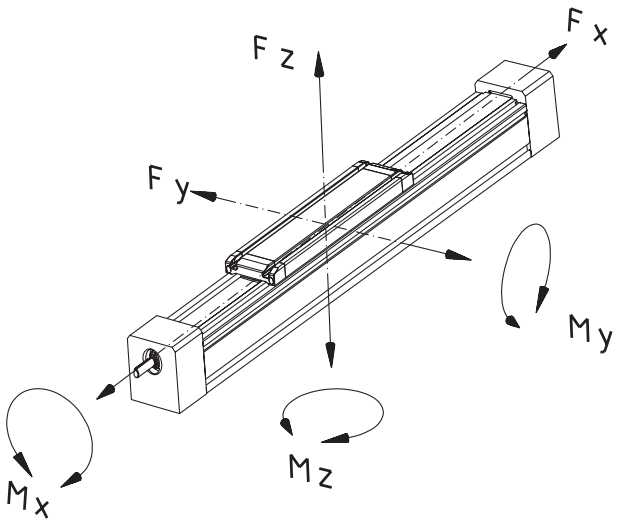
Type	Roller guide	Ball rail guide
RK DuoLine S 120 x 80	0.40	0.60
RK DuoLine S 120 x 80 II	–	0.70

Load data*

F Force [N]

M Moment [Nm]

I Geometric moment of inertia [cm^4]



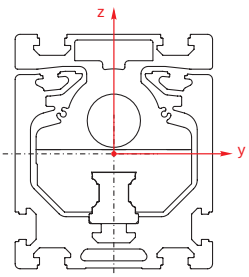
* With reference to carriage (static values, guide element resting on full surface)

Type	Fx	Fy	Fz	Mx	My	Mz
RK DuoLine S 120 x 80 roller guide	3400	2550	2550	118	150	150
RK DuoLine S 120 x 80, ball rail guide	3400	5000	6000	210	430	370
RK DuoLine S 120 x 80 II, ball rail guide	3400	5000	6000	380	430	370

Geometric moment of inertia

[cm^4]

Type	Iy	Iz
RK DuoLine S 120 x 80 roller guide	189.96	595.83
RK DuoLine S 120 x 80, ball rail guide	189.96	595.83
RK DuoLine S 120 x 80 II, ball rail guide	185.94	554.68



Versions

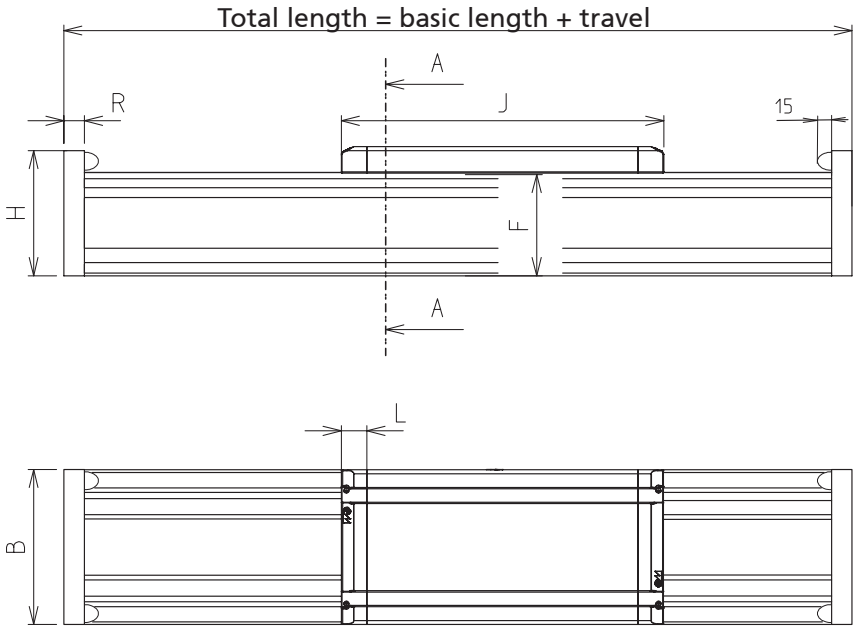
Order instructions:

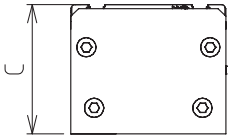
- Longer travel lengths on request
- Second or extended carriage available on request

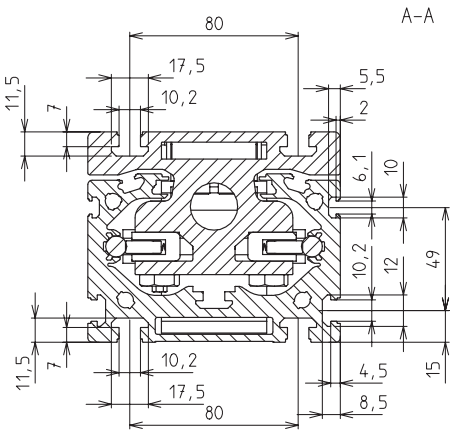
Version ● Guide

Code No.	Type	Basic length	B	C	F	H
MTA1280IA	RK DuoLine 120 x 80 II	312	120	100	79.5	90
MPA1280HA	RK DuoLine 120 x 80	312	120	100	79.5	97

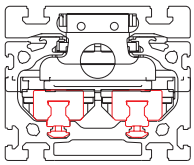
MPA1280HA
- _ _ _ _ Total length = basic length + travel [mm]
- **Guide:** H = roller guide, I = ball rail guide



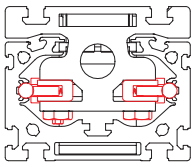




Type 120 x 80



Two ball rail guide
Type 120 x 80 II



Roller guide
Type 120 x 80

[mm]

J	L	R	Max. travel	Mass [kg]	
				Basic length	per 100 mm travel
250	20	16	3750	7.14	1.01
250	20	16	5750	6.10	1.02

Versions

Order instructions:

- Longer travel lengths on request
- Second free-running carriage available on request

Version ● Righthand thread

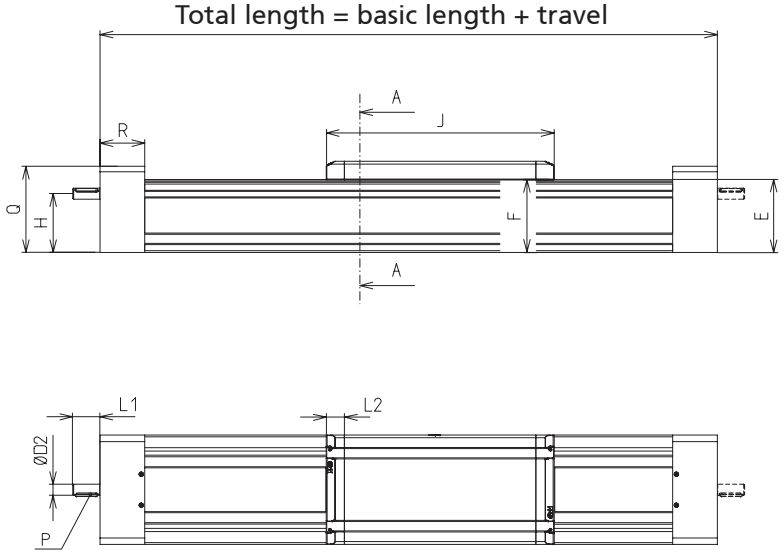
Code No.	Type	Spindle	Basic length	B	C	D1	Ø D2	E	F
TRA1280_I	120 x 80 II	20 x 4	354	120	100	42	12	80	79.5
TCA1280_ H	120 x 80	20 x 4	354	120	100	42	12	80	79.5

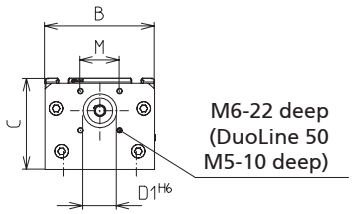
_ _ _ _ Total length = basic length + travel [mm]

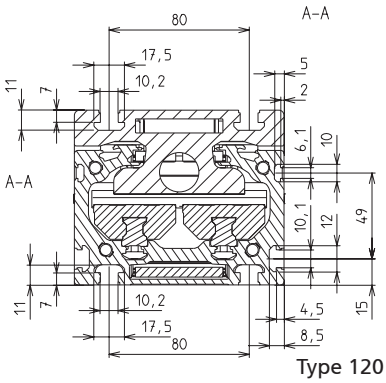
Guide:
H = roller guide
I = ball rail guide

Shafts:
T = 1 drive shaft
U = 2 drive shafts

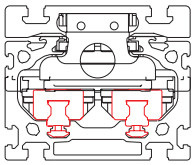
Total length = basic length + travel



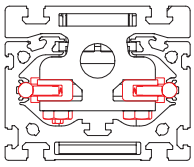




Type 120 x 80



Two ball rail guide
Type 120 x 80 II



Roller guide
Type 120 x 80

[mm]

H	J	L1	L2	M	P	Q	R	Max. travel	Mass [kg]	
									Basic length	per 100 mm travel
64.5	250	30	20	☐ 43	4 x 4 x 25	95.5	52	2924	11.00	1.24
64.5	250	30	20	☐ 43	4 x 4 x 25	95.5	52	2924	9.64	1.24

Versions

Order instructions:

- Longer travel lengths on request
- Extended carriages

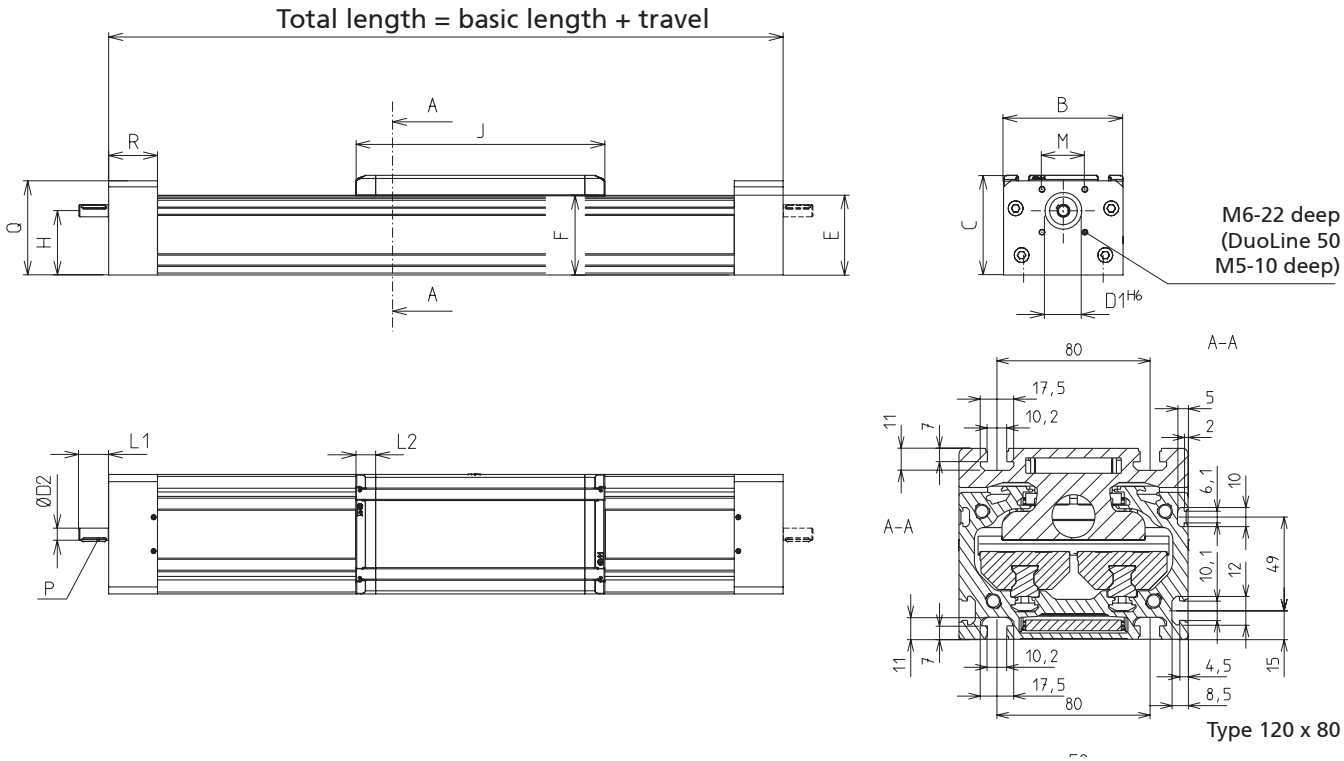
Version ● Right and lefthand thread

Code No.	Type	Spindle	Basic length	B	C	D1	Ø D2	E	F
TRC1280_I	120 x 80 II	20 x 4	604	120	100	42	12	80	79.5
TCC1280_ H	120 x 80	20 x 4	604	120	100	42	12	80	79.5

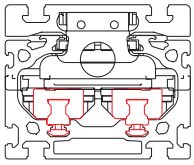
_ _ _ _ Total length = basic length + travel [mm]

Guide:
H = roller guide
I = ball rail guide

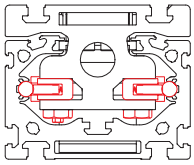
Shafts:
S = 1 drive shaft at lefthand thread end
T = 1 drive shaft at righthand thread end
U = 2 drive shafts



Type 120 x 80



Two ball rail guide
Type 120 x 80 II

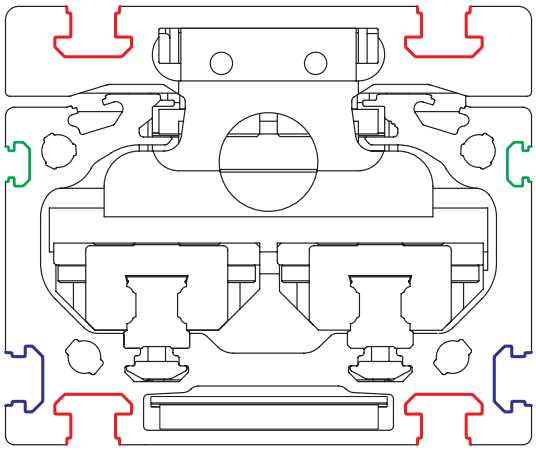


Roller guide
Type 120 x 80

[mm]

H	J	L1	L2	M	P	Q	R	Max. travel	Mass [kg]	
									Basic length	per 100 mm travel
64.5	250	30	20	☐ 43	4 x 4 x 25	95.5	52	2924	13.06	1.24
64.5	250	30	20	☐ 43	4 x 4 x 25	95.5	52	2924	12.28	1.21

Fixing



Type 120 x 80

40 slot geometry
30 slot geometry
20 slot geometry

Order instruction square nut:

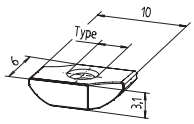
- Purchase only in lot sizes and a multiple of that, see product table below

- Profile slots in the carriage and the guide profile facilitate fixation
- Slot stones can be inserted and positioned at the guide profile and carriage

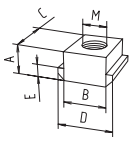
Material: zinc plated steel

Slot stones

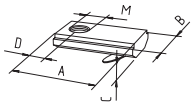
Slot stone -B-
can be swivelled into the slot



Slot stone -N-
can be slid into the slot

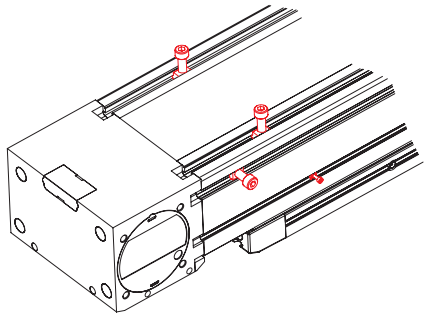


Slot stone -K-
can be swivelled into the slot



[mm]

Code No.	Type	lot sizes	Slot geometry	A	B	C	D	E	M8M	F [N]
Slot stone -B-										
E00017CEE	M3	10, 20, 30... pcs	20							
E00058CEE	M4	10, 20, 30... pcs	20							
Slot stone -N-										
4006202	M8	10, 20, 30... pcs	30	5	10	13	13	3	M8	4000
4026206	M8	10, 20, 30... pcs	40	8	10	13	13	4	M8	9000
Slot stone -K-										
4006211	M5	10, 20, 30... pcs	30 or higher	21	12	4	7	–	M5	5000
4006212	M6	10, 20, 30... pcs	30 or higher	21	12	4	7	–	M6	5000
4016212	M6	10, 20, 30... pcs	40	21	14	4	7	–	M6	5000

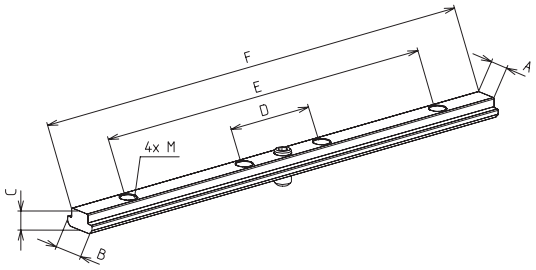


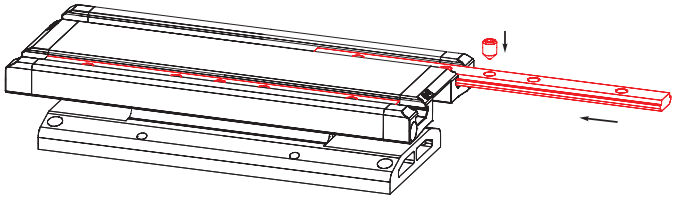
View of DuoLine from below

Threaded bar

- Threaded strip for lateral insertion in the profile slot
- Fixing in carriage with set screw

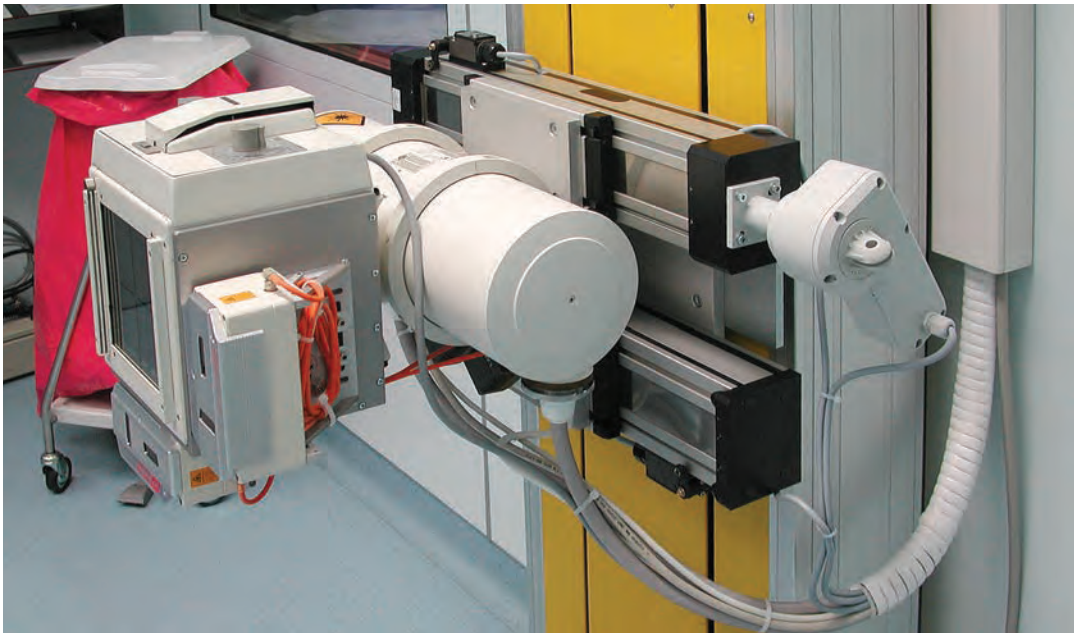
Material: zinc plated steel





[mm]

Code No.	Version	Slot geometry	A	B	C	D	E	F	M
4816500	RK DuoLine 120 x 80 (II)	40	10	15	8	40	160	210	M8



X-ray head adjustment using RK DuoLine S

Drive

Selection table Motor adaptor/RK DuoLine S coupling for three-phase motor

Manufacturers	Motor	RK DuoLine S 120
RK Rose + Krieger	90/120W	949060
		911940 1212
	180/250W	949061
		911430 1214

Code No. Motor adaptor: **949061**
Code No. Coupling with specification of shaft diameter 1st end=12 mm 2st end=14 mm **911430 1214**

Selection table Motor adaptor/RK DuoLine S coupling for servomotors without gear

Manufacturers	Motor	RK DuoLine S 120	Motor flange	Motor shaft
RK Rose + Krieger	RK-AC 118	949053	IM B5 56	Ø11x23
		911430 1112		
	RK-AC 240	949055	IM B5 56	Ø14x30
		911940 1214		
	RK-AC 470	949057	IM B5 63	Ø19x40
		911940 1219		
Baumüller	DSD2-036	949053	IM B5 56	Ø11x23
		911430 1112		
	DSD2-045	949055	IM B5 56	Ø14x30
		911940 1214		
Bosch	MSK050B, MSK050C	949057	IM B5 63	Ø19x40
		911940 1219		
Lenze	MCS06I, MCS06F	949053	IM B5 56	Ø11x23
		911430 1112		
	MCS09D, MCS09F, MCS09H, MCS09L	949055	IM B5 56	Ø14x30
		911940 1214		
Lti / Keba	LSP10	949057	IM B5 63	Ø19x40
		911940 1219		
Parker	SMH 60, SMHA 60	949053	IM B5 56	Ø11x23
		911430 1112		
	SMH 82, SMHA 82	949055	IM B5 56	Ø14x30
		911940 1214		
	SMH 100, SMHA 100	949057	IM B5 63	Ø19x40
		911940 1219		
SEW	CMP50S, CMP50M, CMP50L	949053	IM B5 56	Ø11x23
		911430 1112		
	CMP63S, CMP63M, CPM63L	949055	IM B5 56	Ø14x30
		911940 1214		
Siemens	1FK2105	949057	IM B5 63	Ø19x40
		911940 1219		

Code No. Motor adaptor:
949057

Code No. Coupling with specification of shaft diameter
1st end=12 mm
2st end=19 mm
911940 1219

For dimensions and order data for motor adaptor and coupling, please refer to next page.

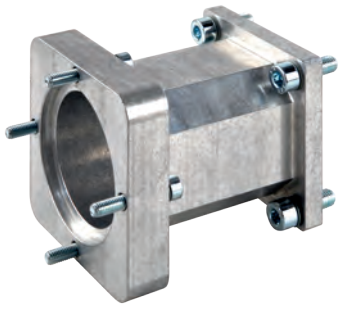
Note:
For further details on motor versions, please refer to the chapter "Motors and controls"

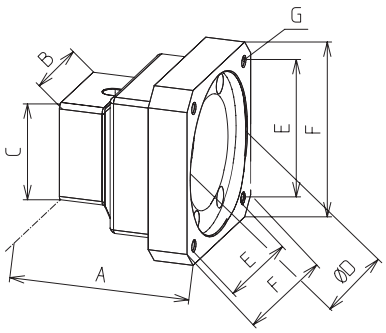
Drive

Motor adaptor

- Simple assembly on linear unit and motor
- Exact fit due to centering shoulders

Material: Aluminium





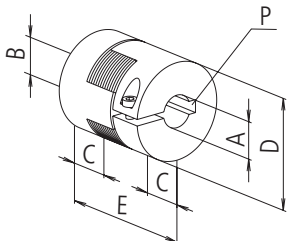
[mm]

Code No.	Type	A	B	C	D	E	F	G
949053	120x80 120x80 II	66	60	60	60	53	70	M5
949055		81	60	60	80	70,7	90	M6
949057		91	60	60	95	81,3	115	M8
949060		75	60	60	50	65	80	M5
949061		75	60	60	80	100	Ø120	Ø6,6

Coupling

- Small size
- Shaft connection without backlash
- Maintenance-free
- Easy plug-in assembly

Material: Aluminium, black anodised



[mm]

Code No.	ØA	ØB	C	ØD	E	P	Torque [Nm]	
							with feather key	without feather key
9109200695	6	9,5	11	30	35	2x2 / –	12	6
9109200612	6	12	11	30	35	2x2 / 4x4	12	6
9114300611	6	11	11	30	35	2x2 / 4x4	12	6
9114300616	6	16	11	30	35	2x2 / 5x5	12	6
9114300895	8	9,5	11	30	35	2x2 / 5x5	12	6
9114300811	8	11	11	30	35	4x4 / 4x4	12	6
9114300812	8	12	11	30	35	4x4 / 5x5	12	6
9114300814	8	14	11	30	35	2x2 / 5x5	12	6
9114309510	9,5	10	11	30	35	– / 3x3	12	6
9114309512	9,5	12	11	30	35	– / 4x4	12	6
9114301011	10	11	11	30	35	3x3 / 4x4	12	6
9114301012	10	12	11	30	35	3x3 / 4x4	12	6

Angular drive

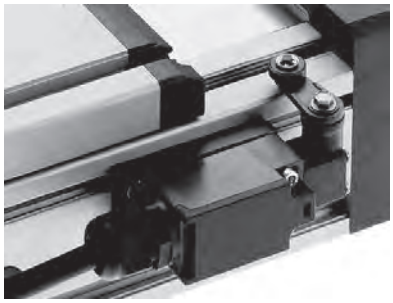
- Angular drives for RK DuoLine S available on request.

Position determination

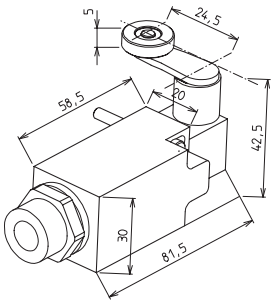
Mechanical limit switch

- Limit switch with angle lever
- Compact design

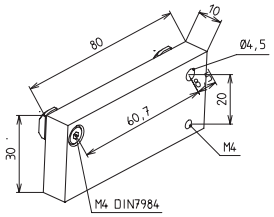
Material: Thermoplastic, self-extinguishing



Max. voltage	230 V AC
Max. switching current	4 A
Max. starting current	10 A
Operating frequency	Max. 5000/h
Mechanical lifetime	20 x 10^6 switching cycles
Axis lever adjustment	locking by 360°
Protection class	IP 67
Ambient temperature	-30°C to +80°C



Type 120 x 80

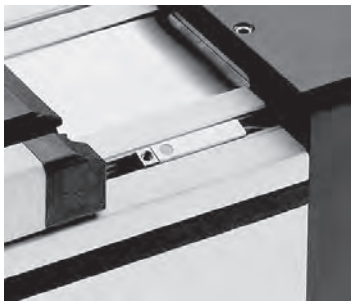


Code No.	Type	Version
92701	120 x 80	Limit switch NC/NO with bracket

Inductive limit switch

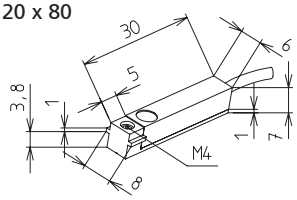
- Maintenance-free

Material: Switch housing, aluminium, anodised

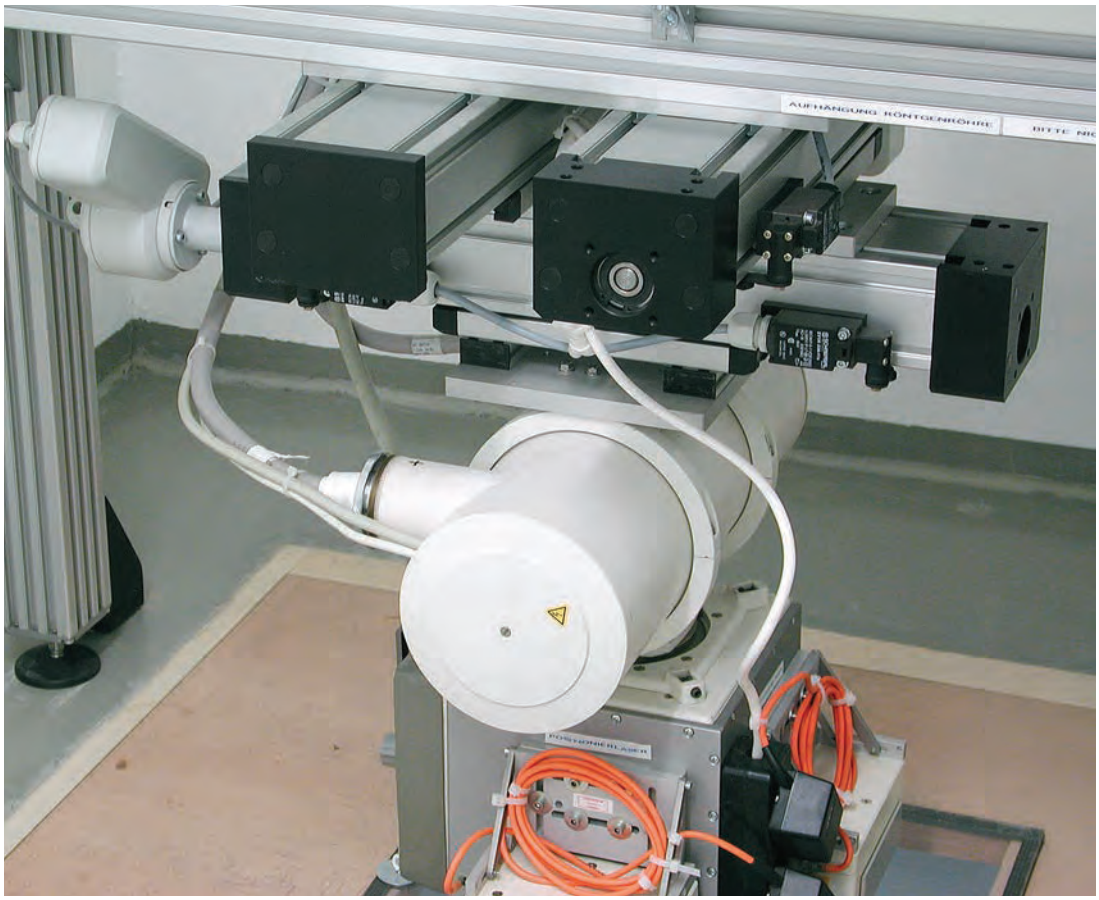


Voltage	10-30 V DC
Max. switching current	10 mA
Max. starting current	100 mA
Operating frequency	max. 5 kHz
Mechanical lifetime	independent of operating cycles
Operating distance	1.5 mm
Protection class	IP 67
Ambient temperature	-25°C to +75°C

Type 120 x 80

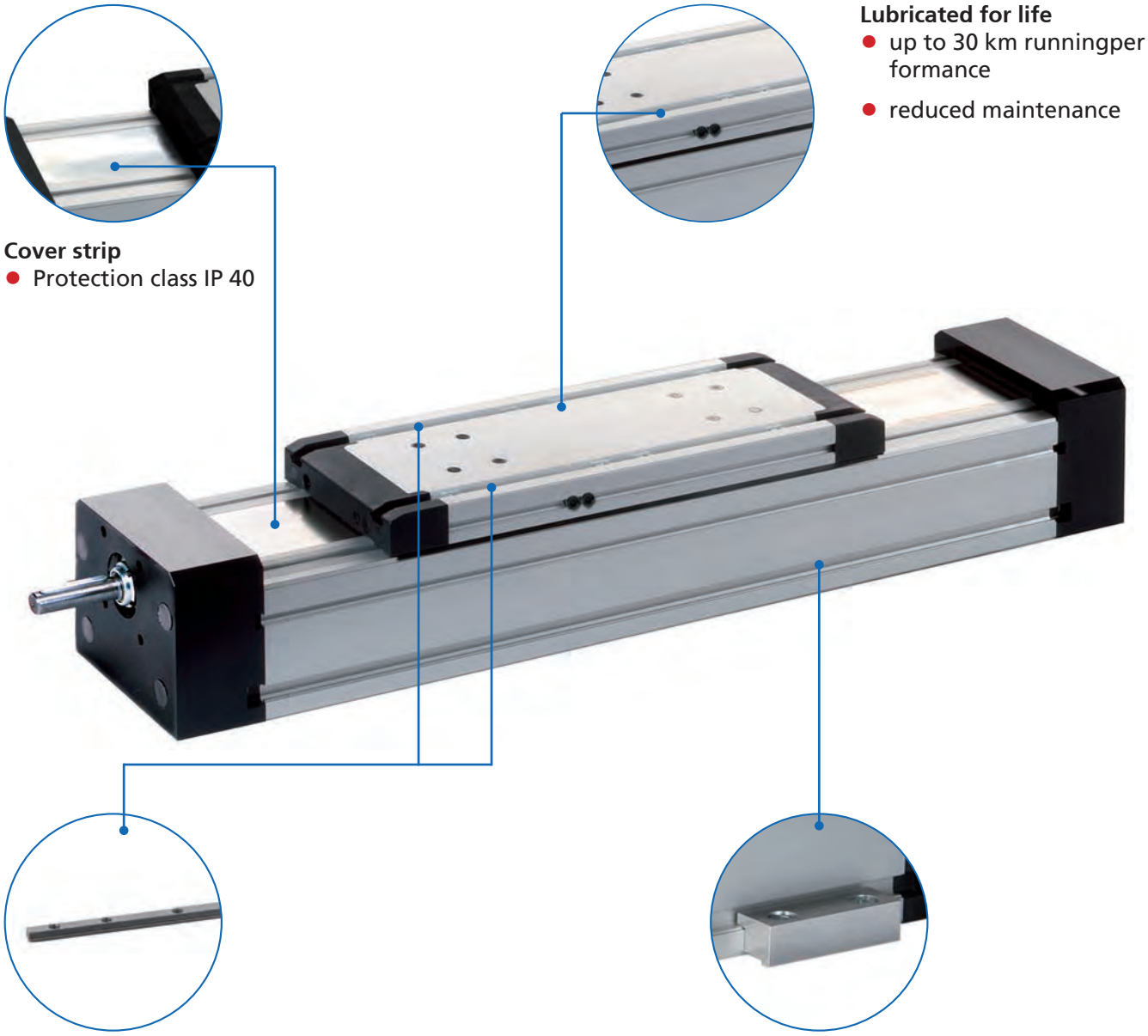


Code No.	Type	Version
92929	120 x 80	NC, with bracket



Suspension of an x-ray tube. X-Y adjustment of RK DuoLine S via EHL

Spindle unit RK DuoLine S with trapezoidal thread



Lubricated for life
- up to 30 km runningper formance
- reduced maintenance

Cover strip
- Protection class IP 40

Slot stone bar
- Fixes your load securely

Clamping bars
- Reliable fixation of the unit

Features:

- Max. travel speed regardless of length
- Lifetime lubricated

RK DuoLine S Protect
- IP 40 protection class due to steel cover strip and seals
- high Positioning accuracy

- Multiple moving screw supports
- Repeatability ± 0,1 mm

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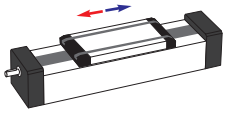
Properties/Technical data

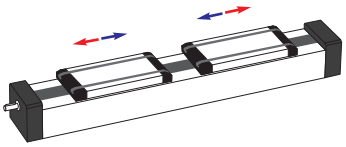
General information/operating conditions ... Page 296

Load data ... Page297

Versions
(Dimensions, order numbers)



Righthand thread ... Page 298



Right and lefthand thread ... Page 300

Accessories

Fixing

Fixation of payload ... Page 302

Clamping strips ... Page 302

Slot stones ... Page 303

Drive

Motor adapter ... Page 306

Position determination

Limit switch ... Page 310

Technical data

General information / operating conditions

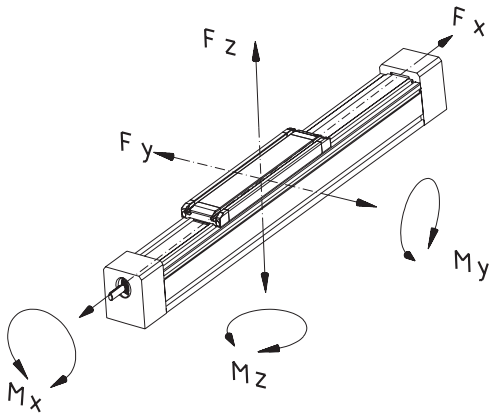
	RK DuoLine S 60	RK DuoLine S 80
Guidance system	Ball rail system	Ball rail system
Installation position	any position	any position
Input torque max.	3.0 Nm	9.0 Nm
Max. speed	0.02 m/s	0,02 / 0,04 m/s (regardless of travel)
Max. acceleration	3 m/s²	3 m/s²
Repeat accuracy	± 0.1 mm	± 0,1 mm
Positioning accuracy	-	-
Max. no-load torque	0.8 Nm	1.0 Nm
Drive	Trapezoidal thread Ø16, Pitch 4	Trapezoidal thread, Ø20, Pitch 4 or 8 mm, on the right
Pitch accuracy	(± 0.1 / 300 mm)	(± 0,1 / 300 mm)
Self-Locking	Yes*	Yes*
Duty cycle	S3 30% Basic 1h	S3 30% Basis 1h
Ambient temperature	0 to +60°C	0 bis +60°C
Degree of protection	IP 40	IP 40

* see Glossary under item Self-locking

Dynamic load data

F Force [N]

M Torque [Nm]

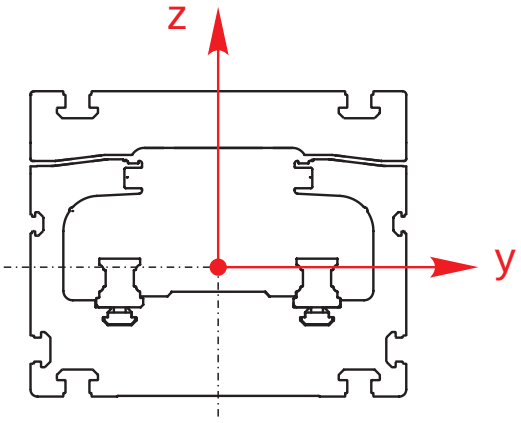


Spindle drive							
Load data	**Spindle**	**Fx**	**Fy**	**Fz**	**Mx**	**My**	**Mz**
Standard guide carriage							
RK DuoLine S 60	16x4	1400	700	2500	48	160	140
RK DuoLine S 80	20x4 / 20x8	2500	1000	4100	100	380	350
Extended guide carriage							
RK DuoLine S 60	16x4	1400	700	2500	48	250	220
RK DuoLine S 80	20x4 / 20x8	2500	1000	4100	100	620	550

Geometric moment of inertia

[cm^4]

	Iy	**Iz**
RK DuoLine S 60	48.97 cm^4	61.84 cm^4
RK DuoLine S 80	116.76 cm^4	165.75 cm^4



Versions

Order instructions:

- Second free concurrent carriage on request
- Also available without screw drive as a torque support
- Lubrication over carriages on request

Versions ● Righthand thread

Key feature:

- Lubricated for life up to 30 km running performance

Code No.	Type	Basic length	B	C	D1	D2
TD13A5A1A15B0_ _ _ _	RK DuoLine S 60 Protect	321	60	80	Ø32^{H7} 2.3 deep	Ø10$_{k7}$
TD13A5A1B15B0_ _ _ _	RK DuoLine S 60 Protect with extended guide carriage	411	60	80	Ø32^{H7} 2.3 deep	Ø10$_{k7}$

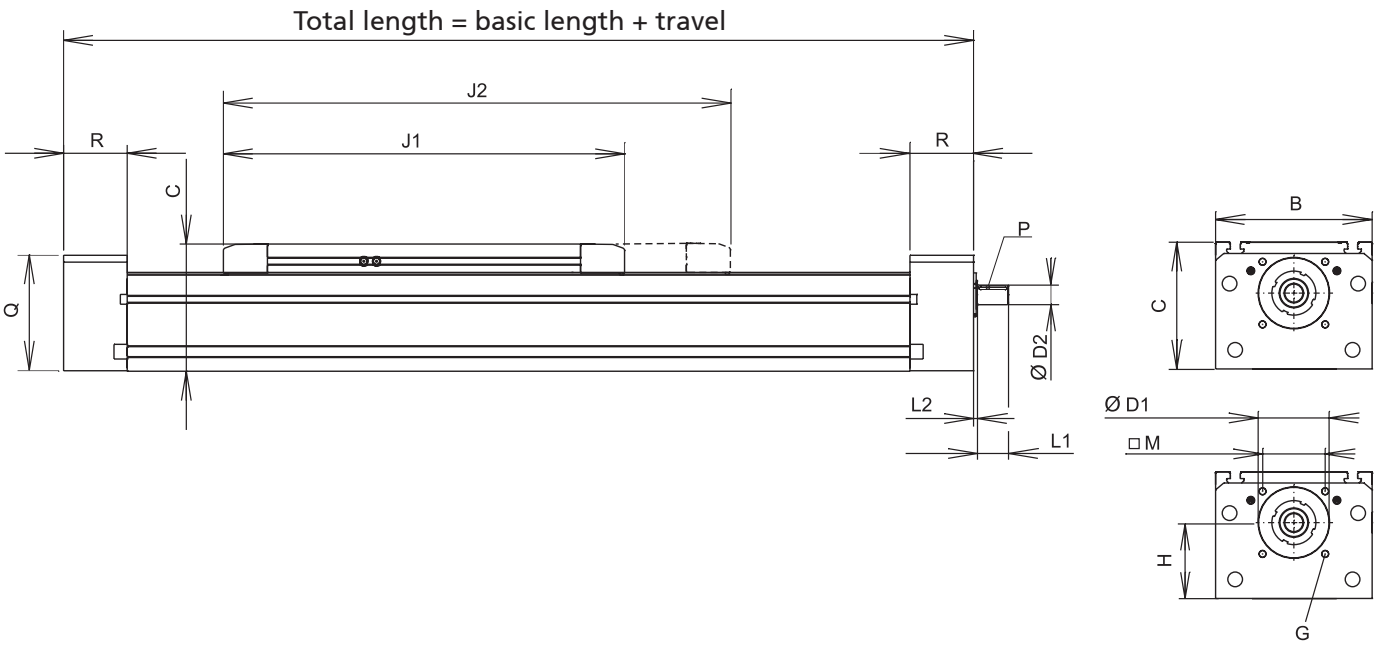
Total length (basic length + travel) mm

Trapezoidal screw:
16x4

Code No.	Type	Basic length	B	C	D1	D2
TD13A2A1A1 _B0_ _ _ _	RK DuoLine S 80 Protect	370	80	100	Ø42^{H7} 2.3 deep	Ø14$_{k7}$
TD13A2A1B1 _B0_ _ _ _	RK DuoLine S 80 Protect with extended guide carriage	502	80	100	Ø42^{H7} 2.3 deep	Ø14$_{k7}$

Total length (basic length + travel) mm

Trapezoidal screw:
5 = 20x4
6 = 20x8



[mm]

G	H	J1	J2	L1	L2	M	P	Q	R	Max. travel	Mass [kg]	
											Basic length	per 100 mm travel
M5-10 deep	47.7	245	-	17.2	2.8	33x24	3x3x12	72.2	38	2664	3.44	0.60
M5-10 deep	47.7	-	335	17.2	2.8	33x24	3x3x12	72.2	38	2574	4.26	0.60

[mm]

G	H	J1	J2	L1	L2	M	P	Q	R	Max. travel	Mass [kg]	
											Basic length	per 100 mm travel
M6-18 deep	57.5	278	-	30	3.8	□46±0.2	5x5x25	89	46	2890	6.74	0.96
M6-18 deep	57.5	-	410	30	3.8	□46±0.2	5x5x25	89	46	2758	8.01	0.96

Versions

Order instructions:

- Lubrication over carriages on request
- Extended carriages on request

Version ● Right- and lefthand thread

Version
- Right and lefthand thread
  DuoLine S 60 16x4
  DuoLine S 80 20x4

Key feature:

- Lubricated for life up to 30 km running performance

Code No.	Type	Basic length	B	C	D1	D2
TD13A5_1A15B0_ _ _ _	RK DuoLine S 60 Protect	566	60	80	Ø32^{H7} 2.3 deep	Ø10$_{k7}$

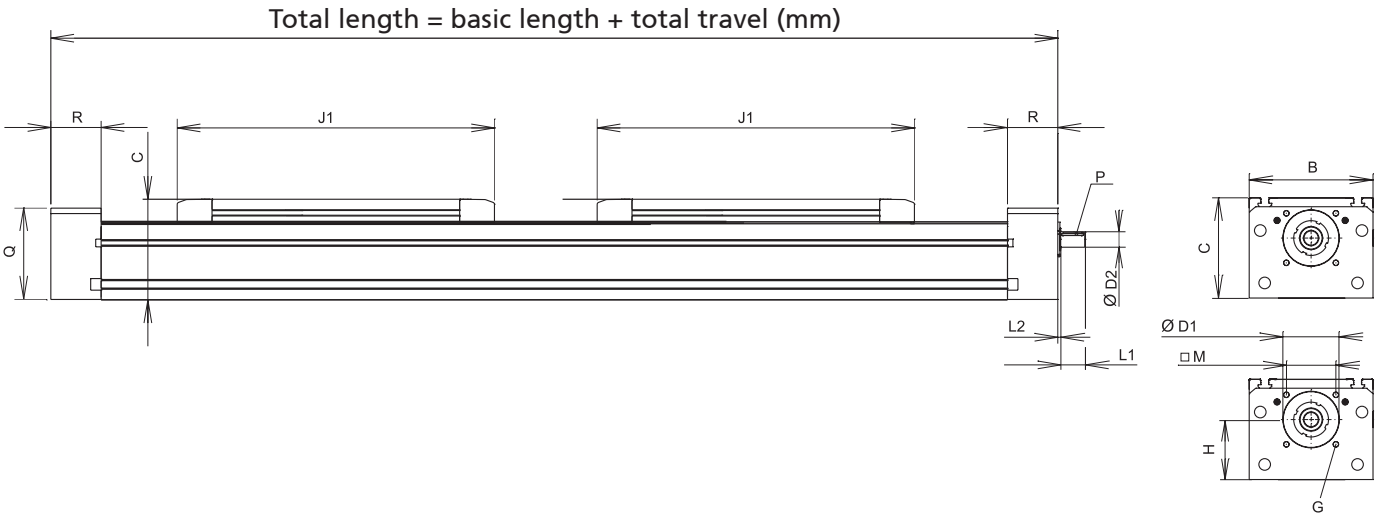
Total lenght = basic length + total travel (mm)

E = 1 drive shaft at righthand thread end
G = 1 drive shaft at lefthand thread end

Code No.	Type	Basic length	B	C	D1	D2
TD13A2_1A15B0_ _ _ _	RK DuoLine S 80 Protect	648	80	100	Ø42^{H7} 2.3 deep	Ø14$_{k7}$

Total lenght = basic length + total travel (mm)

E = 1 drive shaft at righthand thread end
G = 1 drive shaft at lefthand thread end



[mm]

G	H	J1	L1	L2	M	P	Q	R	Max. travel	Mass [kg]	
										Basic length	per 100 mm travel
M5-10 deep	47.7	245	20	2,8	33x24	3x3x12	72.2	38	2476	5.97	0.60

[mm]

G	H	J1	L1	L2	M	P	Q	R	Max. travel	Mass [kg]	
										Basic length	per 100 mm travel
M6-18 deep	57.5	278	30	3.8	□46±0.2	5x5x25	89	46	2890	11.7	0.96

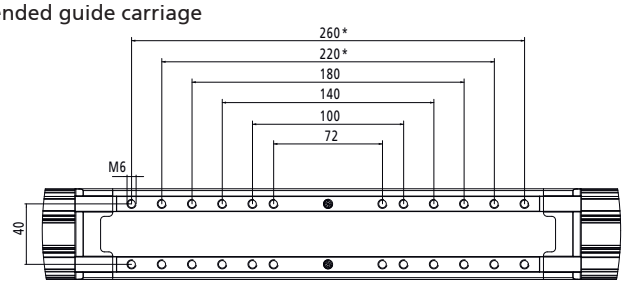
Fixing

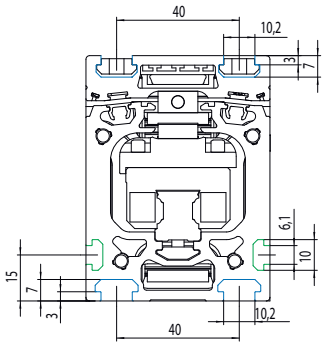
Fixation of payload

- Two slot stone strips 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 DuoLine S 60

*only with version with extended guide carriage



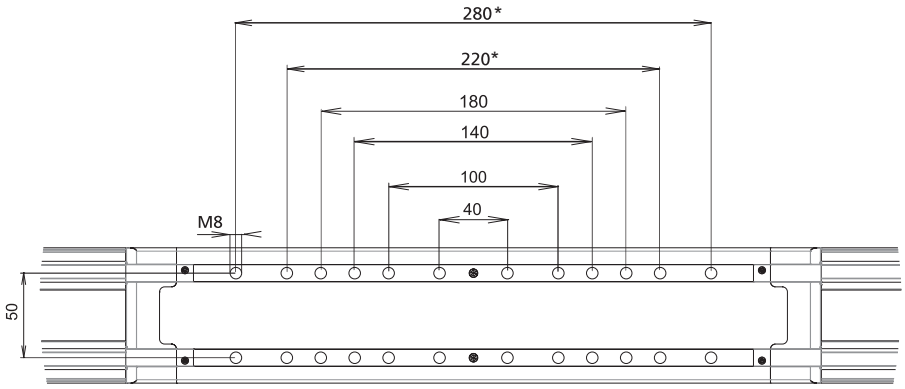


20 slot geometry

30 slot geometry

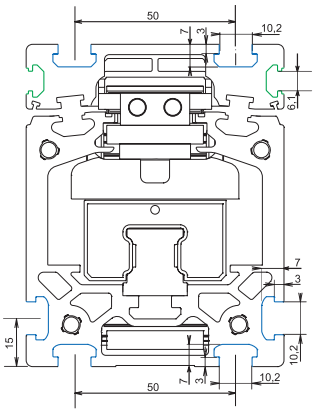
RK DuoLine S 80

*only with version with extended guide carriage



20 slot geometry

30 slot geometry



Clamping strips

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

Material:
Natural anodised aluminium,zinc plated fixation material.

Scope of delivery:
2 clamping strips with fixation material

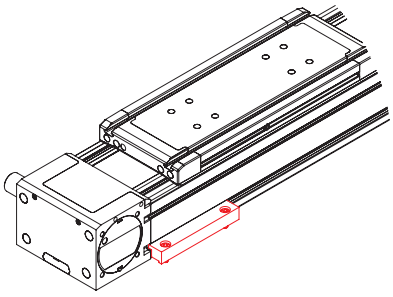


Fig.1: Ground assembly

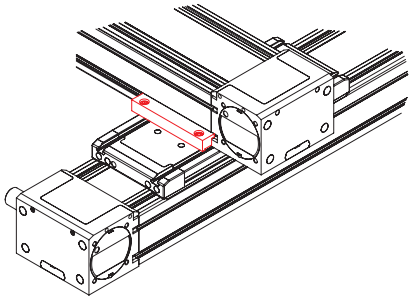
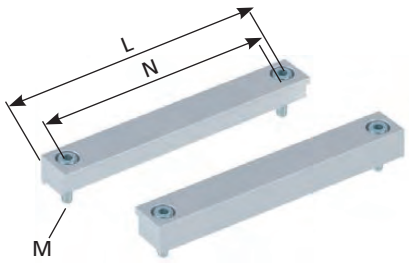
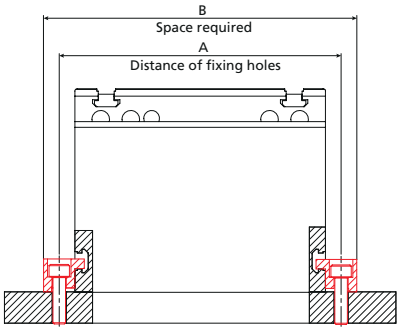


Fig.2: Crossing units





[mm]

Code No.	Type	Fig.	A	B	L	M	N
91818	RK DuoLine 60 ground assembly	1	72	91	57	M6	40
	RK DuoLine 60 crossing to 60	2					
91886	RK DuoLine 80 ground assembly	1	100	122	76	M8	50
	RK DuoLine 80 crossing to 80	2					

Order instruction square nut:

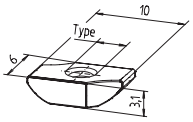
- Purchase only in lot sizes and a multiple of that, see product table below

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

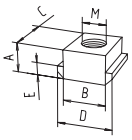
Material: zinc plated steel

Slot stones

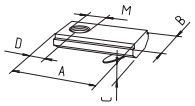
Slot stone -B-
can be swivelled into the slot

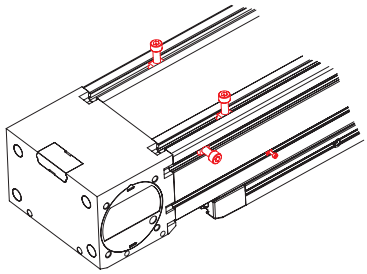


Slot stone -N-
can be slid into the slot



Slot stone -K-
can be swivelled into the slot





View of DuoLine from below

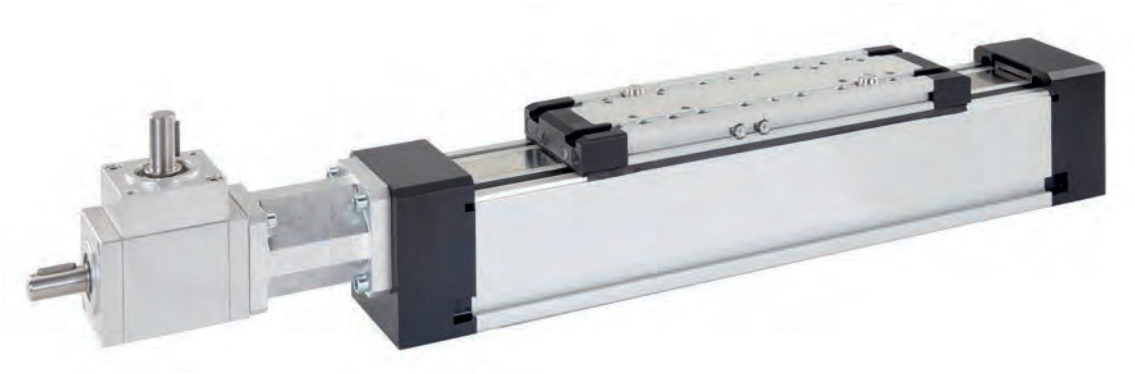
[mm]

Code No.	Type	lot sizes	Slot geometry	A	B	C	D	E	M8M	F [N]
Slot stone -B-										
E00017CEE	M3	10, 20, 30... pcs	20							
E00058CEE	M4	10, 20, 30... pcs	20							
Slot stone -N-										
4006202	M8	10, 20, 30... pcs	30	5	10	13	13	3	M8	4000
Slot stone -K-										
4006211	M5	10, 20, 30... pcs	30	21	12	4	7	–	M5	5000
4006212	M6	10, 20, 30... pcs	30	21	12	4	7	–	M6	5000

Drive

Angular drive

- Fits all RK DuoLine S 60/80 linear units with trapezoidal thread
- Can be retrofitted
- Low noise level
- **Suitable for adjustment with servo, stepper or three-phase motor**

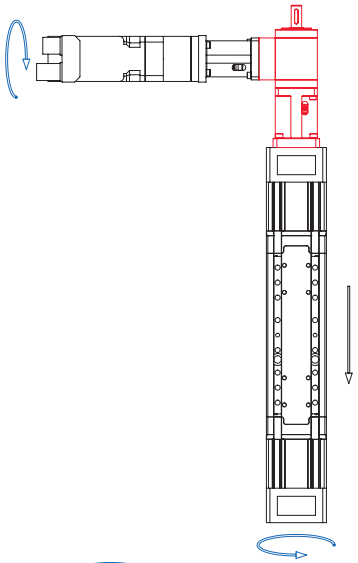


Technical data angular drive

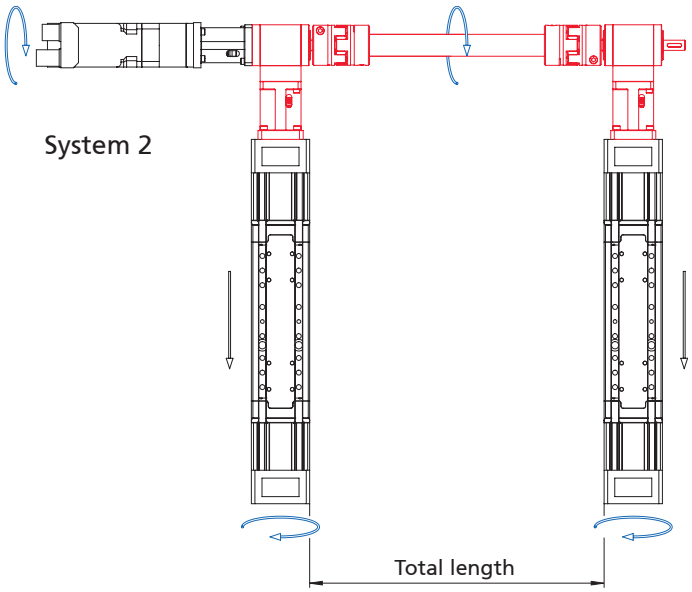
	For RK DuoLine S 60/80	
Reduction		1:1
Drive speed	min^{-1}	0–350
Duty cycle		S3 30% Basis 1h
Efficiency at full load	%	System 1: 90 System 2–3: 81
Ambient temperature	°C	0 to +60

Angular drive for RK DuoLine S 60/80

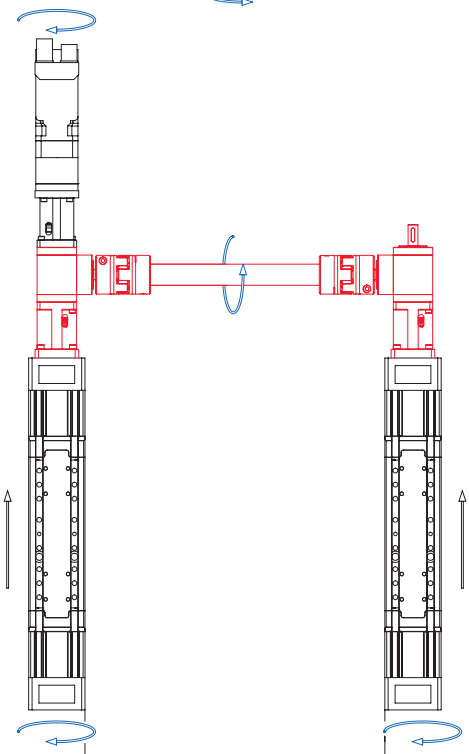
System 1



System 2



System 3



Code No.	Type	Size	Basic length (minimum length)	Max. length (clearance)	Weight [kg]	
					Basic length	per 100 mm travel
982_ _ C1A0000	Angular gear system 1	60	–	–	1,46	–
		80			1,54	
982_ _ C1B_ _ _ _	Angular gear system 2	60	189	2800	3,31	0,18
		80	169	2800	3,46	0,18
982_ _ C1C_ _ _ _	Angular gear system 3	60	211	2000	3,31	0,18
		80	191	2800	3,46	0,18

Total length (mm)

50 = RK Duoline S 60 (Trapezoidal thread)
51 = RK Duoline S 80 (Trapezoidal thread)

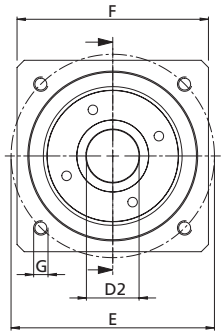
Drive

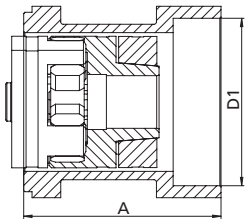
Selection table motor adapter kits RK DuoLine S for servo motors without gear

- Servomotors from the RK standard range 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 fixation material

Manufacturers	Motor	RK DuoLine S 60	RK DuoLine S 80	Motor flange
RK Rose + Krieger	RK-AC 118	949388	–	IM B5 56
	RK-AC 240	949389	949367	
	RK-AC 470	–	949366	IM B5 63
Baumüller	DSD2-036	949388	–	IM B5 56
	DSD2-045	949389	949367	
Beckhoff	AM8031, AM8032, AM8033	On request	–	IM B5 56
	AM8041, AM8042, AM8043		On request	
Bosch	MSK040B, MSK040C, MSK043C	On request	On request	
	MSK050B, MSK050C	–	949366	IM B5 63
Kollmorgen	AKM2G-31, AKM2G-32, AKM2G-33, AKM2G-34	On request	–	IM B5 56
	AKM2G-41, AKM2G-42, AKM2G-43, AKM2G-44		On request	
Lenze	MCS06I, MCS06F	949388	–	IM B5 56
	MCS09D, MCS09F, MCS09H, MCS09L	949389	949367	
Lti/Keba	LSP10	–	949366	IM B5 63
Mitsubishi	HG-JR53(4), HG-JR 73(4), HG-JR103(4), HG-JR153(4), HG-JR203(4)	On request	On request	IM B5 56
Parker	SMH 60, SMHA 60	949388	–	IM B5 56
	SMH 82, SMHA 82	949389	949367	
	SMH 100, SMHA 100	–	949366	IM B5 63
SEW	CMP50S, CMP50M, CMP50L	949388	–	IM B5 56
	CMP63S, CMP63M, CPM63L	949389	949367	
Siemens	1FK7032, 1FK7033, 1FK7034	On request	–	IM B5 56
	1FK7040, 1FK042, 1FK043, 1FK2205	On request	On request	
	1FK2105	–	949366	IM B5 63





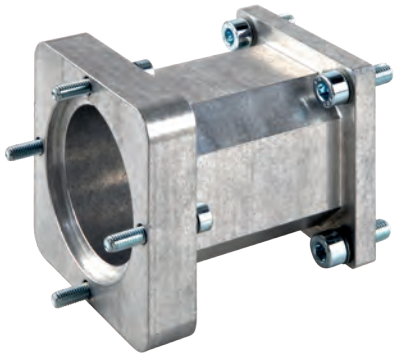
A	D1	D2	E	F	G	Mass [kg]
61	Ø 60 F8 3 deep	Ø11x23	Ø 75	□70	M5 10 deep	0,2
66/79	Ø 80 F8 4/5,7 deep	Ø14x30	Ø 100	□82/□90	M6 15 deep	0,3 /0,67
89	Ø 95 F8 4 deep	Ø19x40	Ø 115	□115	M8 20 deep	1,08
61	Ø 60 F8 3 deep	Ø11x23	Ø 75	□70	M5 10 deep	0,2
66/79	Ø 80 F8 4/5,7 deep	Ø14x30	Ø 100	□82/□90	M6 15 deep	0,3 /0,67
		Ø14x30				
		Ø19x40				
		Ø14x30				
89	Ø 95 H8 4 deep	Ø19x40	Ø 115	□115	M8 20 deep	1,08
		Ø14x30				
		Ø19x40				
61	Ø 60 F8 3 deep	Ø11x23	Ø 75	□70	M5 10 deep	0,2
66/79	Ø 80 F8 4/5,7 deep	Ø14x30	Ø 100	□82/□90	M6 15deep	0,3 /0,67
89	Ø 95 H8 4 deep	Ø19x40	Ø 115	□115	M8 20 deep	1,08
		Ø16x40				
61	Ø 60 F8 3 deep	Ø11x23	Ø 75	□70	M5 10 deep	0,2
66/79	Ø 80 F8 4/5,7 deep	Ø14x30	Ø 100	□82/□90	M6 15 deep	0,3 /0,67
89	Ø 95 H8 4 deep	Ø19x40	Ø 115	□115	M8 20 deep	1,08
61	Ø 60 F8 3 deep	Ø11x23	Ø 75	□70	M5 10 deep	0,2
66/79	Ø 80 F8 4/5,7 deep	Ø14x30	Ø 100	□82/□90	M6 15 deep	0,3 /0,67
		Ø14x30				
		Ø19x40				
89	Ø 95 H8 4 deep	Ø19x40	Ø 115	□115	M8 20 deep	1,08

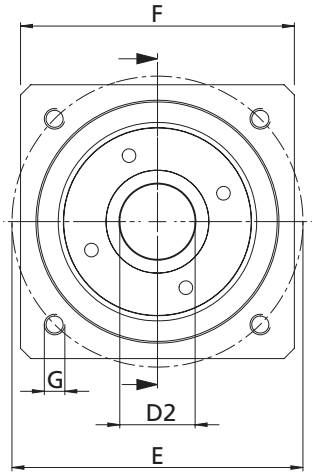
Drive

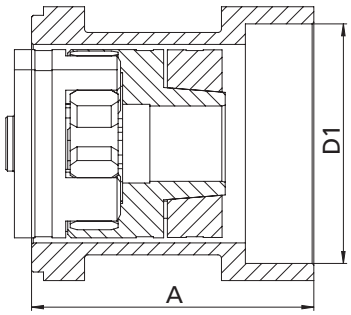
Motor adapter kits

- Servomotors from the RK standard range 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 fixation material







Selection table motor adapter kits for three-phase motor

Manufacturers	Motor	Angular gear system 1-3 RK DuoLine S 60/80 TR	A	D1	D2	E	F	G	Mass [kg]
RK Rose + Krieger	90/120W	949769	75,4	Ø 50^{H8} 4 deep	Ø 12 x 30	Ø 65	Ø 80	M5 15 deep	0,52

Selection table motor adapter kits servo motors with gear

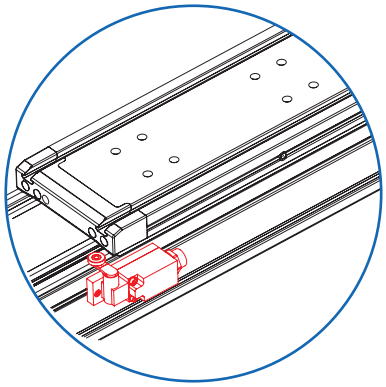
Manufacturers	Gear	RK DuoLine S 60	RK DuoLine S 80	Angular gear system 1-3 RK DuoLine S 60/80 TR	A	D1	D2	E	F	G	Mass [kg]
Neugart	PLE 60	949387	949360	949771	71 / 84 / 80,4	Ø 40 3 / 6 / 4 deep	Ø 14 x 30	Ø 52	□70 / □75 / Ø62	Ø 5,5	0,33 / 0,53 / 0,25
	PLE 80	–	949364	–	89	Ø 60 3,5 deep	Ø 20 x 36	Ø 70	□75	Ø 6,4	0,58
Eppinger	PE065	949387	949360	949771	71 / 84 / 80,4	Ø 40 3 / 6 / 4 deep	Ø 14 x 30	Ø 52	□70 / □75 / Ø62	Ø 5,5	0,33 / 0,53 / 0,25
	PE080	–	949364	–	89	Ø 60 3,5 deep	Ø 20 x 36	Ø 70	□75	Ø 6,4	0,58
Ruhrgetriebe	RPS060	949387	949360	949771	71 / 84 / 80,4	Ø 40 3 / 6 / 4 deep	Ø 14 x 30	Ø 52	□70 / □75 / Ø62	Ø 5,5	0,33 / 0,53 / 0,25
	RPS080	–	949364	–	89	Ø 60 3,5 deep	Ø 20 x 36	Ø 70	□75	Ø 6,4	0,58
SPN Schwaben Präzision	SPN-ECO (E2) EZ 23	949387	949360	949771	71 / 84 / 80,4	Ø 40 3 / 6 / 4 deep	Ø 14 x 30	Ø 52	□70 / □75 / Ø62	Ø 5,5	0,33 / 0,53 / 0,25
	SPN-ECO (E2) EZ 24	–	949364	–	89	Ø 60 3,5 deep	Ø 20 x 36	Ø 70	□75	Ø 6,4	0,58
Wittenstein	Alpha CP015 MF	949387	949360	949771	71 / 84 / 80,4	Ø 40 3 / 6 / 4 deep	Ø 14 x 30	Ø 52	□70 / □75 / Ø62	Ø 5,5	0,33 / 0,53 / 0,25
	Alpha CP020 MF	–	949364	–	89	Ø 60 3,5 deep	Ø 20 x 36	Ø 70	□75	Ø 6,4	0,58

Selection table motor adapter kits for motors with NEMA-Flange

Manufacturers	Motor	Angular gear system 1-3 RK DuoLine 60/80 TR	Motor flange	A	D1	D2	E	F	G	Mass [kg]
RK Rose + Krieger	Stepper motor PD6S	949770	NEMA 34	82,4	Ø 73^{H8} 3 deep	Ø 14 x 35	□ 69,5	□ 86	M6 - 15 deep	0,75
Various	All motors with NEMA 34 motor flange	949770	NEMA 34	82,4	Ø 73^{H8} 3 deep	Ø 14 x 35	□ 69,5	□ 86	M6 - 15 deep	0,75

Position determination

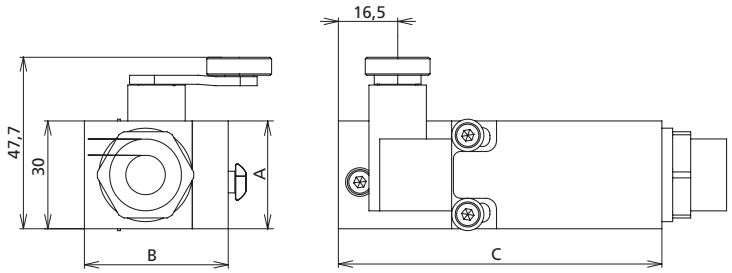
Mechanical limit switch



- External fixation on the guide profile

Scope of delivery:
Limit switch with set of fixing items

Voltage	max. 230 V AC
Max. switching current	4 A
Max. starting current	10 A
Operating frequency	max. 5000 / h
Mechanical lifetime	20x10^6 cycles
Axis leverage adjustment	locking by 360°
Degree of protection	IP67
Ambient temperature	-30°C to +80°C

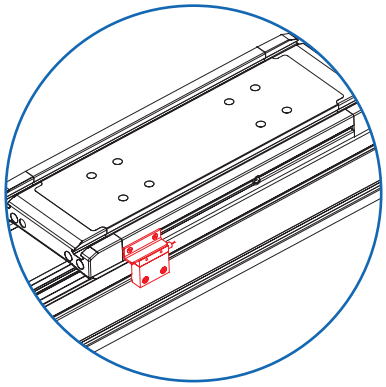


Code No.	Type	A	B	C	Version
92848	RK DuoLine 60	49	39	82	NO / NC, mechanical limit switch
91919	RK DuoLine 80	63	40	83	

External inductive limit switch

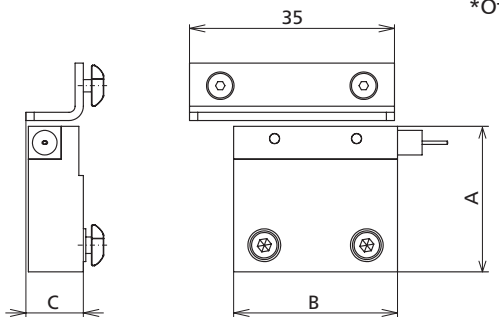
- External fixation on the guide profilev

Scope of delivery:
Limit switch with set of fixing items



Voltage	10...30 VDC
Max. switching current	100 mA
Operating frequency	max. 5 kHz
Mechanical lifetime	independent of operating cycles
Operating distance	1.5 mm
Degree of protection	IP67
Cable length	5 m*
Ambient temperature	-25°C to +70°C

*Other cable lengths available on request.

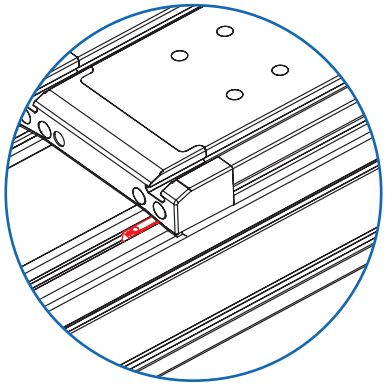


Code No.	Type	A	B	C	Version
92838	RK DuoLine 60	52.8	25	10	**NO, External inductive limit switch**
92819	RK DuoLine 80	71.5	25	10	

Internal inductive limit switch

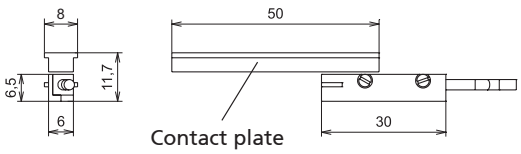
- Proximity switch integrated in the guide profile – no protruding contours

Scope of delivery:
Proximity switch with set of fixing items



Code No.	Type	Version
92828	RK DuoLine 60	**NC, Internal inductive limit switch**
92820*	RK DuoLine 80	

* On this limit switch, the slot must be sealed off with a cover profile



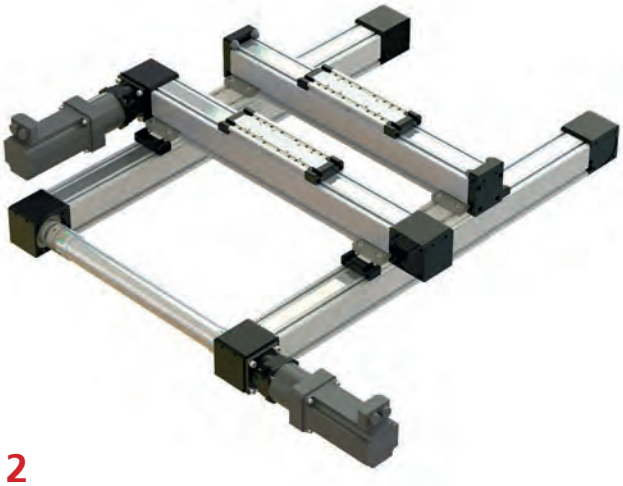
Cover profile

Code No.	Version		
E00024DAC	bar	black	2.000 mm

Assembly examples

RK DuoLine

1



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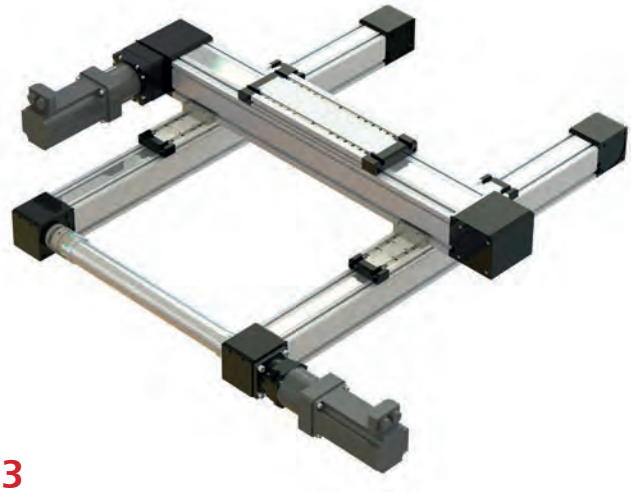

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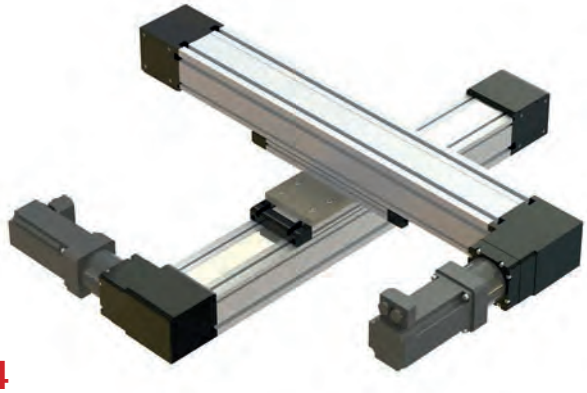
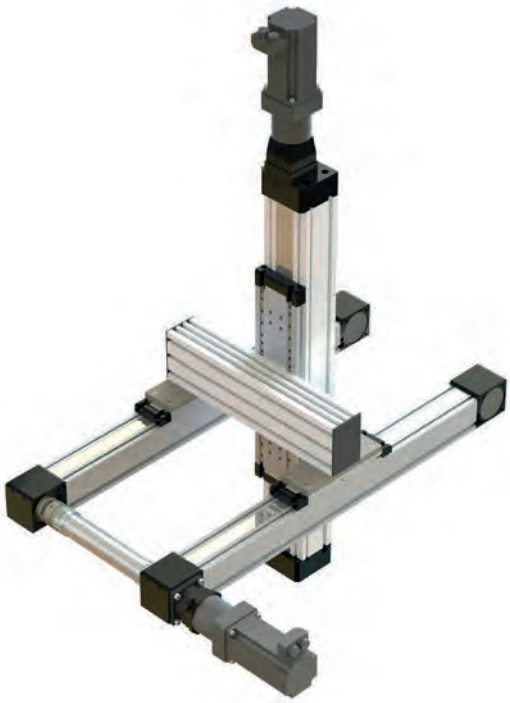


4

5

6



7

8

The industrial design complete system with push/pull forces up to 10,000 N.

Electrical connection
- Cable outlet
- Internal limit switches, incremental displacement pick-up and optional lead-through for brake
- Connection to PLC or equivalent control 24 V / 36V

Adjustable external magnetic switch
- Covered in slot geometry
- Stroke can be adjusted
- Accessories can be retrofitted
- Pre-fitted with internal magnets for external magnetic switch

High-performance DC motor
- Self-locking to 10,000 N

Cylinder fixing
- Simple connection of trunnion flange, trunnion or clevis

Features:
- Integrated DC drive
- Integrated limit switches
- Flexible use of space thanks to parallel motor positioning
- Coverable slot geometry on both sides, supports a range of fixing options
- Push rod with rotation locking
- Maintenance-free for entire lifetime of unit
- IP 54
- Self-locking
- ACME screw

Options:
- Optional IP 66 can be supplied
- Special stroke lengths available on request
- ACME screw version optionally available with motor brake

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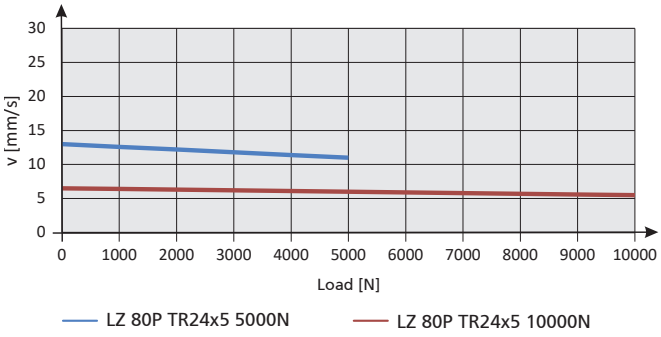
Technical data

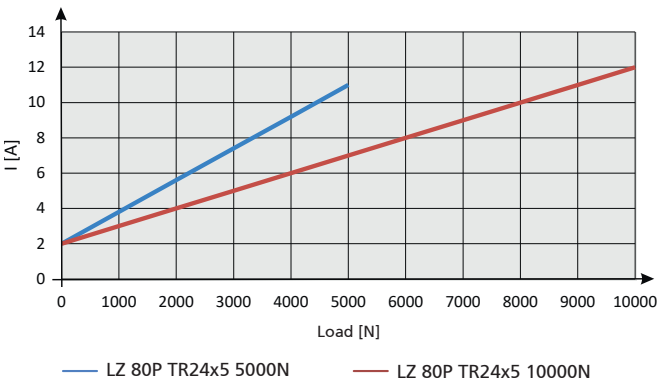
General information/operating conditions

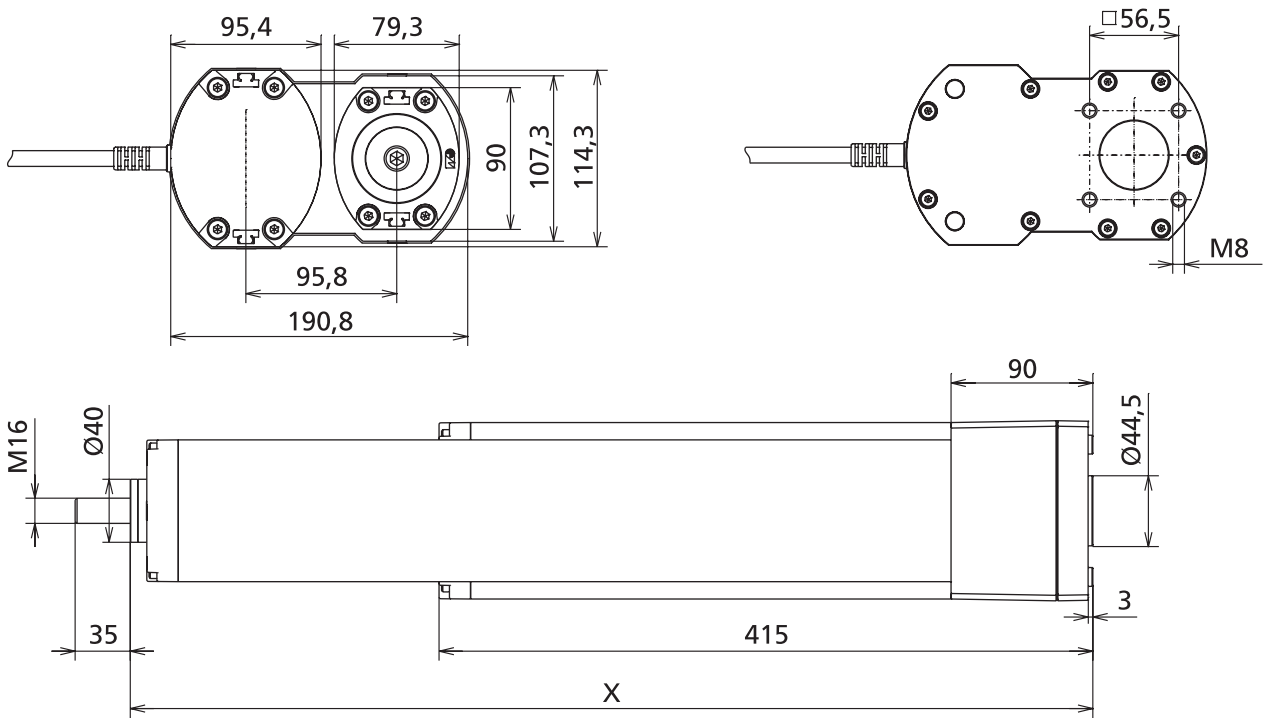
Type	ACME screw
Design	Linear cylinder with integrated DC motor
Guide	Double bearing with POM bushes
Installation position	Any position, without shear forces
Ambient temperature	+5°C to +40°C
Repeatability	0.5 mm
Speed	Max. 25 mm/s
Duty cycle (at max. load)	10% (1 min. operating time; 9 mins rest time/depending on sizing, up to 100% duty cycle possible)
Voltage	24 V
Current consumption	12 A
Power input	288 W
Protection class	IP 54 (optional IP 66)
Compressive force/tensile force	10,000 N
Self-locking	10,000 N

Speed/Force diagram



Current consumption/Force diagram





Versions LZ 80

Code No.	Type	Max. force F [N]	Max. speed [mm/s]
ACME screw 24 x 5			
QLP00ABAB_ _ _ _	LZ 80	5,000	13
QLP00ACAB_ _ _ _	LZ 80	10,000	6.5

Stroke lengths available in increments of 7.5 mm
e.g. stroke [mm] = 0 3 9 7 .5

Stroke* [mm]	Installation dimension X [mm]	Weight [kg]
105	416	12.5
150	461	13
202	513	13.5
255	566	14
300	611	14.5
352	663	15
405	753.5	16
450	798.5	16,5
502	850.5	17
555	903.5	17.5
600	948.5	18
652	1038	18.6
705	1091	19
750	1136	19.3
802	1233	20
855	1286	20.5
900	1331	21
952	1383	21.5
1005	1436	22

*Tolerance +0.5mm/-2.5mm

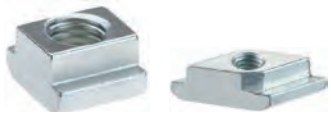
Fixing/Position determination

Order instruction square nut:

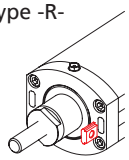
- Purchase only in lot sizes and a multiple of that, see product table below

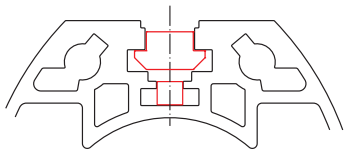
- Slot stones facilitate the attachment of fittings to the cylinder.
- To this end, the slot stones can be slid into the lateral slots (Type -N-) or swivelled into the slot from above (Type -R-).

Slot stone



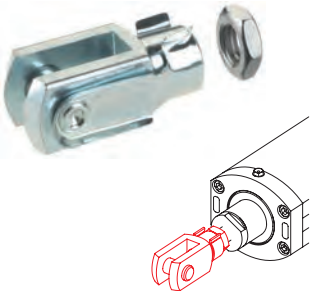
Type -N- Type -R-

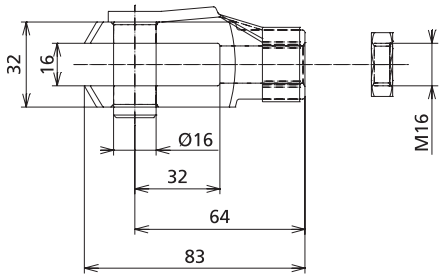




Code No.	Type	lot sizes	F [N]
4026203	Slot stone -N- M6	10, 20, 30... pcs	9,000
4026206	Slot stone -N- M8	10, 20, 30... pcs	9,000
4026221	Slot stone -R- M6	10, 20, 30... pcs	8,000
4026222	Slot stone -R- M8	10, 20, 30... pcs	8,000

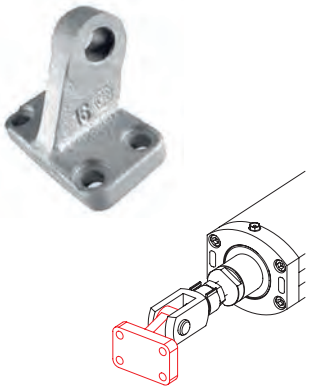
Clevis

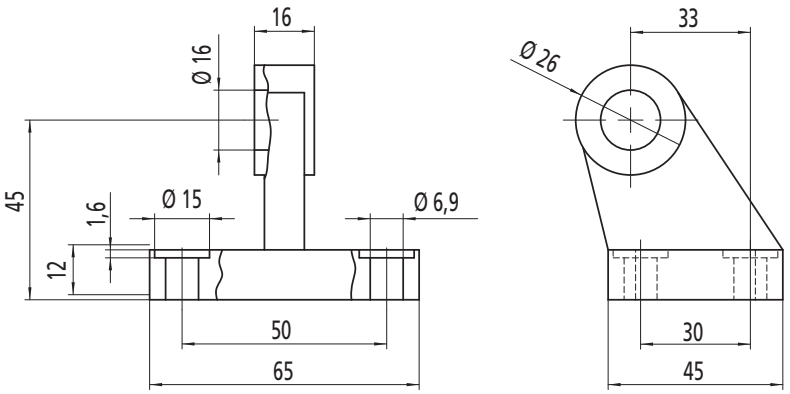




Code No.	Type
QZD050571	Clevis M16

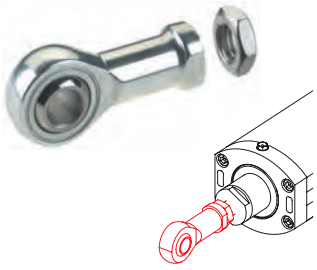
Bearing block for Clevis

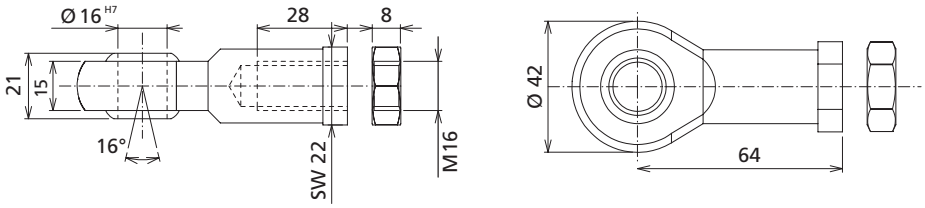




Code No.	Type	
QZD050573	LZ 80	Bearing block Ø16

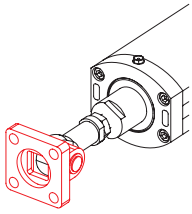
Swivel head

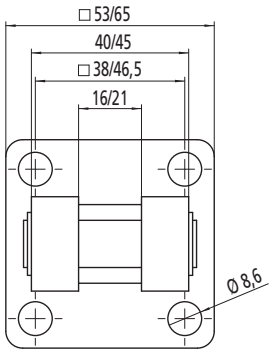


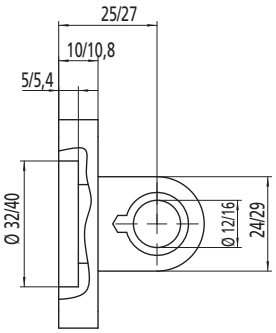


Code No.	Type	
QZD050575	LZ 80	Swivel head M16

Fork attachment for Swivel head

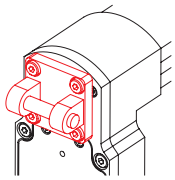


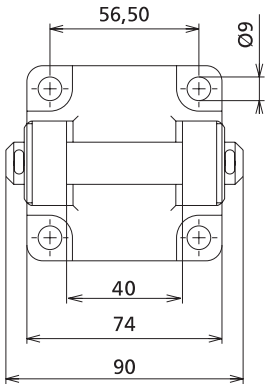


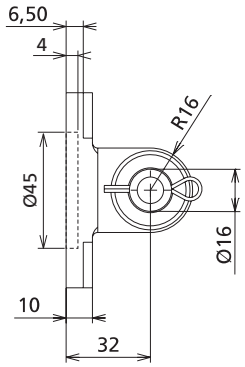


Code No.	Type	
QZD050577	LZ 80	Fork attachment Ø 16

Swivel

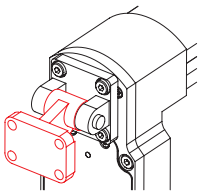


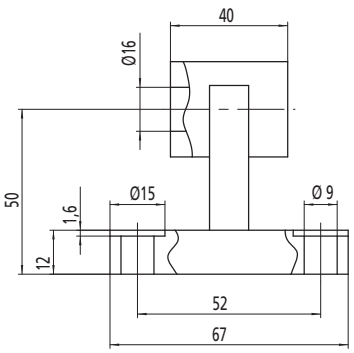


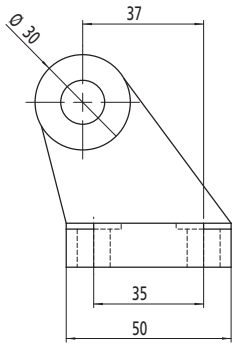


Code No.	Type
QZD050580	Swivel Ø 16

Bearing block for Swivel



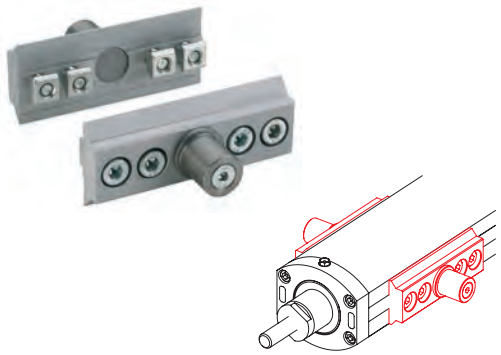


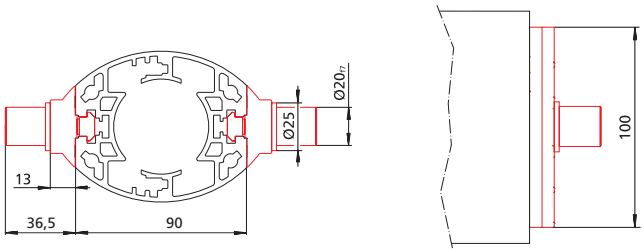


Code No.	Type	
QZD050585	LZ 80	Swivel head wide Ø 16

Fixing/Position determination

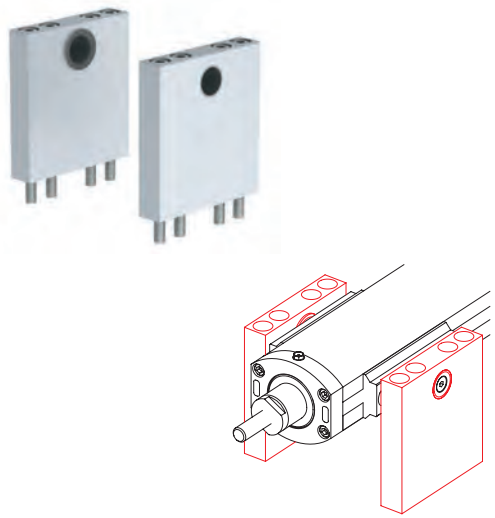
Trunnion mounting set

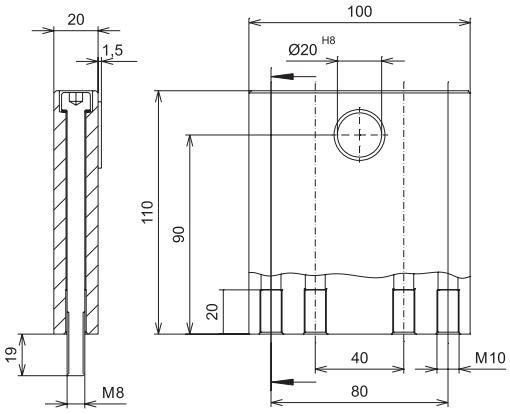




Code No.	Type
QZD050588	Trunnion mounting set LZ 80

Support blocks for trunnion mounting

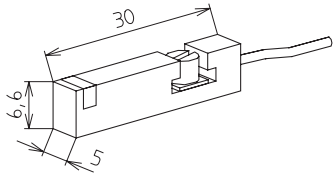


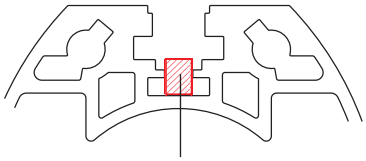


Code No.	Type
QZD050589	Support blocks LZ 70/80

Magnetic switch

- Signals from the magnetic switch can be collected and evaluated by a customer-provided control unit (such as a PLC).
- The switch can be retrofitted in the lateral slot (protected by a cover profile as standard)
- Magnets are integrated in the cylinder as standard.





Code No.	Type
QZD050598	Magnetic switch, NO contact, cable length 6 m
QZD050599	Magnetic switch, NC contact, cable length 5.3 m

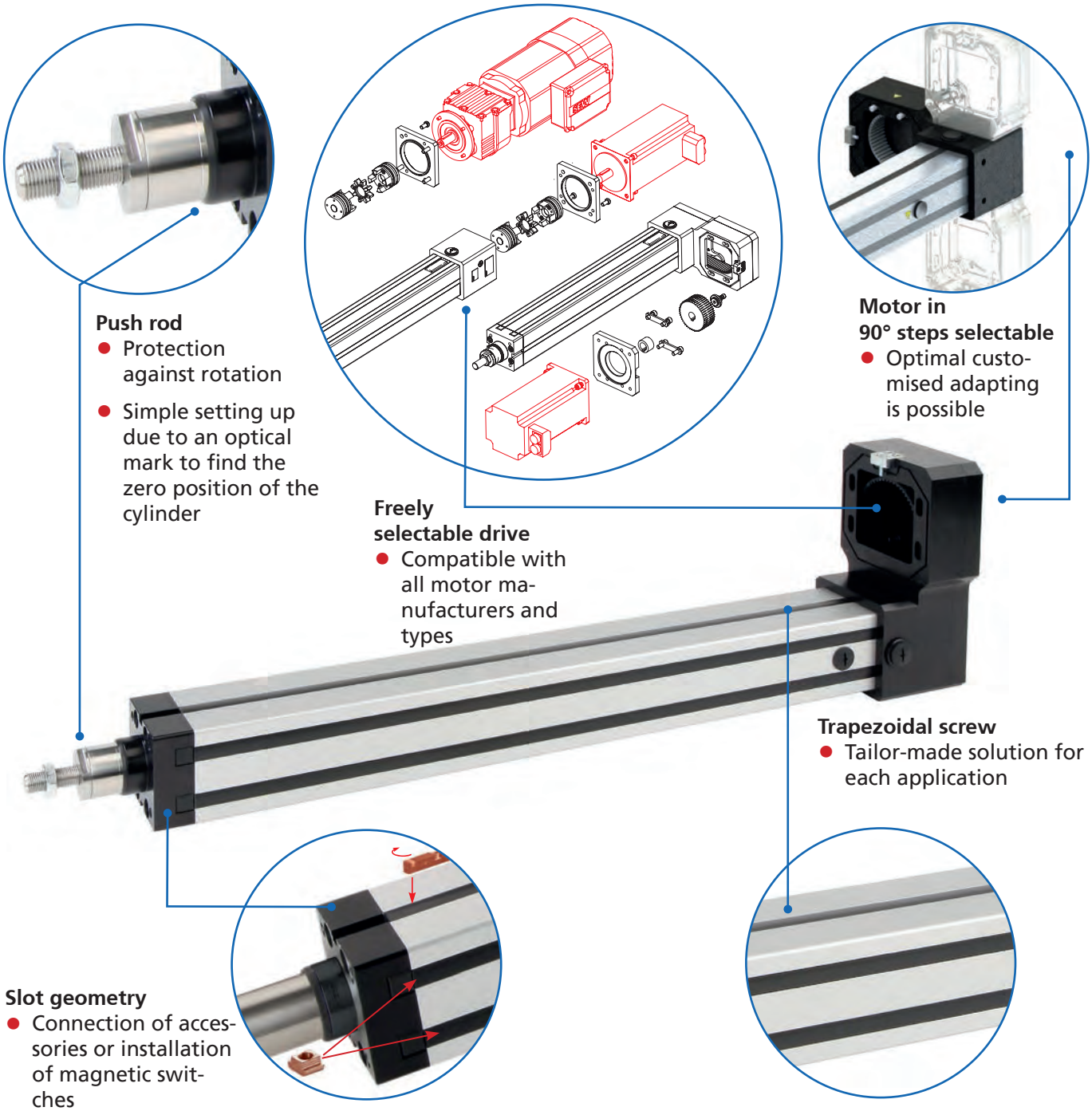
Magnetic switch – Technical data

	NC contact	NO contact
Voltage	10-30 V DC	5-30 V DC
Current consumption	< 10 mA	< 10 mA
Output current	Max. 100 mA	Max. 50 mA
Output type	PNP	PNP
Function indication	LED	LED
Ambient temperature	-25°C to +85°C	-20°C to +70°C
Protection class	IP 67	IP 68

Control requirements

Power supply	24 V DC, at least 500 W
Current output	At least 20 A
Deceleration	Via generator brakes
Brake power	At least 500 W
Duty cycle	Up to 100%
Motor brake	24 V DC, at max. 1 A
Limit switch evaluation	Upper and lower limit switch (NC contacts)

The new industrial heavy duty linear cylinder



Push rod
- Protection against rotation
- Simple setting up due to an optical mark to find the zero position of the cylinder

Freely selectable drive
- Compatible with all motor manufacturers and types

Motor in 90° steps selectable
- Optimal customised adapting is possible

Trapezoidal screw
- Tailor-made solution for each application

Slot geometry
- Connection of accessories or installation of magnetic switches

Features:

- Freely selectable drive (three-phase motor / servo motor / stepper motor)
- Short installation height dueto parallel motor adaption
- Variable fixation options
- DIN ISO 15552
- Non-rotating stainless steel push rod
- Service life of up to 8 million double strokes (500 mm stroke with KG spindles)
- Protection class IP 54
- Integrated magnetics for external magnetic switches

Options:

- Optional: IP 65
- Special stroke lengths available on request
- External magnetic switches
- Optional gear ratio i= 1:1,5 possible
- Position for maintenance point upon request

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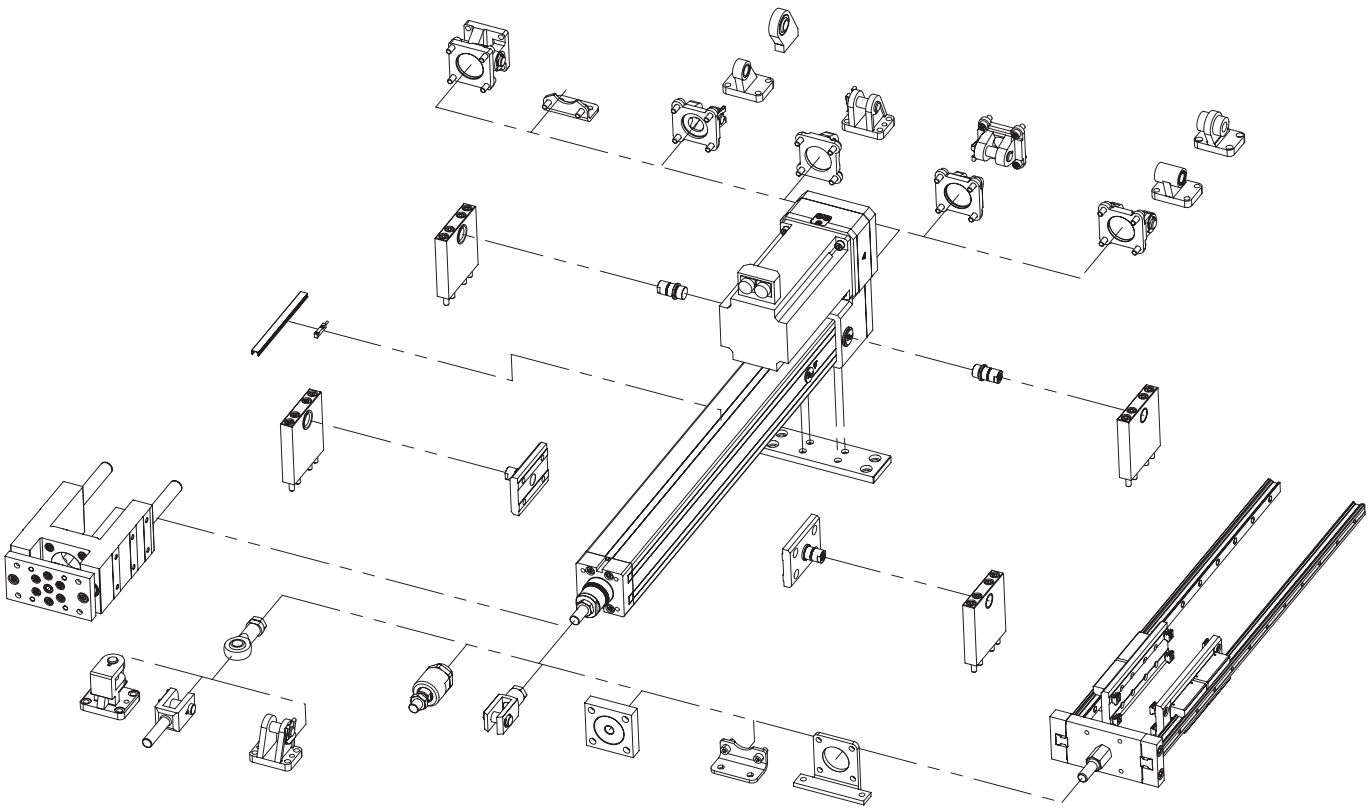
Key features / Technical benefits

Peripherals overview

Unlimited options to adapt standard or customized accessories (front DIN ISO 15552)

- Swivels, trunnions
- Base fixings
- Clevis heads
- Swivel heads
- Guiding units
- Proximity switch

...and more...



Technical data Move-Tec

General information / operating conditions

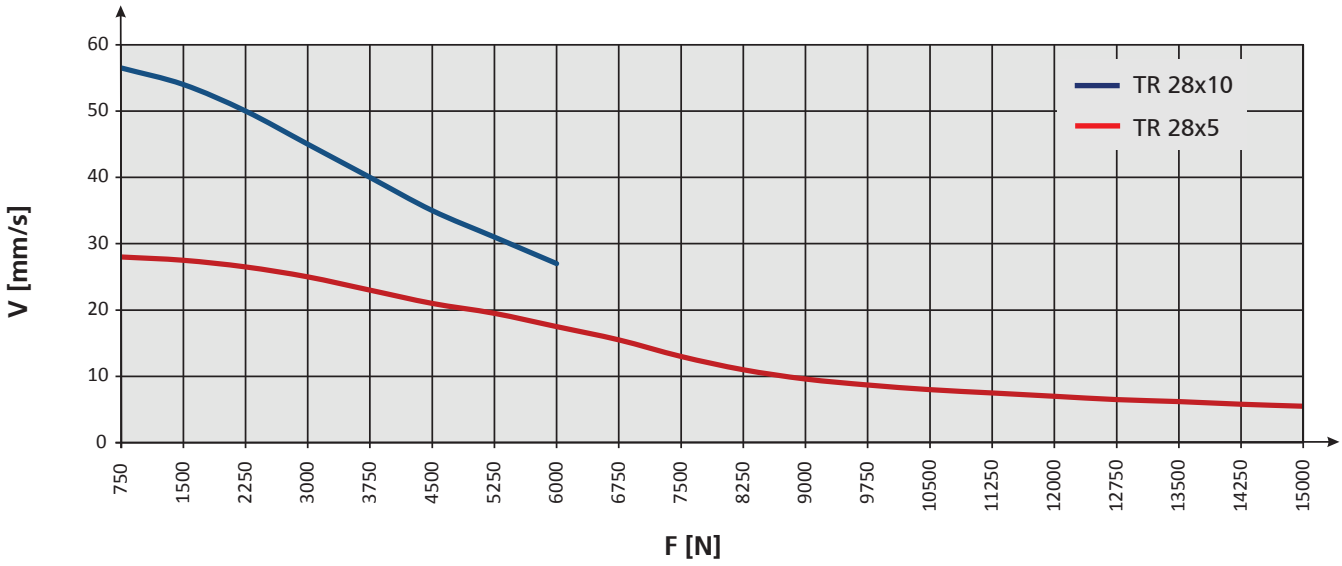
Heavy duty linear cylinder with trapezoidal screw
for robust, versatile moving applications (Move-Tec)

Type	SLZ 63 TR PL	SLZ 63 TR P PL*	SLZ 63 TR FL	SLZ 63 TR P FL*
Max. compressive force / tensile force	15.000 N		6.000 N	
Max. driving torque	40 Nm		30 Nm	
Max. speed	27 mm/s		58 mm/s	
Max. acceleration	3 m/s²			
Repeatability	± 0,2 mm			
Max. no-load torque	-	< 1,5 Nm	-	< 1,5 Nm
Drive	TR 28x5		TR 28x10	
Lead accuracy	≤ 0,05 mm / 300 mm		≤ 0,2 mm / 300 mm	
Duty cycle	S3 15%		S3 40%	
Ambient temperature	+ 0 °C to + 60 °C			
Degree of protection	IP 54 (optional IP 65)			
Continuous sound pressure level	< 65 dB (A)			

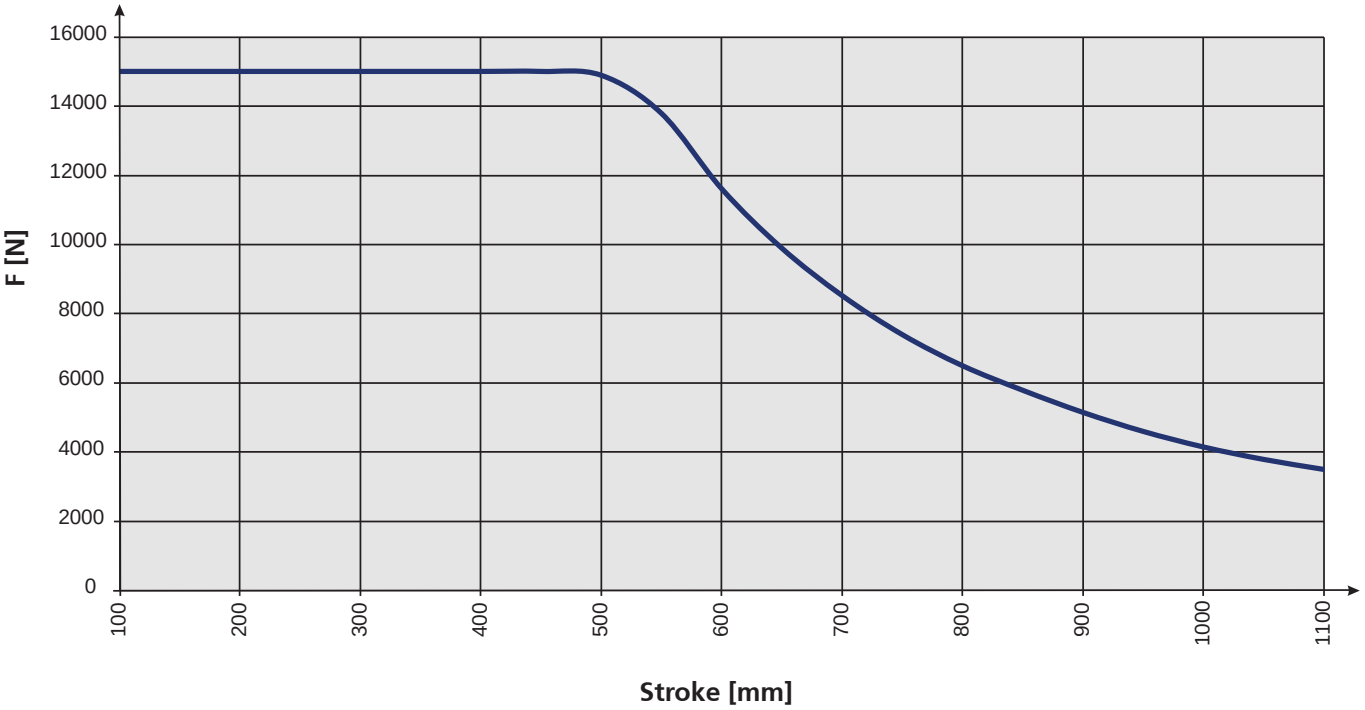
* P FL : parallele motor connection / Fastline-version (high spindle pitch)
* P PL : parallele motor connection / Powerline-version (low spinle pitch)

Subject to modifications. Latest version on www.rk-rose-krieger.com

Speed/Force diagram for SLZ 63 TR FL/PL
Note: SLZ 63 TR FL (Tr 28x10) has no self-locking effect.



Force/Stroke diagram for SLZ 63 TR FL/PL
Spindle buckling



Note:
The specifications are based on experimentally determined and theoretically calculated data at room temperature.

The running performance that can be achieved in practice can deviate from the specified curves under different parameters.

Dimensions / ordering data

Electric cylinder SLZ 63 with trapezoidal screw Move-Tec

Order instruction:

- Change of maintenance opening for SLZ 63 upon request

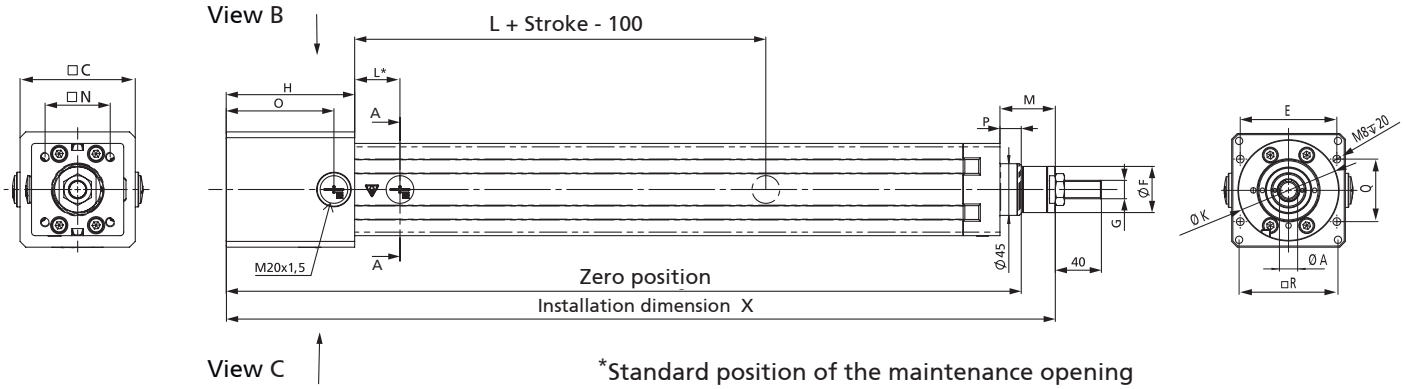
Code No.	Type	Spindle	A	B	C	E	F
TQ3_A1A1E3AAA_ _ _ _	SLZ 63 TR PL	TR 28x5	16	80	100	85	40
TQ3_A1A1E3DAA_ _ _ _	SLZ 63 TR FL	TR 28x10	16	80	100	85	40

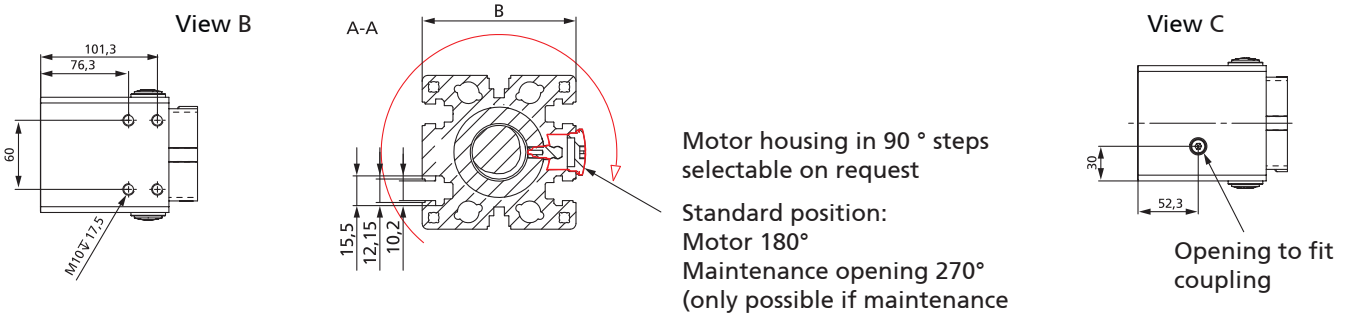
Stroke [mm]
e.g. 0 3 0 0

Degree of protection SLZ 63 TR PL:
1 = IP 54
3 = IP 65

Degree of protection SLZ 63 TR FL:
2 = IP 54
4 = IP 65

Travel [mm]	Installation dimension X [mm]	Weight [kg]
100	380	6,5
200	480	8,0
300	620	10,0
400	720	11,5
500	860	13,5
600	960	15,0
700	1100	17,0
800	1200	18,5
900	1340	20,5
1000	1440	22,0





[mm]

G	H	K	L	M	N	O	P	Q	R
M16x1,5	112	88	40	48	56,5	94	18,5	55	87
M16x1,5	112	88	40	48	56,5	94	18,5	55	87

Dimensions / ordering data

Order instructions:

- Change of maintenance opening for SLZ 63 upon request
- Motor housing in 90° steps upon request selectable

Electric cylinder SLZ 63 P with trapezoidal screw Move-Tec

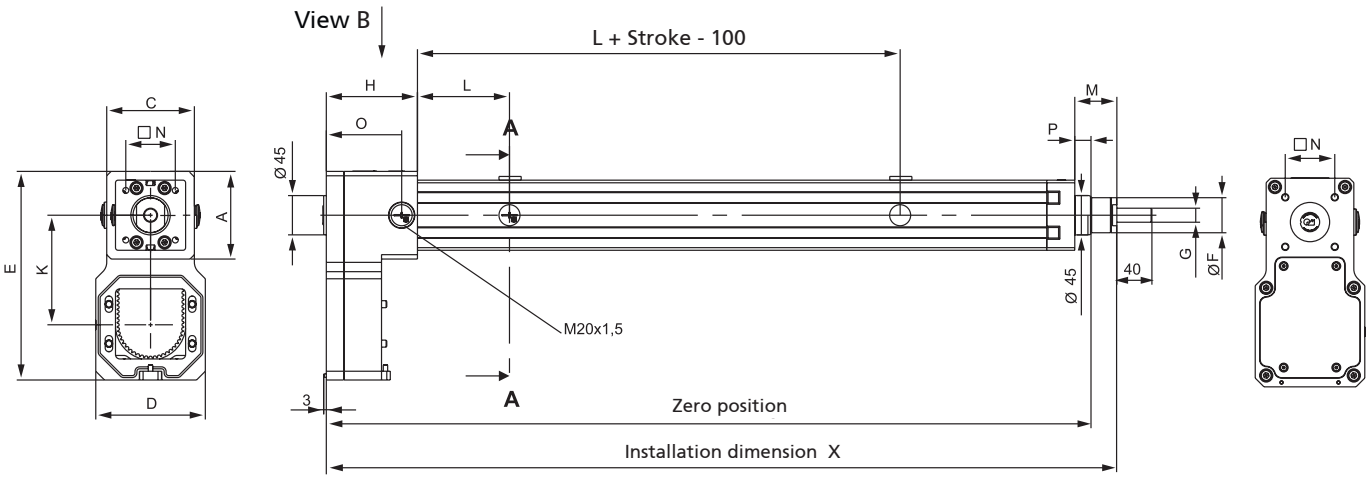
Code No.	Type	Spindle	A	B	C	D	E
TQ3_A1B1E3AAA_ _ _ _	SLZ 63 TR P PL	TR 28x5	100	80	100	125	238
TQ3_A1B1E3DAA_ _ _ _	SLZ 63 TR P FL	TR 28x10	100	80	100	125	238

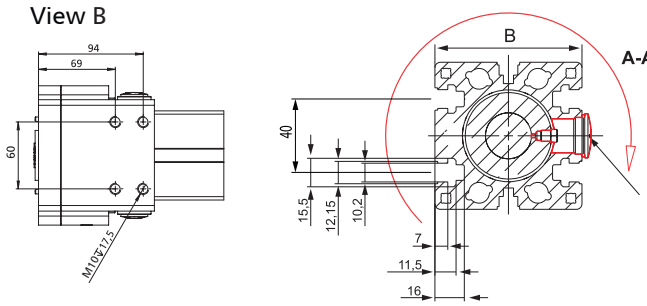
Stroke [mm]
e.g. 0 3 0 0

Degree of protection SLZ 63 TR P PL:
1 = IP 54
3 = IP 65

Degree of protection SLZ 63 TR P FL:
2 = IP 54
4 = IP 65

Travel [mm]	Installation dimension X [mm]	Weight [kg]
100	375	8,5
200	475	10,0
300	615	12,0
400	715	13,5
500	855	15,5
600	955	17,0
700	1095	19,0
800	1195	20,0
900	1335	22,5
1000	1435	24,0





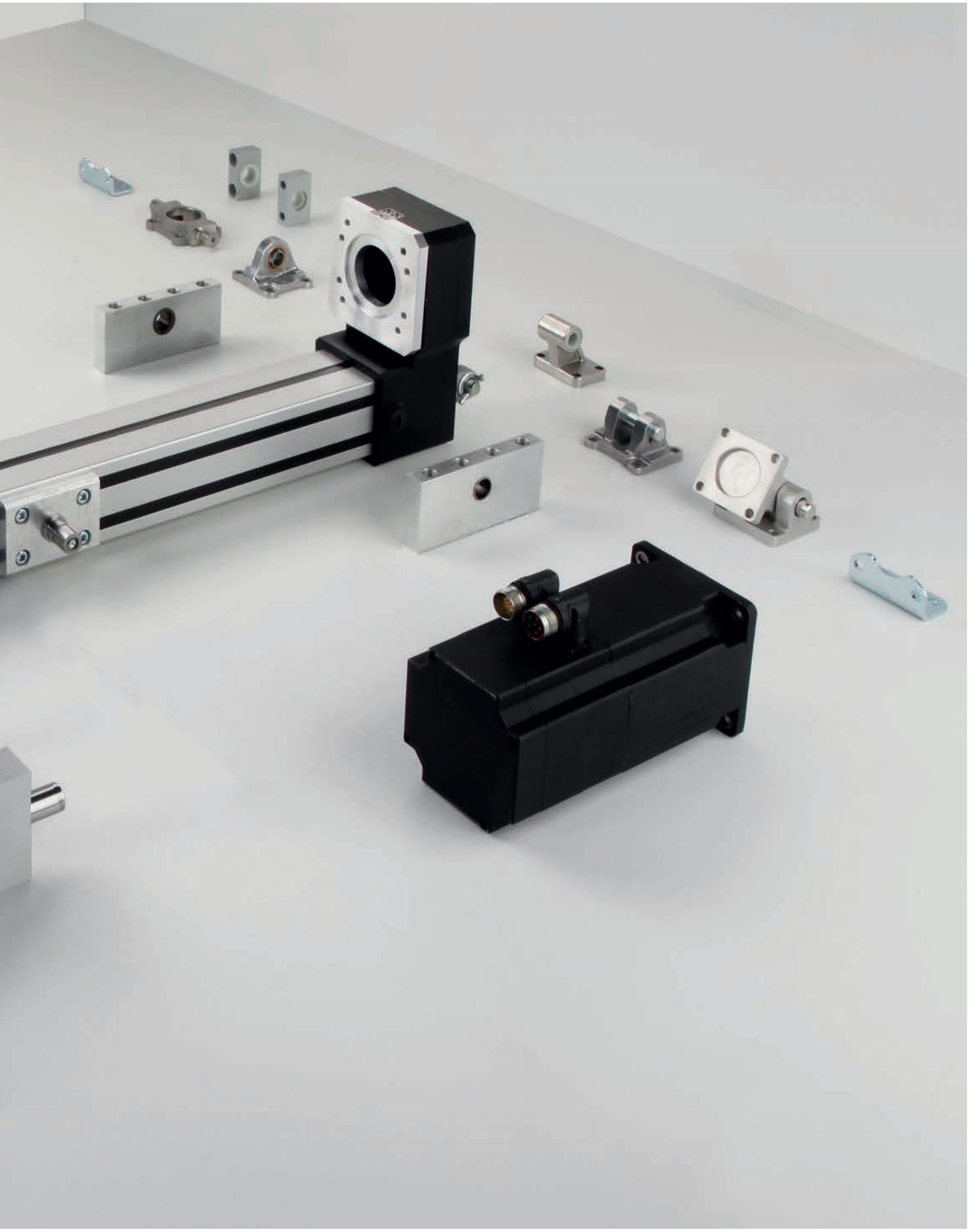
Motor housing in 90 ° steps selectable on request

Standard position:
Motor 180°
Maintenance opening 270°
(only possible if maintenance opening is relocated)

[mm]

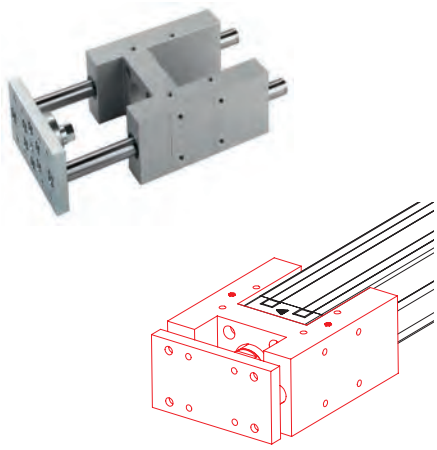
F	G	H	K	L	M	N	O	P
40	M16x1,5	104	125	40	48	56,5	86	18,5
40	M16x1,5	104	125	40	48	56,5	86	18,5

SLZ 63 Accessories / Fittings

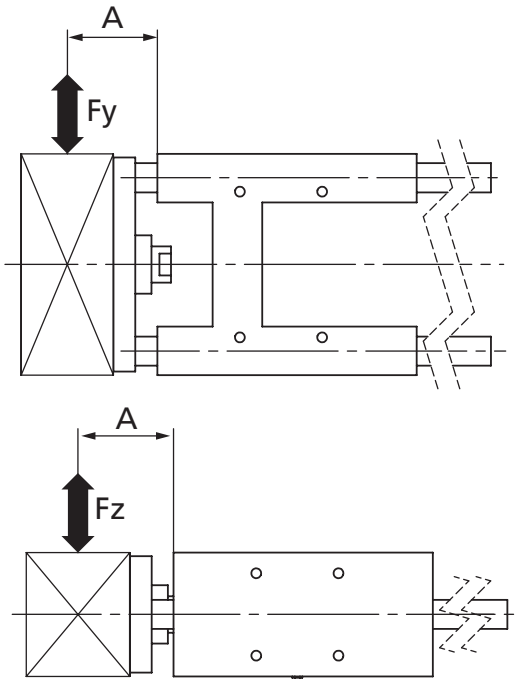


SLZ 63 Accessories / Fittings

Guide unit



Scope of delivery:
Guide unit, incl. fixing material



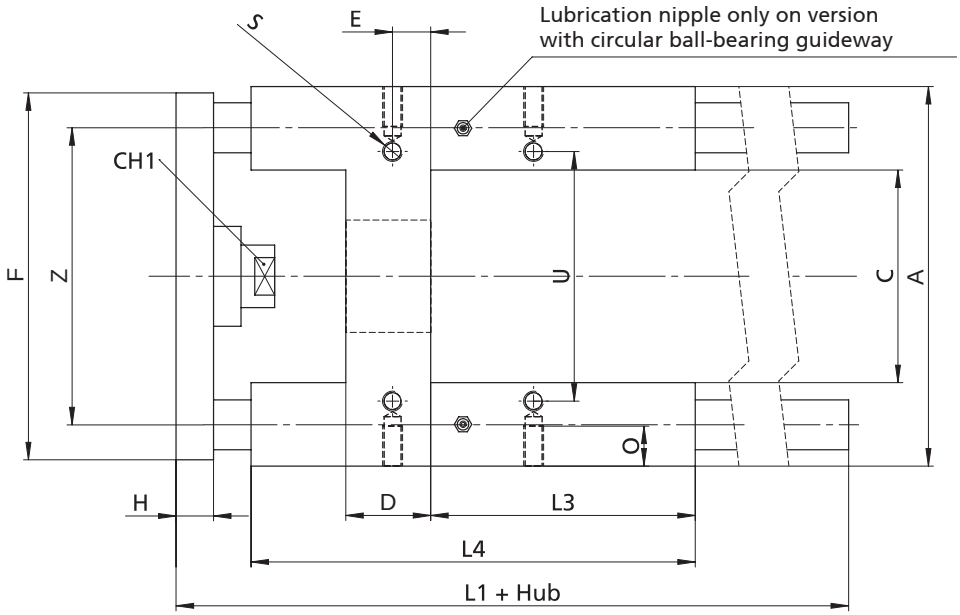
*Mz = Fy x A
My = Fz x A

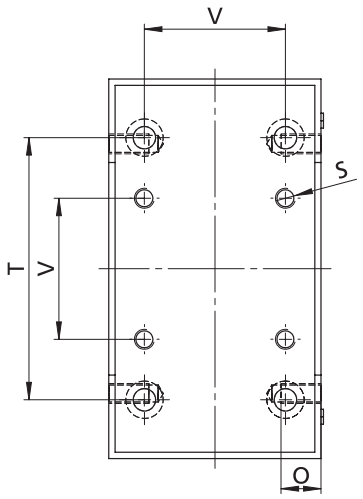
Version	Permissible dynamic load		Mass of guide units		Suitable for SLZ 63
	Mz (Nm)	My (Nm)	0-stroke (kg)	per 100 mm (kg)	
Slide guide	60	54	4.6	0.5	Trapezoidal screw

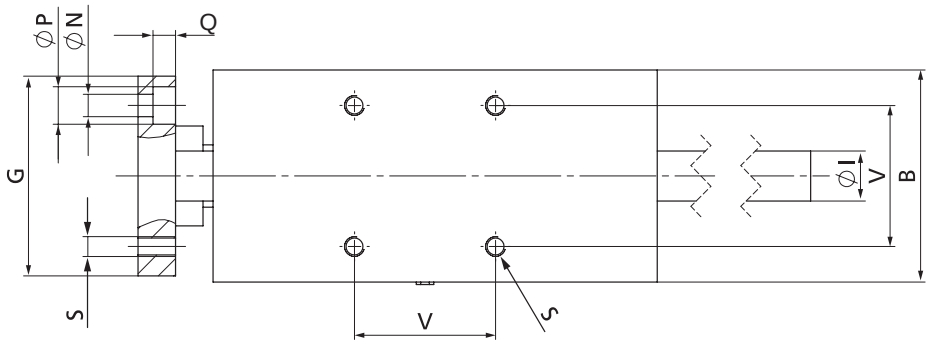
*Note:
The moments Mz and My are the permissible dynamic loads; the statistic loads are twice that.

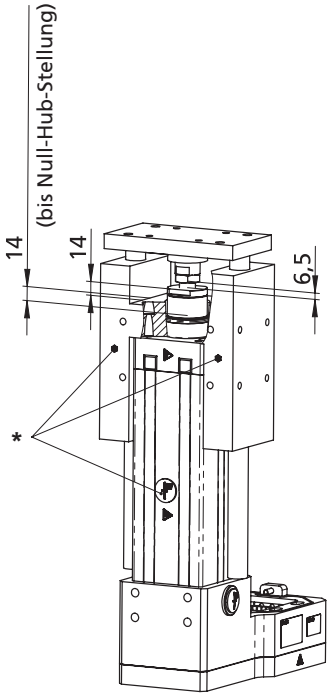
Code No.	Type	Stroke
QZD05_100	Guide unit for SLZ 63	100
QZD05_200		200
QZD05_300		300
QZD05_400		400
QZD05_500		500
QZD05_600		600
QZD05_700		700
QZD05_800		800
QZD05_900		900
QZD05_1000		1000

1 = Slide guide
2 = Ball bearing guide









G = Slide guide
K = Ball bearing guide

***Note:**
To keep access to the maintenance opening of the cylinder free, the housing must be mounted at an angle of 90°.
Ensure that the lubrication nipple of the guide unit is on the same side as the maintenance opening.

[mm]

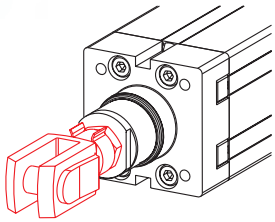
A	B	C	D	E	F	G	H	I	L1
152	85	85,2	34	15,3	147	80	15	20	243 (G) 225 (K)

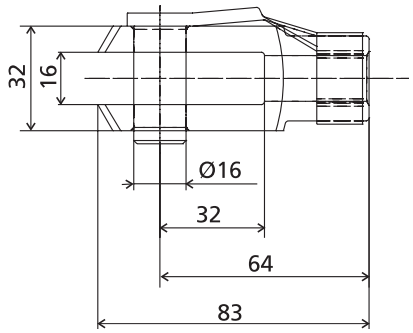
[mm]

L3	L4	N	O	P	Q	S	T	U	V	Z	CH1
106	178	9	16	15	9	M8	105	100	56,5	119	20

SLZ 63 Accessories / Fittings

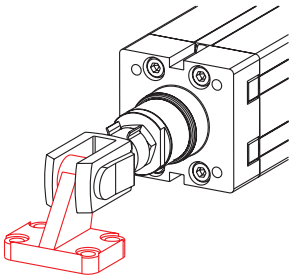
Clevis

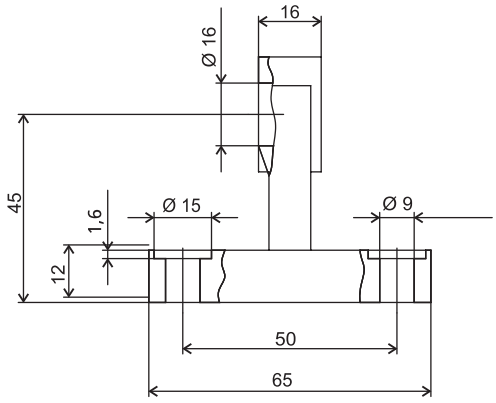


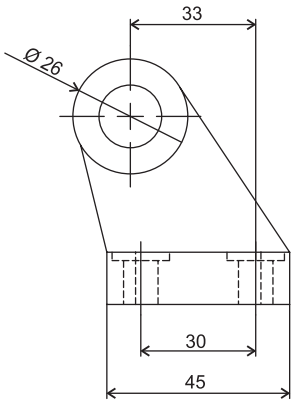


Code No.	Type	
QZD050644	SLZ 63	Cevis M16x1,5

Bearing block for clevis

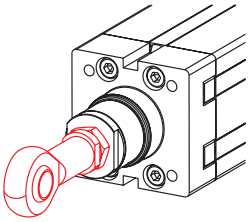


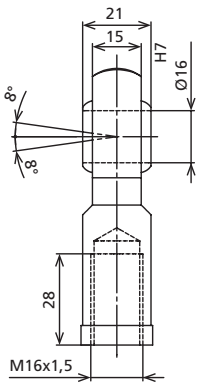


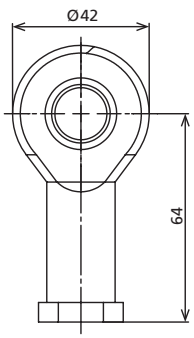


Code No.	Type	
QZD050573	SLZ 63	Bearing block Ø16

Swivel head

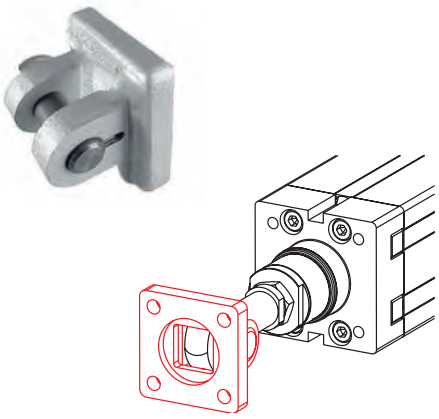


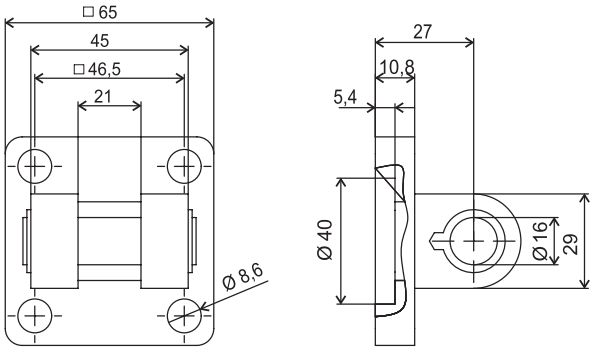




Code No.	Type	
QZD050645	SLZ 63	Swivel head M16x1,5

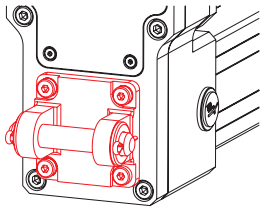
Clevis mounting for swivel head

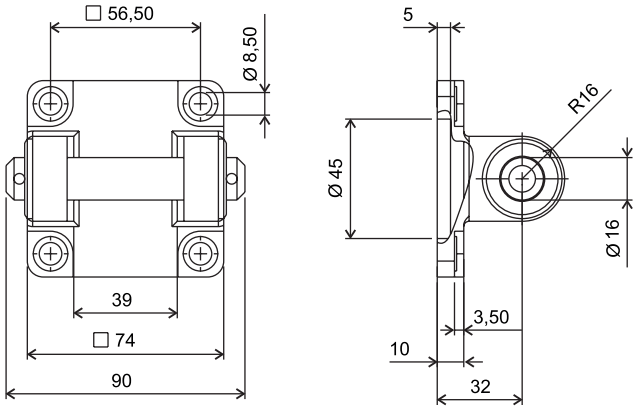




Code No.	Type	
QZD050577	SLZ 63	Fork attachment Ø 16

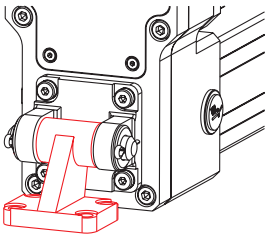
Swivel flange

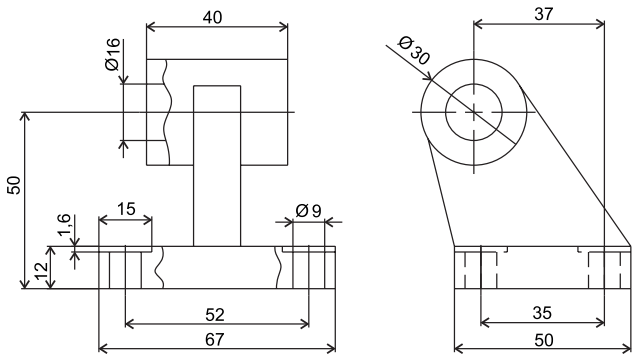




Code No.	Type	
QZD050580	SLZ 63	Swivel Ø 16

Bearing block for clevis mounting

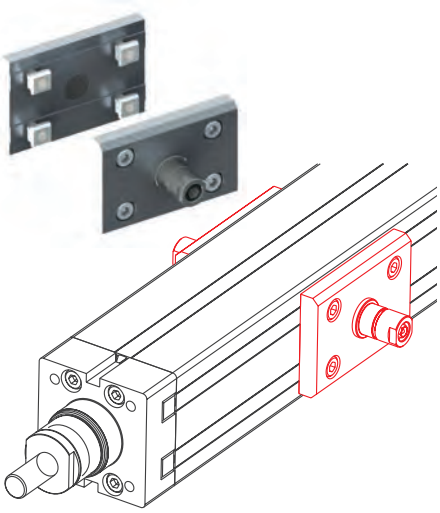


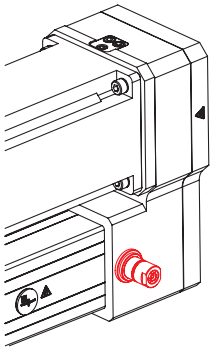


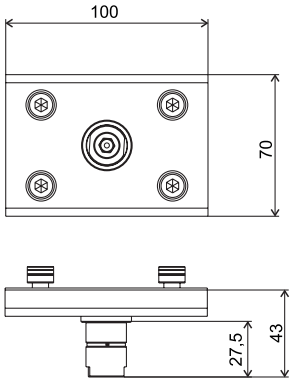
Code No.	Type	
QZD050585	SLZ 63	Bearing block wide Ø 16

SLZ 63 Accessories / Fittings

Trunnion support blocks

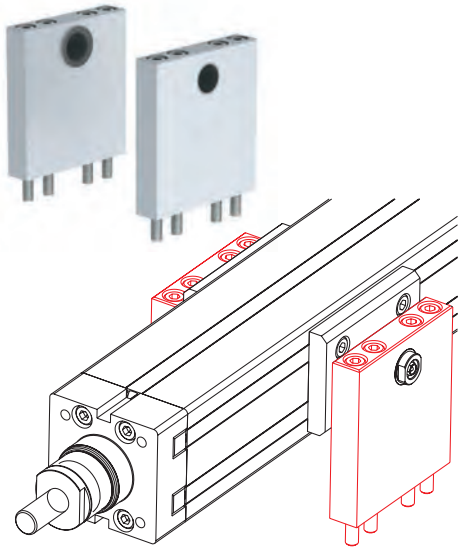


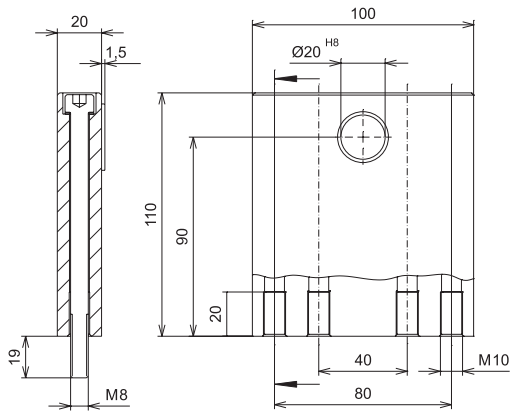




Code No.	Type
QZD050646	Trunnion support blocks SLZ 63
QZD050647	Trunnion SLZ 63

Support blocks for trunnion mounting





Code No.	Type
QZD050589	Support blocks SLZ 63

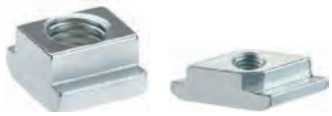
Order instruction slot stones:

- Purchase only in lot sizes and a multiple of that, see product table below

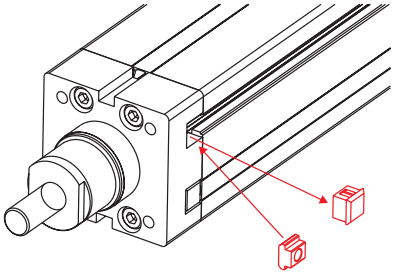
- Slot stones facilitate the attachment of fittings to the cylinder.

- They can be slid into the lateral slots (Type -N-) or swi velled into the slot from above (Type -R-).

Slot stones



Type -N- Type -R-



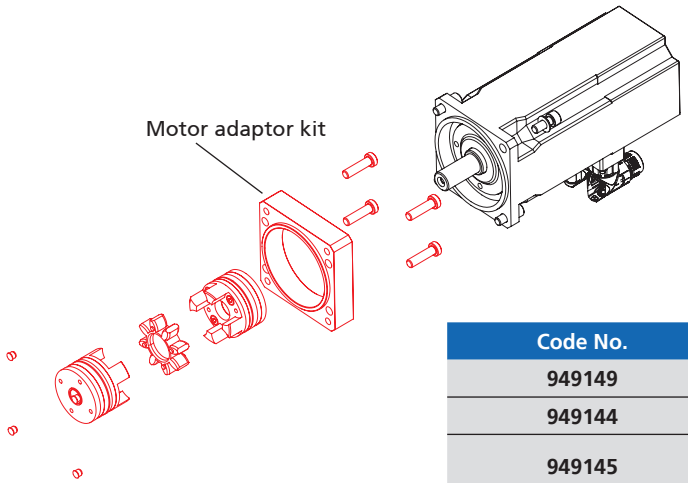
Code No.	Type	lot sizes	F [N]
4006201	Slot stone -N- M5	10, 20, 30... pcs	4000
4006203	Slot stone -N- M6	10, 20, 30... pcs	4000
4026207	Slot stone -N- M5	10, 20, 30... pcs	4000
4026203	Slot stone -N- M6	10, 20, 30... pcs	9000
4026206	Slot stone -N- M8	10, 20, 30... pcs	9000
4026221	Slot stone -R- M6	10, 20, 30... pcs	8000
4026222	Slot stone -R- M8	10, 20, 30... pcs	8000

Motor adaptor kit for 3 phase and servo motors

- Servomotors from the RK standard range can be easily connected
- Complete motor adaptor kits manufactured to your specifications on request
- Motor adaptors offer degree of protection IP 54 (IP 65 available on request)

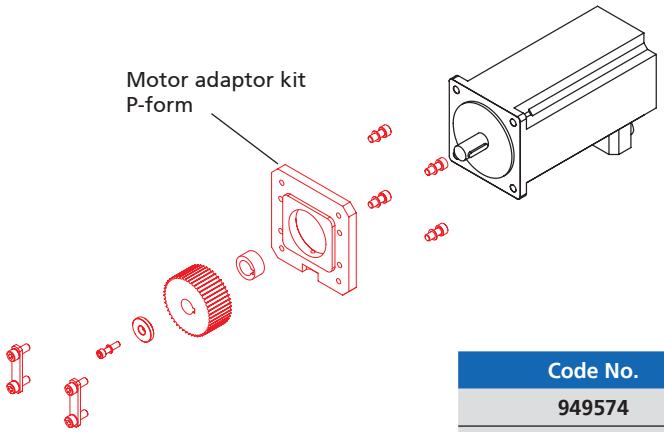
Scope of delivery:
Motor adaptor, elastomer coupling or gear and fixing material

3 phase motor / Servo motor



Code No.	3 phase motor / Servo motor or gear for SLZ 63
949149	for RK AC 345/470 (Servo motor)
949144	for RK AC 800 (Servo motor)
949145	for RF17 und WF20 (SEW - Drehstrommotoren) Motor adaptor fits all SEW flanges Ø120 with shaft Ø20x40
949148	for RF17 und WF20 (SEW- 3 phase motor)* Motor adaptor fits all SEW flanges Ø120 with shaft Ø20x40
949146	for PLE 80 (gear)
949147	for PLE 120 (gear)

*Note:
The motor adaptor must be used in combination with SLZ 63 TR FL/PL.

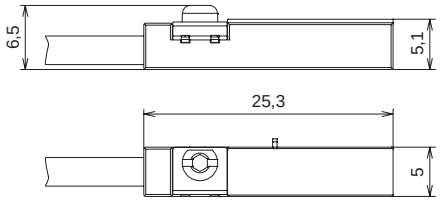


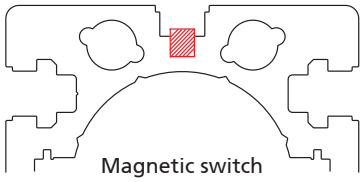
Code No.	3 phase motor / Servo motor or gear for SLZ 63
949574	for RK AC 345/470 (Servo motor)
949570	for RK AC 800 (Servo motor)
949571	for RF07, RF17 and RF 27 (SEW- 3 phase motor) Motor adaptor fits all SEW flanges Ø120 with shaft Ø20x40
949572	for PLE 80 (gear)
949573	for PLE 120 (gear)

SLZ 63 Accessories / Fittings

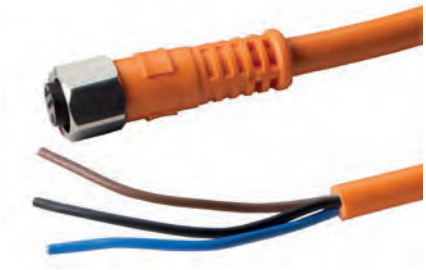
Magnetic switch

- Signals from the magnetic switch can be collected and evaluated by a customer-provided control unit (such as a PLC).
- The switch can be retrofitted in the lateral slot (protected by a cover profile as standard)
- Magnets are already integrated within the cylinder as standard.





Extension for magnetic switch



Magnetic switch – Technical data

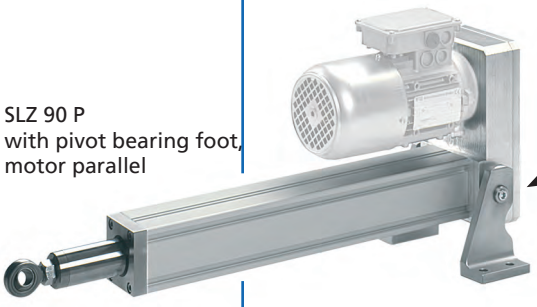
	NC contact
Voltage	10-30 V DC
Current consumption	< 10 mA
Output current	Max. 100 mA
Output type	PNP
Function indication	LED
Ambient temperature	-20°C to +70°C
Degree of protection	IP 67

Code No.	Type
QZD050602	Magnetic switch, NC contact, incl. extension for magnetic switch, cable length 5,3 m

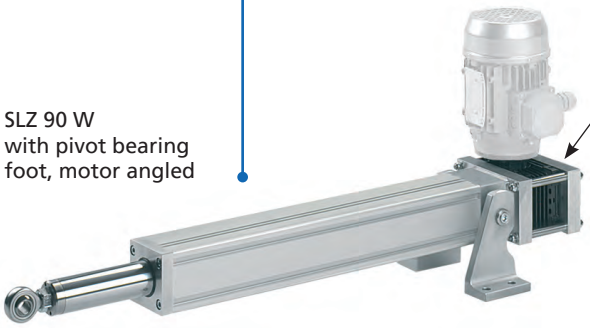
The powerful linear cylinder for precise moving applications up to 25,000 N

SLZ 90 S
With pivot bearing foot, rod shaped

SLZ 90 P
with pivot bearing foot, motor parallel



SLZ 90 W
with pivot bearing foot, motor angled



SLZ 90 version with fixing boss

SLZ 90 version with pivot bearing foot

Drive options for SLZ 90
- 3-phase motor
- Servo motor

Features:

- Choice of drives (3-phase motor/servo motor)
- Flexible use of space due to different motor configurations
- Forces from 10,000 N to 25,000 N
- Coverable slot geometry on both sides supports a range of fixing options for attachments
- Push rod with rotation locking
- Travel up to 2000 mm
- Maintenance-free for entire lifetime of unit
- IP 54
- Self-locking
- Integrated magnets for external magnetic switches

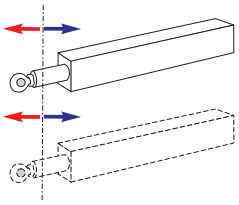
Options:

- Optional IP 65 can be supplied
- Special stroke lengths available on request
- ACME screw version optionally available with motor brake

Table of contents

Properties/Technical data General information/operating conditions ... Page 344

Versions
(Dimensions, order numbers) SLZ 90 electric cylinder with pivot bearing foot and fixing boss:



SLZ 90 S ..... Page 346 - 347

SLZ 90 P ..... Page 348 - 350

SLZ 90 W ..... Page 352 - 354

Accessories
Fixing Slot stone -R- ..... Page 355

Position determination Magnetic switch ..... Page 355

Technical data

General information/operating conditions

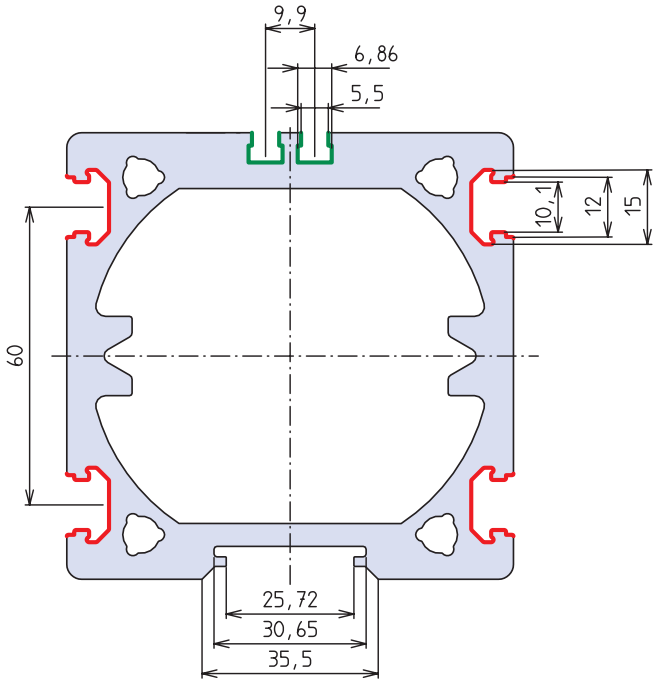
Type	SLZ 90 with ACME screw for moving applications		
	SLZ 90 S	SLZ 90 P	SLZ 90 W
Push force/Pull force	24,000 N	14,000 N	25,000 N
Self-locking (via motor brake)	25,000 N	25,000 N	25,000 N
Max. speed	77 mm/s	77 mm/s	23 mm/s
Design	Linear cylinder with ACME screw 26 x 5 or 36 x 6		
Guide	Double bearing provided by slide bushes		
Installation position	Any position, without shear forces		
Ambient temperature	-20°C to +70°C		
Repeatability	± 0.3 mm		
Duty cycle (at max. load)	25% (2.5 mins operating time; 7.5 mins rest time/depending on sizing, up to 40% duty cycle possible)		
Voltage	230/400 V AC		
Current consumption (max. starting current)	depending on motor selection		
Power input	depending on motor selection, up to 1.5 KW		
Protection class	IP 54 (optional IP 65)		

The data refers to a three-phase motor 230/400 V AC, 50 Hz, different performance data available on request.

Connecting slots – guide profile

Slot for magnetic switch, see page 355

Slot for accessory attachment
(30 BLOCAN® slot geometry)



Versions

Order instructions:

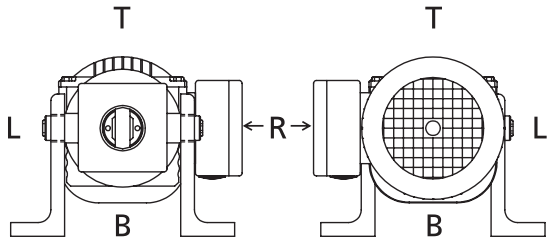
- Longer stroke lengths on request
- Other speeds and motors available on request

SLZ 90 S versions with ACME screw

Code No.	Type	Max. force F [N]	Max. speed [mm/s]	Max. stroke [mm]	Output [kW]	Motor selection
ACME screw 36 x 6						**without motor brake**
TQ21A1S23_2_A_ _ _ _	SLZ 90 S	25,000	10	1,100	0.75	RF17DRN80M4
						with motor brake
TQ21A1S22_2_A_ _ _ _	SLZ 90 S	5,000	63	2,000	1.1	RF17DRN80M2/BE1

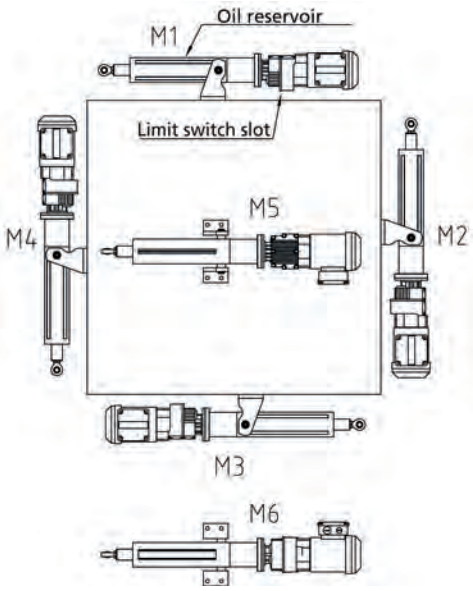
Stroke length

Installation position of terminal box

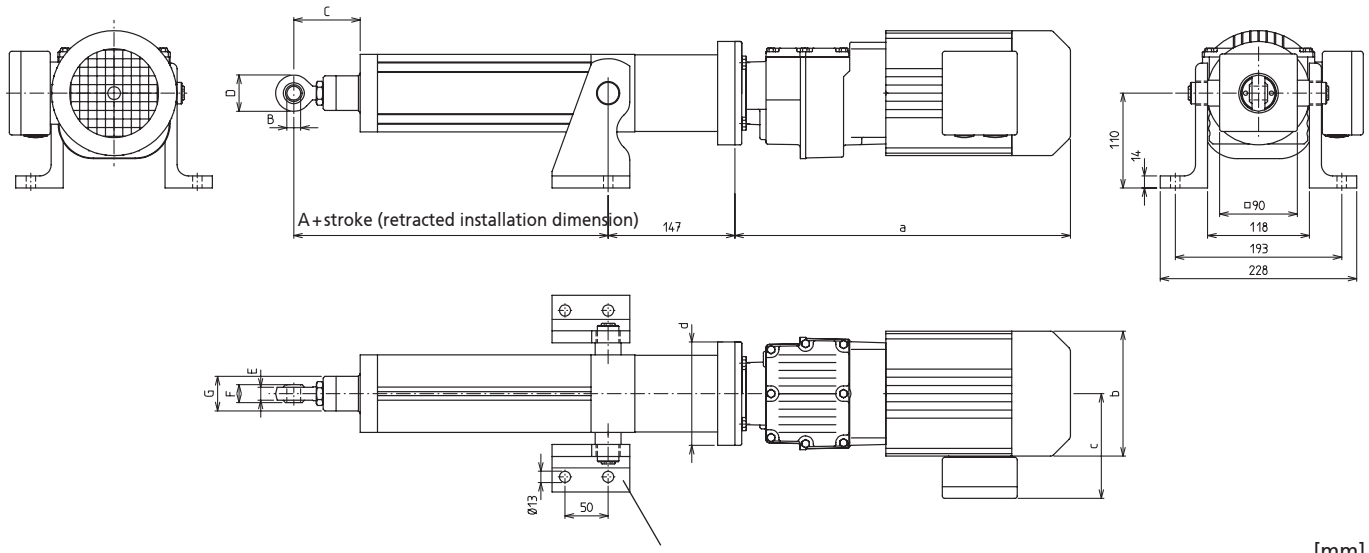


All diagrams show the terminal box in the R position

1 = M1 4 = M4
2 = M2 5 = M5
3 = M3 6 = M6



Version with pivot bearing foot



[mm]

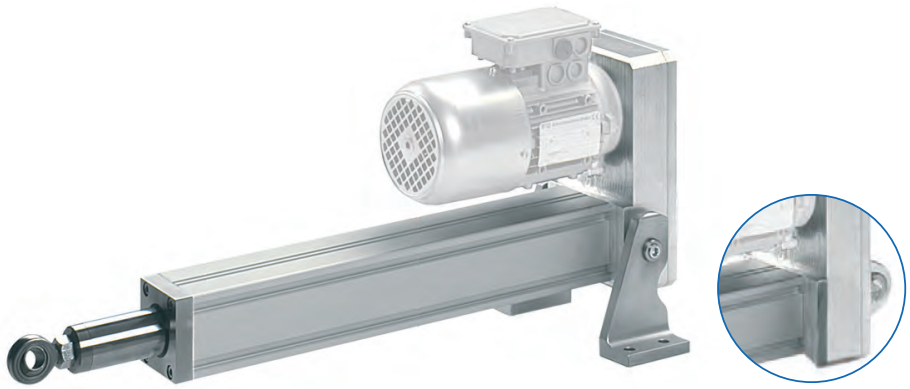
3-phase motors	a	b	c	d	Weight [kg]
RF17DRN80M4	410	Ø156	128	Ø120	17
RF17DRN80M2/BE1	491		139		20

Type	A	B	C	D	E	F	G	Weight [kg]	
								Basic length (dimension A)	Additional weight/100 mm
Tr 36x6	245	Ø20	113	50	18	25	Ø50	12.0	2.0

Versions

Order instructions:

- Longer stroke lengths on request
- Other speeds and motors available on request

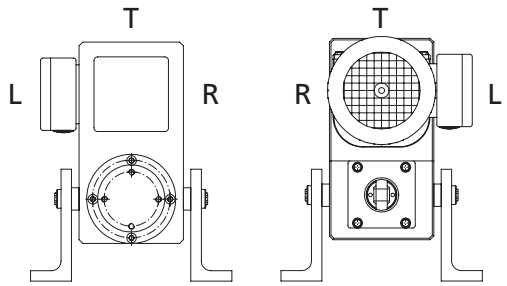


SLZ 90 P versions with ACME screw

Code No.	Type	Max. force F [N]	Max. speed [mm/s]	Max. stroke [mm]	Output [kW]	Motor selection
ACME screw 26 x 5						**without motor brake**
TQ21A1P_3_2_A_ _ _ _	SLZ 90 P	25,000	10	1,100	0.75	RF17DRN80M4
						with motor brake
TQ21A1P_2_2_A_ _ _ _	SLZ 90 P	5,000	63	2,000	1.1	RF17DRN80M2/BE1

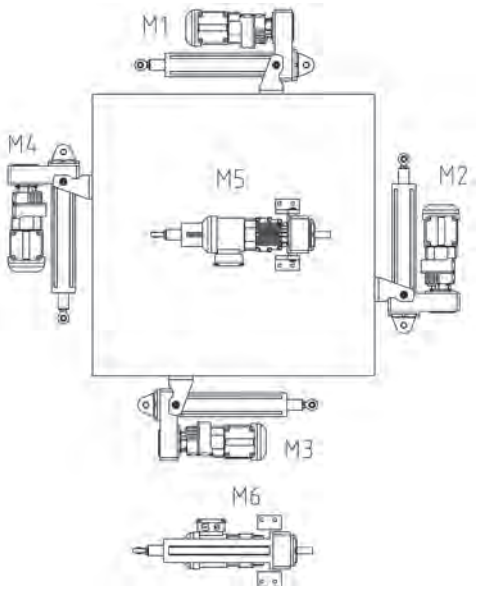
Stroke length

Installation position of terminal box



All diagrams show the terminal box in the L position

1 = M1 4 = M4
2 = M2 5 = M5
3 = M3 6 = M6

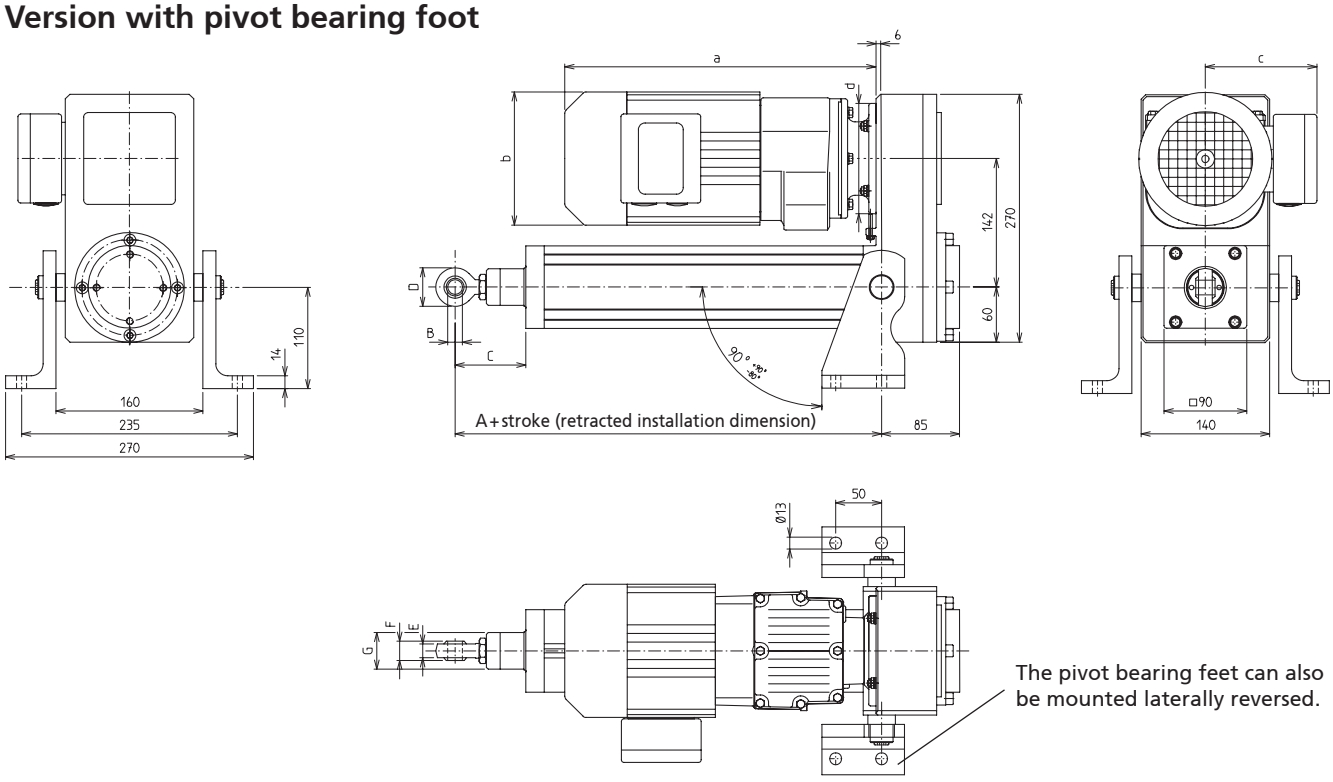


Connection versions

2 = pivot bearing

3 = fixing boss

Version with pivot bearing foot



The pivot bearing feet can also be mounted laterally reversed.

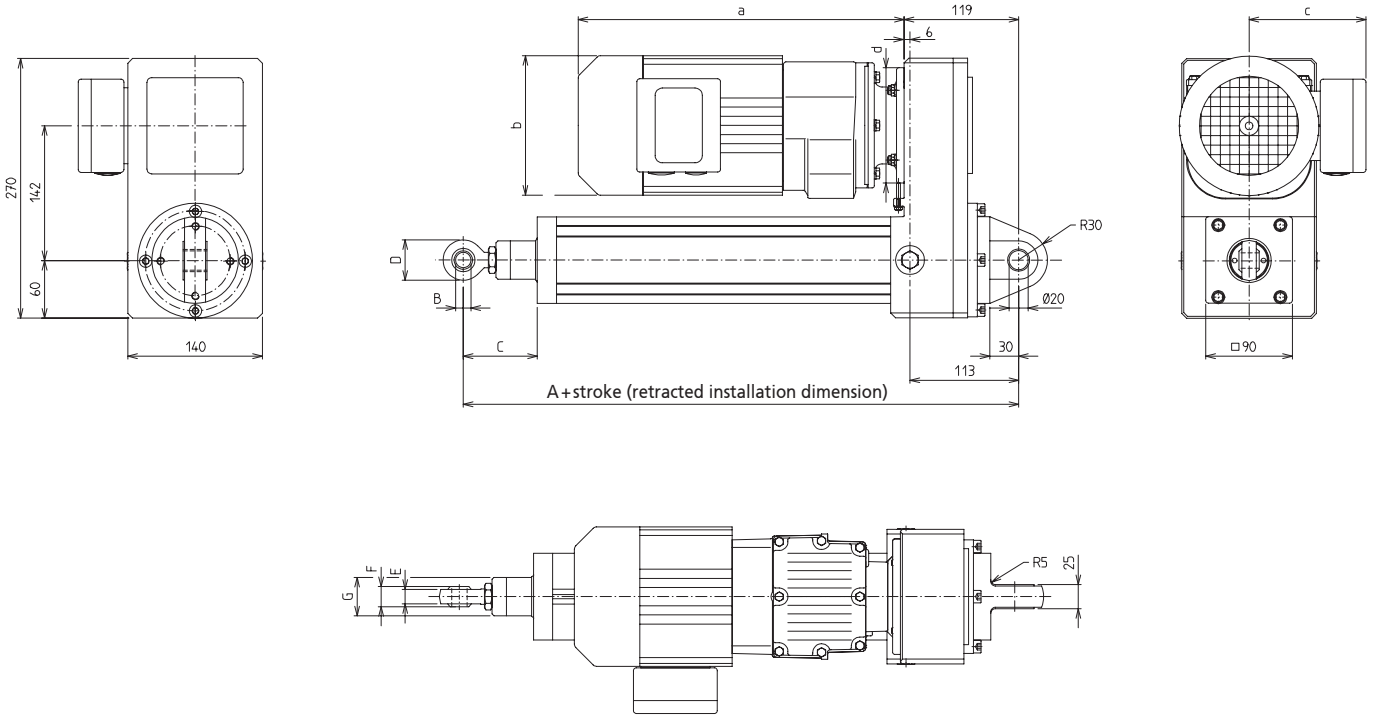
[mm]

3-phase motors	a	b	c	d	Weight [kg]
RF17DRN80M4	410	Ø156	128	Ø120	17
RF17DRN80M2/BE1	491		139		20

Type	A	B	C	D	E	F	G	Weight [kg]	
								Basic length (dimension A)	Additional weight/ 100 mm
Tr 36x6	245	Ø20	113	50	18	25	Ø50	13.1	2.0

Versions

Version with fixing boss



[mm]

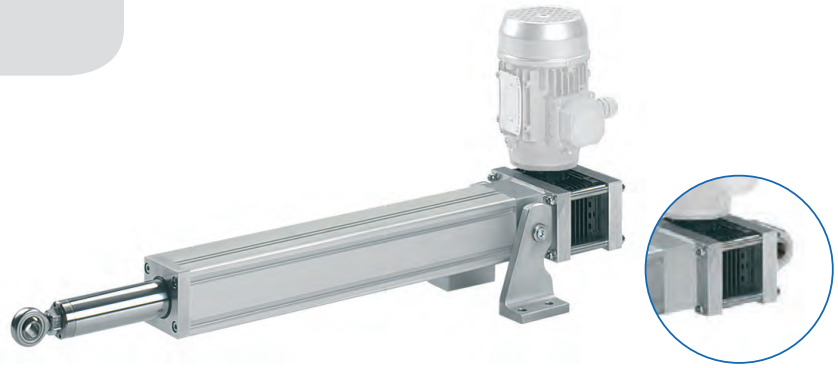
3-phase motors	a	b	c	d	Weight [kg]
RF17DRN80M4	410	Ø156	128	Ø120	17
RF17DRN80M2/BE1	491		139		20

Type	A	B	C	D	E	F	G	Weight [kg]	
								Basic length (dimension A)	Additional weight/ 100 mm
Tr 36x6	358	Ø20	113	50	18	25	Ø50	11.3	2.0

Versions

Order instructions:

- Longer stroke lengths on request
- Other speeds and motors available on request

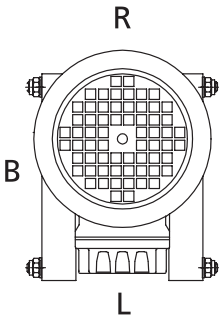


SLZ 90 W versions with ACME screw

Code No.	Type	Max. force F [N]	Max. speed [mm/s]	Max. stroke [mm]	Output [kW]	Motor selection
ACME screw 36 x 6						**without motor brake**
TQ21A1W_3_2_A_ _ _ _	SLZ 90 W	22,000	7	1,300	0.55	DRS71M4/FT
TQ21A1W_1_2_A_ _ _ _	SLZ 90 W	25,000	18	1,200	1.5	DRN90L4/FT

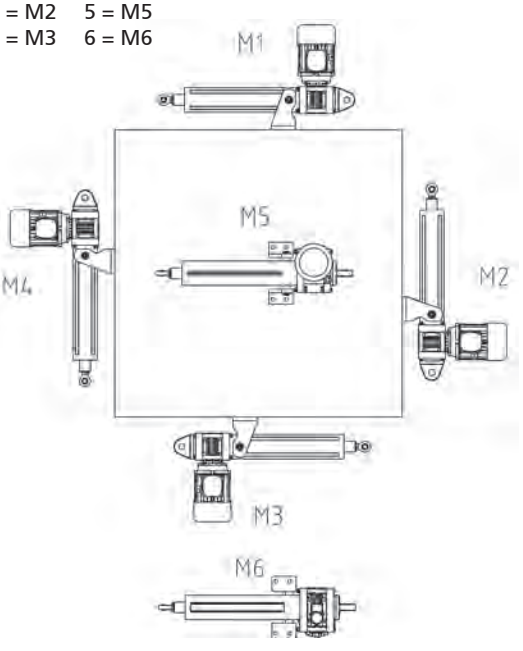
Stroke length

Installation position of terminal box



All diagrams show the terminal box in the L position

1 = M1 4 = M4
2 = M2 5 = M5
3 = M3 6 = M6

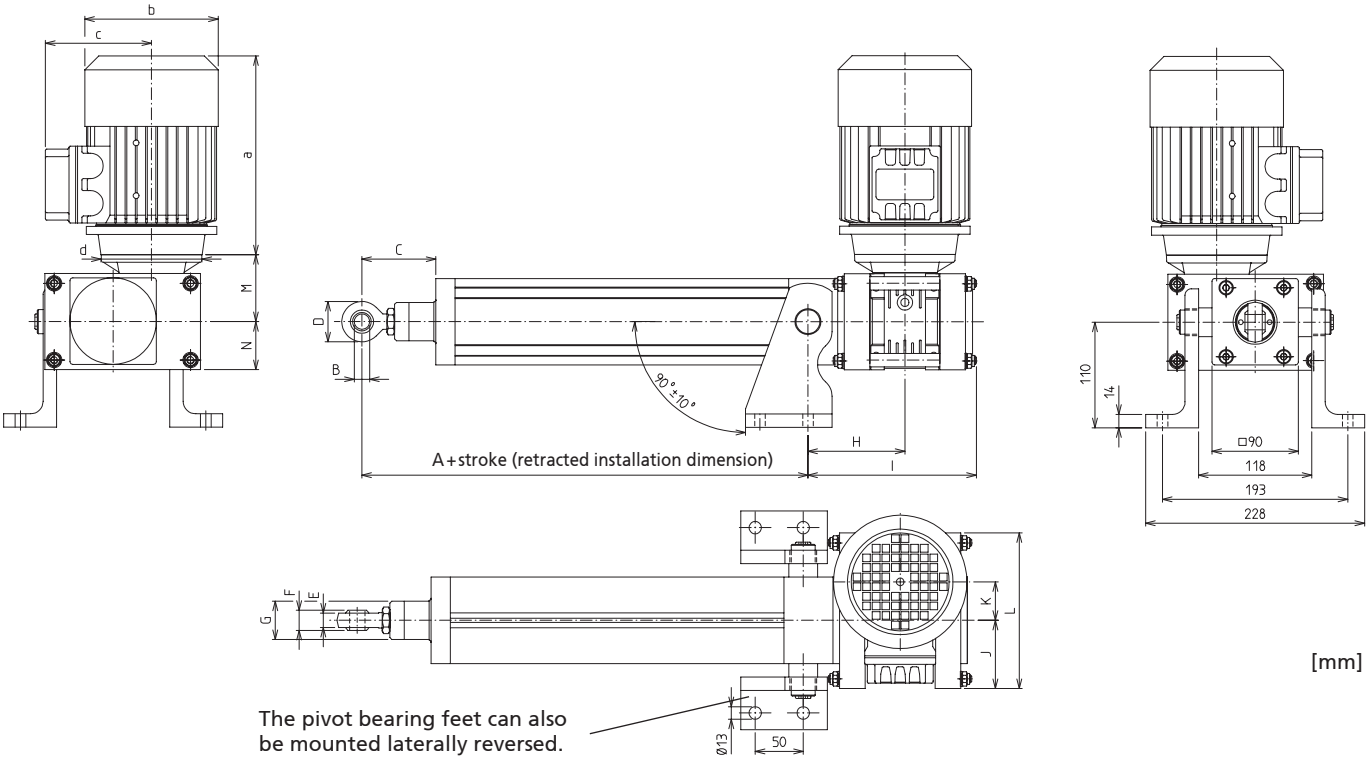


Connection versions

2 = pivot bearing

3 = fixing boss

Version with pivot bearing foot



The pivot bearing feet can also be mounted laterally reversed.

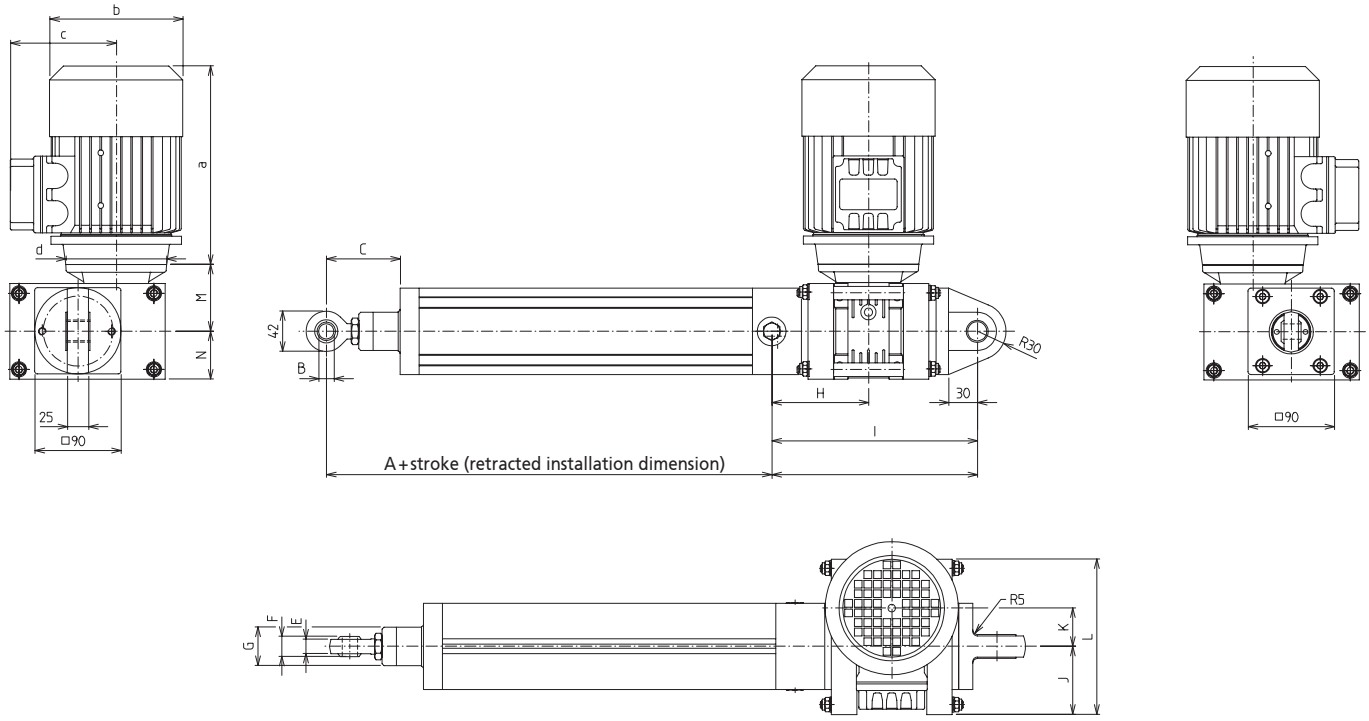
[mm]

3-phase motors	a	b	c	d	Weight [kg]
DRS71M4 / FT	223	Ø139	119	Ø120	9
DRN90L4 / FT	313	Ø179	140	Ø140	23

Type	A	B	C	D	E	F	G	H	I	J	K	L	M	N	Weight [kg]	
															Basic length (dimension A)	Additional weight/ 100 mm
Tr 36x6	245	Ø20	113	50	18	25	Ø50	117.5	212	98	63	231.5	109	72	21.7	2.0

Fixing/Position determination

Version with fixing boss



[mm]

Three-phase motors	a	b	c	d	Weight [kg]
DRS71M4 / FT	223	Ø139	119	Ø120	9
DRN90L4 / FT	313	Ø179	140	Ø140	23

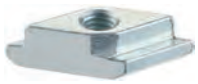
Type	A	B	C	D	E	F	G	H	I	J	K	L	M	N	Weight [kg]	
															Basic length (dimension A)	Additional weight/ 100 mm
Tr 36x6	493	Ø20	113	50	18	25	Ø50	117.5	248	98	63	231.5	109	72	19.9	2.0

Order instruction square nut:

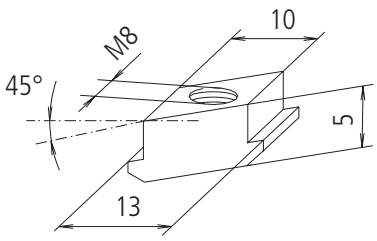
- Purchase only in lot sizes and a multiple of that, see product table below

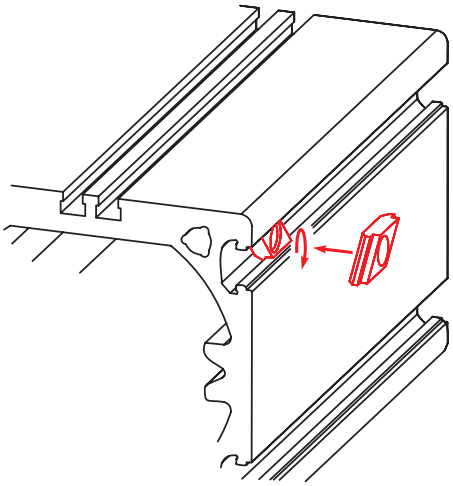
- Slot stones facilitate the fitting of attachments to the cylinder. To this end, they can be swivelled into the slot from above (Type -R-).

Nutenstein -R-



Type -R-

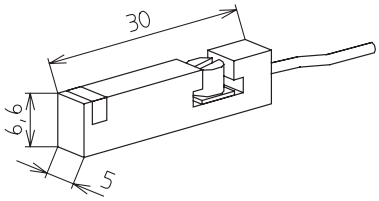


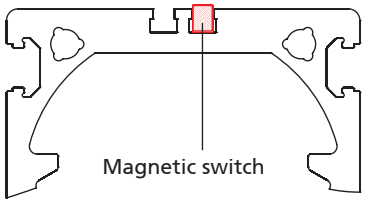


Code No.	Type	lot sizes	F [N]
4006223	Slot stone -R- M8	10, 20, 30... pcs	4,000

Magnetic switch

- Signals from the magnetic switch can be collected and evaluated by a customer-provided control unit (such as a PLC).
- The switch can be retrofitted in the lateral slot (protected by a cover profile as standard)





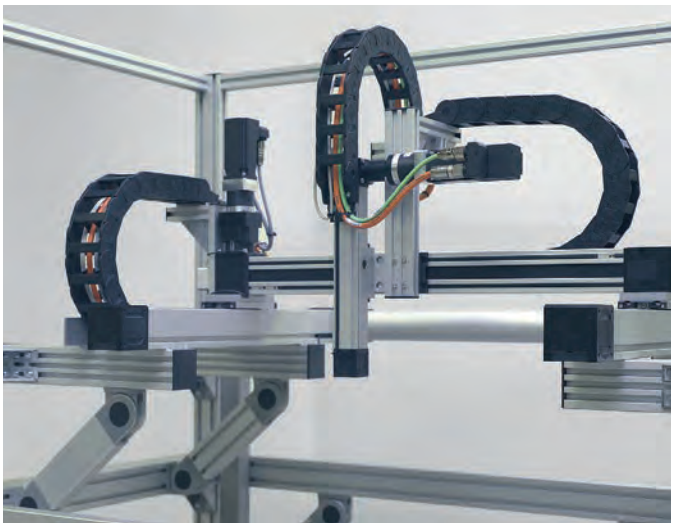
Code No.	Type
QZD050599	Magnetic switch, NC contact*, cable length 5.3 m

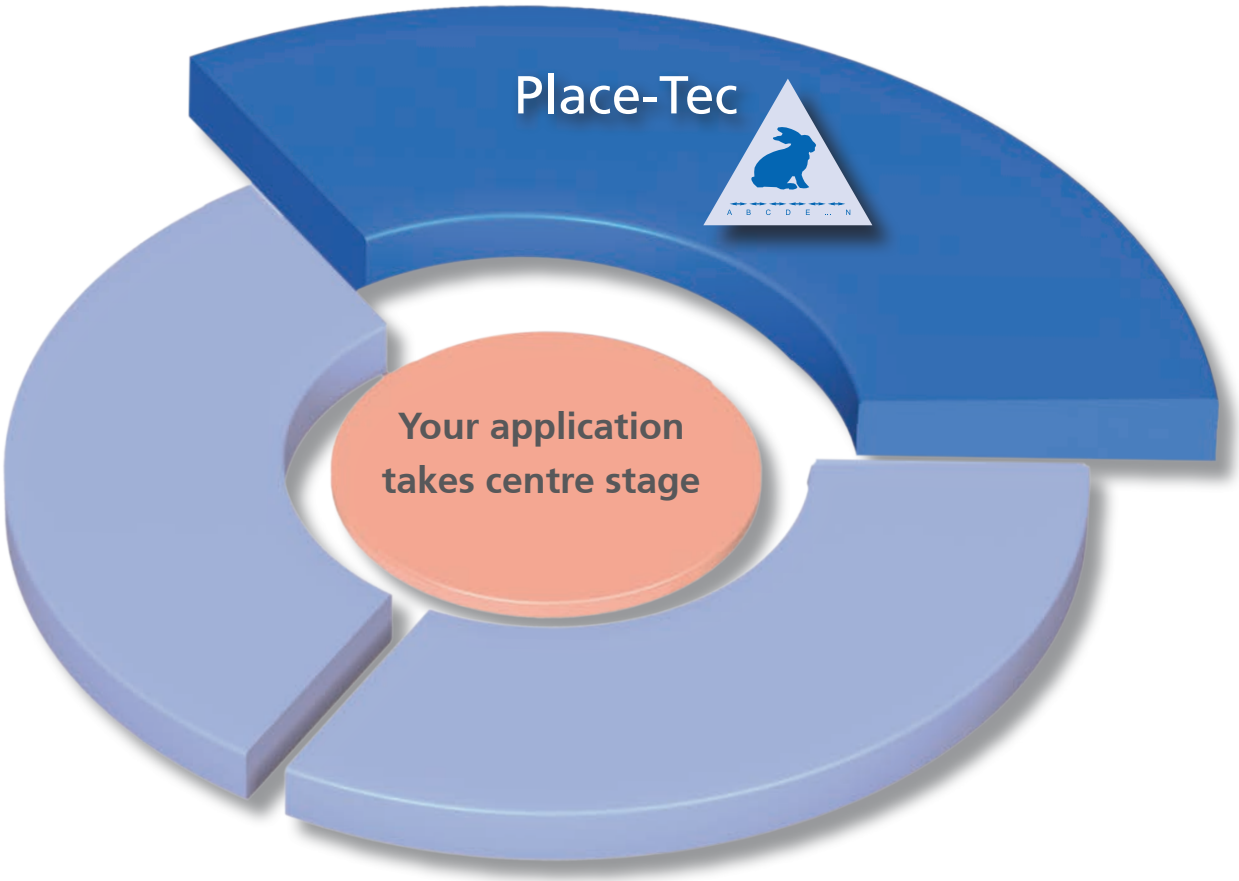
*Magnetic switch, NO contact, available on request

Magnetic switch – Technical data

	NC contact
Voltage	10-30 V DC
Current consumption	< 10 mA
Output current	Max. 100 mA
Output type	PNP
Function indication	LED
Ambient temperature	-25°C to +85°C
Protection class	IP 67

Place-Tec





Place-Tec features:

- High cycle rates
- 3 shift operation
- Short cycle times
- High reliability
- High repeatability

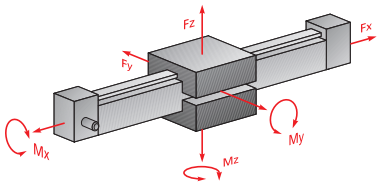
Loading and unloading, palletising, pick & place

Rodless style ..... Page 360 - 453

Rodstyle ..... Page 454 - 467

Place-Tec overview

Rodless style | Drive + Guide



Length/Strokes [mm]
Forces [N]
Moments [Nm]

The “max.” data refer to the smallest/largest sizes

Roller guide actuators/guides

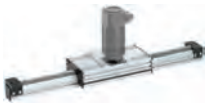
Ball rail actuators/guides

	MonoLine Z from page 364	MultiLine from page 394	RK DuoLine Z from page 418
Size	40, 60, 80, 120	200	60, 80, 120,160
Max. travel	5385-5814 mm	5620 mm	5753-9010 mm
Fx max.	420-4800 N	4700 N	900-6000N
Fy max.	1100-9400 N	8200 N	700-5100 N
Fz max.	694-5200 N	12000 N	2500-8900 N
Mx max.	14-280 Nm	920 Nm	48-500 Nm
My max.	35-1010 Nm	1600 Nm	250-1200 Nm
Mz max.	55-1780 Nm	1500 Nm	220-1150 Nm
Timing-belt	●	●	●
Guide without drive	●	●	●
Features	● Roller guide paired with wide timing-belt and optimum connecting options via slots in the guide profile/carriage	● Compact ball rail actuator for high loads	● All-round talent with encapsulated guide system

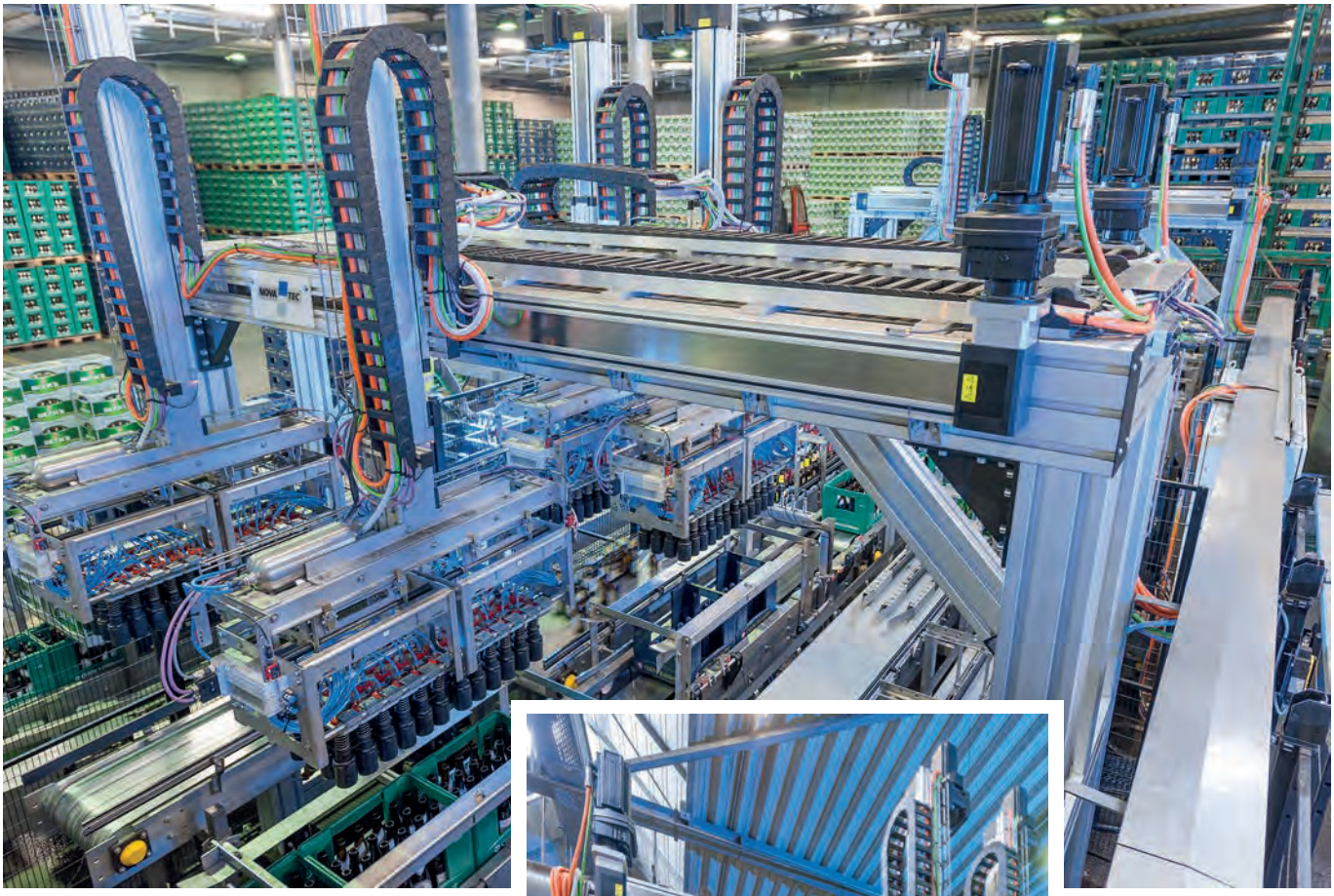
Rodstyle | Drive + Guide

The “max.” data refer to the smallest/largest sizes

Roller guide actuators

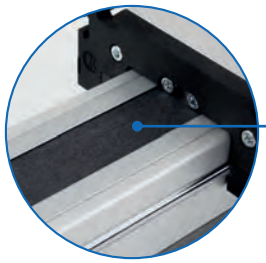


	MonoLine MT from page 374	SQ MT from page 454	SQ ZST from page 468
Size	80	30, 40, 50, 60, 80	60, 80
Max. travel	5614 mm	3722-17476 mm	29530 mm
Fx max.	1500 N	480-3200 N	Motor-dependent
Fy max.	4367 N	1000-5000 N	2550 N
Fz max.	2509 N	1200-6000 N	2550 N
Mx max.	95 Nm	48-380 Nm	99-124 Nm
My max.	564 Nm	70-430 Nm	171-201 Nm
Mz max.	982 Nm	60-370 Nm	171-201 Nm
Features	● Timing-belt unit for large stroke lengths	● Timing-belt unit for large stroke lengths	● Rack unit for large strokes up to 30 m

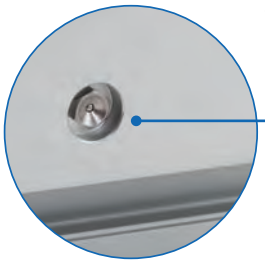


Application example: sorting machine of empties

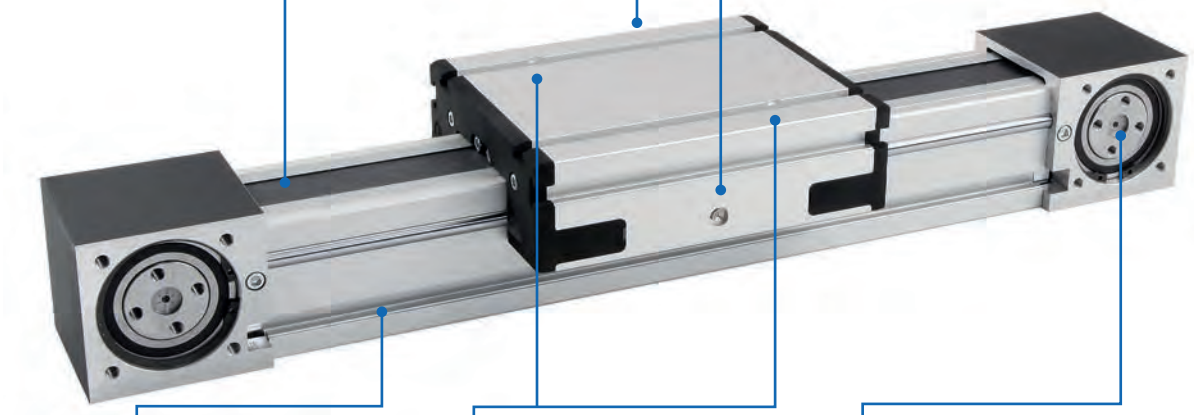
Key features / technical benefits

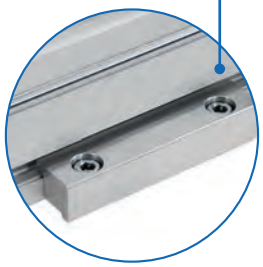


Guided timing-belt

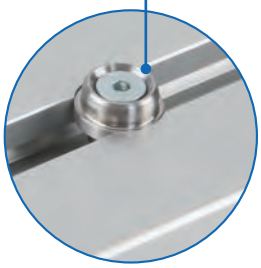


Tapered lubricating nipple
- Central lubricating access on the carriage facilitates maintenance





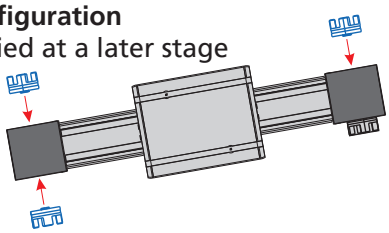
Clamping strip
- Secures the axis reliably



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

Variable motor connection
- For metal bellows coupling
- For servo coupling with zero back lash

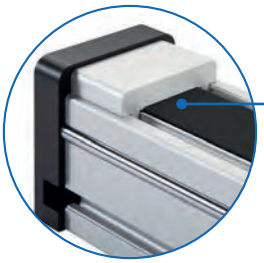
Motor shaft configuration
- Can be modified at a later stage



Key features

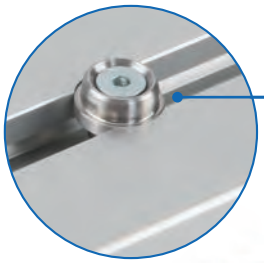
General
- High efficiency
- Low idle torque
- Max. usable travel speed regardless of length
- Central lubricating access on the carriage facilitates maintenance

RK MonoLine Z
- Degree of protection IP20
- Flexible positioning of motor thanks to pulley boxes
- Repeat accuracy ±0.05 mm
- Guided timing-belt
- Centring holes in the guide table

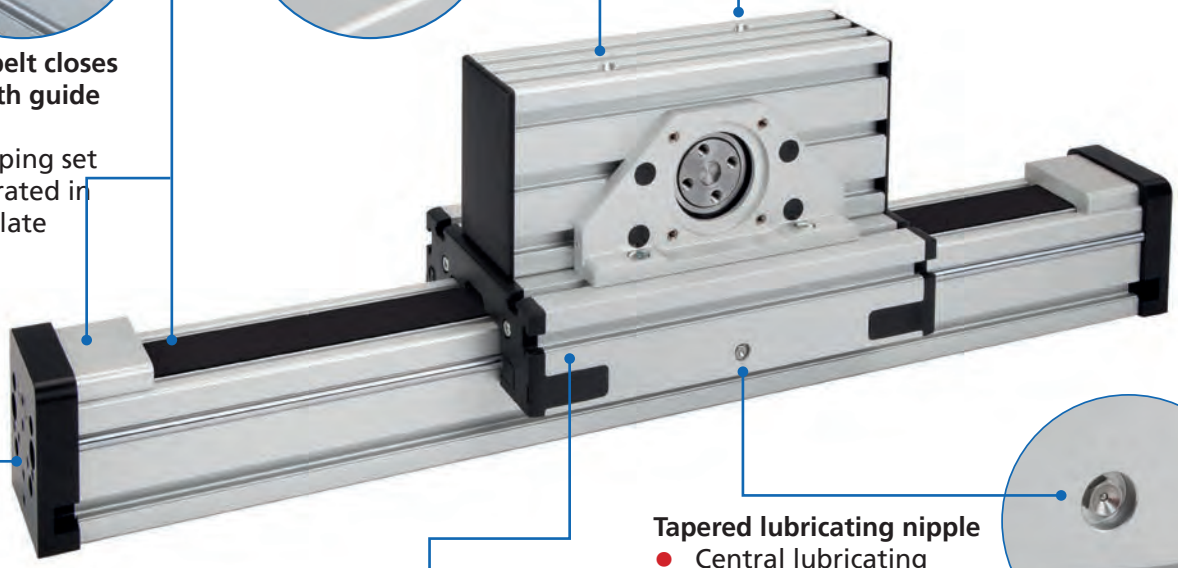


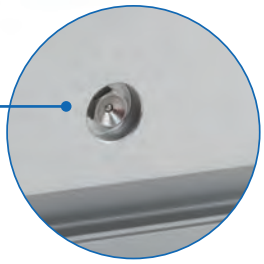
Timing belt closes flush with guide profile

- Clamping set integrated in end plate



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



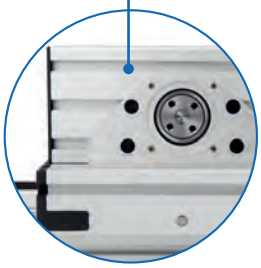


Tapered lubricating nipple

- Central lubricating access on the carriage facilitates maintenance

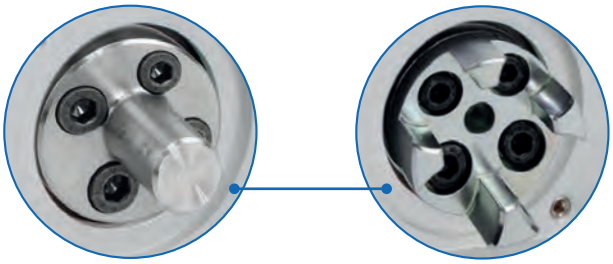
Centring holes and fixing thread

- Simple connection of the payload
- At both end plates possible



Short- and long carriage

- Simple assembly by slots and centring holes

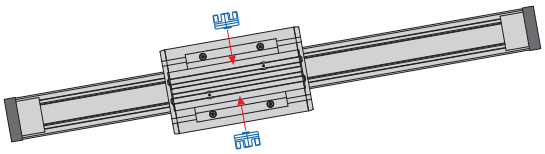


Variable motor connection

- For metal bellows coupling
- For servo coupling with zero backlash

Motor shaft configuration

- Can be modified at a later stage

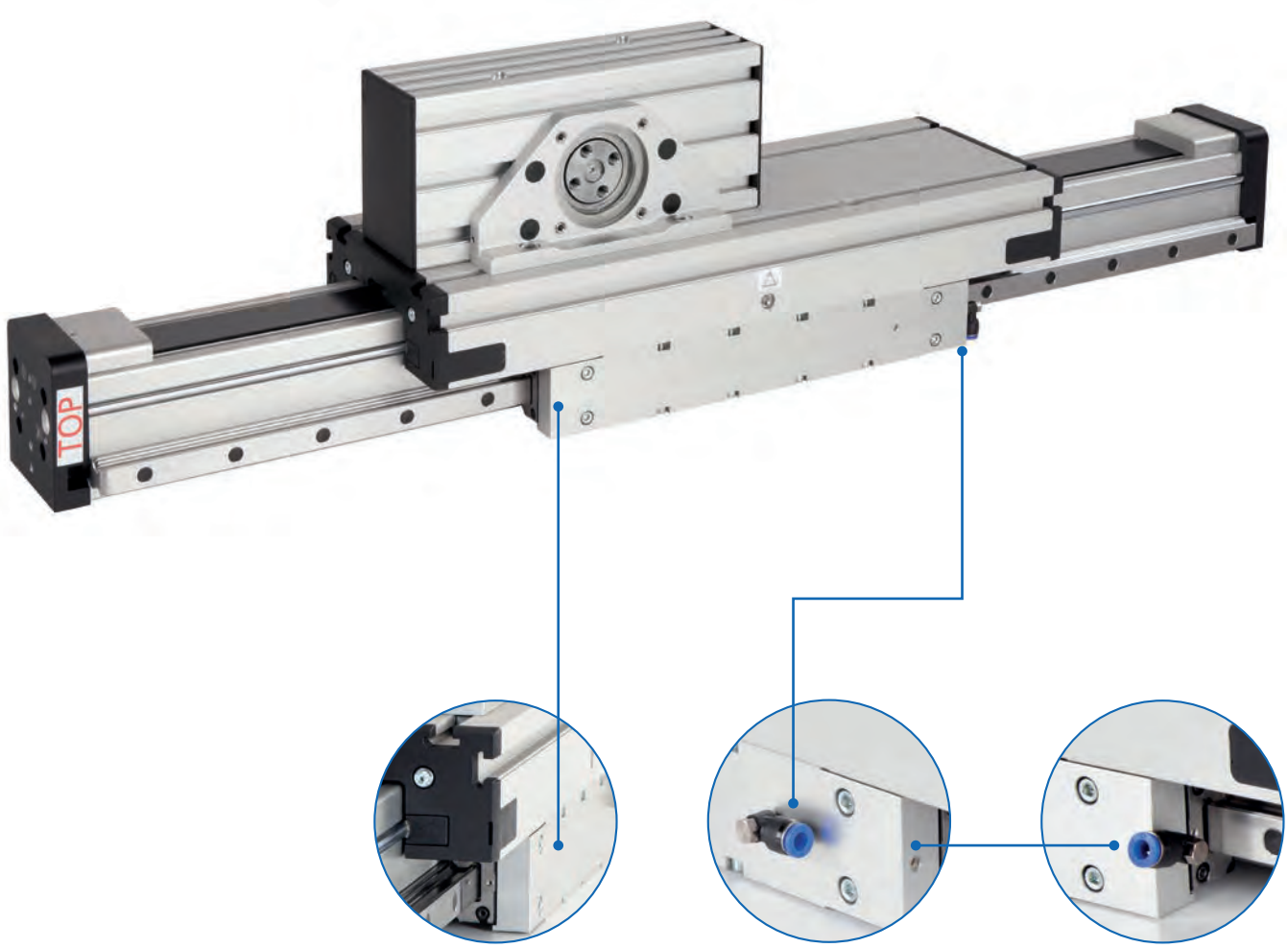


RK MonoLine MT

- Motor can be mounted optional at each side
- Vertical installation with locking device optional
- Additional independently movable guide carriages
- Repeat accuracy ±0.05 mm

Timing-belt units with secure locking function

Key features/technical benefits in addition to the RK MonoLine MT without Safelock



Compact
- No obstructing contour on the side

Variable compressed air connection
- Can be modified at a later stage

Image shows the locking element's standard installation position

The locking element can also be assembled on the opposite side with an identical operating direction at the factory on request.

RK MonoLine MT Safelock
- Motor can be mounted optional at each side
- Secure locking function for gravity-loaded applications
- Additional independently movable guide carriages
- Repeat accuracy ±0.05 mm

- As a safeguard for installation, removal and maintenance work
- Guaranteed nominal holding force on greased ball rails thanks to self-amplifying system
- „Safelock" safety locking device is an approved component in accordance with category 1 of DIN EN ISO 13849-1, which should be considered
- B10 = 1.000.000 operations (static)
- Performance level PL D achievable. PL E as redundant version available on request
- Compact locking system underneath the guide carriage
- Overload-proof locking element

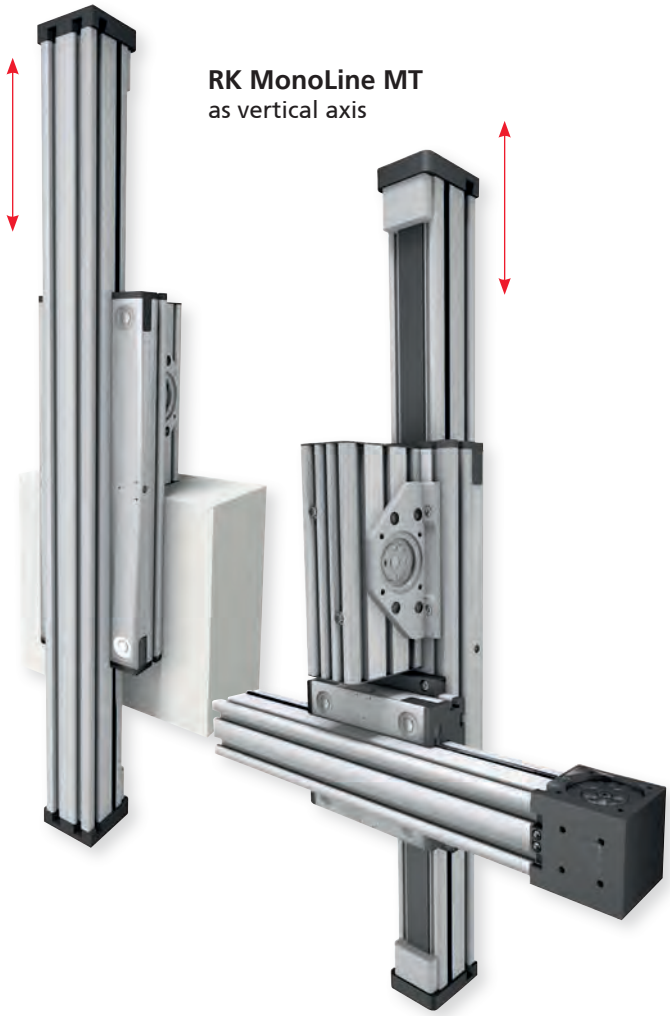
	Toothed belt
	RK MonoLine MT 80 / 80x120 / 80x160 Safelock
Nominal holding force Safelock (at B10 = 1.000.000 operations)	1500 N
DGUV test certification	Tested based on testing principles GS-MF-01 and GS-MF-28

Note:
Maximum holding force = 2x nominal holding force.
Emergency braking of a moving load is not proper use.
If the nominal holding force is exceeded, or after every emergency braking, a functional check has to be performed in normal mode as per the assembly instructions.
www.rk-rose-krieger.com/fileadmin/catalogue/manuals_lineartechnik/99347_safelock.pdf

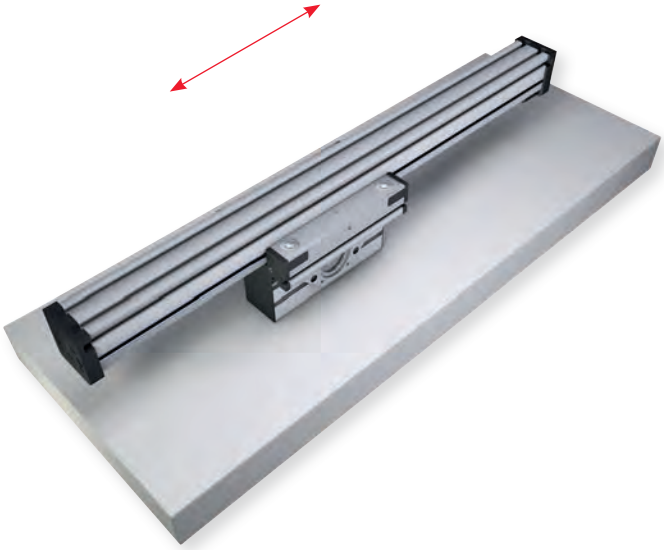
Application examples RK MonoLine MT

Guide profile moves

RK MonoLine MT
as vertical axis

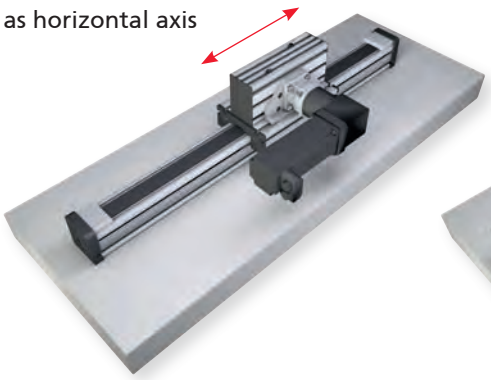


RK MonoLine MT
as horizontal axis

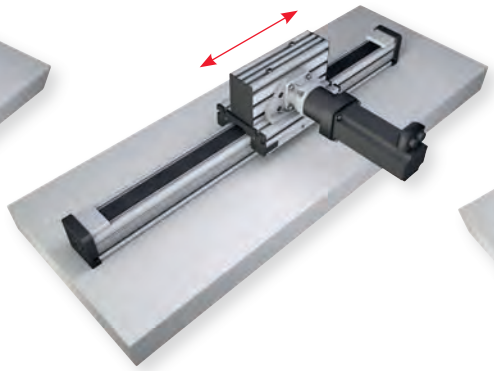


Guide carriage moves

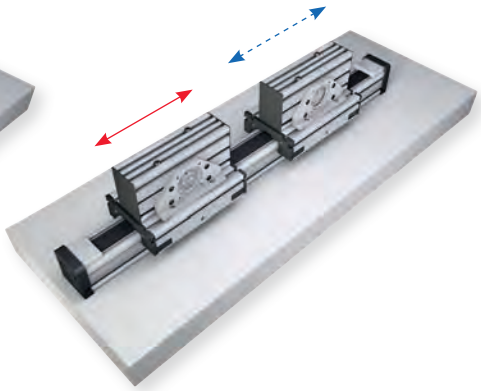
RK MonoLine MT
as horizontal axis



- with angular planetary gearbox on request



- with planetary gearbox on request



- with a second independent moving guide carriage on request

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(Dimensions,order numbers)

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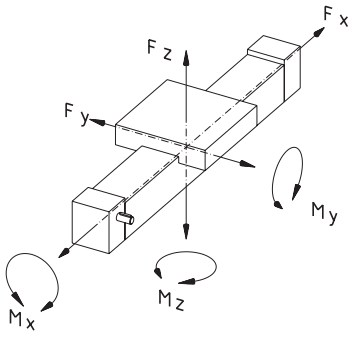
Position determination

Limit switch..... Page 392

Technical data

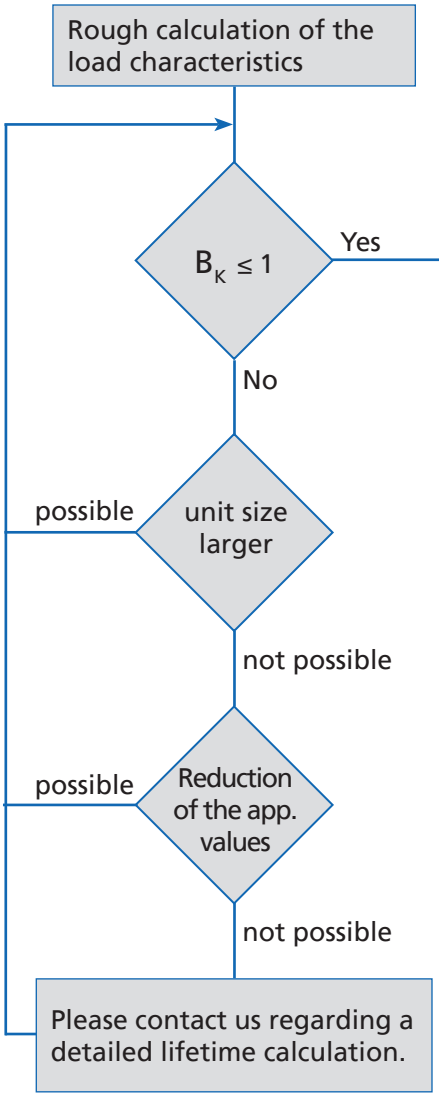
Calculation of the load characteristic to define the lifetime

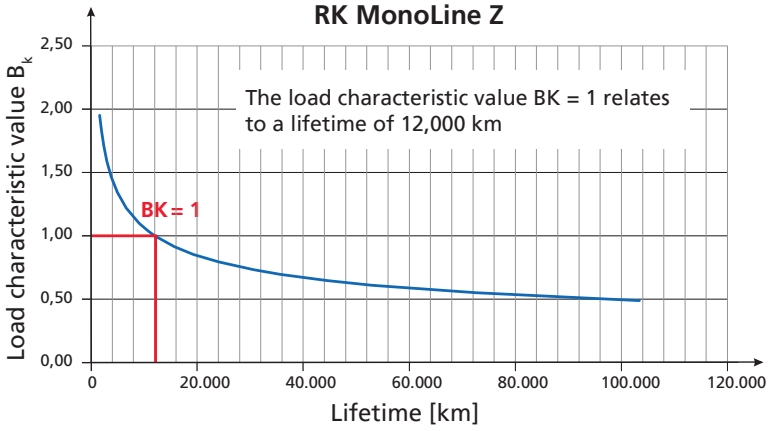
- The lifetime of linear units are in accordance with the average loads and moments of an application. The load characteristic can approximately calculated by following equation with simultaneously appearing load and moments.



$$\text{Load characteristic} = \frac{\text{Application values (z.B. Fy)}}{\text{Catalog values (z.B. } Fy_{max})}$$

$$\text{Load characteristic BK} = \frac{Fy}{Fy_{max}} + \frac{Fz}{Fz_{max}} + \frac{Mx}{Mx_{max}} + \frac{My}{My_{max}} + \frac{Mz}{Mz_{max}} \leq 1$$





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.

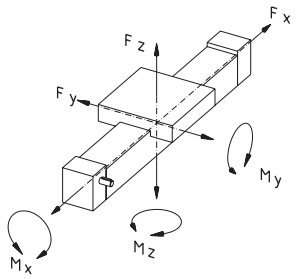
Example:

- The load and moments of the application are:
  Fz = 700N, Mx = 20 Nm und Mz = 45 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 40	RK MonoLine Z 60	RK MonoLine Z 80 / 80x120 / 80x160	RK MonoLine Z 120
Guidance system	Roller, external			
Installation position	any position			
Max. driving torque	6.5 Nm	46 Nm	79 Nm	183 Nm
Max. speed	5 m/s	10 m/s	10 m/s	10 m/s
Max. acceleration	20 m/s²			
Repeat accuracy	± 0.05 mm			
Pitch accuracy	± 0.1 mm/300 mm Hub			
Max. no-load torque	0.35 Nm	0.8 Nm	1.0 Nm	1.8 Nm
Drive	HTD-Belts from Polyurethane, Pitch 5 mm, Width 15 mm	HTD-Belts from Polyurethane, Pitch 8 mm, Width 28 mm	HTD-Belts from Polyurethane, Pitch 8 mm, Width 40 mm	HTD-Belts from Polyurethane, Pitch 8 mm, Width 60 mm
Active Ø pulley wheel	27.08 mm	56.02 mm	61.12 mm	76.39 mm
Pulley wheel circumference	85 mm	175.99 mm	192 mm	239.99 mm
Ambient temperature	0 to +60°C			
Degree of protection	IP 20			



Dynamic load data

Force [N]
Torque [Nm]

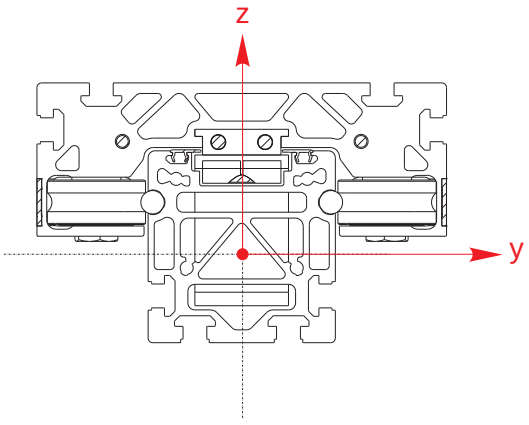
Toothed-belt drive						
Load data	Fx*	Fy	Fz	Mx	My	Mz
Standard guide carriage						
RK MonoLine Z 40	420	1100	694	14	35	55
RK MonoLine Z 60	1660	2800	1628	46	102	178
RK MonoLine Z 80 / 80x120 / 80x160	2600	4367	2509	95	188	327
RK MonoLine Z 120	4800	9400	5200	280	520	850
Extended guide carriage						
RK MonoLine Z 40	420	1100	694	14	65	102
RK MonoLine Z 60	1660	2800	1628	46	195	340
RK MonoLine Z 80 / 80x120 / 80x160	2600	4367	2509	95	351	611
RK MonoLine Z 120	4800	9400	5200	280	1010	1780

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

Geometric moment of inertia

[cm⁴]

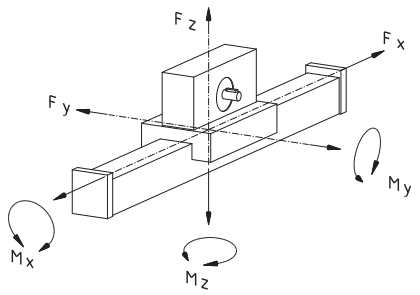
	Iy	Iz
RK MonoLine Z 40	12.15 cm⁴	13.60 cm⁴
RK MonoLine Z 60	66.32 cm⁴	86.24 cm⁴
RK MonoLine Z 80	155.82 cm⁴	172.79 cm⁴
RK MonoLine Z 80x120	462.41 cm⁴	239.76 cm⁴
RK MonoLine Z 80x160	1008.38 cm⁴	304.63 cm⁴
RK MonoLine Z 120	670.05 cm⁴	755.45 cm⁴



Technical data

General information / operating conditions

	RK MonoLine MT 80 / 80x120 / 80x160
Guidance system	Roller, external
Installation position	any position
Max. driving torque	45 Nm
Max. speed	5 m/s
Max. acceleration	15 m/s²
Repeat accuracy	± 0.05 mm
Pitch accuracy	± 0.15 mm/300 mm travel
Max. no-load torque	1.0 Nm
Drive	HTD Belts from Polyurethane Pitch 8 mm, Width 40 mm
Active Ø pulley wheel	61.12 mm
Pulley wheel circumference	192 mm
Ambient temperature	0 to +60°C
Degree of protection	IP 20

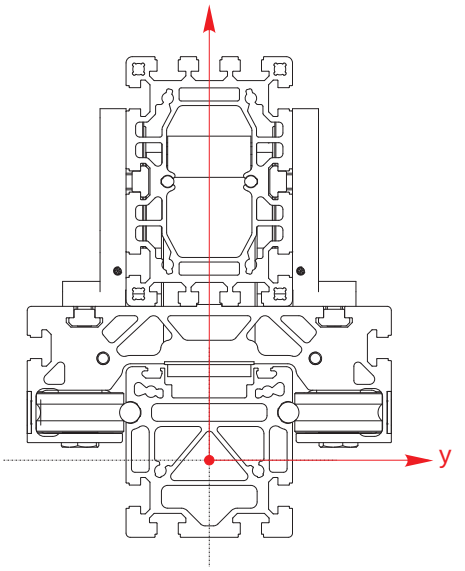


Dynamic load data

Force [N]
Torque [Nm]

Toothed-belt drive						
Load data	Fx*	Fy	Fz	Mx	My	Mz
Standard guide carriage						
RK MonoLine MT 80 / 80x120 / 80x160	1500	4367	2509	95	276	480
Extended guide carriage						
RK MonoLine MT 80 / 80x120 / 80x160	1500	4367	2509	95	564	982

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

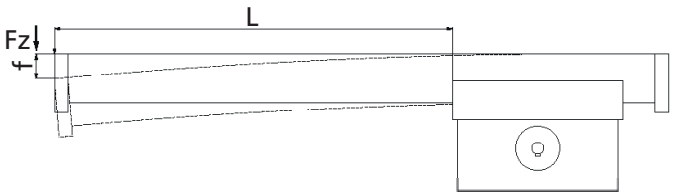


Geometric moment of inertia

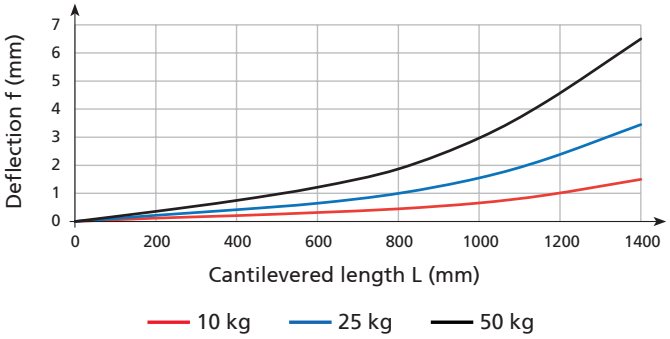
[cm⁴]

	Iy	Iz
RK MonoLine MT 80	155.82 cm⁴	172.79 cm⁴
RK MonoLine MT 80x120	462.41 cm⁴	239.76 cm⁴
RK MonoLine MT 80x160	1008.38 cm⁴	304.63 cm⁴

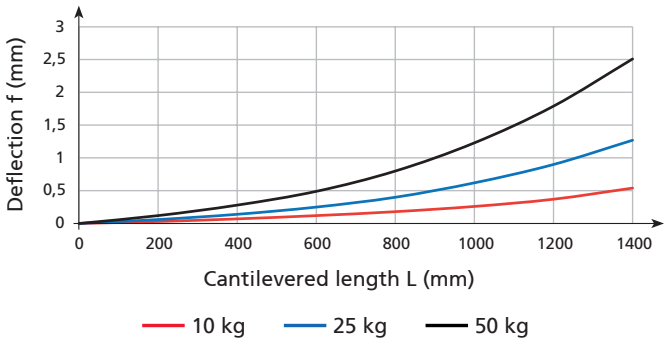
Bending diagram RK MonoLine MT in Fz



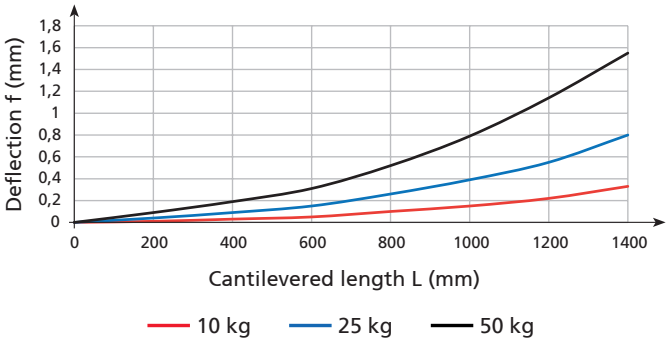
RK MonoLine MT 80



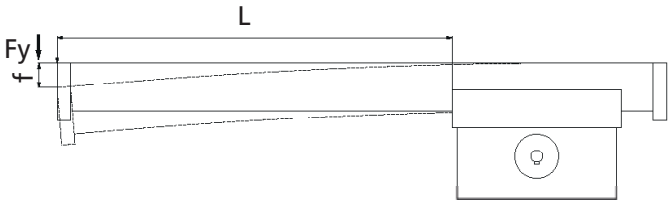
RK MonoLine MT 80x120



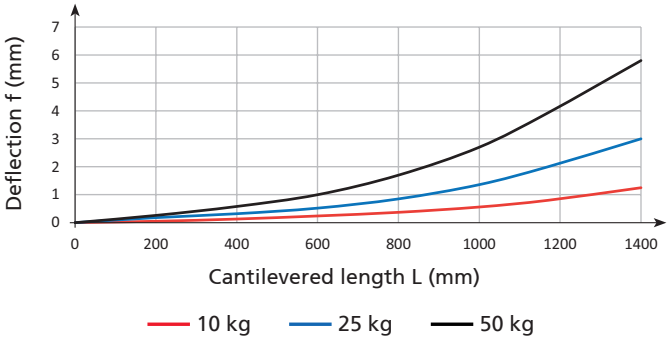
RK MonoLine MT 80x160



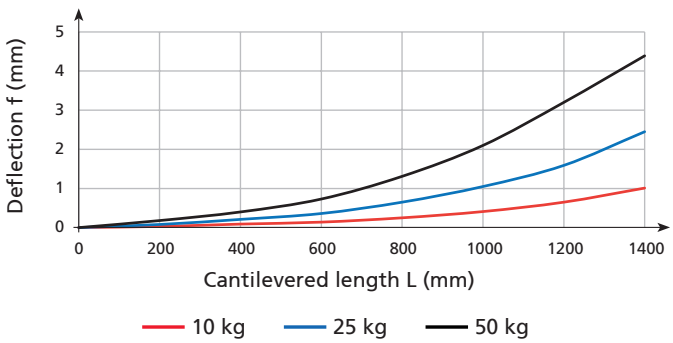
Bending diagram RK MonoLine MT in Fy



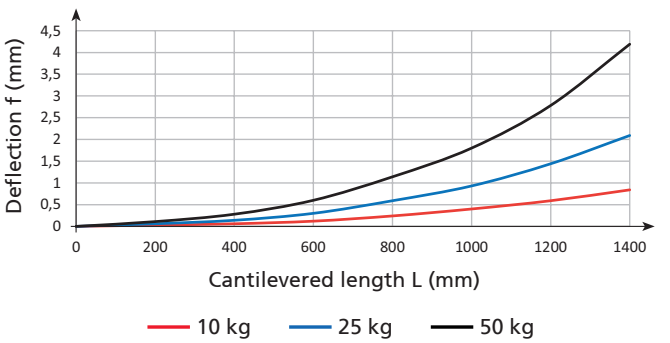
RK MonoLine MT 80



RK MonoLine MT 80x120



RK MonoLine MT 80x160



Versions

Order instruction:

- Longer travel lengths on request

Version

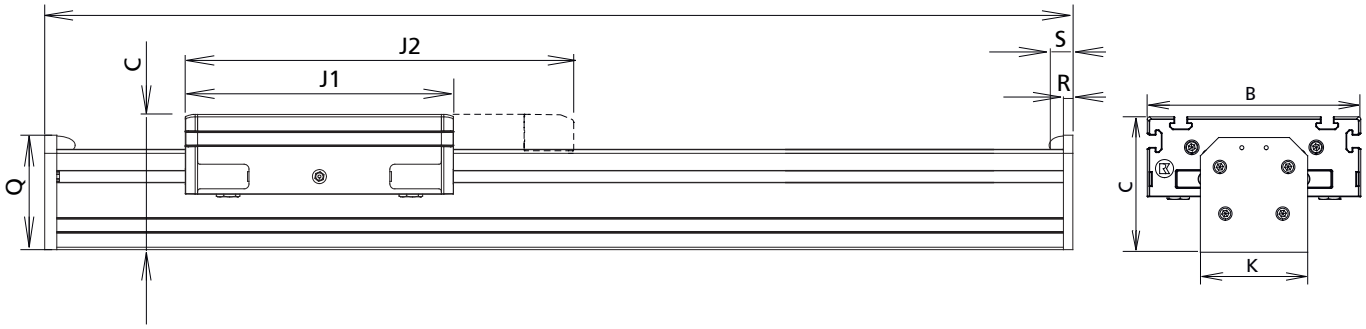
- Guide

Ideal as additional / secondary support for the RK MonoLine with toothed belt

Code No.	Type	Basic length	B	C
TB15B1T4A11A0 _ _ _ _	RK MonoLine R 40	174	97	60
TB15B1T4B11A0 _ _ _ _	RK MonoLine R 40 with extended guide carriage	254		
TB15B2T4A11A0 _ _ _ _	RK MonoLine R 60	236	140	94
TB15B2T4B11A0 _ _ _ _	RK MonoLine R 60 with extended guide carriage	350		
TB15B3T4A11A0 _ _ _ _	RK MonoLine R 80	270	175	111
TB15B3T4B11A0 _ _ _ _	RK MonoLine R 80 with extended guide carriage	400		
TB15B6T4A11A0 _ _ _ _	RK MonoLine R 80x120	270	175	151
TB15B6T4B11A0 _ _ _ _	RK MonoLine R 80x120 with extended guide carriage	400		
TB15B7T4A11A0 _ _ _ _	RK MonoLine R 80x160	270	175	191
TB15B7T4B11A0 _ _ _ _	RK MonoLine R 80x160 with extended guide carriage	400		
TB15B5T4A11A0 _ _ _ _	RK MonoLine R 120	390	280	160
TB15B5T4B11A0 _ _ _ _	RK MonoLine R 120 with extended guide carriage	590		

Total lenght = basic length + total travel (mm)

Total length = basic length + travel



[mm]

J1	J2	K	Q	R	S	max. travel	Mass [kg]	
							Basic length	per 100 mm travel
132	–	46	52	6	21	5465	1.20	0.25
–	212					5385	1.74	
186	–	68	83,5	10	25	5784	2.90	0.53
–	300					5670	4.22	
220	–	88	94	10	25	5750	4.90	0.78
–	350					5620	7.57	
220	–	88	134	10	25	5750	5.35	0.98
–	350					5620	8.29	
220	–	88	174	10	25	5750	5.80	1.18
–	350					5620	9.00	
330	–	138	135	15	30	5640	12.22	1.69
–	530					5440	19.72	

Versions

Order instructions:

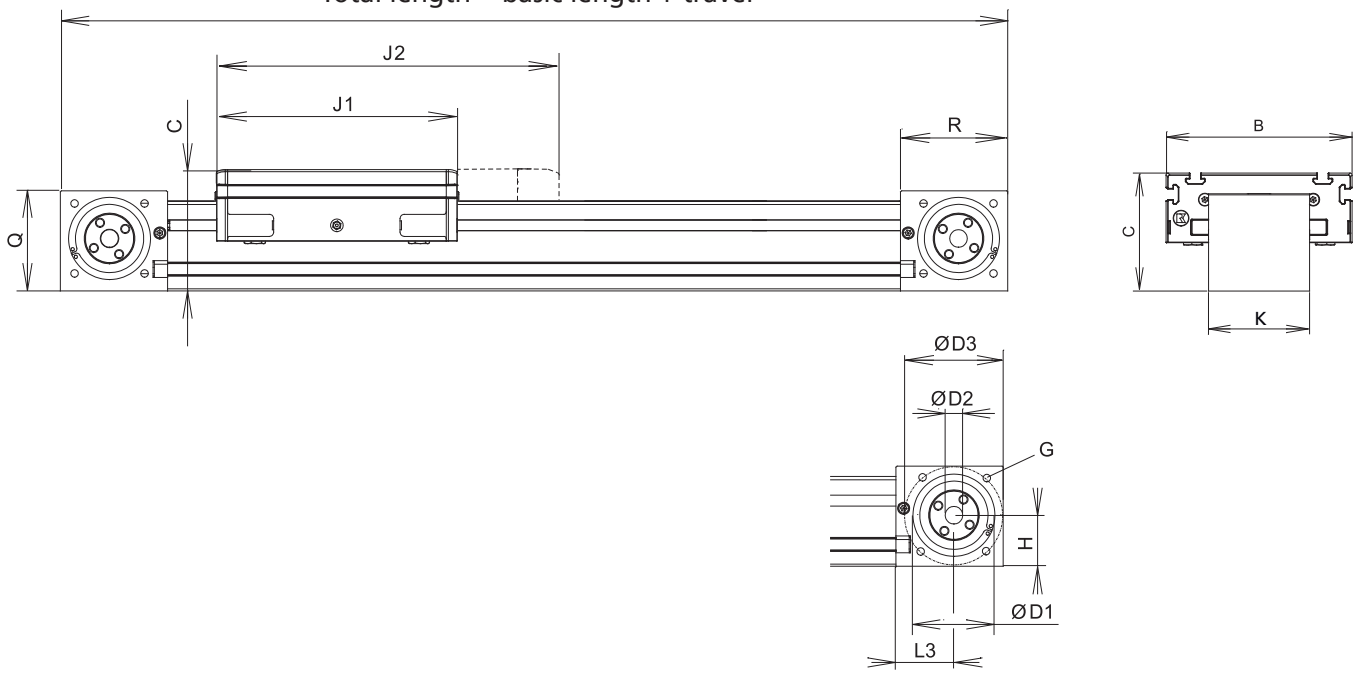
- Longer travel lengths on request
- Also available without screw drive as a torque support

Timing-belt unit RK MonoLine Z Place-Tec

Code No.	Type	Basic length	B	C	D1	D2
TB12B1F4A11A0 _ _ _ _	RK MonoLine Z 40	250	97	60	32^{H7} 3 deep	8^{H6}
TB12B1F4B11A0 _ _ _ _	RK MonoLine Z 40 with extended guide carriage	330				
TB12B2F4A11A0 _ _ _ _	RK MonoLine Z 60	371	140	94	75^{H7} 3,7 deep	16^{H6}
TB12B2F4B11A0 _ _ _ _	RK MonoLine Z 60 with extended guide carriage	485				
TB12B3F4A11A0 _ _ _ _	RK MonoLine Z 80	416	175	111	75^{H7} 4,5 deep	16^{H6}
TB12B3F4B11A0 _ _ _ _	RK MonoLine Z 80 with extended guide carriage	546				
TB12B6F4A11A0 _ _ _ _	RK MonoLine Z 80x120	416	175	151	75^{H7} 4,5 deep	16^{H6}
TB12B6F4B11A0 _ _ _ _	RK MonoLine Z 80x120 with extended guide carriage	546				
TB12B7F4A11A0 _ _ _ _	RK MonoLine Z 80x160	416	175	191	75^{H7} 4,5 deep	16^{H6}
TB12B7F4B11A0 _ _ _ _	RK MonoLine Z 80x160 with extended guide carriage	546				
TB12B5F4A11A0 _ _ _ _	RK MonoLine Z 120	554	280	160	90^{H7} 3,5 deep	25^{H7}
TB12B5F4B11A0 _ _ _ _	RK MonoLine Z 120 with extended guide carriage	754				

Total lenght = basic length + total travel (mm)

Total length = basic length + travel



[mm]

D3	G	H	J1	J2	K	L3	Q	R	max. travel	Mass [kg]	
										Basic length	per 100 mm travel
41±0.2	M5-10 deep	25.7	132	–	48	32	51.6	59	5465	1.94	0.27
			–	212					5385	2.49	0.27
90.5±0.2	M8-14 deep	41.6	186	–	78	49	83.9	92.5	5814	6.46	0.58
			–	300					5700	7.80	0.58
90.5±0.2	M8-14 deep	48	220	–	95	53	91.5	98	5780	10.30	0.84
			–	350					5650	12.99	0.84
90.5±0.2	M8-14 deep	88	220	–	95	53	131.5	98	5780	10.75	1.04
			–	350					5650	13.71	1,04
90.5±0.2	M8-14 deep	128	220	–	95	53	171.5	98	5780	11.19	1.25
			–	350					5650	14.42	1.25
100±0.2	M8-16 deep	78.5	330	–	142	63	130	112	5670	25.02	1.78
			–	530					5470	32.56	1.78

Version

Order instructions:

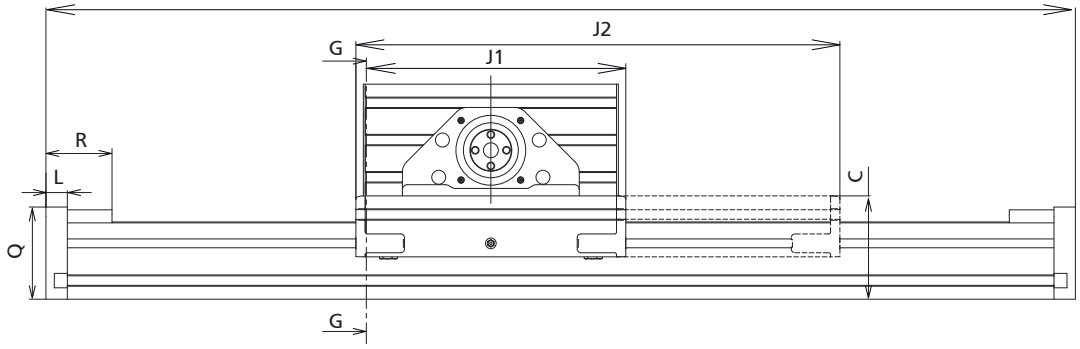
- Longer travel lengths on request
- Further independently movable guide carriages on request

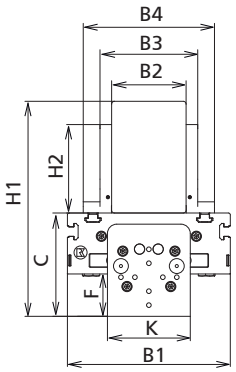
Timing-belt unit RK MonoLine MT Place-Tec

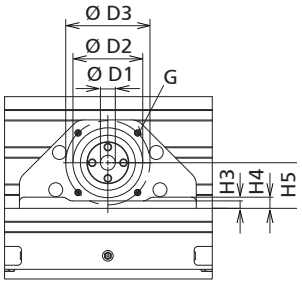
Code No.	Type	Basic length	B1	B2	B3	B4	C	D1	D2	D3
TB13B3F4A13A _ _ _ _ _	RK MonoLine MT 80	432	175	80	105	141	111	16^{H6}	75^{H7} 4.5 deep	90.5±0.2
TB13B3F4B13A _ _ _ _ _	RK MonoLine MT 80 with extended guide carriag	662								
TB13B6F4A13A _ _ _ _ _	RK MonoLine MT 80x120	432	175	80	105	141	151	16^{H6}	75^{H7} 4.5 deep	90.5±0.2
TB13B6F4B13A _ _ _ _ _	RK MonoLine MT 80x120 with extended guide carriag	662								
TB13B7F4A13A _ _ _ _ _	RK MonoLine MT 80x160	432	175	80	105	141	191	16^{H6}	75^{H7} 4.5 deep	90.5±0.2
TB13B7F4B13A _ _ _ _ _	RK MonoLine MT 80x160 with extended guide carriag	662								

Total lenght = basic length + total travel (mm)

Total length = basic length + travel







[mm]

F	G	H1	H2	H3	H4	H5	J1	J2	K	L	Q	R	max. travel	Mass [kg]	
														Basic length	per 100 mm travel
45.5	M8-12,5 deep	231	95	8	12	49	290	–	89	23	99	71	5614	14.7	0.81
							–	520					5384	18.83	
85.5	M8-12,5 deep	271	95	8	12	49	290	–	89	23	139	71	5614	15.51	1.02
							–	520					5384	18.83	
125.5	M8-12,5 deep	311	95	8	12	49	290	–	89	23	179	71	5614	16.28	1.22
							–	520					5384	21.36	

Version

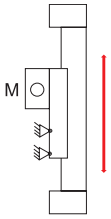
Order instructions:

- Longer travel lengths on request
- Further independently movable guide carriages on request

Timing-belt unit RK MonoLine MT Safelock Place-Tec

Version

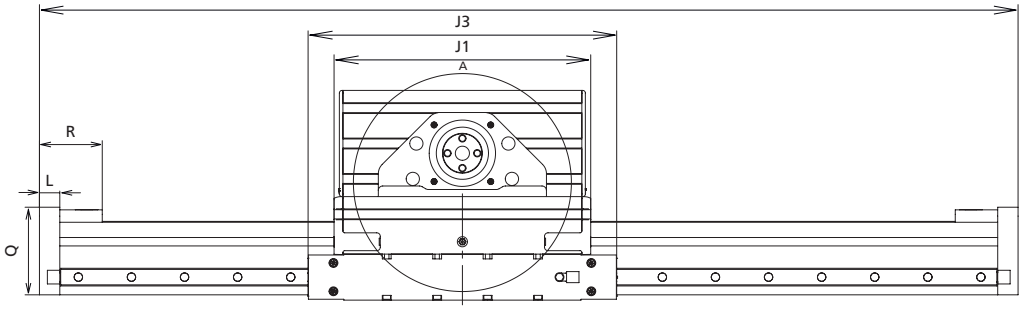
Q

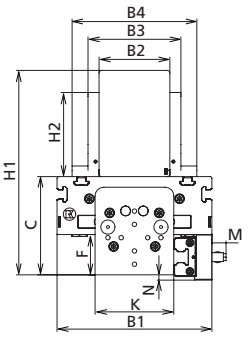


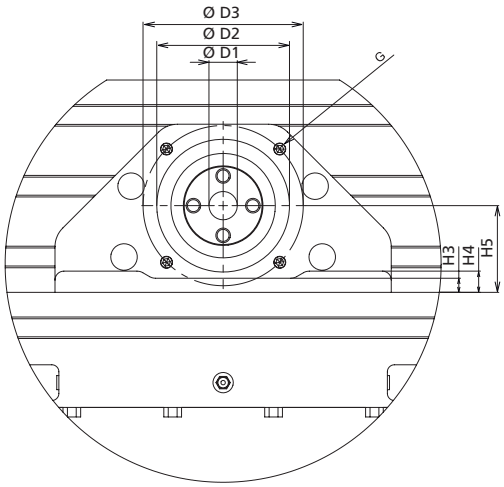
Code No.	Type	Basic length	B1	B2	B3	B4	C	D1	D2	D3
TB13B3F4G13Q _ _ _ _ _	RK MonoLine MT Safelock 80	432	175	80	105	141	111	16^{H6}	75^{H7} 4.5 deep	90.5±0.2
TB13B6F4G13Q _ _ _ _ _	RK MonoLine MT Safelock 80x120						151			
TB13B7F4G13Q _ _ _ _ _	RK MonoLine MT Safelock 80x160						191			
TB13B3F4H13Q _ _ _ _ _	RK MonoLine MT Safelock 80 with extended guide carriage	662					111			
TB13B6F4H13Q _ _ _ _ _	RK MonoLine MT Safelock 80x120 with extended guide carriage						151			
TB13B7F4H13Q _ _ _ _ _	RK MonoLine MT Safelock 80x160 with extended guide carriage						191			

Gesamtlänge (Grundlänge+Hub) in mm

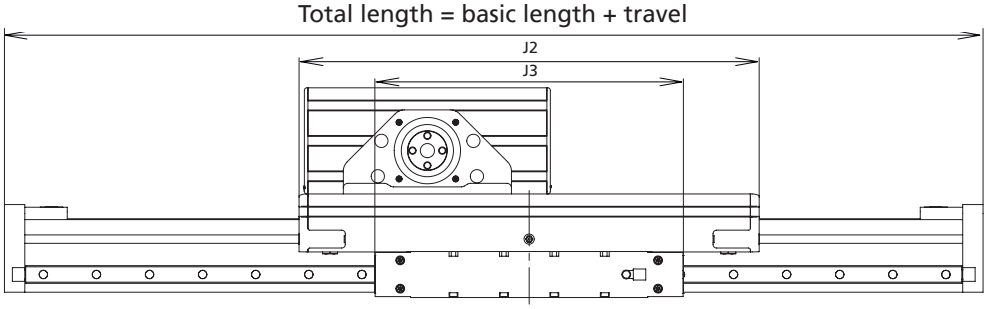
Total length = basic length + travel







Total length = basic length + travel



[mm]

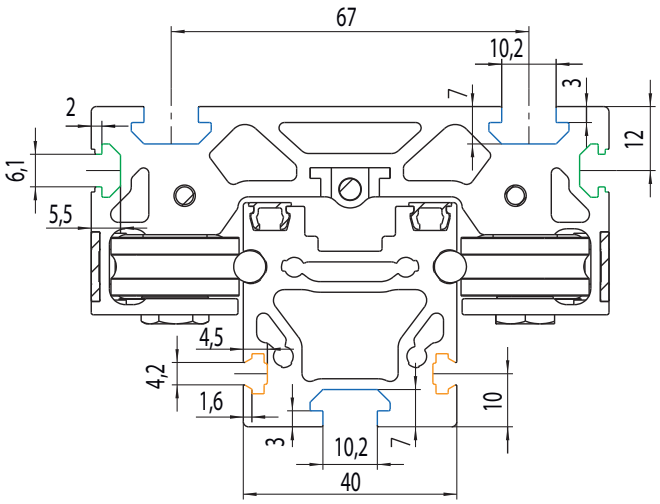
F	G	H1	H2	H3	H4	H5	J1	J2	J3	K	L	M	N	Q	R	max. travel	Mass [kg]	
																	Basic length	per 100 mm travel
45.5	M8-12.5 deep	231	95	8	12	49	290	–	348	89	23	16	6	99	71	5614	17.53	1.08
85.5		271					290	–					34	139			18.34	1.29
125.5		311					290	–					74	179			19.11	1.49
45.5		231					–	520					6	99		5384	22.27	1.08
85.5		271					–	520					34	139			23.56	1.29
125.5		311					–	520					74	179			24.8	1.49

Fixation

Fixation of payload

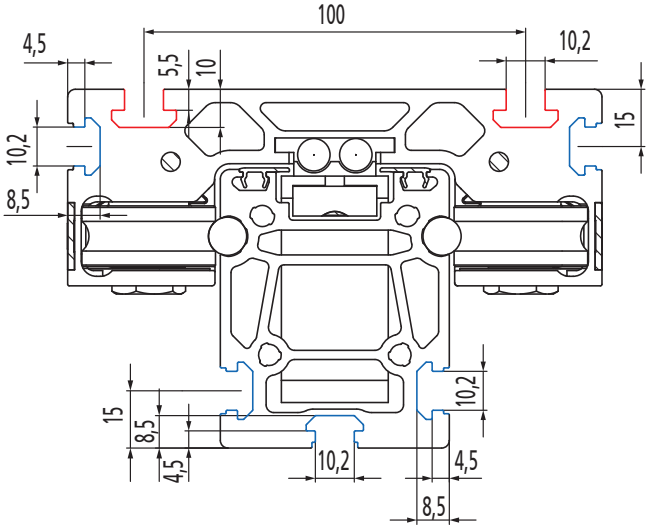
- Two profile slots have been inserted in the guide carriage on which fittings can be securely attached in a variety of ways
- Profile slots in the guide carriage and guide profiles facilitate fixation

RK MonoLine R/Z 40



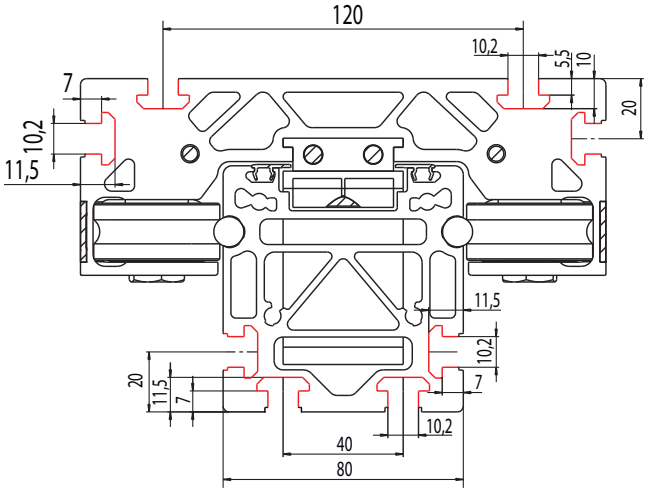
20 slot geometry
30 slot geometry
Slot geometry for square nut DIN 562

RK MonoLine R/Z 60



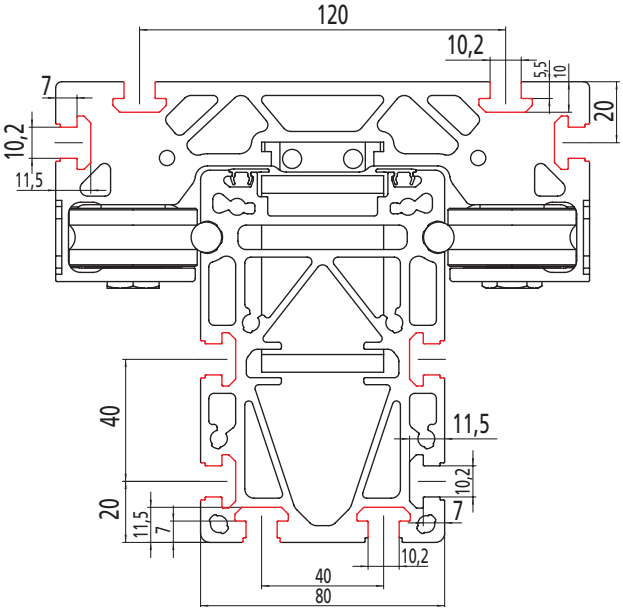
30 slot geometry
40 slot geometry

RK MonoLine R/Z 80



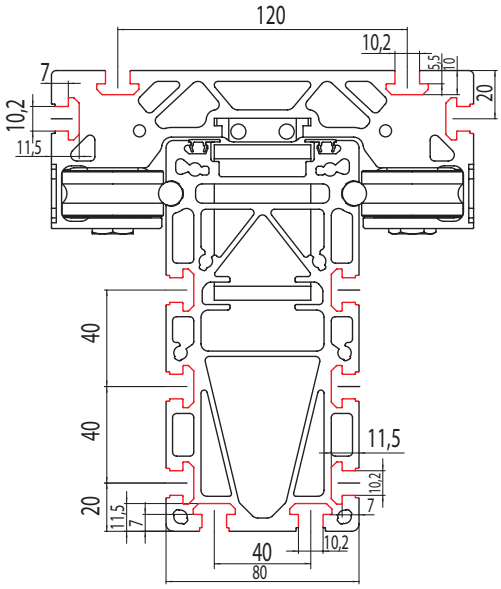
40 slot geometry

RK MonoLine R/Z 80x120



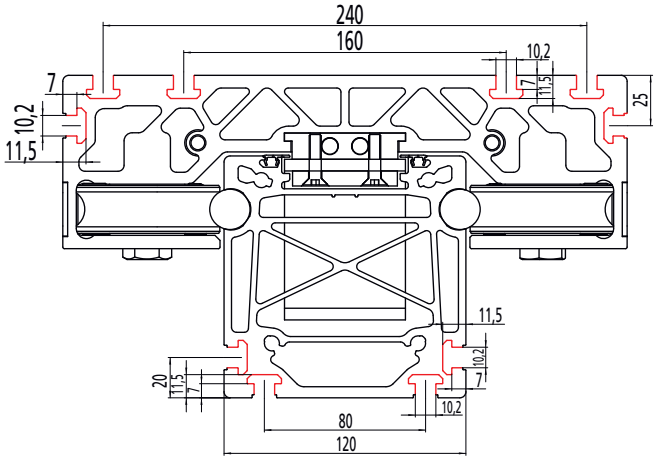
— 40 slot geometry

RK MonoLine R/Z 80x160



— 40 slot geometry

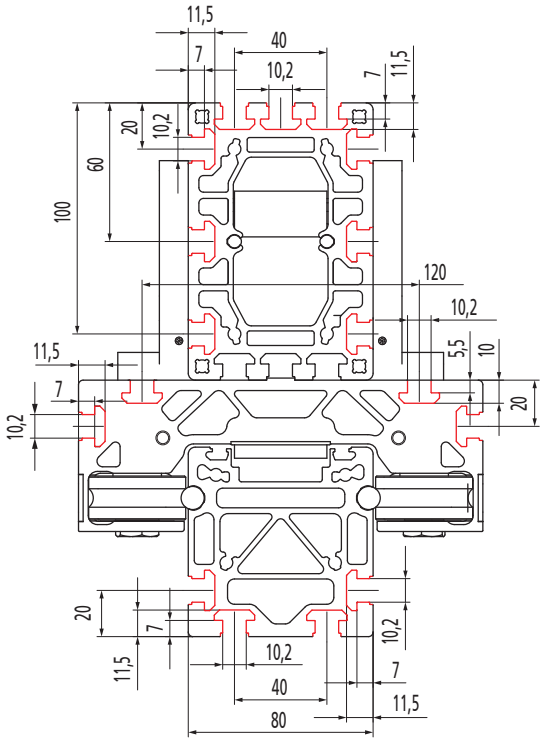
RK MonoLine R/Z 120



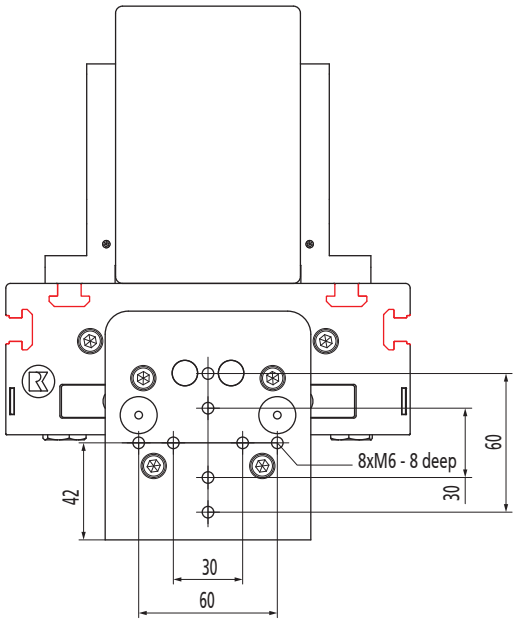
— 40 slot geometry

Fixation

RK MonoLine MT 80

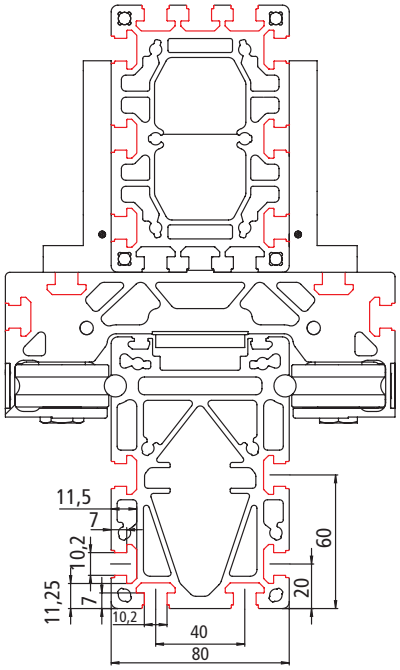


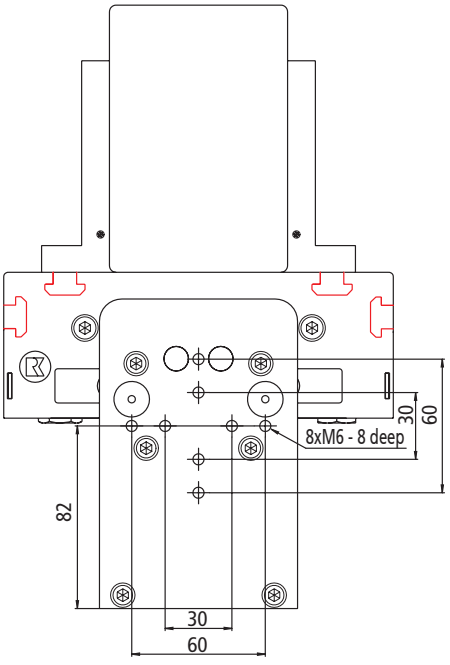
40 slot geometry



RK MonoLine MT 80x120

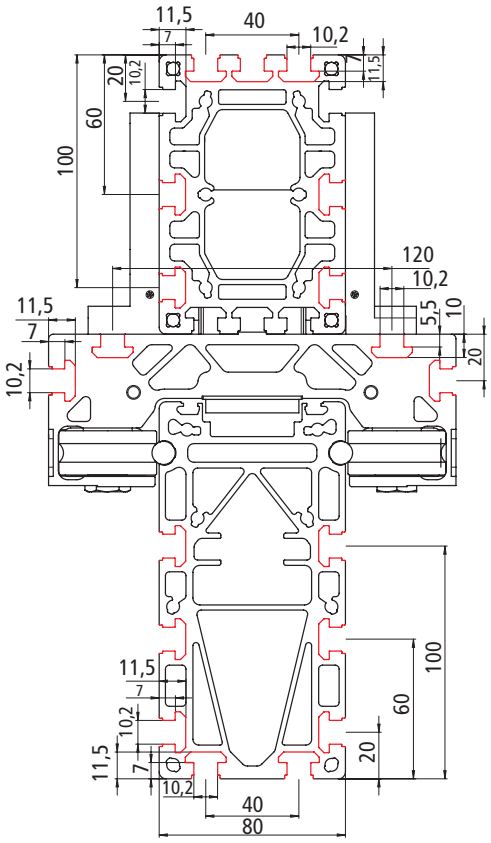
40 slot geometry

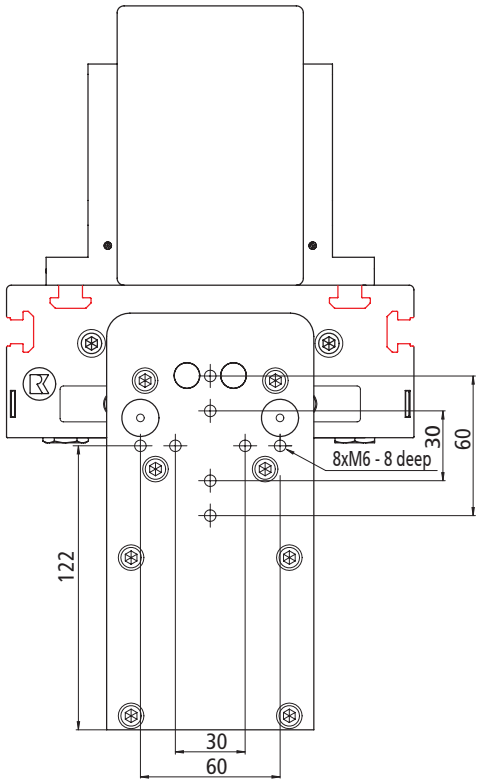




RK MonoLine MT 80x160

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 fixation material.
Scope of delivery:
2 clamping strips with fixation material

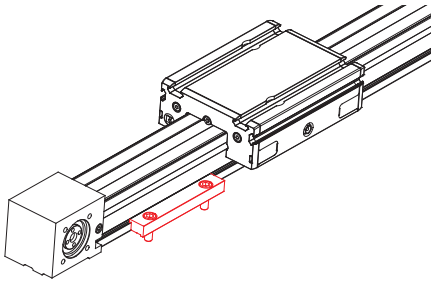


Fig. 1: Ground assembly

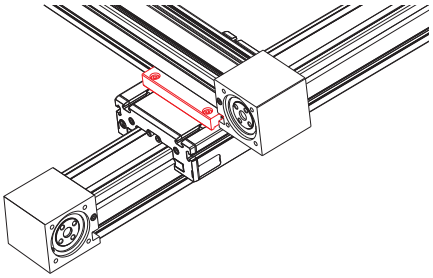


Fig. 2: Crossing units

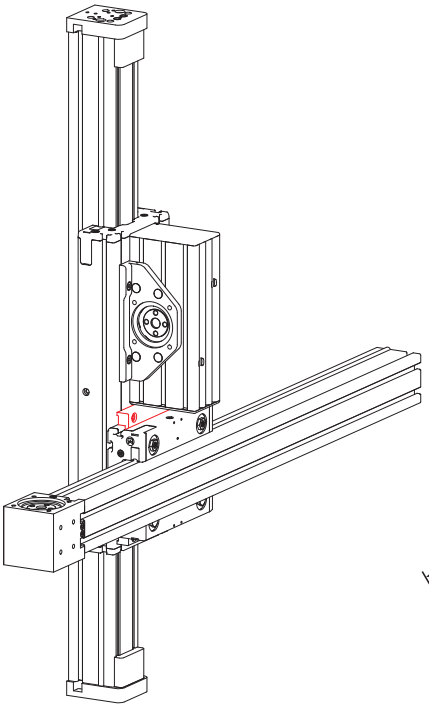
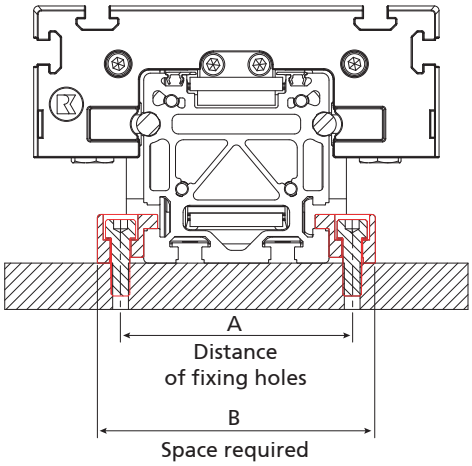
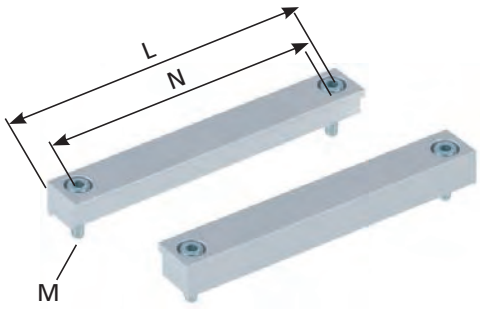


Fig. 3: Crossing units





[mm]

Code No.	Type	Fig.	A	B	L	M	N
91841	RK MonoLine 40 ground assembly	1	52	65	97	M6	67
91842	RK MonoLine 40 crossing to 40	2					
91886	RK MonoLine 60 ground assembly	1	80	102	76	M8	50
91820	RK MonoLine 60 crossing to 60	2			130		100
91812	RK MonoLine 80 / 80 x120 / 80 x160 ground assembly RK MonoLine MT 80 / 80 x120 / 80 x160 ground assembly	1	100	120	116	M8	80
91813	RK MonoLine 80 crossing to 80 RK MonoLine 80 crossing to MT 80	2/3			156		120
91802	RK MonoLine 120 ground assembly	1	140	160	156	M8	120
91813	RK MonoLine 120 crossing to 80	2			156		120

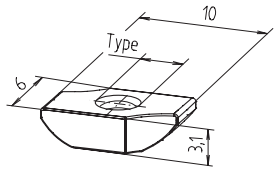
Order instruction:

- Purchase only in lot sizes and a multiple of that, see product table below

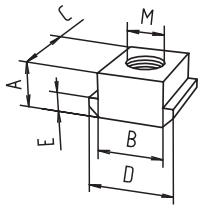
- Slot stones can be inserted and positioned at the guide profile and guide carriage

Material: zinc plated steel

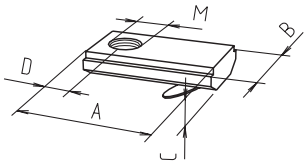
Slot stones



Slot stone -B-
can be swivelled into the slot



Slot stone -N-
can be slid into the slot

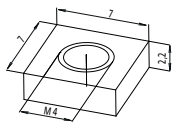


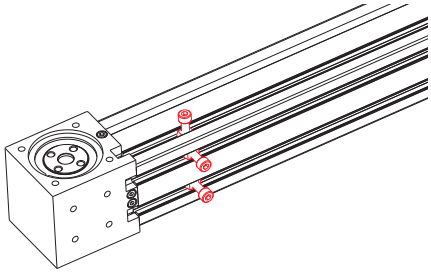
Slot stone -K-
can be swivelled into the slot

[mm]

Code No.	Type	lot sizes	Slot geometry	A	B	C	D	E	M	F [N]
Square nut										
QZD1003261	M4	10, 20, 30... pcs	for square nut DIN 562							
Slot stone -B-										
E00017CEE	M3	10, 20, 30... pcs	20							
E00058CEE	M4	10, 20, 30... pcs	20							
Slot stone -N-										
4006202	M8	10, 20, 30... pcs	30	5	10	13	13	3	M8	4000
4026206	M8	10, 20, 30... pcs	40	8	10	13	15	4	M8	9000
Slot stone -K-										
4006211	M5	10, 20, 30... pcs	30	21	12	4	7	–	M5	5000
4006212	M6	10, 20, 30... pcs	30	21	12	4	7	–	M6	5000
4016212	M6	10, 20, 30... pcs	40	21	14	4	7	–	M6	5000

Square nut DIN 562





View of RK MonoLine from below

Fixation

Centering Sets for RK MonoLine

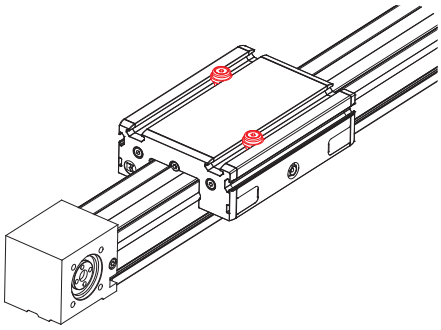


Fig. 1: Slide centering
RK MonoLine Z

- The following positions could be defined exactly during the design process per set
  - Load capacity
- Reproductable position of the load capacity
- Reduced assembly/disassembly time of the load capacity
- Accuracy of the centering bolts h6
- To use for all RK MonoLine linear units

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

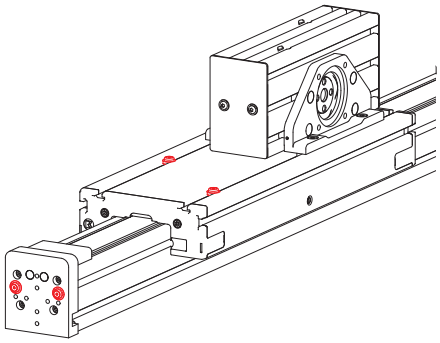
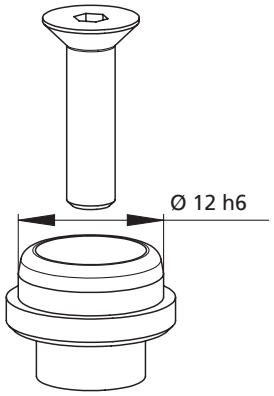
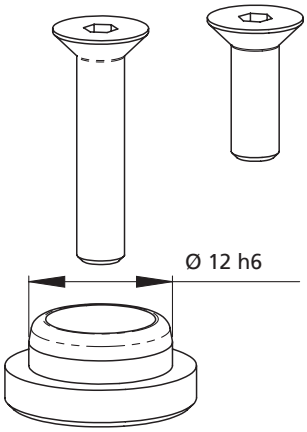


Fig. 2: Slide centering and centering end element
RK MonoLine MT



Size -A-



Size -B-

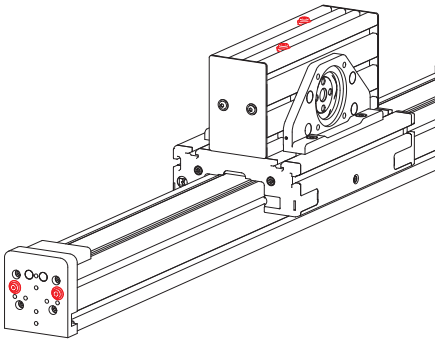
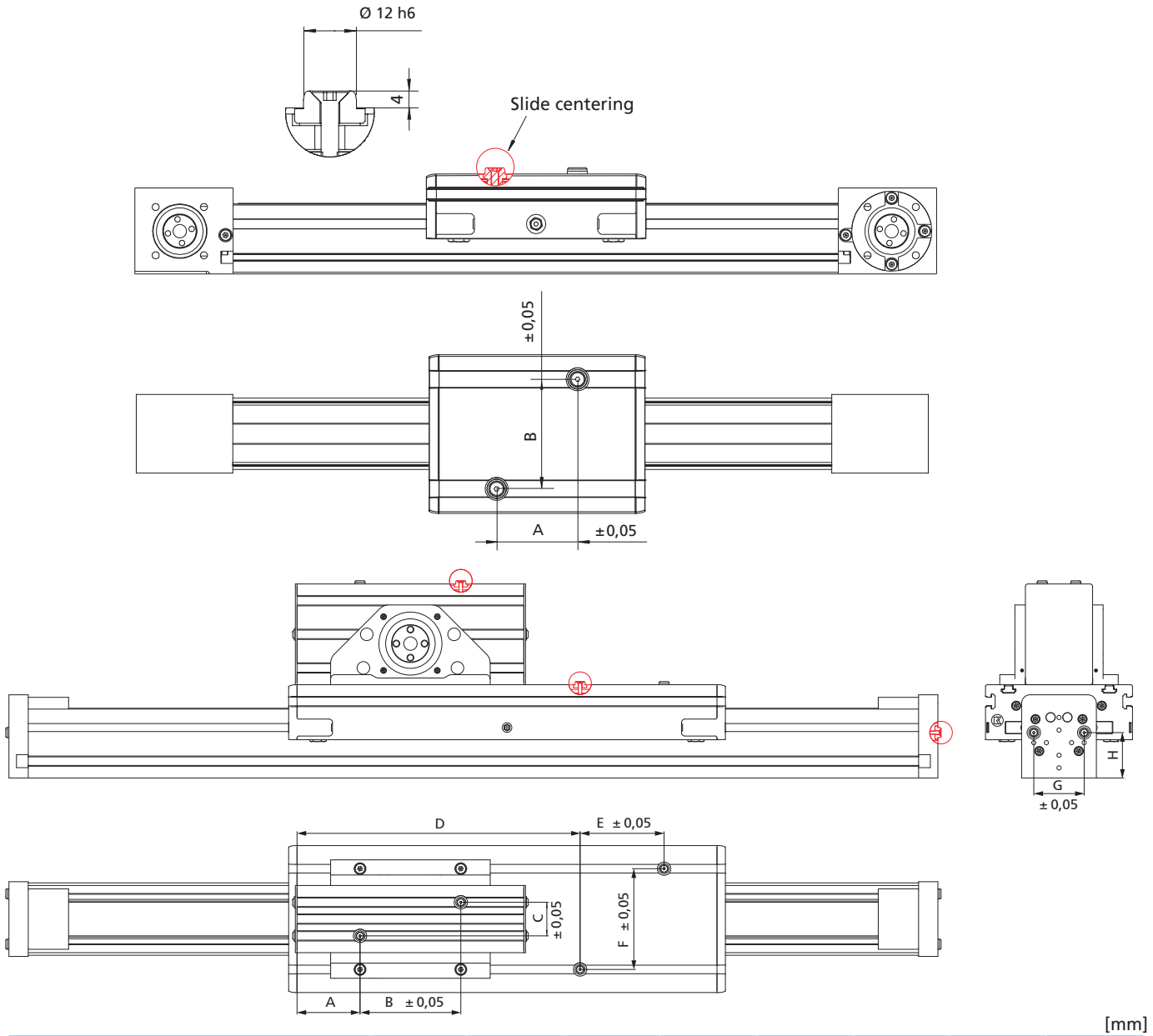


Fig. 3: Slide centering and centering end element
RK MonoLine MT

Code No.	Type	Use for
91898	Centering Set Size -A-	Slide centering RK MonoLine Z 40
91899	Centering Set Size -B-	Slide centering RK MonoLine Z 60 / 80 / 80x120 / 80x160 / 120 RK MonoLine MT 80 / 80x120 / 80x160 Centering end element RK MonoLine MT 80 / 80x120 / 80x160



[mm]

Type	A	B	C	D	E	F	G	H
RK MonoLine Z 40	49.5	67	–	–	–	–	–	–
RK MonoLine Z 40 with extended guide carriage								
RK MonoLine Z 60	100	100	–	–	–	–	–	–
RK MonoLine Z 60 with extended guide carriage								
RK MonoLine Z 80 / 80x120 / 80x160	100	120	–	–	–	–	–	–
RK MonoLine Z 80 / 80x120 / 80x160 with extended guide carriage								
RK MonoLine MT 80 / 80x120 / 80x160	75	120	40	–	–	–	60	54
RK MonoLine MT 80 / 80x120 / 80x160 with extended guide carriage	– *	– *	– *	337	100	120		
RK MonoLine Z 120	100	160	–	–	–	–	–	–
RK MonoLine Z 120 with extended guide carriage								

***Note:** Positions A - C of the long guide carriage remain unused

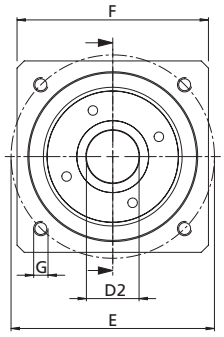
Drive

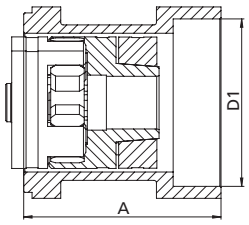
Selection table motor adapter kits RK MonoLine for servo motors without gear

- 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 fixation material

Manufacturers	Motor	RK MonoLine Z 40	RK MonoLine Z 60	RK MonoLine Z 80 + MT 80/80x120/80x160
RK Rose + Krieger	RK-AC 240	949132	–	–
	RK-AC 470	–	949357	949133
Baumüller	DSD2-045	949132	On request	On request
Beckhoff	AM8041, AM8042, AM8043	On request	On request	On request
Bosch	MSK050B, MSK050C	–	949357	949133
Kollmorgen	AKM2G-41, AKM2G-42, AKM2G-43, AKM2G-44	On request	On request	On request
Lenze	MCS09D, MCS09F, MCS09H, MCS09L	949132	On request	On request
Lti/Keba	LSP10	–	949357	949133
Mitsubishi	HG-JR53(4), HG-JR 73(4), HG-JR103(4), HG-JR153(4), HG-JR203(4)	On request	On request	On request
Parker	SMH 82, SMHA 82	949132	–	–
	SMH 100, SMHA 100	–	949357	949133
SEW	CMP63S, CMP63M, CPM63L	949132	On request	On request
Siemens	1FK7040, 1FK042, 1FK043, 1FK2205	On request	On request	On request
	1FK2105	–	949357	949133





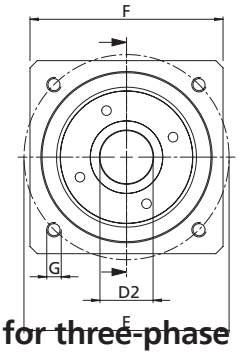
Motor flange	A	D1	D2	E	F	G	Mass [kg]
IM B5 56	50	Ø 80 ^{H7} 4 deep	Ø14x30	Ø 100	□82	M6 15 deep	0,432
IM B5 63	64/67	Ø 95 ^{H7} 4 deep	Ø19x40	Ø 115	□105	M8 19,5/12 deep	1,38/1,16
IM B5 56	49/59/61,5	Ø 80 ^{H7} 4 deep	Ø14x30	Ø 100	□82	M6 15/12/12 deep	0,432/0,93/0,93
IM B5 56	60/64,5/67	Ø 80 ^{H7} 5 deep	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
IM B5 **63**	64/67	Ø 95 ^{H7} 4 deep	Ø19x40	Ø 115	□105	M8 20 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

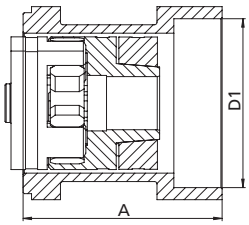
Drive

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 fixation material





Selection table motor adapter kits for three-phase motor

Manufacturers	Motor	RK MonoLine Z 40	RK MonoLine Z 60	RK MonoLine Z 80 + MT 80/80x120/80x160
RK Rose + Krieger	90/120W	949111	949355	–
RK Rose + Krieger	180/250W	949112	949117	949117

Selection table motor adapter kits servo motors with gear

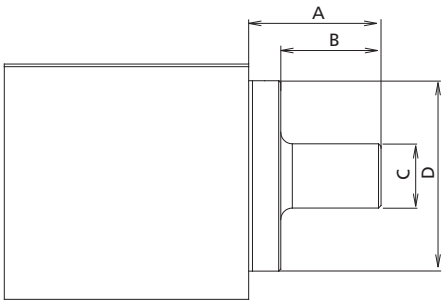
Manu-facturers	Gear	RK MonoLine Z 40	RK MonoLine Z 60	RK MonoLine Z 80 + MT 80/80x120/80x160	RK MonoLine Z 120	A	D1	D2	E	F	G	Mass [kg]
Neugart	PLE 60	949109	949350	949113	–	54,5/60 /60	Ø 40 3/7,8/5,4 deep	Ø 14x30	Ø 52	☐70/☐80/ ☐80	M 5	0,92
	PLE 80	–	949353	949115	–	64/60	Ø 60 5 deep	Ø 20x36	Ø 70	☐80	M 6	0,92
	PLE 120	–	–	949116	949344	60/82	Ø 80 4,5 deep	Ø 25x50	Ø 100	Ø 120/ ☐130	M 10	1,43/3,04
	PLE 160	–	–	–	949345	114	Ø 130 13 deep	Ø 40x80	Ø 145	☐140	M 12	2,63
Atlanta	APG 080	–	949353	949115	–	64/60	Ø 60 5 deep	Ø 20x36	Ø 70	☐80	M 6	0,92
	APG 120	–	–	949116	949344	60/82	Ø 80 4,5 deep	Ø 25x50	Ø 100	Ø 120/ ☐130	M 10	1,43/3,04
Ep-pinger	PE065	949109	949350	949113	–	54,5/60 /60	Ø 40 3/7,8/5,4 deep	Ø 14x30	Ø 52	☐70/☐80/ ☐80	M 5	0,92
	PE080	–	949353	949115	–	64/60	Ø 60 5 deep	Ø 20x36	Ø 70	☐80	M 6	0,92
Ruhrget-riebe	RPS060	949109	949350	949113	–	54,5/60 /60	Ø 40 3/7,8/5,4 deep	Ø 14x30	Ø 52	☐70/☐80/ ☐80	M 5	0,92
	RPS080	–	949353	949115	–	64/60	Ø 60 5 deep	Ø 20x36	Ø 70	☐80	M 6	0,92
SPN Schwa-ben Prä-zision	SPN-ECO (E2) EZ 23	949109	949350	949113	–	54,5/60 /60	Ø 40 3/7,8/5,4 deep	Ø 14 x 30	Ø 52	☐70/☐80/ ☐80	M 5	0,92
	SPN-ECO (E2) EZ 24	–	949353	949115	–	64/60	Ø 60 5 deep	Ø 20 x 36	Ø 70	☐80	M 6	0,92
	SPN-ECO (E2) EZ 25	–	–	949116	949344	60/82	Ø 80 4,5 deep	Ø 25x50	Ø 100	Ø 120/ ☐130	M 10	1,43/3,04
	SPN-ECO (E2) EZ 26	–	–	–	949345	114	Ø 130 13 deep	Ø 40x80	Ø 145	☐140	M 12	2,63
Witten-stein	Alpha CP015 MF	949109	949350	949113	–	54,5/60 /60	Ø 40 3/7,8/5,4 deep	Ø 14 x 30	Ø 52	☐70/☐80/ ☐80	M 5	0,92
	Alpha CP025 MF	–	949353	949115	–	64/60	Ø 60 5 deep	Ø 20 x 36	Ø 70	☐80	M 6	0,92
	Alpha CP035 MF	–	–	949116	949344	60/82	Ø 80 4,5 deep	Ø 25x50	Ø 100	Ø 120/ ☐130	M 10	1,43/3,04
	Alpha CP045 MF	–	–	–	949345	114	Ø 130 13 deep	Ø 40x82	Ø 145	☐140	M 12	2,63

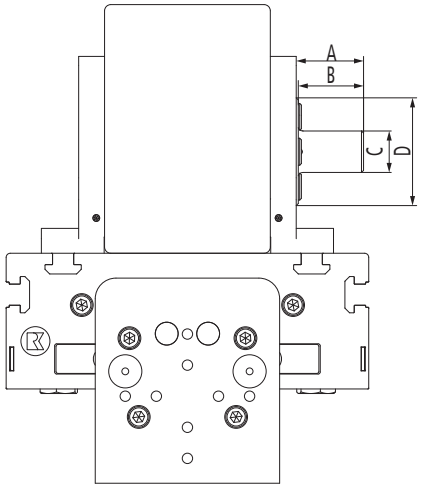
Drive shaft

- The RK MonoLine Z and MT 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 fixation material

For metal bellows coupling





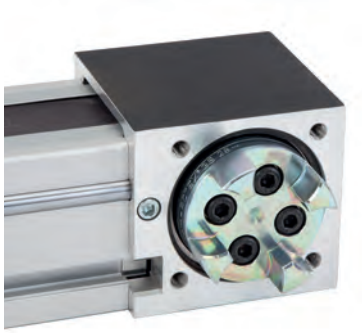
[mm]

Code No.	Type	Version	A	B	C	D
91323	RK MonoLine Z 40	Drive shaft for metal bellows coupling	32.5	23	14	32
91312	RK MonoLine Z 60		35	31.5	20	52
	RK MonoLine MT 80 / 80x120 / 80x160		32.5			
91324	RK MonoLine Z 80 / 80x120 / 80x160		53.5	39	25	74
9720000	RK MonoLine Z 120		58.5	50	30	80

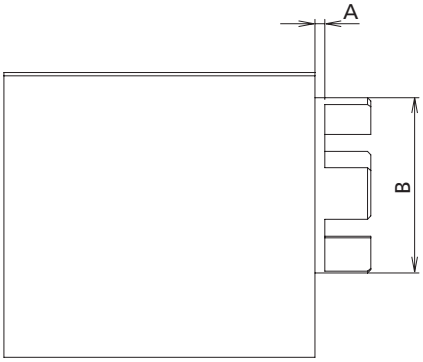
Screw-on hub

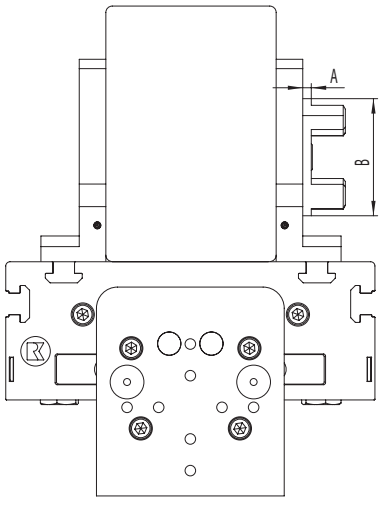
- The RK MonoLine Z and MT is fitted as standard with a hollow shaft
- This can be retrofitted with a screw-on hub as an optional extra

Scope of delivery:
Screw-on hub with fixation material



For servo coupling with zero backlash





[mm]

Code No.	Type	Version	Size	A	B
91340	RK MonoLine Z 40	Screw-on hub for KTR type Rotex GS servo couplings with zero backlash	GS 14	7	30
91338	RK MonoLine Z 60		GS 24	6.5	55
	RK MonoLine MT 80 / 80x120 / 80x160			4	55
	RK MonoLine Z 80 / 80x120 / 80x160			9	55
91327	RK MonoLine Z 120		GS 38	4.5	80

Drive

Order instruction:

- Synchronisation shaft for RK MonoLine MT on request

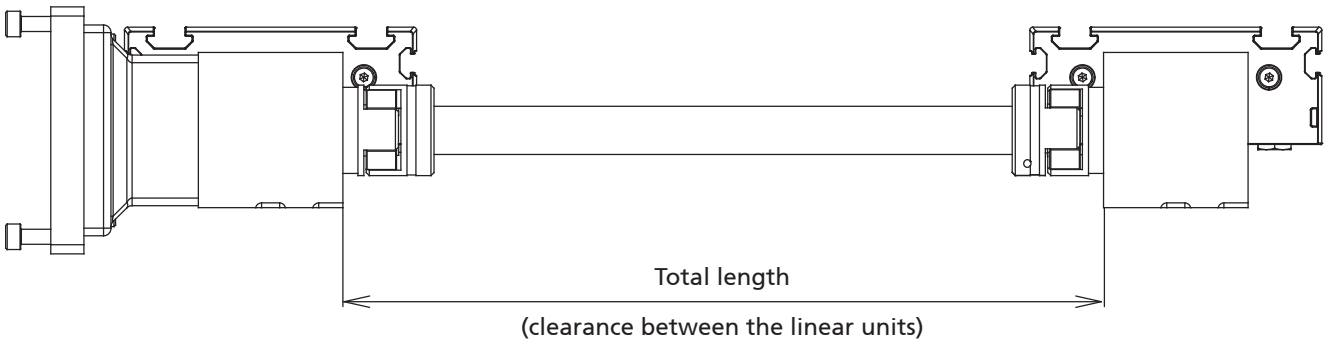
- For torque transmission with parallel linear units
- Synchronisation of the guide carriages by zero point alignment

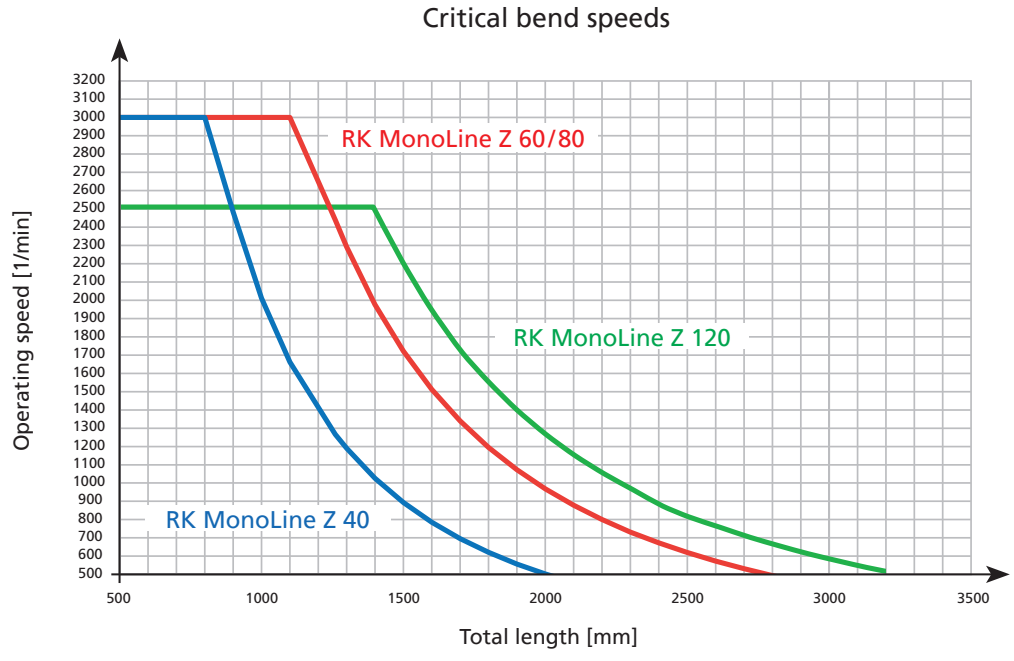
Scope of delivery:
Synchronisation shaft with fixation material

Synchronisation shaft

Max. transfer torque:

RK MonoLine Z 40	6,5 Nm
RK MonoLine Z 60/80	47 Nm
RK MonoLine Z 120	123 Nm





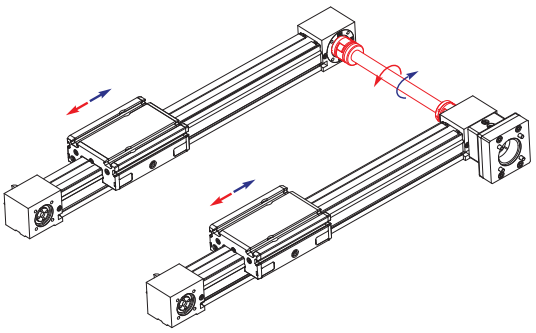


Fig. shows synchronisation shaft

[mm]

Code No.	Type	Basic length (minimum length)	Max. length (clearance)	Weight [kg]	
				Basic length	per 100 mm travel
92520400_ _ _ _	Synchronisation shaft RK MonoLine Z 40	105	2000	0.19	0.05
92520800_ _ _ _	Synchronisation shaft RK MonoLine Z 60 / 80	220	2800	1.09	0.13
92520120_ _ _ _	Synchronisation shaft RK MonoLine Z 120	290	3000	3.39	0.36

Total length [mm]

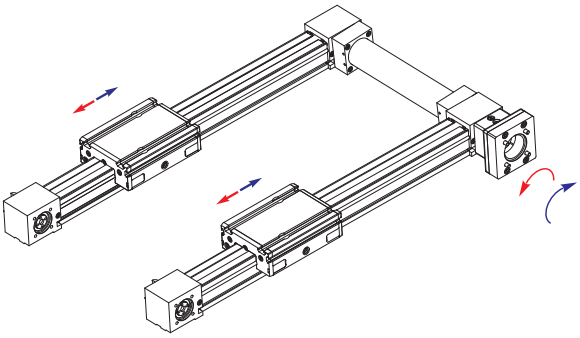


Fig. shows synchronisation shaft with protection

[mm]

Code No.	Type	Basic length (minimum length)	Max. length (clearance)	Weight [kg]	
				Basic length	per 100 mm travel
92521400_ _ _ _	Synchronisation shaft RK MonoLine Z 40 mit Schutz	105	2000	0.45	0.15
92521800_ _ _ _	Synchronisation shaft RK MonoLine Z 60 / 80 mit Schutz	220	2800	1.99	0.30
92521120_ _ _ _	Synchronisation shaft RK MonoLine Z 120 mit Schutz	290	3000	5.47	0.58

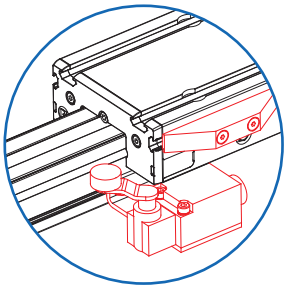
Total length [mm]

Position determination

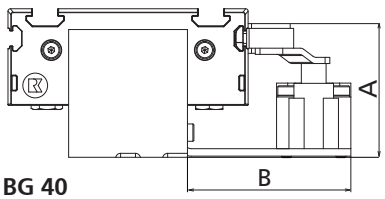
Mechanical limit switch

- External fixation on the guide profile

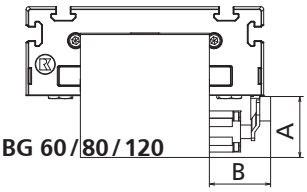
Scope of delivery:
Limit switch with set of fixing items



Limit switch	
Voltage	Max. 230 V AC
Max. switching current	4 A
Max. starting current	10 A
Operating frequency	max. 5000 / h
Mechanical lifetime	$20x10^6$ Zyklen
Axis leverage adjustment	locking by 360°
Degree of protection	IP 67
Ambient temperature	-30°C to +80°C



BG 40



BG 60 / 80 / 120

Code No.	Type	A	B	Version
91925	RK MonoLine 40	54	66	NO / NC, mechanical limit switch
91930	RK MonoLine 60	41	43,5	
91926	RK MonoLine 80 / 80x120 / 80x160	45	45,5	
91929	RK MonoLine 120	74	69	

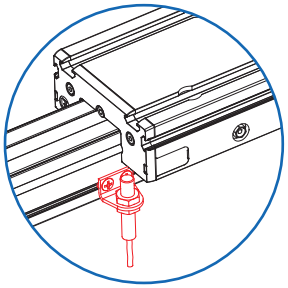
Actuator for Mechanical limit switch

- Fixation to carriage

Scope of delivery:
Actuator and set of fixing items

Code No.	Type
91927	RK MonoLine 40
91903	RK MonoLine 60
91928	RK MonoLine 80 / 80x120 / 80x160 / 120

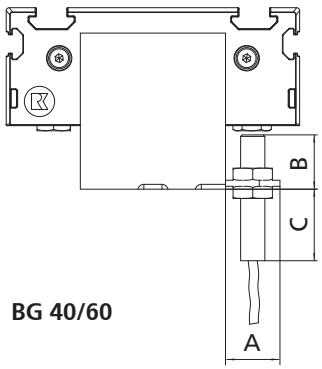
External inductive limit switch



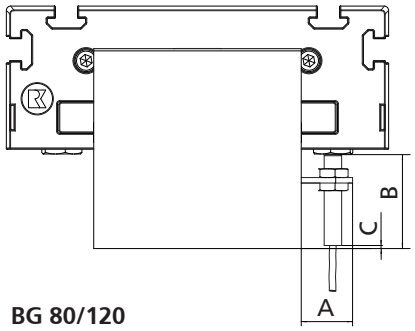
- External fixation on the guide profile

Scope of delivery:
Limit switch with set of fixing items

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



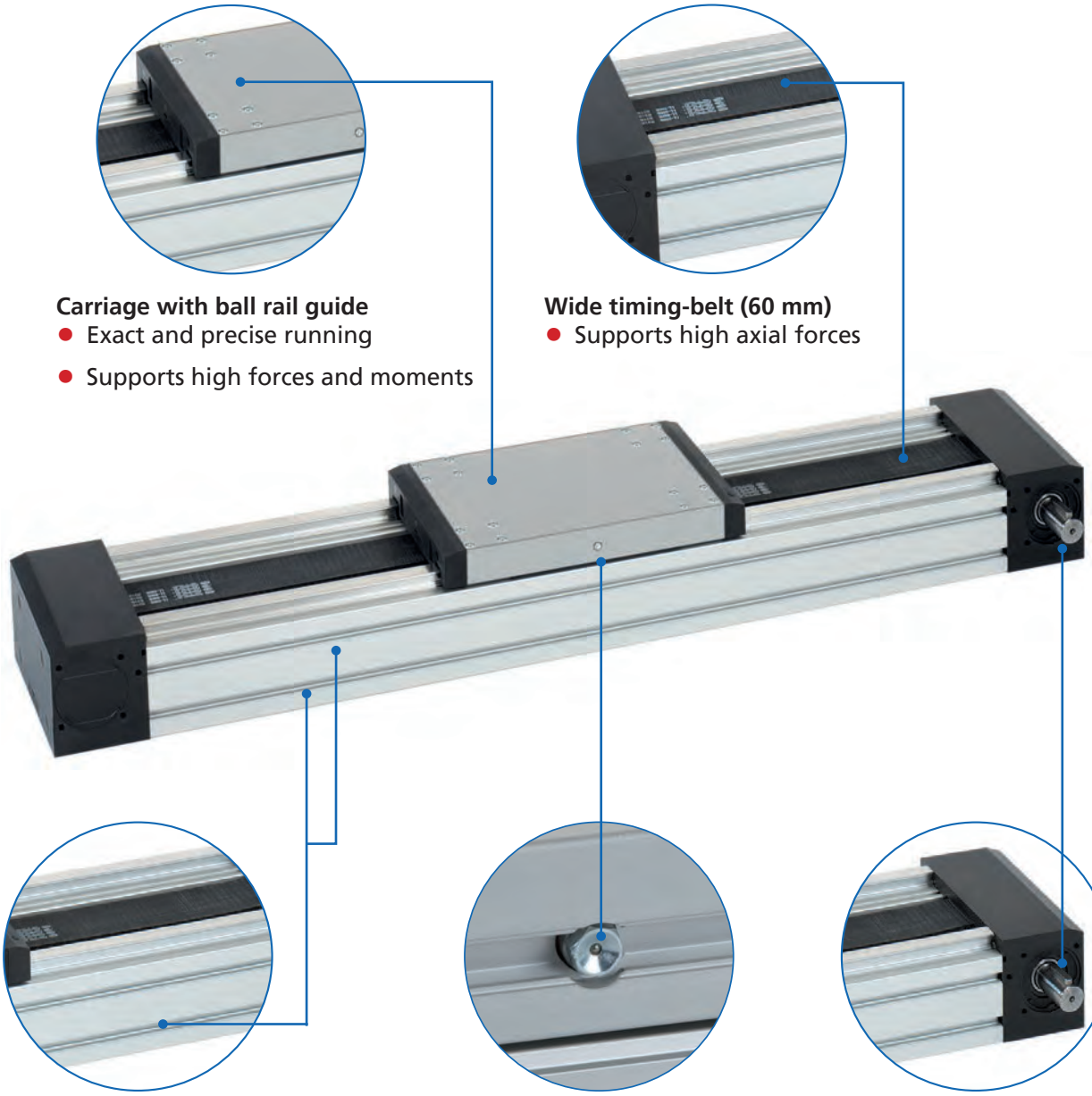
BG 40/60



BG 80/120

Code No.	Type	A	B	C	Version
92850	RK MonoLine 40	18	18	24	Changeover, External inductive limit switch M8x1
91931	RK MonoLine 60	22	39	3	
92851	RK MonoLine 80	43	42,4	0,4	
	RK MonoLine 80x120		82,4	40,4	
	RK MonoLine 80x160		122,4	80,4	
92852	RK MonoLine 120	46	67,5	25,5	

Compact ball rail actuator for high loads



Carriage with ball rail guide
- Exact and precise running
- Supports high forces and moments

Wide timing-belt (60 mm)
- Supports high axial forces

Fixing slots in the guide profile
- Simple connection of accessories
- Excellent fixing of unit

Tapered lubricating nipple
- Central lubricating access on the carriage facilitates maintenance

Configuration of drive shaft
- Freely configurable acc. to your requirements

Features:
- Guide profile 100 x 200 compatible with BLOCAN® profile system
- Durable ball rail guide
- Flat and compact design

Options:
- Longer stroke lengths
- Second non driven carriage
- Extended carriage

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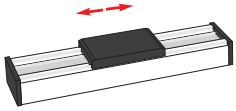
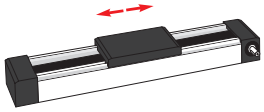
Versions
(Dimensions, order numbers)



MultiLine R guide unit ... Page 396



MultiLine timing-belt unit ... Page 400

Safelock MultiLine timing-belt unit ... Page 402

Accessories

Fixing

Slot stones ... Page 404

Drive

Transmission unit ... Page 405

Motor adaptor/couplings ... Page 408

Position determination

Limit switches ... Page 409

Technical data

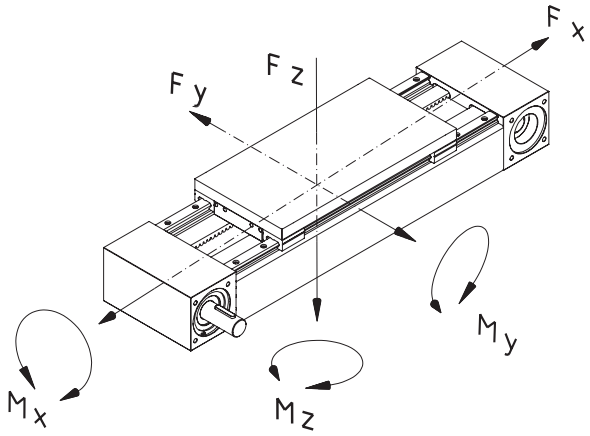
General information/operating conditions

	MultiLine
Design	Aluminium profile, timing-belt drive
Guidance system	2 parallel ball rails, external
Installation position	Any position
Max. input torque	161 **[Nm]**
Max. speed	5 **[m/s]**
Max. acceleration	50 **[m/s²]**
Repeatability	± 0,05 mm
Pitch accuracy toothed belt	± 0,1 mm/300 mm travel
No-load torque	3,8 **[Nm]**
Drive	HTD-Toothed belt, Pitch 8 mm, Width 60 mm
Eff. diam. of pulley	68,75, **[mm]**
Pulley wheel circumference	216
Ambient temperature	0°C to +60°C
Protection class	IP 20

Dynamic load data

F Force [N]

M Moment [Nm]



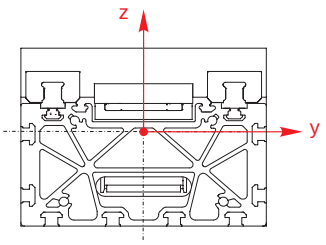
Type	Fx*	Fy	Fz	Mx	My	Mz
MultiLine (Ball rail system)						
MultiLine R	–	8200	12000	920	1600	1500
MultiLine with external timing-belt						
MultiLine	4700	8200	12000	920	1600	1500

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

Geometric moment of inertia

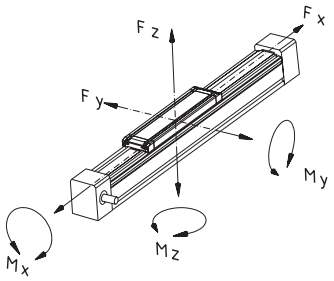
[cm⁴]

Type	Iy	Iz
MultiLine	630,85	2643,85



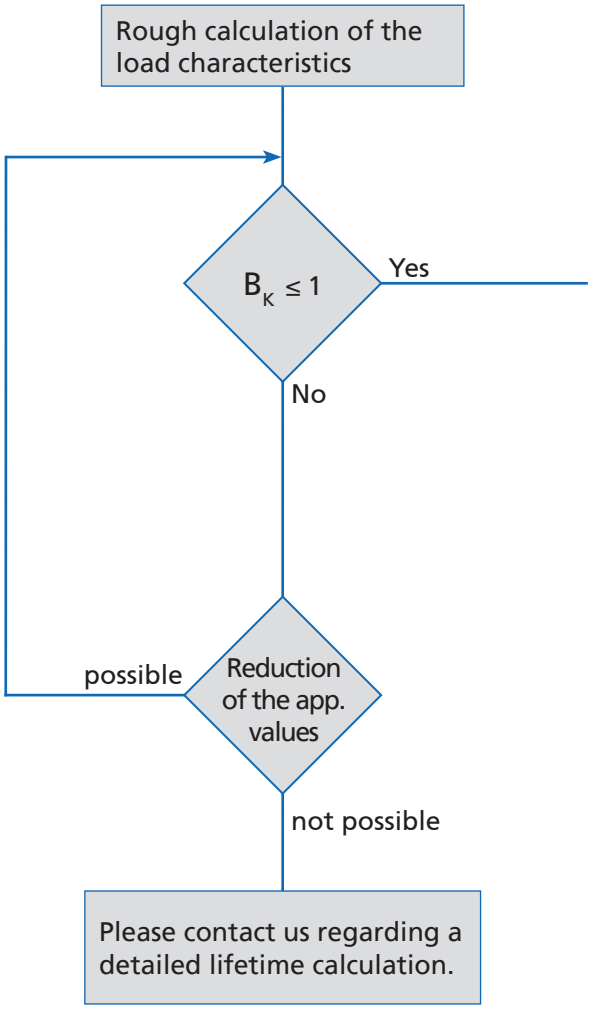
Calculation of the load characteristic to define the lifetime

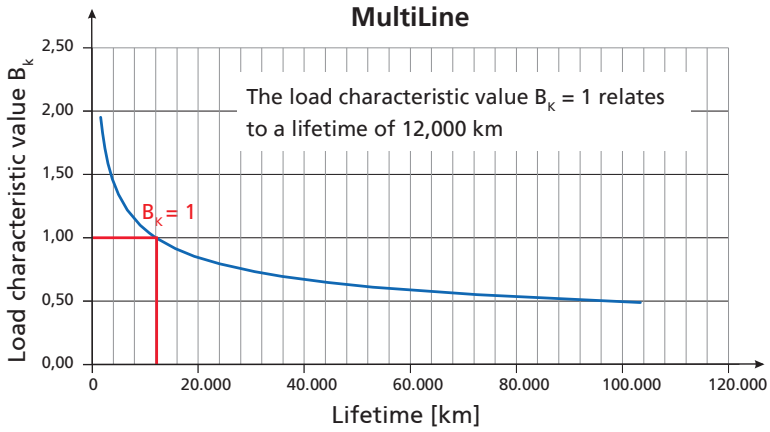
- The lifetime of linear units are in accordance with the average loads and moments of an application. The load characteristic can approximately calcu lated by following equation with simultaneously appearing load and moments.



$$\text{Load characteristic} = \frac{\text{Application values (z.B. Fy)}}{\text{Catalog values (z.B. Fy}_{max})}$$

$$\textbf{Load characteristic } B_K = \frac{Fy}{Fy_{max}} + \frac{Fz}{Fz_{max}} + \frac{Mx}{Mx_{max}} + \frac{My}{My_{max}} + \frac{Mz}{Mz_{max}} \leq 1$$





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:
  Fz = 2000N, Mx = 200 Nm und Mz = 450 Nm

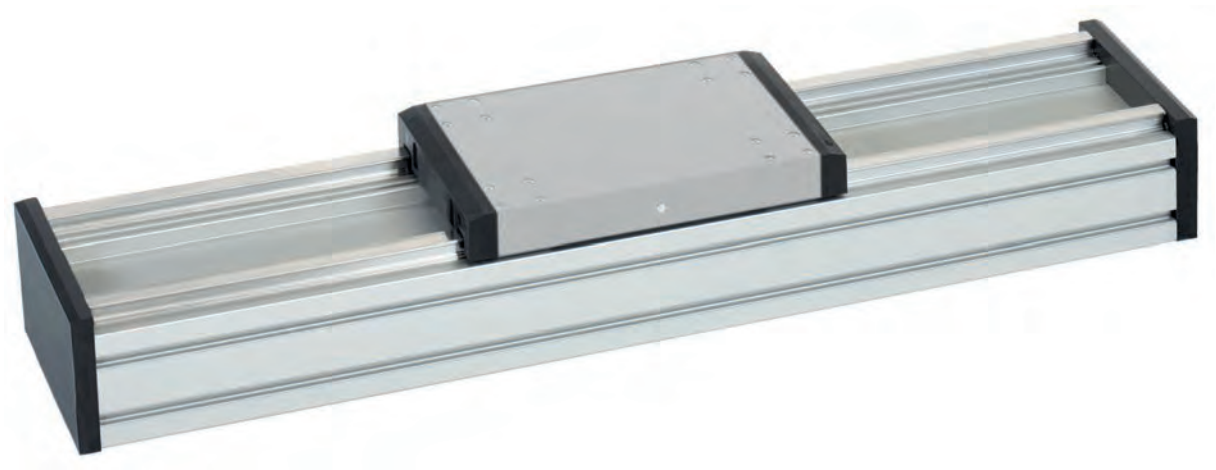
According to the above equation you will have following load characteristic of a MultiLine: $B_K = 0.76$.

Versions

Order instructions:

- Longer travel lengths on request
- Second or extended carriage available on request

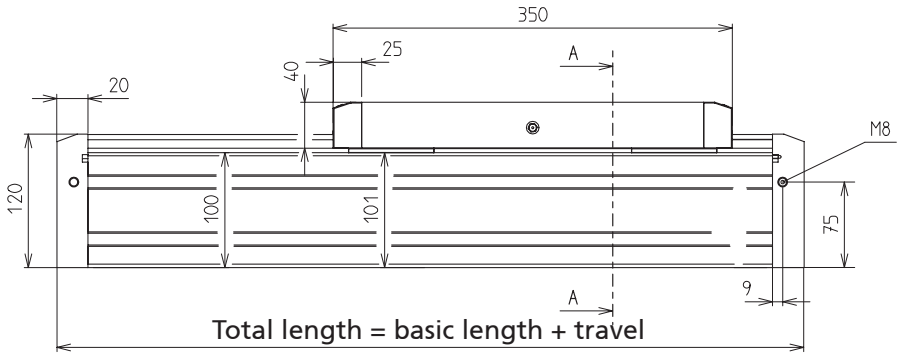
Version ● Guide

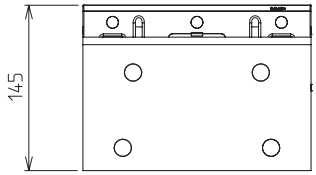


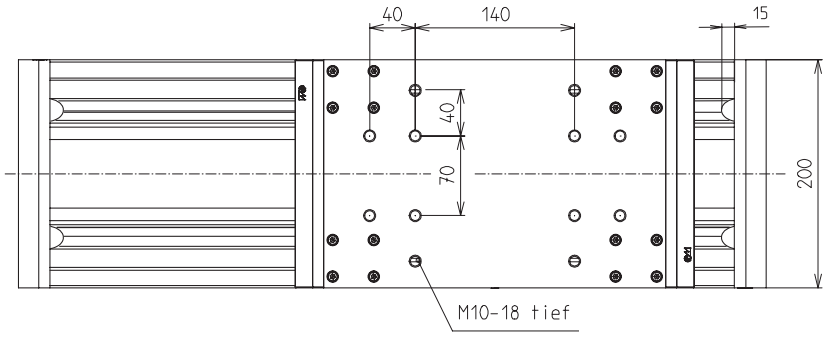
[mm]

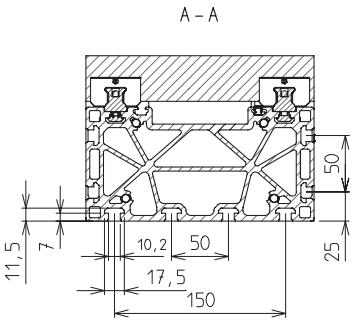
Code No.	Type	Basic length	Max. travel	Mass [kg]	
				Basic length	per 100 mm travel
MSA2010IA	Ball rail system	420	5620	31.11	2.00

_ _ _ _ Total length = basic length + travel [mm]


350
25
A
40
20
M8
120
100
101
75
9
A
Total length = basic length + travel


145


40
140
15
40
70
200
M10-18 tief


A - A
50
11,5
7
10,2
50
25
17,5
150

Versions

Order instructions:

- Longer travel lengths on request
- Second non driven or extended carriage available on request

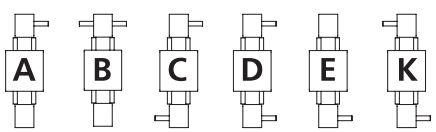
Version ● Timing-belt unit

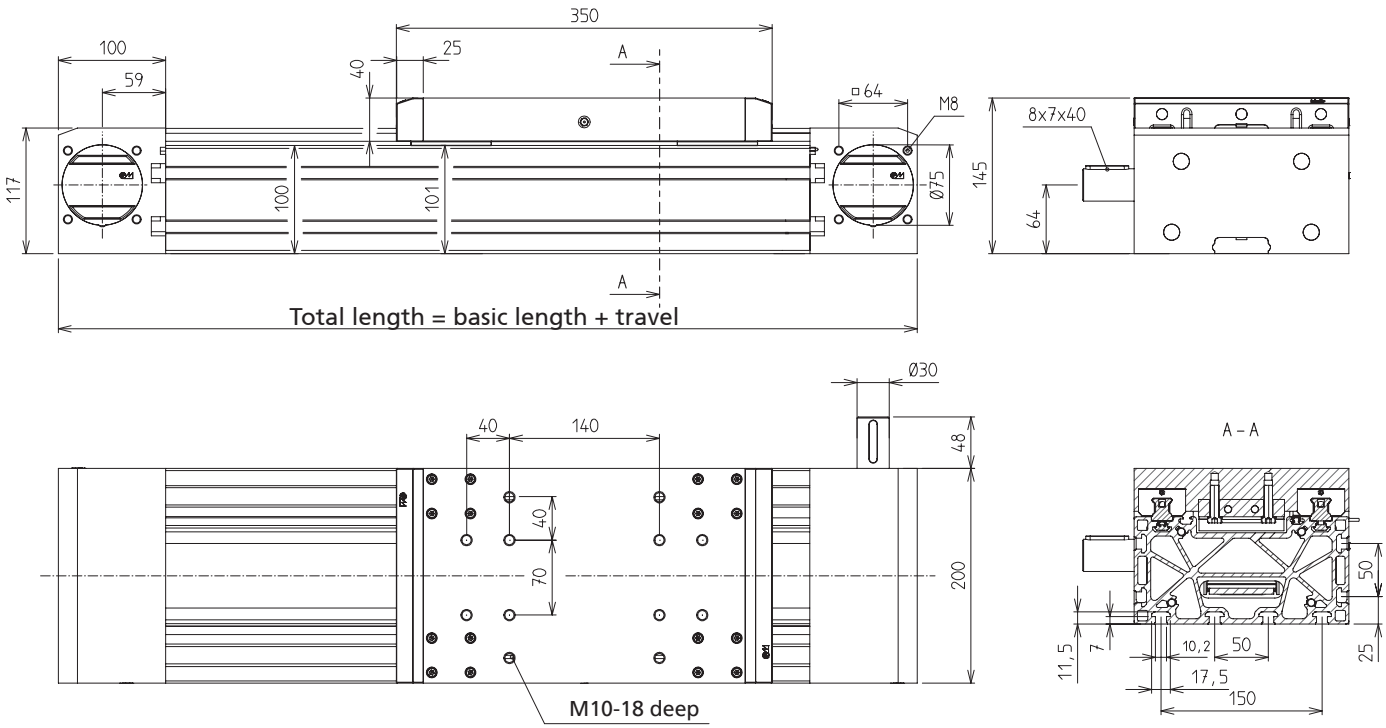
[mm]

Code No.	Type	Toothed belt	Basic length	Max. travel	Mass [kg]	
					Basic length	per 100 mm travel
TAA2010 _ I	Ball rail system	8 M60	550	5620	29.90	2.05

_ _ _ _ Total length = basic length + travel [mm]

Configuration of drive shaft




350
100
59
25
40
A
□64
M8
117
100
101
Ø75
145
8x7x40
64
A
Total length = basic length + travel
Ø30
40
140
48
40
70
200
M10-18 deep
A – A
50
11,5
7
10,2
50
25
17,5
150

RK MultiLine Safelock

Order information:

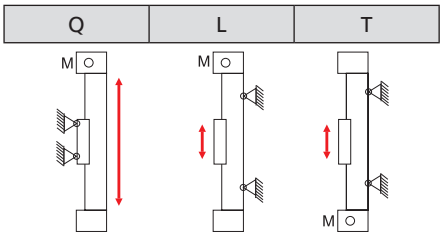
- Longer travel lengths on request
- Also available without toothed-belt drive as a torque support

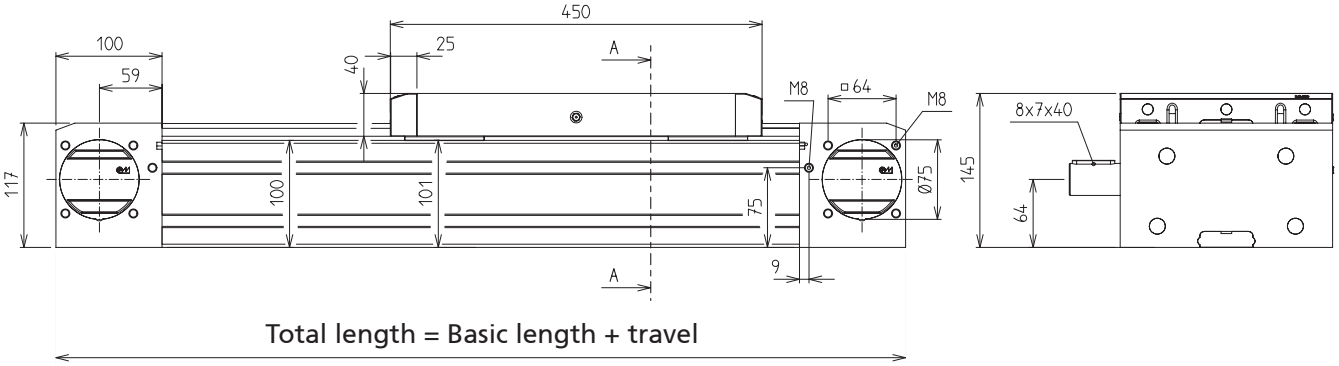
[mm]

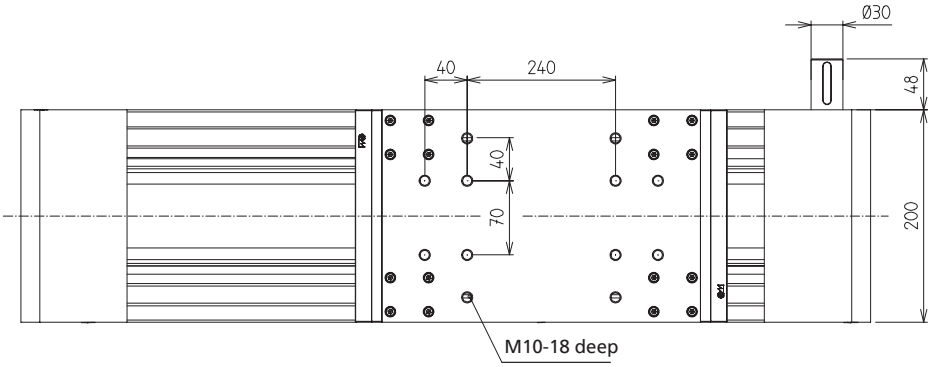
Code No.	Type	Basic length	Max. travel	Mass [kg]	
				Basic length	per 100 mm travel
TA_2010AI _ _ _ _	RK MultiLine Safelock	650	3506	31	2.05

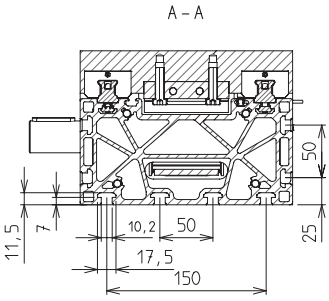
Total length (basic length + travel) in mm

Version:
Q = Motor at top / Profile moves
L = Motor at top / Carriage moves
T = Motor at bottom / Carriage moves




450
100
59
25
40
A
M8
□64
M8
117
100
101
75
Ø75
9
A
Total length = Basic length + travel
8x7x40
145
64


Ø30
40
240
48
40
70
200
M10-18 deep


A – A
50
11,5
7
10,2
50
25
17,5
150

Fixing/Drive

Order instruction:

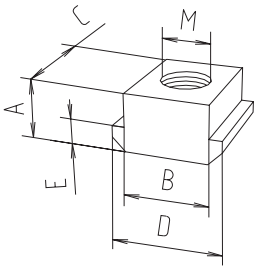
- Purchase only in lot sizes and a multiple of that, see product table below

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

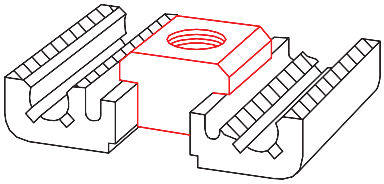
Material: zinc plated steel

Slot stones

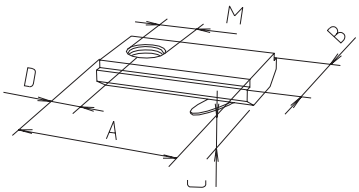
Slot stone -N-



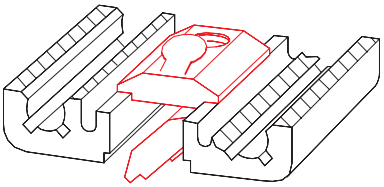
Slot stone -N-
can be slid into the slot



Slot stone -K-



Slot stone -K-
can be swivelled into the slot



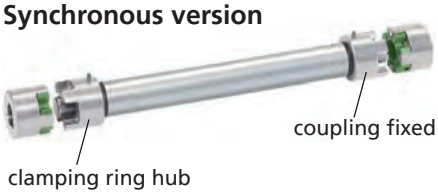
[mm]

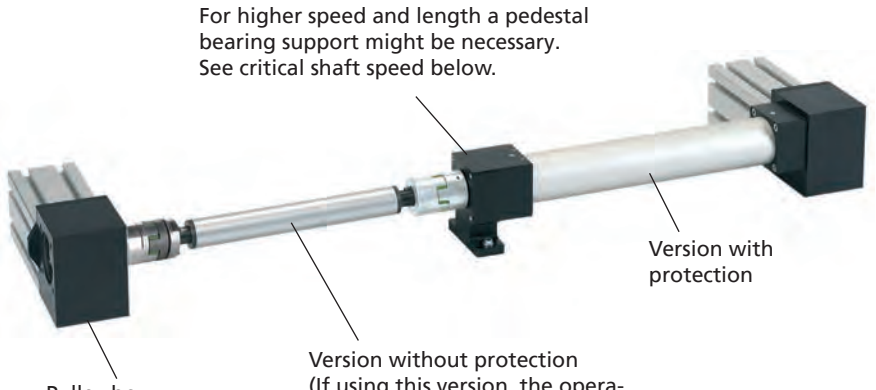
Code No.	Version	lot sizes	A	B	C	D	E	M	F [N]
Slot stone -N-									
4026207	M5	10, 20, 30... pcs	8	10	13	15	4	M5	4000
4026203	M6	10, 20, 30... pcs	8	10	13	15	4	M6	9000
4026206	M8	10, 20, 30... pcs	8	10	13	15	4	M8	9000
Slot stone -K-									
4016212	M6	10, 20, 30... pcs	21	14	4	7	–	M6	5000
4016213	M8	10, 20, 30... pcs	21	14	4	7	–	M8	8000

Transmission unit

- Transmission of high torques up to 120 Nm on parallel linear units
- Synchronisation of carriages via zero point alignment

Synchronous version

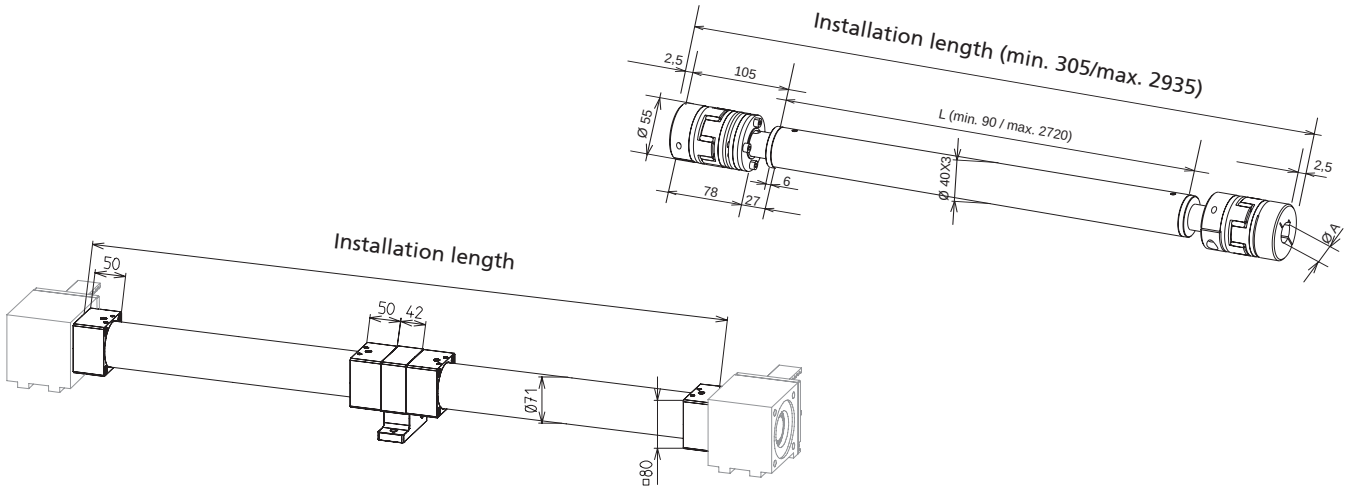




Critical shaft speed:

max. unsupported length [mm] = (2720 - speed [rpm]) + 2 x 107.5

max. speed [rpm] = 2720 - L [mm]



[mm]

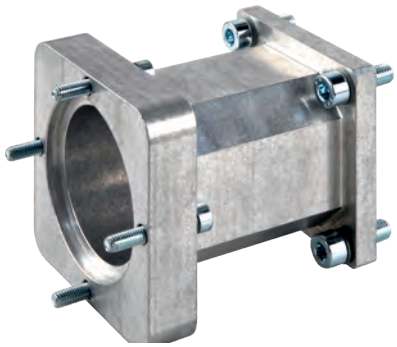
Code No.	Version	for linear unit	A [mm]	Weight [kg]		
				1000 mm	/100 mm	Pedestal bearing support
9252052 _ _ _ _ _	Without protection	MultiLine	30	5.23	0.23	1.7
9252152 _ _ _ _ _	With protection	MultiLine	30	8.56	0.4	1.7

Installation length [mm]

2 = without pedestal bearing support
3 = with pedestal bearing support

Drive

Selection table Motor adaptor/MultiLine coupling for three-phase motor



Manufacturers	Motor	MultiLine
RK Rose + Krieger	90/120W	949968
		912855 1230
	180/250W	949969
		912855 1430

Selection table Motor adaptor/MultiLine coupling for servomotors without gear

Manufacturers	Motor	MultiLine	Motor flange	Motor shaft
RK Rose + Krieger	RK-AC 240	949962	IM B5 56	Ø14x30
		912855 1430		
	RK-AC 470	949964	IM B5 63	Ø19x40
		912855 1930		
Baumüller	DSD2-045	949962	IM B5 56	Ø14x30
		912855 1430		
Bosch	MSK050B, MSK050C	949964	IM B5 63	Ø19x40
		912855 1930		
Lenze	MCS09D, MCS09F, MCS09H, MCS09L	949962	IM B5 56	Ø14x30
		912855 1430		
Lti / Keba	LSP10	949964	IM B5 63	Ø19x40
		912855 1930		
Parker	SMH 82, SMHA 82	949962	IM B5 56	Ø14x30
		912855 1430		
	SMH 100, SMHA 100	949964	IM B5 63	Ø19x40
		912855 1930		
SEW	CMP63S, CMP63M, CPM63L	949962	IM B5 56	Ø14x30
		912855 1430		
Siemens	1FK2105	949964	IM B5 63	Ø19x40
		912855 1930		

↓

Code No. Motor adaptor: **949964**
Code No. Coupling with specification of shaft diameter 1st end=19 mm 2st end=30 mm: **912855 1930**

Selection table Motor adaptor/MultiLine coupling for servomotors with gear

Manufacturers	Gear	MultiLine Z	Motor shaft
Neugart	PLE 60	949446	Ø14x30
		912855 1430	
	PLE 80	949447	Ø20x36
		912855 2030	
	PLE 120	949448	Ø25x50
		912855 2530	
Atlanta	APG080	949447	Ø20x36
		912855 2030	
	APG120	949448	Ø25x50
		912855 2530	
Eppinger	PE065	949446	Ø14x30
		912855 1430	
	PE080	949447	Ø20x36
		912855 2030	
Ruhrgetriebe	RPS060	949446	Ø14x30
		912855 1430	
	RPS080	949447	Ø20x36
		912855 2030	
SPN Schwaben Präzision	SPN-ECO (E2) EZ 23	949446	Ø14x30
		912855 1430	
	SPN-ECO (E2) EZ 24	949447	Ø20x36
		912855 2030	
	SPN-ECO (E2) EZ 25	949448	Ø25x50
		912855 2530	
Wittenstein	Alpha CP015 MF	949446	Ø14x30
		912855 1430	
	Alpha CP025 MF	949447	Ø20x36
		912855 2030	
	Alpha CP035 MF	949448	Ø25x50
		912855 2530	

Code No. Motor adaptor:
949448

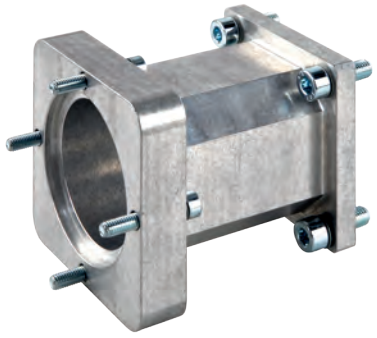
Code No. Coupling with specification of shaft diameter
1st end=25 mm
2st end=30 mm:
912855 2530

For dimensions and order data for motor adaptor and coupling, please refer to next page.

Note:
For further details on motor versions, please refer to the chapter "Motors and controls"

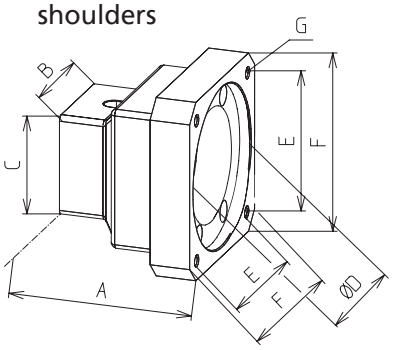
Drive

Motor adaptor



- Simple assembly
- Exact fit due to centering shoulders

Material: Aluminium



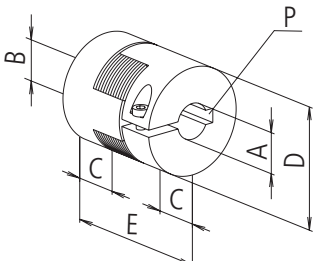
[mm]

Code No.	A	B	C	D	E	F	G
949446	112	80	80	40	53	70	Ø5,5
949962	99	80	80	80	70,7	90	M6
949447	106	80	80	60	70,7	90	Ø6,6
949448	120	80	80	80	91,9	115	Ø9
949964	106	80	80	95	81,3	115	M8
949968	99	80	80	50	46	80	M5
949969	99	80	80	80	100	Ø120	Ø6,6

Coupling

- Shaft connection without backlash
- Easy plug-in assembly

Material: Aluminium hub, polyurethane gear ring



[mm]

Code No.	ØA	ØB	C	D	E	P	Torque [Nm]	
							with feather key	without feather key
9128551430	14	30	30	55	78	5x5 / 8x7	60	35
9128551930	19	30	30	55	78	6x6 / 8x7	60	35

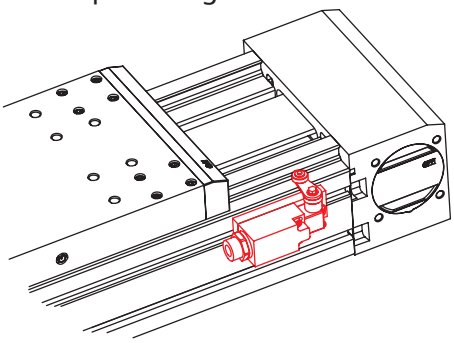
Position determination

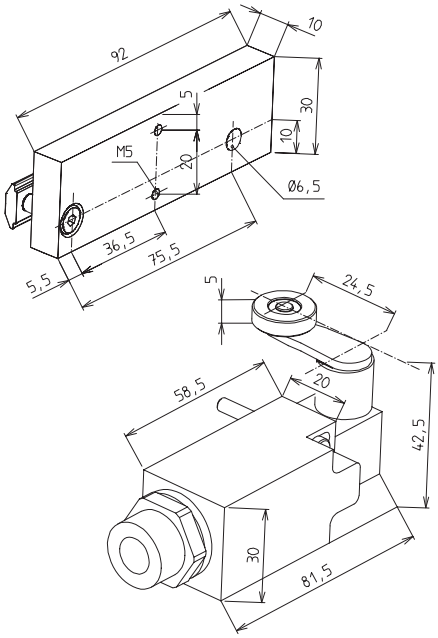
RK ROSE+KRIEGER

Bracket for mechanical limit switch

- Limit switch with angle lever
- Compact design

Material: Limit switch housing made of thermoplastic, self-extinguishing, bracket made of aluminium profile





[mm]

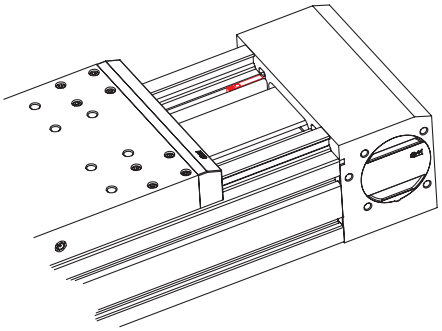
Max. voltage	230 V AC
Max. switching current	4 A
Max. starting current	10 A
Operating cycles	Max. 5,000/h
Mechanical lifetime	20 x 10^6 switching cycles
Axis lever adjustment	locking by 360°
Protection class	IP 67
Ambient temperature	-30°C to +80°C

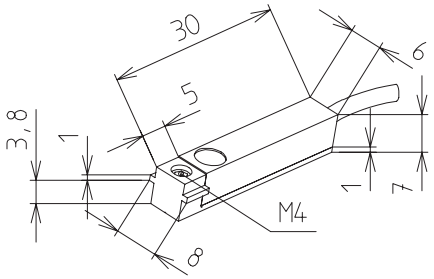
Code No.	Type
92711	Limit switch NC/NO with bracket

Bracket for inductive limit switch

- Fixing in the profile slot of the guide profile
- Function indicator
- Maintenance-free

Material: Limit switch housing made of stainless steel, bracket made of aluminium

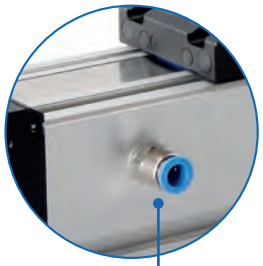




Voltage	10-30 V DC
Max. switching current	10 mA
Max. starting current	100 mA
Operating frequency	Max. 5 kHz
Mechanical lifetime	independent of operating cycles
Operating distance	1.5 mm
Protection class	IP 67
Ambient temperature	-25°C to +70°C

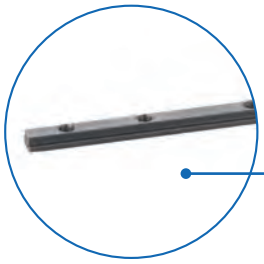
Code No.	Type
92929	Limit switch NC, with bracket

Key features / technical benefits



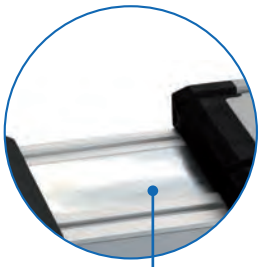
Connection

- For sealing air or vacuum available on request



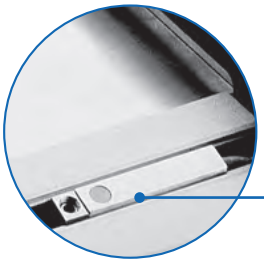
Slot stone strip

- To hold your load securely



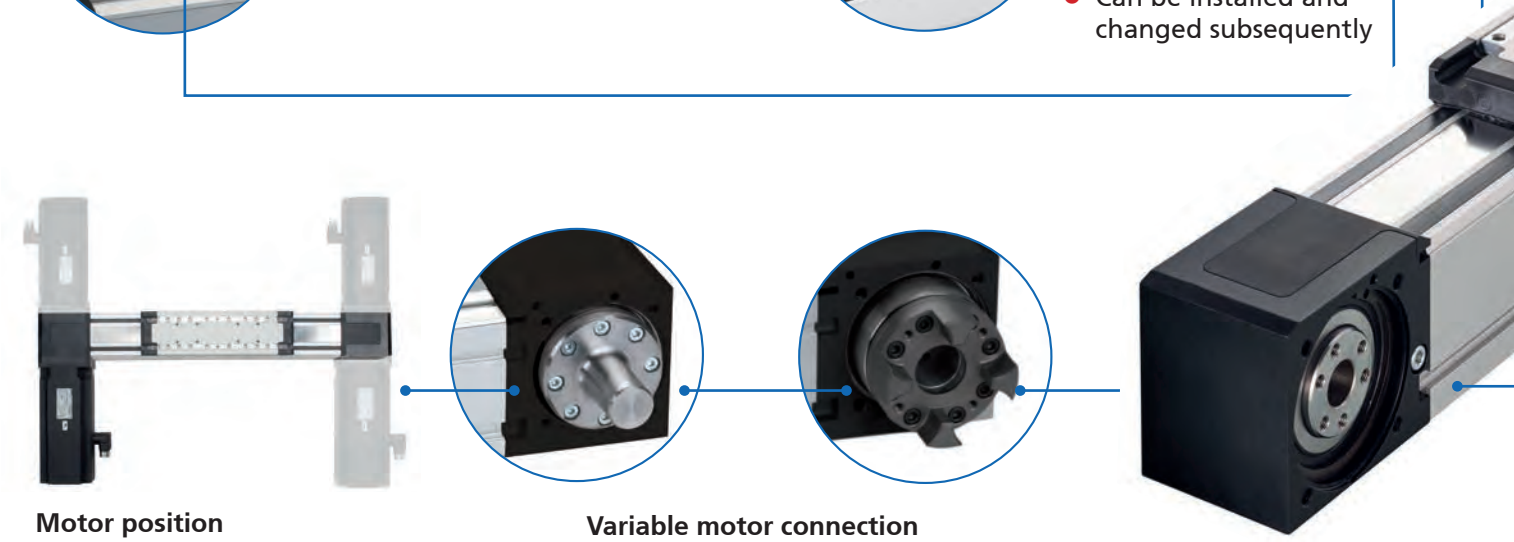
Cover strip

- Degree of protection mode IP40



Proximity switch

- Simple installation without protruding contours
- Up to 3 sensors per slot
- Can be installed and changed subsequently



Motor position

- Can be modified at a later stage
- Freely selectable motor position
- Motor can be rotated in 90° carriage

Variable motor connection

- For metal bellows coupling
- For servo coupling with zero backlash

Key features general

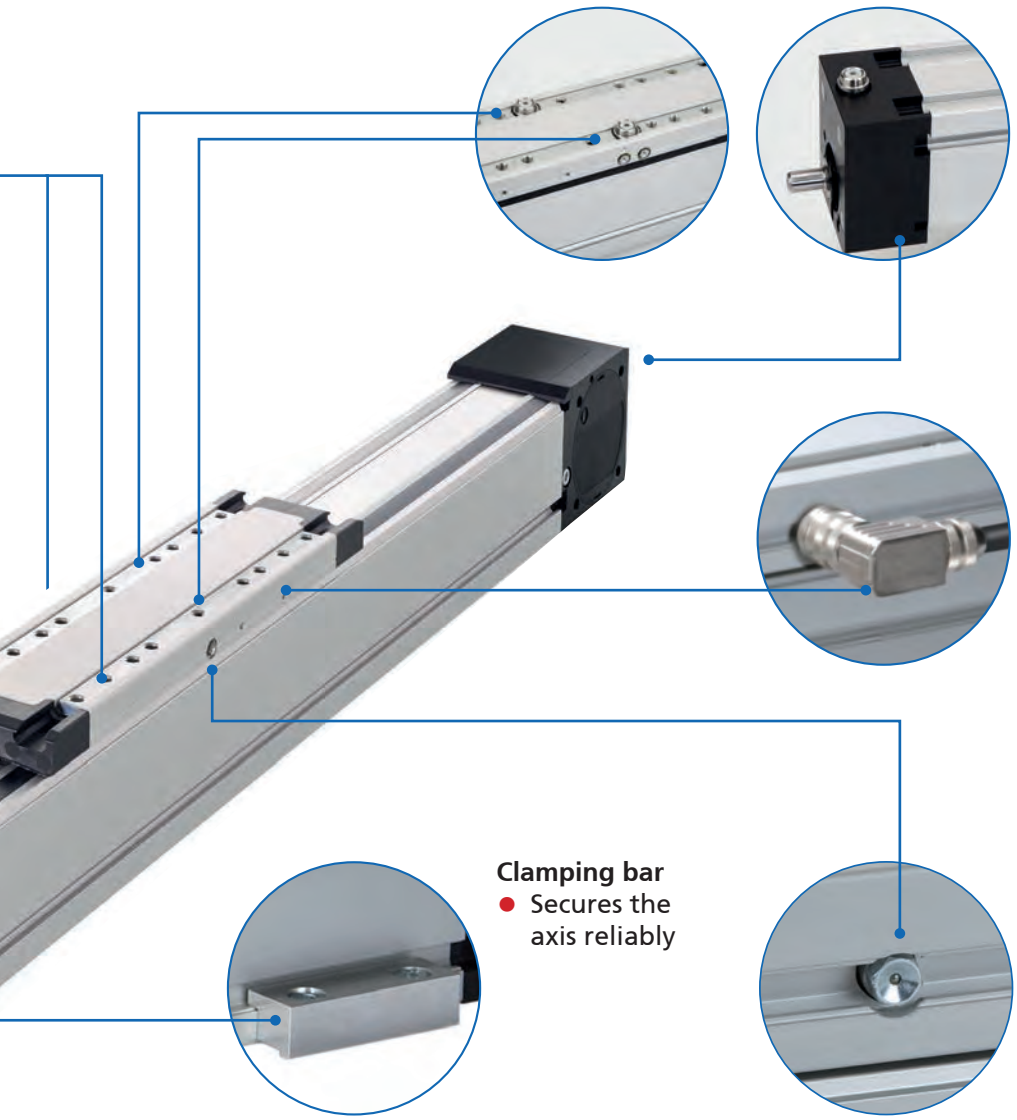
- High efficiency
- Low idle torque
- Max. usable travel speed regardless of length
- Central lubricating access on the carriage facilitates maintenance
- Profile slots for fastening the axis both at the sides and underneath
- Slot stones can be subsequently inserted in the side and bottom slots

RK DuoLine Z (toothed-belt drive)

- Degree of protection IP20
- Flexible positioning of motor thanks to pulley boxes with hollow shafts
- Repeat accuracy ±0.05 mm

RK DuoLine Z Protect (toothed-belt drive)

- Degree of protection IP40 provided by steel cover strip and seals
- Flexible positioning of motor thanks to pulley boxes with hollow shafts
- Repeat accuracy ±0.05 mm



Centring holes

- Reproducible payload position/linear unit

Integr. position sensing system

- High positioning accuracy across the entire unit lengthe
- Direct detection of carriage position
- Elasticities of the drive train identifiable and can be offset by the motor controller

Clamping bar

- Secures the axis reliably

Tapered lubricating nipple

- Central lubricating access on the carriage facilitates maintenance
- RK DuoLine S with trapezoidal thread is lifetime lubricated*
- Alternative connection to per-manent lubrication available on request

RK DuoLine R Protect (guide axis)

- Without dedicated drive
- Freely movable carriage

Variants

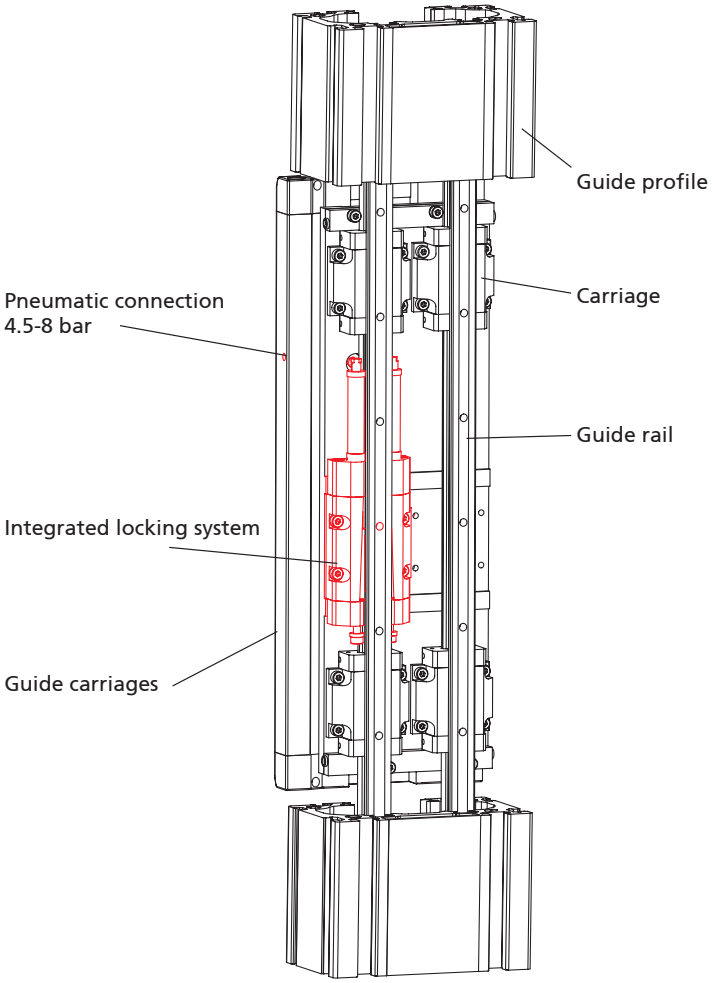
RK DuoLine Clean suitable for use in cleanrooms up to ISO class 1

Fraunhofer IPA TESTED DEVICE
RK Rose+Krieger GmbH
RK DuoLine S80 Clean
Report No. RK 2011-1187

Note:
More information in chapter RK DuoLine Clean (p. 436)

* up to approximately 30 km running performance

Timing-belt- and Spindle units with secure locking function



- As a safeguard for installation, removal and maintenance work
- Guaranteed nominal holding force on greased ball rails thanks to self-amplifying system
- „Safelock" safety locking device is an approved component in accordance with category 1 of DIN EN ISO 13849-1, which should be considered
- B_{10} = 1.000.000 operations (static)
- Performance level PL D achievable. PL E as redundant version available on request
- Integrated locking system. No protruding contours outside the linear axis.
- Overload-proof locking element

	Recirculating ball	Toothed belt	
	RK Duoline S 160	RK Duoline Z 120 one ball rail	RK Duoline Z 160
Nominal holding force Safelock (at B_{10} = 1.000.000 operations)	1800 N	2500 N	1800 N
DGUV test certification	Tested based on testing principles GS-MF-01 and GS-MF-28		

Note:
Maximum holding force = 2x nominal holding force.
Emergency braking of a moving load is not proper use.
If the nominal holding force is exceeded, or after every emergency braking, a functional check has to be performed in normal mode as per the operating instructions.
http://www.rk-rose-krieger.com/fileadmin/catalogue/manuals_lineartechnik/99347_safelock.pdf

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RK ROSE+KRIEGER

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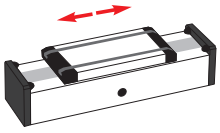

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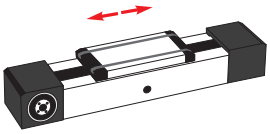

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Position determination

Technical data

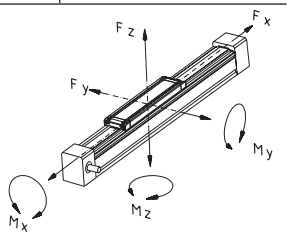
General information / operating conditions

	RK DuoLine Z 60	RK DuoLine Z 80	RK DuoLine Z 120	RK DuoLine Z 120 II	RK DuoLine Z 160
Guidance system	1 Ball rail system	1 Ball rail system	1 Ball rail system	2 Ball rail system	2 Ball rail system
Installation position	any position				
Max. driving torque	28 Nm	67 Nm	141 Nm	141 Nm	220 Nm
Max. speed	5 m/s	5 m/s	5 m/s (10m/s)	5 m/s	5 m/s
Max. acceleration	50 m/s²				
Repeat accuracy	± 0,05 mm	± 0,05 mm	± 0,05 mm	± 0,05 mm	± 0,05 mm
Positioning accuracy	with integrated linear encoder ± (0.025 + 0.01 x L) mm; L = travel in meters				
Max. no-load torque	2 Nm	2,2 Nm	2,3 Nm	2,3 Nm	2,5 Nm
Drive	HTD-Belts from polyurethan, Pitch 5 mm, Width 20 mm	HTD-Belts from polyurethan, Pitch 8 mm, Width 30 mm	HTD-Belts from polyurethan, Pitch 8 mm, Width 50 mm	HTD-Belts from polyurethan, Pitch 8 mm, Width 50 mm	HTD-Belts from polyurethan, Pitch 8 mm, Width 75 mm
Active Ø pulley wheel	52,52 mm	66,21 mm	76,39 mm	76,39 mm	76,39 mm
Pulley wheel circumference	165 mm	208 mm	239,99 mm	239,99 mm	239,99 mm
Ambient temperature	0 to +60°C	0 to +60°C	0 to +60°C	0 to +60°C	0 to +60°C
Degree of protection	Basic IP 20 / Protect IP 40	Basic IP 20 / Protect IP 40	Basic IP 20 / Protect IP 40	Basic IP 20 / Protect IP 40	Basic IP 20 / Protect IP 40

Dynamic load data

Force [N]

Torque [Nm]



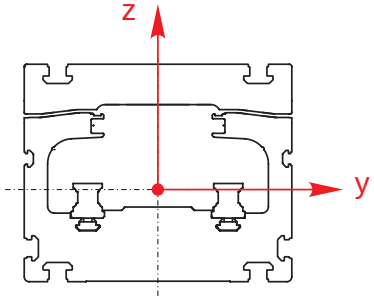
Toothed-belt drive						
Load data	**Fx***	**Fy**	**Fz**	**Mx**	**My**	**Mz**
Standard guide carriage						
RK Duoline Z 60	900	700	2500	48	160	140
RK Duoline Z 80	2000	1000	4100	100	340	300
RK DuoLine Z 120 **RK DuoLine Z 120 Safelock**	3600	1400	6400	125	550	530
RK Duoline Z 120 II	3600	2000	6900	205	620	560
RK DuoLine Z 160 **RK DuoLine Z 160 Safelock**	6000	5100	8900	500	840	810
Extended guide carriage						
RK Duoline Z 60	900	700	2500	48	250	220
RK Duoline Z 80	2000	1000	4100	100	590	520
RK Duoline Z 120	3600	1400	6400	125	890	680
RK Duoline Z 120 II	3600	2000	6900	205	940	790
RK Duoline Z 160	6000	5100	8900	500	1200	1150

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

Geometric moment of inertia

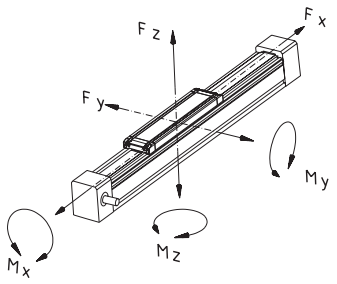
[cm⁴]

	Iy	Iz
RK DuoLine Z 60	52,54 cm⁴	67,41 cm⁴
RK DuoLine Z 80	127,90 cm⁴	172,80 cm⁴
RK DuoLine Z 120	289,5 cm⁴	627,8 cm⁴
RK DuoLine Z 120 II	287,3 cm⁴	597,9 cm⁴
RK DuoLine 160	437,70 cm⁴	1455,90 cm⁴



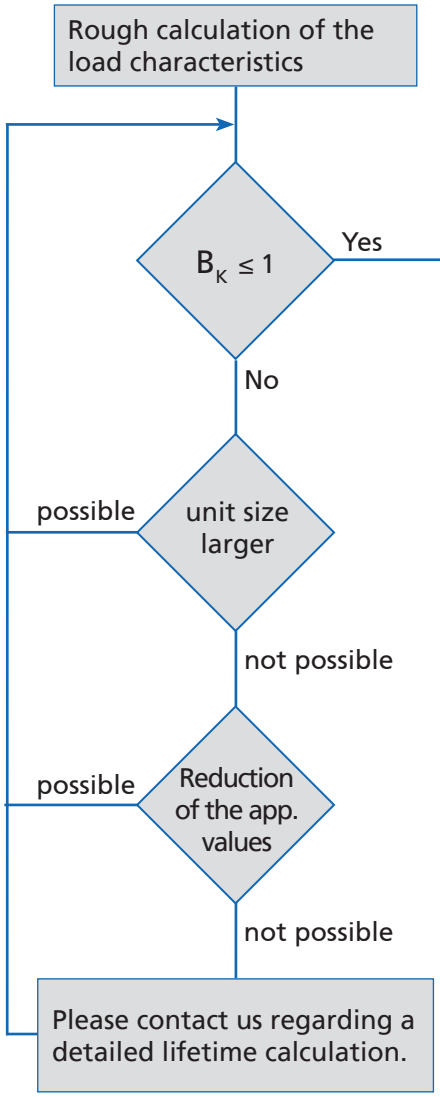
Calculation of the load characteristic to define the lifetime

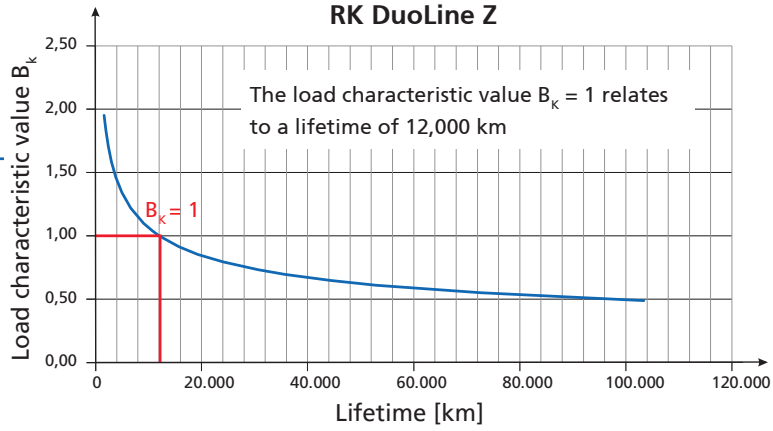
The lifetime of linear units are in accordance with the average loads and moments of an application. The load characteristic can approximately calculated by following equation with simultaneously appearing load and moments.



$$\text{Load characteristic} = \frac{\text{Application values (z.B. Fy)}}{\text{Catalog values (z.B. Fy}_{max})}$$

$$\text{Load characteristic BK} = \frac{Fy}{Fy_{max}} + \frac{Fz}{Fz_{max}} + \frac{Mx}{Mx_{max}} + \frac{My}{My_{max}} + \frac{Mz}{Mz_{max}} \leq 1$$





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:
  Fz = 200N, Mx = 20 Nm und Mz = 45 Nm

  According to the above equation you will have following load characteristic of a RK MonoLine 80: BK = 0.55.

Versions

Order instructions:

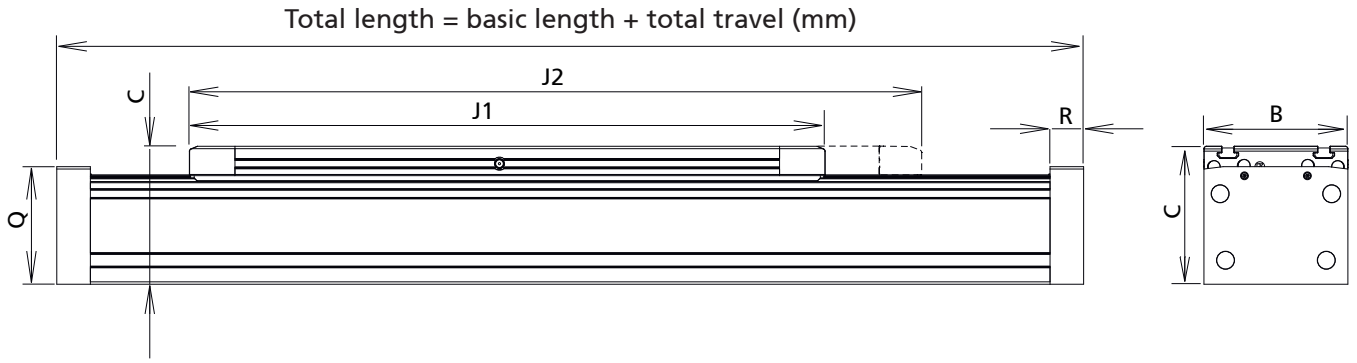
- Longer travel lengths on request
- Integrated linear encoder as Option

Version ● Guide

Ideal as additional / secondary support for the Duoline with toothed belt or spindle.

Code No.	Type	Basic length	B	C
TD14A5T1A11A0 _ _ _ _	RK DuoLine R 60 Protect	295	60	80
TD14A5T1B11A0 _ _ _ _	RK DuoLine R 60 Protect with extended guide carriage	385		
TD14A2T1A11A0 _ _ _ _	RK DuoLine R 80 Protect	352	80	100
TD14A2T1B11A0 _ _ _ _	RK DuoLine R 80 Protect with extended guide carriage	484		
TD14A3T1A11A_ _ _ _ _	RK DuoLine R 120 Protect one ball rail guide	472	120	115
TD14A3T1B11A_ _ _ _ _	RK DuoLine R 120 Protect one ball rail guide with extended guide carriage	616		

Total lenght = basic length + total travel (mm)



[mm]

J1	J2	Q	R	max. travel	Mass [kg]	
					Basic length	per 100 mm travel
245	–	70	22	3587	3,73	0,54
–	335			3497	4,46	0,54
278	–	97	22	7692	5,22	0,83
–	410			7560	6,89	0,83
386	–	98	28	7584	9,76	1,19
–	530			7440	12,16	1,19

Versions

Order instructions:

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

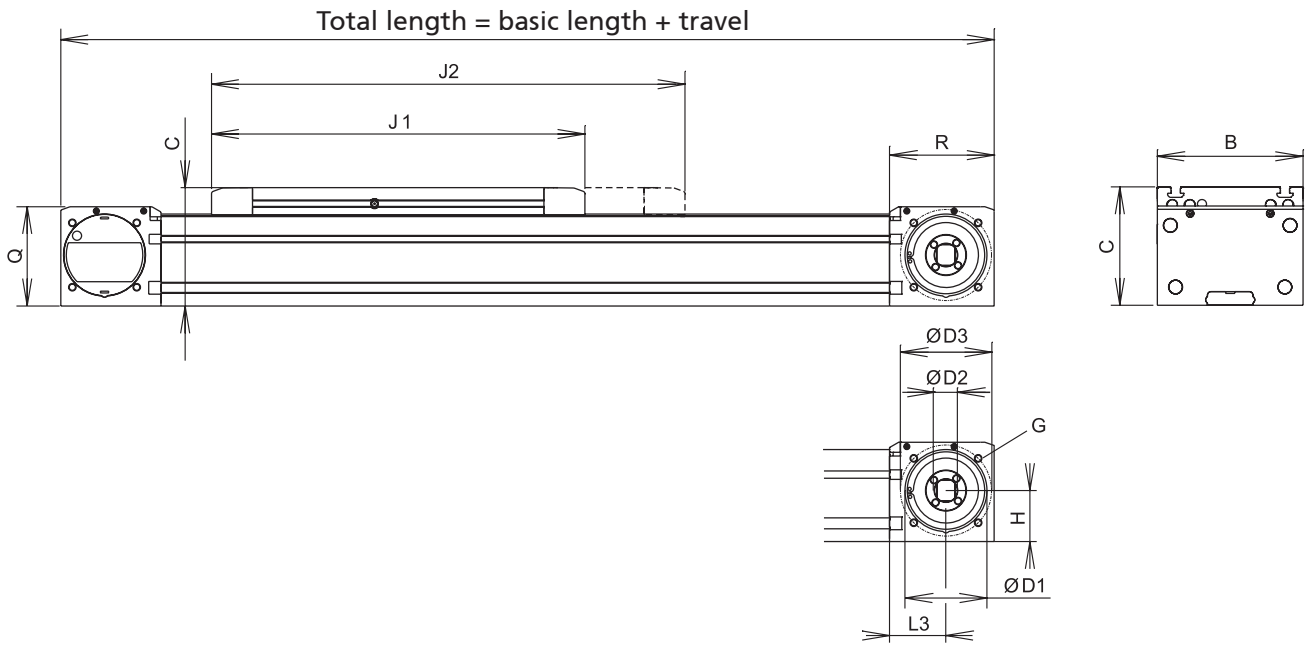
Timing-belt unit RK DuoLine Z Place-Tec

Code No.	Type	Basic length	B	C	D1	D2
TD1_A5F1A11A0_ _ _ _	RK DuoLine Z 60	405	60	80	62^{H7} 5 deep	15^{H6}
TD1_A5F1B11A0_ _ _ _	RK DuoLine Z 60 one ball rail guide with extended guide carriage	495				
TD1_A2F1A_1A_ _ _ _ _	RK DuoLine Z 80	468	80	100	75^{H7} 7 deep	16^{H6}
TD1_A2F1B_1A_ _ _ _ _	RK DuoLine Z 80 with extended guide carriage	600				
TD1_A3F1A_1A_ _ _ _ _	RK DuoLine Z 120 one ball rail guide	606	120	115	90^{H7} 3,5 deep	20^{H6}
TD1_A3F1B_1A_ _ _ _ _	RK DuoLine Z 120 one ball rail guide with extended guide carriage	750				
TD1_A4F1A_1A_ _ _ _ _	RK DuoLine Z 120 two ball rail guides	606				
TD1_A4F1B_1A_ _ _ _ _	RK DuoLine Z 120 two ball rail guides with extended guide carriage	750				
TD1_A1F1A_1A_ _ _ _ _	RK DuoLine Z 160	630	160	130	90^{H7} 3,5 deep	25^{H6}
TD1_A1F1B_1A_ _ _ _ _	RK DuoLine Z 160 with extended guide carriage	780				

Total lenght = basic length + total travel (mm)

Integrated linear encoder:
1 = without
2 = with plug-in coupling and 20 m of cable
3 = with 20 m of cable

Version:
1 = Basic
2 = Protect



[mm]

D3	G	H	J1	J2	L3	Q	R	max. travel	Mass [kg]	
									Basic length	pro 100 mm travel
72,1±0.2	M6-12 deep	33.8	245	–	44	70	80	5753	4.65	0.54
			–	335				5665	5.38	0.54
90.5±0.2	M8-12 deep	40.1	278	–	52	85	95	7722	7.84	0.83
			–	410				7590	9.51	0.83
100±0.2	M8-16 deep	46.8	386	–	62	98	110	7614	16.33	1.19
			–	530				7470	18.72	1.19
			386	–				5614	16.33	1.19
			–	530				5470	18.72	1.19
100±0.2	M8-28 deep	56	410	–	62	109	110	9010	25.76	1.80
			–	560				8860	28.16	1.80

Safelock

Order instructions:

- Longer travel lengths on request

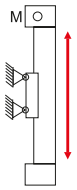
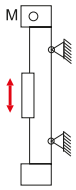
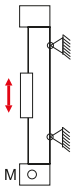
Code No.	Type	Basic length	B	C	ØD1	ØD2	ØD3
TD1_A3A1C_1_ _ _ _ _	RK DuoLine Z Safelock 120	836	120	115	90	20^{H6}	100±0.2
TD1_A1A1C_1_ _ _ _ _	RK DuoLine Z Safelock 160	820	160	130	90^{H7}	25^{H6}	100±0.2

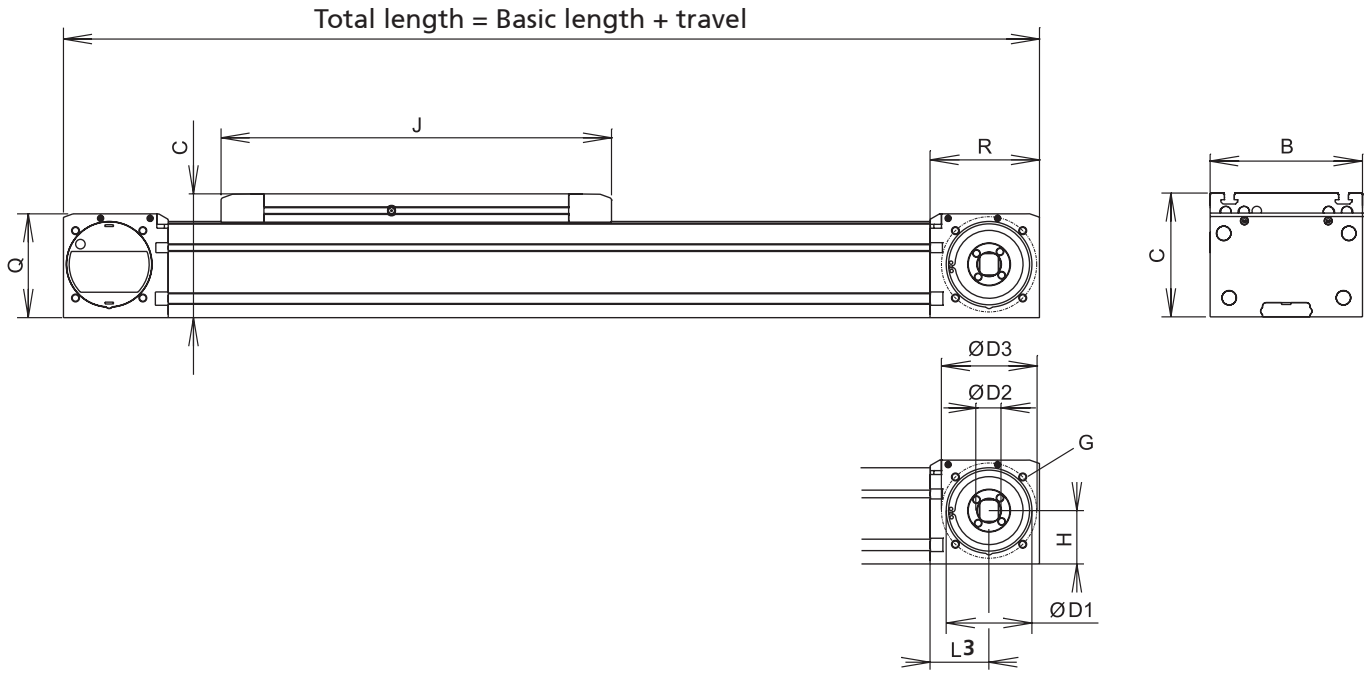
Total length (basic length + travel) in mm

Version:
Q = Motor at top / Profile moves
L = Motor at top / Carriage moves
T = Motor at bottom / Carriage moves

Integrated position sensing system:
1 = without
2 = with plug-in coupling and 20 m of cable
3 = with 20 m of cable

Degree of protection:
1 = Basic
2 = Protect (IP 40 via cover strip)

Q	L	T
		



[mm]

G	H	J	L	Q	R	Max. travel	Mass [kg]	
							Basic length	per 100 mm travel
M8-16 deep	46.8	616	62	98	110	7384	21.27	1.19
M8-28 deep	56	600	62	109	110	9380	30.20	1.80

Fixing

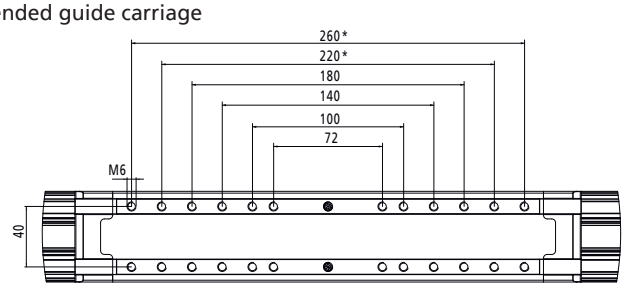
Fixation of payload RK DuoLine S/Z 80

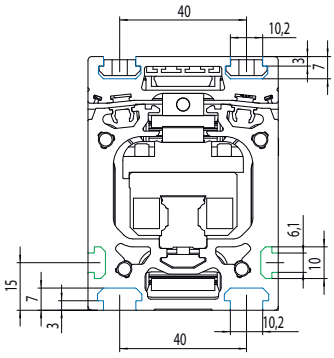
Two slot stone strips have been inserted in the guide carriage on which fittings can be securely attached in a variety of ways

Profile slots in the guide carriage and guide profiles facilitate fixation

RK DuoLine R/Z 60

*only with version with extended guide carriage



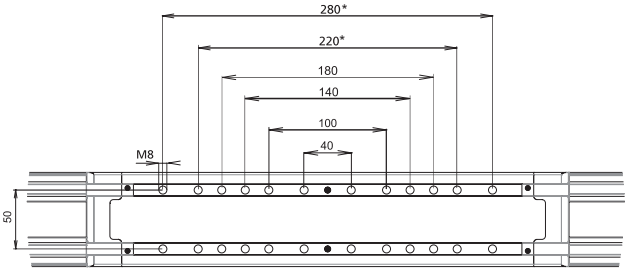


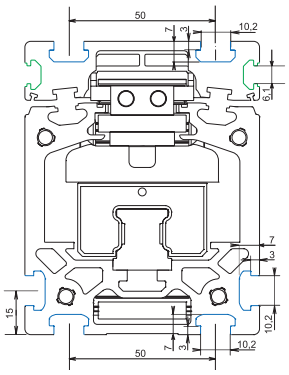
20 slot geometry

30 slot geometry

RK DuoLine R/Z 80

*only with version with extended guide carriage



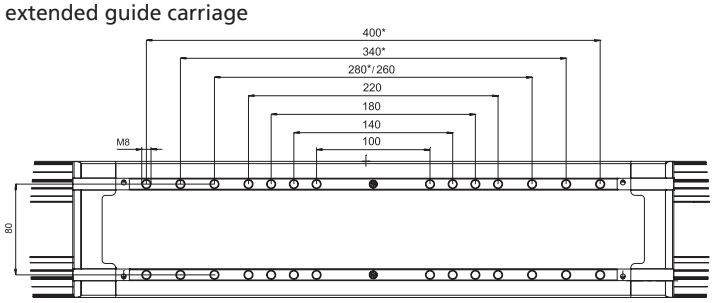


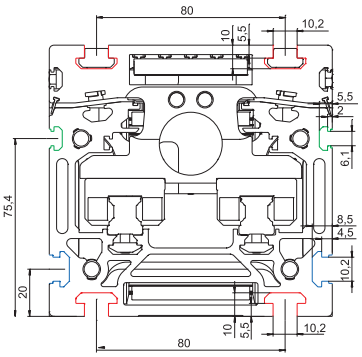
20 slot geometry

30 slot geometry

RK DuoLine R/Z 120

*only with version with extended guide carriage





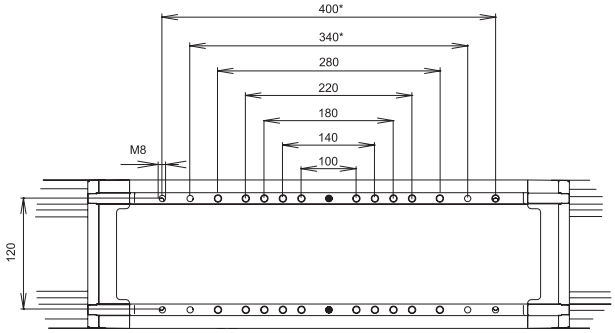
20 slot geometry

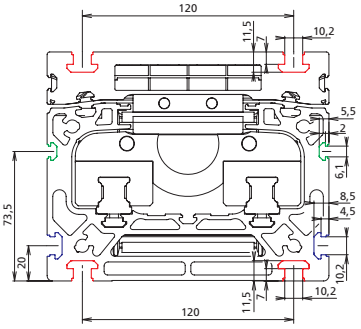
30 slot geometry

40 slot geometry

RK DuoLine Z 160

*only with version with extended guide carriage





20 slot geometry

30 slot geometry

40 slot geometry

Clamping strips

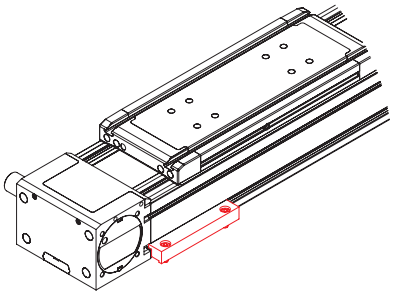
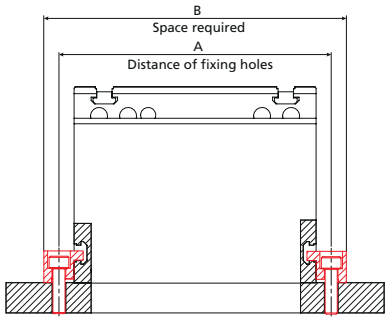
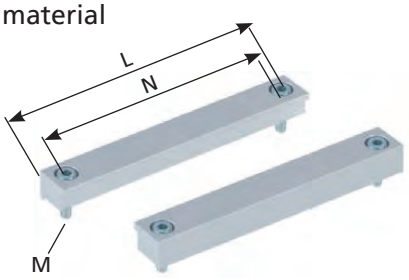


Fig.1: Ground assembly

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



Material:
Natural anodised aluminium, zinc plated fixation material.
Scope of delivery:
2 clamping strips with fixation material



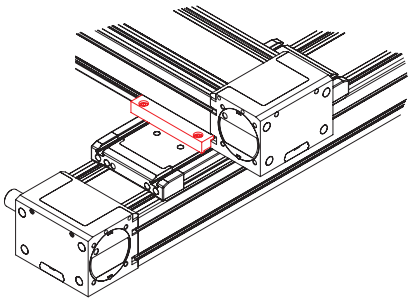


Fig.2: Crossing units

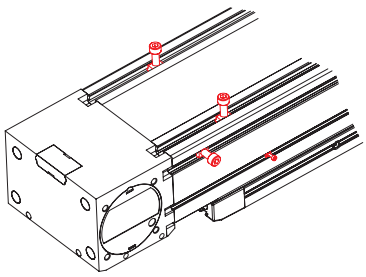
[mm]

Code No.	Type	Abb.	A	B	L	M	N
91818	RK DuoLine 60 ground assembly	1	72	91	57	M6	40
	RK DuoLine 60 crossing to 60	2					
91886	RK DuoLine 80 ground assembly	1	100	122	76	M8	50
	RK DuoLine 80 crossing to 80	2					
91812	RK DuoLine 120 ground assembly	1	140	160	116	M8	80
	RK DuoLine 120 crossing to 120	2					
	RK DuoLine 160 crossing to 120	2					
91802	RK DuoLine 160 ground assembly	1	180	200	156	M8	120
	RK DuoLine 160 crossing to 160	2					
	RK DuoLine 120 crossing to 160	2					

Order instruction square nut:

- Purchase only in lot sizes and a multiple of that, see product table below

Slot stones

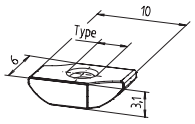


View of DuoLine from below

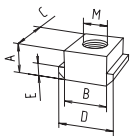
- Slot stones can be inserted and positioned at the guide profile and guide carriage

Material: zinc plated steel

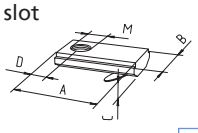
Slot stone -B-
can be swivelled into the slot



Slot stone -N-
can be slid into the slot



Slot stone -K-
can be swivelled into the slot



[mm]

Code No.	Type	lot sizes	Slot geome-try	A	B	C	D	E	M	F [N]
Slot stone -B-										
E00017CEE	M3	10, 20, 30... pcs	20							
E00058CEE	M4	10, 20, 30... pcs	20							
Slot stone -N-										
4006202	M8	10, 20, 30... pcs	30	5	10	13	13	3	M8	4000
4026206	M8	10, 20, 30... pcs	40	8	10	13	15	4	M8	9000
Slot stone -K-										
4006211	M5	10, 20, 30... pcs	30	21	12	4	7	–	M5	5000
4006212	M6	10, 20, 30... pcs	30	21	12	4	7	–	M6	5000
4016212	M6	10, 20, 30... pcs	40	21	14	4	7	–	M6	5000

Fixing

Centering Sets for RK DuoLine

- The following positions could be defined exactly during the design process per set
  - Load capacity
  - Linear unit
- Reproductable position of the load capacity
- Reduced assembly/disassembly time of the load capacity or the linear unit
- Accuracy of the centering bolts h6
- To use for all RK DuoLine linear units in Basic and Protect design from October 2015 production date

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

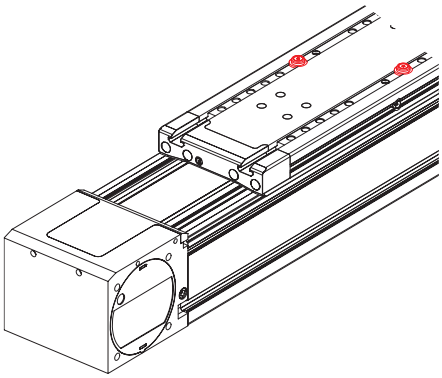


Abb.1: Slide centering

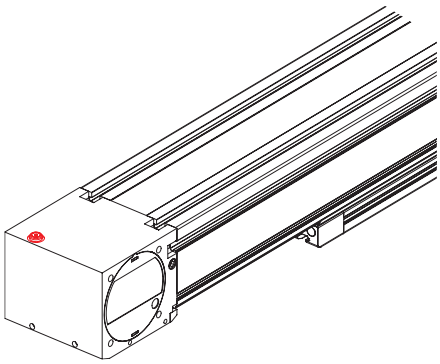
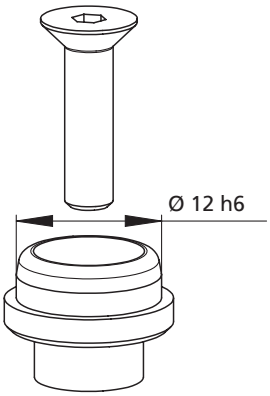
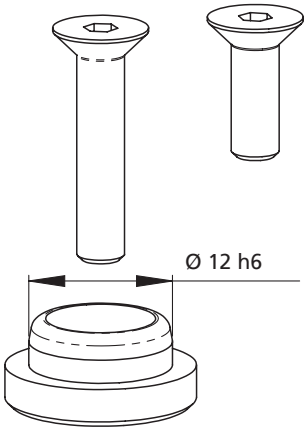


Abb.2: Base centering

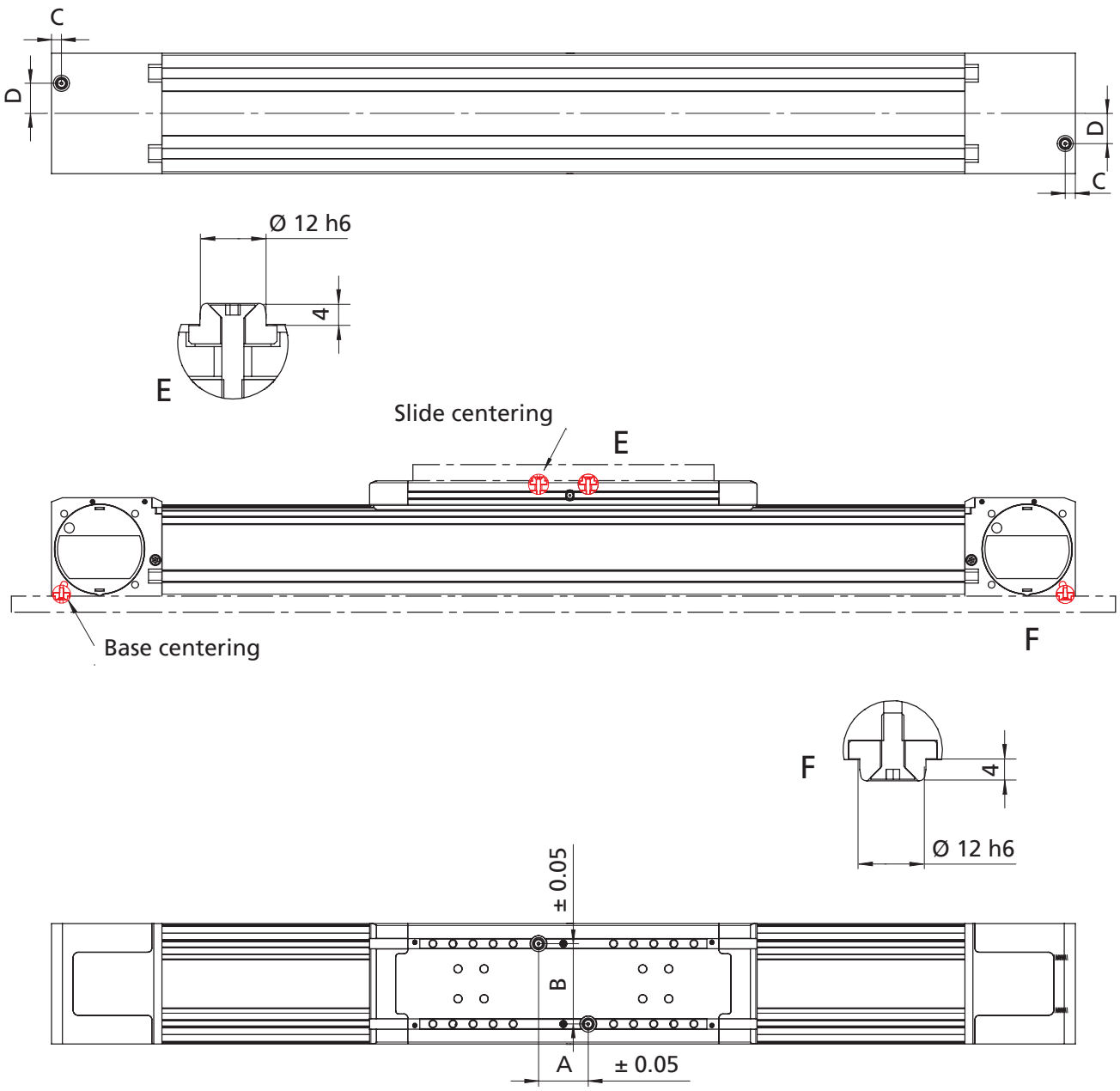


Size -A-



Size -B-

Code No.	Type	Use for
91898	Centering Set Size -A-	Slide centering RK DuoLine Z 60 + Z 80
91899	Centering Set Size -B-	Slide centering RK DuoLine Z 120 + Z 160 RK DuoLine Z 120/160 Safelock Base centering RK DuoLine Z 60 + Z 80 + Z 120 + Z 160 RK DuoLine Z 120/160 Safelock



[mm]

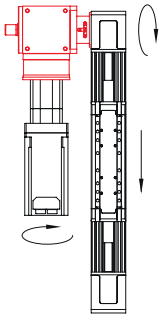
Type	A	B	C	D
RK DuoLine Z 60	42	40	10	0
RK DuoLine Z 60 with extended guide carriage	48	40	10	0
RK DuoLine Z 80	65	50	10	15
RK DuoLine Z 80 with extended guide carriage	70	50	10	15
RK DuoLine Z 120	49.5	80	10	30
RK DuoLine Z 120 with extended guide carriage	250	80	10	30
RK DuoLine Z 160	70	120	10	40
RK DuoLine Z 160 with extended guide carriage	366	120	10	40

Drive

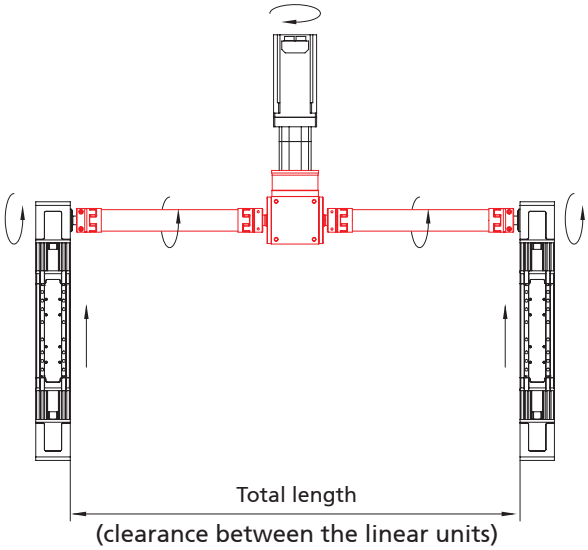
Bevel gear for RK DuoLine Z

- The following combination options are available on request

System 1



System 4

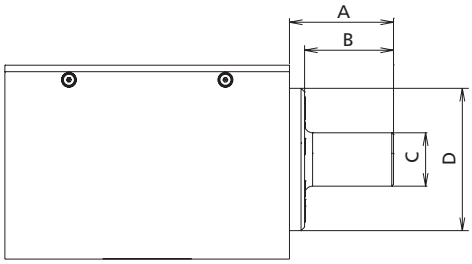


Drive shaft

- The RK DuoLine 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 fixation material

For metal bellows coupling



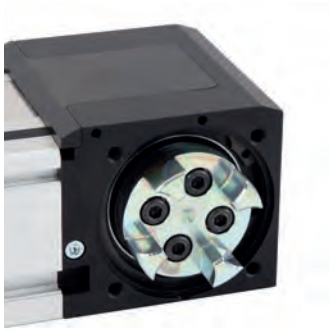
[mm]

Code No.	Type	Version	A	B	C	D
91328	RK DuoLine Z 60	Drive shaft for metal bellows coupling	28,6	25	16	44
91312	RK DuoLine Z 80		35	31,5	20	52
91320	RK DuoLine Z 120		45,5	39	25	74
9720000	RK DuoLine Z 160		58,5	50	30	80

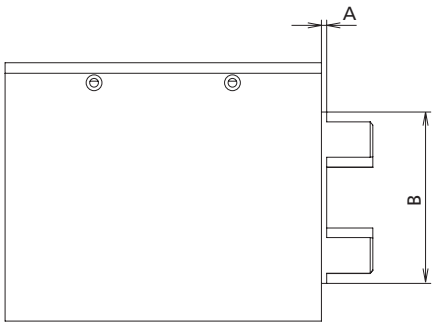
Screw-on hub

- The RK DuoLine 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 fixation material



For servo coupling with zero backlash



[mm]

Code No.	Type	Version	Size	A	B
91318	RK DuoLine Z 60	Screw-on hub for KTR type Rotex GS servo couplings with zero backlash	GS 19	5,5	40
91338	RK DuoLine Z 80		GS 24	6,5	55
91321	RK DuoLine Z 120		GS 28	2	65
91327	RK DuoLine Z 160		GS 38	4,5	80

Drive

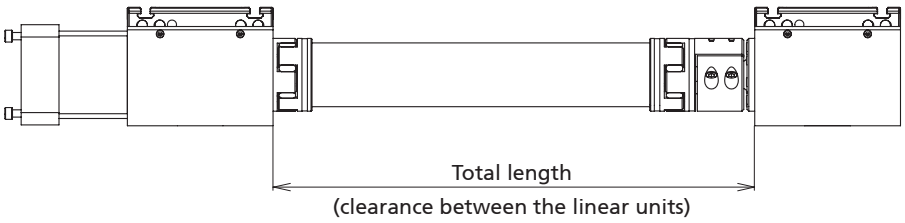
Synchronisation shaft

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

Scope of delivery:
Synchronisation shaft with fixation material

Max. transfer torque:

RK DuoLine Z 60	28 Nm
RK DuoLine Z 80	67 Nm
RK DuoLine Z 120	141 Nm
RK DuoLine Z 160	220 Nm



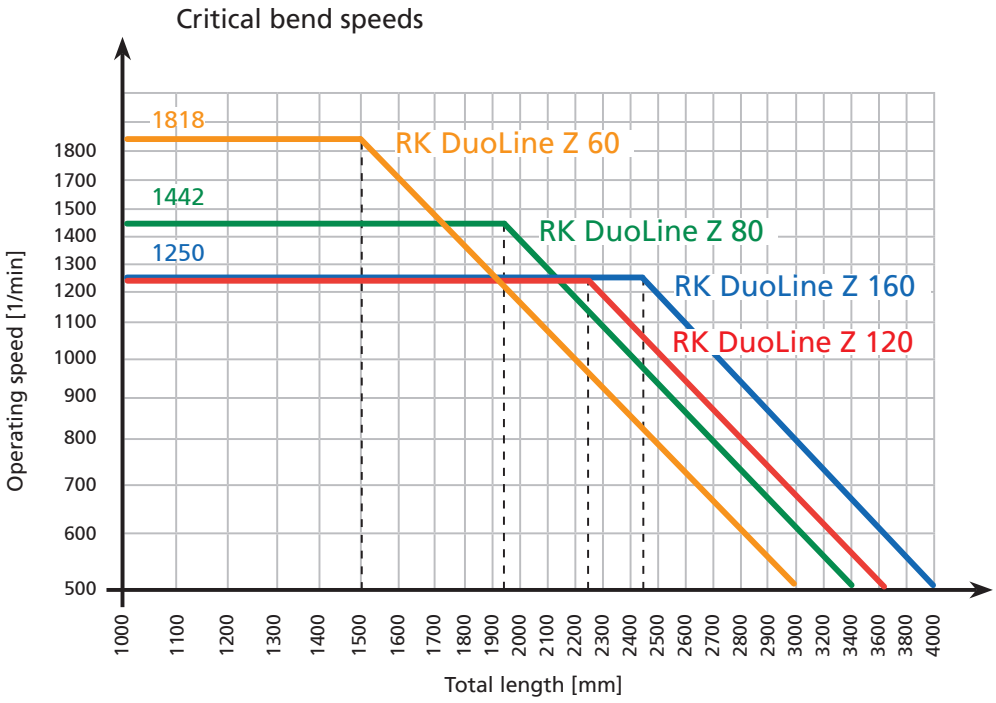


Fig. shows synchronisation shaft

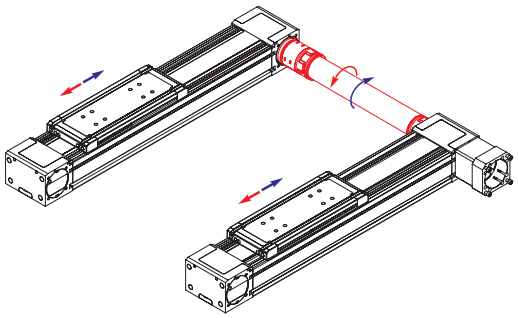
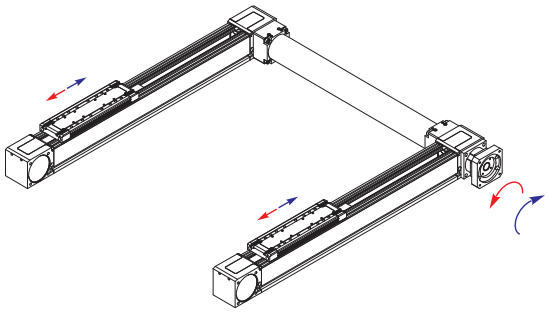


Fig. shows synchronisation shaft with protection



[mm]

Code No.	Type	Basic length (minimum length)	Max. length (clearance)	Weight [kg]	
				Basic length	per 100 mm travel
92548_ _ _ _	Synchronisation shaft RK DuoLine Z 60	127	2985	0,53	0,09
92538_ _ _ _	Synchronisation shaft RK DuoLine Z 80	157	3400	1,07	0,12
92519_ _ _ _	Synchronisation shaft RK DuoLine Z 120	182	3994	1,38	0,15
92510_ _ _ _	Synchronisation shaft RK DuoLine Z 160	227	4075	3,42	0,22

Total length [mm]

[mm]

Code No.	Type	Basic length (minimum length)	Max. length (clearance)	Weight [kg]	
				Basic length	per 100 mm travel
92521700_ _ _ _	Synchronisation shaft RK DuoLine Z 60 with protection	127	2985	1,0	0,24
92521710_ _ _ _	Synchronisation shaft RK DuoLine Z 80 with protection	157	3400	1,96	0,29
92521720_ _ _ _	Synchronisation shaft RK DuoLine Z 120 with protection	182	3994	2,53	0,36
92521730_ _ _ _	Synchronisation shaft RK DuoLine Z 160 with protection	227	4075	5,38	0,44

Total length [mm]

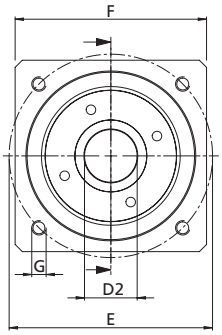
Drive

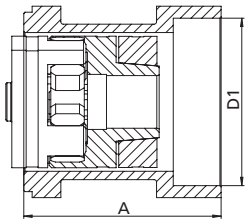
Selection table motor adapter kits DuoLine Z for servo motors without gear

- 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 fixation material

Manufacturers	Motor	RK DuoLine Z 60	RK DuoLine Z 80	Motor flange
RK Rose + Krieger	RK-AC 240	949376	–	IM B5 56
	RK-AC 470	–	949357	IM B5 63
Baumüller	DSD2-045	949376	On request	IM B5 56
Beckhoff	AM8041, AM8042, AM8043	On request	On request	IM B5 56
Bosch	MSK050B, MSK050C	–	949357	IM B5 63
Kollmorgen	AKM2G-41, AKM2G-42, AKM2G-43, AKM2G-44	On request	On request	IM B5 56
Lenze	MCS09D, MCS09F, MCS09H, MCS09L	949376	On request	IM B5 56
Lti/Keba	LSP10	–	949357	IM B5 63
Mitsubishi	HG-JR53(4), HG-JR 73(4), HG-JR103(4), HG-JR153(4), HG-JR203(4)	On request	On request	IM B5 56
Parker	SMH 82, SMHA 82	949376	–	IM B5 56
	SMH 100, SMHA 100	–	949357	IM B5 63
SEW	CMP63S, CMP63M, CPM63L	949376	On request	IM B5 56
Siemens	1FK7040, 1FK042, 1FK043, 1FK2205	On request	On request	IM B5 56
	1FK2105	–	949357	IM B5 63





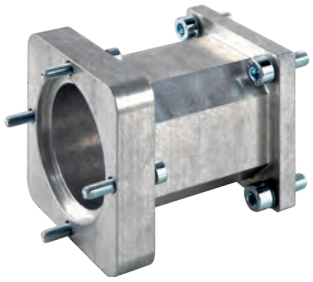
A	D1	D2	E	F	G	Masse [kg]
55	Ø 80 H8 5,7 deep	Ø14x30	Ø 100	□90	M6 11 deep	0,79
64	Ø 95 H7 4 deep	Ø19x40	Ø 115	□105	M8 19,5 deep	1,38
55/59	Ø 80 H8 5,7 deep	Ø14x30	Ø 100	□90/□82	M6 11/12 deep	0,79/0,93
61,1/64,5	Ø 80 H8 5,7 deep	Ø19x40	Ø 100	□90/□82	M6 15/12 deep	0,72/0,93
64	Ø 95 H7 4 deep	Ø19x40	Ø 115	□105	M8 19,5 deep	1,38
61,1/64,5	Ø 80 H8 5,7/5 deep	Ø19x40	Ø 100	□90/□82	M6 15/12 deep	0,72/0,93
55/59	Ø 80 H8 5,7 deep	Ø14x30	Ø 100	□90/□82	M6 11/12 deep	0,79/0,93
64	Ø 95 H7 4 deep	Ø19x40	Ø 115	□105	M8 19,5 deep	1,38
61,1/64,5	Ø 80 H8 5,7/5 deep	Ø16x30	Ø 100	□90/□82	M6 15/12 deep	0,72/0,93
55	Ø 80 H8 5,7 deep	Ø14x30	Ø 100	□90	M6 11 deep	0,79
64	Ø 95 H7 4 deep	Ø19x40	Ø 115	□105	M8 19 deep	1,38
55/59	Ø 80 H8 5,7 deep	Ø14x30	Ø 100	□90/□82	M6 11/12 deep	0,79/0,93
61,1/64,5	Ø 80 H8 5,7/5 deep	Ø19x40	Ø 100	□90/□82	M6 15/12 deep	0,72/0,93
64	Ø 95 H7 4 deep	Ø19x40	Ø 115	□105	M8 19,5 deep	1,38

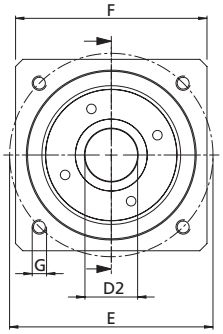
Drive

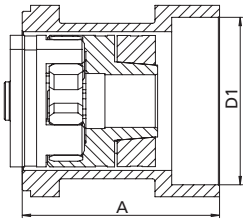
Motor adapter kits

- 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 fixation material







Selection table motor adapter kits for three-phase motor

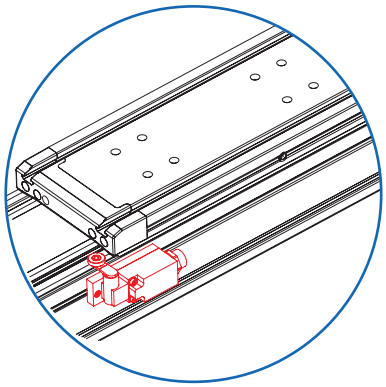
Manufacturers	Motor	RK DuoLine Z 60	RK DuoLine Z 80	RK DuoLine Z 120
RK Rose + Krieger	90/120W	949377	949355	949372
RK Rose + Krieger	180/250W	949378	949117	949373

Selection table motor adapter kits servo motors with gear

Manu-facturers	Gear	RK DuoLine Z 60	RK DuoLine Z 80	RK DuoLine Z 120	RK DuoLine Z 160	A	D1	D2	E	F	G	Mass [kg]
Neugart	PLE 60	949374	949350	–	–	57/60	Ø 40 5/7,8 deep	Ø 14x30	Ø 52	70x67/□80	M 5	0,65/0,92
	PLE 80	949375	949353	949371	–	60/64/ 67,5	Ø 60 3,5/5/13 deep	Ø 20x36	Ø 70	□75/□80/ □92,6	M 6	0,69/0,92/1,47
	PLE 120	–	949354	949370	949344	78/75,5/ 82	Ø 80 4,5 deep	Ø 25x50	Ø 100	Ø 120/□ 120 □130	M 10	1,43/1,97/3,04
	PLE 160	–	–	–	949345	114	Ø 130 13 deep	Ø 40x80	Ø 145	□140	M 12	2,63
Atlanta	APG 080	949375	949353	949371	–	60/64/ 67,5	Ø 60 3,5/5/13 deep	Ø 20x36	Ø 70	□75/□80/ □92,6	M 5	0,69/0,92/1,47
	APG 120	–	949354	949370	949344	78/75,5/ 82	Ø 80 4,5 deep	Ø 25x50	Ø 100	Ø 120/□ 120 □130	M 6	1,43/1,97/3,04
Eppinger	PE065	949374	949350	–	–	57/60	Ø 40 5/7,8 deep	Ø 14x30	Ø 52	70x67/□80	M 5	0,65/0,92
	PE080	949375	949353	949371	–	60/64/ 67,5	Ø 60 3,5/5/13 deep	Ø 20x36	Ø 70	□75/□80/ □92,6	M 6	0,69/0,92/1,47
Ruhr-getriebe	RPS060	949374	949350	–	–	57/60	Ø 40 3/7,8/5,4 deep	Ø 14x30	Ø 52	70x67/□80	M 5	0,65/0,92
	RPS080	949375	949353	949371	–	60/64/ 67,5	Ø 60 3,5/5/13 deep	Ø 20x36	Ø 70	□75/□80/ □92,6	M 6	0,69/0,92/1,47
SPN Schwa-ben Präzision	SPN-ECO (E2) EZ 23	949374	949350	–	–	57/60	Ø 40 5/7,8 deep	Ø 14 x 30	Ø 52	70x67/□80	M 5	0,65/0,92
	SPN-ECO (E2) EZ 24	949375	949353	949371	–	60/64/ 67,5	Ø 60 3,5/5/13 deep	Ø 20 x 36	Ø 70	□75/□80/ □92,6	M 6	0,69/0,92/1,47
	SPN-ECO (E2) EZ 25	–	949354	949370	949344	78/75,5/ 82	Ø 80 4,5 deep	Ø 25x50	Ø 100	Ø 120/ □ 120 □130	M 10	1,43/1,97/3,04
	SPN-ECO (E2) EZ 26	–	–	–	949345	114	Ø 130 13 deep	Ø 40x80	Ø 145	□140	M 12	2,63
Witten-stein	Alpha CP015 MF	949374	949350	–	–	57/60	Ø 40 5/7,8 deep	Ø 14 x 30	Ø 52	70x67/□80	M 5	0,65/0,92
	Alpha CP025 MF	949375	949353	949371	–	60/64/ 67,5	Ø 60 3,5/5/13 deep	Ø 20 x 36	Ø 70	□75/□80 □92,6	M 6	0,69/0,92/1,47
	Alpha CP035 MF	–	949354	949370	949344	78/75,5/ 82	Ø 80 4,5 deep	Ø 25x50	Ø 100	Ø 120/ □ 120 □130	M 10	1,43/1,97/3,04
	Alpha CP045 MF	–	–	–	949345	114	Ø 130 13 deep	Ø 40x82	Ø 145	□140	M 12	2,63

Position determination

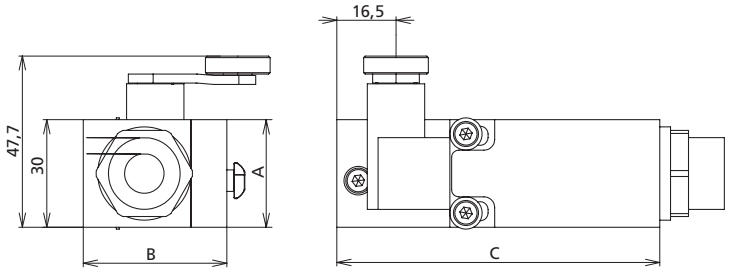
Mechanical limit switch



- External fixing on the guide profile

Scope of delivery:
Limit switch with set of fastenings

Voltage	max. 230 V AC
Max. switching current	4 A
Max. starting current	10 A
Operating frequency	max. 5000/h
Mechanical lifetime	20 x 10^6 cycles
Axis lever adjustment	locking by 360°
Protection class	IP 67
Ambient temperature	-30°C to +80°C

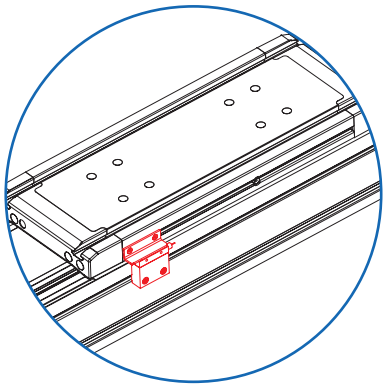


Code No.	Type	A	B	C	Version
92848	RK DuoLine 60	49	39	82	NO / NC, mechanical limit switch
91919	RK DuoLine 80	63	40	83	
92701	RK DuoLine 120	31	40	97	
91910	RK DuoLine 160	30	40	90	

External inductive limit switch

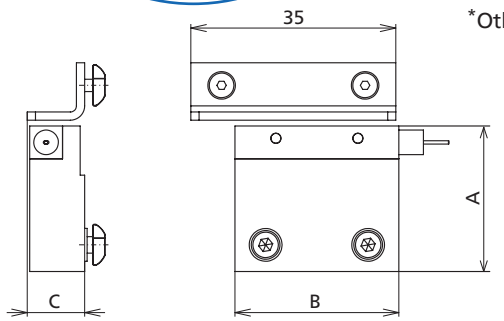
- External fixing on the guide profile

Scope of delivery:
Limit switch with set of fastenings



Voltage	10...30 VDC
Max. switching current	100 mA
Operating frequency	Max. 5 kHz
Mechanical lifetime	independent of operating cycles
Operating distance	1.5 mm
Protection class	IP 67
Cable length	5 m*
Ambient temperature	-25°C to +70°C

*Other cable lengths available on request.

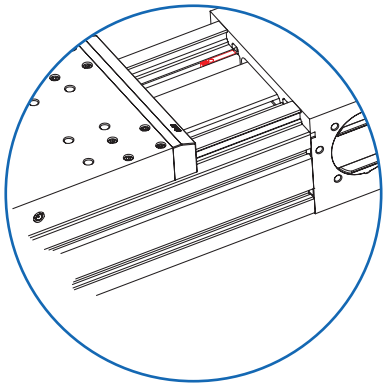


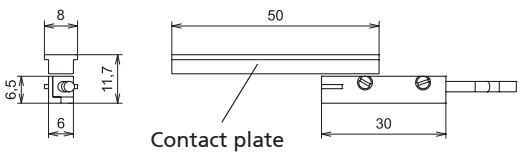
Code No.	Type	A	B	C	Version
92838	RK DuoLine 60	52,8	25	10	**NO, External inductive limit switch**
92819	RK DuoLine 80	71,5	25	10	
92840	RK DuoLine 120	22	40	14	
92810	RK DuoLine 160	35,5	40	14	

Internal inductive limit switch

- Limit switch integrated in the guide profile
  - no protruding contours

Scope of delivery:
Limit switch with set of fastenings





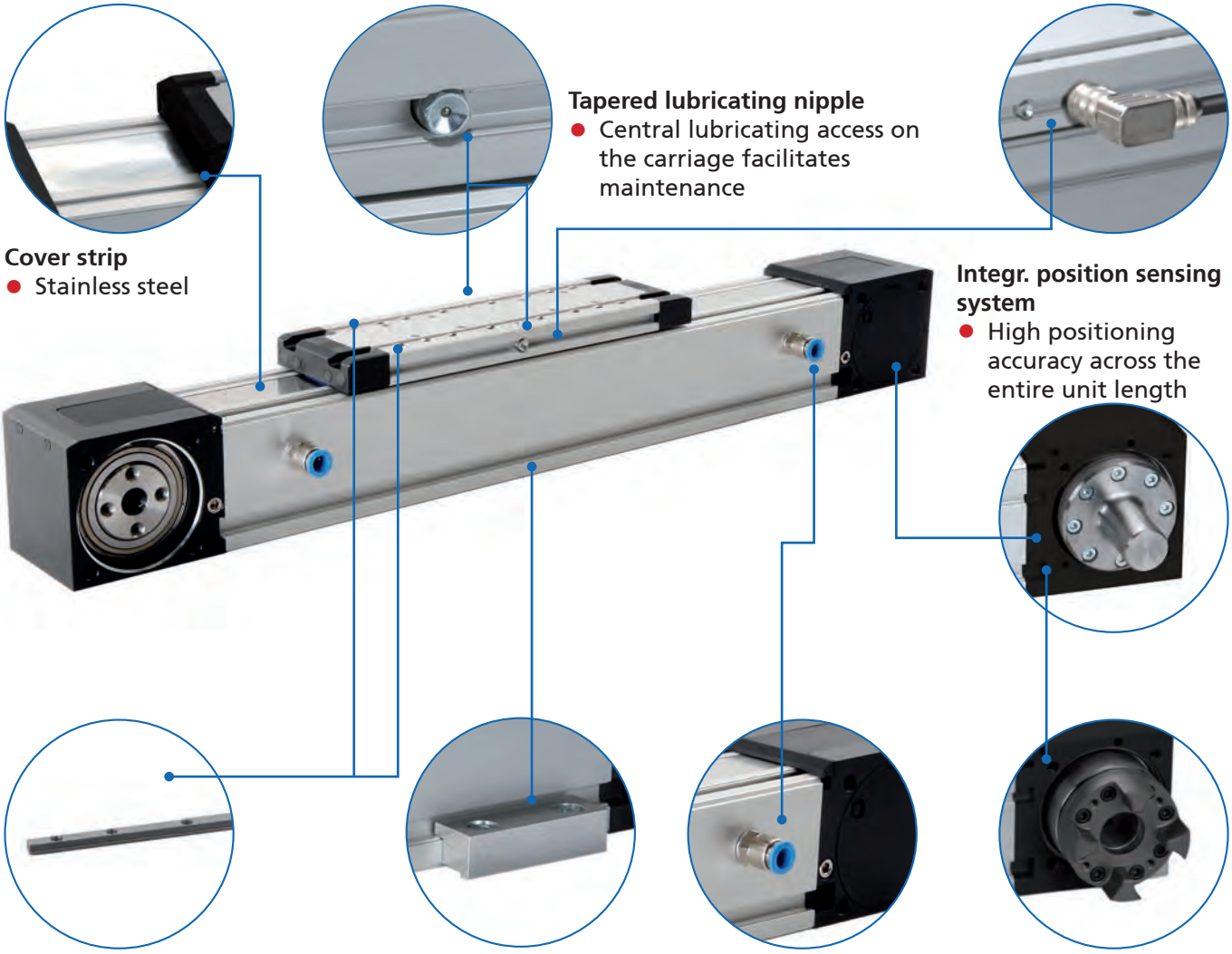
Code No.	Type	Version
92828	RK DuoLine 60	**NC, Internal inductive limit switch**
92820*	RK DuoLine 80 RK DuoLine 120 RK DuoLine 160	

*On this limit switch, the slot must be sealed off with a cover profile

Cover profile

Code No.	Version		
E00024DAC	bar	black	2.000 mm

RK DuoLine Z/R Clean – Key features/technical benefits



Cover strip
- Stainless steel

Tapered lubricating nipple
- Central lubricating access on the carriage facilitates maintenance

Integr. position sensing system
- High positioning accuracy across the entire unit length

Slot stone strip
- To hold your load securely
- Nickel-plated

Clamping strip
- Secures the axis reliably

Vacuum extraction
- Optional

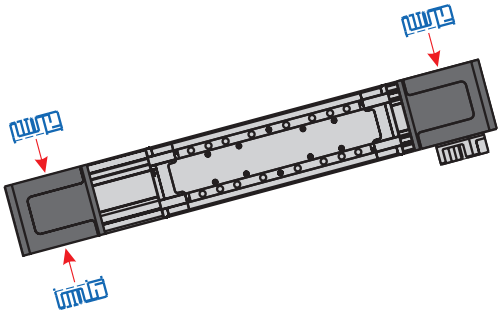
Variable motor connection
- For metal bellows coupling
- For servo coupling with zero backlash

Motor shaft configuration
- Can be modified at a later stage

Key features

General
- All external steel parts nickel-plated or made of stainless steel
- Suitability according to EN ISO 14644-1 for clean rooms
- Optionally with or without vacuum extraction
- High efficiency
- Low no-load torque
- Central lubricating access on the carriage facilitates maintenance

RK DuoLine Z Clean (toothed-belt drive)
- Cover band made from stainless steel
- Flexible positioning of motor thanks to pulley boxes with hollow shafts
- Repeat accuracy ±0.05 mm



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(Dimensions, order numbers)

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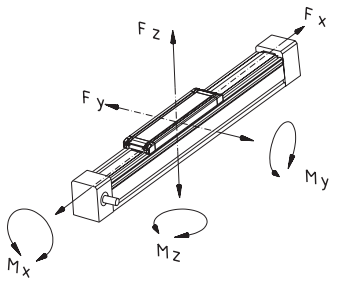
Technical data

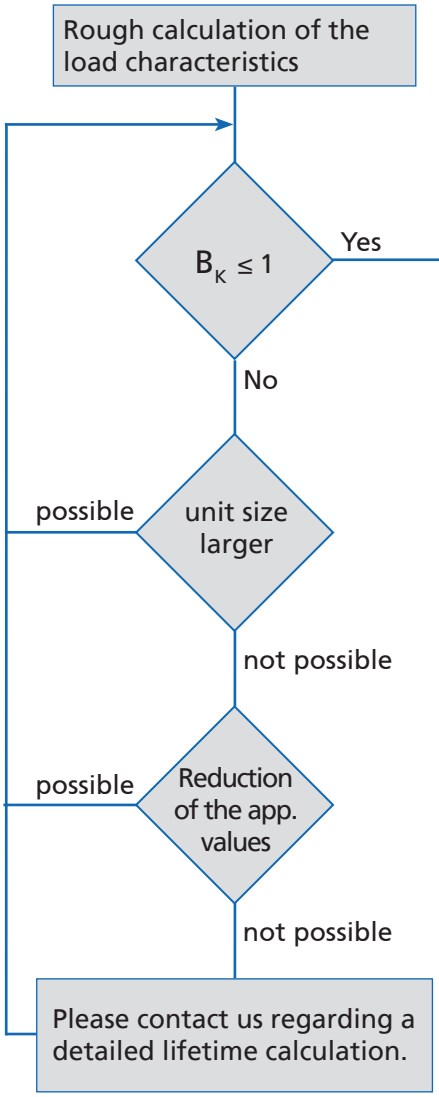
Calculation of the load characteristic to define the lifetime

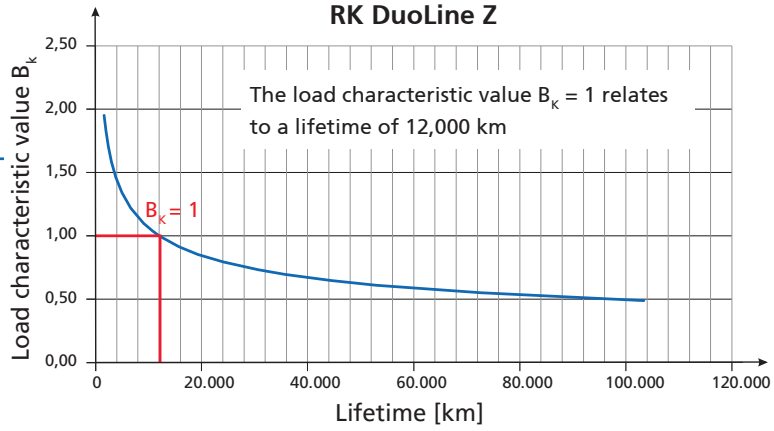


- The lifetime of linear units are in accordance with the average loads and moments of an application. The load characteristic can approximately calculated by following equation with simultaneously appearing load and moments.

$$\text{Load characteristic} = \frac{\text{Application values (z.B. Fy)}}{\text{Catalog values (z.B. Fy}_{max})}$$

$$\text{Load characteristic BK} = \frac{Fy}{Fy_{max}} + \frac{Fz}{Fz_{max}} + \frac{Mx}{Mx_{max}} + \frac{My}{My_{max}} + \frac{Mz}{Mz_{max}} \leq 1$$





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.

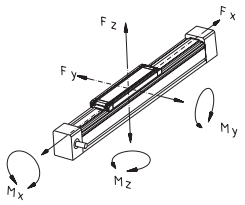
Example:

- The load and moments of the application are:
  Fz = 200N, Mx = 20 Nm und Mz = 45 Nm

  According to the above equation you will have following load characteristic of a RK MonoLine 80: BK = 0.55.

General information / operating conditions

	RK DuoLine Z 60 Clean	RK DuoLine Z 80 Clean
Guidance system	1 Ball rail system	
Installation position	any position	
Max. driving torque	17 Nm	46 Nm
Max. speed	1 m/s	2 m/s
Max. acceleration	4 m/s²	5 m/s²
Repeat accuracy	± 0,05 mm	± 0,05 mm
Positioning accuracy	only without integrated linear encoder ± 0,1/300 mm	with integrated linear encoder ± (0.025 + 0.01 x L) mm; L = travel in meters
Max. no-load torque	2 Nm	2,2 Nm
Drive	HTD-Belts from polyurethan, Pitch 5 mm, Width 20 mm	HTD-Belts from polyurethan, Pitch 8 mm, Width 30 mm
Active Ø pulley wheel	52,52 mm	66,21 mm
Pulley wheel circumference	165 mm	208 mm
Ambient temperature	0 to +60°C	0 to +60°C



Dynamic load data

Force [N]
Torque [Nm]

Toothed-belt drive						
Load data	**Fx***	**Fy**	**Fz**	**Mx**	**My**	**Mz**
Standard guide carriage						
RK Duoline Z 60 Clean	630	700	2500	48	160	140
RK Duoline Z 80 Clean	1400	1000	4100	100	340	300
Extended guide carriage						
RK Duoline Z 60 Clean	630	700	2500	48	250	220
RK Duoline Z 80 Clean	1400	1000	4100	100	590	520

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

Suitable for use in air purity levels according to EN ISO 14644-1

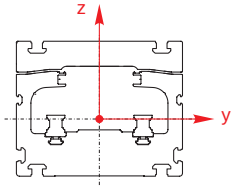
You find the documents and certificates with the test parameters on the website www.rk-rose-krieger.com

Type	Clean room categories				
	ISO 1	**ISO 3**	**ISO 5**	**ISO 6**	**ISO 7**
RK DuoLine Z 60 Clean without suction			0,25 m/s	0,5 m/s	1 m/s
RK DuoLine Z 60 Clean with suction	0,25 m/s; 0,5 m/s; 1,0 m/s				
RK DuoLine Z 80 Clean without suction			0,5 m/s		1 m/s; 2 m/s
RK DuoLine Z 80 Clean with suction	0,25 m/s; 0,5 m/s	1,0 m/s			

Geometric moment of inertia

[cm⁴]

	Iy	Iz
RK DuoLine Z 60 Clean	52,54 cm⁴	67,41 cm⁴
RK DuoLine Z 80 Clean	127,90 cm⁴	172,80 cm⁴



Versions

Order instructions:

- Longer travel lengths on request
- Integrated linear encoder as Option for size 80

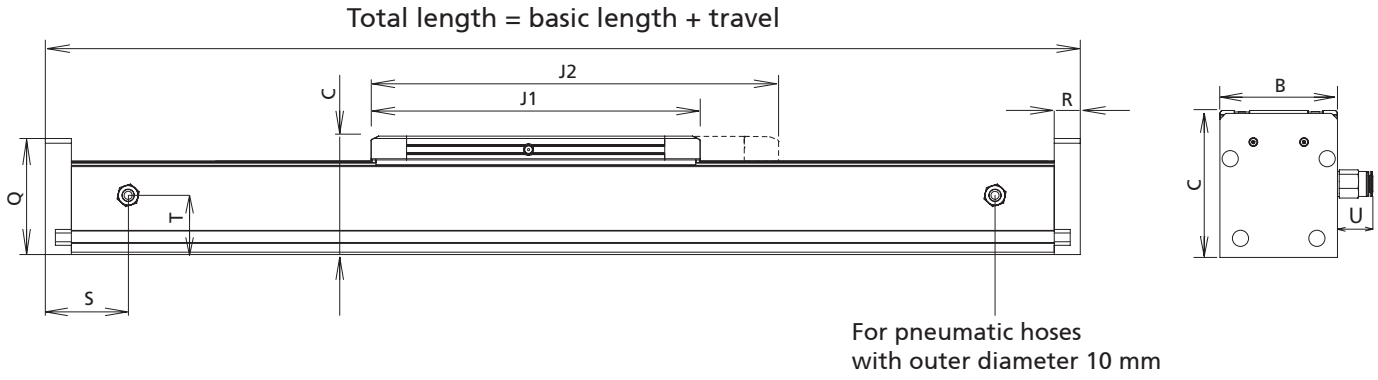
Version: ● Guide

Ideal as additional / secondary support for the Duoline with toothed belt or spindle. Identical construction to Z/S 60 and 80, but without drive

Code No.	Type	Basic length	B	C
TD17A5T1A11_0 _ _ _ _	RK DuoLine R 60 Clean	295	60	80
TD17A5T1B11_0 _ _ _ _	RK DuoLine R 60 Clean with extended guide carriage	385		
TD17A2T1A11_0 _ _ _ _	RK DuoLine R 80 Clean	352	80	100
TD17A2T1B11_0 _ _ _ _	RK DuoLine R 80 Clean with extended guide carriage	484		

Total lenght = basic length + total travel (mm)

A = without connection for vacuum suction
C = with connection for vacuum suction



[mm]

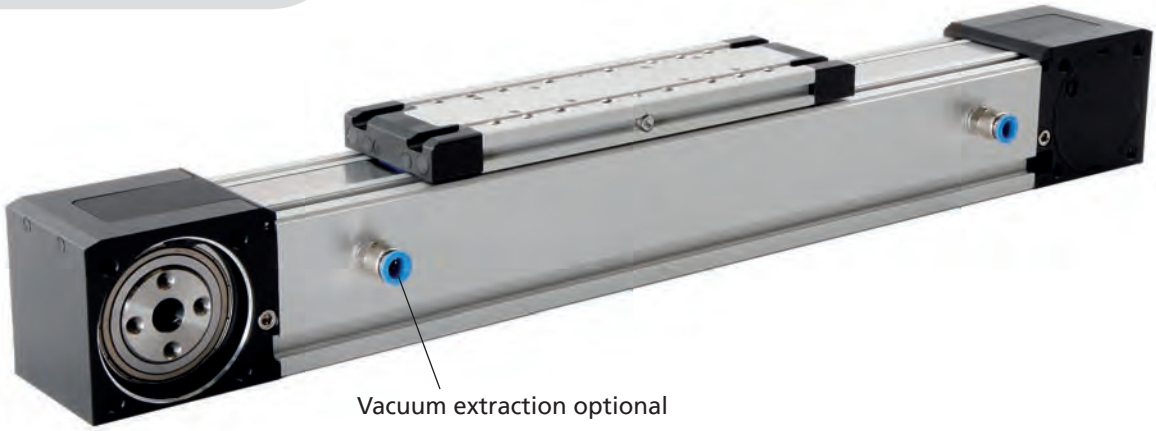
J1	J2	Q	R	S	T	U	Max. travel	Mass [kg]	
								Basic length	per 100 mm travel
245	–	70	22	72	38	24	3587	3,73	0,54
–	335						3497	4,46	0,54
278	–	97	22	72	50	24	7692	5,22	0,83
–	410						7560	6,89	0,83

Dimensions / ordering data

Order instructions:

- Longer travel lengths on request
- Also available without screw drive as a torque support
- Version with vacuum extraction as option

Timing-belt unit RK DuoLine Z Clean

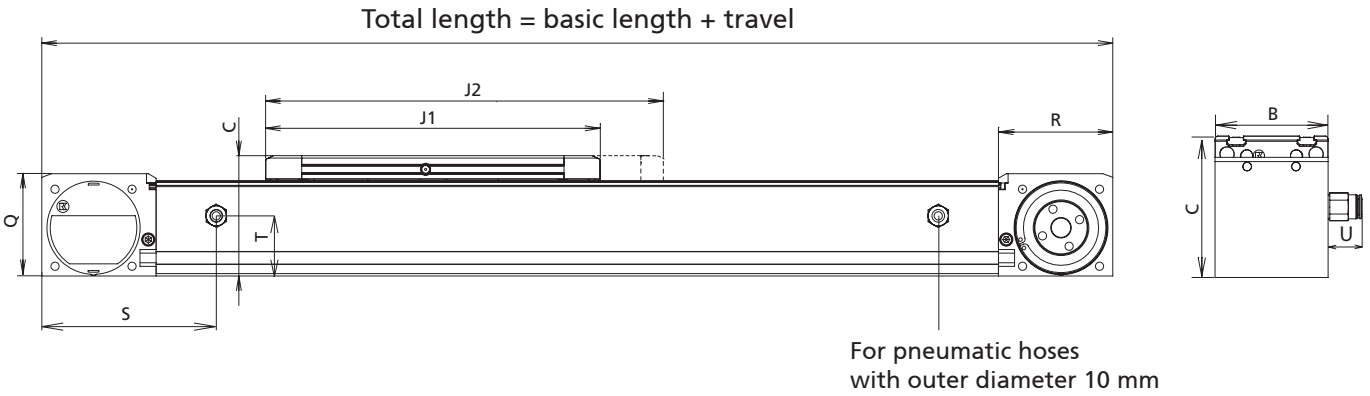


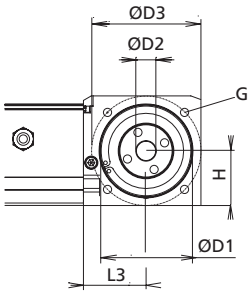
Code No.	Type	Basic length	B	C	D1	D2
TD15A5F1A12_ 0 _ _ _ _	RK DuoLine Z 60 Clean	405	60	80	62^{H7} 5 deep	15^{H6}
TD15A5F1B12_ 0 _ _ _ _	RK DuoLine Z 60 Clean with extended guide carriage	495				
TD15A2F1A_2_ _ _ _ _ _	RK DuoLine Z 80 Clean	468	80	100	75^{H7} 7 deep	16^{H6}
TD15A2F1B_2_ _ _ _ _ _	RK DuoLine Z 80 Clean with extended guide carriage	600				

Total lenght = basic length + total travel (mm)

A = without connection for vacuum extraction
C = with connection for vacuum extraction

Integrated linear encoder
1 = without
2 = with plug-in coupling and 20 m of cable
3 = with 20 m of cable





[mm]

D3	G	H	J1	J2	L3	Q	R	S	T	U	max. travel	Mass [kg]	
												Basic length	per 100 mm travel
72,1±0,2	M6-12 deep	33,8	245	–	44	70	80	130	38	24	5753	4,65	0,54
			–	335							5665	5,38	0,54
90,5±0,2	M8-12 deep	40,1	278	–	52	85	95	145	50	24	7722	7,84	0,83
			–	410							7590	9,51	0,83

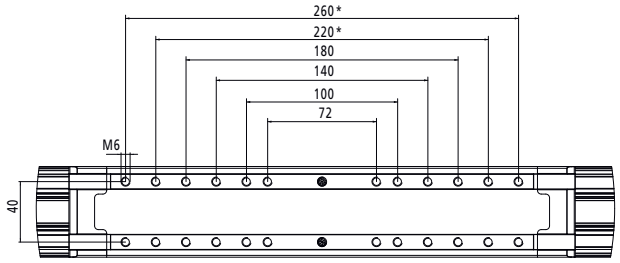
Fixation

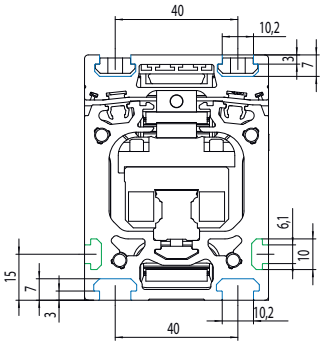
Fixation of payload

- Two slot stone strips 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 DuoLine R/Z 60

*only with version with extended guide carriage



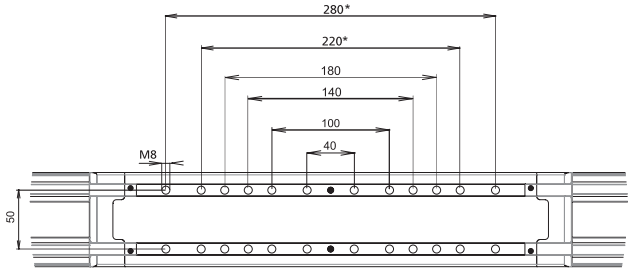


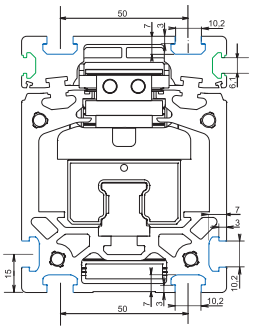
20 slot geometry

30 slot geometry

RK DuoLine R/Z 80

*only with version with extended guide carriage





20 slot geometry

30 slot geometry

Clamping strips

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

Material:
Natural anodised aluminium, fixation material stainless steel or nickel-plated
Scope of delivery:
2 clamping strips with fixation material

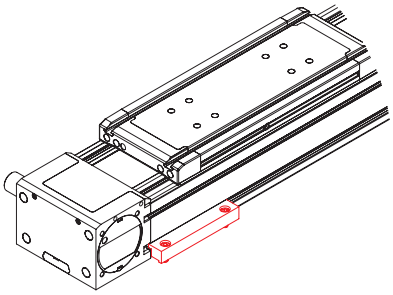


Fig.1: Ground assembly

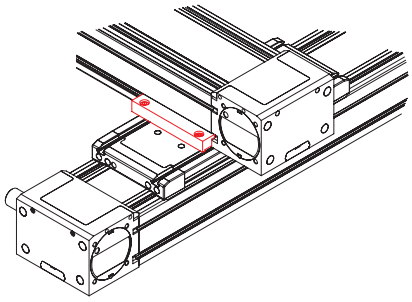
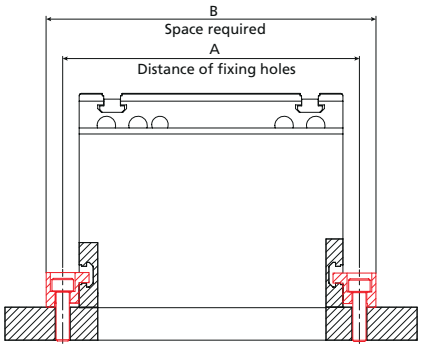
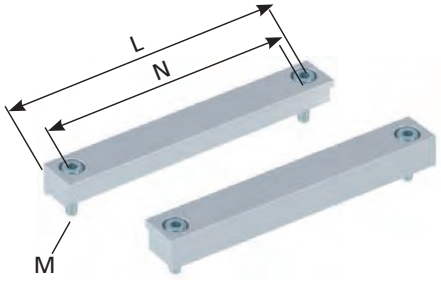


Fig.2: Crossing units





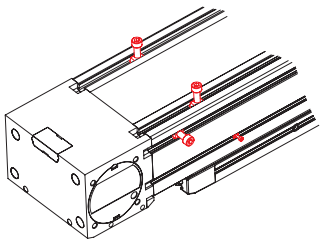
[mm]

Code No.	Type	Fig.	A	B	L	M	N
91819	RK DuoLine 60 ground assembly	1	72	91	57	M6	40
	RK DuoLine 60 crossing to 60	2					
91809	RK DuoLine 80 ground assembly	1	100	122	76	M8	50
	RK DuoLine 80 crossing to 80	2					

Slot stones

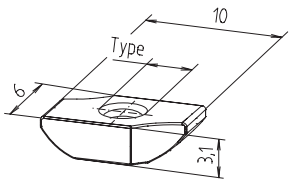
- Slot stones can be inserted and positioned at the guide profile and guide carriage

Material: Steel, nickel-plated or stainless steel

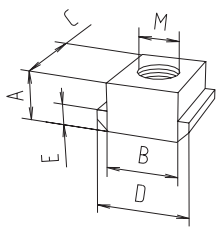


View of DuoLine from below

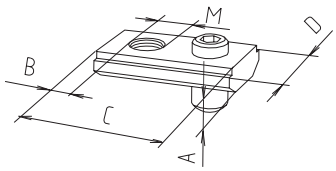
Slot stone -B-
can be swivelled into the slot



Slot stone -N-
can be slid into the slot



Slot stone -P- Version K
can be slid into the slot



[mm]

Code No.	Type	lot sizes	Material	Slot geometry	A	B	C	D	E	M	F [N]
Slot stone -B-											
E00017CSE	M3	–	Nickel-plated	20							
E00058CSE	M4	–	Nickel-plated	20							
Slot stone -N-											
400B202	M8	–	Nickel-plated	30	5	10	13	13	3	M8	4000
40092021	M8	–	Stainless steel	30	5	10	13	13	3	M8	4000
Slot stone -P- Version K											
4009214	M5	–	Stainless steel	30	4	7	20	12	-	M5	5000
4009216	M6	–	Stainless steel	30	4	7	20	12	-	M6	5000

Fixation

Centering Sets for RK DuoLine Clean

- The following positions could be defined exactly during the design process per set
  - Load capacity
  - Linear unit
- Reproductable position of the load capacity
- Reduced assembly/disassembly time of the load capacity or the linear unit
- Accuracy of the centering bolts h6
- To use for all RK DuoLine Clean linear units from March 2021 production date

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

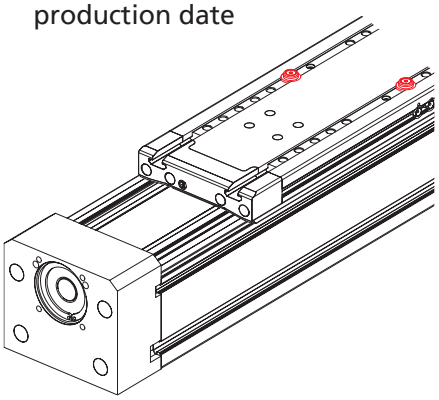


Fig. 1: Slide centering

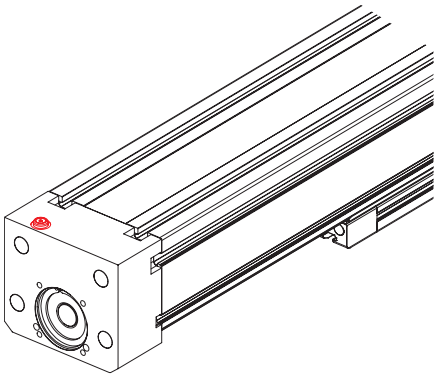
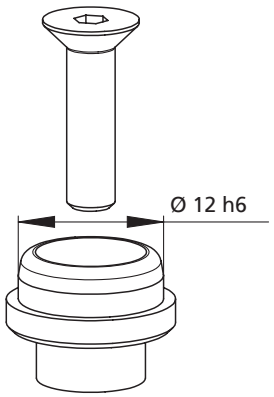
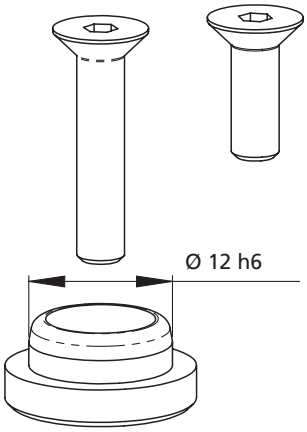


Fig. 2: Base centering

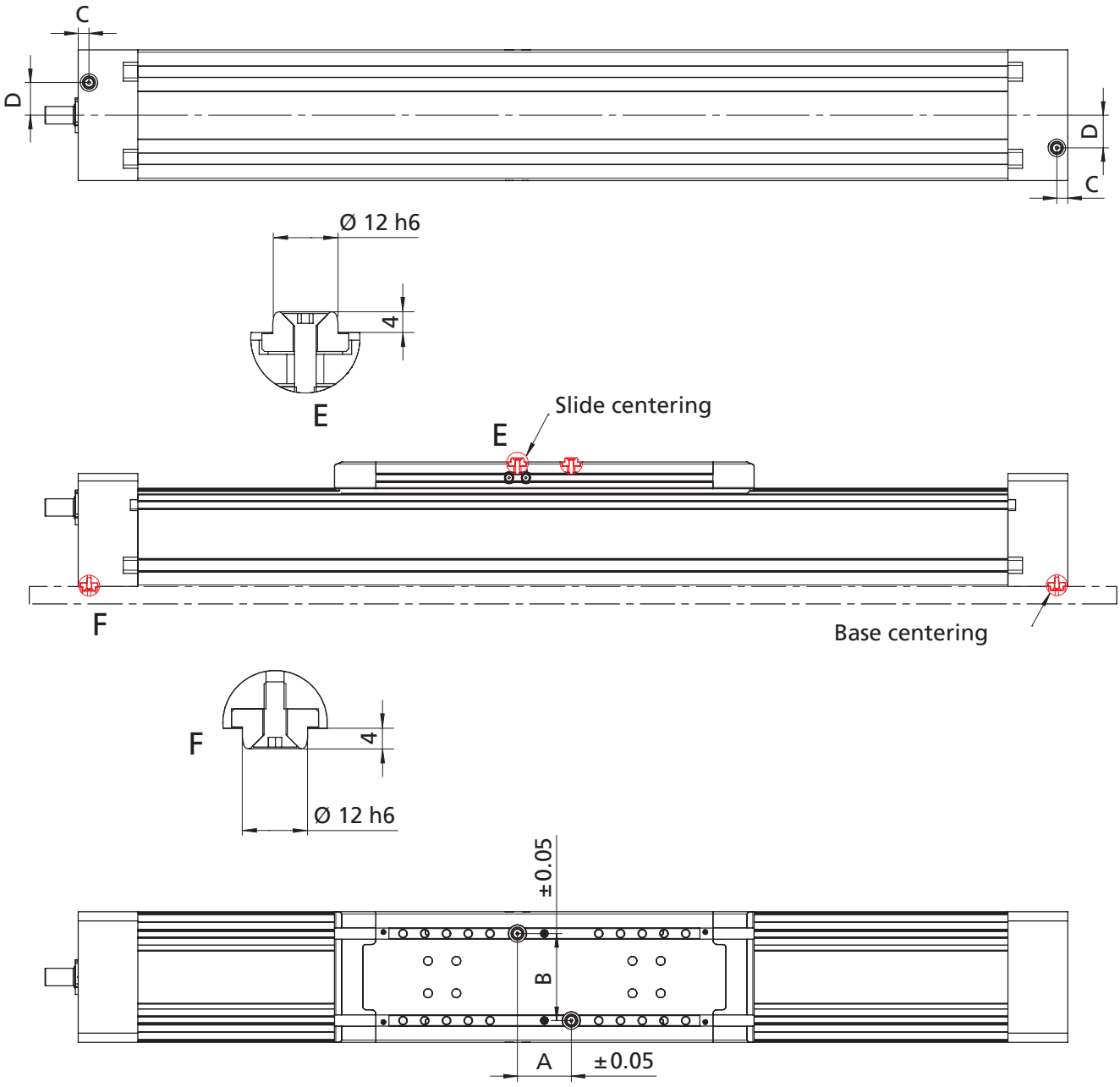


Size -A-



Size -B-

Code No.	Type	Use for
91810	Centering Set Size -A-	Slide centering RK DuoLine Z 60; Z 80
91817	Centering Set Size -B-	Base centering RK DuoLine Z 60; Z 80



[mm]

Type	A	B	C	D
RK DuoLine Z 60	42	40	10	0
RK DuoLine Z 60 with extended guide carriage	48	40	10	0
RK DuoLine Z 80	65	50	10	15
RK DuoLine Z 80 with extended guide carriage	70	50	10	15

*Note: Centering on request only with special drill holes in the slide/clamp strips possible

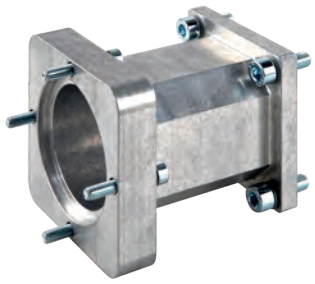
Drive

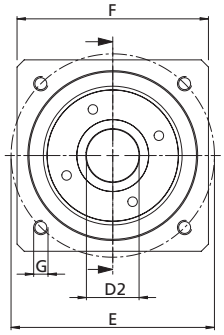
Selection table motor adapter kits RK DuoLine Z for servo motors without gear

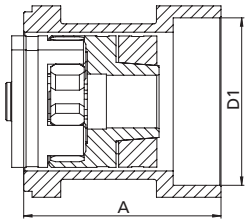
- Servomotors can be easily connected
- Complete motor adapter kits manufactured to your specifications on request

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

Manufacturers	Motor	RK DuoLine Z 60 Clean	RK DuoLine Z 80 Clean	Motor flange
RK Rose + Krieger	RK-AC 240	949458	–	IM B5 56
	RK-AC 470	–	949461	IM B5 63
Baumüller	DSD2-045	949458	On request	IM B5 56
Beckhoff	AM8041, AM8042, AM8043	On request	On request	IM B5 56
Bosch	MSK050B, MSK050C	–	949461	IM B5 63
Kollmorgen	AKM2G-41, AKM2G-42, AKM2G-43, AKM2G-44	On request	On request	IM B5 56
Lenze	MCS09D, MCS09F, MCS09H, MCS09L	949458	On request	IM B5 56
Lti/Keba	LSP10	–	949461	IM B5 63
Mitsubishi	HG-JR53(4), HG-JR 73(4), HG-JR103(4), HG-JR153(4), HG-JR203(4)	On request	On request	IM B5 56
Parker	SMH 82, SMHA 82	949458	–	IM B5 56
	SMH 100, SMHA 100	–	949461	IM B5 63
SEW	CMP63S, CMP63M, CPM63L	949458	On request	IM B5 56
Siemens	1FK7040, 1FK042, 1FK043, 1FK2205	On request	On request	IM B5 56
	1FK2105	–	949461	IM B5 63







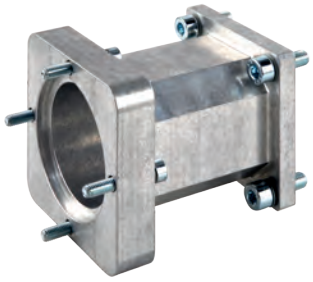
A	D1	D2	E	F	G	Masse [kg]
55	Ø 80 H8 5,7 deep	Ø14x30	Ø 100	□90	M6 11 deep	0,79
64	Ø 95 H7 4 deep	Ø19x40	Ø 115	□105	M8 19,5 deep	1,38
55/59	Ø 80 H8 5,7 deep	Ø14x30	Ø 100	□90/□82	M6 11/12 deep	0,79/0,93
61,1/64,5	Ø 80 H8 5,7 deep	Ø19x40	Ø 100	□90/□82	M6 15/12 deep	0,72/0,93
64	Ø 95 H7 4 deep	Ø19x40	Ø 115	□105	M8 19,5 deep	1,38
61,1/64,5	Ø 80 H8 5,7/5 deep	Ø19x40	Ø 100	□90/□82	M6 15/12 deep	0,72/0,93
55/59	Ø 80 H8 5,7 deep	Ø14x30	Ø 100	□90/□82	M6 11/12 deep	0,79/0,93
64	Ø 95 H7 4 deep	Ø19x40	Ø 115	□105	M8 19,5 deep	1,38
61,1/64,5	Ø 80 H8 5,7/5 deep	Ø16x30	Ø 100	□90/□82	M6 15/12 deep	0,72/0,93
55	Ø 80 H8 5,7 deep	Ø14x30	Ø 100	□90	M6 11 deep	0,79
64	Ø 95 H7 4 deep	Ø19x40	Ø 115	□105	M8 19 deep	1,38
55/59	Ø 80 H8 5,7 deep	Ø14x30	Ø 100	□90/□82	M6 11/12 deep	0,79/0,93
61,1/64,5	Ø 80 H8 5,7/5 deep	Ø19x40	Ø 100	□90/□82	M6 15/12 deep	0,72/0,93
64	Ø 95 H7 4 deep	Ø19x40	Ø 115	□105	M8 19,5 deep	1,38

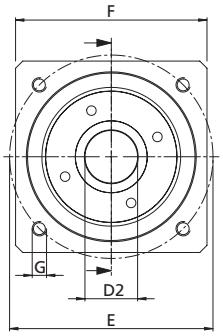
Drive

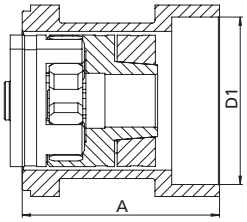
Motor adapter kits

- Servo 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 fixation material







Selection table motor adapter kits servo motors with gear

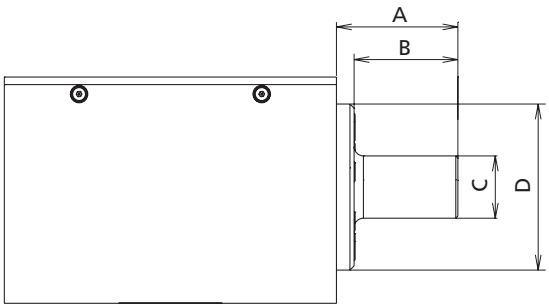
Manufacturers	Gear	RK DuoLine Z 60 Clean	RK DuoLine Z 80 Clean	A	D1	D2	E	F	G	Mass [kg]
Neugart	PLE 60	949459	949462	57/60	Ø 40 5/7,8 deep	Ø 14x30	Ø 52	70x67/□80	M 5	0,65/0,92
	PLE 80	949460	949463	60/64	Ø 60 3,5/5 deep	Ø 20x36	Ø 70	□75/□80	M 6	0,69/0,92
	PLE 120	–	949464	78	Ø 80 4,5 deep	Ø 25x50	Ø 100	Ø 120	M 10	1,43
Atlanta	APG 080	949460	949463	60/64	Ø 60 3,5/5 deep	Ø 20x36	Ø 70	□75/□80	M 6	0,69/0,92
	APG 120	–	949464	78	Ø 80 4,5 deep	Ø 25x50	Ø 100	Ø 120	M 10	1,43
Eppinger	PE065	949459	949462	57/60	Ø 40 5/7,8 deep	Ø 14x30	Ø 52	70x67/□80	M 5	0,65/0,92
	PE080	949460	949463	60/64	Ø 60 3,5/5 deep	Ø 20x36	Ø 70	□75/□80	M 6	0,69/0,92
Ruhrgetriebe	RPS060	949459	949462	57/60	Ø 40 5/7,8 deep	Ø 14x30	Ø 52	70x67/□80	M 5	0,65/0,92
	RPS080	949460	949463	60/64	Ø 60 3,5/5 deep	Ø 20x36	Ø 70	□75/□80	M 6	0,69/0,92
SPN Schwaben Präzision	SPN-ECO (E2) EZ 23	949459	949462	57/60	Ø 40 5/7,8 deep	Ø 14 x 30	Ø 52	70x67/□80	M 5	0,65/0,92
	SPN-ECO (E2) EZ 24	949460	949463	60/64	Ø 60 3,5/5 deep	Ø 20 x 36	Ø 70	□75/□80	M 6	0,69/0,92
	SPN-ECO (E2) EZ 25	–	949464	78	Ø 80 4,5 deep	Ø 25x50	Ø 100	Ø 120	M 10	1,43
Wittenstein	Alpha CP015 MF	949459	949462	57/60	Ø 40 5/7,8 deep	Ø 14 x 30	Ø 52	70x67/□80	M 5	0,65/0,92
	Alpha CP025 MF	949460	949463	60/64	Ø 60 3,5/5 deep	Ø 20 x 36	Ø 70	□75/□80	M 6	0,69/0,92
	Alpha CP035 MF	–	949464	78	Ø 80 4,5 deep	Ø 25x50	Ø 100	Ø 120	M 10	1,43

Drive shaft

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

Material:
Stainless steel drive shaft and fastening material
Scope of delivery per set:
Drive shaft with fixation material

For metal bellows coupling



[mm]

Code No.	Type	Version	A	B	C	D
91325	RK DuoLine Z 60 Clean	Drive shaft for metal bellows coupling	28,6	25	16	44
91326	RK DuoLine Z 80 Clean		35	31,5	20	52

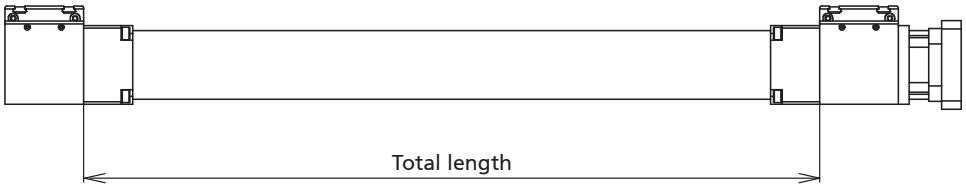
Drive / Position determination

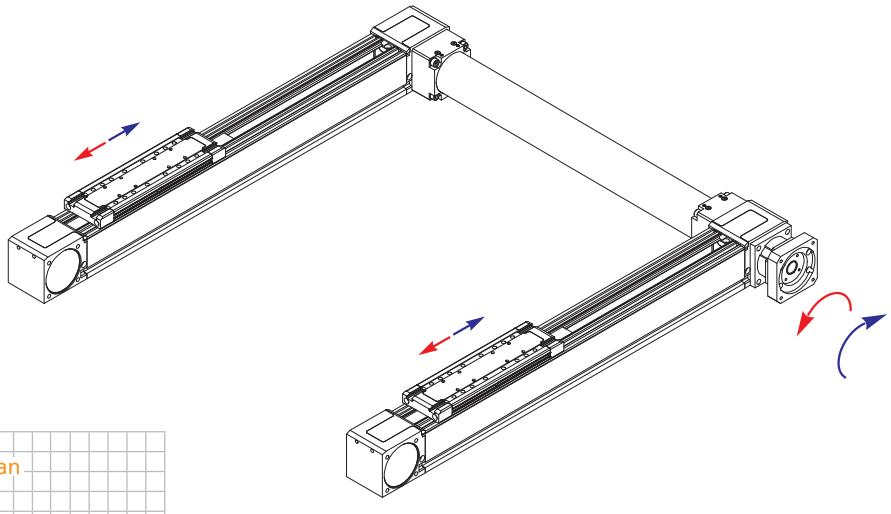
Synchronisation shaft

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

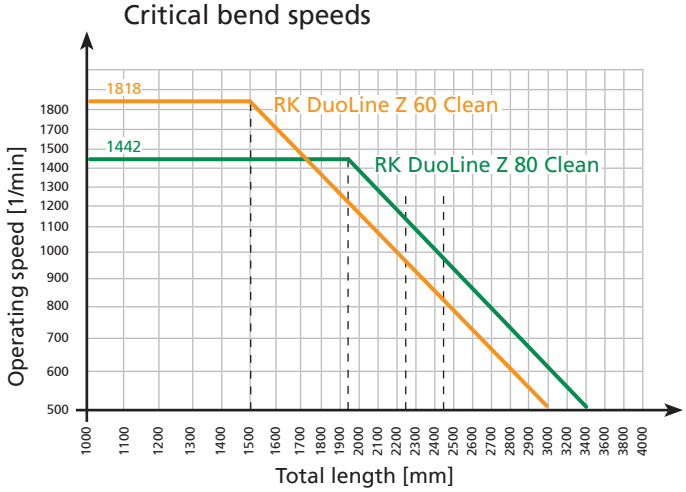
Scope of delivery:
Synchronisation shaft with fixation material

Max. transfer torque:
RK DuoLine Z 60 Clean 28 Nm
RK DuoLine Z 80 Clean 67 Nm





Critical bend speeds



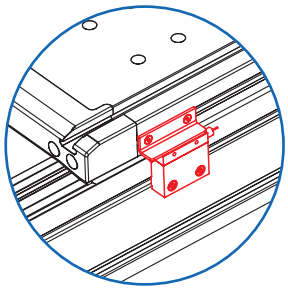
[mm]

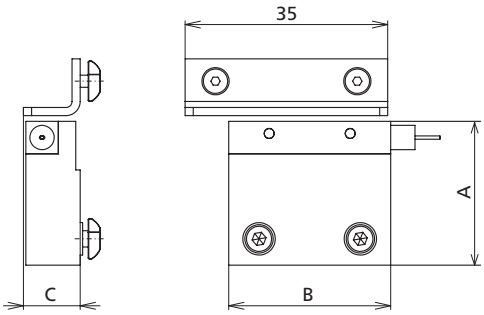
Code No.	Type	Basic length (minimum length)	Max. length (clearance)	Weight [kg]	
				Basic length	per 100 mm travel
92521740_ _ _ _	Synchronising shaft RK DuoLine Z 60 Clean	127	2985	1,0	0,24
92521750_ _ _ _	Synchronising shaft RK DuoLine Z 80 Clean	157	3400	1,96	0,29

External inductive limit switch

- External fixation on the guide profilev

Scope of delivery:
Limit switch with set of fixing items

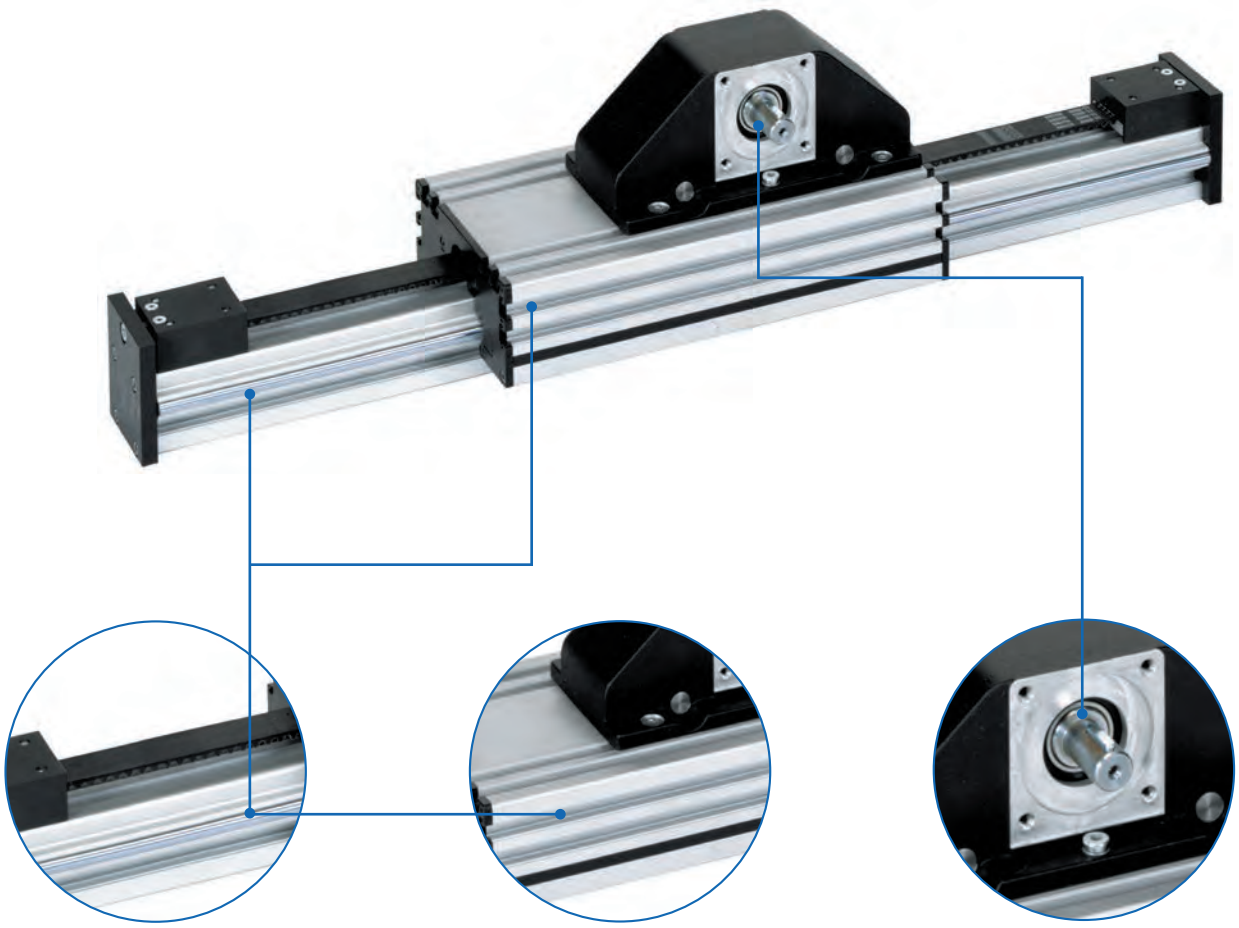




Limit switch	external
Voltage	10...30 VDC
Max. switching current	100 mA
Operating frequency	max. 5 kHz
Mechanical lifetime	independent of operating cycles
Operating distance	1,5 mm
Degree of protection	IP 67
Cable length	5 m
Ambient temperature	-25°C to +70°C

Code No.	Type	A	B	C	Version
92839	RK DuoLine 60 Clean	52,8	25	10	NO, Internal inductive limit switch
92821	RK DuoLine 80 Clean	71,5	25	10	

Timing-belt unit with fixed carriage, also for large travel



Fixing slots
- Simple connection of the payload
- Simple connection to the baseframe

Drive shaft
- Either at one end or both

Features:
- Stroke lengths up to 18 m
- Travel speed up to 5 m/s
- Guide profile made from the BLOCAN® modular profile system
- Extruded carriage with fixing slots
- Guide block and drive move with carriage

Options:
- Longer stroke lengths
- Second carriage, either non driven or driven separately
- Extended carriage

Table of contents

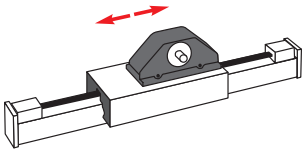
Properties/Technical data

General information/operating conditions ... Page 456

Timing-belt ... Page 456

Load data ... Page 457

Versions
(Dimensions, order numbers)



SQ MT timing-belt unit ... Page 458 - 459

Accessories

Fixing

Slot stones ... Page 460

Motor adaptor ... Page 464

Drive

Coupling ... Page 465

Mechanical limit switch ... Page 466

Position determination

Inductive limit switch and holder ... Page 467

Technical data

General information/operating conditions

Design	Aluminium profile, timing-belt drive, moving profile
Guide	Rollers, external
Installation position	Any position
Repeatability	± 0.05 mm
Pitch accuracy toothed belt	± 0.1 mm/300 mm travel
Ambient temperature	0°C to +60°C
Protection class	IP 20

Timing-belt

Type	Timing-belt	Pitch/width	Eff. diam. of lock washer [mm]	Max. moment via shaft [Nm]	Max. speed [m/s]	Max. acceleration [m/s^2]
SQ MT 30	GT 5MR	5/12	23.87	5	5	20
SQ MT 40	GT 5MR	5/20	27.06	8.5	5	
SQ MT 40 x 80	GT 5MR	5/20	27.06	8.5	5	
SQ MT 50	GT 5MR	5/25	38.20	20	5	
SQ MT 50 x 100	GT 5MR	5/25	38.20	20	5	
SQ MT 60	GT 8MR	8/28	56.02	55	10	
SQ MT 60 x 120	GT 8MR	8/28	56.02	55	10	
SQ MT 80	GT 8MR	8/40	61.12	90	10	
SQ MT 80 x 160	GT 8MR	8/40	61.12	90	10	

No-load torque

[Nm]

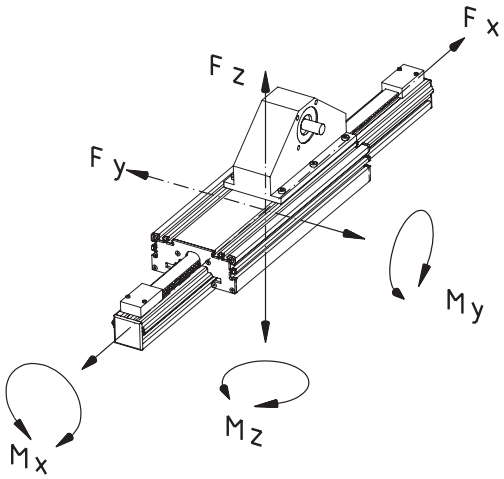
Type	SQ MT
30	0.60
40	0.70
50	0.85
60	1.00
80	1.20

Load data*

F Force [N]

M Moment [Nm]

I Geometric moment of inertia [cm^4]



* With reference to carriage (static values, guide element resting on full surface)

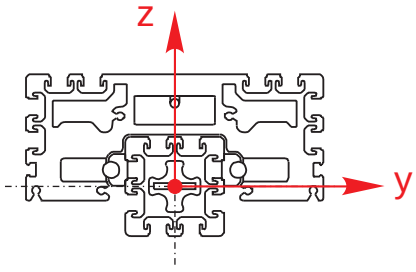
Type	Fx**	Fy	Fz	Mx	My	Mz
SQ MT 30	320	790	790	14	24	26
SQ MT 40	610	1020	1020	23	40	40
SQ MT 40 x 80	610	1020	1020	23	40	40
SQ MT 50	1000	1020	1020	28	59	59
SQ MT 50 x 100	1000	1020	1020	28	59	59
SQ MT 60	1790	2550	2550	99	171	171
SQ MT 60 x 120	1790	2550	2550	99	171	171
SQ MT 80	2810	2550	2550	124	201	201
SQ MT 80 x 160	2810	2550	2550	124	201	201

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

Geometric moment of inertia

[cm^4]

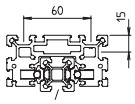
Type	Iy	Iz
SQ MT 30	3.4	3.4
SQ MT 40	11.3	11.3
SQ MT 40 x 80	19.4	76.0
SQ MT 50	29.1	29.1
SQ MT 50 x 100	43.9	180.8
SQ MT 60	51.2	51.2
SQ MT 60 x 120	94.7	372.3
SQ MT 80	155.3	155.3
SQ MT 80 x 160	292.4	1090



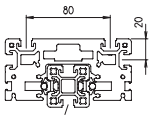
Verisons

Order instructions:

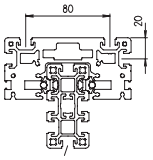
- Longer travel lengths on request
- Second non driven or separately driven carriage available on request
- Extended carriage available on request



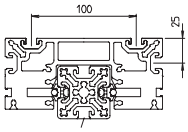
Profile S-30



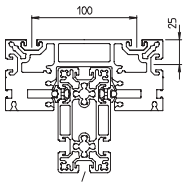
Profile S-40



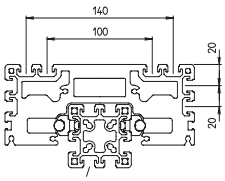
Profile S-40 x 80



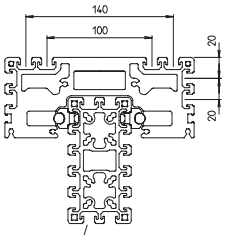
Profile F-50



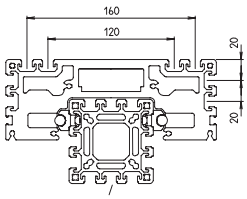
Profile F-50 x 100



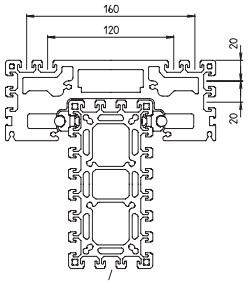
Profile F-60



Profile F-60 x 120



Profile F-80

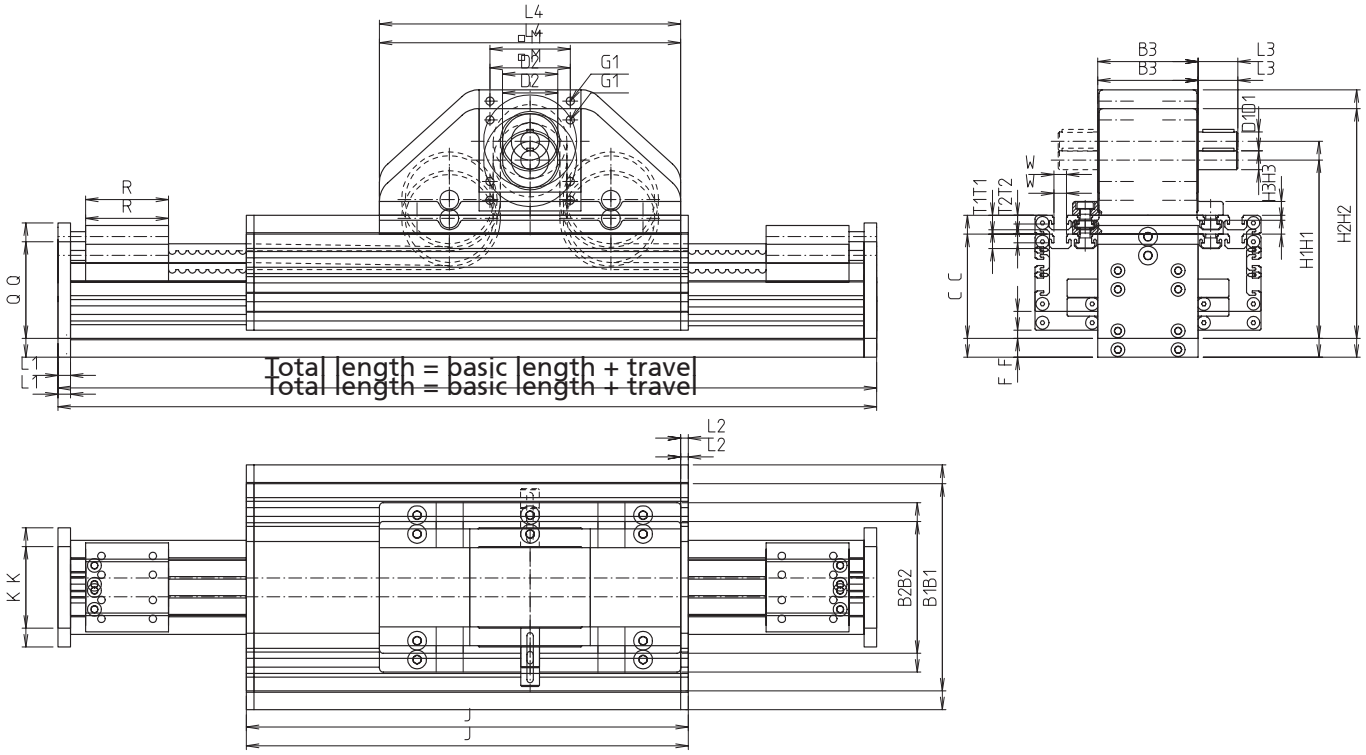


Profile F-80 x 160

Code No.	Type	Timing-belt	Basic length	B1	B2	B3	C	D1	D2	F	G1	H1	H2
FEB3030 _ A	SQ MT 30	5M-12	278	91.2	75	38	50	10	22^{H7}	4.5	M4	83	107
FEB4040 _ A	SQ MT 40	5M-20	352	120	100	48	65	10	28^{H7}	6.5	M5	104	132
FEB4080 _ A	SQ MT 40 x 80	5M-20	352	120	100	48	105	10	28^{H7}	46.5	M5	144	172
FEB5050 _ A	SQ MT 50	5M-25	377	150	120	58	78	14	35^{H7}	9	M6	119	155
FEB5010 _ A	SQ MT 50 x 100	5M-25	377	150	120	58	128	14	35^{H7}	59	M6	169	205
FFB6060 _ A	SQ MT 60	8M-28	524	180	120	80	98	20	70^{H7}	21.5	M8	157	198
FFB6012 _ A	SQ MT 60 x 120	8M-28	524	180	120	80	158	20	70^{H7}	81.5	M8	217	258
FFB8080 _ A	SQ MT 80	8M-40	554	200	140	100	118	25	70^{H7}	41.5	M8	177	218
FFB8016 _ A	SQ MT 80 x 160	8M-40	554	200	140	100	198	25	70^{H7}	121.5	M8	257	298

_ _ _ _ Total length = basic length + travel [mm]

Drive shafts:
A = 1 shaft
B = 2 shafts



[mm]

H3	J	O	L1	L2	C	L4	M	Q	R	T1	T2	W	Max. travel	Mass [kg]	
														Basic length	per 100 mm travel
7	181	40	8	6	25	120	21	47	35	8.5	4.5	10.1	3722	2.04	0.14
8	232	47	10	6	28	150	29	60	45	11.5	7	10.1	4648	4.51	0.23
8	232	47	10	6	28	150	29	100	45	11.5	7	10.1	4648	5.06	0.39
8.5	257	60	10	6	30	160	38	73	45	11.5	7	10.1	5623	6.75	0.41
8.5	257	60	10	6	30	160	38	123	45	11.5	7	10.1	5623	7.15	0.52
11	352	80	12	6	31.5	240	64	90	66	11.5	7	10.1	5476	13.63	0.45
11	352	80	12	6	31.5	240	64	150	66	11.5	7	10.1	5476	15.93	0.90
11	382	100	12	6	31.5	240	64	115	66	11.5	7	10.1	5446	17.50	0.79
11	382	100	12	6	31.5	240	64	195	66	11.5	7	10.1	5446	20.41	1.34

Fixing

Order instructions:

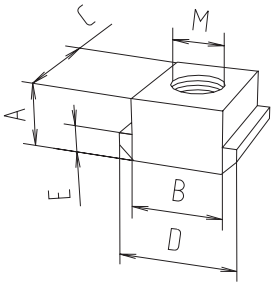
- Purchase only in lot sizes and a multiple of that, see product table below

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

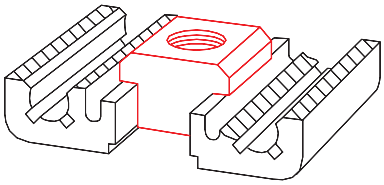
Material: zinc plated steel

Slot stones

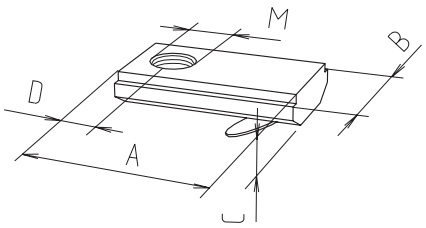
Slot stone -N-



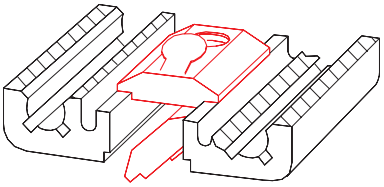
Slot stone -N-
can be slid into the slot



Slot stone -K-

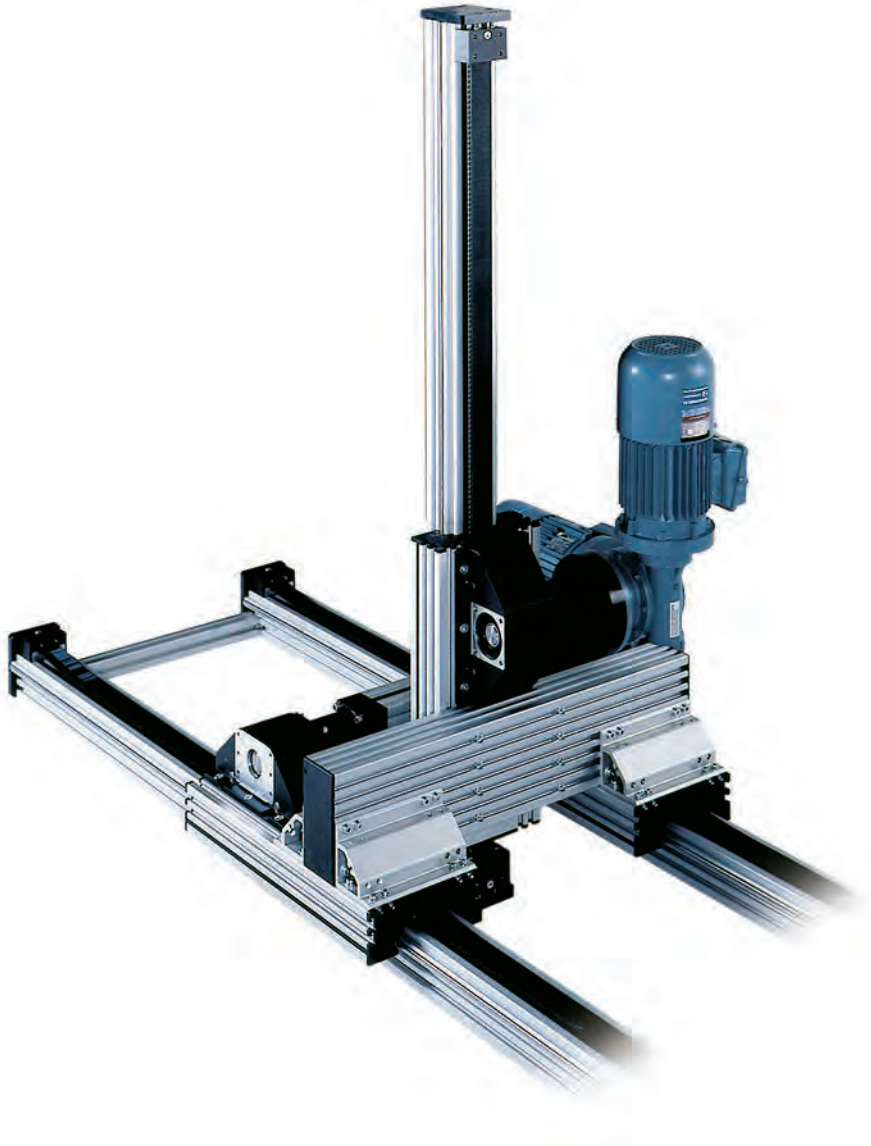


Slot stone -K-
can be swivelled into the slot



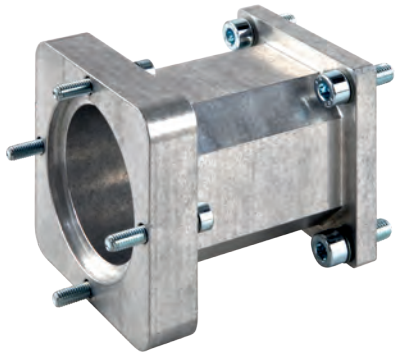
[mm]

Code No.	Type	lot sizes	Version	A	B	C	D	E	M	F [N]
Slot stone -N-										
4006201	SQ MT 30	10, 20, 30... pcs	M5	5	10	13	13	3	M5	4000
4006203	SQ MT 30	10, 20, 30... pcs	M6	5	10	13	13	3	M6	4000
4006202	SQ MT 30	10, 20, 30... pcs	M8	5	10	13	13	3	M8	4000
4026207	SQ MT 40-80	10, 20, 30... pcs	M5	8	10	13	15	4	M5	4000
4026203	SQ MT 40-80	10, 20, 30... pcs	M6	8	10	13	15	4	M6	9000
4026206	SQ MT 40-80	10, 20, 30... pcs	M8	8	10	13	15	4	M8	9000
Slot stone -K-										
4006211	all	10, 20, 30... pcs	M5	21	12	4	7	–	M5	5000
4006212	all	10, 20, 30... pcs	M6	21	12	4	7	–	M6	5000
4006213	all	10, 20, 30... pcs	M8	21	12	4	7	–	M8	5000
4016212	SQ MT 40-80	10, 20, 30... pcs	M6	21	14	4	7	–	M6	5000
4016213	SQ MT 40-80	10, 20, 30... pcs	M8	21	14	4	7	–	M8	8000



Drive

Selection table Motor adaptor/SQ MT coupling for three-phase motor



Manufacturers	Motor	SQ-MT 30	SQ-MT 40	SQ-MT 50 SQ-MT 50x100	SQ-MT 60 SQ-MT 60x120	SQ-MT 80 SQ-MT 80x160
RK Rose + Krieger	90/120W	949113	949920	949928	949938	949944
		910920 1012	911430 1012	911430 1214	911940 1220	912855 1225
	180/250W	949949	949921	949929	949939	949945
		911430 1014	911430 1014	911430 1414	911430 1420	912855 2025

Code No. Motor adaptor:
949939

Code No. Coupling with specification of shaft diameter
1st end=12 mm
2st end=14 mm
911430 1420

Selection table Motor adaptor/SQ MT coupling for servomotors without gear

Manufacturers	Motor	SQ-MT 30	SQ-MT 40	SQ-MT 50 SQ-MT 50x100	SQ-MT 60 SQ-MT 60x120	SQ-MT 80 SQ-MT 80x160	Motor flange	Motor shaft
RK Rose + Krieger	RK-AC 118	949910	949915	949922	949930	–	IM B5 56	Ø11x23
		911430 1011	911430 1011	911430 1114	911940 1120	–		
	RK-AC 240	–	949917	949224	949932	949940	IM B5 56	Ø14x30
		–	911430 1014	911430 1414	911940 1420	912855 1425		
	RK-AC 470	–	–	–	949934	949942	IM B5 63	Ø19x40
		–	–	–	911940 1920	912855 1925		
Baumüller	DSD2-036	949910	949915	949922	949930	–	IM B5 56	Ø11x23
		911430 1011	911430 1011	911430 1114	911940 1120	–		
	DSD2-045	–	949917	949224	949932	949940	IM B5 56	Ø14x30
		–	911430 1014	911430 1414	911940 1420	912855 1425		
Bosch	MSK050B, MSK050C	–	–	–	949934	949942	IM B5 63	Ø19x40
		–	–	–	911940 1920	912855 1925		
Lenze	MCS06I, MCS06F	949910	949915	949922	949930	–	IM B5 56	Ø11x23
		911430 1011	911430 1011	911430 1114	911940 1120	–		
	MCS09D, MCS09F, MCS09H, MCS09L	–	949917	949224	949932	949940	IM B5 56	Ø14x30
		–	911430 1014	911430 1414	911940 1420	912855 1425		
Lti / Keba	LSP10	–	–	–	949934	949942	IM B5 63	Ø19x40
		–	–	–	911940 1920	912855 1925		
Parker	SMH 60, SMHA 60	949910	949915	949922	949930	–	IM B5 56	Ø11x23
		911430 1011	911430 1011	911430 1114	911940 1120	–		
	SMH 82, SMHA 82	–	949917	949224	949932	949940	IM B5 56	Ø14x30
		–	911430 1014	911430 1414	911940 1420	912855 1425		
	SMH 100, SMHA 100	–	–	–	949934	949942	IM B5 63	Ø19x40
		–	–	–	911940 1920	912855 1925		
SEW	CMP50S, CMP50M, CMP50L	949910	949915	949922	949930	–	IM B5 56	Ø11x23
		911430 1011	911430 1011	911430 1114	911940 1120	–		
	CMP63S, CMP63M, CPM63L	–	949917	949224	949932	949940	IM B5 56	Ø14x30
		–	911430 1014	911430 1414	911940 1420	912855 1425		
Siemens	1FK2105	–	–	–	949934	949942	IM B5 63	Ø19x40
		–	–	–	911940 1920	912855 1925		

Code No. Motor adaptor:
949934

Code No. Coupling with specification of shaft diameter
1st end=12 mm
2st end=19 mm
911940 1920

Note:
For further details on motor versions, please refer to the chapter "Motors and controls"

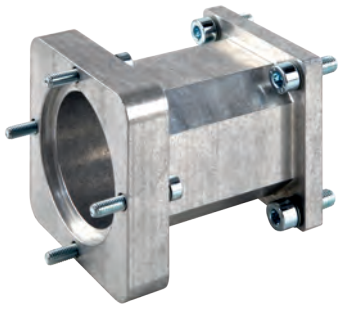
For dimensions and order data for motor adaptor and coupling, please refer to next page.

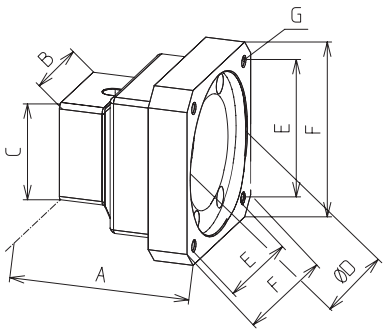
Drive

Motor adaptor

- Simple assembly
- Exact fit due to centring shoulders

Material: AlMgSi





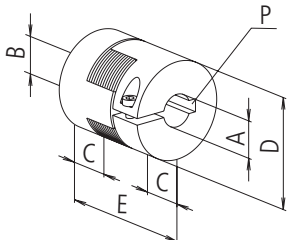
[mm]

Code No.	Type	A	B	C	D	E	F	G
949910	30	63	40	40	60	53	70	M5
949913	30	65	40	40	50	65	80	M5
949949	30	70	40	40	80	100	Ø120	Ø6,6
949915	40	65	50	50	60	53	70	M5
949917	40	73	50	50	80	70,7	90	M6
949920	40	73	50	50	50	65	80	M5
949921	40	73	50	50	80	100	Ø120	Ø6,6
949922	50	66	52	52	60	53	70	M5
949924	50	73	52	52	80	70,7	90	M6
949928	50	73	52	52	50	65	80	M5
949929	50	75	52	52	80	100	Ø120	Ø6,6
949930	60	74	80	80	60	53	70	M5
949932	60	79	80	80	80	70,7	90	M6
949934	60	89	80	80	95	81,3	115	M8
949938	60	79	80	80	50	65	80	M5
949939	60	81	80	80	80	100	Ø120	Ø6,6
949940	80	86	80	80	80	70,7	90	M6
949942	80	96	80	80	95	81,3	115	M8
949944	80	86	80	80	50	65	80	M5
949945	80	86	80	80	80	100	Ø120	Ø6,6

Coupling

- Shaft connection without backlash
- Easy plug-in assembly

Material: Hub, aluminium
Gear ring, polyurethane



[mm]

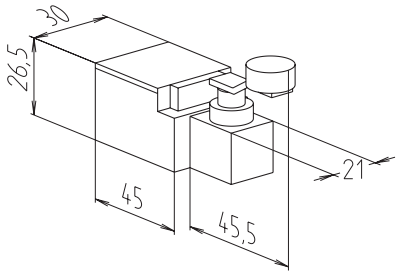
Code No.	A	B	C	D	E	P	Torque [Nm]	
							with feather key	without feather key
9109209510	9,5	10	10	20	30	– / 3x3	5	3
9109201012	10	12	10	22	30	3x3 / 4x4	5	3
9114309514	9,5	14	11	30	35	– / 5x5	12	6
9114301011	10	11	11	30	35	3x3 / 4x4	12	6
9114301012	10	12	11	30	35	3x3 / 4x4	12	6
9114301014	10	14	11	30	35	3x3 / 5x5	12	6
9114301114	11	14	11	30	35	4x4 / 5x5	12	6
9114301214	12	14	11	30	35	4x4 / 5x5	12	6
9114301414	14	14	11	30	35	5x5 / 5x5	12	6
9114301420	14	20	11	30	35	5x5 / 6x6	12	6
9119409520	9,5	20	25	40	65	– / 6x6	17	10
9119401120	11	20	25	40	65	4x4 / 6x6	17	10
9119401220	12	20	25	40	65	4x4 / 6x6	17	10
9119401920	19	20	25	40	65	6x6 / 6x6	17	10
9128559525	9,5	25	25	40	65	– / 8x7	17	10
9128551225	12	25	25	40	65	4x4 / 8x7	17	10
9128551425	14	25	30	55	78	5x5 / 8x7	60	35
9128551925	19	25	30	55	78	6x6 / 8x7	60	35

Position determination

Mechanical limit switch

- Limit switch with angle lever
- Compact design

Material:
Thermoplastic, fully insulated



Max. voltage	250 V AC
Max. switching current	6 A
Max. starting current	16 A
Operating cycles	Max. 6,000/h
Mechanical lifetime	1 x 10^7 switching cycles
Axis lever adjustment	locking by 360°
Protection class	IP 65
Ambient temperature	-30°C to +80°C

Code No.	Switching function
91905	NC/NO

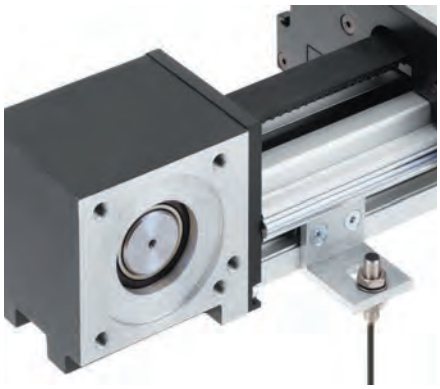
Holder for inductive limit switch

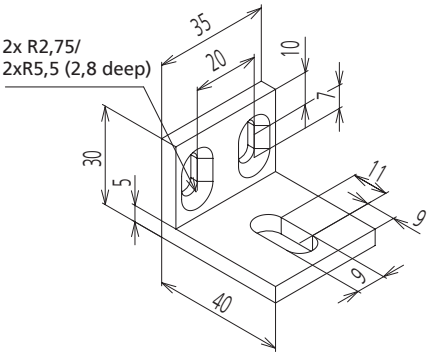
- Fixing bracket for limit switches
- Fixing in the profile slot of the guide profile
- Simple axial displacement and adjustment of holder is possible

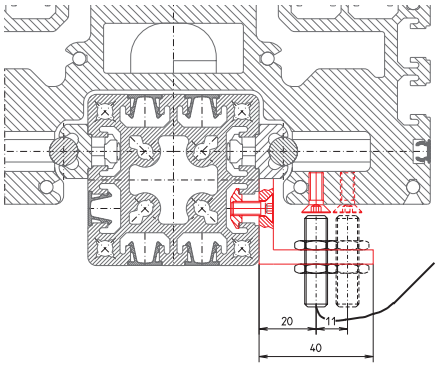
Material:
AlMgSi, vibratory finished

Scope of delivery:
Holder with fastenings

A limit switch is not included!







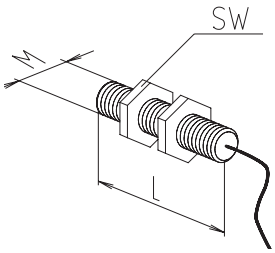
Code No.	Type
92909	SQ MT 40 x 80, 60, 60 x 120, 80, 80 x 160

Inductive limit switch

- Function indicator (LED)
- Maintenance-free

Material: Housing: stainless steel

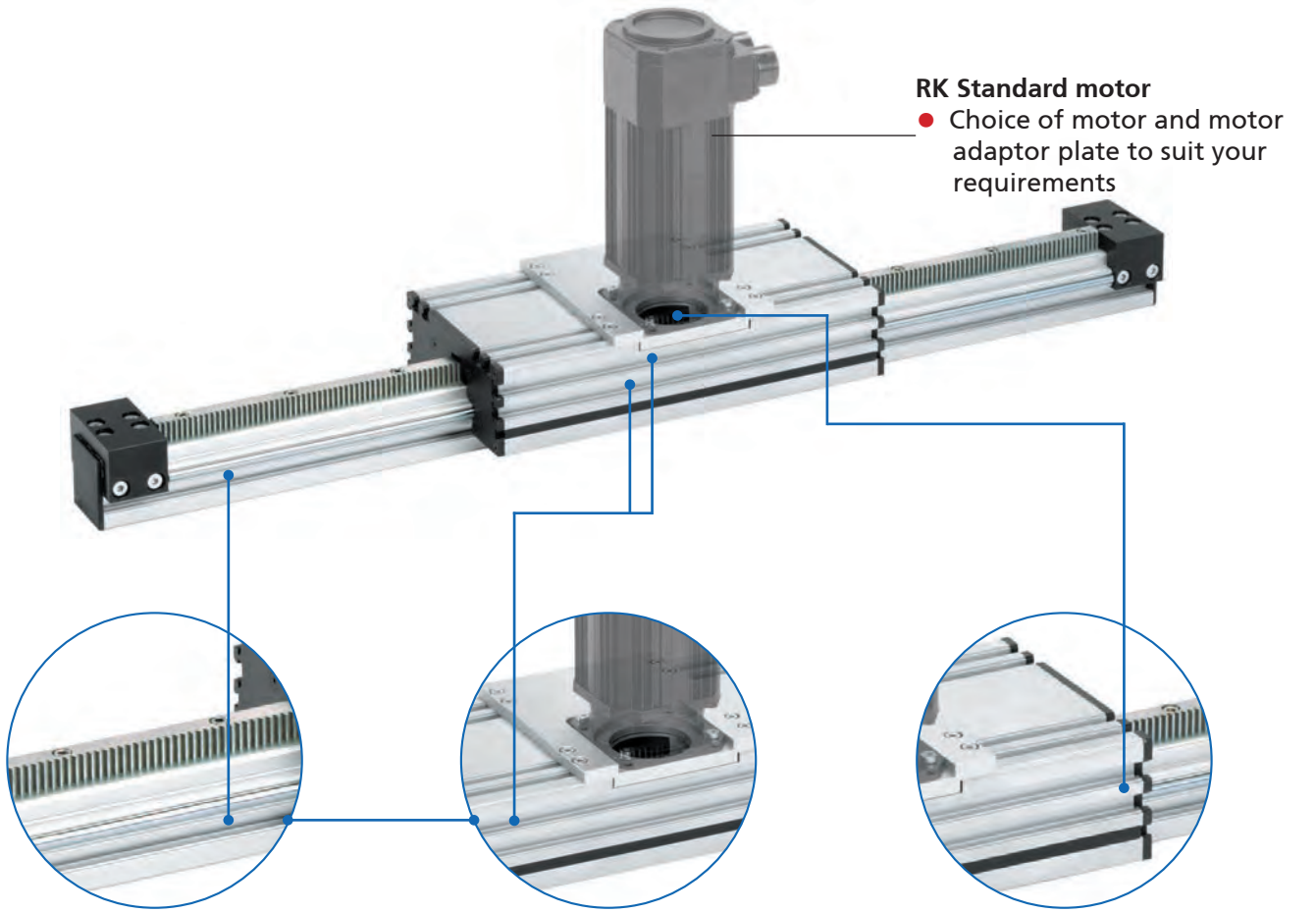
Type	60-80
Voltage	10 - 30 V DC
Max. switching current	150 mA
Operating distance	2 mm for steel
Protection class	IP 67
Ambient temperature	-25°C to +70°C
Cable lengths	2m



[mm]

Code No.	Switching function	L	M	Wrench size (SW)
92826	Changeover	40	8x1	13

Rack and pinion with fixed carriage, also for larger travels up to 30 m



RK Standard motor
- Choice of motor and motor adaptor plate to suit your requirements

Fixing slots
- Simple connection of the rated load
- Simple connection to the baseframe

Carriage with spur gear
- A spur gear transmits the motion of rotation directly onto the carriage
- In the carriage, an oil-soaked, free-running felt wheel lubri cates the rack

Features:
- Linear power transmission via rack and spur gear
- Designed specially for large strokes of up to 30 m and more
- High positioning accuracy, even with large stroke lengths
- Travel speed up to 5 m/s
- Guide profile made from the BLOCAN® modular profile system
- Rack lubrication via felt wheel
- Suitable for RK standard motors

Options:
- Second non driven carriage
- Longer stroke lengths
- Additional independently driven carriages

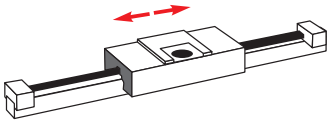
Table of contents

Properties/Technical data

General information/operating conditions ... Page 470

Load data ... Page 471

Versions
(Dimensions, order numbers)



SQ ZST rack unit ... Page 472 - 473

Accessories

Fixing

Slot stones ... Page 474

Position determination

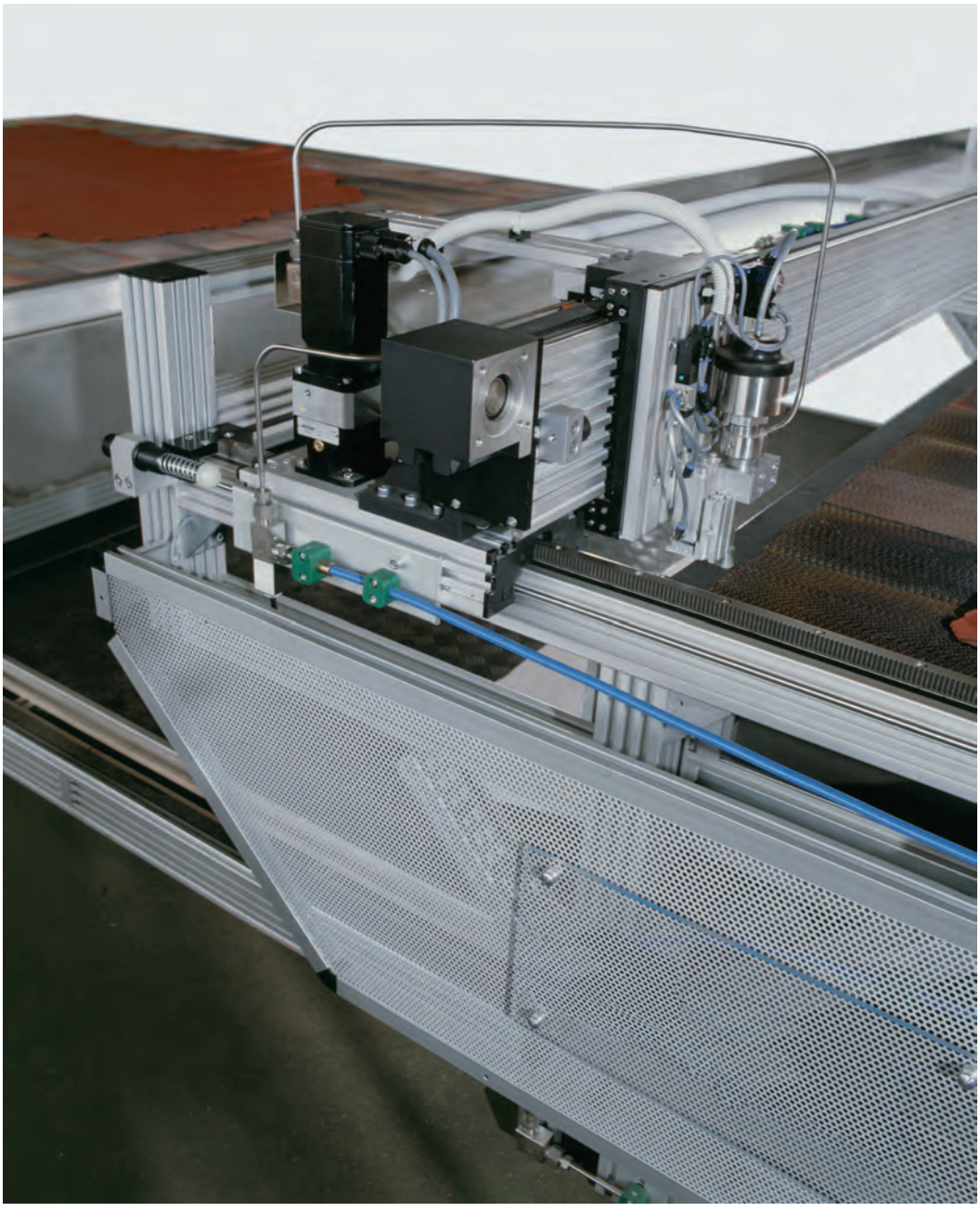
Mechanical limit switch ... Page 475

Inductive limit switch and holder ... Page 475

Technical data

General information/operating conditions

Design	Aluminium profile, rack drive, moving profile
Guide	Rollers, external
Installation position	Any position
Repeatability	± 0.05 mm
Pitch accuracy rack	± 0.1 mm/300 mm travel
Max. travel speed	5 m/s
Ambient temperature	0°C to +60°C
Protection class	IP 20



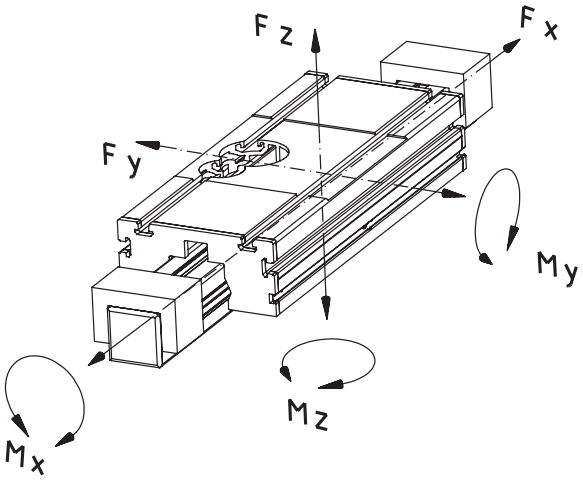
3-axis plotter, X-axis moves via an SQ ZST rack unit

Load data*

F Force [N]

M Moment [Nm]

I Geometric moment of inertia [cm^4]



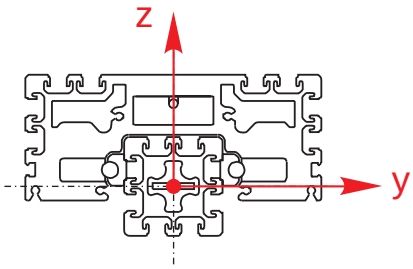
* With reference to carriage (static values, guide element resting on full surface)

Type	Fx	Fy	Fz	Mx	My	Mz
SQ ZST 60	1132	2550	2550	99	171	171
SQ ZST 60 x 120		2550	2550	99	171	171
SQ ZST 80		2550	2550	124	201	201
SQ ZST 80 x 160		2550	2550	124	201	201

Geometric moment of inertia

[cm^4]

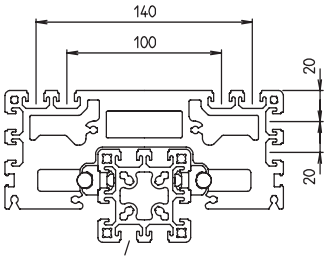
Type	Iy	Iz
SQ ZST 60	51.2	51.2
SQ ZST 60 x 120	94.7	372.3
SQ ZST 80	155.3	155.3
SQ ZST 80 x 160	292.4	1090



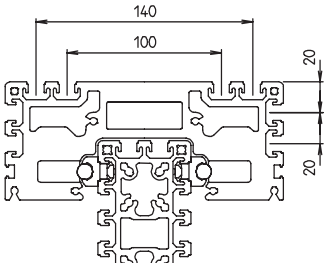
Versions

Order instructions:

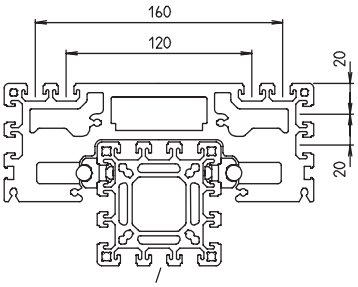
- Longer travel lengths on request
- Second non driven or independently driven carriage available on request



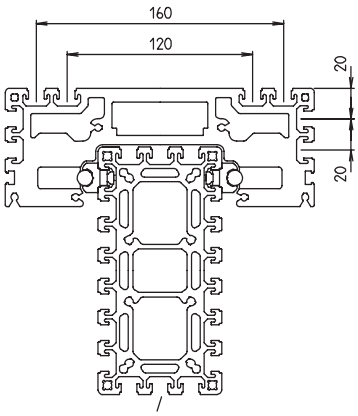
Profile F-60



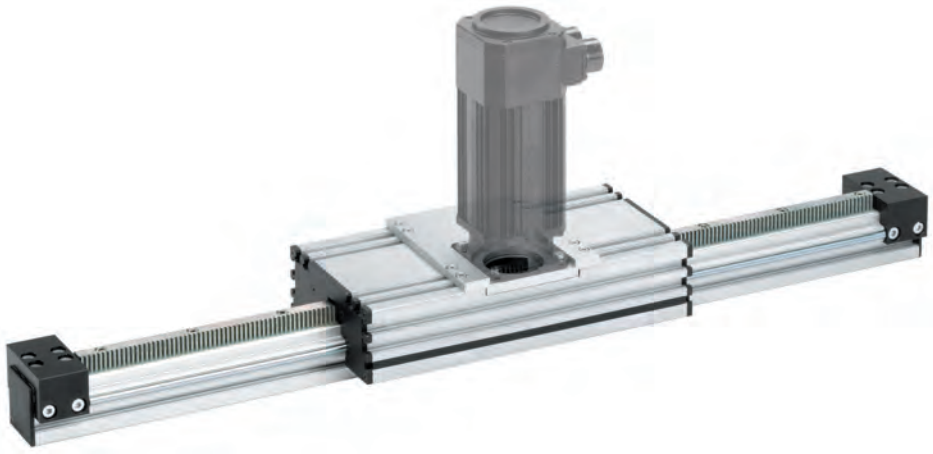
Profile F-60 x 120



Profile F-80



Profile F-80 x 160



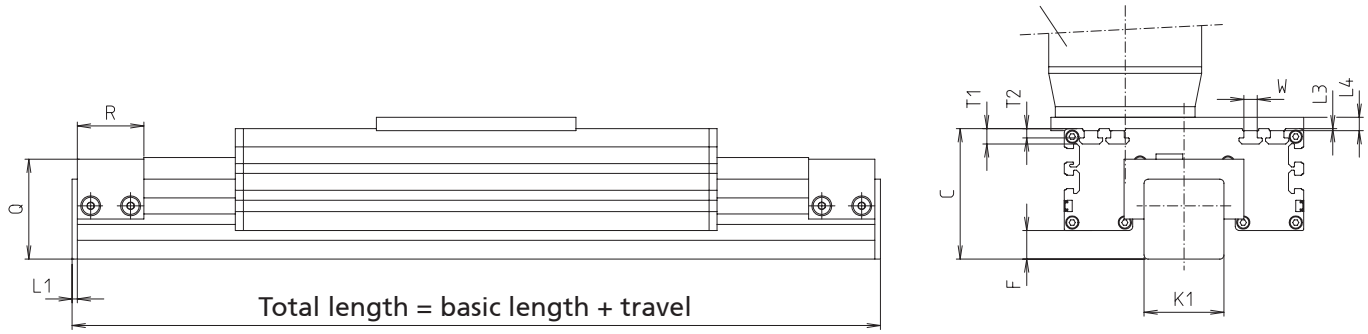
Code No.	Type	Basic length	B1	B2	C	F	H	J	K1	K2	L1
FGA6060 _ A	SQ ZST 60	470	180	depending on engine	98	21.5	150	362	60	90	4
FGA6012 _ A	SQ ZST 60 x 120	470	180		158	81.5	150	362	60	90	4
FGA8080 _ A	SQ ZST 80	470	200		118	41.5	150	362	80	110	4
FGA8016 _ A	SQ ZST 80 x 160	470	200		198	121.5	150	362	80	110	4

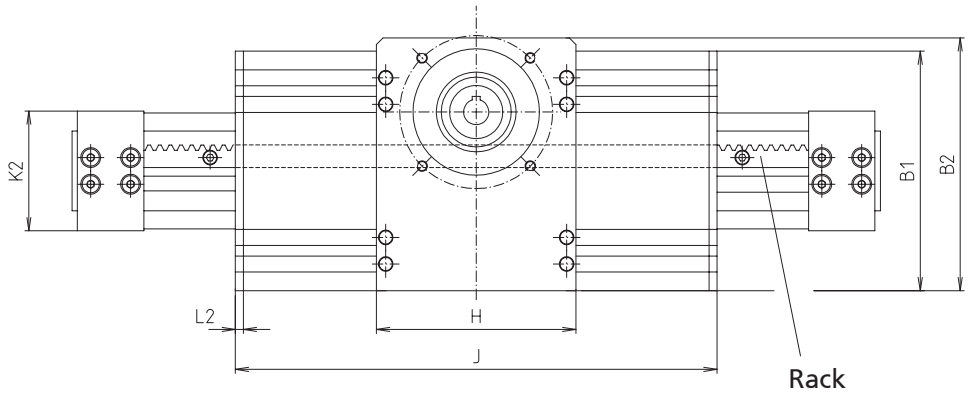
_ _ _ _ Total length = basic length + travel [mm]

For motor (see chapter "Motors and controls"):

C = RK-AC 240
D = RK-AC 240 with gear unit
E = RK-AC 470
F = RK-AC 470 with gear unitl
I = 3-phase motor 90 W
K = 3-phase motor 120W
L = 3-phase motor 180W
M = 3-phase motor 250W

Optional motor
(see chapter "Motors and controls")





[mm]

L2	C	L4	Q	R	T1	T2	W	Max. travel	Mass [kg]	
									Basic length	per 100 mm travel
6	1.5	depending on engine	75	50	11.5	7	10.1	29530	11.77	0.81
6	1.5		135	50	11.5	7	10.1	29530	13.88	1.26
6	1.5		95	50	11.5	7	10.1	29530	12.78	1.14
6	1.5		175	50	11.5	7	10.1	29530	14.28	1.34

Fixing

Order instruction:

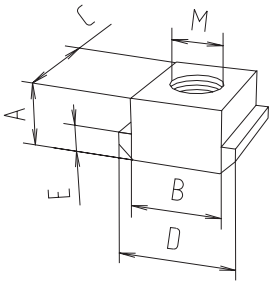
- Purchase only in lot sizes and a multiple of that, see product table below

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

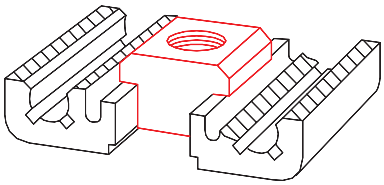
Material: zinc plated steel

Slot stones

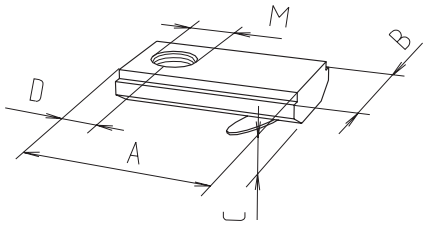
Slot stone -N-



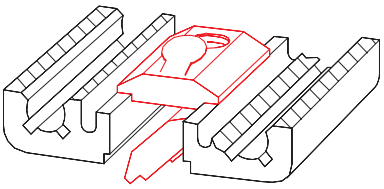
Slot stone -N-
can be slid into the slot



Slot stone -K-



Slot stone -K-
can be swivelled into the slot



[mm]

Code No.	Version	lot sizes	A	B	C	D	E	M	F [N]
Slot stone -N-									
4026207	M5	10, 20, 30... pcs	8	10	13	15	4	M5	4000
4026203	M6	10, 20, 30... pcs	8	10	13	15	4	M6	9000
4026206	M8	10, 20, 30... pcs	8	10	13	15	4	M8	9000
Slot stone -K-									
4006211	M5	10, 20, 30... pcs	21	12	4	7	–	M5	5000
4006212	M6	10, 20, 30... pcs	21	12	4	7	–	M6	5000
4006213	M8	10, 20, 30... pcs	21	12	4	7	–	M8	5000
4016212	M6	10, 20, 30... pcs	21	14	4	7	–	M6	5000
4016213	M8	10, 20, 30... pcs	21	14	4	7	–	M8	8000

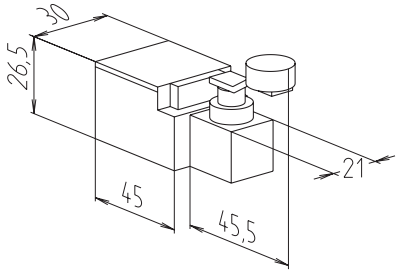
Position determination

RK ROSE+KRIEGER

Mechanical limit switch

- Limit switch with angle lever
- Compact design

Material:
Thermoplastic, fully insulated



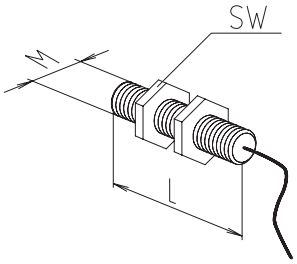
Max. voltage	250 V AC
Max. switching current	6 A
Max. starting current	16 A
Operating cycles	Max. 6,000/h
Mechanical lifetime	1 x 10^7 switching cycles
Axis lever adjustment	locking by 360°
Protection class	IP 65
Ambient temperature	-30°C to +80°C

Code No.	Switching function
91905	NC/NO

Inductive limit switch

- Function indicator (LED)
- Maintenance-free

Material: Housing: stainless steel



Type	60-80
Voltage	10 - 30 V DC
Max. switching current	150 mA
Operating distance	2 mm for steel
Protection class	IP67
Ambient temperature	-25°C to +70°C
Cable lengths	2m

[mm]

Code No.	Switching function	L	M	Wrench size (SW)
92826	Changeover	40	8x1	13

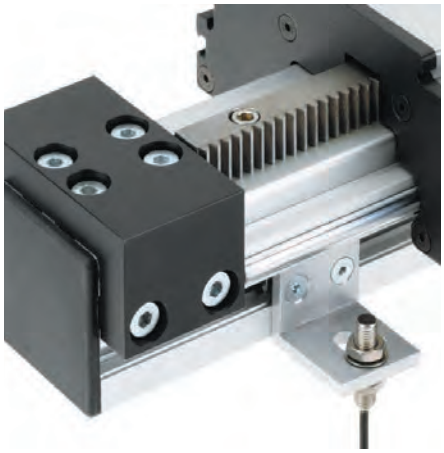
Holder for inductive limit switch

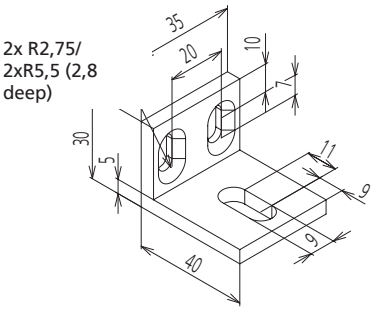
- Fixing bracket for proximity switches
- Fixing in the profile slot of the guide profile
- Simple axial displacement and adjustment of holder is possible

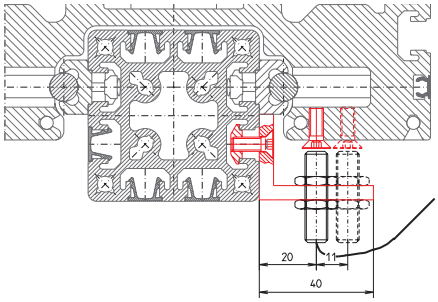
Material:
AlMgSi, vibratory finished

Scope of delivery:
Holder with fastenings

A proximity switch is not included!

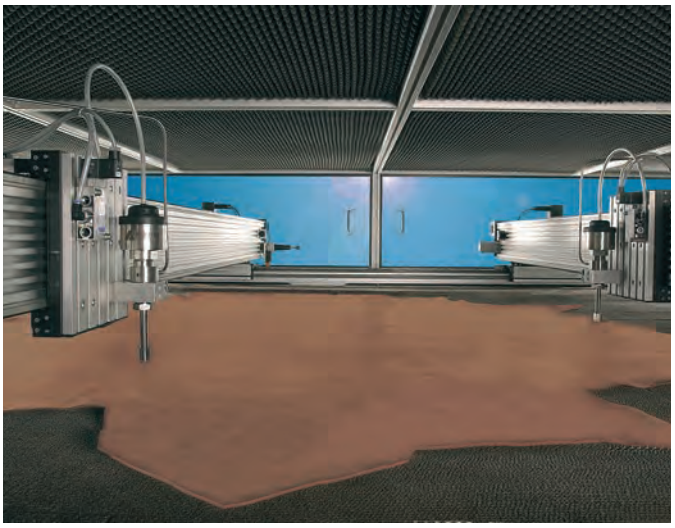


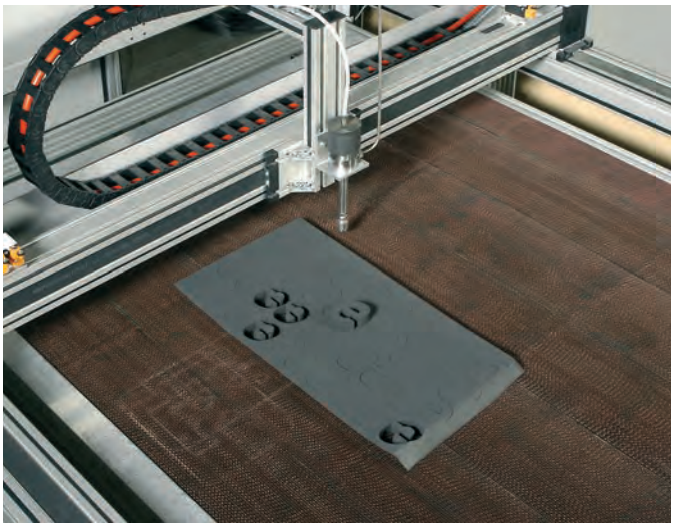


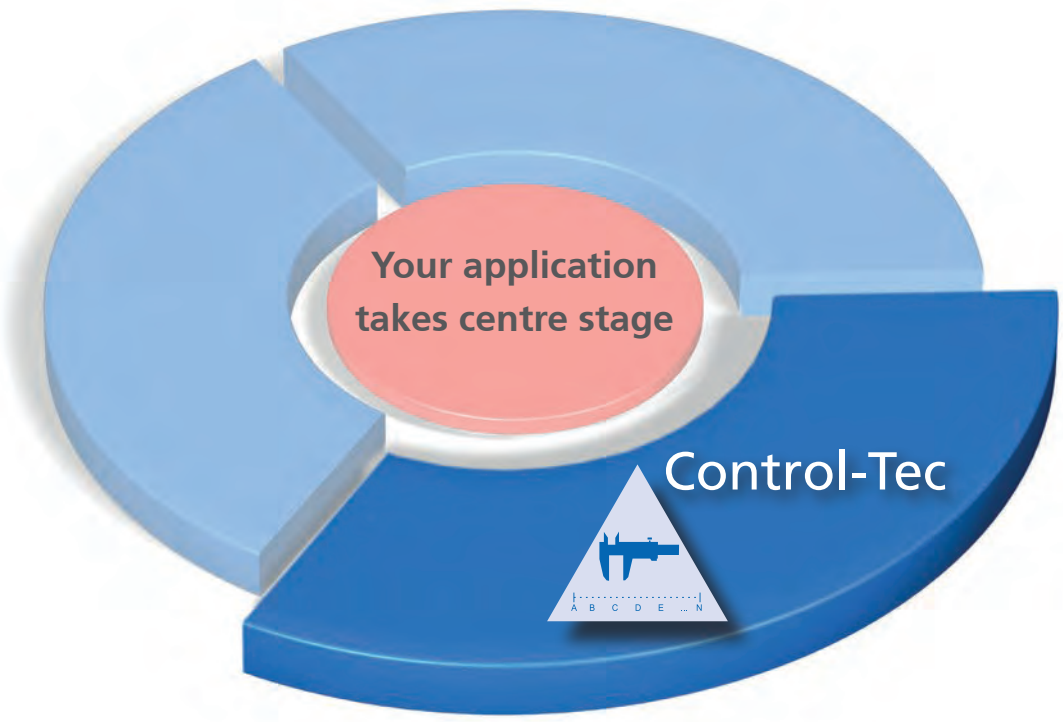


Code No.	Type
92909	SQ ZST 60, 60 x 120, 80, 80 x 160

Control-Tec Overview

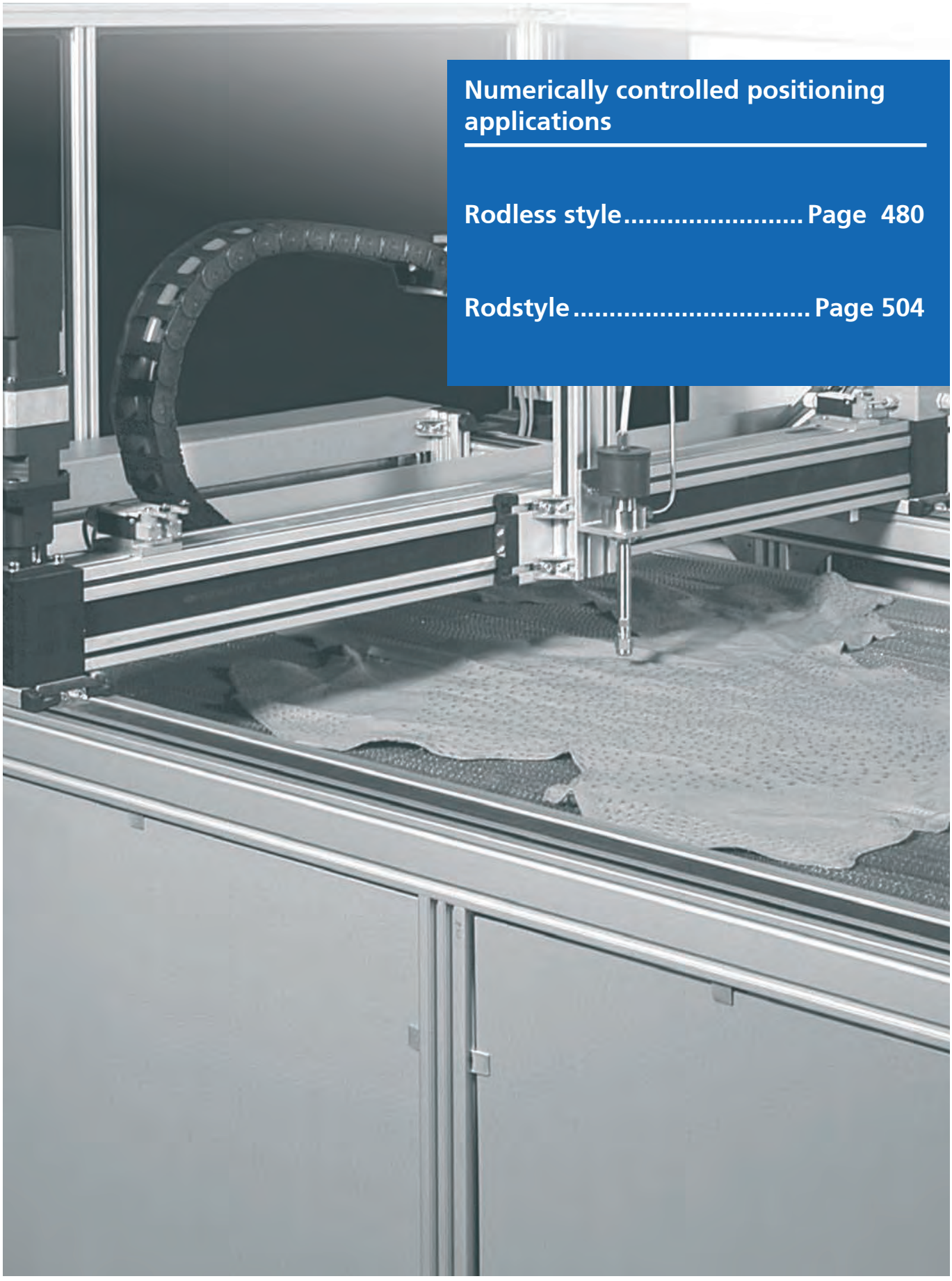






Features:

- High positioning accuracy
- Uniform motion
- High drive stiffness
- 3 shift operation
- IP 40 protection class



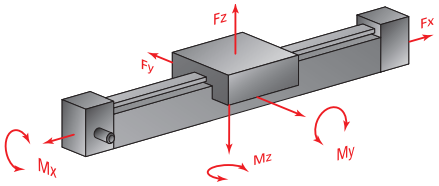
Numerically controlled positioning applications

Rodless style ..... Page 480

Rodstyle ..... Page 504

Control-Tec overview

Rodless style | Drive + Guide

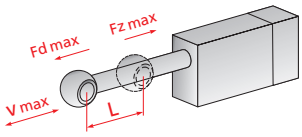


Length/Strokes [mm]
Forces [N]
Moments [Nm]

Linear actuator

	EP(X)-II KG page 480	RK DuoLine S page 490
Max. travel	1310 - 2250 mm	2268 - 4400 mm
Fx max.	1000 - 1200 N	1400 - 8000 N
Fy max.	1100 - 2400 N	930 - 7000 N
Fz max.	1100 - 2400 N	1100 - 8000 N
Mx max.	70 - 160 Nm	45 - 500 Nm
My max.	85 - 250 Nm	65 - 600 Nm
Mz max.	99 - 280 Nm	56 - 500 Nm
V max.	0.24 m/s	2.4 m/s
a max.	10 m/s^2	20 m/s^2
Repeat accuracy	± 0.05 mm	± 0.04 mm
Pitch accuracy	T7 (± 0.052 / 300 mm)	T5 (± 0.023 / 300 mm)
Right-hand thread	Yes	Yes
Split screw	on request	on request
Features	Compact dimensions, precision and stability for demanding positioning tasks	Optimum performance, precision and features

Rodstyle | Drive



E-cylinder

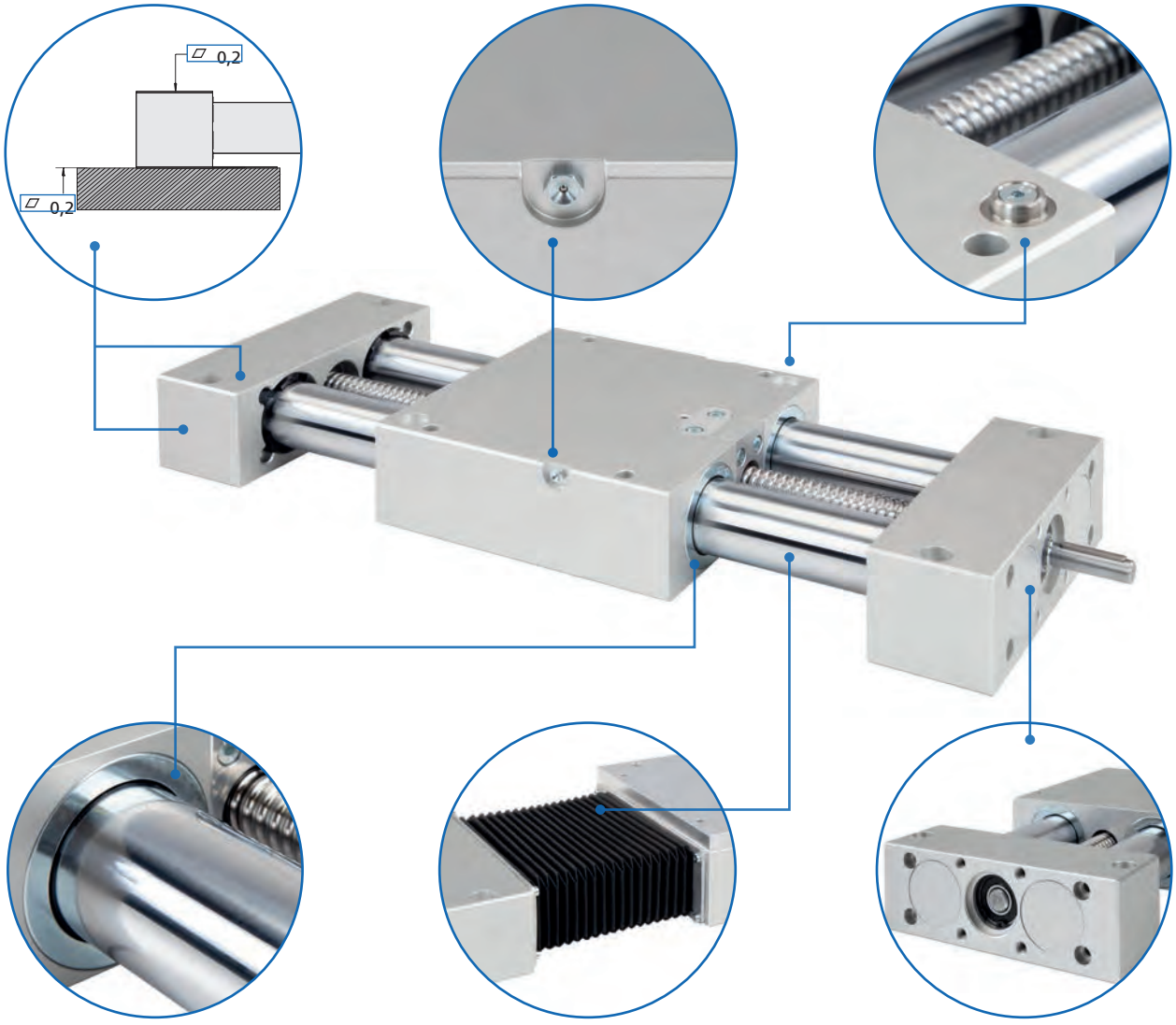
	LZ 70 FL/PL E-cylinder page 508	SLZ 63 E-cylinder page 548	SLZ 90 E-Zylinder page 570
Max. travel	1000 mm	1000 mm	2000 mm
Fd max.	5.000 N	10.000 N	25.000 N
Fz max.	5.000 N	10.000 N	25.000 N
V max.	1000 mm/s	1250 mm/s	933 mm/s
Repeat accuracy	± 0.05 mm	± 0.04 mm	± 0.05 mm
Pitch accuracy	T7 (± 0.052 / 300 mm)	T7 (± 0.052 / 300 mm)	T7 (± 0.052 / 300 mm)
Mechanical positioning accuracy	± 0.08 mm	± 0.08 mm	± 0.142 mm
Features	The new generation of industrial linear cylinders using linear technology		The powerful linear cylinder for precise positioning tasks up to 25.000 N

EPX-II 30/40 linear unit with precise ball screw drive and guide shafts

Precise / plane mounting surface
- Distortion-free installation

Tapered lubricating nipple
- Central lubricating access on the carriage facilitates maintenance on both sides

Centering holes in the guide table
(Image shows optional centering sets from the accessories)



Carriage with ball bushing
- Exceptionally long lifetime
- Smooth running performance

Bellows
- Protection class IP 40

Various fixing possibilities at the endelement
- Simple connection of accessories
- Also for vertical installation position suitable

Features:
- Identical connection sizes as previous version
- X-version possible via connecting plate and external guide table
- Combination of EPX-II 30/40 KG and EPX-II 30/40 trapezoidal thread is possible

Versions:
- EPX-II 30/40 KG Right thread
- EPX-II 30/40 without drive on request
- Optional with bellows

Options:
- Standard- and long carriage
- Protect: with bellows and protection class IP 40
- Second free-running carriage

Table of contents

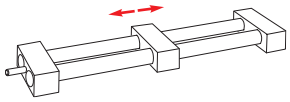
Properties/performance data

General information / operating conditions . Page 483

Load data ..... Page 483

Geometric moments of inertia ..... Page 483

Versions
(Dimensions, order numbers)



EPX-II 30/40 KG right thread..... Page 484

Accessories
Drive

Angular gaer ..... Page 490

Motor adapter / coupling ..... Page 492

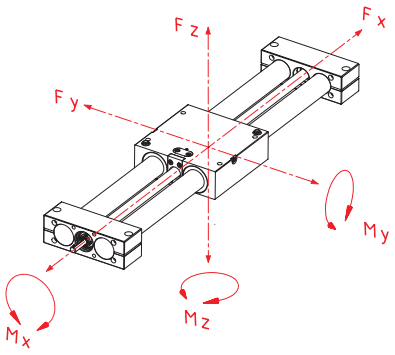
Position determination

Limit switch..... Page 496

Technical data

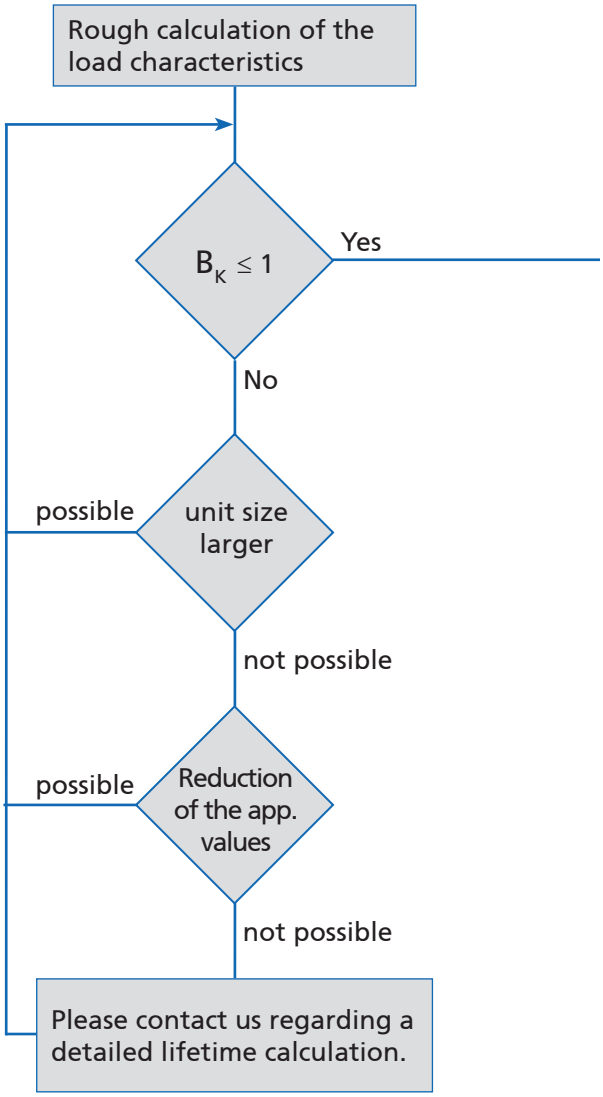
Calculation of the load characteristic to define the lifetime

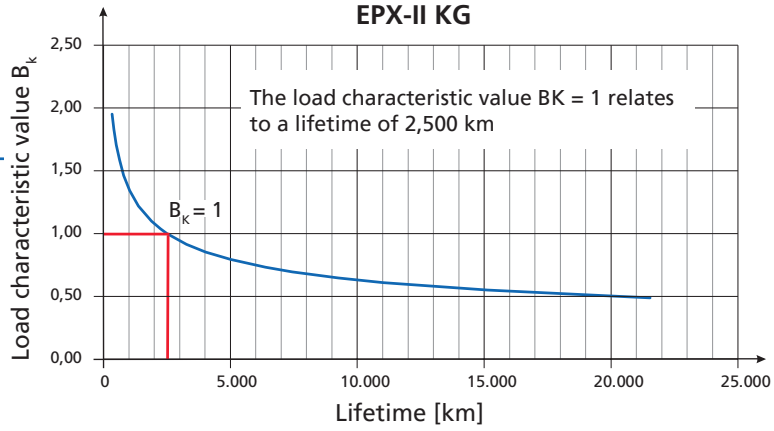
- The lifetime of linear units are in accordance with the average loads and moments of an application. The load characteristic can approximately calcu lated by following equation with simultaneously appearing load and moments.



$$\text{Load characteristic} = \frac{\text{Application values (z.B. Fy)}}{\text{Catalog values (z.B. Fy}_{max})}$$

$$\textbf{Load characteristic } B_K = \frac{Fy}{Fy_{max}} + \frac{Fz}{Fz_{max}} + \frac{Mx}{Mx_{max}} + \frac{My}{My_{max}} + \frac{Mz}{Mz_{max}} \leq 1$$





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:

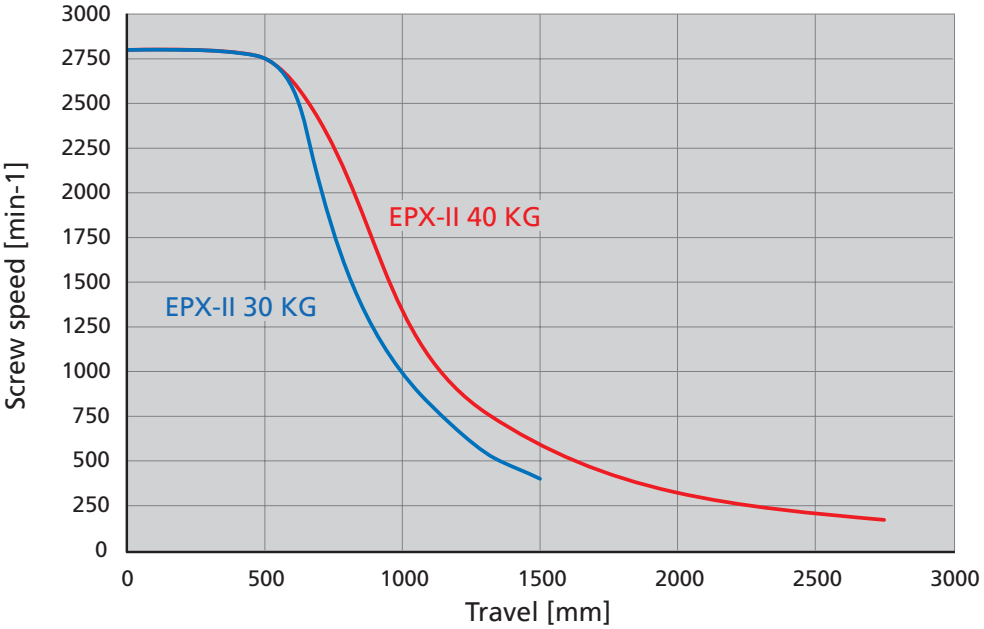
- The load and moments of the application are:
  Fz = 1200N, Mx = 20 Nm und Mz = 45 Nm

According to the above equation you will have following load characteristic of a EPX-II 30/40 KG: $B_K = 0.83$.

General information / operating conditions

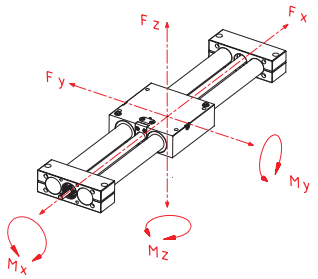
	EPX-II 30 KG	EPX-II 40 KG
Guide	Ball bushing	
Installation position	Any position	
Max. speed	0.24 m/s	
Max. acceleration	10 m/s²	
Repeatability	± 0.05 mm	
Max. no-load torque	0.4 Nm	0.5 Nm
Drive	Ball screw, Ø16, pitch 5	Ball screw, Ø20, pitch 5
Lead accuracy	T7 (0.052 mm/300 mm)	
Duty cycle	S3, 100%	
Ambient temperature	0 to +60°C	
Protection class	Basic: no / Protect: IP 40	

Control of Screw speed (Critical screw speed)



Dynamic load data

F Force [N]
M Moment [Nm]
I Geometric moment of inertia [cm^4]

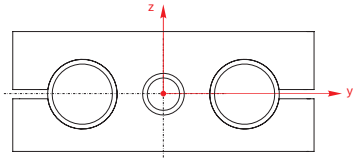


Type	Fx	Fy	Fz	Mx	My	Mz
Compact guide carriage						
EPX-II 30 KG	1000	1100	1100	70	85	99
EPX-II 40 KG	1200	2400	2400	160	190	220
Extended guide carriage						
EPX-II 30 KG	1000	1100	1100	70	100	120
EPX-II 40 KG	1200	2400	2400	160	250	280

Geometric moment of inertia

[cm^4]

Type	Iy	Iz
EPX-II 30 KG	3,83	124,13
EPX-II 40 KG	25.1	534

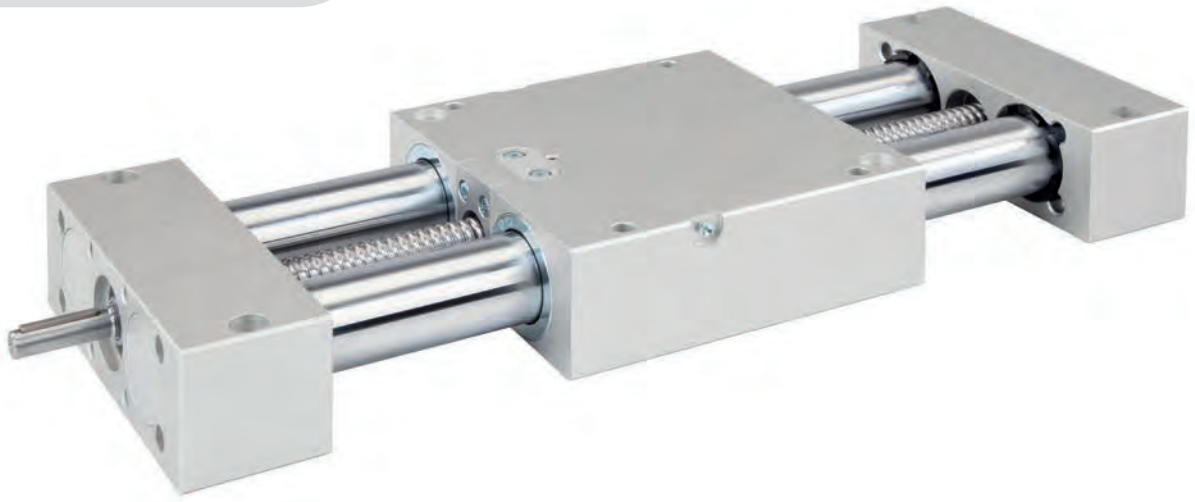


Dimensions / ordering data

Order informations:

- Without drive (Ball screw drive) available on request
- Second shaft end available on request
- Second non driven carriage available on request
- Split screw available on request
- For further screw leads available on request

Version ● Righthand thread

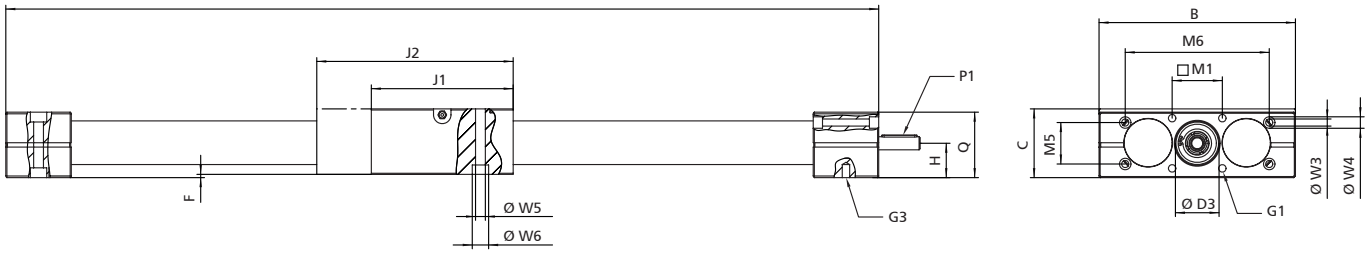


Code No.	Type	Spindle	Basic length	B	C	D1	D3	F	G1	G3	H	J1	J2	L1	M1	M2
79A3011A_ AAA_ _ _ _	30	KG 16x5	190	130	54	8	30 H8	2	M6 / 16 deep	M6 / 12 deep	27	90	–	26	40x30	114
79A3011A_ ABA_ _ _ _	30 with extended guide carriage		230									–	130			
79A4011A_ AAA_ _ _ _	40	KG 20x5	250	180	63	12	40 H8	3	M8 / 20 deep	M8 / 12 deep	31,5	130	–	38	46	160
79A4011A_ ABA_ _ _ _	40 with extended guide carriage		300									–	180			

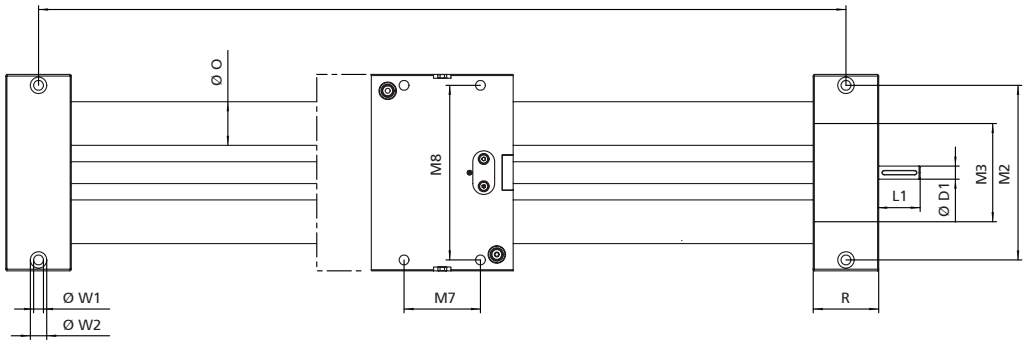
_ _ _ _ Total length = basic length + travel [mm] (Minimum travel: Basic 50 mm, Protect 120 mm)

Version:
1 = Basic
2 = Protect (For the Protect version, the stroke must be ordered longer than required by a factor of 1.5 due to the space required for installation of the bellows.)

Total length = basic length + travel



Total length – R



[mm]

M3	M5	M6	M7	M8	O	P 1	Q	R	W1	W2	W3	W4	W5	W6	max. Hub	Mass [kg]	
																Basic length	per 100 mm travel
70	35	92	30	114	25	2x2x20	52	50	7	11 / 7 deep	M6	9 / 6 deep	6,6	11 / 8.6 deep	1310	4.5	0.93
			80												1270	5.4	0.93
90	38	132	70	160	40	4x4x32	60	60	9	15 / 9 deep	M8	10.5 / 8.5 deep	9	15 / 8.6 deep	2250	9.80	2.22
			120												2200	11.92	2.22

Fixation

Centering Sets for EPX-II KG

- The following positions could be defined exactly during the design process per set
  - Load capacity
  - Linear unit
- Reproductable position of the load capacity
- Reduced assembly/disassembly time of the load capacity or the linear unit
- Accuracy of the centering bolts h6
- To use for all EPX-II KG linear units in Basic and Protect design

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

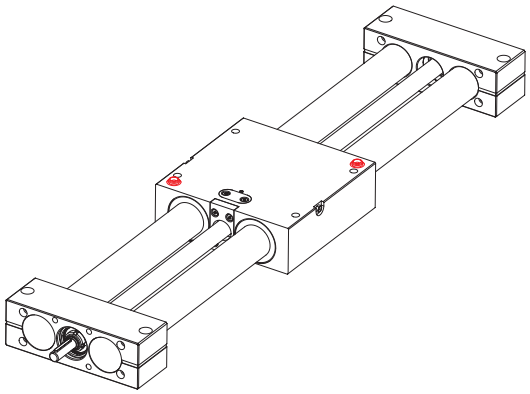
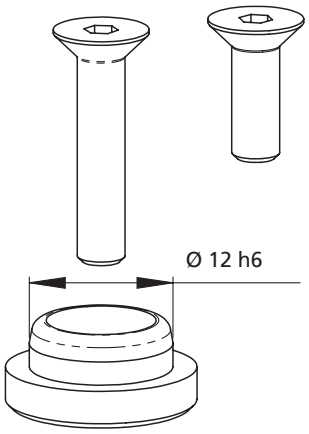
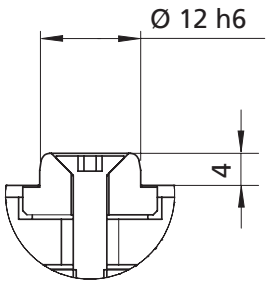


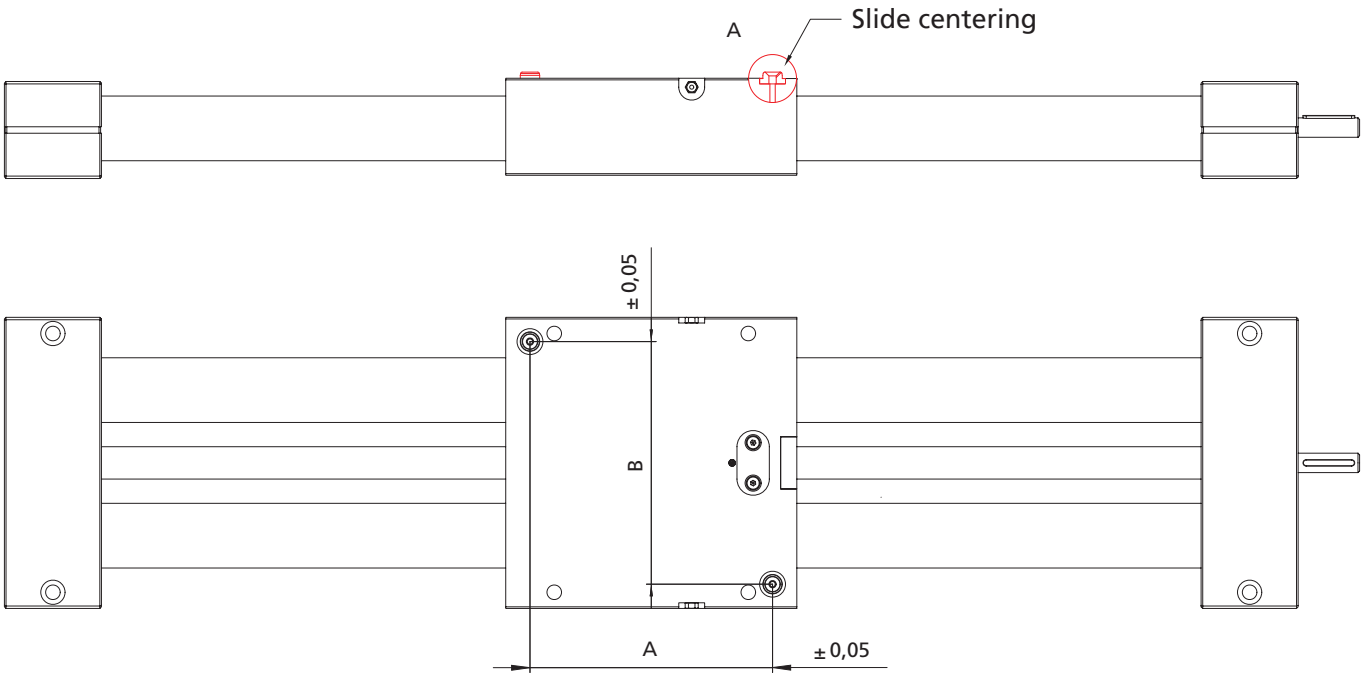
Fig. 1: Slide centering



Size -B-

Code No.	Type	Use for
91899	Centering Set Size -B-	Slide centering EPX-II 30/40 KG





[mm]

Type	A	B
EPX-II 30 KG	60	100
EPX-II 30 KG with extended guide carriage	100	100
EPX-II 40 KG	100	150
EPX-II 40 KG with extended guide carriage	150	150

Fixation

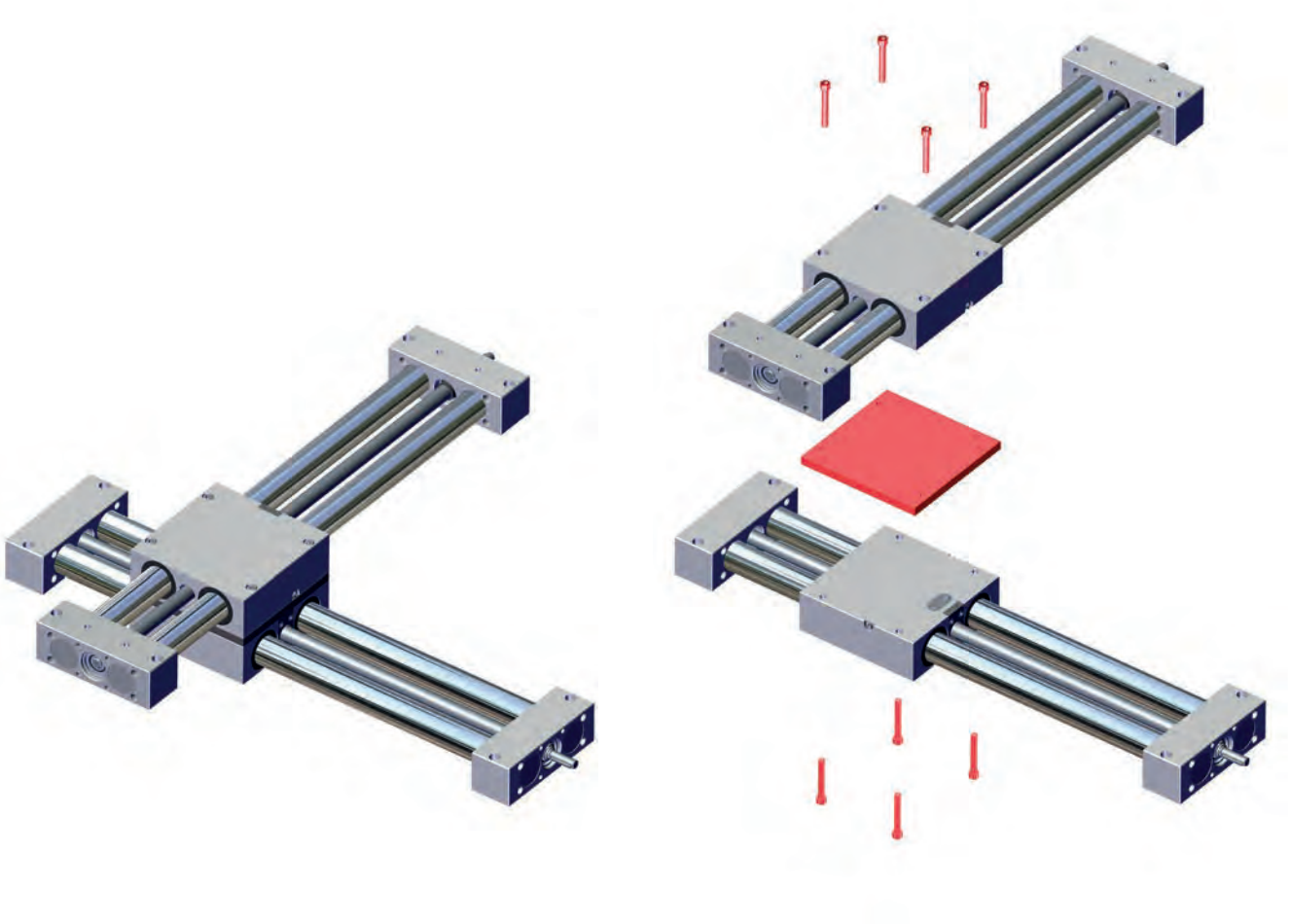
Adapter sets for crossing combinations

- For crossing combination of EPX-II units of the same size
- An extended carriage is required for EPX-II KG
- Crossing combinations of EPX-II KG with extended carriage to EPX-II with trapezoidal screw possible
- Regardless of Basic or Protect version

Scope of delivery per set – Fig. 1:
Adapter plate and Fixing screws

Scope of delivery per set – Fig. 2:
Fixing screws

Fig. 1:
Crossing combination of two EPX-II with ball screw and extended carriage

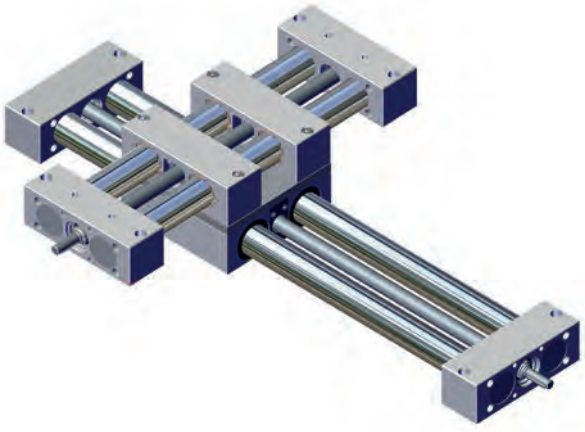


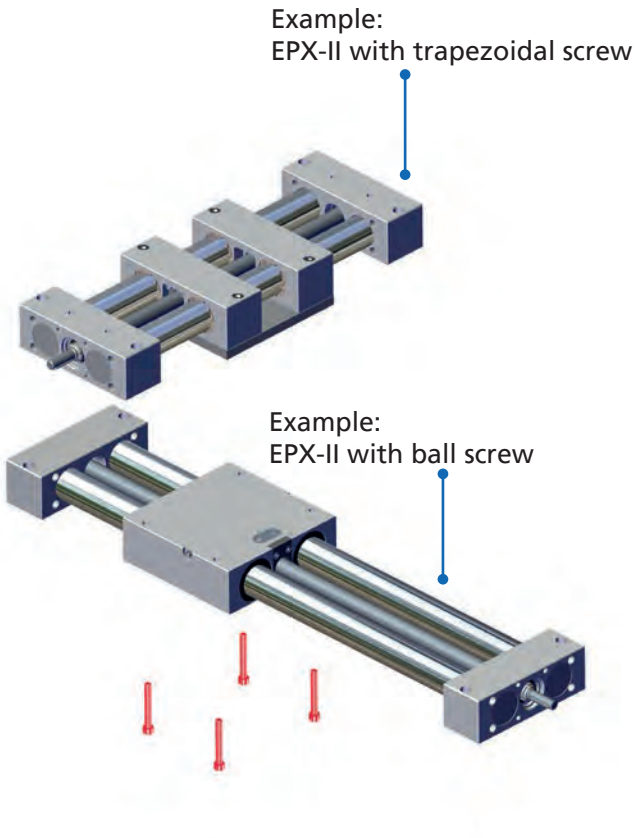
Code No.	Type	Use for
955115	Fig. 1	EPX-II 30
955116	Fig. 1	EPX-II 40
955117	Fig. 2	EPX-II 30
955118	Fig. 2	EPX-II 40

Order example – Fig. 1:
Crossed arrangement of two
EPX-II 40 Basic with ball screw
One total length 400mm,
once total length 800mm

Order:
1x 79A4011A1ABA00400
1x 79A4011A1ABA00800
1x 955116

Fig. 2:
Crossing combination of an EPX-II with ball screw
and extended carriage with an EPX-II with trapezoidal screw (see chapter Move-Tec)





Drive

Order information:

- Reductions 1:1.5, 1:2, 1:3, 1:4 or 1:5 on request

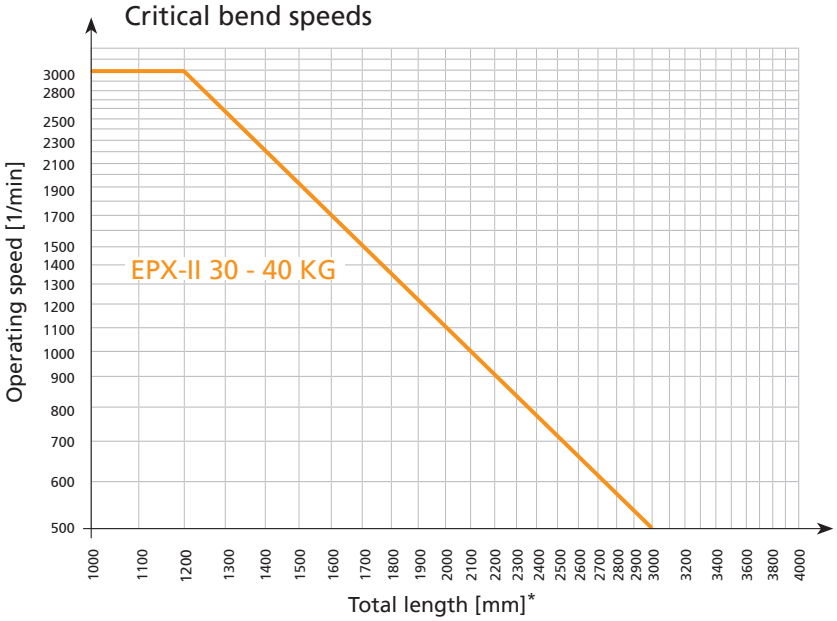
Angular gear

- Fits all EPX-II KG-actuators
- Can be retrofitted
- Low torsional backlash
- Low noise level
- Spiral toothing

Scope of delivery:
Angular gear 1:1,
Fastenings on EPX-II KG-actuators and synchronisation shaft depending on system

Technical data angular gear

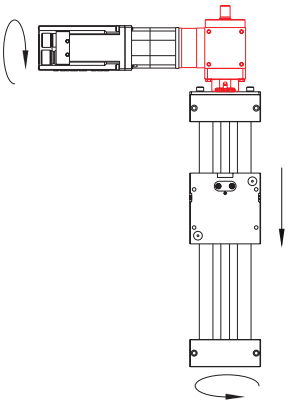
	For EPX-II 30-40 KG	
Reduction		1:1
Drive speed	min^{-1}	3000
Torsional backlash at output shaft	arcmin	≤ 9
Efficiency at full load	%	> 98
Running noise at 1500 rpm	db(A)	≤ 70
Weight	Kg	4.5
Surface		Primer RAL 9005 – black matt
Geometric moment of inertia	$Kgcm^2$	1.79
Idle torque	Nm	0,4



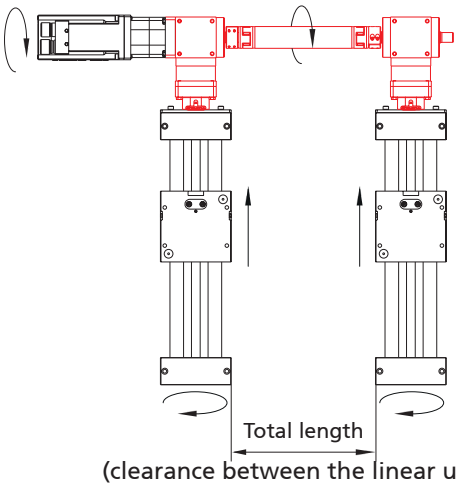
***To calculate the critical bending speed of system 4, use half of the total length.**

Angular gear for EPX-II KG - actuators

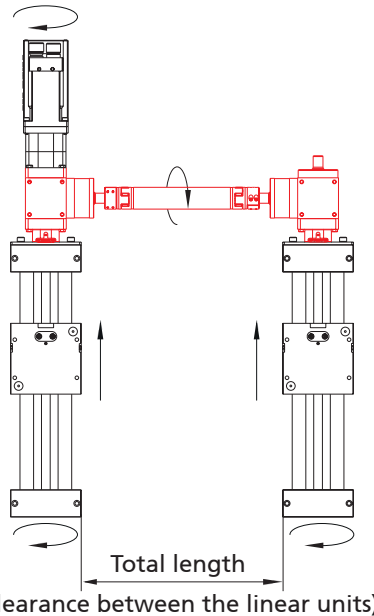
System 1



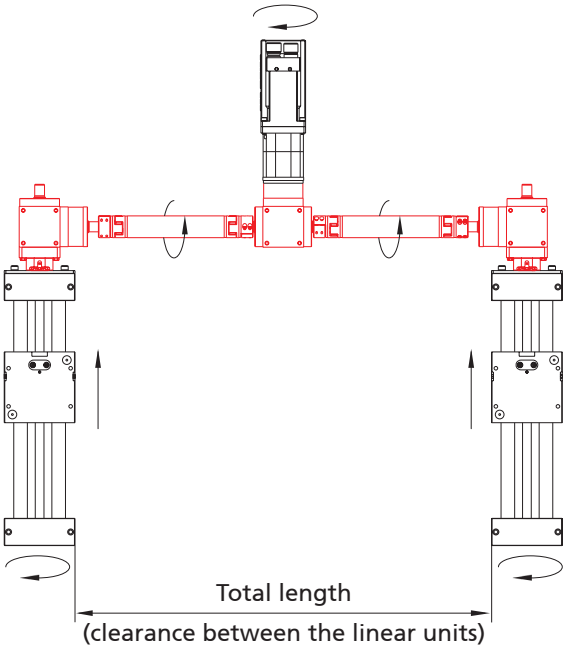
System 2



System 3



System 4



[mm]

Code No.	Type	Basic length (minimum length)	Max. length (clearance)	Weight [kg]	
				Basic length	per 100 mm travel
982_ _ A1A0000	Angular gear system 1	-	-	5.5	-
982_ _ A1B_ _ _ _	Angular gear system 2	123	2860	10.5	0.1
982_ _ A1C_ _ _ _	Angular gear system 3	228	2965	10.5	0.1
982_ _ A1D_ _ _ _	Angular gear system 4	500	6029	15.5	0.1

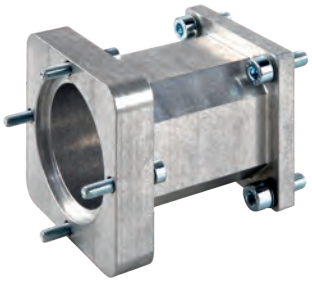
Total length (mm)

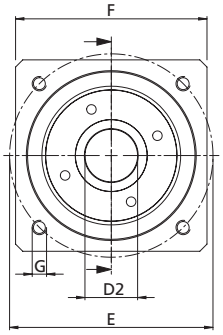
40 = EPX-II 30 KG
41 = EPX-II 40 KG

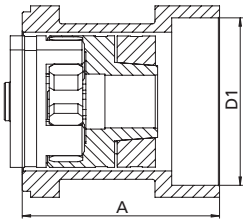
Note: Additional information, dimensions, accessories and necessary tools for assembling the angular gears can be found in our main catalogue "Linear Technology" (Chapter: Motors and controls).

Drive

Selection table - motor adaptor/coupling EPX-II 30/40 KG for servo motors without gear







Manufacturers	Motor	EPX-II 30 KG	EPX-II 40 KG	Angular gear system 1 and 4 EPX-II 30/40 KG	Angular gear system 2 and 3 EPX-II 30/40 KG
RK Rose + Krieger	RK-AC 118	949200 911430 0811	949201 911430 1112	–	–
	RK-AC 240	–	949221 911430 1214	949130	949139
	RK-AC 470	–	–	949131	949140
Baumüller	DSD2-036	949200 911430 0811	949201 911430 1112	–	–
	DSD2-045	–	949221 911430 1214	On request	On request
Beckhoff	AM8031, AM8032, AM8033	On request	On request	–	–
	AM8041, AM8042, AM8043	–		On request	On request
Bosch	MSK040B, MSK040C, MSK043C	–	On request	On request	On request
	MSK050B, MSK050C		–	949131	949140
Kollmorgen	AKM2G-31, AKM2G-32, AKM2G-33, AKM2G-34	On request	On request	–	–
	AKM2G-41, AKM2G-42, AKM2G-43, AKM2G-44	–		On request	On request
Lenze	MCS06I, MCS06F	949200 911430 0811	949201 911430 1112	–	–
	MCS09D, MCS09F, MCS09H, MCS09L	–	949221 911430 1214	949130	949139
Lti/Keba	LSP10	–	–	949131	949140
Mitsubishi	HG-JR53(4), HG-JR 73(4), HG-JR103(4), HG-JR153(4), HG-JR203(4)	On request	On request	On request	On request
Parker	SMH 60, SMHA 60	949200 911430 0811	949201 911430 1112	–	–
	SMH 82, SMHA 82	–	949221 911430 1214	949130	949139
	SMH 100, SMHA 100		–	949131	949140
SEW	CMP50S, CMP50M, CMP50L	949200 911430 0811	949201 911430 1112	–	–
	CMP63S, CMP63M, CPM63L	–	949221 911430 1214	949130	949139
Siemens	1FK7032, 1FK7033, 1FK7034	On request	On request	–	–
	1FK7040, 1FK042, 1FK043, 1FK2205	–		On request	On request
	1FK2105	–	–	949131	949140

Code No. Motor adaptor: **949221**

Code No. Coupling with specification of shaft diameter
1st end = 12 mm / 2st end = 14 mm
911430 1214

Motor flange	A	D1	D2	E	F	G	Mass [kg]
IM B5 56	64/74	Ø 60 H8 4,5 deep	Ø11x23	Ø 75	□70	M5 13 deep	0,53/0,65
	83/99/94	Ø 80 H8 5,7/4/4 deep	Ø14x30	Ø 100	□90/□82/□82	M6 14,6/12/12 deep	0,73/0,86/0,86
IM B5 63	109/104	Ø 95 H8 4 deep	Ø19x40	Ø 115	□100	M8 20/22/22 deep	1,2
IM B5 56	64/74	Ø 60 H8 4,5 deep	Ø11x23	Ø 75	□70	M5 13 tief	0,53 / 0,65
	83/99/94	Ø 80 H8 5,7/4/4 deep	Ø14x30	Ø 100	□90/□82/□82	M6 14,6/12/12 deep	0,73/0,86/0,86
IM B5 56			Ø14x30				
			Ø19x40				
–			Ø14x30				
IM B5 63	109/104	Ø 95 H8 4 deep	Ø19x40	Ø 115	□100	M8 20/22/22 deep	1,2
IM B5 56			Ø14x30				
			Ø19x40				
IM B5 56	64/74	Ø 60 H8 4,5 deep	Ø11x23	Ø 75	□70	M5 13 deep	0,53 / 0,65
	83/99/94	Ø 80 H8 5,7/4/4 deep	Ø14x30	Ø 100	□90/□82/□82	M6 14,6/12/12 deep	0,73/0,86/0,86
IM B5 63	109/104	Ø 95 H8 4 deep	Ø19x40	Ø 115	□100	M8 20/22/22 deep	1,2
IM B5 56			Ø16x40				
IM B5 56	64/74	Ø 60 H8 4,5 tief	Ø11x23	Ø 75	□70	M5 13 deep	0,53 / 0,65
	83/99/94	Ø 80 H8 5,7/4/4 deep	Ø14x30	Ø 100	□90/□82/□82	M6 14,6/12/12 deep	0,73/0,86/0,86
IM B5 63	109/104	Ø 95 H8 4 deep	Ø19x40	Ø 115	□100	M8 20/22/22 deep	1,2
IM B5 56	64/74	Ø 60 H8 4,5 deep	Ø11x23	Ø 75	□70	M5 13 deep	0,53 / 0,65
	83/99/94	Ø 80 H8 5,7/4/4 deep	Ø14x30	Ø 100	□90/□82/□82	M6 14,6/12/12 deep	0,73/0,86/0,86
IM B5 56			Ø14x30				
			Ø19x40				
IM B5 63	109/104	Ø 95 H8 4 deep	Ø19x40	Ø 115	□100	M8 20/22/22 deep	1,2

Drive

Selection table - motor adaptor/coupling EPX-II 30/40 KG for three-phase motor

Manufacturers	Motor	EPX-II 30 KG	EPX-II 40 KG
RK Rose + Krieger	90/120W	949996	949614
		911940 0812	911430 1212
	180/250W	–	949414
			911430 1214

Code No. Motor adaptor:
949414

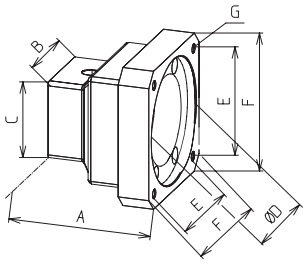
Code No. Coupling with specification of shaft diameter
1st end= 12 mm
2st end= 14 mm
911430 1214

Note: For further details on motor versions, please refer to the chapter motors and controls" in our main catalogue "Linear Technology".

Motor adaptor

- Simple assembly
- Exact fit due to centering shoulders

Material: Aluminium

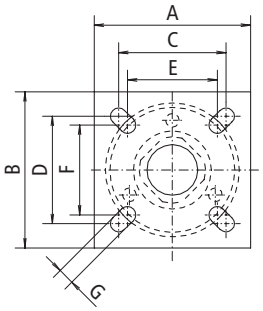


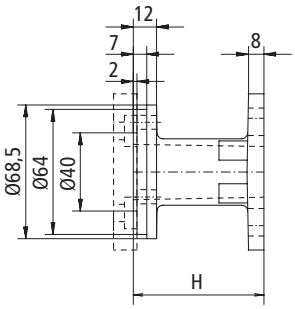
[mm]

Code No.	Type	A	B	C	D	E	F	G
949200	30	64	53,5	53,5	60	53	70	M5
949996	30	64	53,5	53,5	50	65	80	M5
949201	40	74	60	60	60	53	70	M5
949221	40	83	60	60	80	70,7	90	M6
949614	40	83	60	60	50	46	80	M5
949414	40	83	60	60	80	100	Ø120	Ø6,6

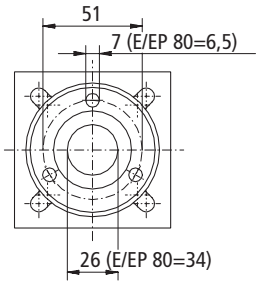
Motor adaptor for EHL

Linear unit connection





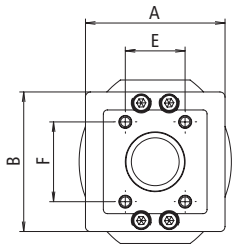
EHL connection

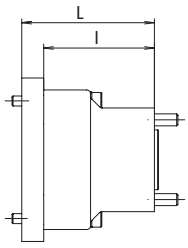


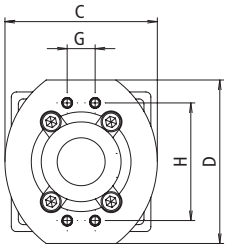
[mm]

Code No.	for linear unit	PinØ unit	A	B	C	D	E	F	G	H	L	Ø
92667	EPX-II 30 KG	8	50	50	30	40	30	30	6	67	–	–
92668	EPX-II 40 KG	12	60	60	46	46	36	36	7	67	–	–

Motor adapter for LZ S/P - Drive



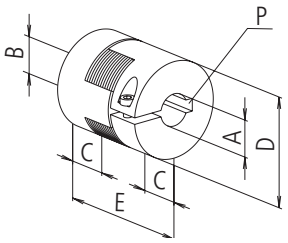




[mm]

Linear unit	LZ S Code No.	LZ P Code No.	Coupling Code No.	A	B	C	D	E	F	G	H	I	L
EPX-II 30 KG	949711		9109200810	70	70	76.4	82	30	40	14	59	55.5	66.5
EPX-II 40 KG	949713		9114301012	70	70	76.4	82	46	46	52.3	52.3	73.5	81.5

Coupling



- Small size
- Shaft connection without backlash
- Maintenance-free
- Easy plug-in assembly

Material: Hub – aluminium
Gear ring – polyurethane

To ensure the smooth running of the coupling, a clearance of **D+3 mm** is required.

[mm]

Code No.	A	B	C	D	E	P	Torque [Nm]	
							with feather key	without feather key
9109200895	8	9,5	10	20	30	2x2 / –	5	3
9114300811	8	11	11	30	35	2x2 / 4x4	12	6
9114300816	8	16	11	30	35	2x2 / 5x5	12	6
9114309512	9,5	12	11	30	35	– / 4x4	12	6
9114301112	11	12	11	30	35	4x4 / 4x4	12	6
9114301212	12	12	11	30	35	4x4 / 4x4	12	6
9114301214	12	14	11	30	35	4x4 / 5x5	12	6
9114301216	12	16	11	30	35	4x4 / 5x5	12	6
9119400812	08	12	25	40	65	2x2 / 4x4	17	10

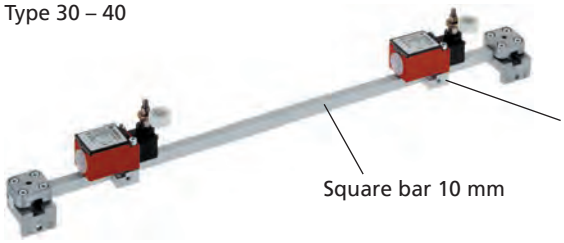
Further information for adaption and drives see catalogue linear technology, chapter motors and controls.

Position determination

Holder for mechanical limit switch

- Limit switch can be moved and fixed axially

Type 30 – 40

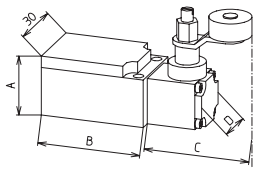


Type	30 – 40
Max. voltage	250 V AC
Max. switching current	6 A
Max. starting current	16 A
Lifetime	10 million switching cycles
Axis lever adjustment	locking at 10° increments
Protection rating	IP 65
Ambient temperature	-30°C to +80°C

Code No.	Type	Basic length	Version
92961_ _ _ _	30 – 40	245	with switch
92962_ _ _ _	30 – 40	245	without switch

Total length of linear unit

Mechanical limit switch

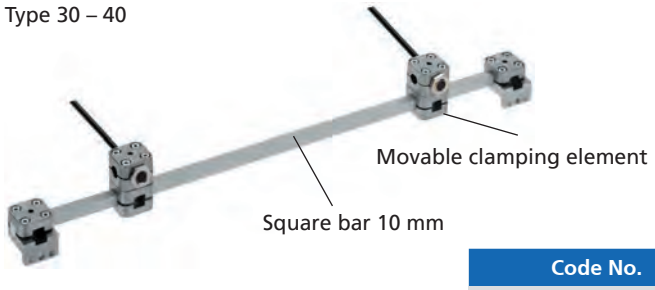


[mm]

Code No.	Type	Switching function	A	B	C	D
91905	30 – 40	NC contact / NO contact	26.5	45	45.5	21

- Limit switch can be moved and fixed axially

Type 30 – 40

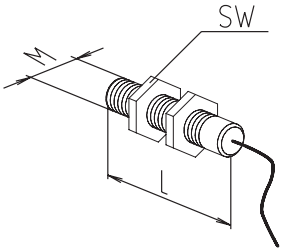


Type	30 – 40
Voltage	10 - 30 V DC
Max. switching current	200 mA
Operating distance	4 mm for steel
Protection rating	IP 67
Ambient temperature	-25°C to +70°C
Cable lengths	2m

Code No.	Type	Basic length	Version
92965_ _ _ _	30 – 40	125	without switch

Total length of linear unit

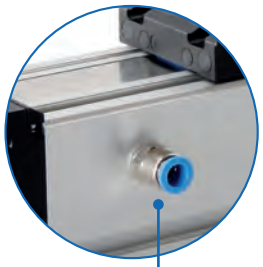
Inductive limit switch



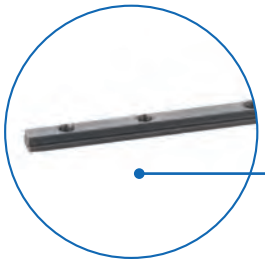
[mm]

Code No.	Type	Switching function	L	M	Wrench size (SW)
92825	30 – 40	Changeover	50	12x1	17

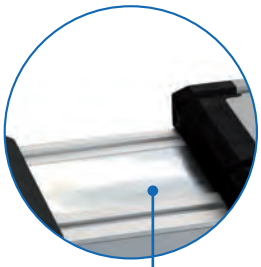
Key features / Technical benefits



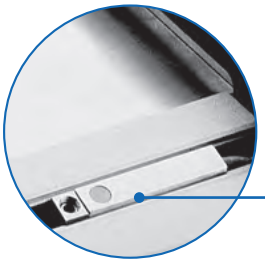
Connection
- For sealing air or vacuum available on request



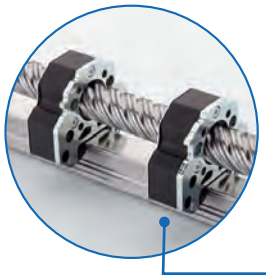
Slot stone strip
- To hold your load securely



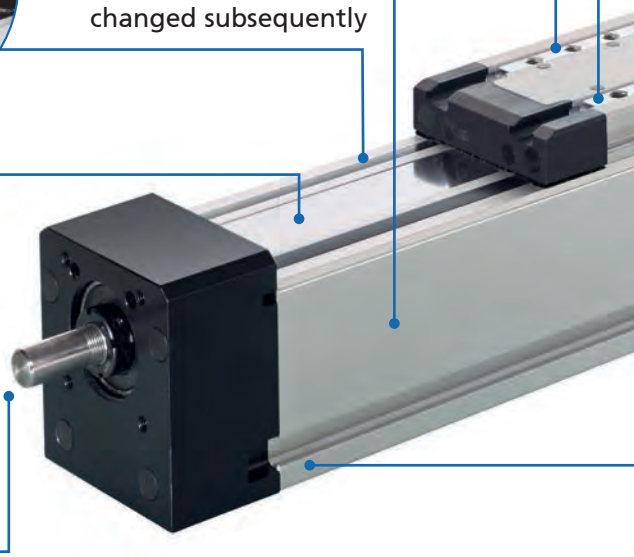
Cover strip
- Degree of protection mode IP40



Proximity switch
- Simple installation without protruding contours
- Up to 3 sensors per slot
- Can be installed and changed subsequently



Anti-vibration screw support
- Maximum speed and dynamics regardless of length
- Maintenance- and wear-free
- Up to 8x
- Reduced vibrations



Key features general

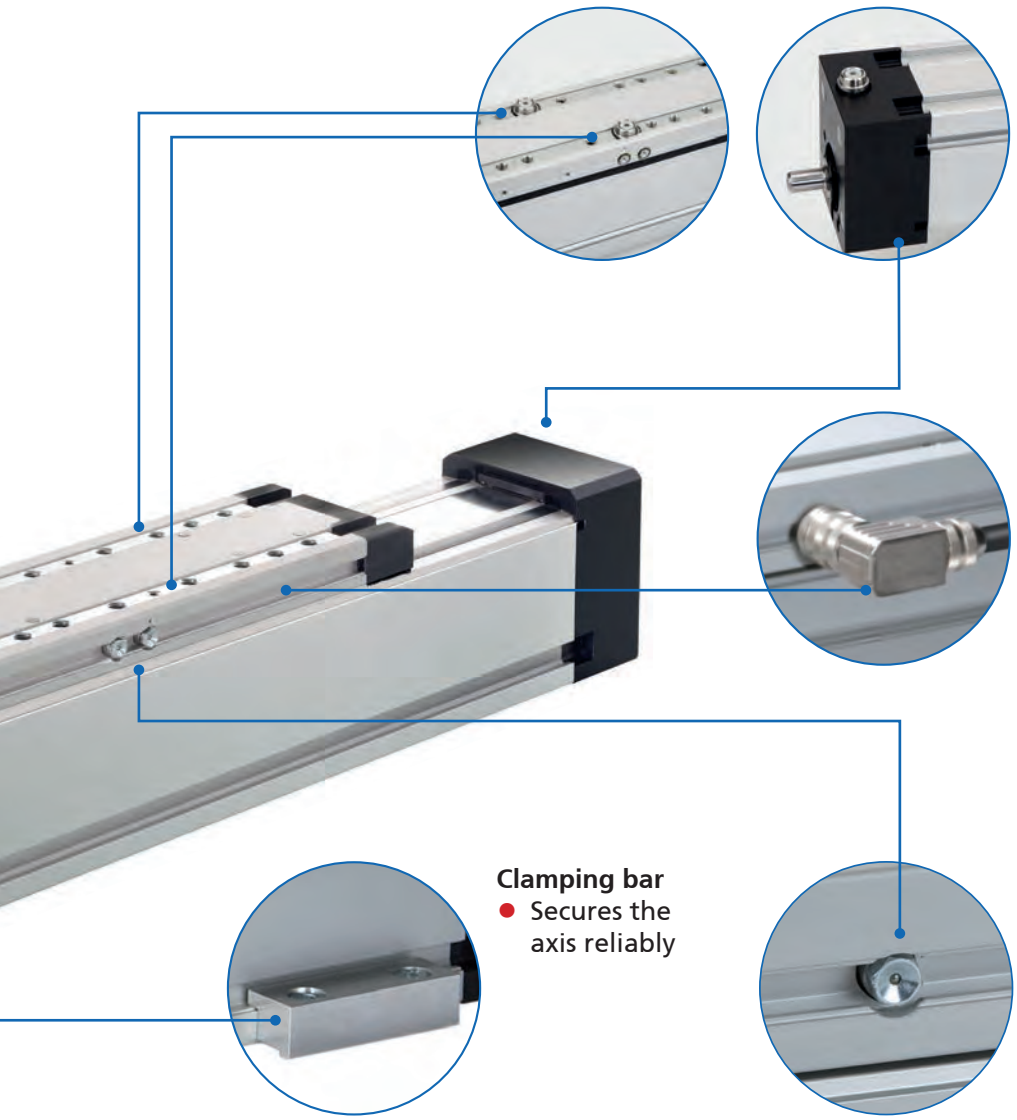
- High efficiency
- Low idle torque
- Max. usable travel speed regardless of length
- Central lubricating access on the carriage facilitates maintenance
- Profile slots for fastening the axis both at the sides and underneath
- Slot stones can be subsequently inserted in the side and bottom slots

RK DuoLine S Protect (spindle drive)

- Degree of protection IP40 provided by steel cover strip and seals
- Positioning accuracy ±0.05 mm when using an integrated linear encoder
- Multiple anti-vibration spindle supports
- Pitch accuracy T5 with ball screw

RK DuoLine R Protect (guide axis)

- Without dedicated drive
- Freely movable carriage



Centring holes

- Reproducible payload position/linear unit

Integr. position sensing system

- High positioning accuracy across the entire unit lengthe
- Direct detection of carriage position
- Elasticities of the drive train identifiable and can be offset by the motor controller

Clamping bar

- Secures the axis reliably

Tapered lubricating nipple

- Central lubricating access on the carriage facilitates maintenance
- RK DuoLine S with trapezoidal thread is lifetime lubricated*
- Alternative connection to permanent lubrication available on request

Variants

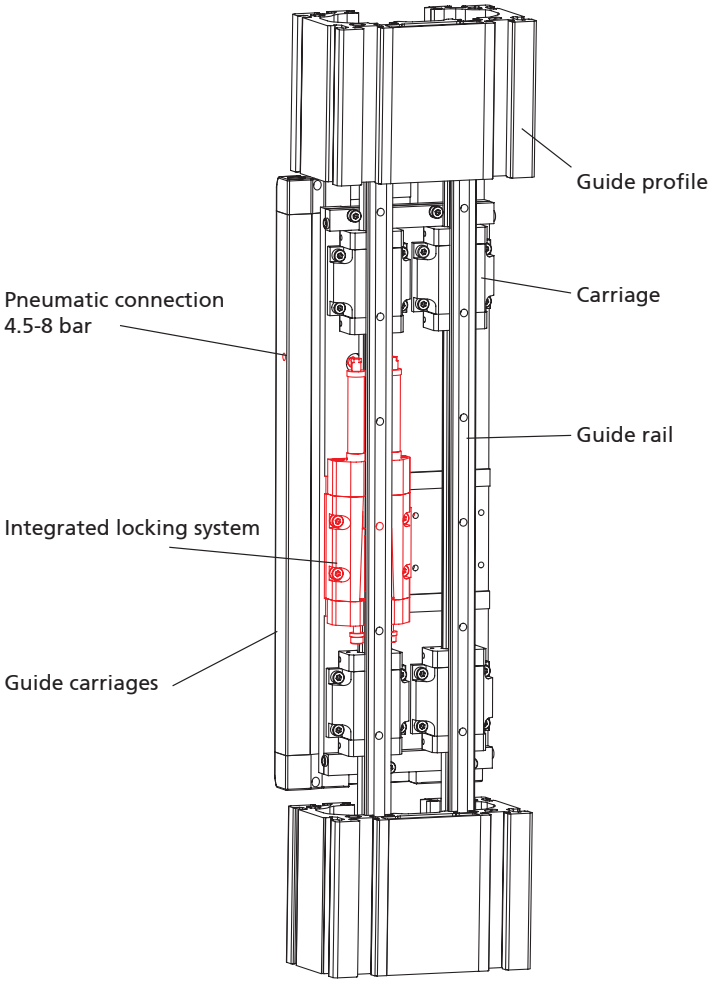
RK DuoLine Clean suitable for use in cleanrooms up to ISO class 1

Fraunhofer IPA TESTED DEVICE
RK Rose+Krieger GmbH
RK DuoLine S80 Clean
Report No. RK 2011-1187

Note:
More information in chapter RK DuoLine Clean (p. 530)

* up to approximately 30 km running performance

Timing-belt- and Spindle units with secure locking function



- As a safeguard for installation, removal and maintenance work
- Guaranteed nominal holding force on greased ball rails thanks to self-amplifying system
- „Safelock" safety locking device is an approved component in accordance with category 1 of DIN EN ISO 13849-1, which should be considered
- B_{10} = 1.000.000 operations (static)
- Performance level PL D achievable. PL E as redundant version available on request
- Integrated locking system. No protruding contours outside the linear axis.
- Overload-proof locking element

	Recirculating ball	Toothed belt	
	RK Duoline S 160	RK Duoline Z 120 one ball rail	RK Duoline Z 160
Nominal holding force Safelock (at B_{10} = 1.000.000 operations)	1800 N	2500 N	1800 N
DGUV test certification	Tested based on testing principles GS-MF-01 and GS-MF-28		

Note:
Maximum holding force = 2x nominal holding force.
Emergency braking of a moving load is not proper use.
If the nominal holding force is exceeded, or after every emergency braking, a functional check has to be performed in normal mode as per the operating instructions.
http://www.rk-rose-krieger.com/fileadmin/catalogue/manuals_lineartechnik/99347_safelock.pdf

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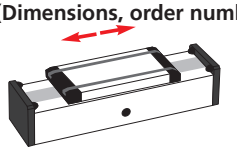
(Dimensions, order numbers)



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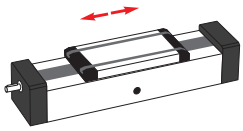

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Drive

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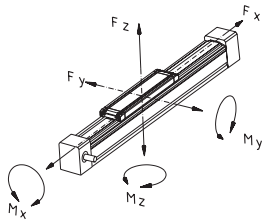
Position determination

Technical data

General information / operating conditions

	RK DuoLine S 60	RK DuoLine S 80	RK DuoLine S 120	RK DuoLine S 160
Guidance system	1 Ball rail system	1 Ball rail system	2 Ball rail system	2 Ball rail system
Installation position	any position			
Max. driving torque	3.4 Nm	17 Nm	32 Nm	52 Nm
Max. speed	0.283 / 0.467 / 0.747 m/s	0.24 / 0.94 / 2.4 m/s (regardless of travel)	0.24 / 1.2 / 2.4 m/s (regardless of travel)	2 m/s (regardless of travel)
Max. acceleration	20 m/s²	20 m/s²	20 m/s²	20 m/s²
Repeat accuracy	± 0.04 mm	± 0.04 mm	± 0.04 mm	± 0.04 mm
Positioning accuracy	-	with integrated linear encoder ± (0.025 + 0.01 x L) mm; L = travel in meters		
Max. no-load torque	0.5 Nm	0.6 Nm	0.7 Nm	0.9 Nm
Drive	Ball-and-screw Ø16, Pitch 5, 10, 16mm	Ball-and-screw, Ø20, Pitch 5, 20 or 50 mm, on the right	Ball-and-screw, Ø 25, Pitch 5, 25 or 50 mm	Ball-and-screw, Ø 32, Pitch 40 mm, on the right
Pitch accuracy	T5 (0.023 / 300 mm)	T5 (0.023 / 300 mm)	T5 (0.023 / 300 mm)	T5 (0.023 / 300 mm)
Duty cycle	S3 100%	S3 100%	S3 100%	S3 100%
Ambient temperature	0 to +60°C	0 to +60°C	0 to +60°C	0 to +60°C
Degree of protection	IP 40	IP 40	IP 40	IP 40

Dynamic load data



Force [N]

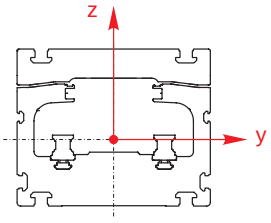
Torque [Nm]

Spindle drive							
Load data	**Spindle**	**Fx**	**Fy**	**Fz**	**Mx**	**My**	**Mz**
Standard guide carriage							
RK Duoline S 60	16x5	840	700	2500	48	160	140
	16x10	1300					
	16x16	1300					
RK Duoline S 80	20x5	950	1000	4100	100	380	350
	20x20	1420					
	20x50	2250					
RK Duoline S 120	25x5	1240	2000	6900	205	620	560
	25x25	2700					
	25x50	3400					
RK DuoLine S 160 RK DuoLine S 160 Safelock	32x40	8000	5100	8900	500	840	810
Extended guide carriage							
RK Duoline S 60	16x5	840	700	2500	48	250	220
	16x10	1300					
	16x16	1300					
RK Duoline S 80	20x5	950	1000	4100	100	620	550
	20x20	1420					
	20x50	2250					
RK Duoline S 120	25x5	1240	2000	6900	205	940	790
	25x25	2700					
	25x50	3400					
RK Duoline S 160	32x40	8000	5100	8900	500	1200	1150

Geometric moment of inertia

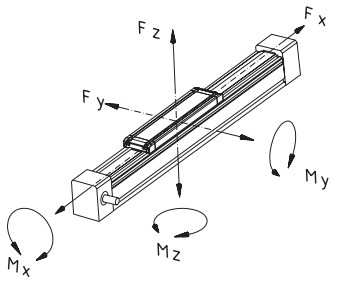
[cm⁴]

	Iy	Iz
RK DuoLine S 60	48.97 cm⁴	61.84 cm⁴
RK DuoLine S 80	116.76 cm⁴	165.75 cm⁴
RK DuoLine S 120	287.3 cm⁴	597.9 cm⁴
RK DuoLine S 160	437.70 cm⁴	1455.90 cm⁴



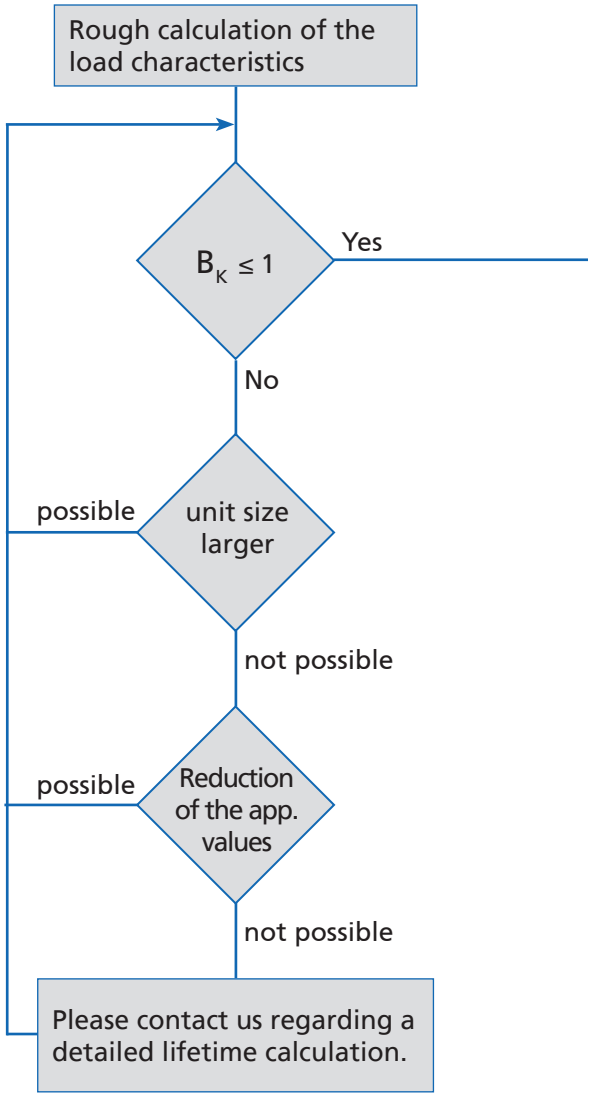
Calculation of the load characteristic to define the lifetime

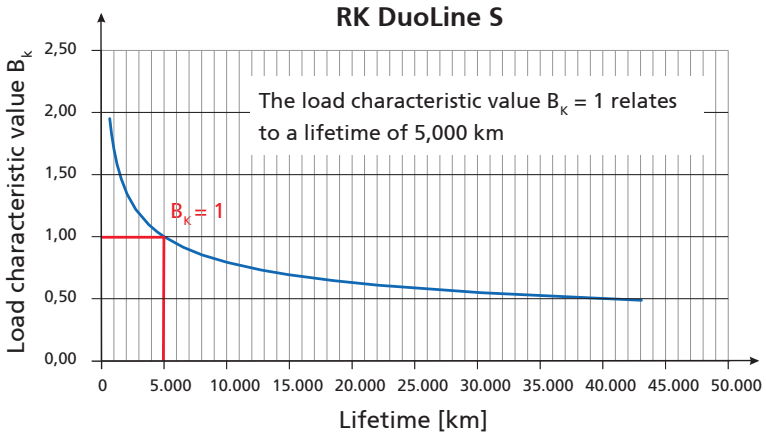
- The lifetime of linear units are in accordance with the average loads and moments of an application. The load characteristic can approximately calcu lated by following equation with simultaneously appearing load and moments.



$$\text{Load characteristic} = \frac{\text{Application values (z.B. Fy)}}{\text{Catalog values (z.B. Fy}_{max})}$$

$$\textbf{Load characteristic } B_K = \frac{Fy}{Fy_{max}} + \frac{Fz}{Fz_{max}} + \frac{Mx}{Mx_{max}} + \frac{My}{My_{max}} + \frac{Mz}{Mz_{max}} \leq 1$$





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:
  Fz = 200N, Mx = 20 Nm und Mz = 45 Nm

  According to the above equation you will have following load characteristic of a DuoLine 80: $B_K = 0.55$.

Versions

Order instructions:

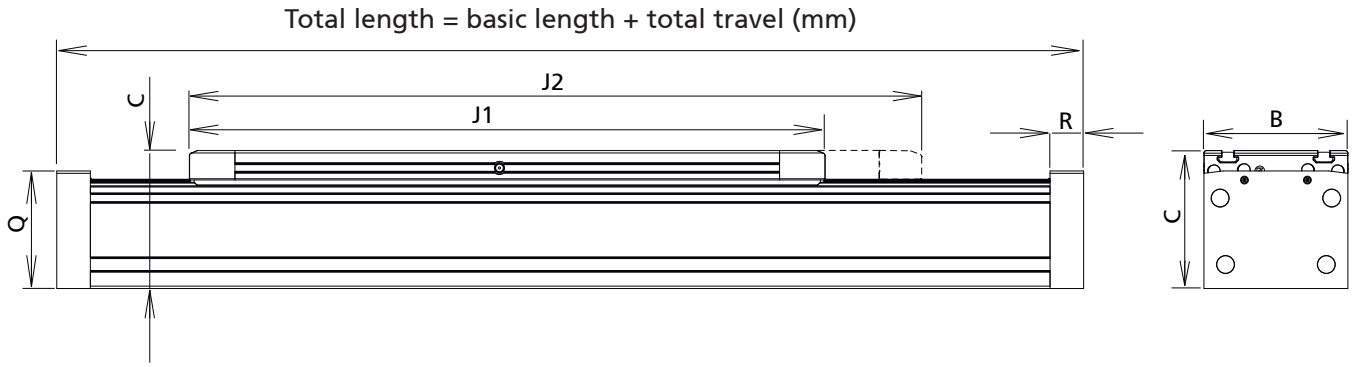
- Longer travel lengths on request
- Integrated linear encoder as Option

Version ● Guide

Ideal as additional / secondary support for the Duoline with toothed belt or spindle.

Code No.	Type	Basic length	B	C
TD14A5T1A11A0 _ _ _ _	RK DuoLine R 60 Protect	295	60	80
TD14A5T1B11A0 _ _ _ _	RK DuoLine R 60 Protect with extended guide carriage	385		
TD14A2T1A11A0 _ _ _ _	RK DuoLine R 80 Protect	352	80	100
TD14A2T1B11A0 _ _ _ _	RK DuoLine R 80 Protect with extended guide carriage	484		
TD14A3T1A11A_ _ _ _ _	RK DuoLine R 120 Protect one ball rail guide	472	120	115
TD14A3T1B11A_ _ _ _ _	RK DuoLine R 120 Protect one ball rail guide with extended guide carriage	616		

Total lenght = basic length + total travel (mm)



[mm]

J1	J2	Q	R	max. travel	Mass [kg]	
					Basic length	per 100 mm travel
245	–	70	22	3587	3,73	0,54
–	335			3497	4,46	0,54
278	–	97	22	7692	5,22	0,83
–	410			7560	6,89	0,83
386	–	98	28	7584	9,76	1,19
–	530			7440	12,16	1,19

Versions

Order instructions:

- Second free concurrent carriage on request
- Also available without screw drive as a torque support

Spindle unit RK DuoLine S with ball screw Control-Tec

Code No.	Type	Basic length			B	C	D1	D2
		Total length of up to 812 mm	Total length of 813-1899 mm	Total length of 1900 mm				
TD13A5A1A1 _A0_ _ _ _	RK DuoLine S 60 Protect	321	391	471	60	80	Ø32^{H7} 2.3 deep	Ø10$_{k7}$
TD13A5A1B1 _A0_ _ _ _	RK DuoLine S 60 Protect with extended guide carriage	411	481	561				

Total lenght = basic length + total travel (mm)

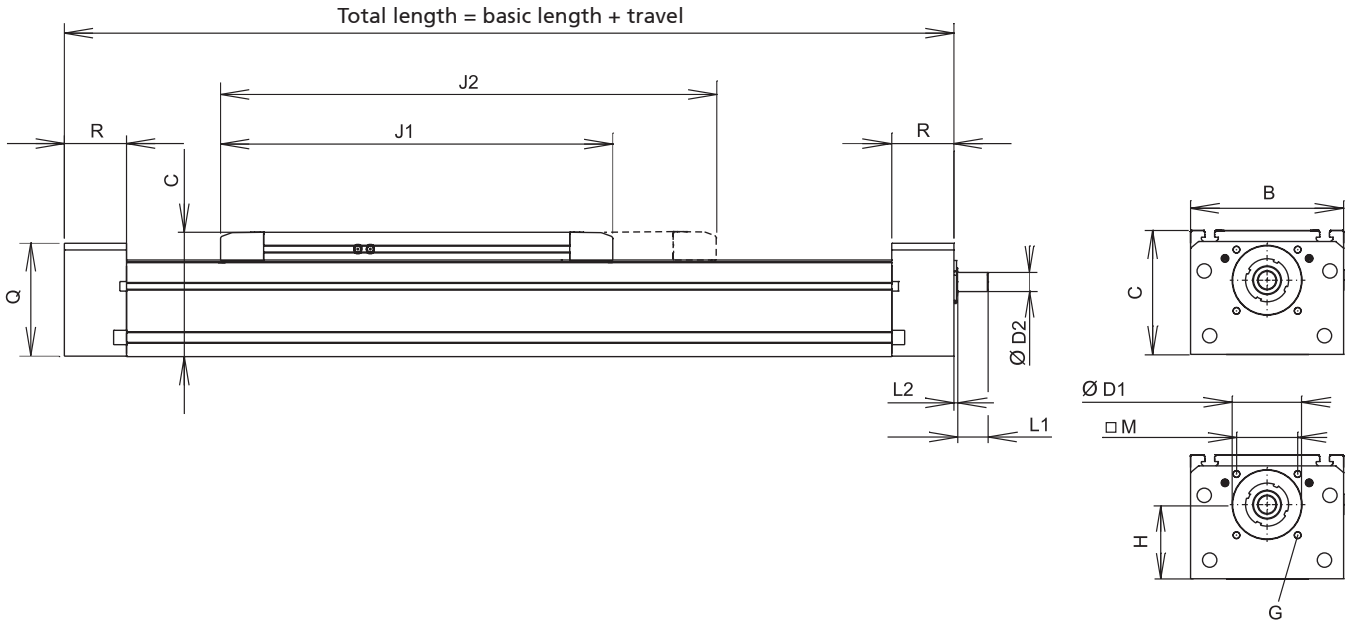
Ball screw:
1 = 16x5
2 = 16x10
3 = 16x16

Code No.	Type	Basic length			B	C	D1	D2
		Total length of up to 1171 mm	Total length of 1172-3051 mm	Total length of 3052 mm				
TD13A2A1A_ _A0_ _ _ _	RK DuoLine S 80 Protect	370	415	495	80	100	Ø42^{H7} 2.3 deep	Ø14$_{k7}$
TD13A2A1B_ _A0_ _ _ _	RK DuoLine S 80 Protect with extended guide carriage	502	547	627	80	100	Ø42^{H7} 2.3 deep	Ø14$_{k7}$

Total lenght = basic length + total travel (mm)

Ball screw:
3 = 20x5
1 = 20x20
2 = 20x50

Integrated linear encoder:
1 = without
2 = with plug-in coupling and 20 m of cable
3 = with 20 m of cable



[mm]

G	H	J1	J2	L1	L2	M	Q	R	max. travel	Mass [kg]	
										Basic length	per 100 mm travel
M5-10 deep	47.7	245	-	17.2	2.8	33x24	72.2	38	2664	3.44	0.60
		-	335						2574	4.26	0.60

[mm]

G	H	J1	J2	L1	L2	M	Q	R	max. travel	Mass [kg]	
										Basic length	per 100 mm travel
M6-18 deep	57.5	278	-	30	3.8	□46±0.2	89	46	4440	6.74	0.96
M6-18 deep	57.5	-	410	30	3.8	□46±0.2	89	46	4368	8.01	0.96

Versions

Order instructions:

- Second free concurrent carriage on request
- Also available without screw drive as a torque support

Spindle unit RK DuoLine S with ball screw Control-Tec

Code No.	Type	Basic length		B	C	D1	D2
		Total length of up to 3042 mm	Total length of 3043 mm				
TD13A4A1A1 _A0_ _ _ _	RK DuoLine S 120 Protect	498	614	120	115	Ø55^{H7} 2.3 deep	Ø16$_{K6}$
TD13A4A1B_ _A0_ _ _ _	RK DuoLine S 120 Protect with extended guide carriage	642	758				

Total lenght = basic length + total travel (mm)

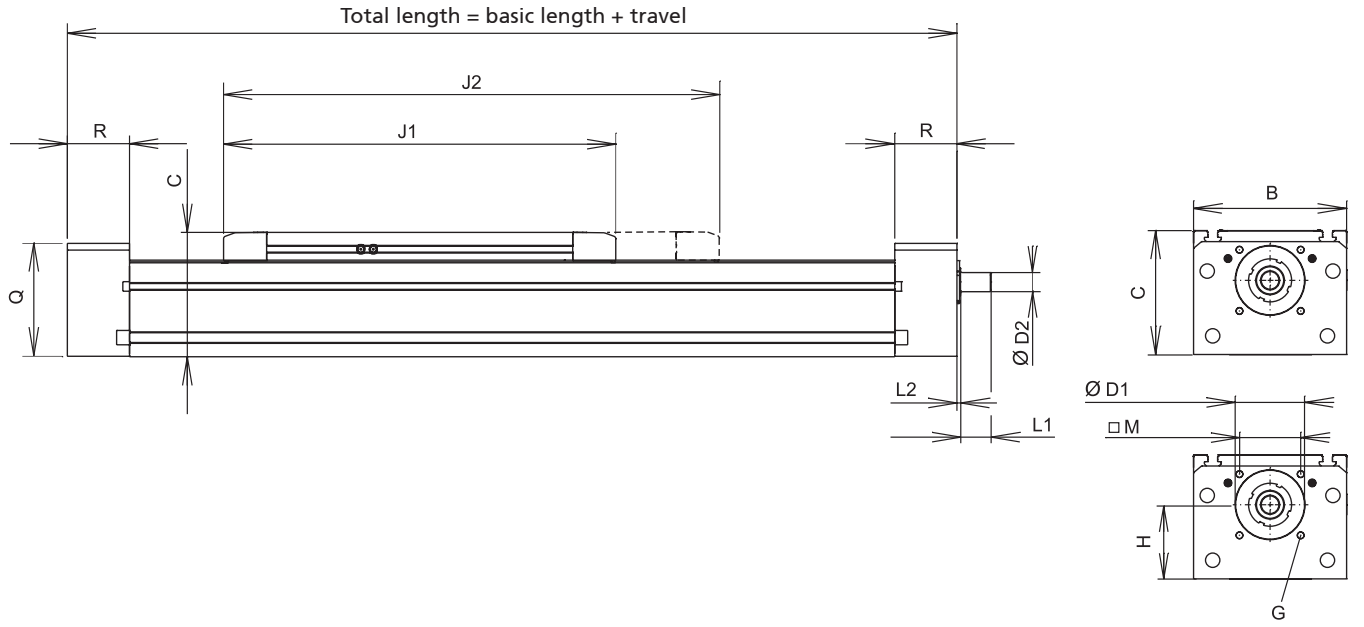
Ball screw:
1 = 25x5
2 = 25x25
3 = 25x50

Integrated linear encoder:
1 = without
2 = with plug-in coupling and 20 m of cable
3 = with 20 m of cable

Code No.	Type	Basic length			B	C	D1	D2
		Total length of up to 1350 mm	Total length of 1351-3350 mm	Total length of 3351 mm				
TD13A1A1A12A0_ _ _ _	RK DuoLine S 160 Protect	540	602	702	160	130	Ø75^{H7} 2.3 deep	Ø20$_{K8}$
TD13A1A1B_2A0 _ _ _ _	RK DuoLine S 160 Protect with extended guide carriage	690	752	852	160	130	Ø75^{H7} 2.3 deep	Ø20$_{K8}$

Total lenght = basic length + total travel (mm)

Integrated linear encoder:
1 = without
2 = with plug-in coupling and 20 m of cable
3 = with 20 m of cable



[mm]

G	H	J1	J2	L1	L2	M	Q	R	max. travel	Mass [kg]	
										Basic length	per 100 mm travel
M6-18 deep	72.7	386	-	30	2,5	□46±0.2	104	55	4591	14.57	1,49
		-	530						4447	16.74	1,49

[mm]

G	H	J1	J2	L1	L2	M	Q	R	max. travel	Mass [kg]	
										Basic length	per 100 mm travel
M8-22 deep	78	410	-	32	3,7	□64±0.2	118	65	4300	23.26	2,21
M8-22 deep	78	-	560	32	3,7	□64±0.2	118	65	4150	26.59	2,21

Safelock

Order instruction:

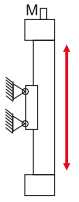
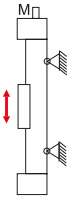
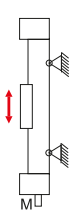
- Longer travel lengths on request

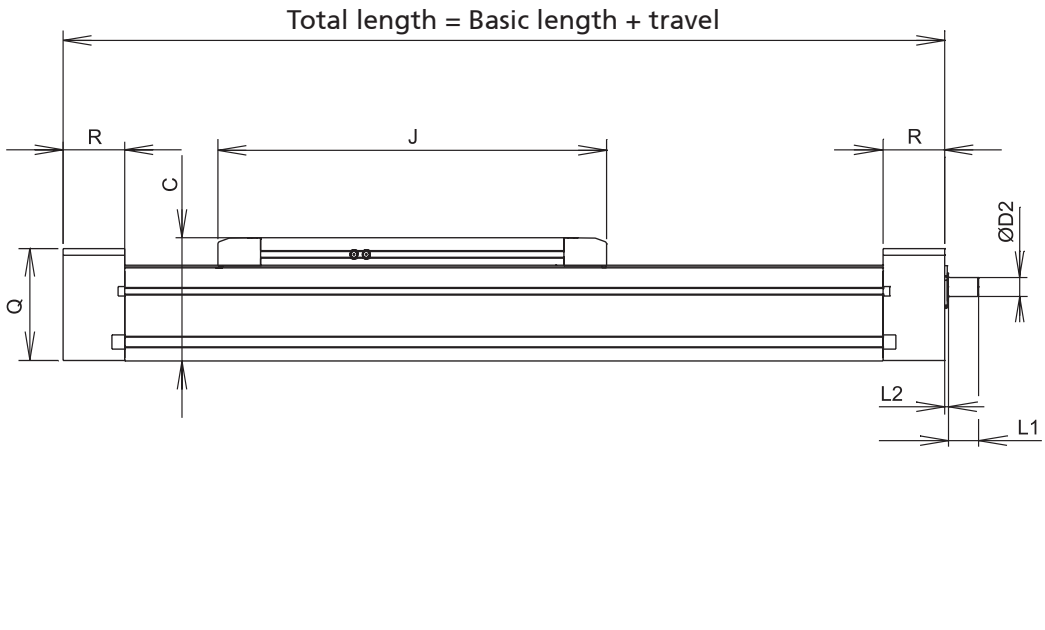
Code No.	Type	Spindle	Basic length	B	C	ØD1	ØD2	G
TD13A1A1C_1_ 0 _ _ _ _	RK DuoLine S Safelock 160	32x40	805	160	130	75^{H7}	20_{h8}	M8-22 deep

Total length (basic length + travel) in mm

Version:
Q = Motor at top / Profile moves
L = Motor at top / Carriage moves
T = Motor at bottom / Carriage moves

Integrated position sensing system:
1 = without
2 = with plug-in coupling and 20 m of cable
3 = with 20 m of cable

Q	L	T
		



[mm]

H	J	L1	L2	M	Q	R	Max. travel	Mass [kg]	
								Basic length	per 100 mm travel
78	675	32	3.7	⌀64±0.2	118	65	4275	31.66	2.21

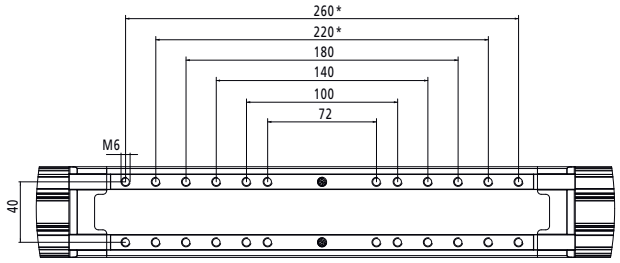
Fixing

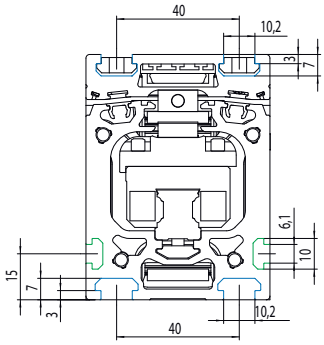
Fixation of payload and Accessories

- Two slot stone strips 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
- See next page for details of clamping strips and slot stones

RK DuoLine R/S 60

*only with version with extended guide carriage

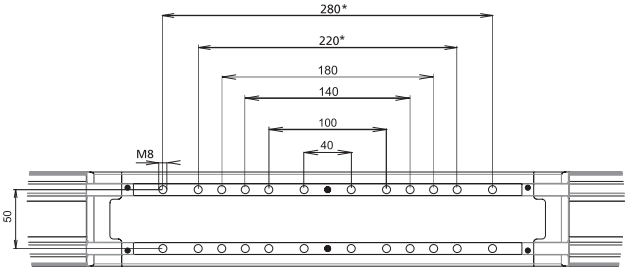


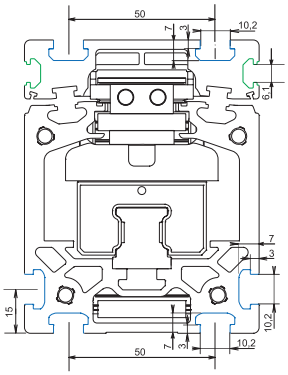


20 slot geometry
30 slot geometry

RK DuoLine R/S 80

*only with version with extended guide carriage

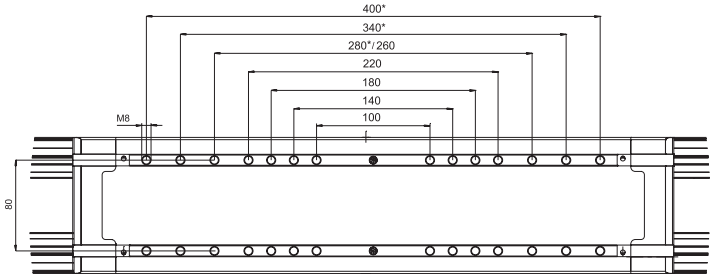


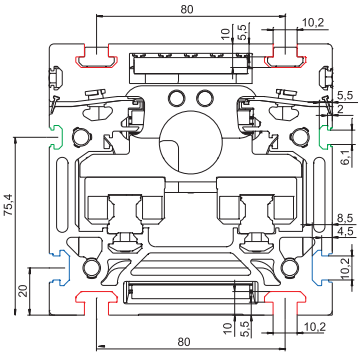


20 slot geometry
30 slot geometry

RK DuoLine R/S120

*only with version with extended guide carriage

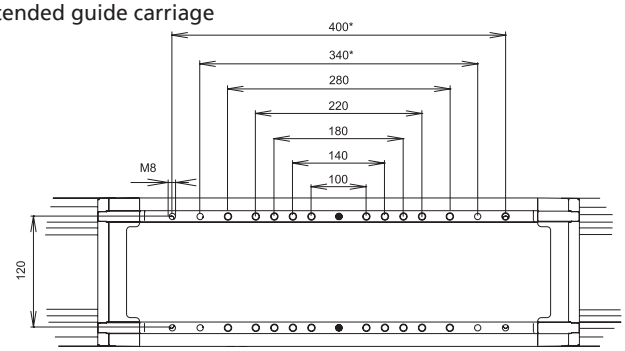


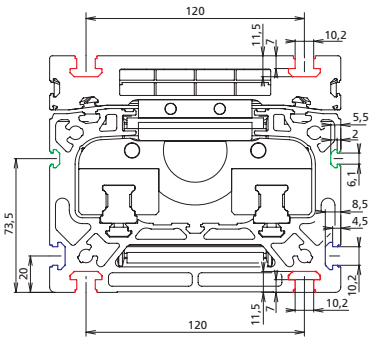


20 slot geometry
30 slot geometry
40 slot geometry

RK DuoLine S160

*only with version with extended guide carriage





20 slot geometry
30 slot geometry
40 slot geometry

Clamping bars

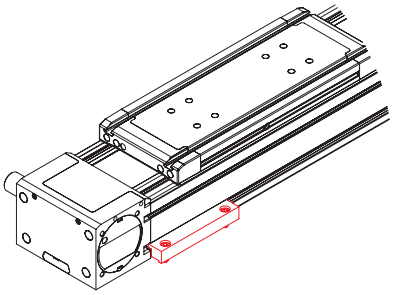


Fig.1: Base mounting

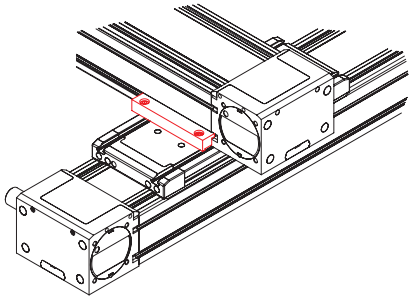
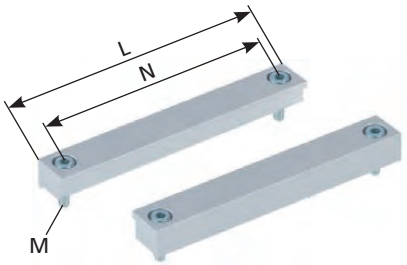
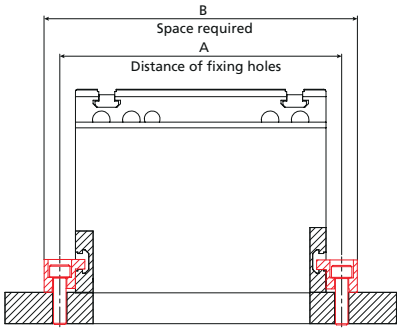


Fig. 2: Crossing units

- Clamping bars facilitate fixation of the linear unit to the base or connection of two units to form a cross table



Material:
Natural anodised aluminium, zinc plated fastenings
Scope of delivery:
2 clamping bars with fastenings



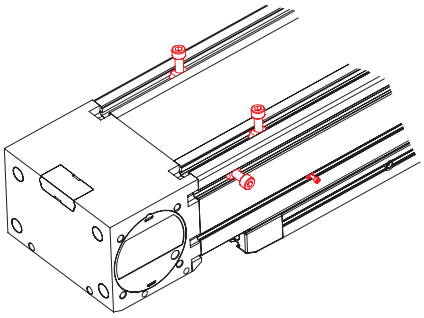
[mm]

Code No.	Type	Fig.	A	B	L	M	N
91818	RK DuoLine 60 ground assembly	1	72	91	57	M6	40
	RK DuoLine 60 crossing to 60	2					
91886	RK DuoLine 80 ground assembly	1	100	122	76	M8	50
	RK DuoLine 80 crossing to 80	2					
91812	RK DuoLine 120 ground assembly	1	140	160	116	M8	80
	RK DuoLine 120 crossing to 120	2					
	RK DuoLine 160 crossing to 120	2					
91802	RK DuoLine 160 ground assembly	1	180	200	156	M8	120
	RK DuoLine 160 crossing to 160	2					
	RK DuoLine 120 crossing to 160	2					

Order instruction square nut:

- Purchase only in lot sizes and a multiple of that, see product table below

Slot stones

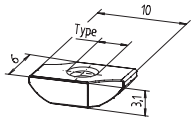


View of DuoLine from below

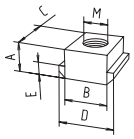
- Slot stones can be inserted and positioned on the guide profile and carriage

Material: galvanised steel

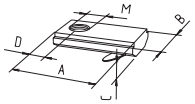
Slot stone -B-
can be swivelled into the slot



Slot stone -N-
can be slid into the slot



Slot stone -K-
can be swivelled into the slot



[mm]

Code No.	Type	lot sizes	Slot geometry	A	B	C	D	E	M	F [N]
Slot stone -B-										
E00017CEE	M3	10, 20, 30... pcs	20							
E00058CEE	M4	10, 20, 30... pcs	20							
Slot stone -N-										
4006202	M8	10, 20, 30... pcs	30	5	10	13	13	3	M8	4000
4026206	M8	10, 20, 30... pcs	40	8	10	13	15	4	M8	9000
Slot stone -K-										
4006211	M5	10, 20, 30... pcs	30	21	12	4	7	–	M5	5000
4006212	M6	10, 20, 30... pcs	30	21	12	4	7	–	M6	5000
4016212	M6	10, 20, 30... pcs	40	21	14	4	7	–	M6	5000

Fixing

Centering Sets for RK DuoLine

- The following positions could be defined exactly during the design process per set
  - Load capacity
  - Linear unit
- Reproductable position of the load capacity
- Reduced assembly/disassembly time of the load capacity or the linear unit
- Accuracy of the centering bolts h6
- To use for all RK DuoLine linear units in Basic and Protect design from October 2015 production date

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

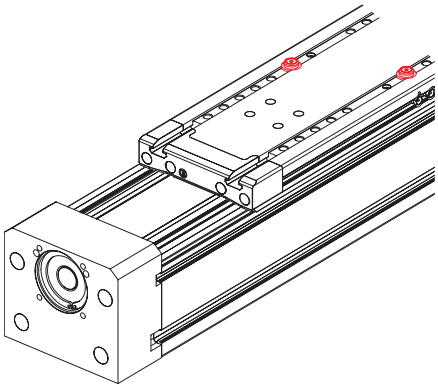


Fig. 1: Slide centering

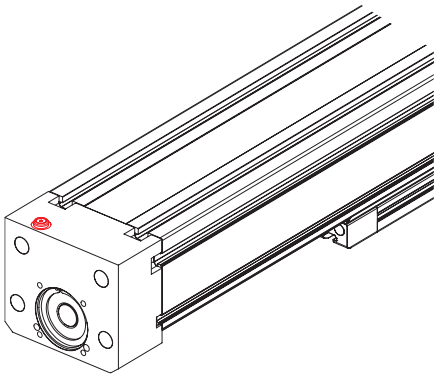
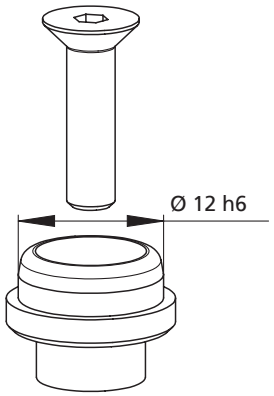
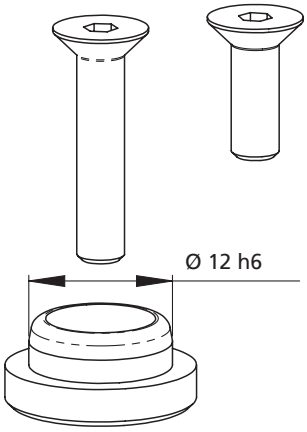


Fig. 2: Base centering

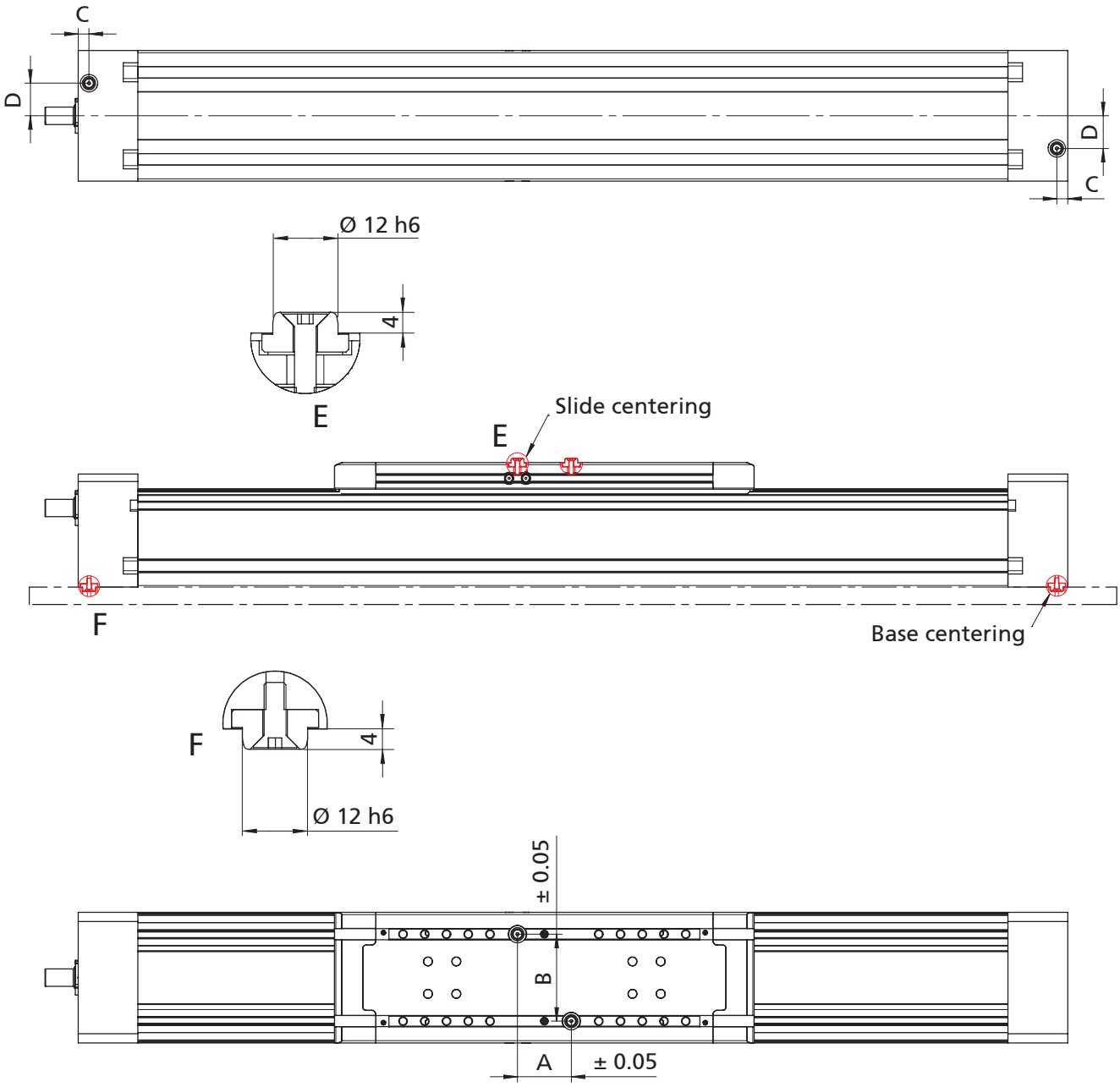


Size -A-



Size -B-

Code No.	Type	Use for
91898	Centering Set Size -A-	Slide centering RK DuoLine S 60 + S 80
91899	Centering Set Size -B-	Slide centering RK DuoLine S 120 + S 160 RK DuoLine S 160 Safelock Base centering RK DuoLine S 60 + S 80 + S 120 + S 160 RK DuoLine S 160 Safelock



[mm]

Type	A	B	C	D
RK DuoLine S 60	42	40	10	0
RK DuoLine S 60 with extended guide carriage	48	40	10	0
RK DuoLine S 80	*	*	10	15
RK DuoLine S 80 with extended guide carriage	70	50	10	15
RK DuoLine S 120	49.5	80	10	30
RK DuoLine S 120 with extended guide carriage	250	80	10	30
RK DuoLine S 160	70	120	10	40
RK DuoLine S 160 with extended guide carriage	366	120	10	40

***Note:**
Centering on request only with special drill holes in the slide/clamp strips possible

Drive

Transmission

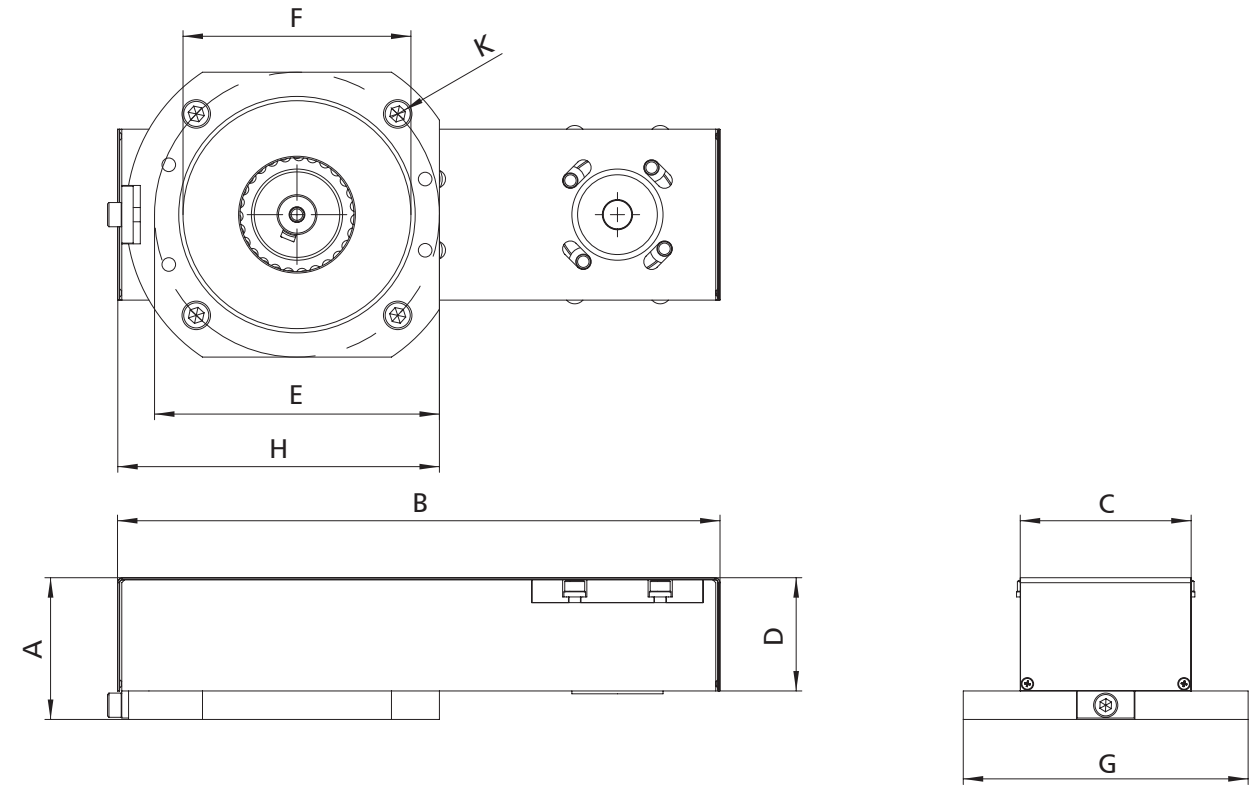
- For parallel-axis motor configuration
- Freely selectable position of motor in 90° increments, position can be subsequently modified at any time
- Freely selectable position of timing-belt transmission in 90° increments, position can be subsequently modified at any time
- Fits any RK DuoLine S Protect
- Reduction 1:1
- No load data or speed restrictions of the respective RK DuoLine S
- Motor adaptation suitable for RK-AC servomotors without gear and SEW RF 17 Three-phase motors Ø 120
- We can also adapt customer motors if required

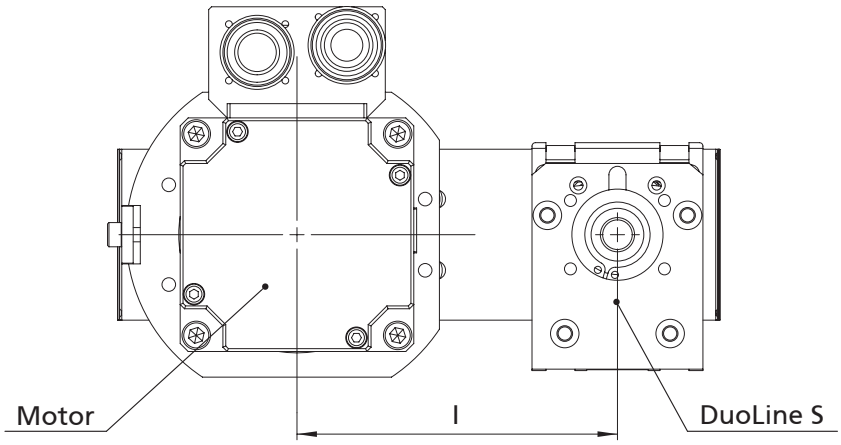
Scope of delivery:
Transmission complete with fixing material and motor adaptation, not fitted.

General information

Type	Protection class (fitted)	Required radial forces of motor shaft [N]
Transmission for RK DuoLine 60 S	IP 40	400
Transmission for RK DuoLine 80 S	IP 40	600
Transmission for RK DuoLine 120 S	IP 40	600

Code No.	Type	Motor flange	Motor shaft Ø	Suitable for motor
98330A1A1A1	Transmission for RK DuoLine 60 S	IM B5 56	14	RK-AC 240 without gear
98331A1A1B2	Transmission for RK DuoLine 80 S	IM B5 63	19	RK-AC 470 without gear
98332A1A1B2	Transmission for RK DuoLine 120 S			
98331A1A1A3	Transmission for RK DuoLine 80 S	IM B5 56	20	SEW RF 17 Three-phase motor Ø 120
98332A1A1A3	Transmission for RK DuoLine 120 S			





[mm]

A	B	C	D	E	F	G	H	I	K	Mass [kg]
49,75	211,5	60	39,75	100	80^{F7} 4,5 deep	100	113	112,5	M6/ 10 deep	1,0
59,75	245,5	80	49,75	115	95^{F7} 4,5 deep	100	118	144	M8/ 10 deep	2,0
59,75	285,5	80	49,75	115	95^{F7} 4,5 deep	100	118	184,5	M8/ 10 deep	2,2
59,75	245,5	80	49,75	100	80^{F7} 4,5 deep	120	123,5	144	M8/ 10 deep	2,0
59,75	285,5	80	49,75	100	80^{F7} 4,5 deep	120	123,5	184,5	M8/ 10 deep	2,2

Drive/Pos. determination

Order instruction:

- Reductions 1:1.5, 1:2, 1:3, 1:4 or 1:5 on request

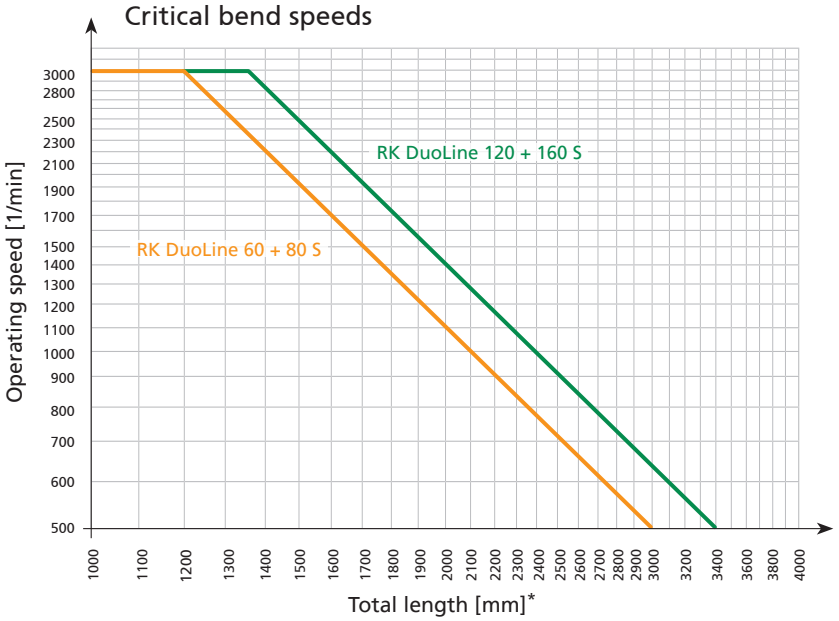
Angular gear

- Fits all third-generation RK DuoLine S
- Can be retrofitted
- Low torsional backlash
- Low noise level
- Spiral toothing

Scope of delivery:
Angular gear 1:1,
Fastenings on RK DuoLine and synchronisation shaft depending on system

Technical data angular gear

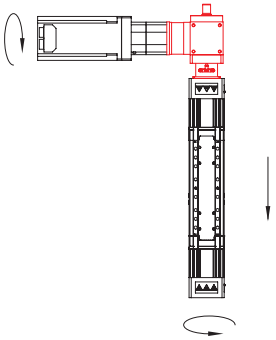
		For RK DuoLine 60 and 80 S	For RK DuoLine 120 and 160 S
Reduction		1:1	1:1
Drive speed	min^{-1}	3000	3000
Torsional backlash at output shaft	arcmin	≤ 9	≤ 8
Efficiency at full load	%	> 98	> 98
Running noise at 1500 rpm	db(A)	≤ 70	≤ 74
Weight	Kg	4,5	8
Surface		Primer RAL 9005 – black matt	
Geometric moment of inertia	$Kgcm^2$	1,79	3,88
Idle torque	Nm	0,4	0,9



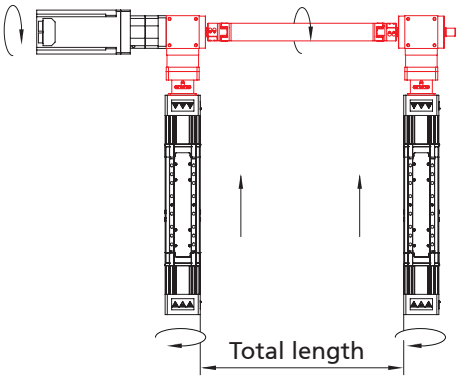
*To calculate the critical bending speed of system 4, use half of the total length.

Angular gear for RK DuoLine S

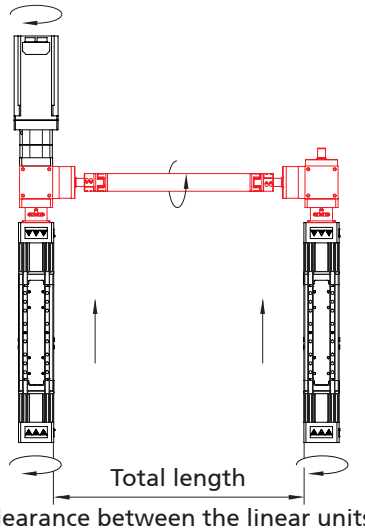
System 1



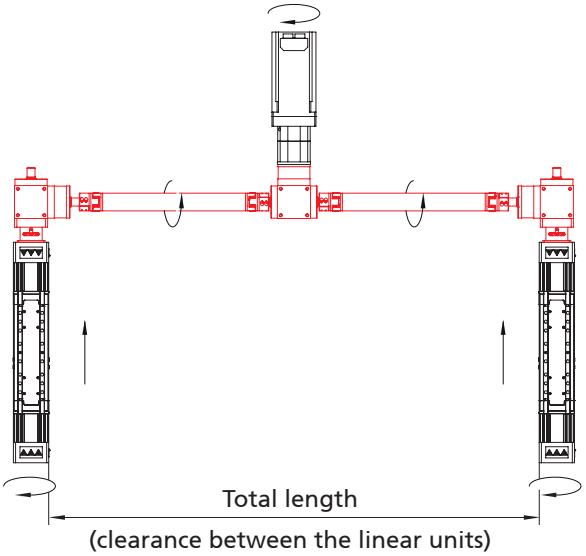
System 2



System 3



System 4



[mm]

Code No.	Type	Basic length (minimum length)		Max. length (clearance)		Weight [kg]		
		60 + 80 S	120 + 160 S	60 + 80 S	120 + 160 S	Basic length 60 + 80 S	Basic length 120 + 160 S	per 100 mm travel
982_ _ A1A0000	Angular gear system 1	-				5,5	9,5	-
982_ _ A1B_ _ _ _	Angular gear system 2	199	199	2984	3331	10,5	15,5	0,1
982_ _ A1C_ _ _ _	Angular gear system 3	304	319	3089	3451	10,5	15,5	0,1
982_ _ A1D_ _ _ _	Angular gear system 4	563	638	6153	6942	10,5	15,5	0,1

982_ _ A1D_ _ _ _
- Total length (mm)
- 30 = RK DuoLine 60 S
  31 = RK DuoLine 80 S
  32 = RK DuoLine 120 S
  33 = RK DuoLine 160 S

Note:
Additional information, dimensions, accessories and necessary tools for assembling the angular gears can be found

Chapter:
Motors and controls

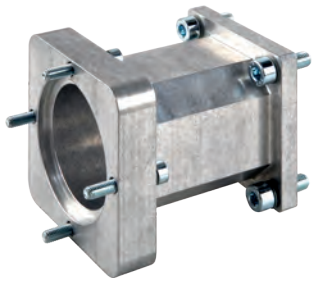
Drive

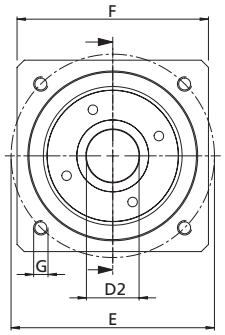
Selection table motor adapter kits RK DuoLine S for servo motors without gear

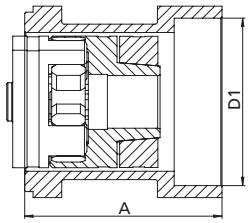
- Servomotors can be easily connected
- Complete motor adapter kits manufactured to your specifications on request

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

Manufacturers	Motor	RK DuoLine S 60	RK DuoLine S 80	RK DuoLine S 120	RK DuoLine S 160
RK Rose + Krieger	RK-AC 118	949388	–	–	–
	RK-AC 240	949389	949367	949123	–
	RK-AC 470	–	949366	949124	–
	RK-AC 800	–	–	949125	949340
Baumüller	DSD2-036	949388	–	–	–
	DSD2-045	949389	949367	949123	–
Beckhoff	AM8031, AM8032, AM8033	On request	–	–	–
	AM8041, AM8042, AM8043		On request	On request	–
Bosch	MSK040B, MSK040C, MSK043C	On request	On request	On request	–
	MSK050B, MSK050C	–	949366	949124	–
Kollmorgen	AKM2G-31, AKM2G-32, AKM2G-33, AKM2G-34	On request	–	–	–
	AKM2G-41, AKM2G-42, AKM2G-43, AKM2G-44		On request	On request	–
Lenze	MCS06I, MCS06F	949388	–	–	–
	MCS09D, MCS09F, MCS09H, MCS09L	949389	949367	949123	–
Lti/Keba	LSP10	–	949366	949124	–
Mitsubishi	HG-JR53(4), HG-JR 73(4), HG-JR103(4), HG-JR153(4), HG-JR203(4)	On request	On request	On request	–
Parker	SMH 60, SMHA 60	949388	–	–	–
	SMH 82, SMHA 82	949389	949367	949123	–
	SMH 100, SMHA 100	–	949366	949124	–
	SMH 115, SMHA 115	–	–	949125	949340
SEW	CMP50S, CMP50M, CMP50L	949388	–	–	–
	CMP63S, CMP63M, CPM63L	949389	949367	949123	–
Siemens	1FK7032, 1FK7033, 1FK7034	On request	–	–	–
	1FK7040, 1FK042, 1FK043, 1FK2205		On request	On request	–
	1FK2105	–	949366	949124	–







Motorf flange	A	D1	D2	E	F	G	Mass [kg]
IM B5 56	61	Ø 60 ^{F8} 3 deep	Ø11x23	Ø 75	□70	M5 10 deep	0,2
	66/79/77	Ø 80 ^{F8} 4/5,7 deep	Ø14x30	Ø 100	□82/□90/□90	M6 15 deep	0,3 /0,67/0,63
IM B5 63	89	Ø 95 ^{H8} 4 deep	Ø19x40	Ø 115	□115	M8 20 deep	1,08/1,08
	89		Ø19x40	Ø 130	□115	M8 20 deep	0,97/1,86
IM B5 56	61	Ø 60 ^{F8} 3 deep	Ø11x23	Ø 75	□70	M5 10 deep	0,2
	66/79/77	Ø 80 ^{F8} 4/5,7 deep	Ø14x30	Ø 100	□82/□90/□90	M6 15 deep	0,3 /0,67/0,63
IM B5 56			Ø14x30				
			Ø19x40				
			Ø14x30				
IM B5 63	89	Ø 95 ^{H8} 4 deep	Ø19x40	Ø 115	□115	M8 20 deep	1,08/1,08
IM B5 56			Ø14x30				
			Ø19x40				
IM B5 56	61	Ø 60 ^{F8} 3 deep	Ø11x23	Ø 75	□70	M5 10 deep	0,2
	66/79/77	Ø 80 ^{F8} 4/5,7 deep	Ø14x30	Ø 100	□82/□90/□90	M6 15 deep	0,3 /0,67/0,63
IM B5 63	89	Ø 95 ^{H8} 4 deep	Ø19x40	Ø 115	□115	M8 20 deep	1,08/1,08
IM B5 56			Ø16x40				
IM B5 56	61	Ø 60 ^{F8} 3 deep	Ø11x23	Ø 75	□70	M5 10 deep	0,2
	66/79/77	Ø 80 ^{F8} 4/5,7/5,7 deep	Ø14x30	Ø 100	□82/□90/□90	M6 15 deep	0,3 /0,67/0,63
IM B5 63	89	Ø 95 ^{H8} 4 deep	Ø19x40	Ø 115	□115	M8 20 deep	1,08/1,08
	89	Ø 95 ^{H8} 4 deep	Ø19x40		□115	M8 20 deep	0,97/1,86
IM B5 56	61	Ø 60 ^{F8} 3 deep	Ø11x23	Ø 75	□70	M5 10 deep	0,2
	66/79/77	Ø 80 ^{F8} 4/5,7 deep	Ø14x30	Ø 100	□82/□90/□90	M6 15 deep	0,3 /0,67/0,63
IM B5 56			Ø14x30				
			Ø19x40				
IM B5 63	89	Ø 95 ^{H8} 4 deep	Ø19x40	Ø 115	□115	M8 20 deep	1,08/1,08

Drive

Motor adapter kits on angular gear

- Three-phase- or servomotors with gear from popular manu facturers 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 fixation material

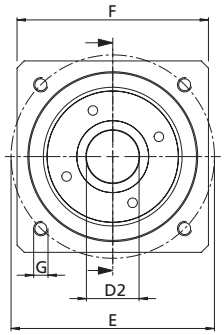
Selection table motor adapter kits for three-phase motor

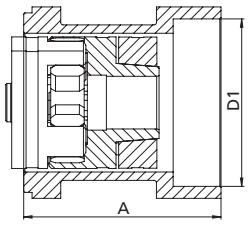
Manufacturers	Motor	RK DuoLine S 60	RK DuoLine S 80	RK DuoLine S 120	RK DuoLine S 160
RK Rose + Krieger	90/120W	-	949363	949126	-
	180/250W		949365	949127	

Selection table motor adapter kits servo motors with gear

Manufacturers	Gear	RK DuoLine S 60	RK DuoLine S 80	RK DuoLine S 120	RK DuoLine S 160
Neugart	PLE 60	949387	949360	949121	-
	PLE 80	-	949364	949122	-
	PLE 120	-	-	-	949341
	PLE 160	-	-	-	949343
Atlanta	APG080	-	949364	949122	-
	APG120	-	-	-	949341
Eppinger	PE065	949387	949360	949121	-
	PE080	-	949364	949122	-
Ruhrgetriebe	RPS060	949387	949360	949121	-
	RPS080	-	949364	949122	-
SPN Schwaben Präzision	SPN-ECO (E2) EZ 23	949387	949360	949121	-
	SPN-ECO (E2) EZ 24	-	949364	949122	-
	SPN-ECO (E2) EZ 25	-	-	-	949341
	SPN-ECO (E2) EZ 26	-	-	-	949343
Wittenstein	Alpha CP015 MF	949387	949360	949121	-
	Alpha CP025 MF	-	949364	949122	-
	Alpha CP035 MF	-	-	-	949341
	Alpha CP035 MF	-	-	-	949343

RK DuoLine S 60/80/120/160 – Drive





A	D1	D2	E	F	G	Mass [kg]
71/84 /84	Ø 40^{H7} 3/6/6 deep	Ø 14 x 30	Ø 52	□70/□75/ □75	Ø 5,5	0,33/0,53/0,25
89 /87	Ø 60^{H7} 3,5 deep	Ø 20 x 36	Ø 70	□75	Ø 6,4	0,58
115,5	Ø 80^{H7} 6 deep	Ø 25 x 50	Ø 100	□130	Ø 10,5	3
125	Ø 130^{H7} 13 deep	Ø 40 x 80	Ø 145	□140	Ø 13	2,63
89 /87	Ø 60^{H7} 3,5 deep	Ø 20 x 36	Ø 70	□75	Ø 6,4	0,58/0,54
115,5	Ø 80^{H7} 6 deep	Ø 25 x 50	Ø 100	□130	Ø 10,5	3
71/84 /84	Ø 40^{H7} 3/6/6 deep	Ø 14 x 30	Ø 52	□70/□75/ □75	Ø 5,5	0,33/0,53/0,25
89 /87	Ø 60^{H7} 3,5 deep	Ø 20 x 36	Ø 70	□75	Ø 6,4	0,58/0,54
71/84 /84	Ø 40^{H7} 3/6/6 deep	Ø 14 x 30	Ø 52	□70/□75/ □75	Ø 5,5	0,33/0,53/0,25
89 /87	Ø 60^{H7} 3,5 deep	Ø 20 x 36	Ø 70	□75	Ø 6,4	0,58/0,54
71/84 /84	Ø 40^{H7} 3/6/6 deep	Ø 14 x 30	Ø 52	□70/□75/ □75	Ø 5,5	0,33/0,53/0,25
89 /87	Ø 60^{H7} 3,5 deep	Ø 20 x 36	Ø 70	□75	Ø 6,4	0,58 / 0,25
115	Ø 80^{H7} 6 deep	Ø 25 x 50	Ø 100	□130	Ø 10,5	3
125	Ø 130^{H7} 13 deep	Ø 40 x 80	Ø 145	□140	Ø 13	2,63
71/84 /84	Ø 40^{H7} 3/6/6 deep	Ø 14 x 30	Ø 52	□70/□75/□75	Ø 5,5	0,33/0,53/0,25
89 /87	Ø 60^{H7} 3,5 deep	Ø 20 x 36	Ø 70	□75	Ø 6,4	0,58/0,25
115,5	Ø 80^{H7} 6 deep	Ø 25 x 50	Ø 100	□130	Ø 10,5	3
125	Ø 130^{H7} 13 deep	Ø 40 x 82	Ø 145	□140	Ø 13	2,63

Drive

Selection table RK DuoLine S KG motor adapter kits for angular gear systems

Manufacturers	Motor	Angular gear system 1 + 4 RK DuoLine S 60/80 KG	Angular gear system 2 + 3 RK DuoLine S 60/80 KG	Angular gear system 1 + 4 RK DuoLine S 120/160 KG	Angular gear system 2 + 3 RK DuoLine S 120/160 KG
RK Rose + Krieger	RK-AC 240	949130	949139	–	–
	RK-AC 470	949131	949140	949135	949141
	RK-AC 800	–	–	949136	949142
Baumüller	DSD2-045	949130	949139	On request	On request
Beckhoff	AM8041, AM8042, AM8043	On request	On request	On request	On request
Bosch	MSK040B, MSK040C, MSK043C	On request	On request	–	–
	MSK050B, MSK050C	949131	949140	949135	949141
Kollmorgen	AKM2G-41, AKM2G-42, AKM2G-43, AKM2G-44	On request	On request	On request	On request
Lenze	MCS09D, MCS09F, MCS09H, MCS09L	949130	949139	On request	On request
Lti/Keba	LSP10	949131	949140	949135	949141
Mitsubishi	HG-JR53(4), HG-JR 73(4), HG-JR103(4), HG-JR153(4), HG-JR203(4)	On request	On request	On request	On request
Parker	SMH 82, SMHA 82	949130	949139	–	–
	SMH 100, SMHA 100	949131	949140	949135	949141
	SMH 115, SMHA 115	–	–	949136	949142
SEW	CMP63S, CMP63M, CPM63L	949130	949139	On request	On request
Siemens	1FK7040, 1FK042, 1FK043, 1FK2205	On request	On request	On request	On request
	1FK2105	949131	949140	949135	949141

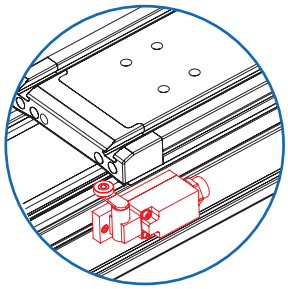
Motor flange	A	D1	D2	E	F	G	Mass [kg]
IM B5 56	99/94	Ø 80 ^{H7} 4 deep	Ø14x30	Ø 100	□82	M6 12 deep	0,86
IM B5 63	109/104/109/104	Ø 95 ^{H7} 4 deep	Ø19x40	Ø 115	□100/□100/ Ø 100/□100	M8 22 deep	1,19/1,2/1,34/1,41
	109,5/104,5	Ø 95 ^{H7} 4 deep	Ø19x40	Ø 130	□115	M8 11,5 deep	1,29/1,36
IM B5 56	99/94	Ø 80 ^{H7} 4 deep	Ø14x30	Ø 100	□82	M6 12 deep	0,86
IM B5 56			Ø19x40				
			Ø14x30				
IM B5 63	109/104/109/104	Ø 95 ^{H7} 4 deep	Ø19x40	Ø 115	□100/□100/ Ø 100/□100	M8 22 deep	1,19/1,2/1,34/1,41
IM B5 56			Ø19x40				
IM B5 56	99/94	Ø 80 ^{H7} 4 deep	Ø14x30	Ø 100	□82	M6 12 deep	0,86
IM B5 63	109/104/109/104	Ø 95 ^{H7} 4 deep	Ø19x40	Ø 115	□100/□100/ Ø 100/□100	M8 22 deep	1,19/1,2/1,34/1,41
IM B5 56			Ø16x40				
IM B5 56	99/94	Ø 80 ^{H7} 4 deep	Ø14x30	Ø 100	□82	M6 12 deep	0,86
IM B5 63	109/104/109/104	Ø 95 ^{H7} 4 deep	Ø19x40	Ø 115	□100/□100/ Ø 100/□100	M8 22 deep	1,19/1,2/1,34/1,41
	109,5/104,5	Ø 95 ^{H7} 4 deep	Ø19x40	Ø 130	□115	M8 11,5 deep	1,29/1,36
IM B5 56	99/94	Ø 80 ^{H7} 4 deep	Ø14x30	Ø 100	□82	M6 12 deep	0,86
IM B5 56			Ø19x40				
IM B5 63	109/104/109/104	Ø 95 ^{H7} 4 deep	Ø19x40	Ø 115	□100/□100/ Ø 100/□100	M8 22 deep	1,19/1,2/1,34/1,41

Drive/Pos. determination

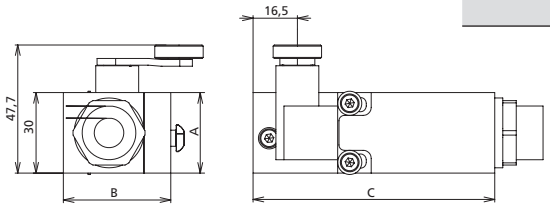
Mechanical limit switch

- External fixation on the guide profile

Scope of delivery:
Limit switch with set of fixing items



Voltage	max. 230 V AC
Max. switching current	4 A
Max. starting current	10 A
Operating frequency	max. 5000 / h
Mechanical lifetime	20x10^6 cycles
Axis leverage adjustment	locking by 360°
Degree of protection	IP67
Ambient temperature	-30°C to +80°C

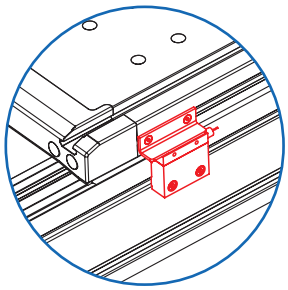


Code No.	Type	A	B	C	Version
92848	RK DuoLine 60	49	39	82	NO / NC, mechanical limit switch
91919	RK DuoLine 80	63	40	83	
92701	RK DuoLine 120	31	40	97	
91910	RK DuoLine 160	30	40	90	

External inductive limit switch

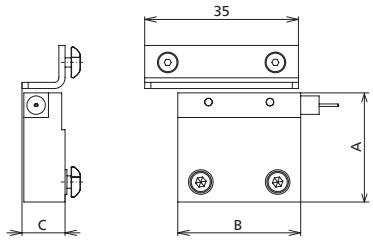
- External fixation on the guide profilev

Scope of delivery:
Limit switch with set of fixing items



Voltage	10...30 VDC
Max. switching current	100 mA
Operating frequency	max. 5 kHz
Mechanical lifetime	independent of operating cycles
Operating distance	1.5 mm
Degree of protection	IP67
Cable length	5 m*
Ambient temperature	-25°C to +70°C

*Other cable lengths available on request.

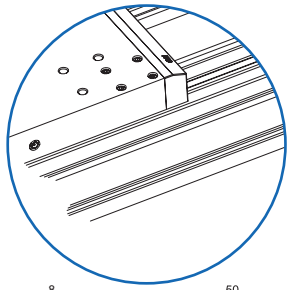


Code No.	Type	A	B	C	Version
92838	RK DuoLine 60	52,8	25	10	NO, External inductive limit switch
92819	RK DuoLine 80	71,5	25	10	
92840	RK DuoLine 120	22	40	14	
92810	RK DuoLine 160	35,5	40	14	

Internal inductive limit switch

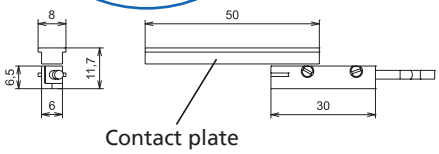
- Proximity switch integrated in the guide profile – no protruding contours

Scope of delivery:
Proximity switch with set of fixing items



Code No.	Type	Version
92828	RK DuoLine 60	NC, Internal inductive limit switch
92820*	RK DuoLine 80 RK DuoLine 120 RK DuoLine 160	

*On this limit switch, the slot must be sealed off with a cover profile



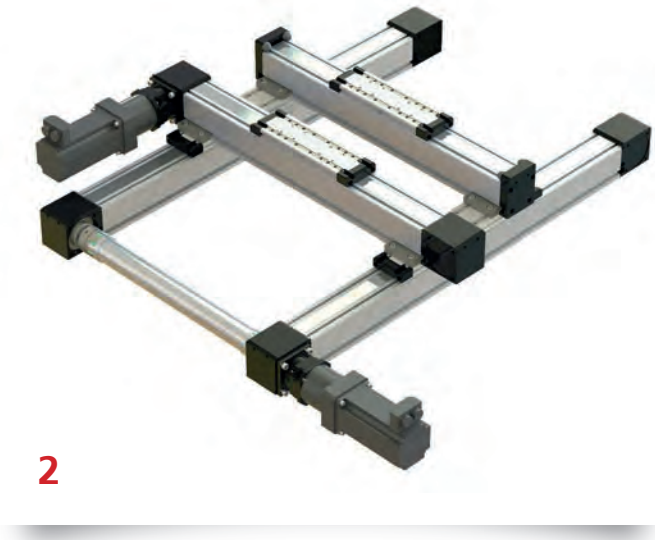
Cover profile

Code No.	Version		
E00024DAC	bar	black	2.000 mm

Assembly examples

RK DuoLine

1



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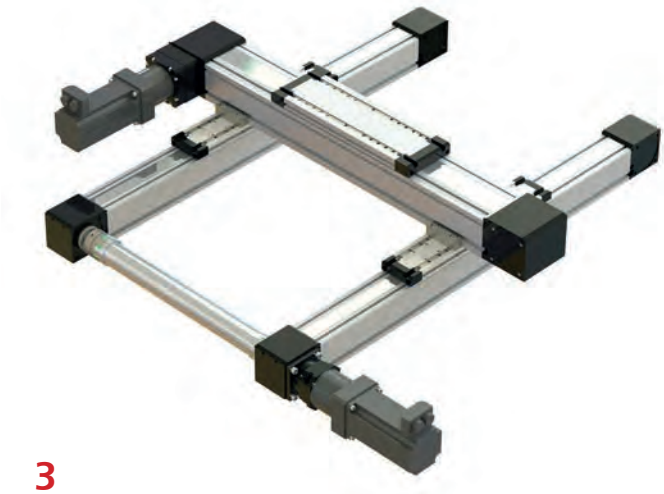
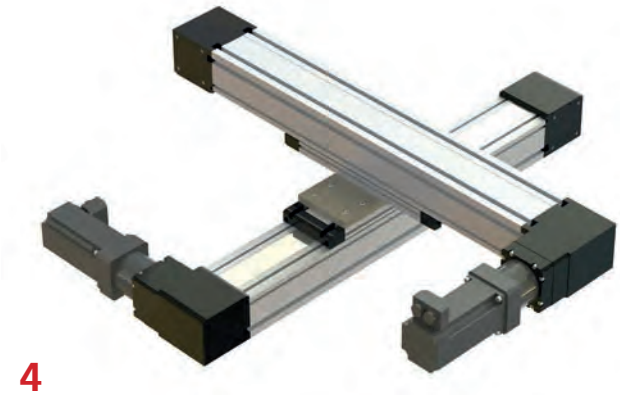


3



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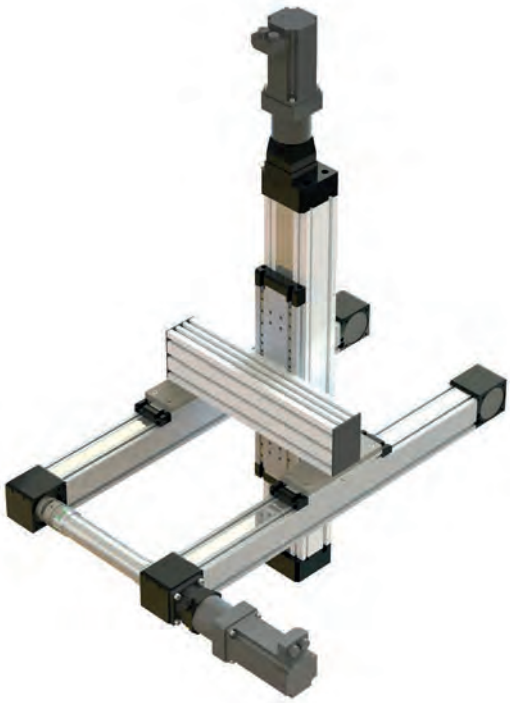
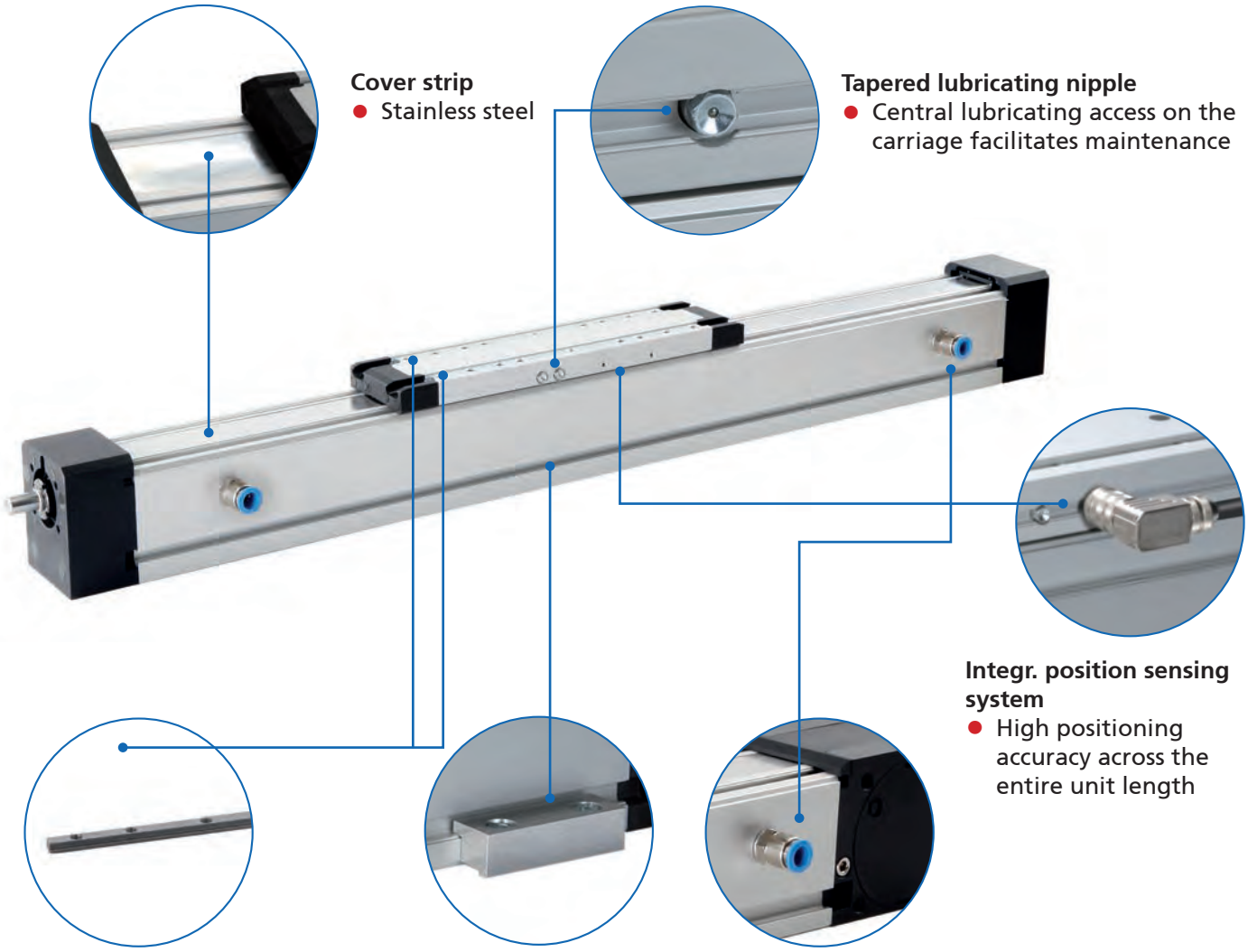


7

8

Key features / technical benefits



Cover strip
- Stainless steel

Tapered lubricating nipple
- Central lubricating access on the carriage facilitates maintenance

Integr. position sensing system
- High positioning accuracy across the entire unit length

Slot stone strip
- To hold your load securely
- Nickel-plated

Clamping strip
- Secures the axis reliably

Vacuum extraction
- Optional

Key features

General

- All external steel parts nickel-plated or made of stainless steel
- Suitability according to EN ISO 14644-1 for clean rooms
- Optionally with or without vacuum extraction
- High efficiency
- Low no-load torque
- Central lubricating access on the carriage facilitates maintenance

RK DuoLine S Clean (spindle drive)

- Cover band made from stainless steel
- Positioning accuracy ±0.05 mm when using an integrated linear encoder
- Repeat accuracy ±0.04 mm

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Version
(Dimensions, order numbers)

Control-Tec

RK DuoLine R 60/80 Clean ..... Page 536

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RK DuoLine S 80 Clean..... Page 538

Accessories

Fixing

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Drive

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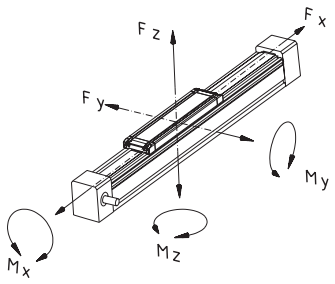
Technical data

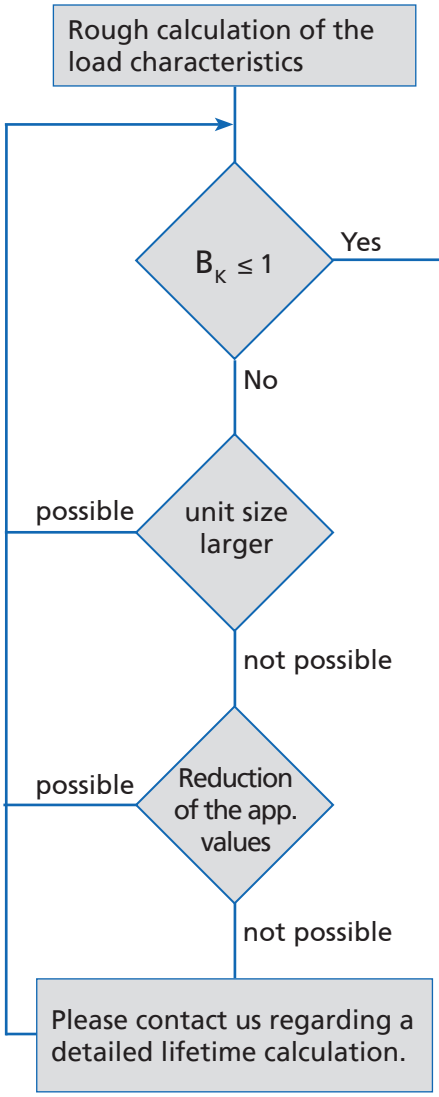
Calculation of the load characteristic to define the lifetime

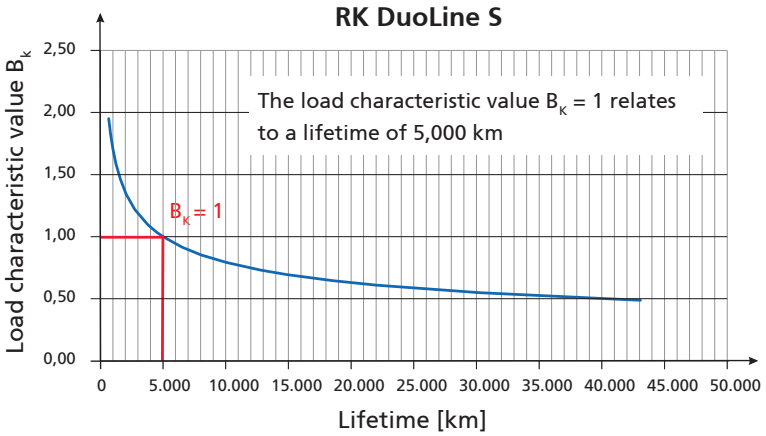


- The lifetime of linear units are in accordance with the average loads and moments of an application. The load characteristic can approximately calcu lated by following equation with simultaneously appearing load and moments.

$$\text{Load characteristic} = \frac{\text{Application values (z.B. Fy)}}{\text{Catalog values (z.B. Fy}_{max})}$$

$$\textbf{Load characteristic } B_K = \frac{Fy}{Fy_{max}} + \frac{Fz}{Fz_{max}} + \frac{Mx}{Mx_{max}} + \frac{My}{My_{max}} + \frac{Mz}{Mz_{max}} \leq 1$$





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:
  Fz = 200N, Mx = 20 Nm und Mz = 45 Nm

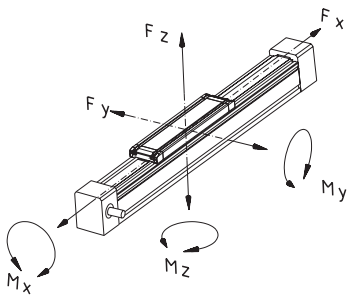
According to the above equation you will have following load characteristic of a DuoLine 80: $B_K = 0.55$.

IPA
Fraunhofer
TESTED®
DEVICE
RK Rose+Krieger GmbH
RK DuoLine S80 Clean
Report No. RK 2011-1187

Technical data

General information / operating conditions

	RK DuoLine S 60 Clean	RK DuoLine S 80 Clean
Guidance system	1 Ball rail system	
Installation position	any position	
Max. driving torque	3.4 Nm	17 Nm
Max. speed	0.5 m/s	0.5 m/s
Max. acceleration	4 m/s²	4 m/s²
Repeat accuracy	± 0.04 mm	± 0.04 mm
Positioning accuracy	only without integrated linear encoder ± 0,1/300 mm	with integrated linear encoder ± (0.025 + 0.01 x L) mm; L = travel in meters
Max. no-load torque	0.4 Nm	0.6 Nm
Drive	Ball-and-screw Ø16, Pitch 5, 10, 16mm	Ball-and-screw Ø20, Pitch 5, 20 or 50 mm, on the right
Pitch accuracy	T5 (0.023 / 300 mm)	T5 (0.023 / 300 mm)
Duty cycle	S3 100%	S3 100%
Ambient temperature	0 to +60°C	0 to +60°C

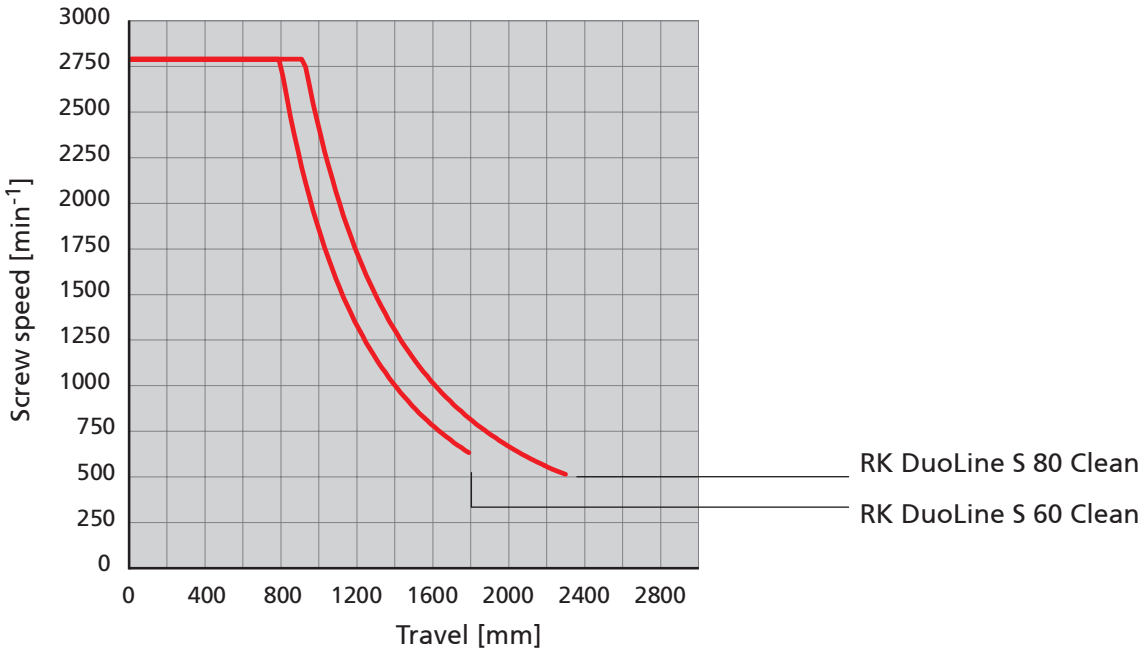


Dynamic load data

Force [N]
Torque [Nm]

Toothed-belt drive							
Load data	**Screw**	**Fx**	**Fy**	**Fz**	**Mx**	**My**	**Mz**
Standard guide carriage							
RK Duoline S 60	16x5	840	700	2500	48	160	140
	16x10	1300					
	16x16	1300					
RK Duoline S 80	20x5	950	1000	4100	100	380	350
	20x20	1420					
	20x50	2250					
Extended guide carriage							
RK Duoline S 60	16x5	840	700	2500	48	250	220
	16x10	1300					
	16x16	1300					
RK Duoline S 80	20x5	950	1000	4100	100	620	550
	20x20	1420					
	20x50	2250					

Control of Screw speed (Critical screw speed)



Suitable for use in air purity levels according to EN ISO 14644-1

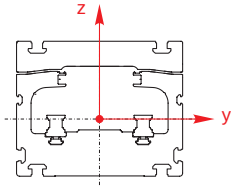
You find the documents and certificates with the test parameters on the website **www.rk-rose-krieger.com**

Type	Clean room categories					
	ISO 1	ISO 2	ISO 5	ISO 6	ISO 7	ISO 8
RK DuoLine S 60 Clean without suction			0,1 m/s		0,25m/s; 0,5 m/s	
RK DuoLine S 60 Clean with suction	0,1m/s	0,25m/s; 0,5m/s				
RK DuoLine S 80 Clean without suction				0,1m/s	0,25m/s	0,5m/s
RK DuoLine S 80 Clean with suction	0,1 m/s; 0,25m/s; 0,5m/s					

Geometric moment of inertia

[cm^4]

	Iy	Iz
RK DuoLine S 60 Clean	48,97 cm^4	61,84 cm^4
RK DuoLine S 80 Clean	116,76 cm^4	165,75 cm^4



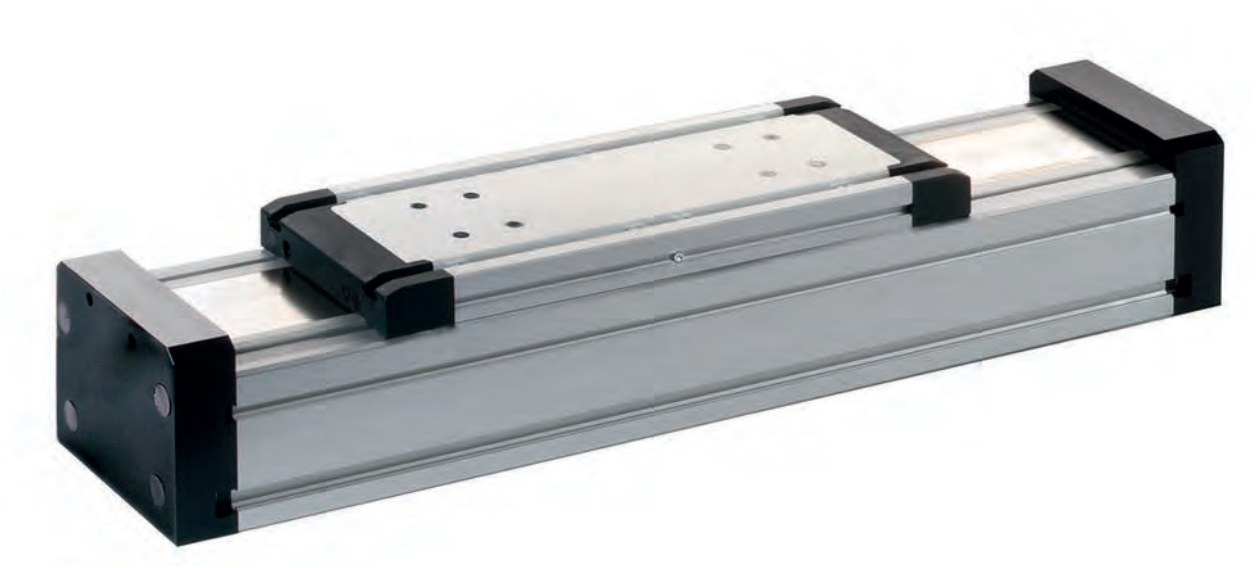
Versions

Order instructions:

- Longer travel lengths on request
- Integrated linear encoder as Option for size 80

Version: ● **Guide**

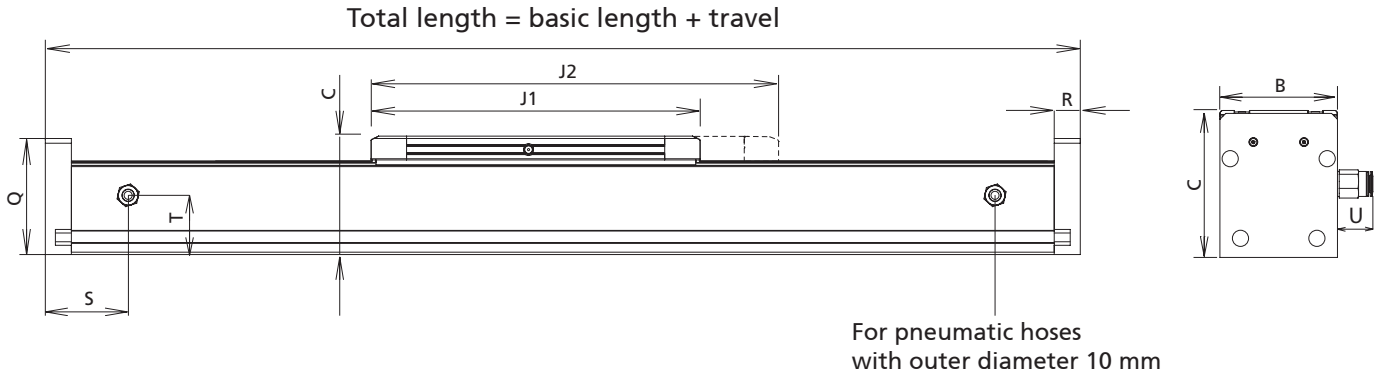
Ideal as additional / secondary support for the Duoline with toothed belt or spindle.
Identical construction to Z/S 60 and 80, but without drive



Code No.	Type	Basic length	B	C
TD17A5T1A11_0 _ _ _ _	RK DuoLine R 60 Clean	295	60	80
TD17A5T1B11_0 _ _ _ _	RK DuoLine R 60 Clean with extended guide carriage	385		
TD17A2T1A11_0 _ _ _ _	RK DuoLine R 80 Clean	352	80	100
TD17A2T1B11_0 _ _ _ _	RK DuoLine R 80 Clean with extended guide carriage	484		

Total lenght = basic length + total travel (mm)

A = without connection for vacuum suction
C = with connection for vacuum suction



[mm]

J1	J2	Q	R	S	T	U	Max. travel	Mass [kg]	
								Basic length	per 100 mm travel
245	–	70	22	72	38	24	3587	3,73	0,54
–	335						3497	4,46	0,54
278	–	98	22	72	50	24	7692	5,22	0,83
–	410						7560	6,89	0,83

Dimensions / ordering data

Order instructions:

- Longer travel lengths on request
- Also available without screw drive as a torque support
- Version with vacuum extraction as option

Spindle unit RK DuoLine S Clean with ball screw

Code No.	Type	Basic length	B	C	D1	D2
TD16A5A1A1 _ _0_ _ _ _	RK DuoLine S 60 Clean	321	60	80	Ø32^{H7} 2,3 deep	Ø10$_{k7}$
TD16A5A1B1 _ _0_ _ _ _	RK DuoLine S 60 Clean with extended guide carriage	411				

Total lenght = basic length + total travel (mm)

A = without connection for vacuum extraction
C = with connection for vacuum extraction

Ball screw:
1 = 16x5
2 = 16x10
3 = 16x16

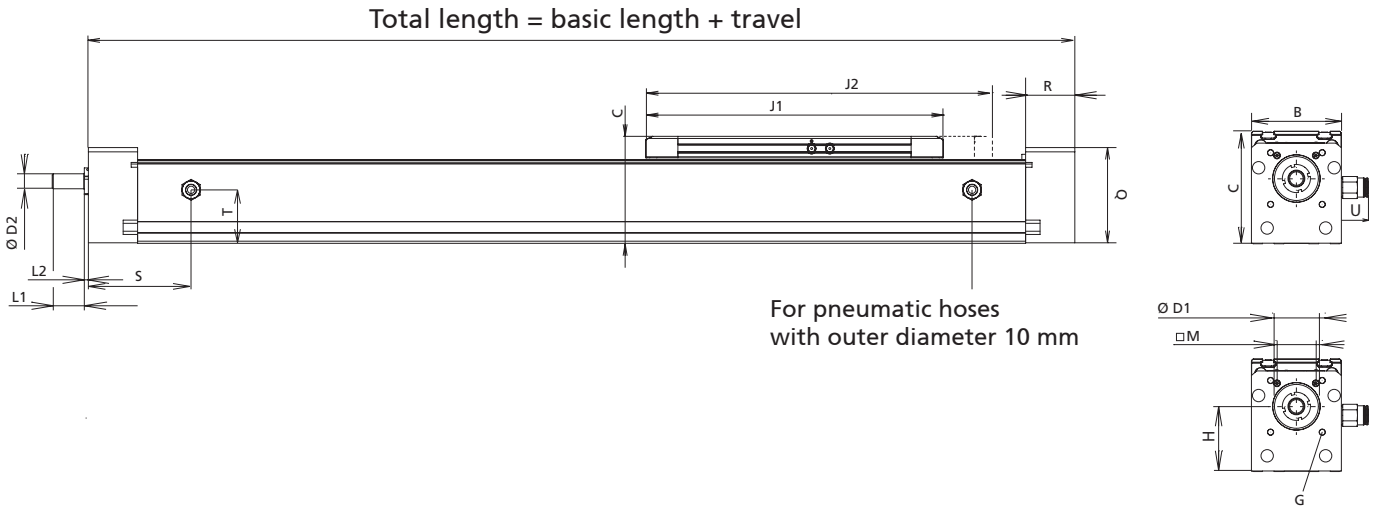
Code No.	Type	Basic length	B	C	D1	D2
TD16A2A1A_ _ _0_ _ _ _	RK DuoLine S 80 Clean	370	80	100	Ø42^{H7} 2,3 deep	Ø14$_{k7}$
TD16A2A1B_ _ _0_ _ _ _	RK DuoLine S 80 Clean with extended guide carriage	502	80	100	Ø42^{H7} 2,3 deep	Ø14$_{k7}$

Total lenght = basic length + total travel (mm)

A = without connection for vacuum extraction
C = with connection for vacuum extraction

Ball screw:
3 = 20x5
1 = 20x20
2 = 20x50

Integrated linear encoder
1 = without
2 = with plug-in coupling and 20 m of cable
3 = with 20 m of cable



[mm]

G	H	J1	J2	L1	L2	M	Q	R	S	T	U	max. travel	Mass [kg]	
													Basic length	per 100 mm travel
M5-10 deep	47,7	245	-	17,2	2,8	33x24	72,2	38	88	38	24	1800	3,44	0,60
		-	335									1710	4,26	0,60

[mm]

G	H	J1	J2	L1	L2	M	Q	R	S	T	U	max. travel	Mass [kg]	
													Basic length	per 100 mm travel
M6-18 deep	57,5	278	-	30	3,8	□46±0,2	89	46	96	50	24	1930	6,74	0,96
M6-18 deep	57,5	-	410	30	3,8	□46±0,2	89	46				1798	8,01	0,96

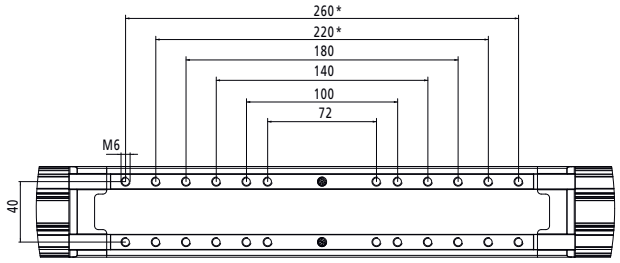
Fixation

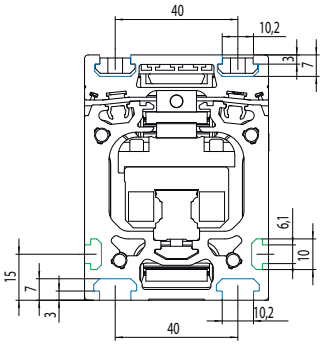
Fixation of payload

- Two slot stone strips 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 DuoLine R/S/Z 60

*only with version with extended guide carriage



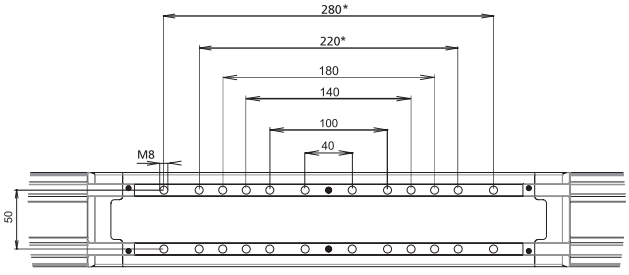


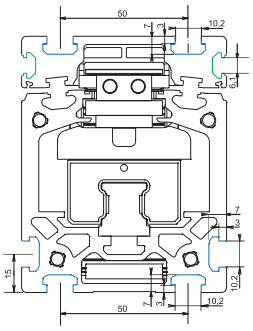
20 slot geometry

30 slot geometry

RK DuoLine R/S/Z 80

*only with version with extended guide carriage





20 slot geometry

30 slot geometry

Clamping strips

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

Material:
Natural anodised aluminium, fixation material stainless steel or nickel-plated
Scope of delivery:
2 clamping strips with fixation material

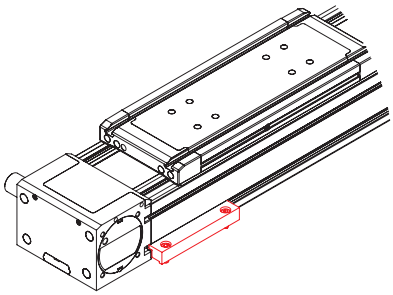


Fig.1: Ground assembly

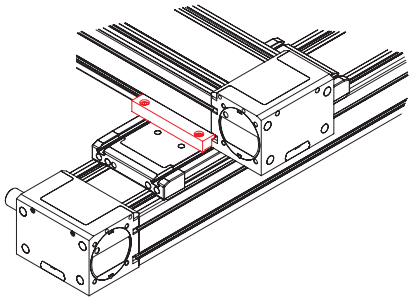
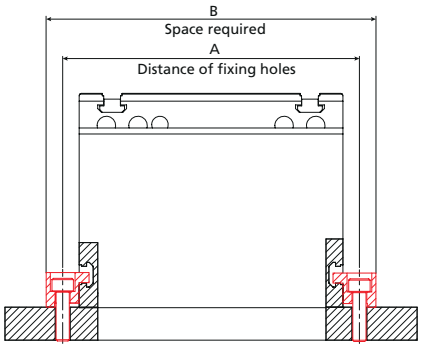
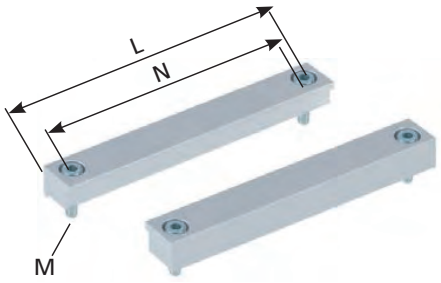


Fig.2: Crossing units





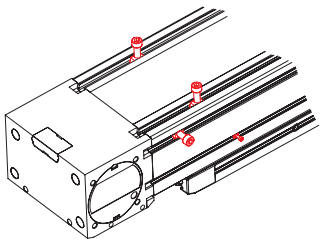
[mm]

Code No.	Type	Fig.	A	B	L	M	N
91819	RK DuoLine 60 ground assembly	1	72	91	57	M6	40
	RK DuoLine 60 crossing to 60	2					
91809	RK DuoLine 80 ground assembly	1	100	122	76	M8	50
	RK DuoLine 80 crossing to 80	2					

Slot stones

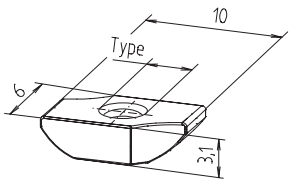
- Slot stones can be inserted and positioned at the guide profile and guide carriage

Material: Steel, nickel-plated or stainless steel

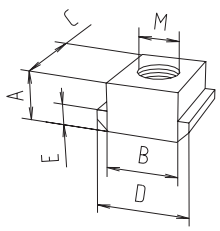


View of DuoLine from below

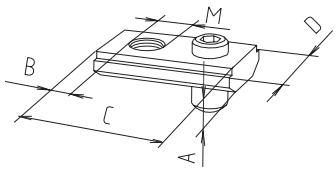
Slot stone -B-
can be swivelled into the slot



Slot stone -N-
can be slid into the slot



Slot stone -P- Version K
can be slid into the slot



[mm]

Code No.	Type	lot sizes	Material	Slot geometry	A	B	C	D	E	M	F [N]
Slot stone -B-											
E00017CSE	M3	–	Nickel-plated	20							
E00058CSE	M4	–	Nickel-plated	20							
Slot stone -N-											
400B202	M8	–	Nickel-plated	30	5	10	13	13	3	M8	4000
40092021	M8	–	Stainless steel	30	5	10	13	13	3	M8	4000
Slot stone -P- Version K											
4009214	M5	–	Stainless steel	30	4	7	20	12	-	M5	5000
4009216	M6	–	Stainless steel	30	4	7	20	12	-	M6	5000

Fixation

Centering Sets for RK DuoLine Clean

- The following positions could be defined exactly during the design process per set
  - Load capacity
  - Linear unit
- Reproductable position of the load capacity
- Reduced assembly/disassembly time of the load capacity or the linear unit
- Accuracy of the centering bolts h6
- To use for all RK DuoLine Clean linear units from March 2021 production date

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

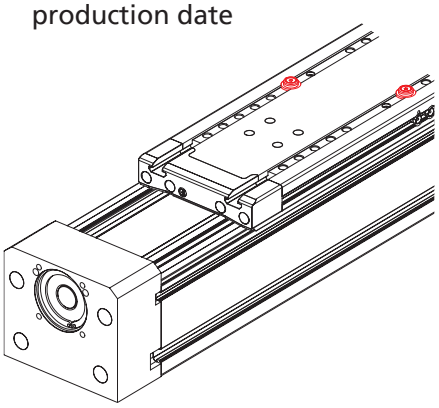


Fig. 1: Slide centering

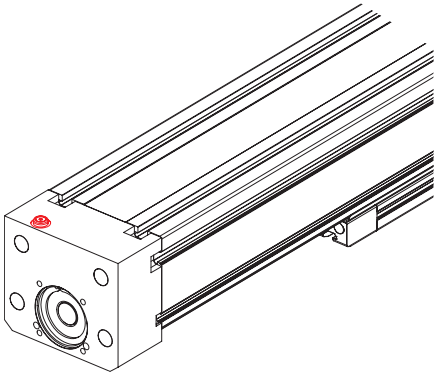
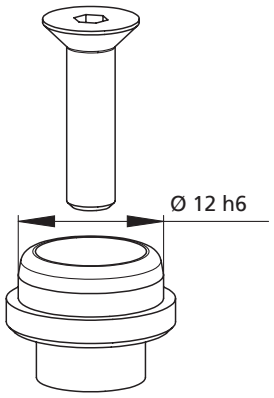
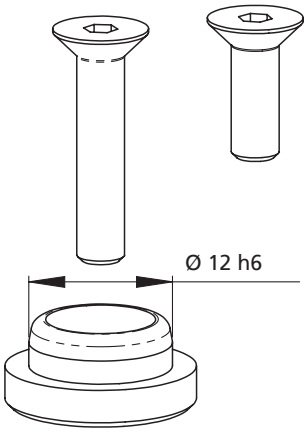


Fig. 2: Base centering

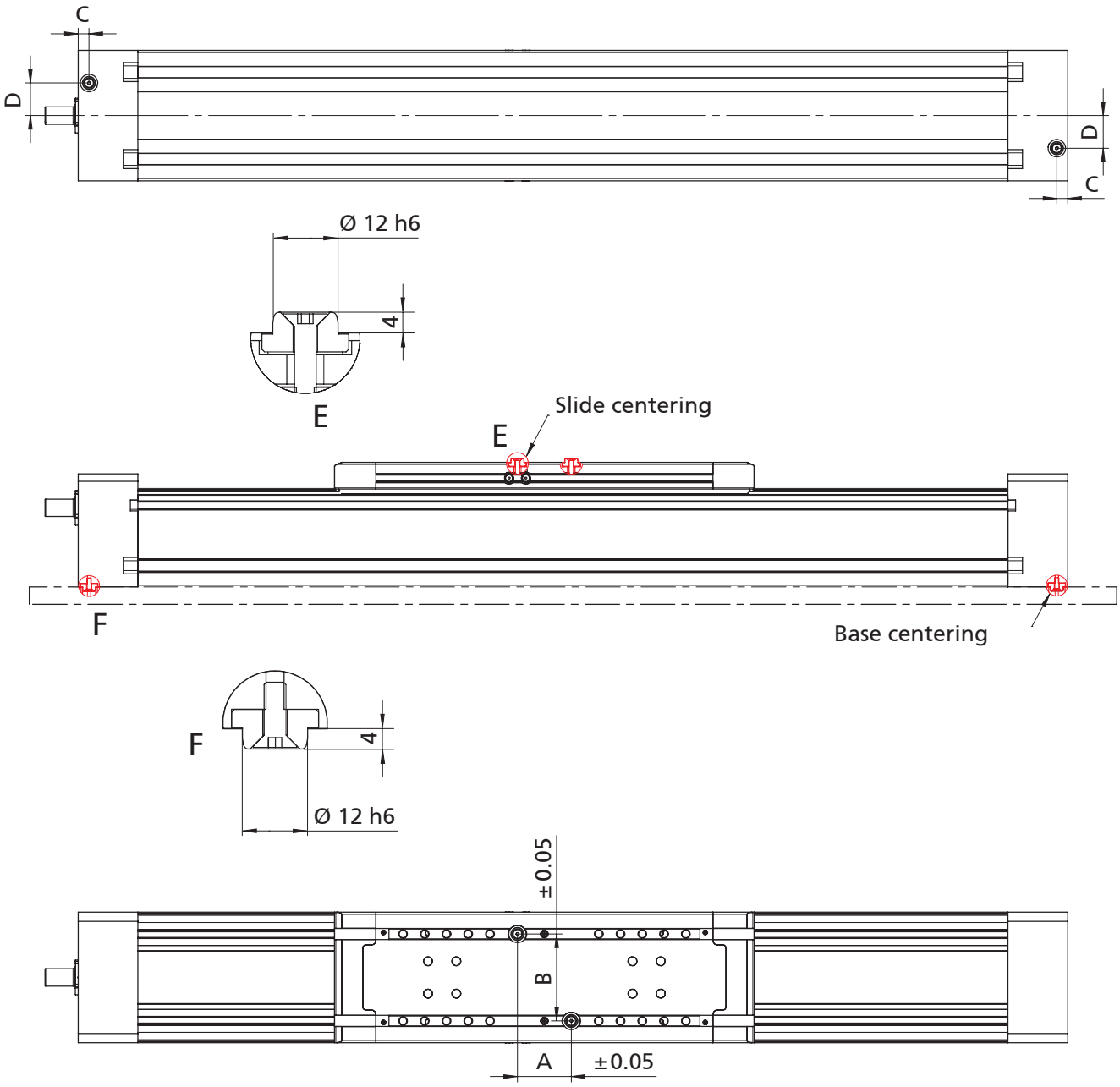


Size -A-



Size -B-

Code No.	Type	Use for
91810	Centering Set Size -A-	Slide centering RK DuoLine S 60; S 80
91817	Centering Set Size -B-	Base centering RK DuoLine S 60; S 80



[mm]

Type	A	B	C	D
RK DuoLine S 60	42	40	10	0
RK DuoLine S 60 with extended guide carriage	48	40	10	0
RK DuoLine S 80	*	*	10	15
RK DuoLine S 80 with extended guide carriage	70	50	10	15

***Note:** Centering on request only with special drill holes in the slide/clamp strips possible

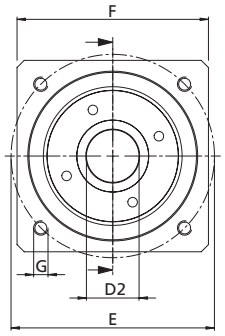
Drive

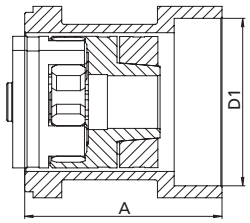
Selection table motor adapter kits RK DuoLine S for servo motors without gear

- 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 fixation material

Manufacturers	Motor	RK DuoLine S 60 Clean	RK DuoLine S 80 Clean	Motor flange
RK Rose + Krieger	RK-AC 118	949456	–	IM B5 56
	RK-AC 240	949466	949468	
	RK-AC 470	–	949469	IM B5 63
Baumüller	DSD2-036	949456	–	IM B5 56
	DSD2-045	949466	949468	
Beckhoff	AM8031, AM8032, AM8033	On request	–	IM B5 56
	AM8041, AM8042, AM8043	On request	On request	
Bosch	MSK040B, MSK040C, MSK043C	On request	On request	
	MSK050B, MSK050C	–	949366	IM B5 63
Kollmorgen	AKM2G-31, AKM2G-32, AKM2G-33, AKM2G-34	On request	–	IM B5 56
	AKM2G-41, AKM2G-42, AKM2G-43, AKM2G-44	On request	On request	
Lenze	MCS06I, MCS06F	949465	–	IM B5 56
	MCS09D, MCS09F, MCS09H, MCS09L	949466	949468	
Lti/Keba	LSP10	–	949469	IM B5 63
Mitsubishi	HG-JR53(4), HG-JR 73(4), HG-JR103(4), HG-JR153(4), HG-JR203(4)	On request	On request	IM B5 56
Parker	SMH 60, SMHA 60	949456	–	IM B5 56
	SMH 82, SMHA 82	949466	949468	
	SMH 100, SMHA 100	–	949469	IM B5 63
SEW	CMP50S, CMP50M, CMP50L	949456	–	IM B5 56
	CMP63S, CMP63M, CPM63L	949466	949468	
Siemens	1FK7032, 1FK7033, 1FK7034	On request	–	IM B5 56
	1FK7040, 1FK042, 1FK043, 1FK2205	On request	On request	
	1FK2105	–	949469	IM B5 63





A	D1	D2	E	F	G	Mass [kg]
61	Ø 60 F8 3 deep	Ø11x23	Ø 75	□70	M5 10 deep	0,39
66/79	Ø 80 F8 4/5,7 deep	Ø14x30	Ø 100	□82/□90	M6 15 deep	0,3 /0,67
89	Ø 95 H8 4 deep	Ø19x40	Ø 115	□115	M8 20 deep	1,08
61	Ø 60 F8 3 deep	Ø11x23	Ø 75	□70	M5 10 deep	0,39
66/79	Ø 80 F8 4/5,7 deep	Ø14x30	Ø 100	□82/□90	M6 15 deep	0,3 /0,67
		Ø14x30				
		Ø19x40				
		Ø14x30				
89	Ø 95 H8 4 deep	Ø19x40	Ø 115	□115	M8 20 deep	1,08
		Ø14x30				
		Ø19x40				
61	Ø 60 F8 3 deep	Ø11x23	Ø 75	□70	M5 10 deep	0,39
66/79	Ø 80 F8 4/5,7 deep	Ø14x30	Ø 100	□82/□90	M6 15 deep	0,3 /0,67
89	Ø 95 H8 4 deep	Ø19x40	Ø 115	□115	M8 20 deep	1,08
		Ø16x40				
61	Ø 60 F8 3 deep	Ø11x23	Ø 75	□70	M5 10 deep	0,2
66/79	Ø 80 F8 4/5,7 deep	Ø14x30	Ø 100	□82/□90	M6 15 deep	0,3 /0,67
89	Ø 95 H8 4 deep	Ø19x40	Ø 115	□115	M8 20 deep	1,08
61	Ø 60 F8 3 deep	Ø11x23	Ø 75	□70	M5 10 deep	0,2
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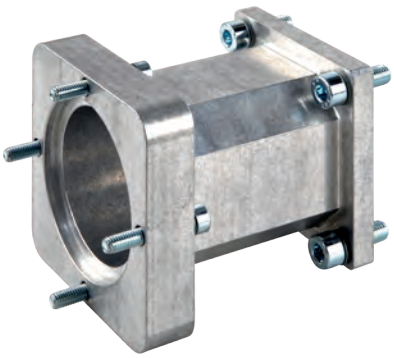
		Ø14x30				
		Ø19x40				
89	Ø 95 H8 4 deep	Ø19x40	Ø 115	□115	M8 20 deep	1,08

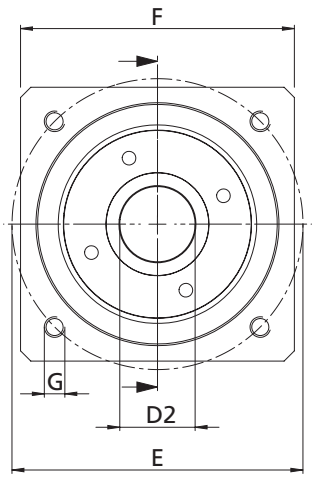
Drive

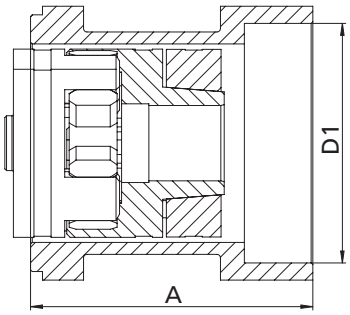
Motor adapter kits

- 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 fixation material







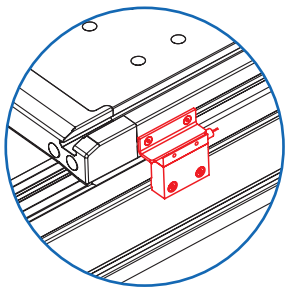
Selection table motor adapter kits servo motors with gear

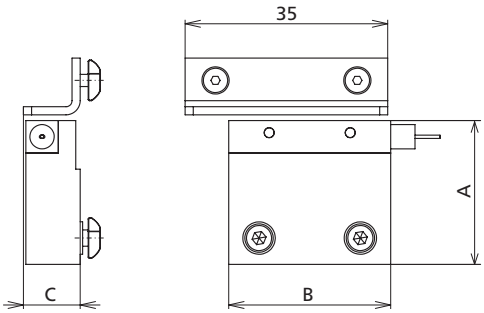
Manufacturers	Gear	RK DuoLine S 60 Clean	RK DuoLine S 80 Clean	A	D1	D2	E	F	G	Mass [kg]
Neugart	PLE 60	949467	949470	71 / 84	Ø 40 3 / 6 deep	Ø 14 x 30	Ø 52	☐70 / ☐75	M5	0,33 / 0,53
	PLE 80	–	949471	89	Ø 60 3,5 deep	Ø 20 x 36	Ø 70	☐75	M6	0,58
Atlanta	APG 080	–	949471	89	Ø 60 3,5 deep	Ø 20 x 36	Ø 70	☐75	M6	0,58
Eppinger	PE065	949467	949470	71 / 84	Ø 40 3 / 6 deep	Ø 14 x 30	Ø 52	☐70 / ☐75	M5	0,33 / 0,53
	PE080	–	949471	89	Ø 60 3,5 deep	Ø 20 x 36	Ø 70	☐75	M6	0,58
Ruhrgetriebe	RPS060	949467	949470	71 / 84	Ø 40 3 / 6 deep	Ø 14 x 30	Ø 52	☐70 / ☐75	M5	0,33 / 0,53
	RPS080	–	949471	89	Ø 60 3,5 deep	Ø 20 x 36	Ø 70	☐75	M6	0,58
SPN Schwaben Präzision	SPN-ECO (E2) EZ 23	949467	949470	71 / 84	Ø 40 3 / 6 deep	Ø 14 x 30	Ø 52	☐70 / ☐75	M5	0,33 / 0,53
	SPN-ECO (E2) EZ 24	–	949471	89	Ø 60 3,5 deep	Ø 20 x 36	Ø 70	☐75	M6	0,58
Wittenstein	Alpha CP015 MF	949467	949470	71 / 84	Ø 40 3 / 6 deep	Ø 14 x 30	Ø 52	☐70 / ☐75	M5	0,33 / 0,53
	Alpha CP025 MF	–	949471	89	Ø 60 3,5 deep	Ø 20 x 36	Ø 70	☐75	M6	0,58

External inductive limit switch

- External fixation on the guide profilev

Scope of delivery:
Limit switch with set of fixing items

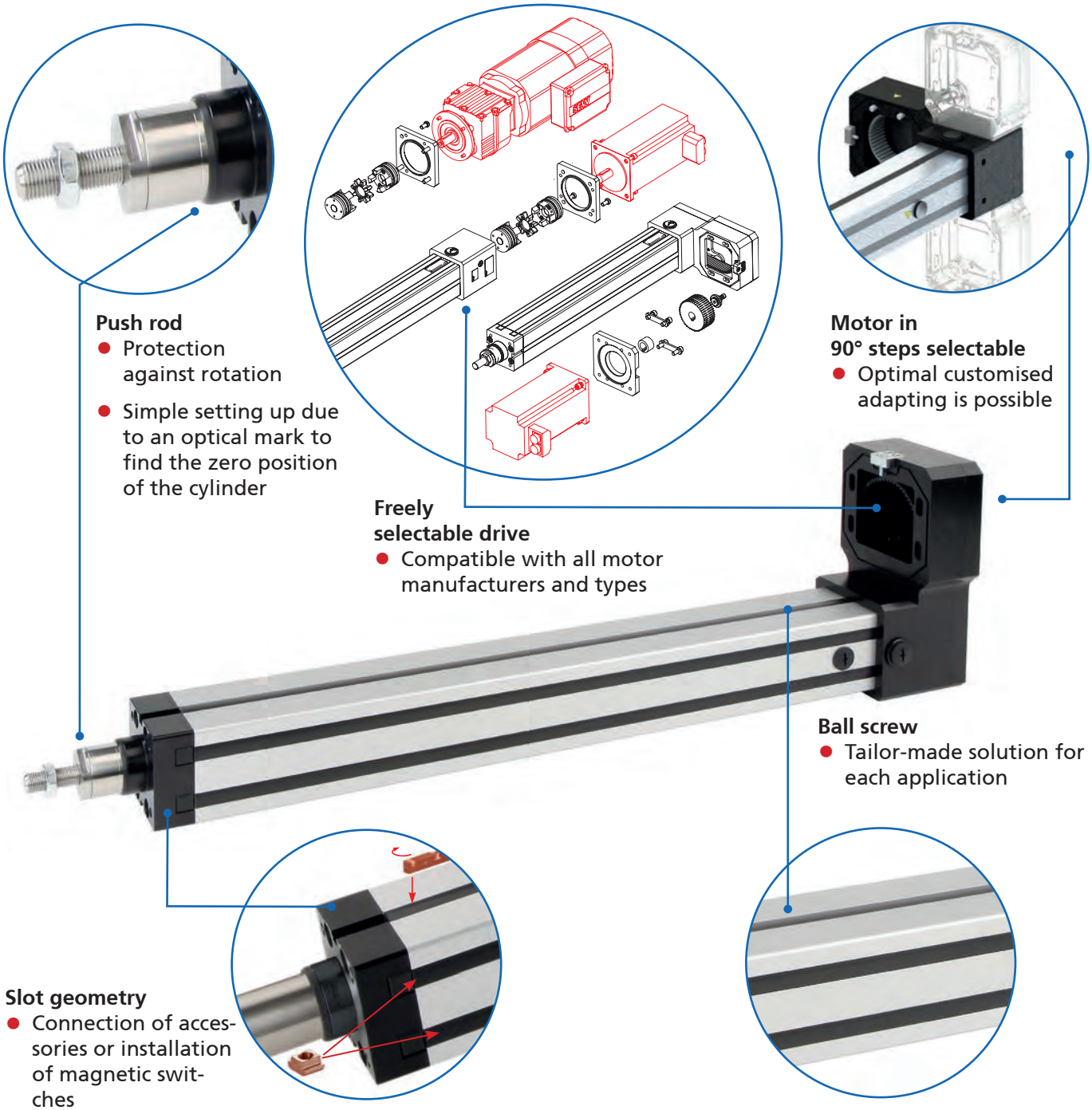




Limit switch	external
Voltage	10...30 VDC
Max. switching current	100 mA
Operating frequency	max. 5 kHz
Mechanical lifetime	independent of operating cycles
Operating distance	1,5 mm
Degree of protection	IP 67
Cable length	5 m
Ambient temperature	-25°C to +70°C

Code No.	Type	A	B	C	Version
92839	RK DuoLine 60 Clean	52,8	25	10	NO, Internal inductive limit switch
92821	RK DuoLine 80 Clean	71,5	25	10	

The new industrial heavy duty linear cylinder



Push rod
- Protection against rotation
- Simple setting up due to an optical mark to find the zero position of the cylinder

Motor in 90° steps selectable
- Optimal customised adapting is possible

Freely selectable drive
- Compatible with all motor manufacturers and types

Ball screw
- Tailor-made solution for each application

Slot geometry
- Connection of accessories or installation of magnetic switches

Features:

- Freely selectable drive (three-phase motor / servo motor / stepper motor)
- Short installation height dueto parallel motor adaption
- Variable fixation options
- DIN ISO 15552
- Non-rotating stainless steel

push rod

- Service life of up to 8 million double strokes (500 mm stroke with KG spindles)
- Protection class IP 54
- Integrated magnetics for external magnetic switches

Options:

- Optional: IP 65
- Special stroke lengths available on request
- External magnetic switches
- Optional gear ratio i= 1:1,5 possible
- Position for maintenance point upon request

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Support blocks for trunnion mounting ..... Page 566

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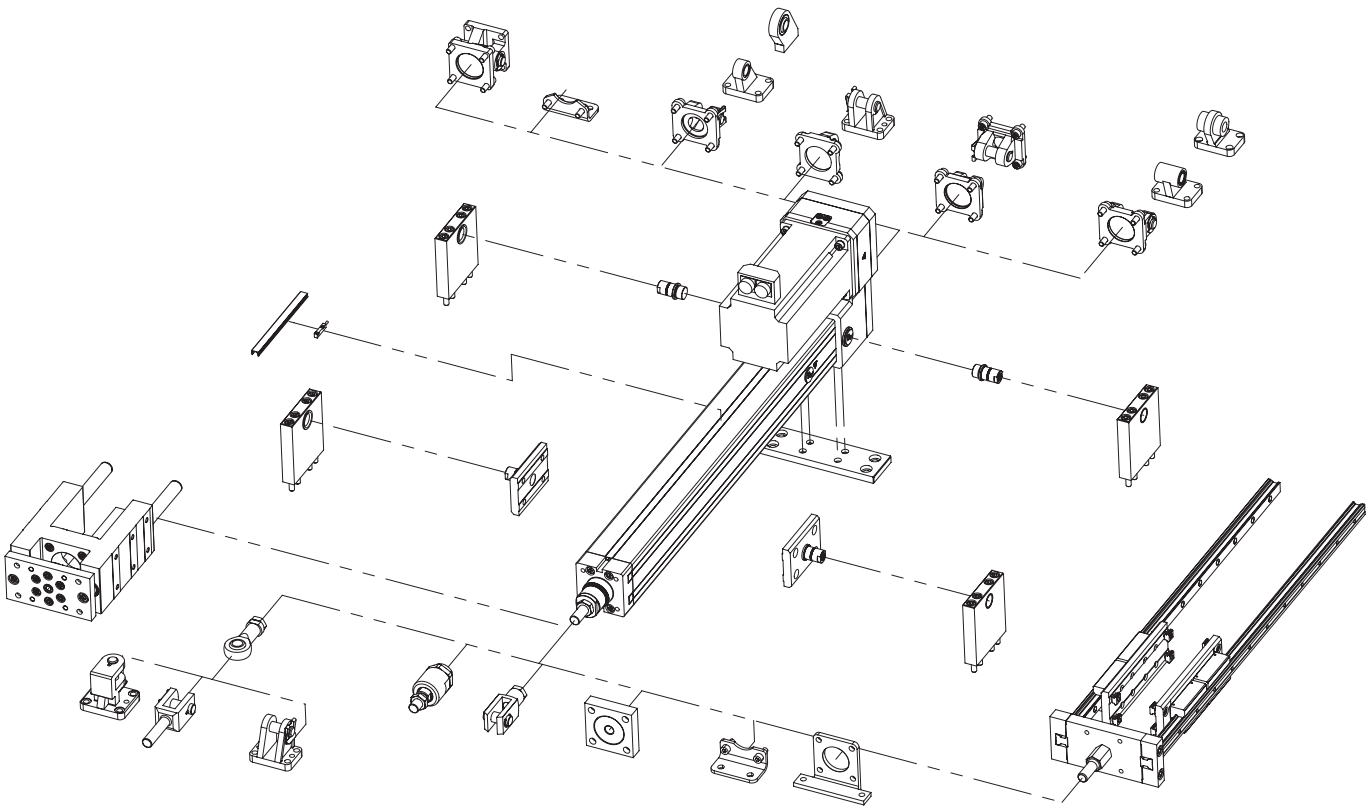
Key features / technical benefits

Peripherals overview

Unlimited options to adapt standard or customized accessories (front DIN ISO 15552)

- Swivels, trunnions
- Base fixings
- Clevis heads
- Swivel heads
- Guiding units
- Proximity switch

...and more...



Technical data

General information / operating conditions

Heavy duty linear cylinder with ball screw
for precision positioning applications (Control-Tec)

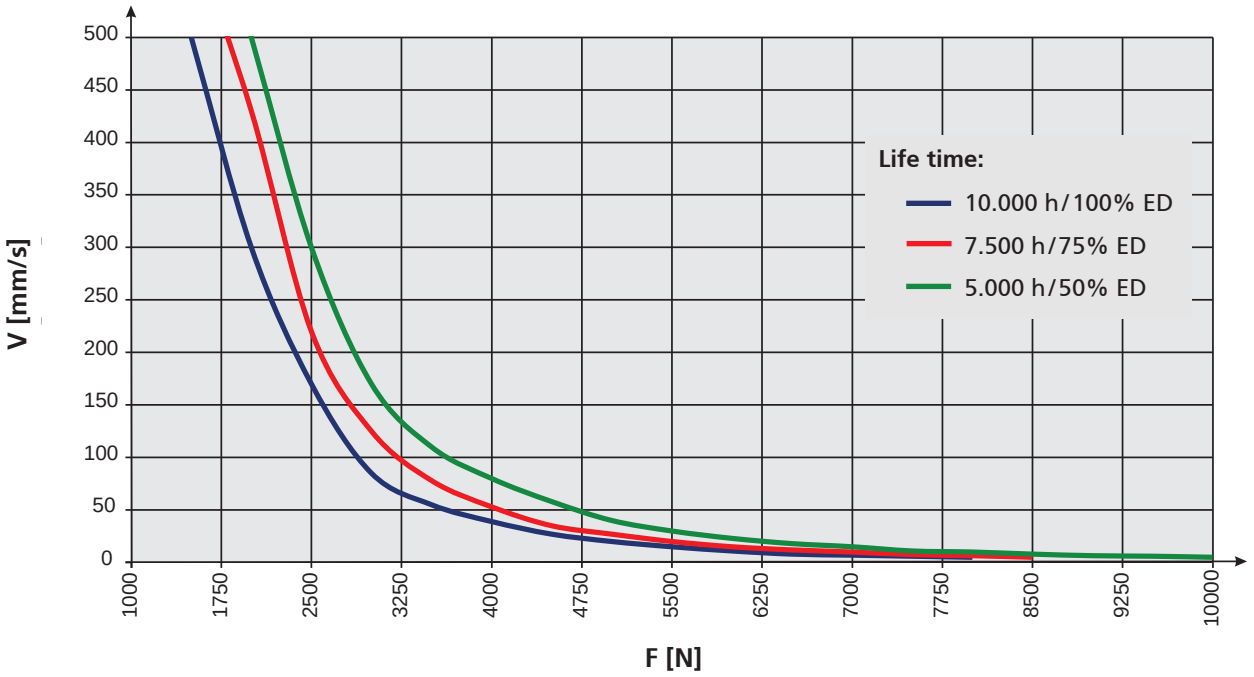
Type	SLZ 63 KG PL	SLZ 63 KG P PL*	SLZ 63 KG FL	SLZ 63 KG P FL*
Max. compressive force / tensile force	10.000 N		6.000 N	
Max. driving torque	20 Nm		30 Nm	
Max. speed	500 mm/s		1250 mm/s	
Max. acceleration	10 m/s²			
Repeatability	± 0,04 mm			
Max. no-load torque	-	< 1,0 Nm	-	< 1,0 Nm
Drive	KG 25x10		KG 25x25	
Lead accuracy	T 7 (≤ 0,052 mm / 300 mm)			
Duty cycle	S3 100%			
Ambient temperature	+ 0 °C to + 50 °C			
Degree of protection	IP 54 (optional IP 65)			
Continuous sound pressure level	< 75 dB (A)			
Mechanical positioning accuracy	± 0,08 mm			

*The pitch accuracy and the axial play of the lead nut combine to produce the mechanical positioning accuracy.

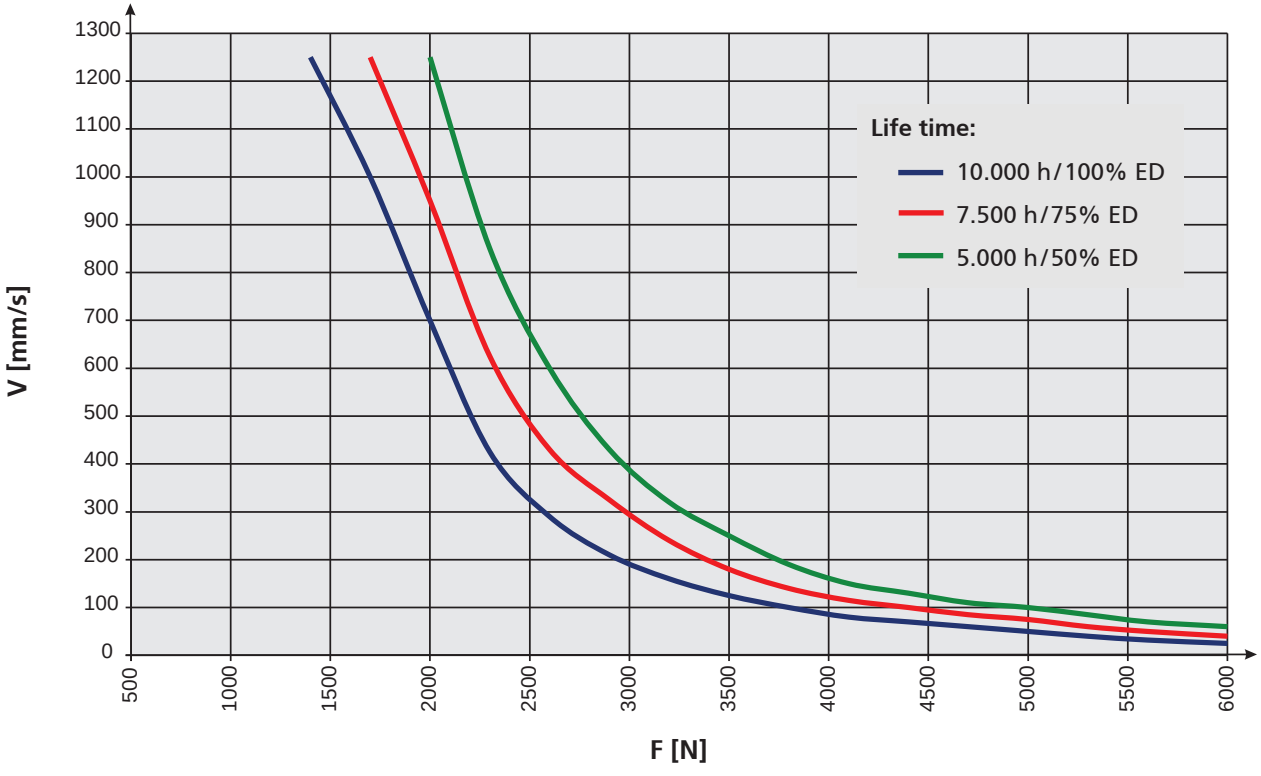
* P FL : parallele motor connection / Fastline-version (high spindle pitch)
* P PL : parallele motor connection / Powerline-version (low spinle pitch)

Subject to modifications. Latest version on www.rk-rose-krieger.com

Speed/Force diagram for SLZ 63 KG PL (KG 25x10)
For stroke lengths >700 mm, see diagram "Critical speed"

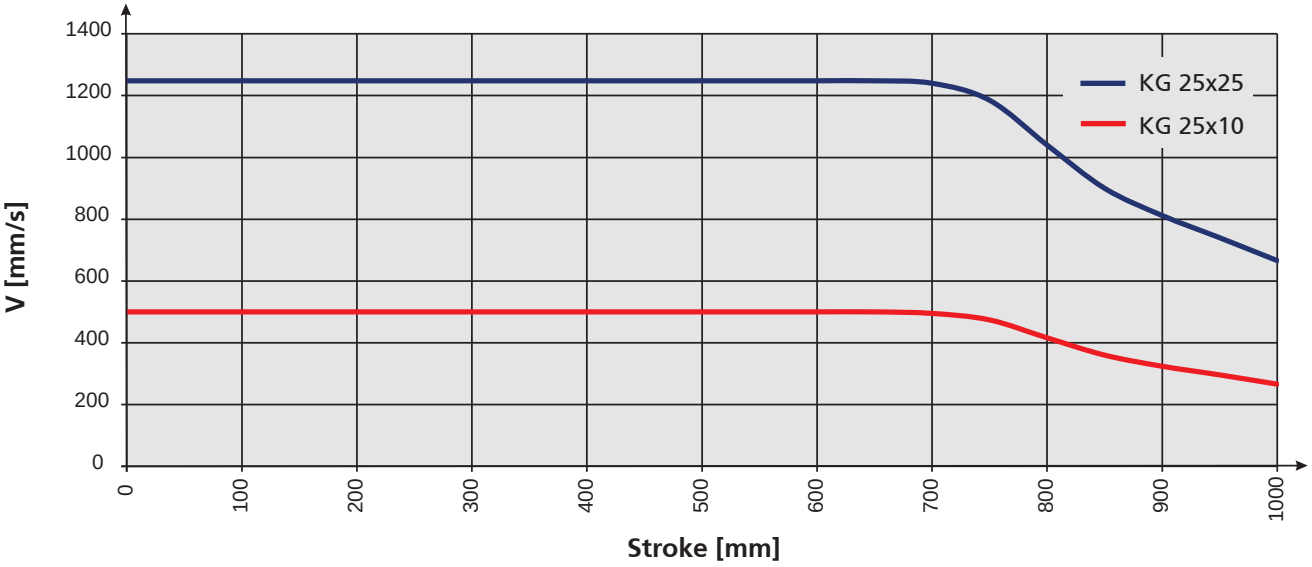


Speed/Force diagram for SLZ 63 KG PL (KG 25x25)
For stroke lengths >700 mm, see diagram "Critical speed"

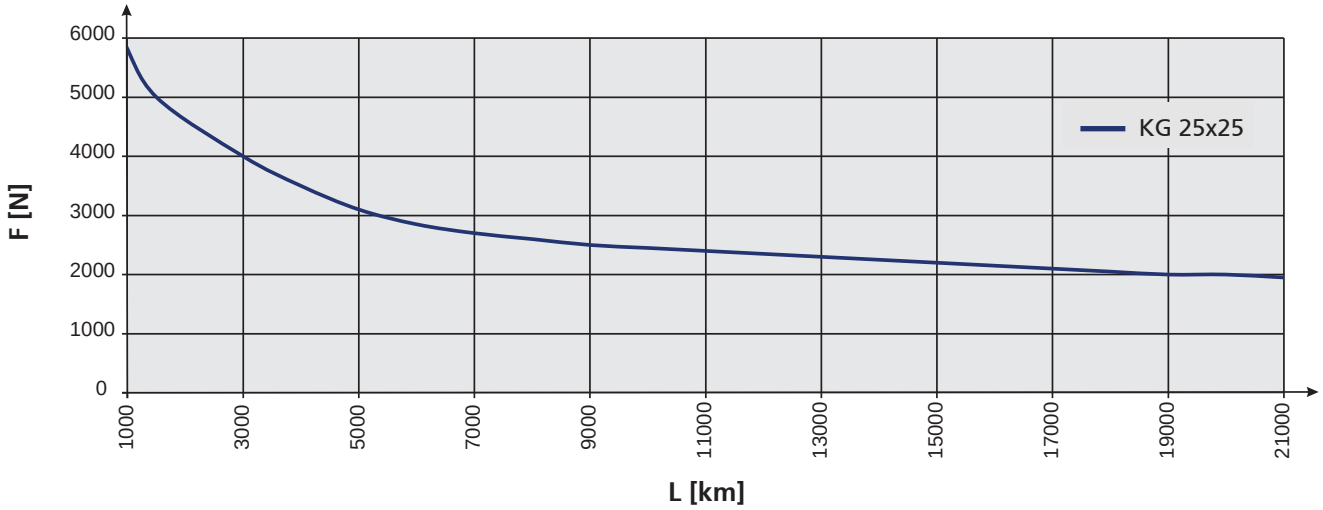


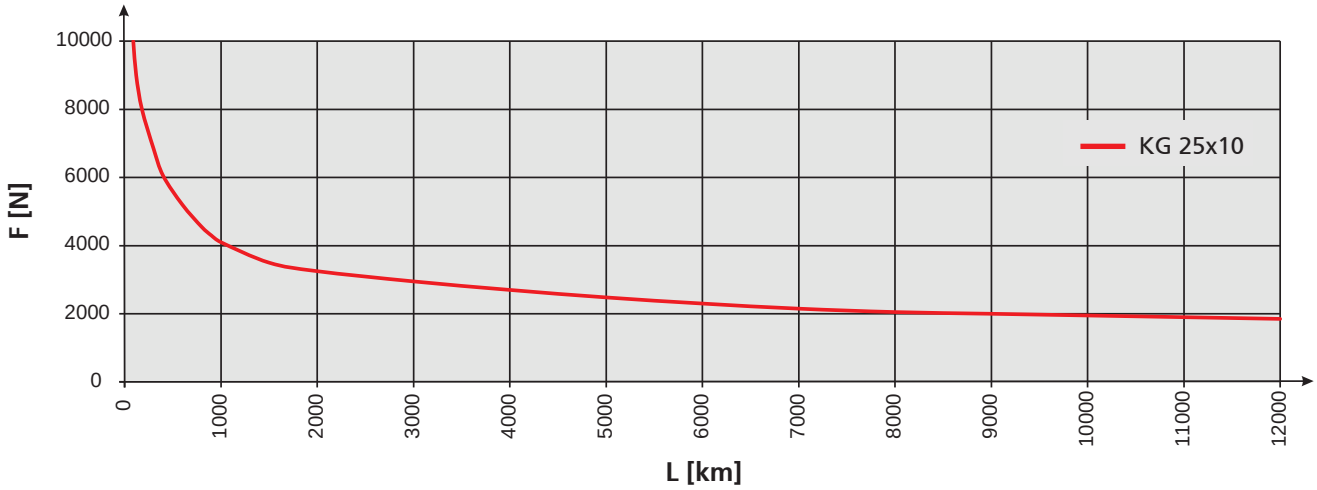
Power diagrams

Speed/Stroke diagram for SLZ 63 KG FL/PL (KG 25x25 and KG 25x10)
Critical speed

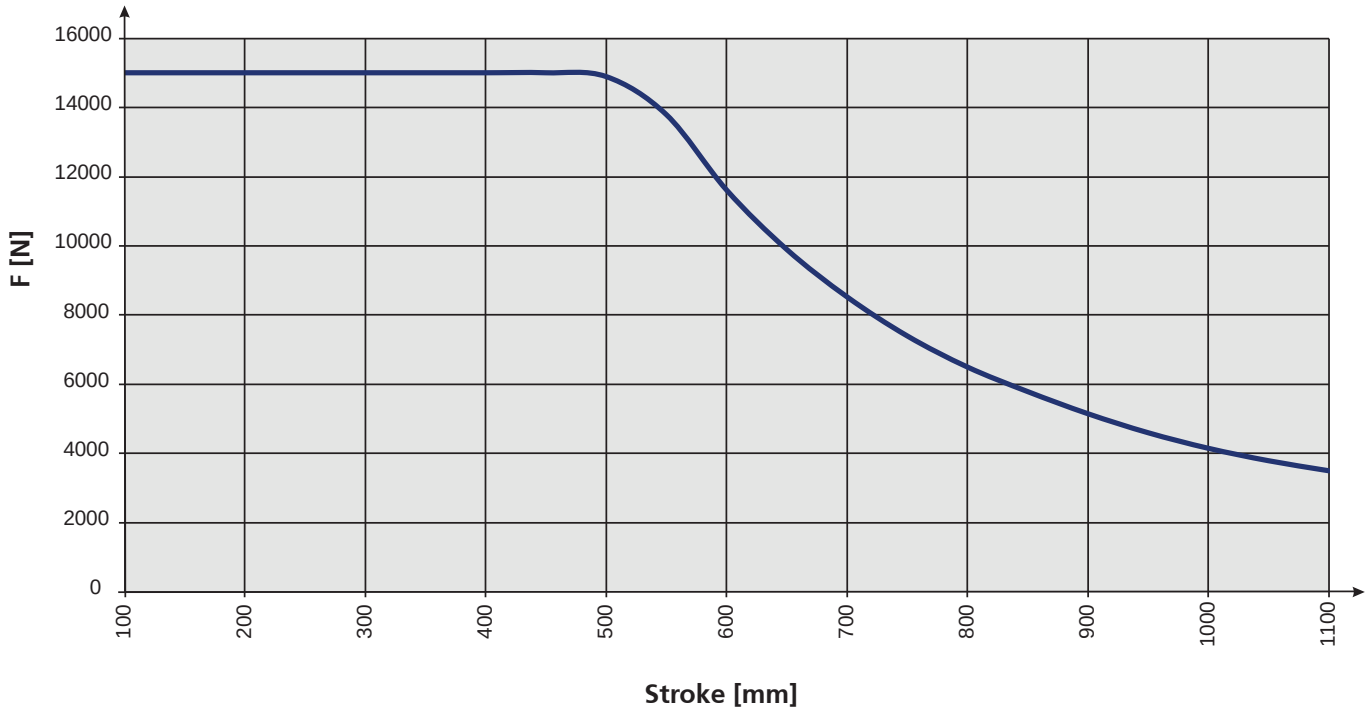


Force/Performance diagram for SLZ 63 KG FL/PL (KG 25x25 and KG 25x10)
All data are theoretical, practical differences are possible.





Force/Stroke diagram for SLZ 63 KG FL/PL
Spindle buckling



Note:
The specifications are based on experimentally determined and theoretically calculated data at room temperature.

The running performance that can be achieved in practice can deviate from the specified curves under different parameters.

Dimensions / ordering data

Order instruction:

- Change of maintenance opening for SLZ 63 upon request

Electric cylinder SLZ 63 with ball screw Control-Tec

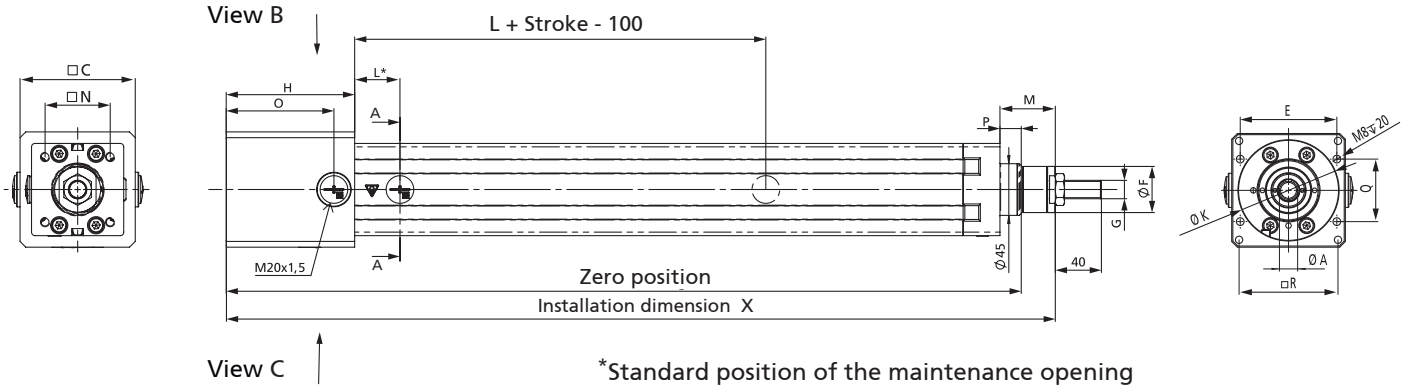
Code No.	Type	Spindle	A	B	C	E	F
TQ3_A1A1E3CAA_ _ _ _	SLZ 63 KG PL	KG 25x10	16	80	100	85	40
TQ3_A1A1E3BAA_ _ _ _	SLZ 63 KG FL	KG 25x25	16	80	100	85	40

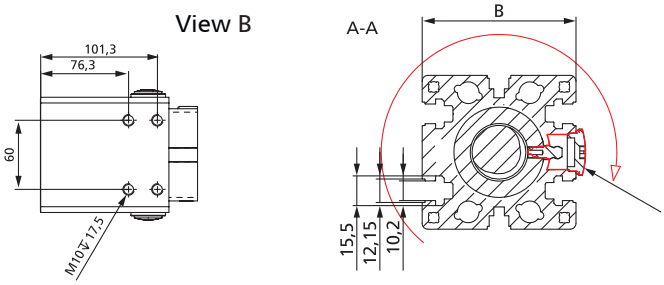
Stroke [mm]
e.g. 0 3 0 0

Degree of protection
SLZ 63 KG PL:
1 = IP 54
3 = IP 65

Degree of protection
SLZ 63 KG FL:
2 = IP 54
4 = IP 65

Travel [mm]	Installation dimension X [mm]	Weight [kg]
100	407	7,0
200	507	8,5
300	647	10,5
400	747	12,0
500	887	14,0
600	987	15,5
700	1127	17,5
800	1227	19,0
900	1367	21,0
1000	1467	22,5





[mm]

G	H	K	L	M	N	O	P	Q	R
M16x1,5	112	88	95	48	56,5	94	18,5	55	87
M16x1,5	112	88	95	48	56,5	94	18,5	55	87

Dimensions / ordering data

Order instructions:

- Change of maintenance opening for SLZ 63 upon request
- Motor housing in 90° steps upon request selectable

Electric cylinder SLZ 63 P with ball screw Control-Tec

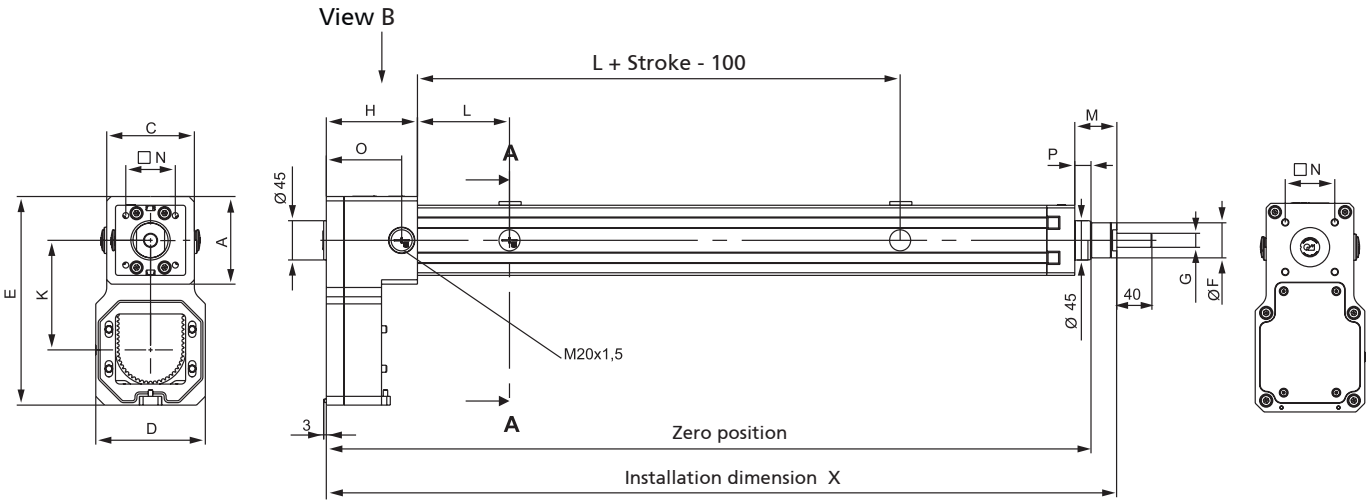
Code No.	Type	Spindle	A	B	C	D	E
TQ3_A1B1E3CAA_ _ _ _	SLZ 63 KG P PL	KG 25x10	100	80	100	125	238
TQ3_A1B1E3BAA_ _ _ _	SLZ 63 KG P FL	KG 25x25	100	80	100	125	238

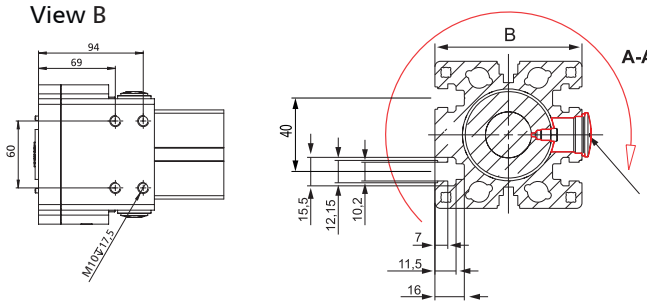
Stroke [mm]
e.g. 0 3 0 0

Degree of protection
SLZ 63 KG P PL:
1 = IP 54
3 = IP 65

Degree of protection
SLZ 63 KG P FL:
2 = IP 54
4 = IP 65

Travel [mm]	Installation dimension X [mm]	Weight [kg]
100	402	9,0
200	502	10,5
300	642	12,5
400	742	14,0
500	882	16,0
600	982	17,5
700	1122	19,5
800	1222	21,0
900	1362	23,0
1000	1462	24,5





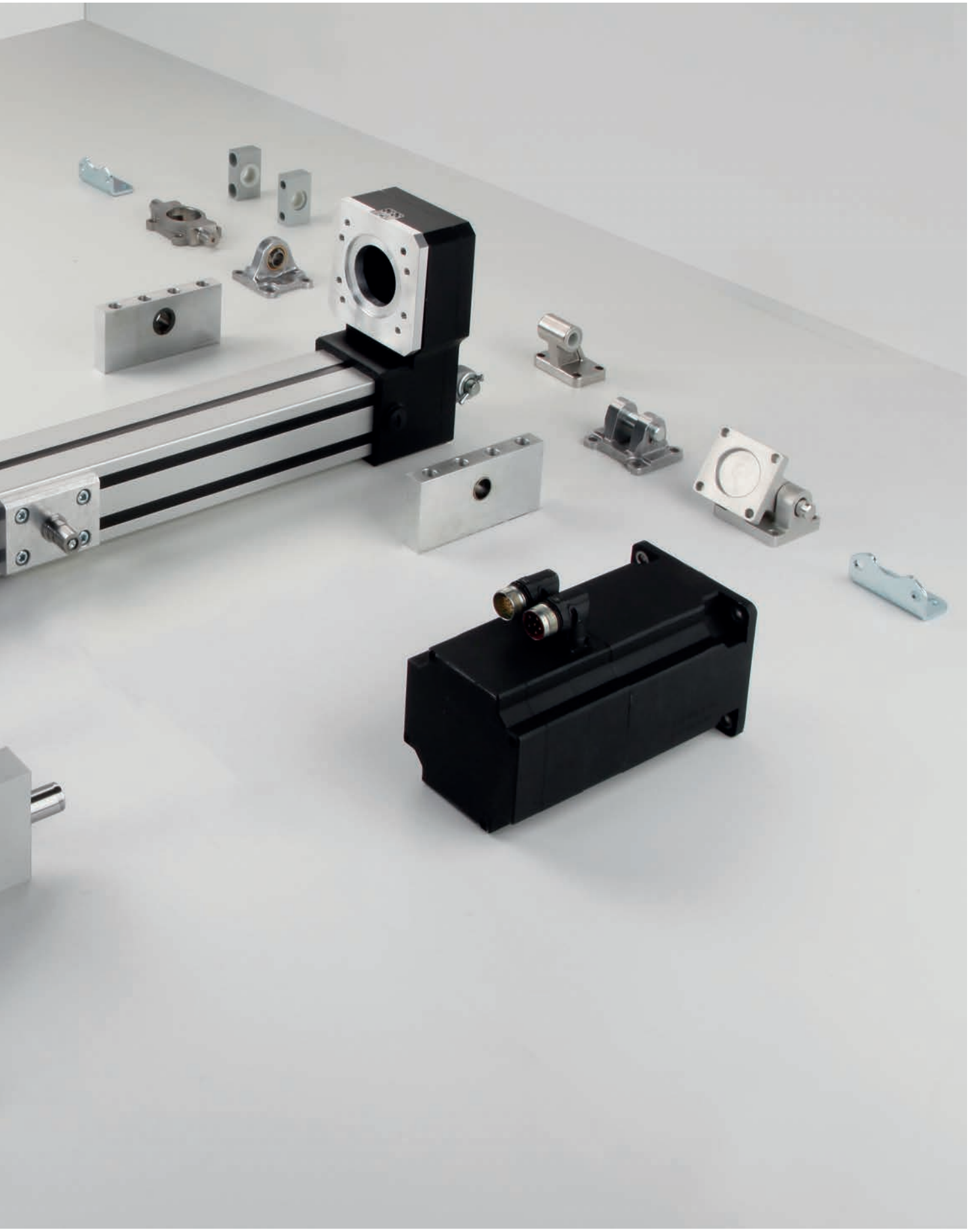
Motor housing in 90 ° steps selectable on request

Standard position:
Motor 180°
Maintenance opening 270°
(only possible if maintenance opening is relocated)

[mm]

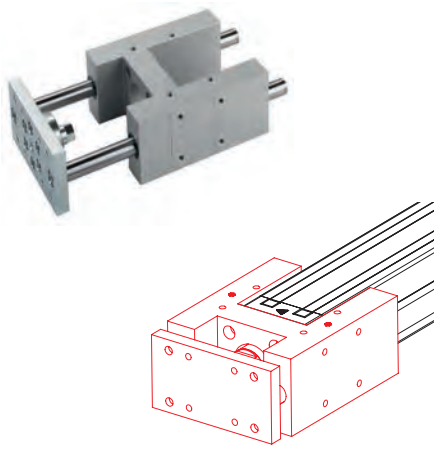
F	G	H	K	L	M	N	O	P
40	M16x1,5	104	125	95	48	56,5	86	18,5
40	M16x1,5	104	125	95	48	56,5	86	18,5

SLZ 63 Accessories / Fittings

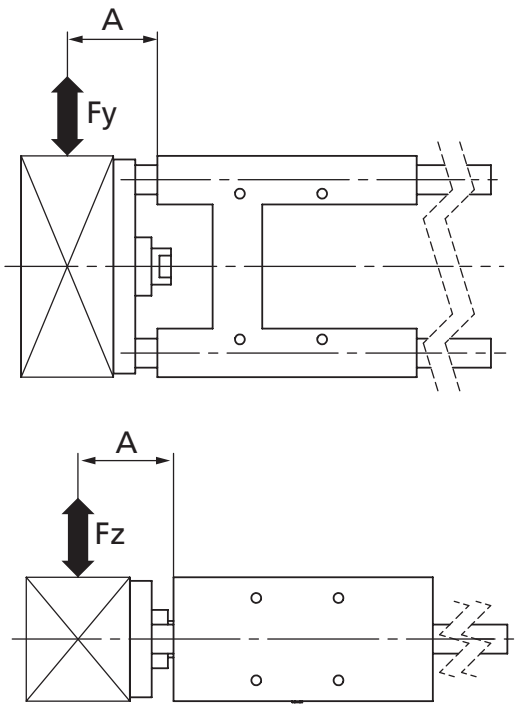


SLZ 63 Accessories / Fittings

Guide unit



Scope of delivery:
Guide unit, incl. fixing material



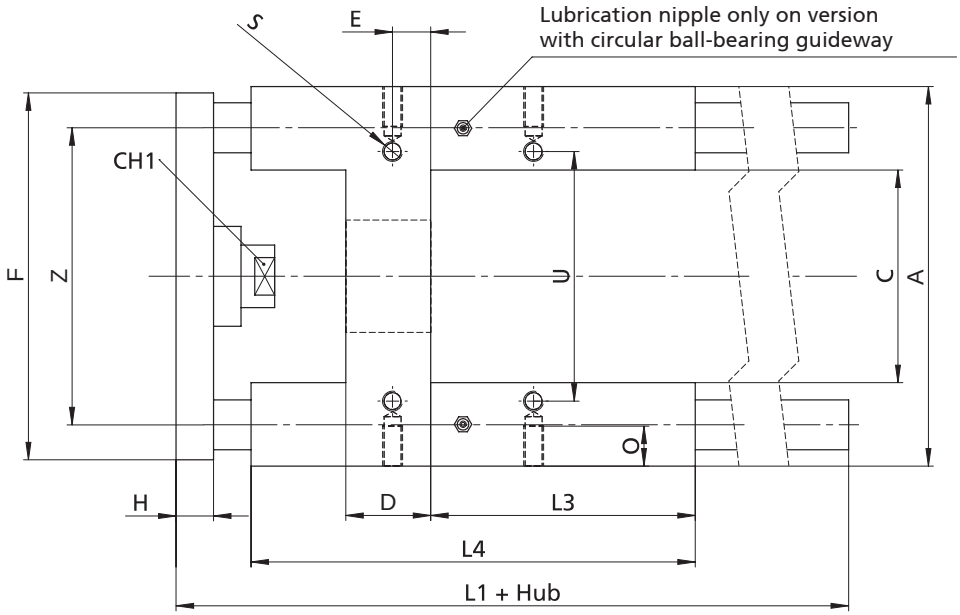
*Mz = Fy x A
My = Fz x A

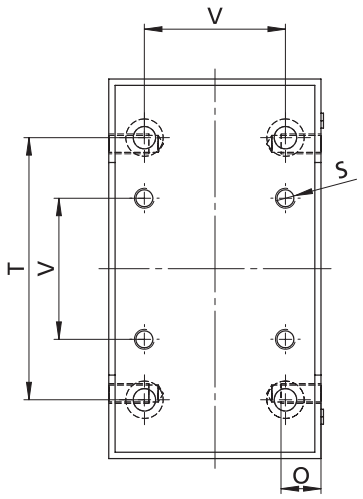
Version	Permissible dynamic load		Mass of guide units		Suitable for SLZ 63
	Mz (Nm)	My (Nm)	0-stroke (kg)	per 100 mm (kg)	
Ball bearing guide	48	43	4.4	0.5	Ball screw

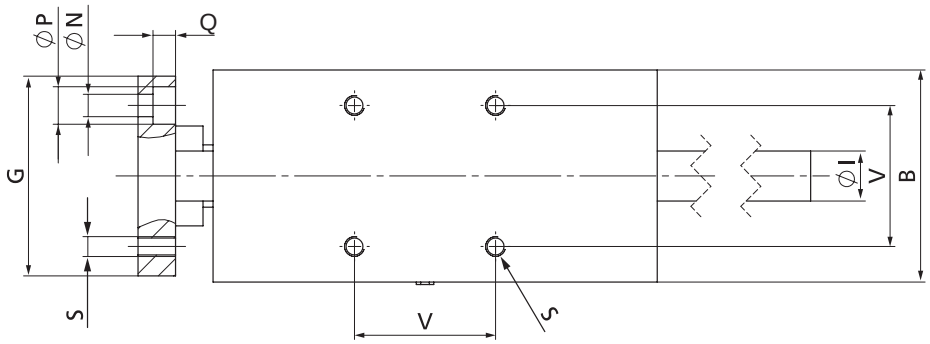
***Note:**
The moments Mz and My are the permissible dynamic loads; the statistic loads are twice that.

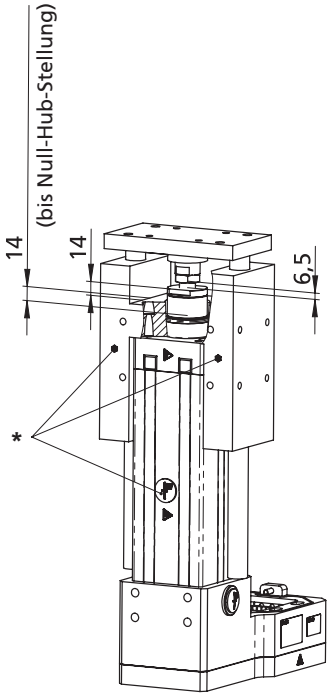
Code No.	Type	Stroke
QZD05_100	Guide unit for SLZ 63	100
QZD05_200		200
QZD05_300		300
QZD05_400		400
QZD05_500		500
QZD05_600		600
QZD05_700		700
QZD05_800		800
QZD05_900		900
QZD05_1000		1000

1 = Slide guide
2 = Ball bearing guide









G = Slide guide
K = Ball bearing guide

***Note:**
To keep access to the maintenance opening of the cylinder free, the housing must be mounted at an angle of 90°.
Ensure that the lubrication nipple of the guide unit is on the same side as the maintenance opening.

[mm]

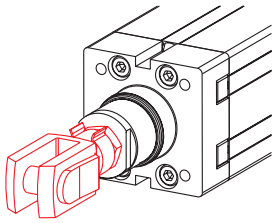
A	B	C	D	E	F	G	H	I	L1
152	85	85,2	34	15,3	147	80	15	20	243 (G) 225 (K)

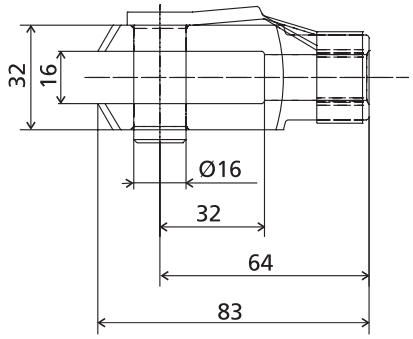
[mm]

L3	L4	N	O	P	Q	S	T	U	V	Z	CH1
106	178	9	16	15	9	M8	105	100	56,5	119	20

SLZ 63 Accessories / Fittings

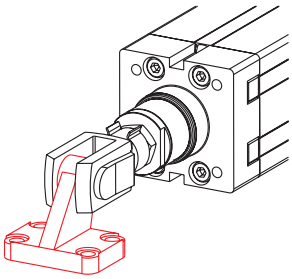
Clevis

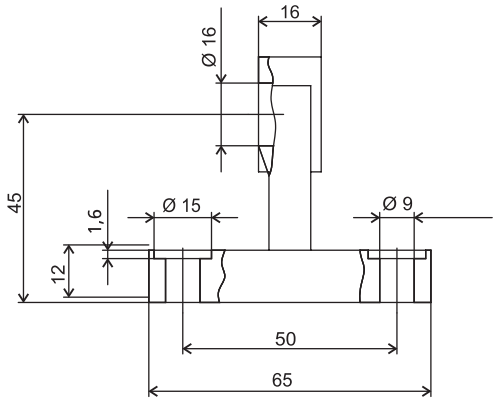


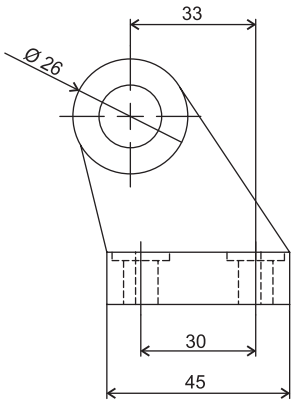


Code No.	Type	
QZD050644	SLZ 63	Cevis M16x1,5

Bearing block for clevis

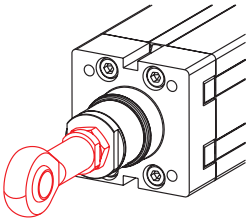


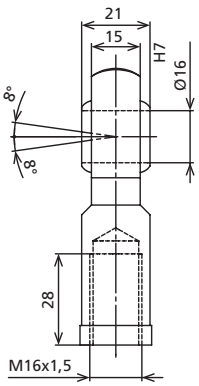


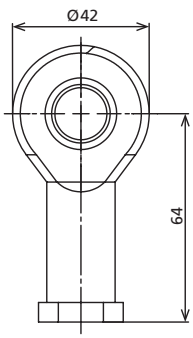


Code No.	Type	
QZD050573	SLZ 63	Bearing block Ø16

Swivel head

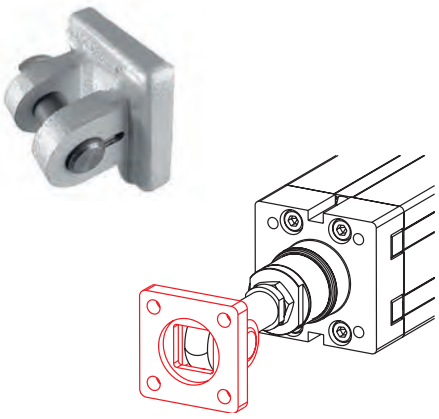


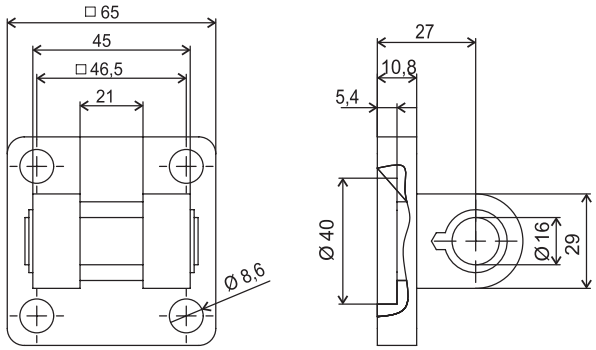




Code No.	Type	
QZD050645	SLZ 63	Swivel head M16x1,5

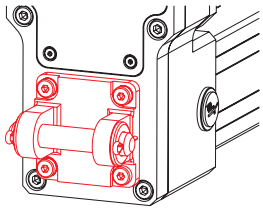
Clevis mounting for swivel head

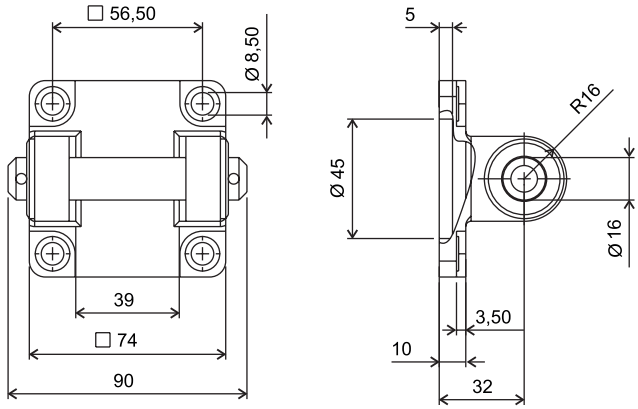




Code No.	Type	
QZD050577	SLZ 63	Fork attachment Ø 16

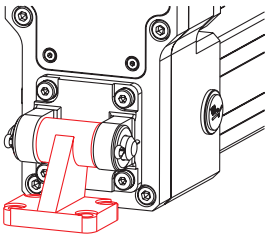
Swivel flange

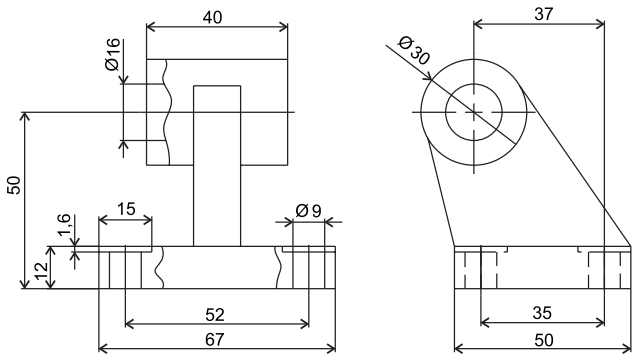




Code No.	Type	
QZD050580	SLZ 63	Swivel Ø 16

Bearing block for clevis mounting

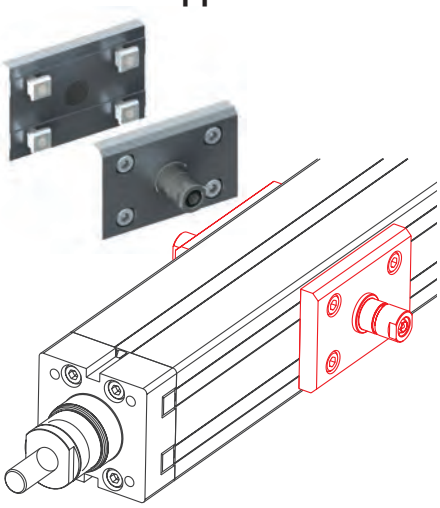


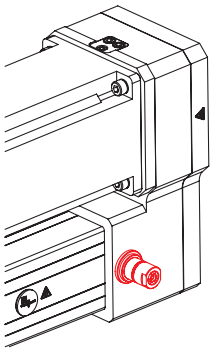


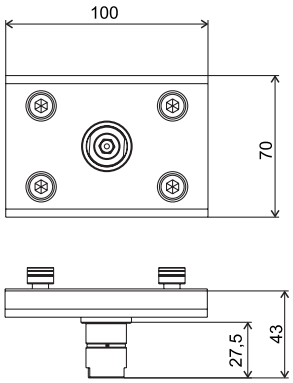
Code No.	Type	
QZD050585	SLZ 63	Bearing block wide Ø 16

SLZ 63 Accessories / Fittings

Trunnion support blocks

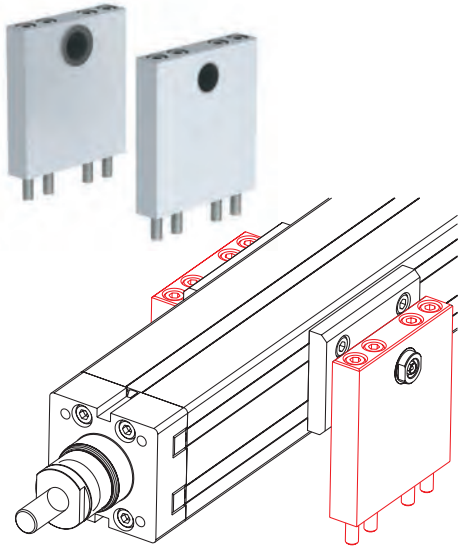


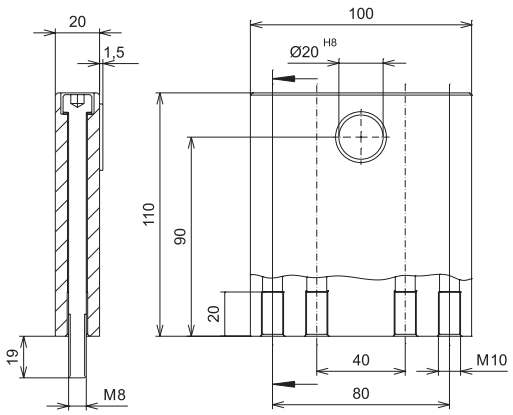




Code No.	Type
QZD050646	Trunnion support blocks SLZ 63
QZD050647	Trunnion SLZ 63

Support blocks for trunnion mounting





Code No.	Type
QZD050589	Support blocks SLZ 63

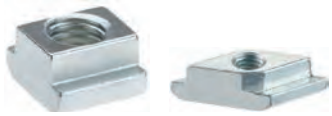
Order instruction slot stones:

- Purchase only in lot sizes and a multiple of that, see product table below

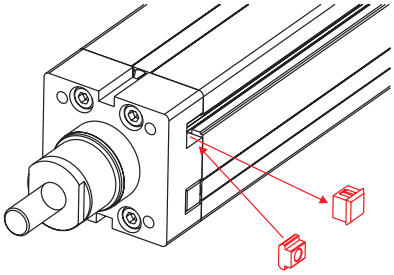
- Slot stones facilitate the attachment of fittings to the cylinder.

- They can be slid into the lateral slots (Type -N-) or swivelled into the slot from above (Type -R-).

Slot stones



Type -N- Type -R-



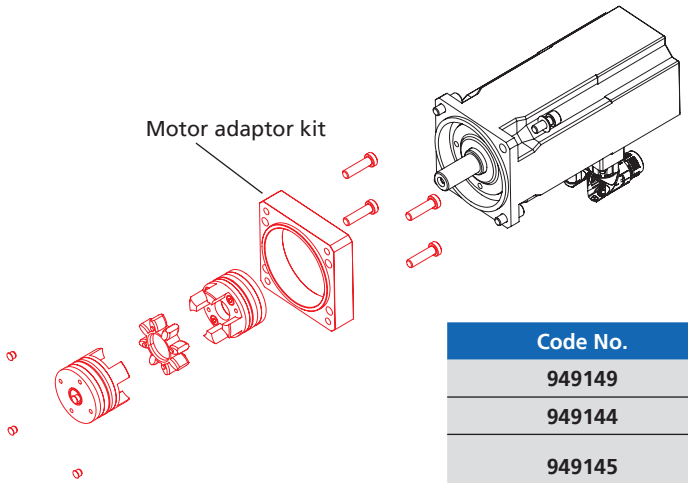
Code No.	Type	lot sizes	F [N]
4006201	Slot stone -N- M5	10, 20, 30... pcs	4000
4006203	Slot stone -N- M6	10, 20, 30... pcs	4000
4026207	Slot stone -N- M5	10, 20, 30... pcs	4000
4026203	Slot stone -N- M6	10, 20, 30... pcs	9000
4026206	Slot stone -N- M8	10, 20, 30... pcs	9000
4026221	Slot stone -R- M6	10, 20, 30... pcs	8000
4026222	Slot stone -R- M8	10, 20, 30... pcs	8000

Motor adaptor kit for 3 phase and servo motors

- Servomotors from the RK standard range can be easily connected
- Complete motor adaptor kits manufactured to your specifications on request
- Motor adaptors offer degree of protection IP 54 (IP 65 available on request)

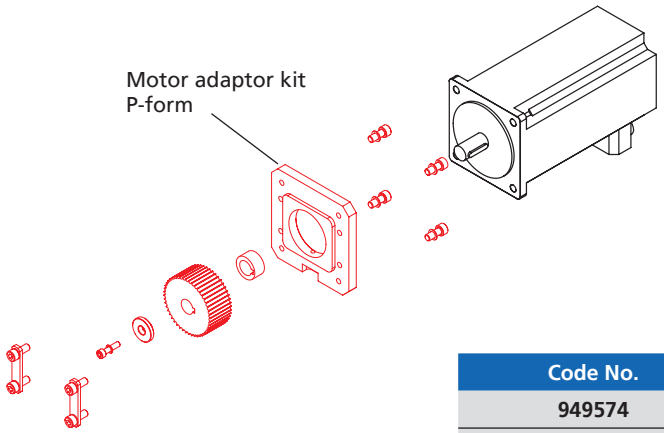
Scope of delivery:
Motor adaptor, elastomer coupling or gear and fixing material

3 phase motor / Servo motor



Code No.	3 phase motor / Servo motor or gear for SLZ 63
949149	for RK AC 345/470 (Servo motor)
949144	for RK AC 800 (Servo motor)
949145	for RF17 und WF20 (SEW - Drehstrommotoren) Motor adaptor fits all SEW flanges Ø120 with shaft Ø20x40
949148	for RF17 und WF20 (SEW- 3 phase motor)* Motor adaptor fits all SEW flanges Ø120 with shaft Ø20x40
949146	for PLE 80 (gear)
949147	for PLE 120 (gear)

*Note:
The motor adaptor must be used in combination with SLZ 63 TR FL/PL.

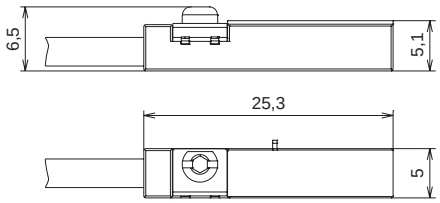


Code No.	3 phase motor / Servo motor or gear for SLZ 63
949574	for RK AC 345/470 (Servo motor)
949570	for RK AC 800 (Servo motor)
949571	for RF07, RF17 and RF 27 (SEW- 3 phase motor) Motor adaptor fits all SEW flanges Ø120 with shaft Ø20x40
949572	for PLE 80 (gear)
949573	for PLE 120 (gear)

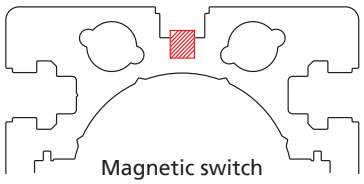
SLZ 63 Accessories / Fittings

Magnetic switch

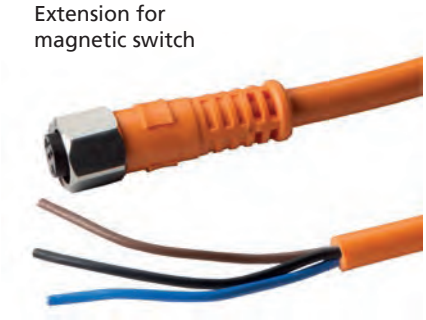
- Signals from the magnetic switch can be collected and evaluated by a customer-provided control unit (such as a PLC).



- The switch can be retrofitted in the lateral slot (protected by a cover profile as standard)
- Magnets are already integrated within the cylinder as standard.



Extension for magnetic switch



Magnetic switch – Technical data

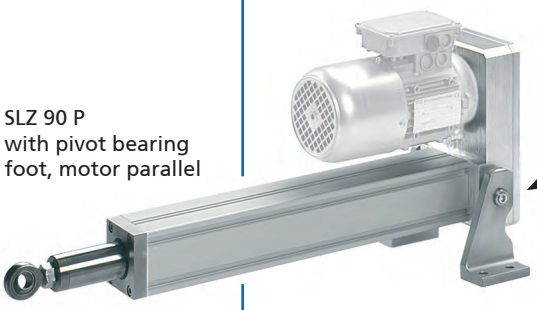
	NC contact
Voltage	10-30 V DC
Current consumption	< 10 mA
Output current	Max. 100 mA
Output type	PNP
Function indication	LED
Ambient temperature	-20°C to +70°C
Degree of protection	IP 67

Code No.	Type
QZD050602	Magnetic switch, NC contact, incl. extension for magnetic switch, cable length 5,3 m

The powerful linear cylinder for precise positioning tasks up to 25,000 N

SLZ 90 S
with pivot bearing
foot, motor inline

SLZ 90 P
with pivot bearing
foot, motor parallel



SLZ 90 W
with pivot bearing
foot, motor rightangle

SLZ 90 version with fixing boss

SLZ 90 version with pivot bearing foot

Drive options for SLZ 90
3-phase motor
Servo motor

Features:

- Choice of drives (3-phase motor/servo motor)
- Flexible use of space due to different motor configurations
- Forces up to 25,000 N
- Speeds up to 933 mm/s
- 100% duty cycle
- Coverable slot geometry on both sides supports a range of fixing options for attachments
- Push rod with rotation locking
- Travel up to 2000 mm
- Maintenance-free for entire lifetime of unit
- IP 54
- Internal magnets for external magnetic switches

Options:

- Optional IP 65 can be supplied
- Servo motors and controls available on request
- Special stroke lengths available on request
- Motor brake

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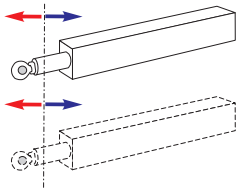
Properties/Technical data General information/operating conditions ... Page 572

Versions
(Dimensions, order numbers)



SLZ 90 electric cylinder with pivot bearing foot and fixing boss:

SLZ 90 S ..... Page 574 - 575

SLZ 90 P ..... Page 576 - 578

SLZ 90 W ..... Page 580 - 582

Accessories

Fixing Slot stone -R- ..... Page 583

Position determination Magnetic switch ..... Page 583

Technical data

General information/operating conditions

Type	SLZ 90 with ball screw for precise positioning/control		
	SLZ 90 S	SLZ 90 P	SLZ 90 W
Compressive force/tensile force	25,000 N	25,000 N	25,000 N
Self-locking (via motor brake)	25,000 N	25,000 N	25,000 N
Max. speed	933 mm/s	933 mm/s	126 mm/s
Design	Linear cylinder with ball screw 25 x 5, 25 x 10, 25 x 25, 32 x 5, 32 x 10, 32 x 40		
Guide	Double bearing provided by slide bushes		
Installation position	Any position, without shear forces		
Lead accuracy	T7 (≤ 0,052 mm / 300 mm)		
Ambient temperature	-20°C to +70°C		
Repeatability	± 0.05 mm		
Duty cycle (at max. load)	100%		
Voltage	230/400 V AC		
Current consumption (max. starting current)	depending on motor selection		
Power input	depending on motor selection, up to 1.5 KW		
Protection class	IP 54 (optional IP 65)		
Mechanical positioning accuracy	± 0,142 mm		

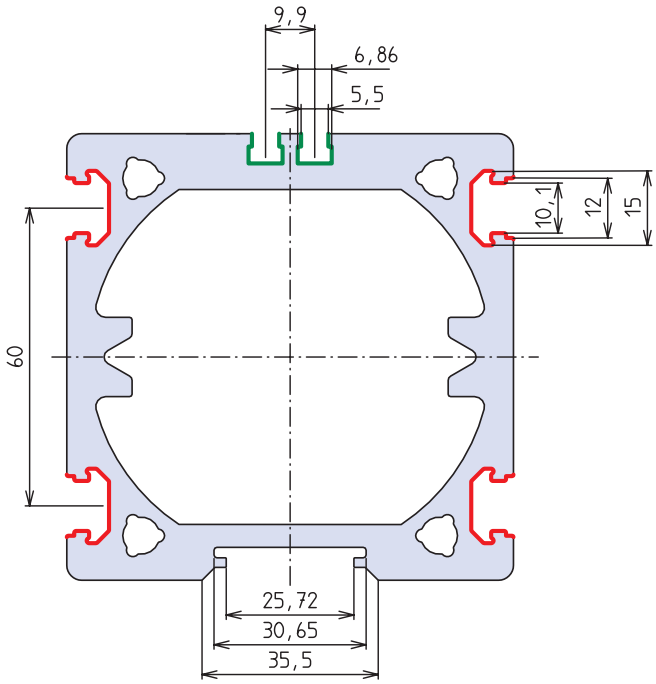
*The pitch accuracy and the axial play of the lead nut combine to produce the mechanical positioning accuracy.

The data refers to a three-phase motor 230/400 V AC, 50 Hz;
different performance data available on request.

Connecting slots - guide profile

Slot for magnetic switch, see page 583

Slot for accessory attachment
(30 BLOCAN® slot geometry)



Versions

Order instructions:

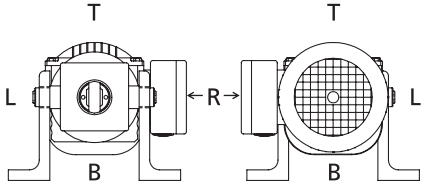
- Longer stroke lengths on request
- Other performance data and motors available on request

SLZ 90 S versions with ball screw

Code No.	Type	Max. force F [N]	Max. speed [mm/s]	Max. stroke [mm]	Output [kW]	Motor selection with motor brake
Ball screw 32 x 5						
TQ21A1S21_6_A_ _ _ _	SLZ 90 S	8,000	116	1,000	1.5	DRN90L4/BE2/FT
TQ21A1S24_6_A_ _ _ _	SLZ 90 S	18,000	26	1,300	0.75	RF17DRN80M4/BE1
Ball screw 32 x 10						
TQ21A1S21_7_A_ _ _ _	SLZ 90 S	3,500	233	1,000	1.5	DRN90L4/BE2/FT
TQ21A1S25_7_A_ _ _ _	SLZ 90 S	25,000	17	1,100	0.55	RF17DRS71M4/BE1
Ball screw 32 x 40						
TQ21A1S21_8_A_ _ _ _	SLZ 90 S	1,000	933	900	1.5	DRN90L4/BE2/FT

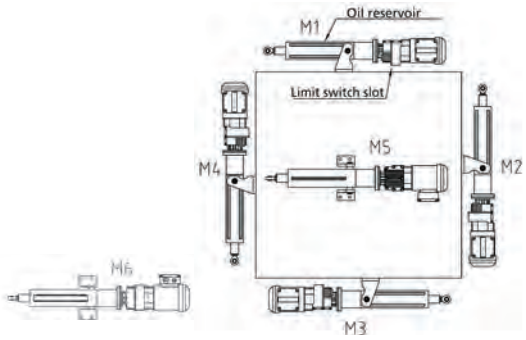
Stroke length

Installation position of terminal box

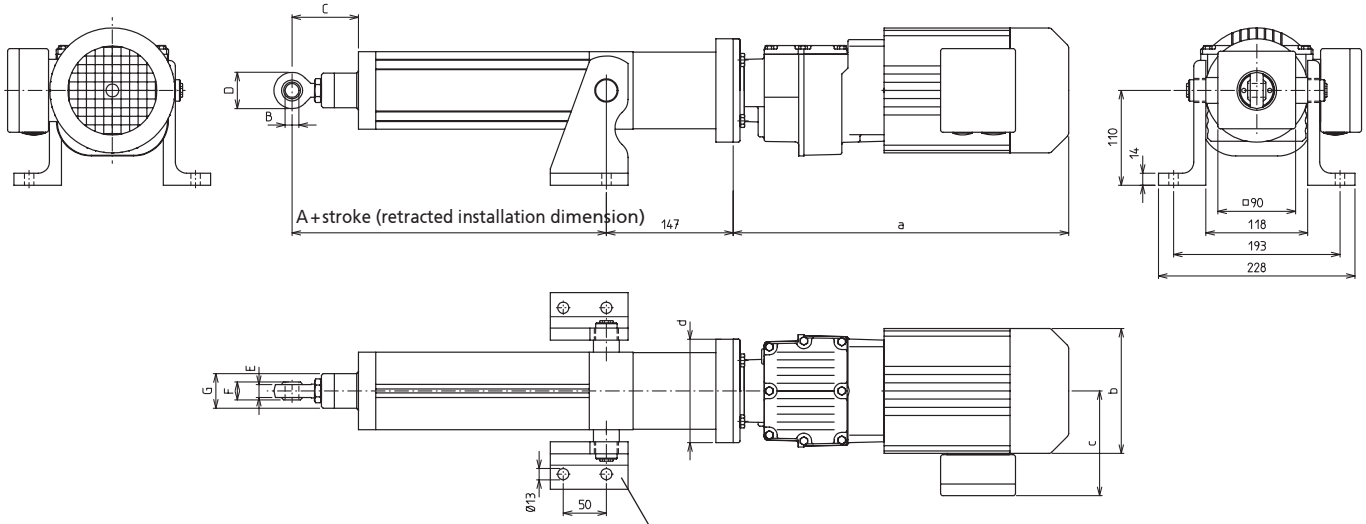


All diagrams show the terminal box in the R position

1 = M1
2 = M2
3 = M3
4 = M4
5 = M5
6 = M6



Version with pivot bearing feet



Can be turned through 360°
The pivot bearing feet can also be mounted laterally reversed.

[mm]

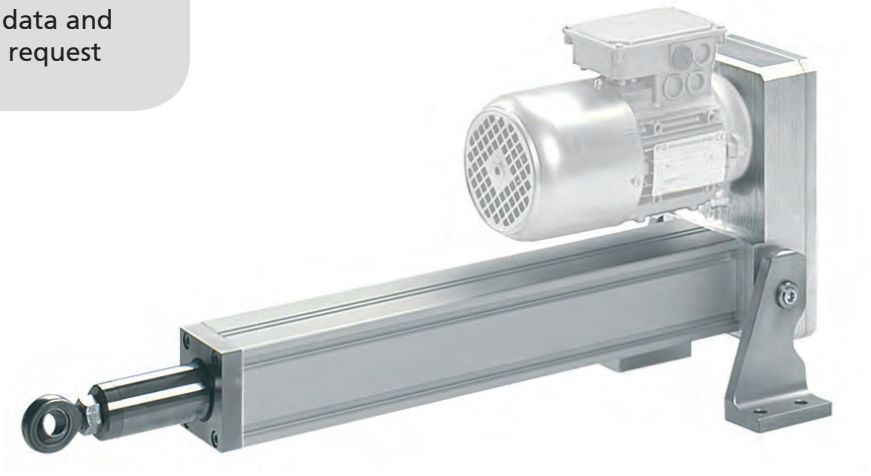
3-phase motors	a	b	c	d	Weight [kg]
RF17DRS71M4/BE1	428	Ø139	129	Ø120	15
RF17DRN80M4/BE1	491	Ø156	139		20
DRN90L4/BE2/FT	407	Ø179	150	Ø140	37

Type	A	B	C	D	E	F	G	Weight [kg]	
								Basic length (dimension A)	Additional weight/100 mm
KG 32x5, 32x10, 32x40	294	Ø20	86	50	18	25	Ø50	12.8	1.9

Versions

Order instructions:

- Longer stroke lengths on request
- Other performance data and motors available on request



SLZ 90 P versions with ball screw drive

Code No.	Type	Max. force F [N]	Max. speed [mm/s]	Max. stroke [mm]	Output [kW]	Motor selection with motor brake
Ball screw 32 x 5						
TQ21A1P_1_6_A_ _ _ _	SLZ 90 P	8,000	116	800	1.5	DRN90L4/BE2/FT
TQ21A1P_4_6_A_ _ _ _	SLZ 90 P	18,000	26	1,300	0.75	RF17DRN80M4/BE1
Ball screw 32 x 10						
TQ21A1P_1_7_A_ _ _ _	SLZ 90 P	3,500	233	1,000	1.5	DRN90L4/BE2/FT
TQ21A1P_5_7_A_ _ _ _	SLZ 90 P	25,000	17	1,100	0.55	RF17DRS71M4/BE1
Ball screw 32 x 40						
TQ21A1P_1_8_A_ _ _ _	SLZ 90 P	1,000	933	900	1.5	DRN90L4/BE2/FT

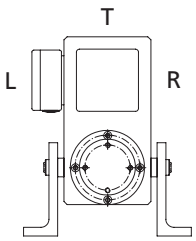
Stroke length

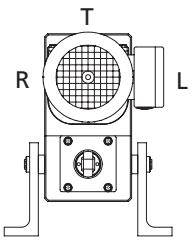
Installation position of terminal box

Connection versions

2 = pivot bearing

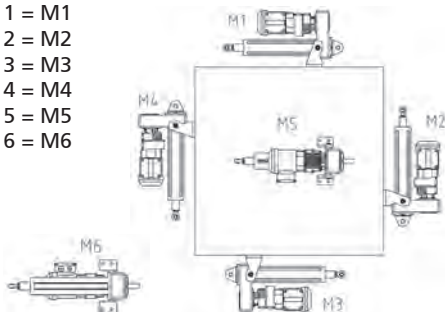
3 = fixing boss



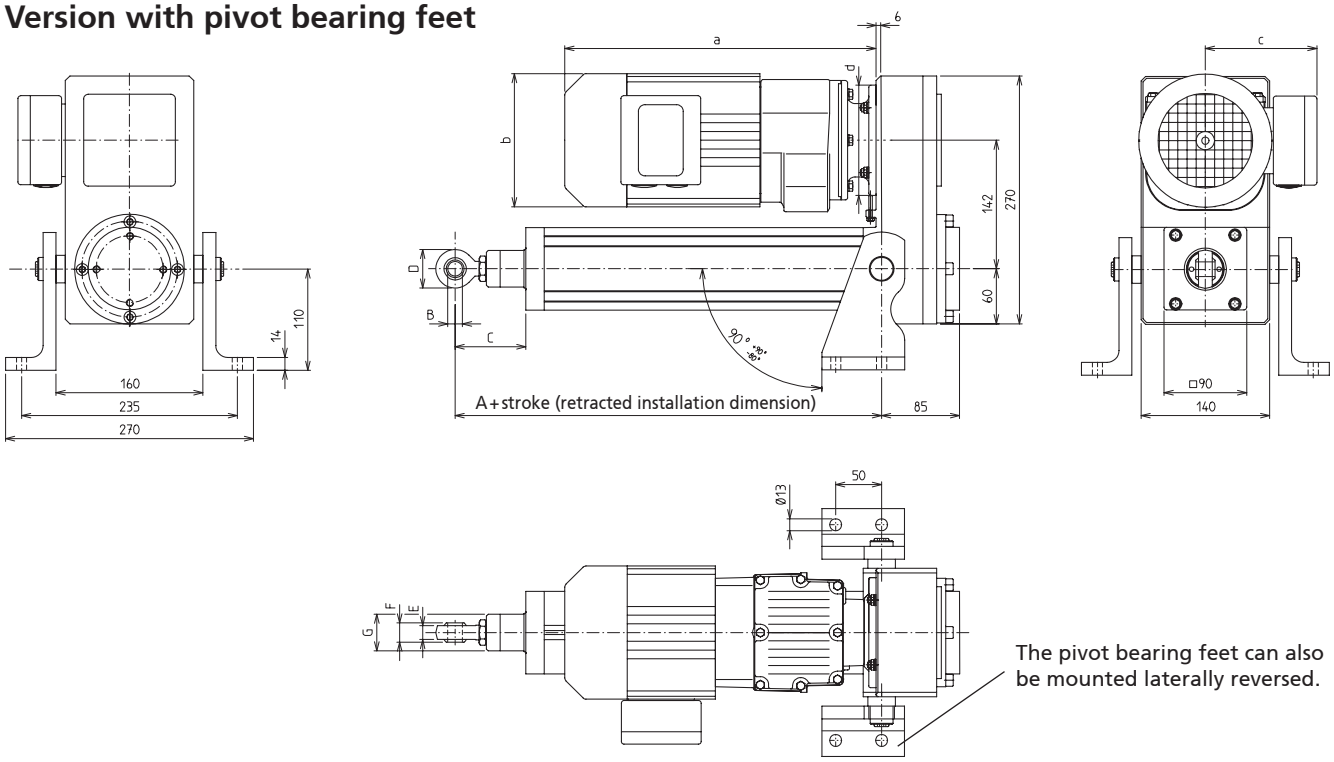


All diagrams show the terminal box in the L position

1 = M1
2 = M2
3 = M3
4 = M4
5 = M5
6 = M6



Version with pivot bearing feet



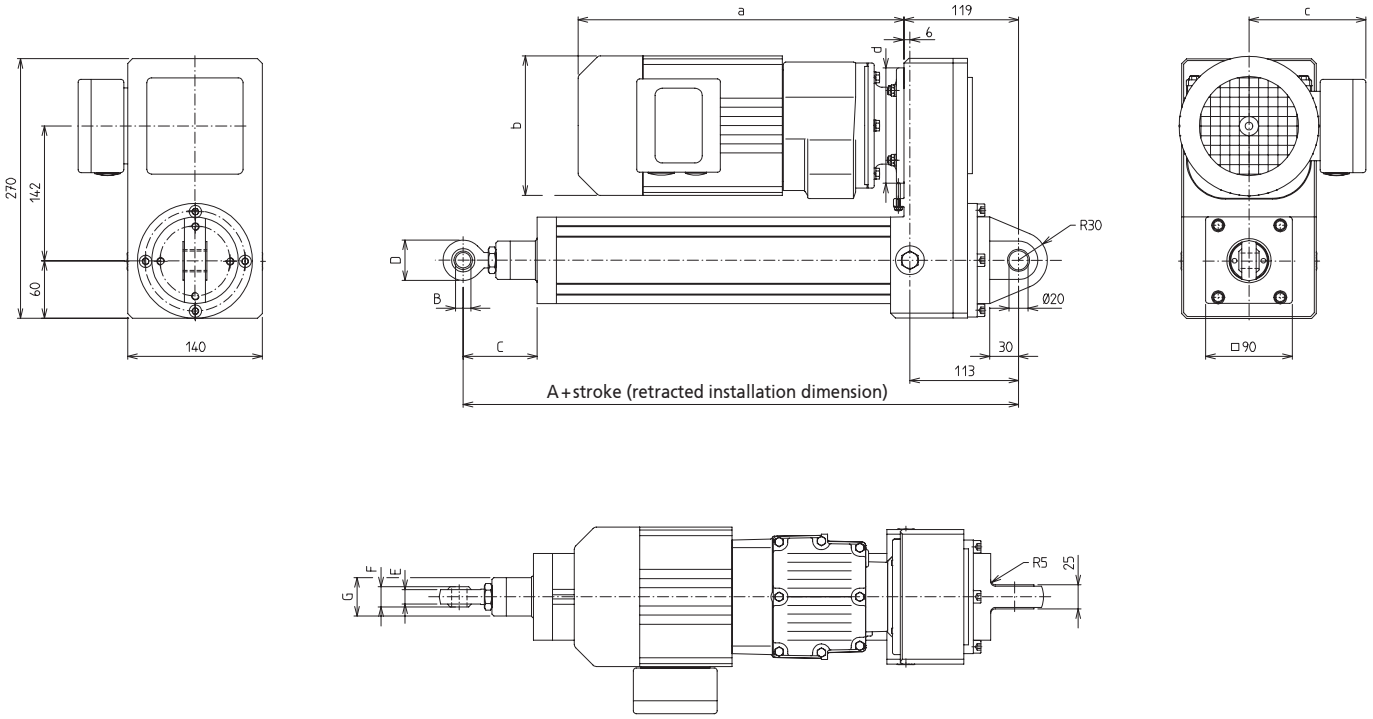
The pivot bearing feet can also be mounted laterally reversed.

[mm]

3-phase motors	a	b	c	d	Weight [kg]
RF17DRS71M4/BE1	428	Ø139	129	Ø120	15
RF17DRN80M4/BE1	491	Ø156	139		20
DRN90L4/BE2/FT	407	Ø179	150	Ø140	37

Type	A	B	C	D	E	F	G	Weight [kg]	
								Basic length (dimension A)	Additional weight/ 100 mm
KG 32x5, 32x10, 32x40	294	Ø20	86	50	18	25	Ø50	13.1	1.9

Versions



[mm]

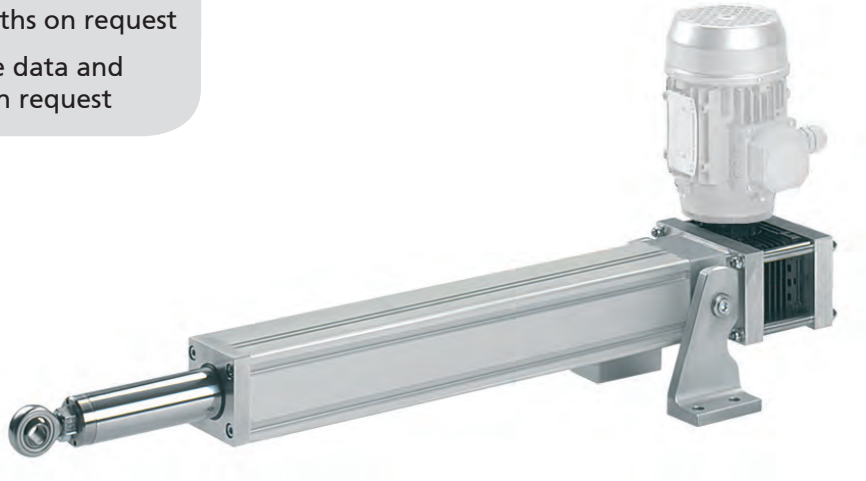
3-phase motors	a	b	c	d	Weight [kg]
RF17DRN80M4/BE1	491	Ø156	139	Ø120	20
RF17DRS71M4/BE1	428	Ø139	129		15

Type	A	B	C	D	E	F	G	Weight [kg]	
								Basic length (dimension A)	Additional weight/ 100 mm
KG 32x5, 32x10, 32x40	410	Ø20	86	50	18	25	Ø50	12.0	1.9

Versions

Order instructions:

- Longer stroke lengths on request
- Other performance data and motors available on request

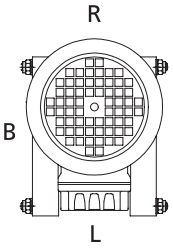


SLZ 90 W versions with ball screw drive

Code No.	Type	Max. force F [N]	Max. speed [mm/s]	Max. stroke [mm]	Output [kW]	Motor selection with motor brake
Ball screw 32 x 10						
TQ21A1W_2_7_A_ _ _ _	SLZ 90 W	25,000	30	1,100	1.1	DRN90S4/BE2/FT
Ball screw 32 x 40						
TQ21A1W_2_8_A_ _ _ _	SLZ 90 W	6,000	126	1,600	1.1	DRN90S4/BE2/FT

Stroke length

Installation position of terminal box



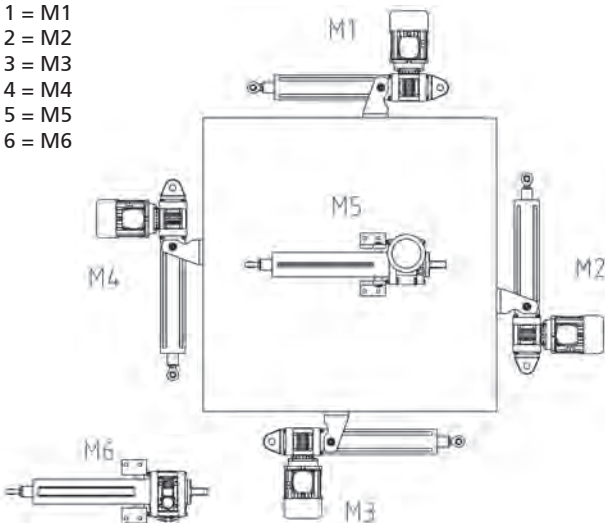
Connection versions

2 = pivot bearing

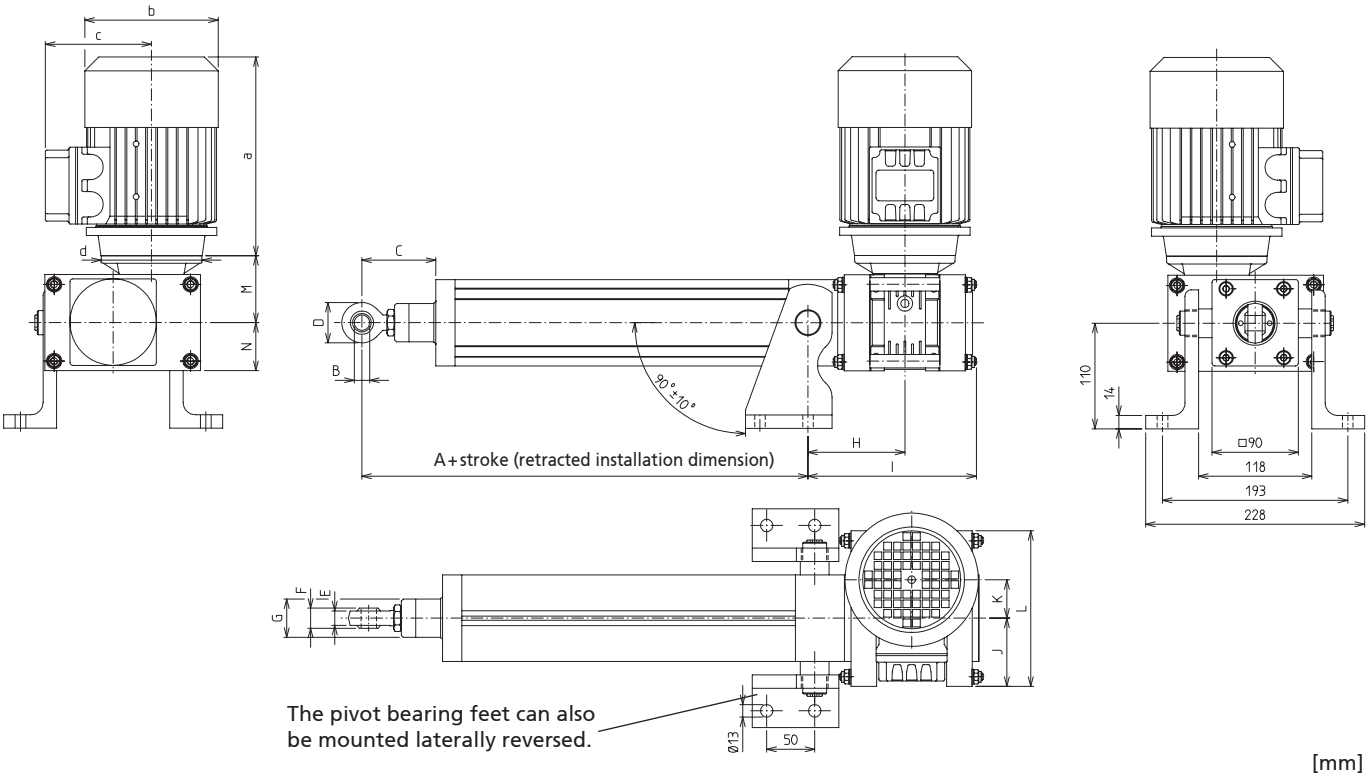
3 = fixing boss

All diagrams show the terminal box in the L position

1 = M1
2 = M2
3 = M3
4 = M4
5 = M5
6 = M6



Version with pivot bearing feet



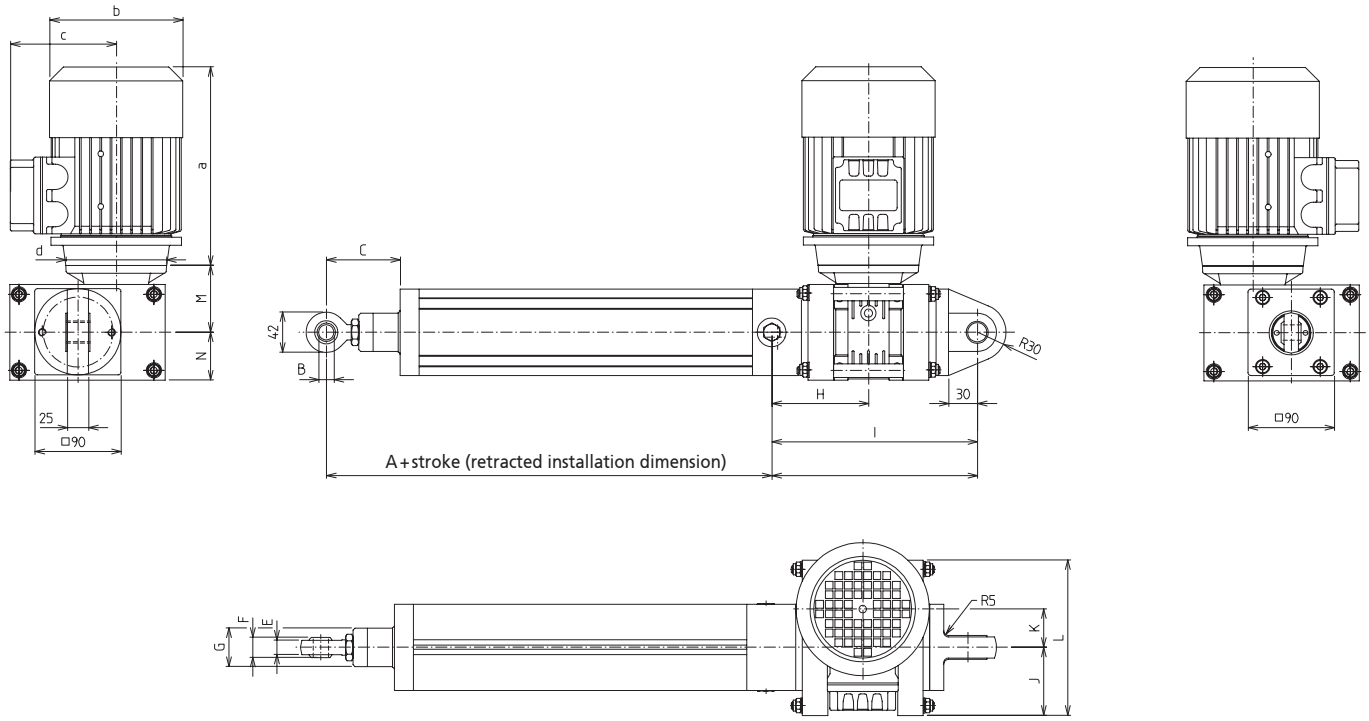
[mm]

3-cphase motors	a	b	c	d	Weight [kg]
DRN90S4/BE2/FT	375	Ø179	150	Ø140	24

Type	A	B	C	D	E	F	G	H	I	J	K	L	M	N	Weight [kg]	
															Basic length (dimension A)	Additional weight/ 100 mm
KG 32x10, 32x40	294	Ø20	86	50	18	25	Ø50	117.5	212	98	63	231.5	109	72	22.5	1.9

Fixing/Position determination

Version with



[mm]

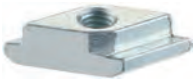
3-phase motors	a	b	c	d	Weight [kg]
DRN90S4/BE2/FT	375	Ø179	150	Ø140	24

Type	A	B	C	D	E	F	G	H	I	J	K	L	M	N	Weight [kg]	
															Basic length (dimension A)	Additional weight/ 100 mm
KG 32x10, 32x40	294	Ø20	86	50	18	25	Ø50	117.5	212	98	63	231.5	109	72	22.5	1.9

Order instruction square nut:

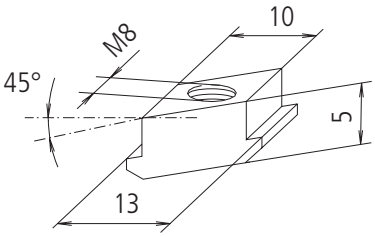
- Purchase only in lot sizes and a multiple of that, see product table below

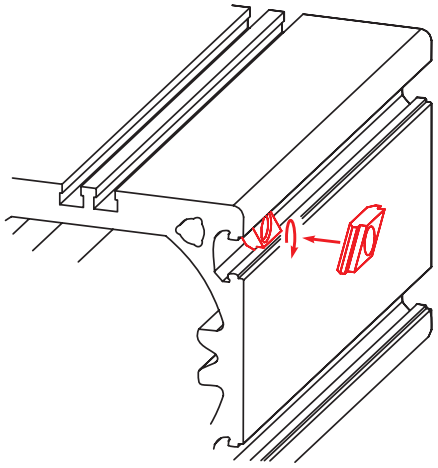
Slot stone -R-



Type -R-

- Slot stones facilitate the fitting of attachments to the cylinder.
- To this end, they can be swivelled into the slot from above (Type -R-)

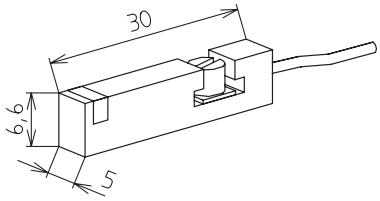


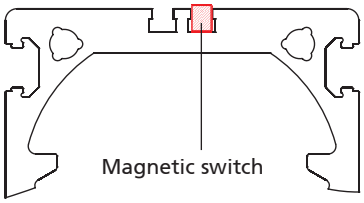


Code No.	Type	lot sizes	F [N]
4006223	Slot stone -R- M8	10, 20, 30... pcs	4,000

Magnetic switch

- Signals from the magnetic switch can be collected and evaluated by a customer-provided control unit (such as a PLC).
- The switch can be retrofitted in the lateral slot (protected by a cover profile as standard)





Code No.	Type
QZD050599	Magnetic switch, NC contact*, cable length 5.3 m

*Magnetic switch, NO contact, available on request

Magnetic switch – Technical data

	NC contact
Voltage	10-30 V DC
Current consumption	< 10 mA
Output current	Max. 100 mA
Output type	PNP
Function indication	LED
Ambient temperature	-25°C to + 85°C
Protection class	IP 67

Motors and controls

High-performance mechanical systems require the right motor and control system.

Our partners are experts in their fields and we offer a range of selected standard combinations.

However, it goes without saying that we can also tailor solutions exactly to the requirements of your application.

Motors for linear actuators ..... 578 - 602

Converters and controls for linear actuators ..... 622 - 635

Motors and controls for linear actuators
The alternative to the handwheel

EHL without transformer

LZ S/P drive unit

High-performance and optimally co-ordinated drives

3-phase motors

Stepper motors

Servo motors

Angular gear

RK-Control 2S

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Motors for linear actuators

Electronic handwheels ..... Page 588

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Stepper motors ..... Page 600

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Accessories Drive

Angular gear ..... Page 612

Coupling/motor adaptor for three-phase motors ... Page 618

Coupling/motor adaptor for stepper motors ..... Page 618

Coupling/motor adaptor for servo motors ..... Page 620

Controls for linear actuators

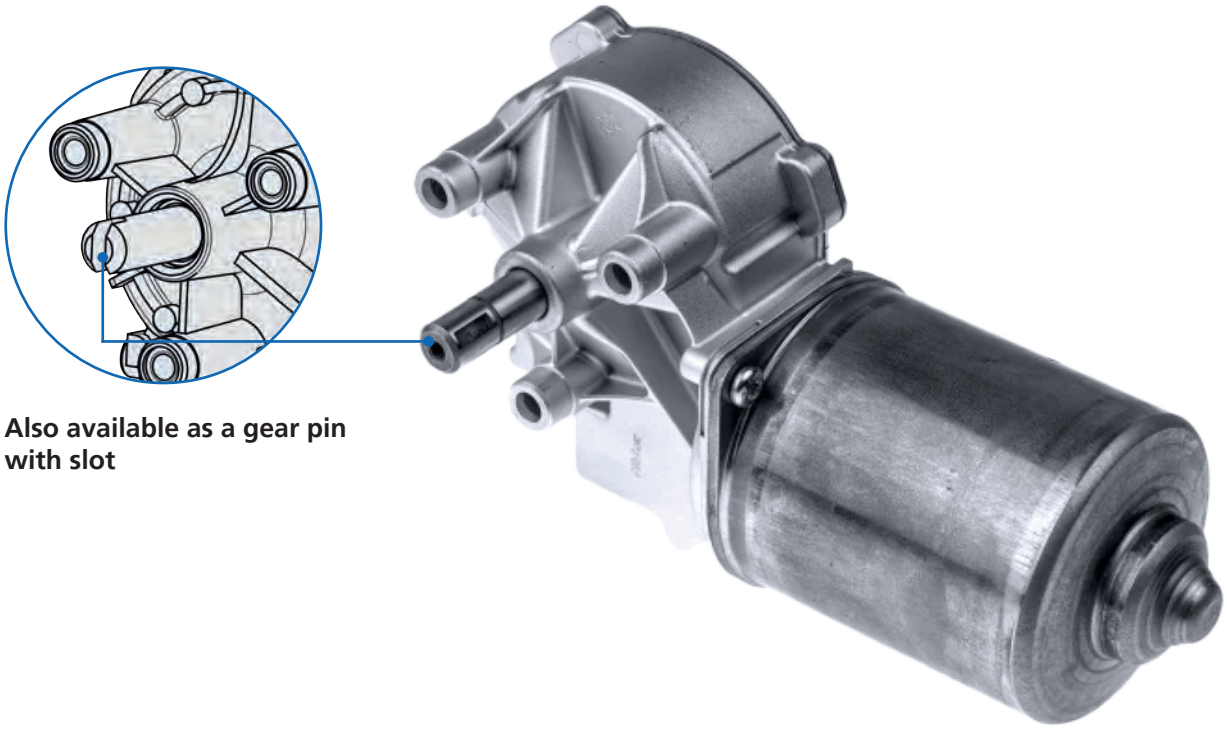
FW 3-phase frequency converter ..... Page 620

RK control servo technology ..... Page 620

EHL electronic handwheel

The low-cost alternative to conventional hand adjustment

EHL without transformer



Also available as a gear pin with slot

Features:

- Transformer rectifier with two different rated speeds of 50 and 135 min Manufactured according to VDE, Protection class III

Options:

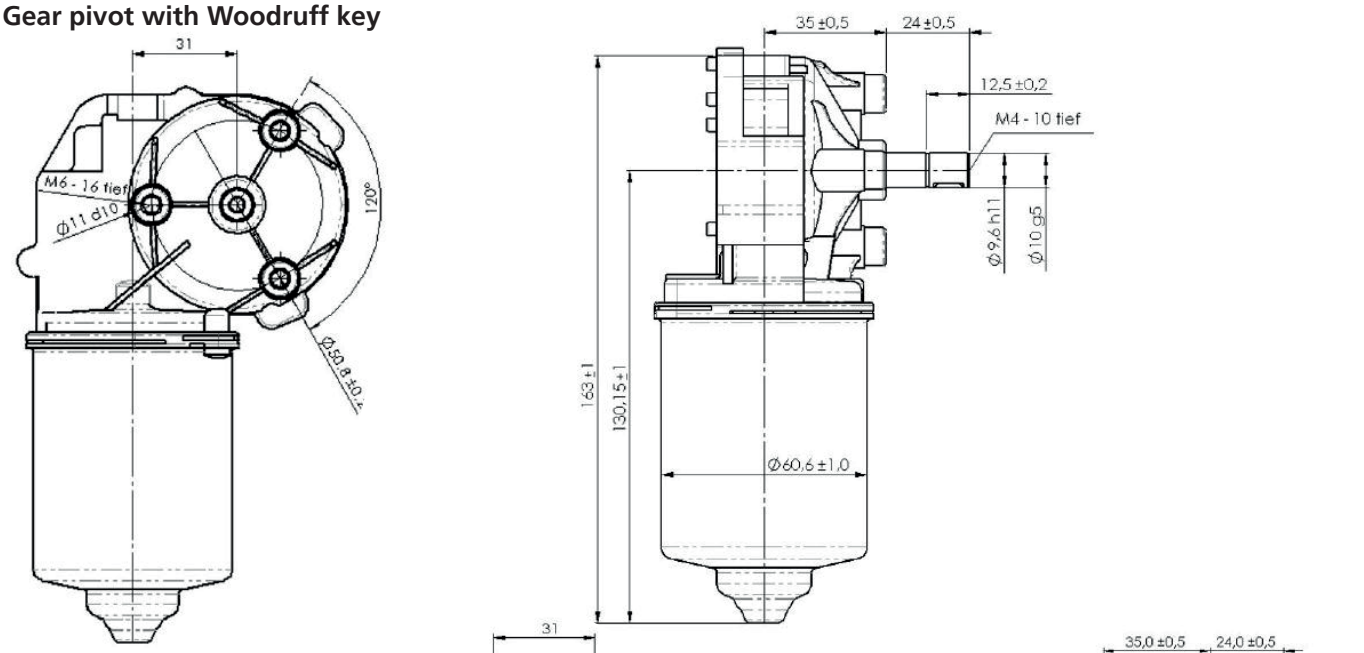
- Various adapters available on available on request

General information/operating conditions

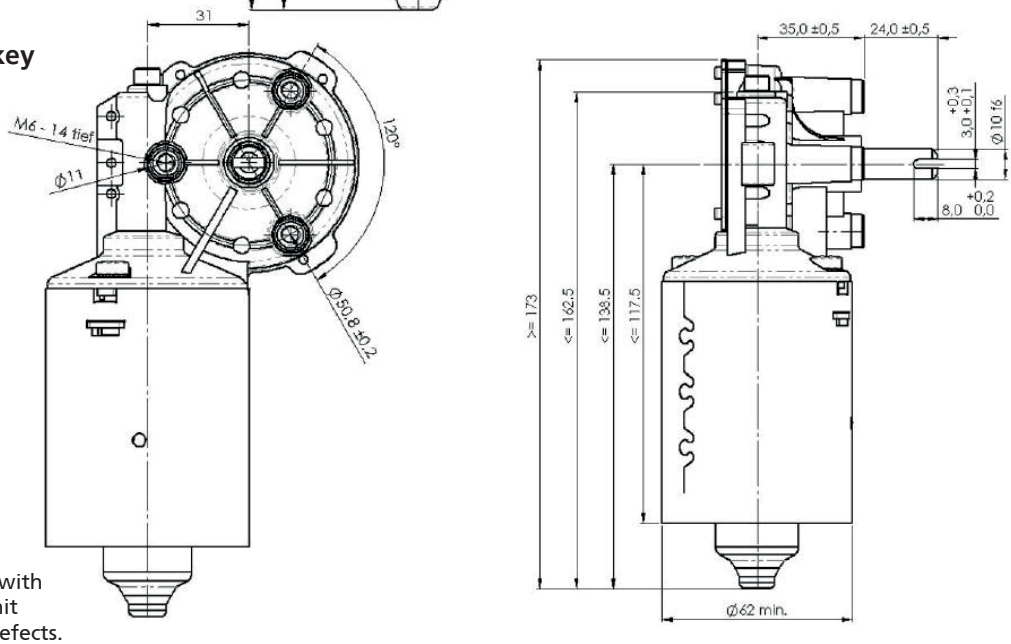
Technische Angaben	Drehzahl 50 min $^{-1}$	Drehzahl 135 min^{-1}
Motor shaft*	Woodruff key	Slot
Duty cycle	50% at half Starting torqeue / 15% at max. Starting torque	
Starting torque	5.5 Nm at 50^{-1} rpm	2 Nm at 135^{-1} rpm
Thermal protection	115 °C	
Protection class	IP 20	
Fast mode	Operating mode with nominal speed (50 or 135^{-1} rpm)	
Drive set-up	Can be rotated in 90°increments – connecting cable must be extended	
Cable length mains cable	Plug connector	with cable 200 mm

*The motor adapters are compatible with both versions of the motor shaft (Woodruff key and slotted version).

Gear pivot with Woodruff key



Gear pivot with Woodruff key

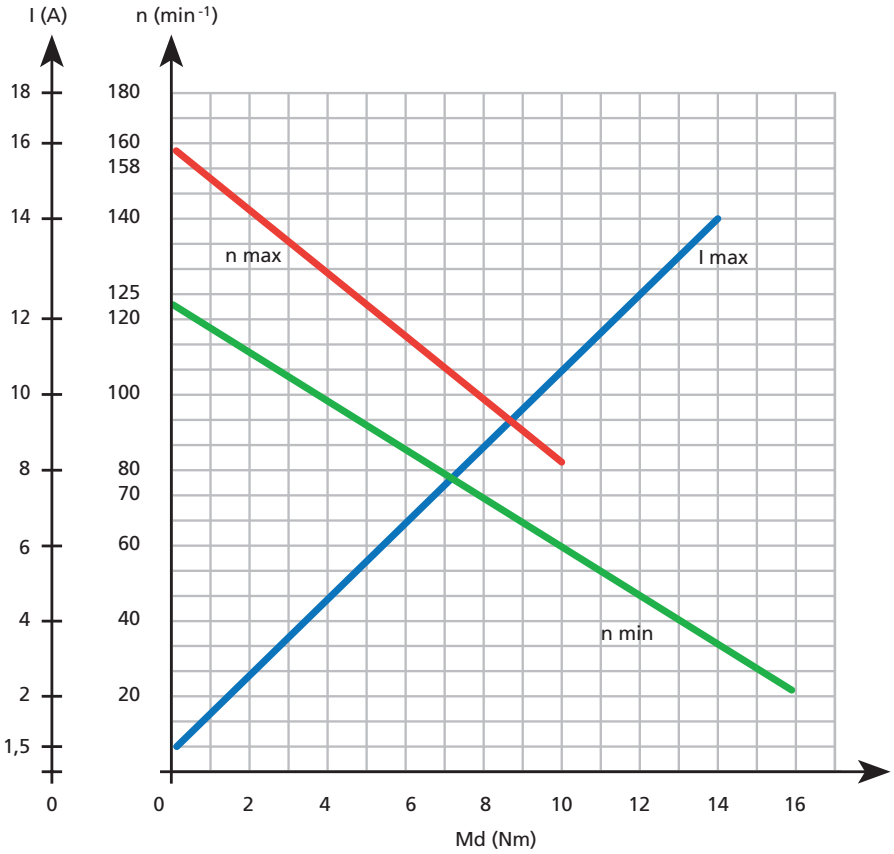


Note:
The EHL must always be operated with limit switches. This prevents the unit getting stuck and any associated defects.

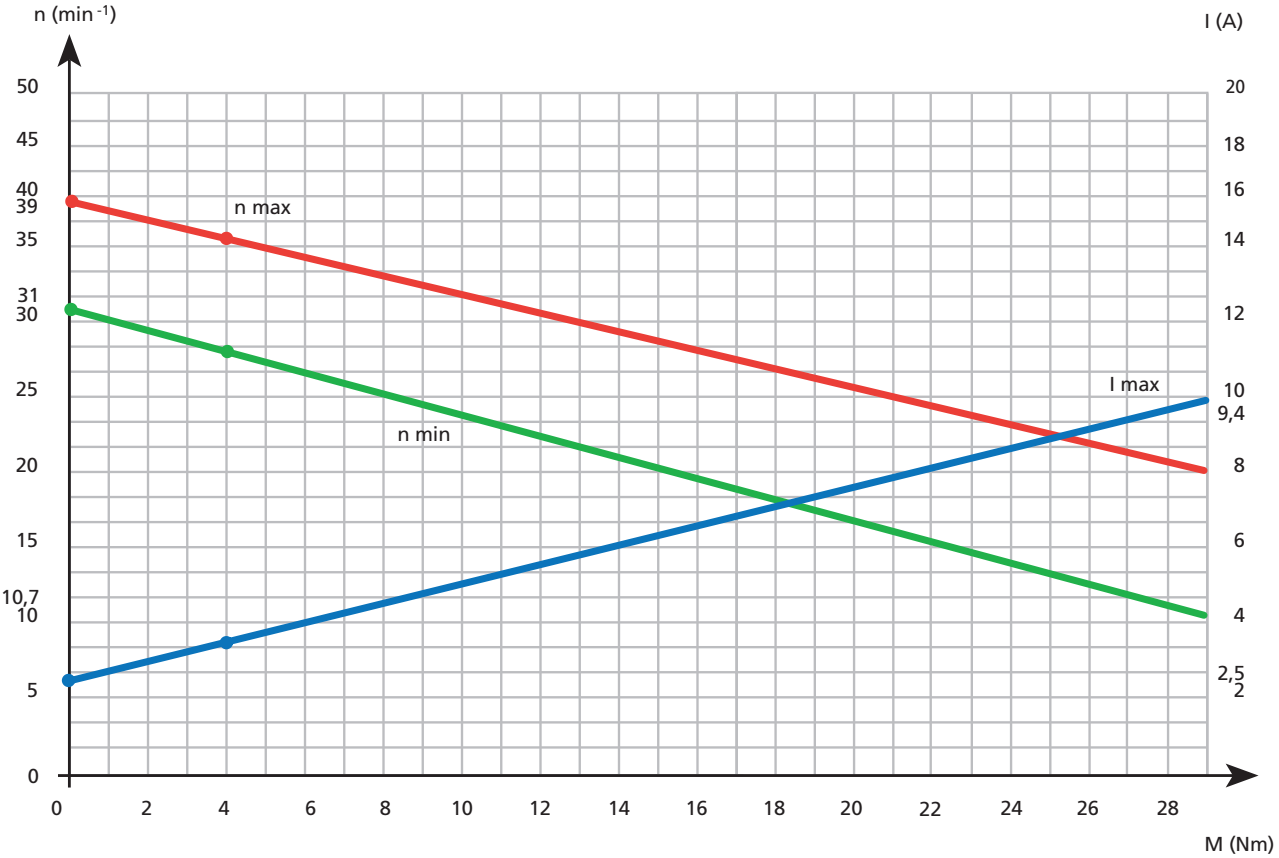
Code No.	Type	Speed [rpm]	Output torque [Nm]
90967	EHL without transformer	1)* 50	5,5
90968	EHL without transformer	2)* 135	2

Technical data/fixing

Motor characteristic curve at 24V DC - version 135 revolutions per minute



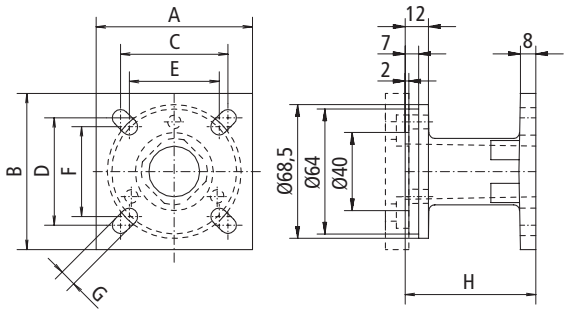
Motor characteristic curve at 24V DC - version 50 revolutions per minute



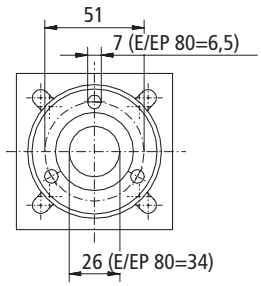
EHL – Fixing

Motor adaptor for linear units

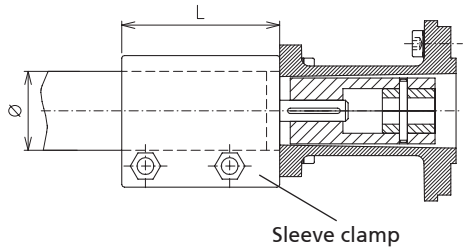
Linear unit connection

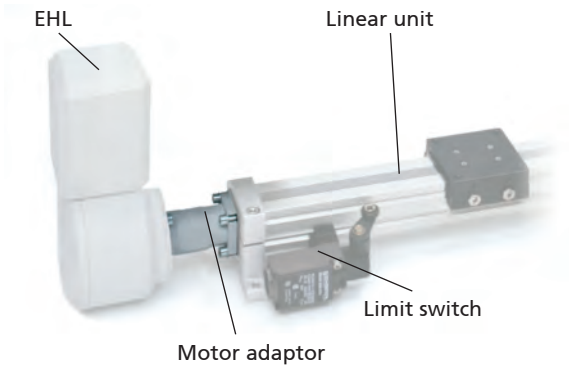


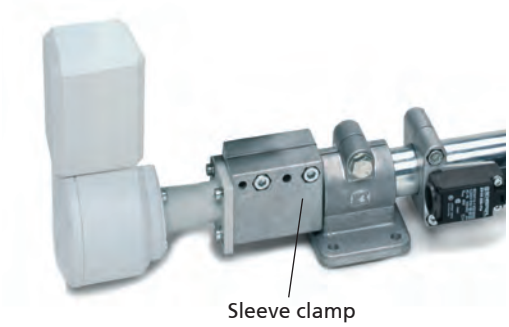
EHL connection



Only for linear unit Type E







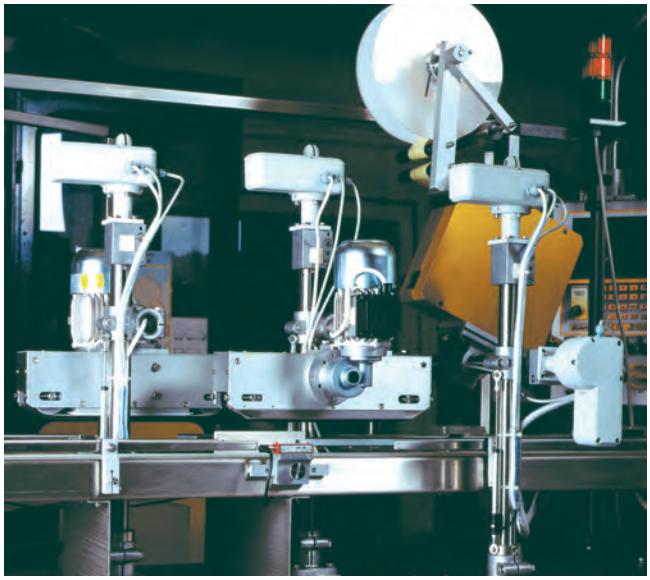
[mm]

Code No.	for linear unit	PinØ unit	A	B	C	D	E	F	G	H	L	Dia-meter
92663	E 30	8	50	50	30	40	30	30	6,5	67	60	30
92664	E 40	12	60	60	46	46	36	36	7	67	75	40
92684	E 50	12	65	65	46	46	–	–	9	67	67	60
949666	E 60	14	80	80	55	55	46	46	9	67	110	60
92682	E 80	20	80	80	70	70	–	–	6.2	59		80
92667	EP 30	8	50	50	30	40	30	30	6	67	–	–
92668	EP 40	12	65	65	46	46	36	36	9	67	–	–
92669	EP 50	12	65	65	46	46	–	–	9	67	–	–
92670	EP 60	14	80	80	55	55	46	46	9	67	–	–
92683	EP 80	20	92	92	64	64	–	–	8.5	61,3		–
92680	EV/AV 30	8	40	40	40	40	29	29	6	67	–	–
92671	EV/AV 40	10	40	40	40	40	29	29	6	67	–	–
92672	EV/AV 50	12	50	50	50	50	38	38	7	67	–	–
92679	EV 60	12	60	60	46	46	36	36	7	67	–	–
92673	EV/AV 80	14	80	80	55	55	46	46	9	67	–	–
92676	PLS-II 30	6	40	40	40	40	29	29	6	67	–	–
92677	PLS-II 40	8	40	40	40	40	29	29	6	67	–	–
92678	PLS-II 50	10	50	50	50	50	38	38	7	67	–	–
92679	PLS-II 60	12	60	60	46	46	36	36	7	67	–	–
92681	PLS-II 80	14	80	80	55	55	46	46	9	67	–	–

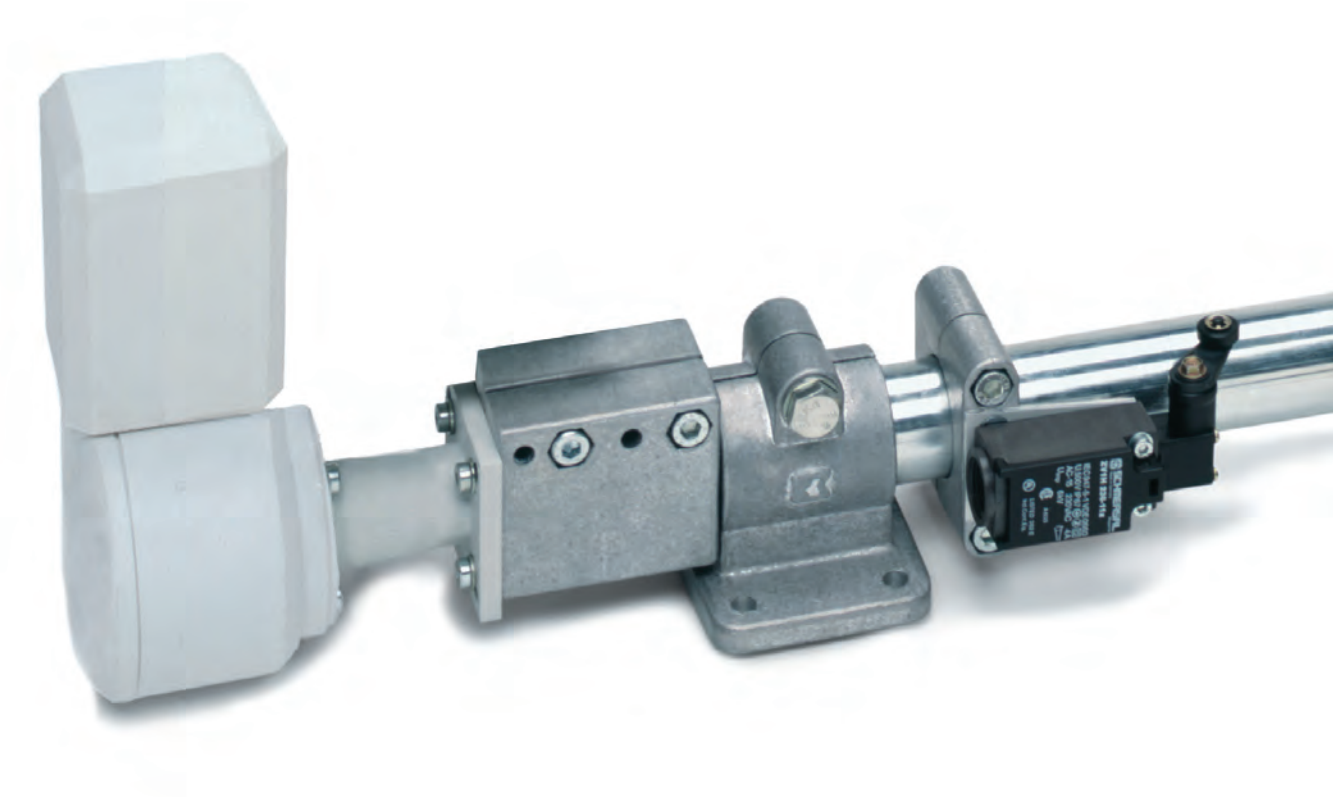
Note: To mount the motor adaptor on a Type E linear unit, a sleeve clamp is required (this is included with the adaptor). Please note that the stroke may be limited.

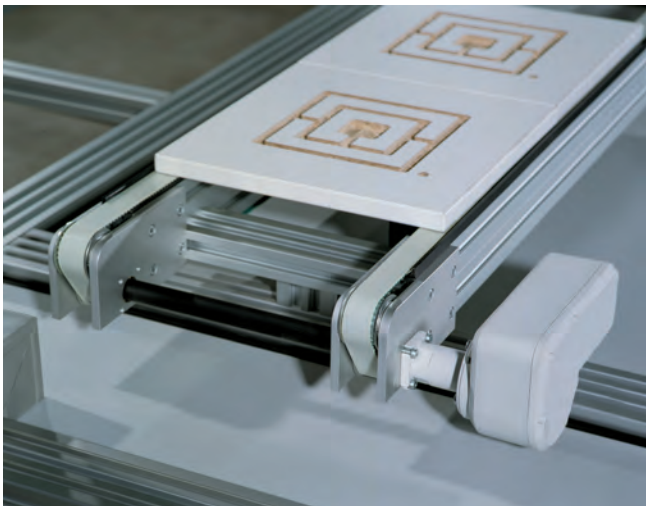
Fixing

X-ray machine: lateral adjustment via EHL with RK DuoLine S, height adjustment via RK Easylift.



Labeling machine: The height adjustment is controlled by a linear unit of the E series with EHL.

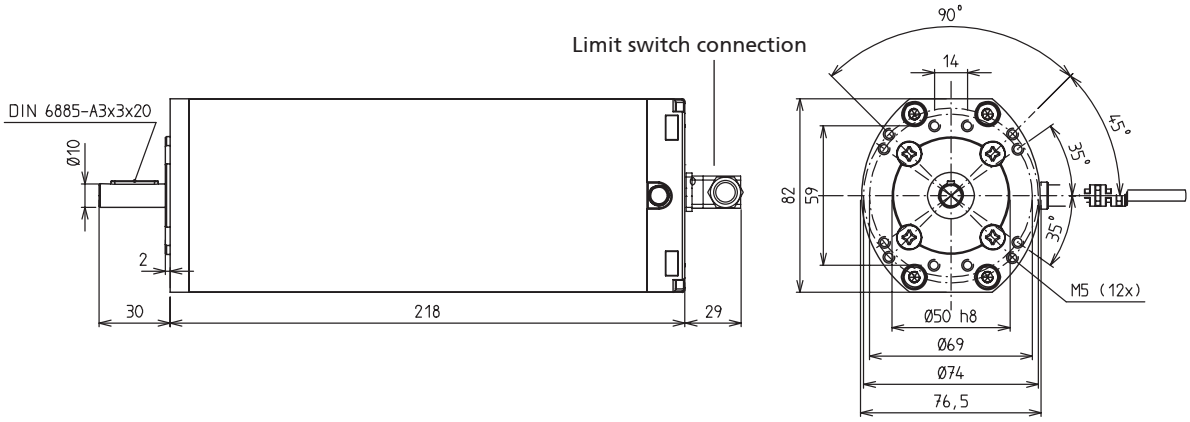


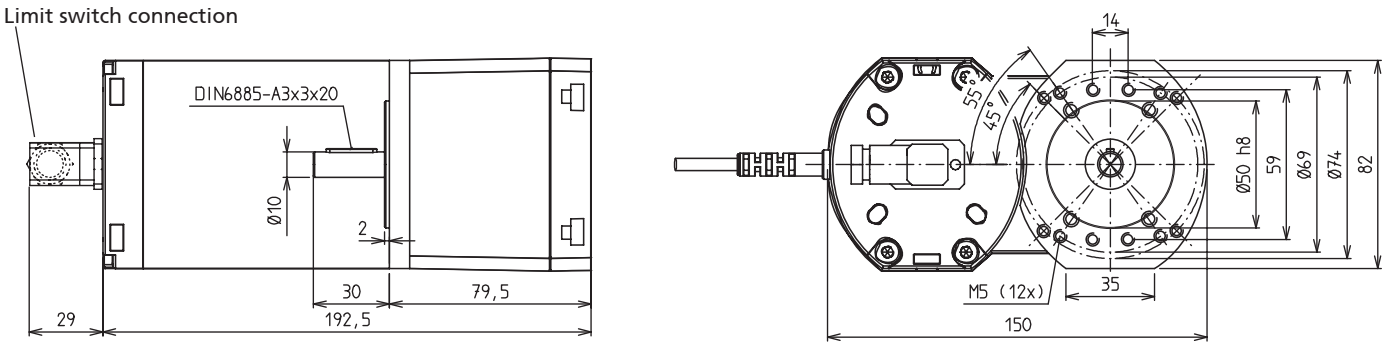


Transfer system: drive for material feed.

Drive unit/technical data

The high-performance drive units of the LZ S series (rod shaped) and LZ P (parallel mounted motor) for the control of linear axes





Features:

- Rotation speed control with MultiControl mono supported (with elec. connection “a”)
- RK synchronous control supports storage of up to 25 memory positions (with elec. connection “c”)
- Synchronous travel supported
- Compact design
- Housing made of aluminium
- Attractive design

Options:

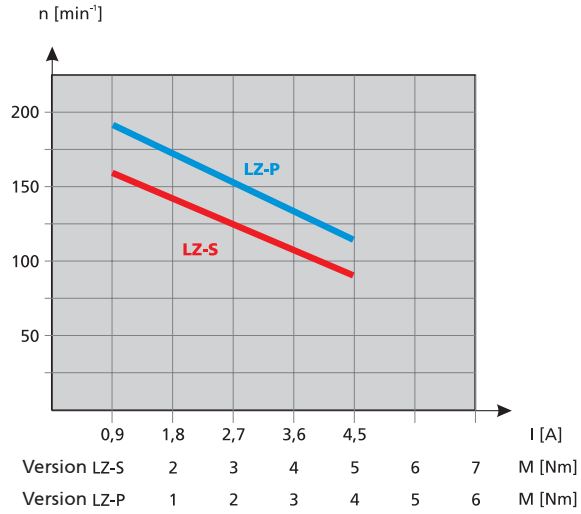
- Three different options for electrical connection
- Various adaptors available on request

General information/operating conditions

Voltage	24-36 V DC
Current consumption	Max. 4.5 A
Protection class	IP 54
Ambient temperature	-10°C to +60°C
Duty cycle	at nominal load, 15% (max. 1,5 mins operating time, 8,5 mins rest time)

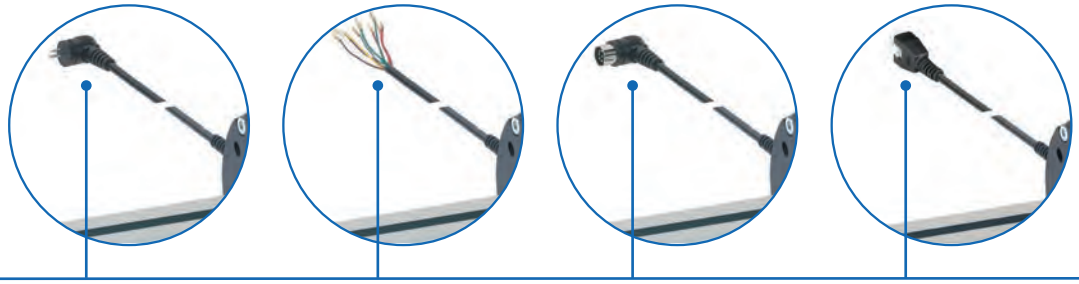
Power diagram*

*All data were determined using an RK transformer control (at room temperature). If the unit is operated from a fixed voltage source, these values may vary slightly.



Electrical connection Choice of:

External control
Connecting cable is fed out of the cylinder and connects to a control (range of connecting options)



Elec. connection “a”
Connection (2.5 m) to RK transformer control, MultiControl mono or external fixed voltage source. Only power cable is fed out.

Elec. connection “b”
All connecting cables (approx. 1 m) fed directly out of the unit (motor, 2-channel Hallsensor) e.g for connection to a PLC

Elec. connection “c”
Connection (2.5 m) to PM synchronous control

Elec. connection „e“
Connection (2,5m) to MultiControl II synchronous control.

Note: The drive units must not be driven against the mechanical stops! All versions support the connection of customer-supplied limit switches. While it is possible to operate the units without limit switches, we do not recommend it.

Note: Further information about the MultiControl II synchronous control can be found in the following catalogue:

Linear Technology
Lifting columns and electric cylinders
for the new control generation MultiControl II (from 2018)

Code No.	Type	Electrical connection	Max. output torque [Nm]	Max. speed [rpm]	Weight [kg]
90980	LZ S	a	5	160	1,8
90981	LZ S	b	5	160	1,8
90984	LZ S	c	5	160	1,8
90987	LZ S	e	5	125	1,8
90982	LZ P	a	4	196	3,0
90983	LZ P	b	4	196	3,0
90985	LZ P	c	4	196	3,0
90986	LZ P	e	4	152	3,0

Drive

Controls

MultiControl

24/36 V DC

MultiControl II duo

28 V DC

- Input voltage 100-230 V
- Output voltage 24/28/36 V DC

For dimensions and other technical data, please refer to the chapter “Motors and controls”

Code No.	Version	
QSTAACA1AA000	MultiControl mono connection A, up to max. I= 10 A current output, 24 V DC	Controls up to 2 drives
QSTACCA1AA000	MultiControl mono connection C, up to max. I= 12 A current output, 36 V DC	Controls up to 2 drives
QST35C02AA000*	Synchronous control RK MultiControl duo, up to max. I = 12 A current output at 15% duty cycle	1-2 drives synchronised
QST35C04AA000*	Synchronous control RK MultiControl quadro, up to max. I = 12 A current output at 15% duty cycle	1-4 drives synchronised
*For connection of a synchronous control, the drive unit must be fitted with electrical connection “c”		
QST35H12AA000	Synchronous control RK MultiControl II duo, up to 10 A current output at 20% ED**	Controls up to 2 drives
QST35H12AA022	Synchronous control RK MultiControl II duo premium, up to 10 A current output at 20% ED**	Controls up to 2 drives

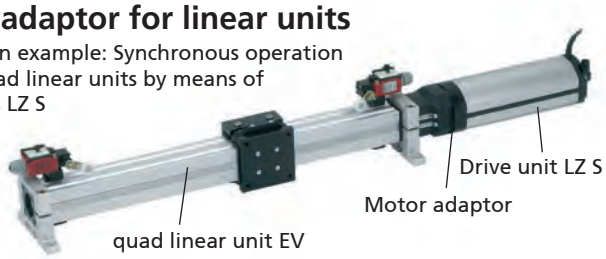
** For connection „e“ with a synchronous control, other accessories are required.
That can be found in the catalogue: **Linear Technology** **Lifting columns and electric cylinders**
for the new control generation MultiControl II (from 2018)

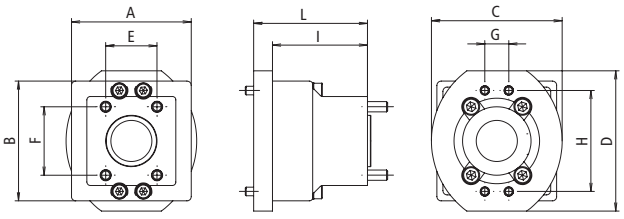
Accessories	
QZD0702844000*	Straight connecting cable (4 m) with 5-pin connector and open cable end

*for the connection of a parallel hand switch or an external potentiometer (in the case of the MultiControl mono)

Motor adaptor for linear units

Application example: Synchronous operation of two quad linear units by means of drive units LZ S





Further adaptors available on request

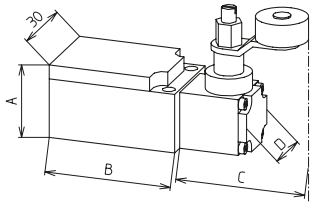
[mm]

Linear unit	LZ S Code No.	LZ P Code No.	Coupling Code No.	A	B	C	D	E	F	G	H	I	L
E 30	949700	949701	9109200810	56	74	76,4	82	–	–	56,5	39,6	65	134
E 40	949702	949703	9114301012	89,2	66	76,4	82	–	–	56,5	39,6	78	129
E 50	949704	949705	9114301012	66	84	76,4	82	–	–	56,5	39,6	78	129
E 60	949706	–	9114301014	80	103	76,4	82	–	–	52,3	52,3	92	143
EP(X)30	949711		9109200810	70	70	76,4	82	30	40	14	59	55,5	66,5
EP(X)40	949713		9114301012	70	70	76,4	82	46	46	52,3	52,3	73,5	81,5
EP(X)50													
EP(X)60	949716	–	9114301014	80	80	76,4	82	55	55	52,3	52,3	68	81
EV 30	949721		9109200810	70	70	76,4	82	21	21	14	59	54,5	65,5
EV 40	949723		9114301010	70	70	76,4	82	29	29	14	59	61	72
EV 50	949725		9114301012	70	70	76,4	82	38	38	14	59	60	73
EV 60	949727		9114301012	70	70	76,4	82	43	43	14	59	62	73
EV 80	949728	–	9114301014	80	80	76,4	82	64	64	52,3	52,3	68,5	81,5

LZ S/P – Position determination

Mechanical limit switch

Material:
thermoplastic, fully insulated



Type	18-60
Max. voltage	250 V AC
Max. switching current	6 A
Max. starting current	16 A
Operating frequency	Max. 6000/h
Mechanical lifetime	10 million switching cycles
Axis lever adjustment	locking at 10° increments
Protection class	IP 65
Ambient temperature	-30°C to +80°C

[mm]

Code No.	Type	Switching function	A	B	C	D
91905	18-60	NC contact/NO contact	26.5	45	45.5	21

Hand switches/accessories

Code No.	Version	Fig.
Hand switch for transformer control		
QZB02C03AD031	Hand switch with 1 m spiral cable – 6 function keys	2
Hand switch for transformer or synchronous control		
QZB02C03AB031	Hand switch with 1 m spiral cable – 2 function keys	1
QZB11G07AB041	Hand switch with 1 m spiral cable – 2 function keys	7
QZB00A00AB051	Table hand switch with 1 m cable – 2 function keys	11
QZB00A00BC011	Membrane keyboard with 1 m spiral cable – 2 function keys	12
QZB02C01AE114	Foot switch – 2 function keys	13
Hand switch for synchronous control		
QZB00D04AD041	Hand switch with 1 m spiral cable – 6 function keys	8
Accessories for hand switches with spiral cable		
QZD000072	Bracket for hand switch	3
QZD000074	Hand switch drawer	9
QZD070750	Adapter DIN 5-pin to Molex 6-pin	10

*When using the handswitch with 2 function keys **QZB11G07AB041** on theMultiControl I, the Adapter DIN 5-pin to Molex 6-pin **QZD070750** is required.

3-phase motors – Technical data

Note: The three-phase motors can have different visual characteristics, such as the appearance of the connection housings.

General information/operating conditions

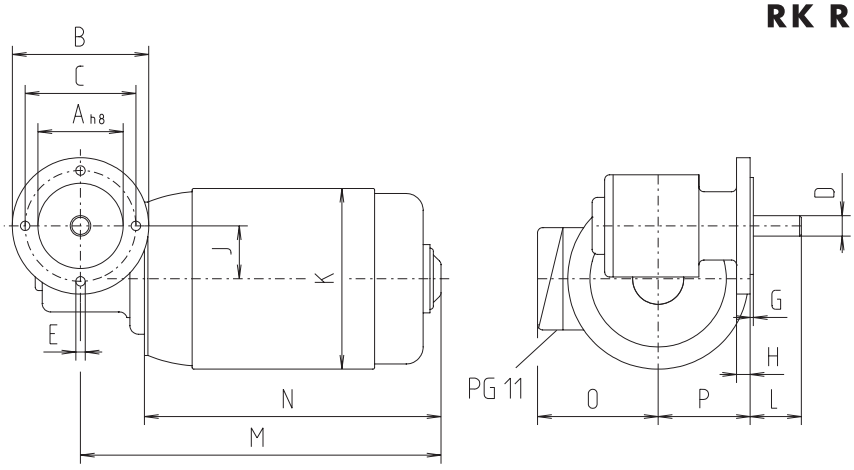
Type	90 W	120 W	180 W	250 W
Motor speed [rpm]	1400	2800	1400	2800
Torque without gear unit [Ncm]	28	41	68	68
Braking voltage [V]	220	220	220	220
Nominal current [A]	0.4	0.45	0.7	0.81
Permitted dynamic shaft load [N] axial radial	 80 120	 80 120	 100 150	 100 150
Protection class	IP 54	IP 54	IP 54	IP 54
Weight [kg]	4.5	4.5	6.5	6.0
Weight with brake [kg]	5.3	5.3	7.3	7.0

Code No.	Type
9121 _ _ _	90 W
9123 _ _ _	120 W
9124 _ _ _	180 W
9125 _ _ _	250 W

Gear selection (see next page)
05 = gear 5:1
07 = gear 7:1
10 = gear 10:1
11 = gear 11:1
15 = gear 15:1
17 = gear 17:1
18 = gear 18:1
: = :
: = :

0 = Standard
1 = Brake
2 = 2:1 pole-changing (not with 90 W)

Order example:
Three-phase motor 120 W
2:1 pole-changing, gear 7:1
9123 2 07



[mm]

Motor	Connection dimensions						Dimensions						Shaft dimensions	
	A	B	C	E	G	H	J	K	M	N	O	P	D	L
90 W, 380/220 V	50	80	65	5.5	2.5	8	31	110	203	166	92	54	12	30
90 W, with brake	50	80	65	5.5	2.5	8	31	110	238	201	92	54	12	30
120 W, 380/220 V	50	80	65	5.5	2.5	8	31	110	203	166	92	54	12	30
120 W, with brake	50	80	65	5.5	2.5	8	31	110	238	201	92	54	12	30
120 W, pole-changing	50	80	65	5.5	2.5	8	31	110	238	201	92	54	12	30
180 W, 380/220 V	80	120	100	M6	3	10	33	124	232	190	108	66	14	33
180 W, with brake	80	120	100	M6	3	10	33	124	268	226	108	66	14	33
180 W, pole-changing	80	120	100	M6	3	10	33	124	268	226	108	66	14	33
250 W, 380/220 V	80	120	100	M6	3	10	33	124	232	190	108	66	14	33
250 W, with brake	80	120	100	M6	3	10	33	124	268	226	108	66	14	33
250 W, pole-changing	80	120	100	M6	3	10	33	124	268	226	108	66	14	33

Gear selection

Eff. torque [Nm]														
Transmission:	100:1	75:1	55:1	50:1	38:1	30:1	24:1	20:1	18:1	15:1	12:1	10:1	7:1	5:1	2.5:1
90/1400 rpm	18	13	15	11	11	9	7.2	7.5	6.7	6.1	5.2	4.3	3.3	2.4	1.3
120/2800 rpm	14	10	10	8.2	8.1	6.5	5.3	5.2	4.8	4.2	3.6	3.0	2.3	1.7	0.9
Transmission:	75:1	56:1	38:1	32:1	30:1	24:1	20:1	17:1	15:1	11:1	7:1	5:1			
180/1400 rpm	23	21	20	19	17	15	14	13	11	9.3	6.4	4.8			
250/2800 rpm	18	16	15	14	13	11	10	9.6	8.3	6.8	4.6	3.5			

Chain-type motor connecting cable

Code No.	Type	
957050 _ _ _	Motor cable 4 x 1.5 + 2 x (2 x 0.75) mm	for connection to a frequency converter, any length

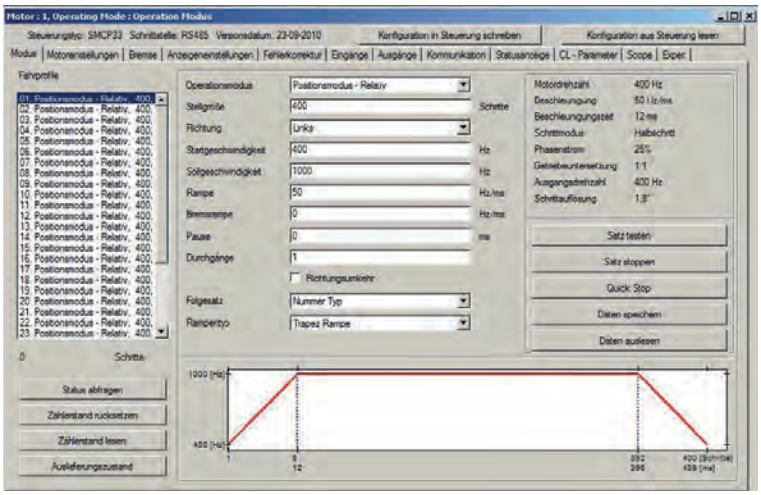
Length:
0 2 5 = 2.5 m
0 5 0 = 5.0 m
0 7 5 = 7.5 m
1 0 0 = 10.0 m
1 2 5 = 12.5 m
1 5 0 = 15.0 m
2 0 0 = 20.0 m
2 5 0 = 25.0 m

Plug & Drive stepper motor PDS6 with integrated power electronics

PD 6S

Features:

- Up to 16 motion sequences (position and speed profiles) can be stored in the motor, selected via digital inputs, stopped and started.
- Using an analogue input, the speed, position and torque can also be controlled.
- Motor programming via RS485.
- Standard protocol as per CANopen/DSP 402 via CAN bus.
- Simple start-up and configuration using free Windows software.
- Position feedback and monitoring with integrated encoders with 500 pulses per motorrevolution.



Inputof various motion sequences in the clearly structured programming software

Relative and absolute positions can be saved in the set table. Travel speed and acceleration and deceleration ramp can be freely selected for any position.

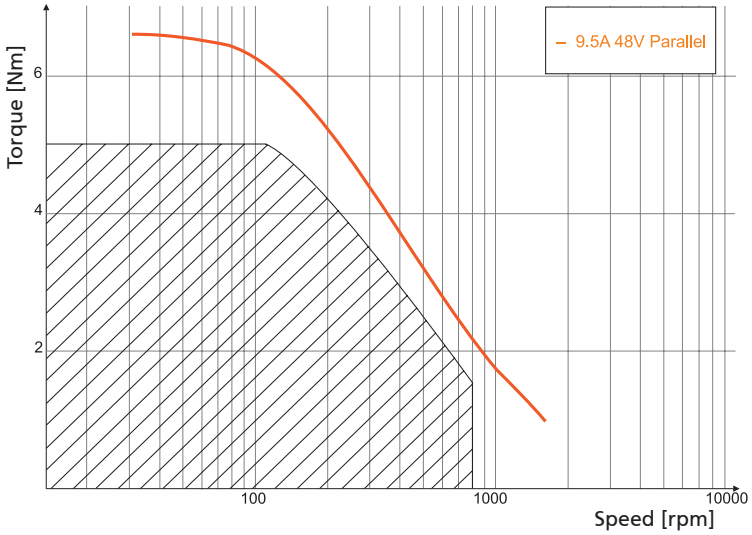
Code No.	Type
958200PD6S	PD 6S

Stepper motor PD6S

General information/operating conditions

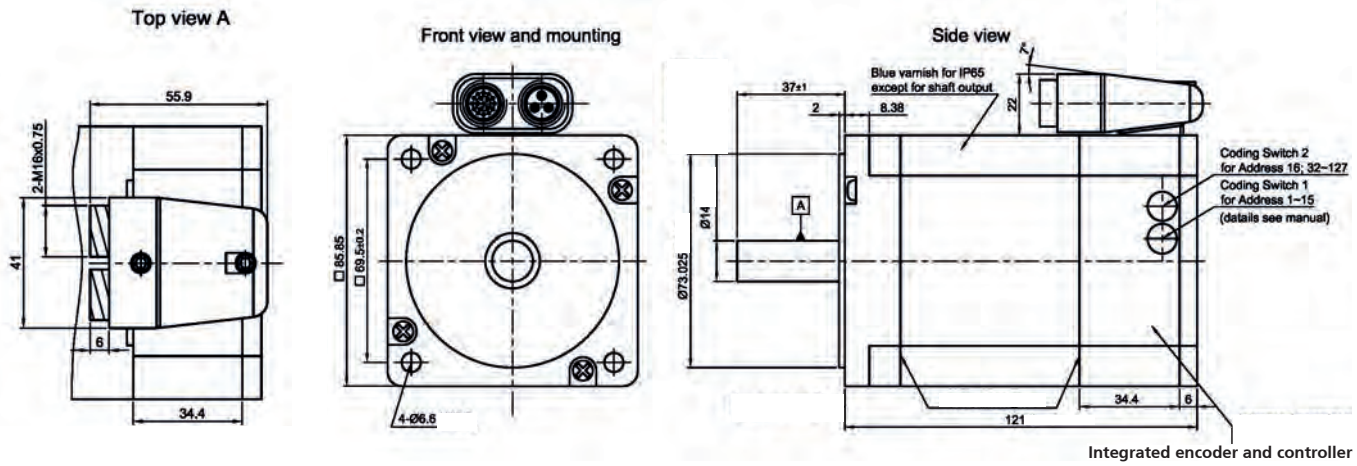
Operating voltage	24 to 48V / DC
Interface:	RS485 or CANopen
Operating modes	Position, speed, flag position, clock direction
Operating mode	1/1, 1/2, 1/4, 1/5, 1/8, 1/10, 1/32, 1/64, adaptive (1/128)
Position monitoring	Automatic error correction up to 0.9°
Inputs	6 optocoupler inputs (5-24V) / 1 analogue input
Outputs	3 open drains
Rotor moment of inertia	1.9 kg cm²
Temperature range	0°C to +40°C
Motor weight	3.4 kg

Torque curve



Optimal operating conditions at 48V and continuous operation

Maximum value



Stepper motor PD6S – Accessories

Programming cable

Code No.	Type	Length
957038	USB auf RS485	1,8m

Circuit capacitor

Code No.	Type	
957039	Circuit capacitor 10.000µf / 63V	PD 6S

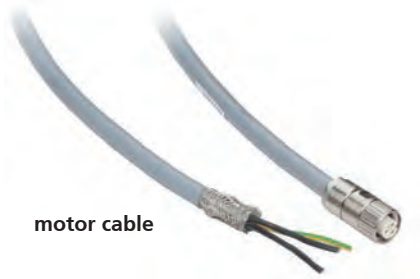
Switching power supply

24V

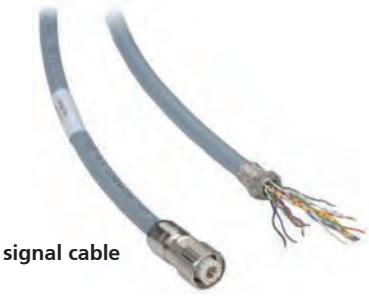
48V

Code No.	Type	
957035	Switching power supply 48V / 10A output current	Power electronic PD 6S (1 motor)
957036	Switching power supply 48V / 20A output current	Power electronic PD 6S (2-3 motors)
957037	Switching power supply 24V / DC 2,5A	Control electronics PD 6S (1-3 motors)

Motor cable / signal cable



motor cable



signal cable

Code No.	Type	
957051 _ _ _	motor cable	PD 6S, choice of lengths
957053 _ _ _	signal cable	PD 6S, choice of lengths

Length:
0 5 0 = 5,0 m
0 7 5 = 7,5 m
1 0 0 = 10,0 m

Cables for use in cable drag chains

Code No.	Type	
957052 _ _ _ FLEX	motor cable	PD 6S, choice of lengths
957054 _ _ _ FLEX	signal cable	PD 6S, choice of lengths

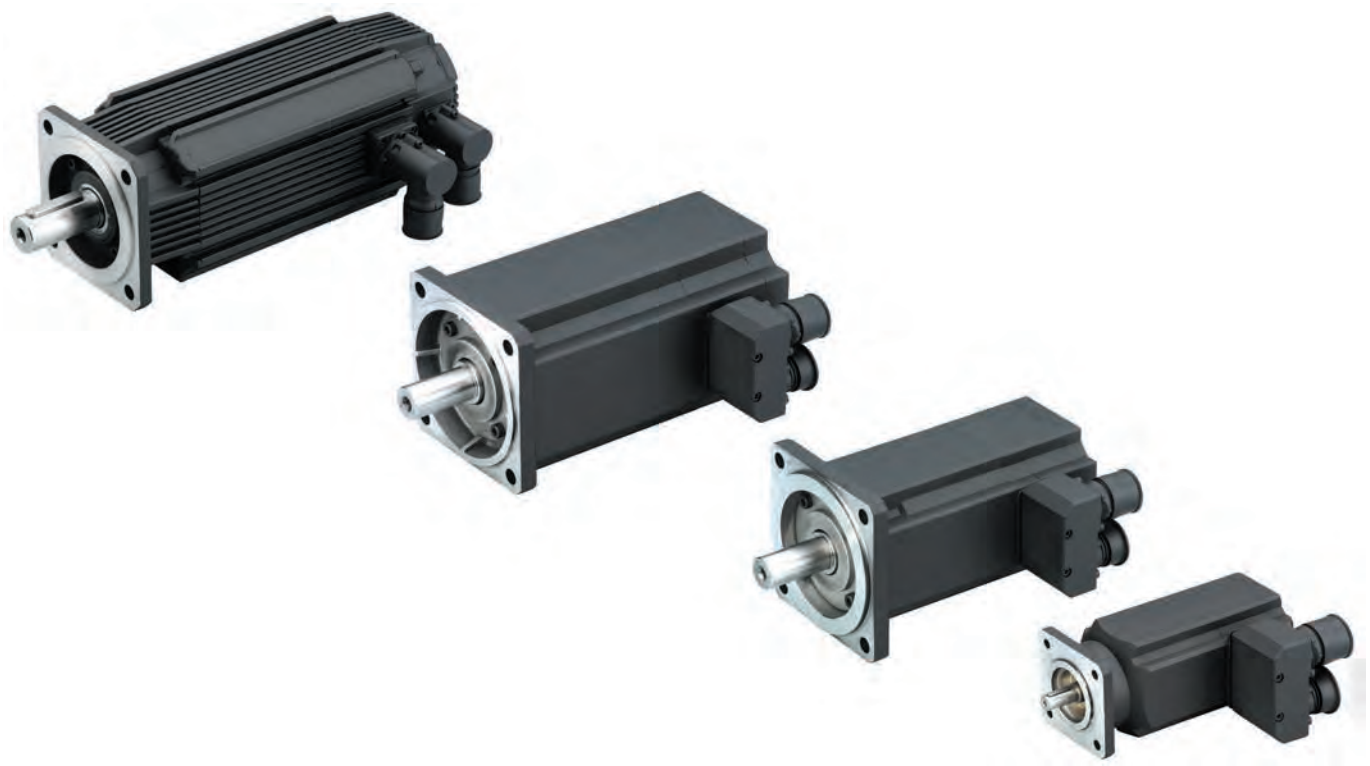
Length:
0 5 0 = 5,0 m
0 7 5 = 7,5 m
1 0 0 = 10,0 m

Note: Other cable lengths on request

Servo motors

Order instructions:

- Further motors available on request
- Encoder available as an option.

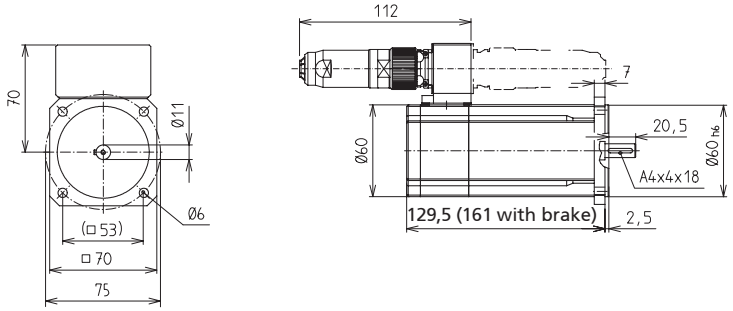


General information/operating conditions

Type		RK-AC 112	RK-AC 118	RK-AC 240	RK-AC 260	RK-AC 280	RK-AC 345	RK-AC 470	RK-AC 800	RK-AC 1252	RK-AC 1776	RK-AC 2521
Nominal speed [rpm]		6000	3300	3300	4300	2500	4500	3000	3000	3000	3000	2000
Torque [Nm]		1,12	1,18	2,4	2,6	2,8	3,45	4,7	8	12,52	17,76	25,21
Nominal current [A]		2,4	1,46	2,8	2,8	2,5	5,4	4,6	4,8	7,38	10,35	9,95
Nominal output [KW]		0,7	0,49	0,83	1,17	0,73	1,625	1,48	2,51	3,93	5,57	5,51
Moment of inertia [kgmm^2]		30,2	30,2	140	140	140	336	336	900	1600	2150	2700
Brake torque [Nm]		2,2	2,2	5	5	5	11	11	11	28	28	28
Continuous standstill torque [Nm]		1,4	1,4	3	3	3	6	6	10	14,99	22,01	27,99
Torque constant [Nm/A]		0,81	0,81	0,85	0,68	1,11	0,64	1,02	1,66	1,78	1,80	2,65
Weight [kg]	without brake	1,5	1,5	3,5	3,5	3,5	4,7	4,7	7,7	17,5	22,7	28
	with brake	1,8	1,8	4,2	4,2	4,2	5,3	5,3	9,7	22,5	27,7	33
Servo motors	without gearbox		•	•				•				
	with gearbox	PLE 60			PLE 80	PLE 80	PLE 120		PLE 120	PLE 160	PLE 160	PLE 160
Suitable for:		RK-Control 2S 2,5 A		RK-Control 2S 6,3 A		RK-Control 2S 2,5 A	RK-Control 2S 6,3 A		RK-Control 2S 7,5 A		RK-Control 2S 15 A	

Servo motors without gear

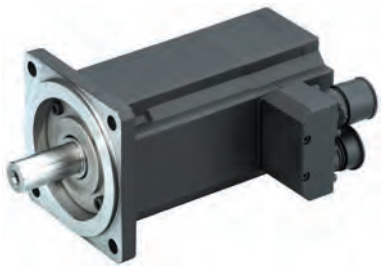
RK-AC 118

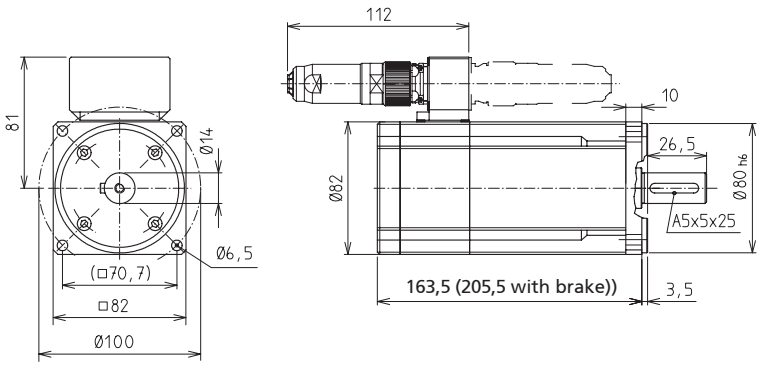


Code No.	Type
95801 _ 00 SMH	RK-AC 118

0 = Standard
1 = with brake

RK-AC 240



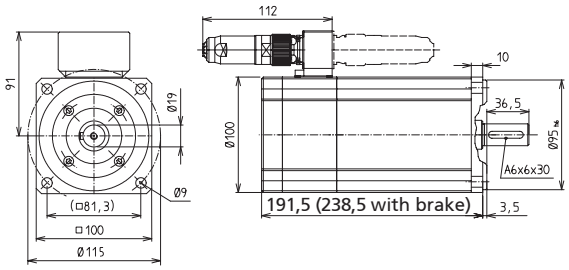


Code No.	Type
95802 _ 00 SMH	RK-AC 240

0 = Standard
1 = with brake

Servo motors

RK-AC 470

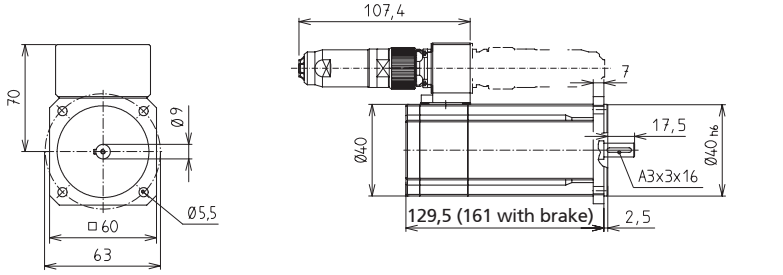


Code No.	Type
95803 _ 00 SMH	RK-AC 470

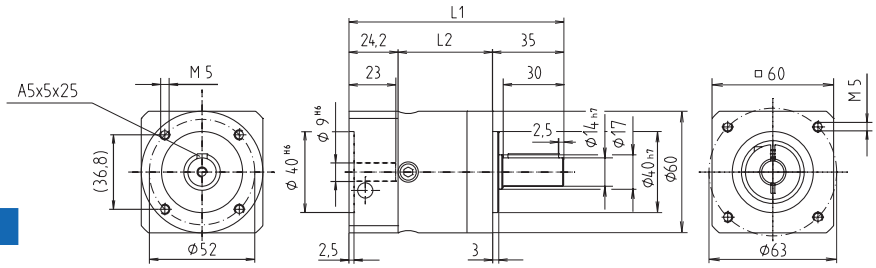
0 = Standard
1 = with brake

Servo motors with gear

RK-AC 112



Gear unit
1-step i = 3:1/5:1/8:1
2-step i = 9:1/12:1/15:1/20:1/25:1



Code No.	Type
95811 _ _ _ SMH	RK-AC 112

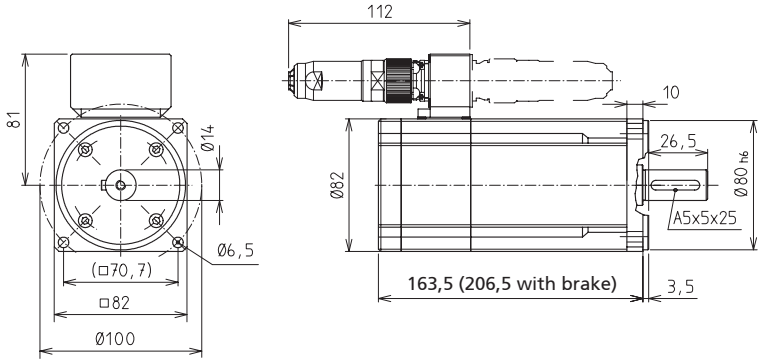
Gear selection:

03 = gear	3:1
05 = gear	5:1
08 = gear	8:1
09 = gear	9:1
12 = gear	12:1
15 = gear	15:1
20 = gear	20:1
25 = gear	25:1

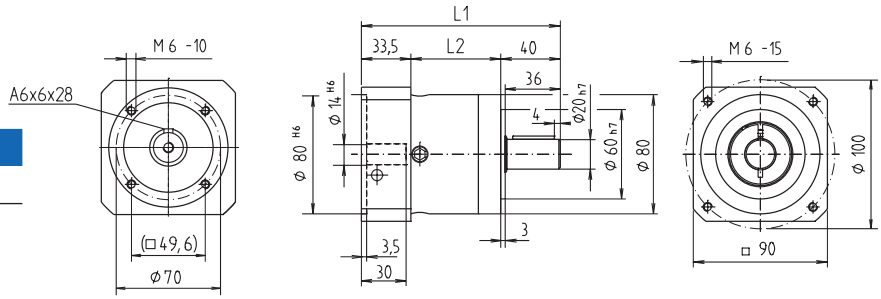
0 = Standard
1 = with brake

PLE 60	1-step 3:1 - 8:1	2-step 9:1 - 25:1
Backlash	< 16 arcmin	< 20 arcmin
Max. average input speed	4.500 min^{-1}	4.500 min^{-1}
L1	106	118,5
L2	47	59,5

RK-AC 260



Gear unit
1-step i = 3:1/5:1/8:1
2-step i = 9:1/12:1/15:1/20:1/25:1



Code No.	Type
95812 _ _ _ SMH	RK-AC 260

Gear selection:

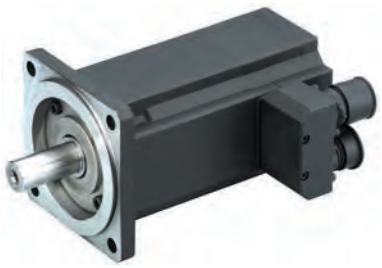
03 = gear	3:1
05 = gear	5:1
08 = gear	8:1
09 = gear	9:1
12 = gear	12:1
15 = gear	15:1
20 = gear	20:1
25 = gear	25:1

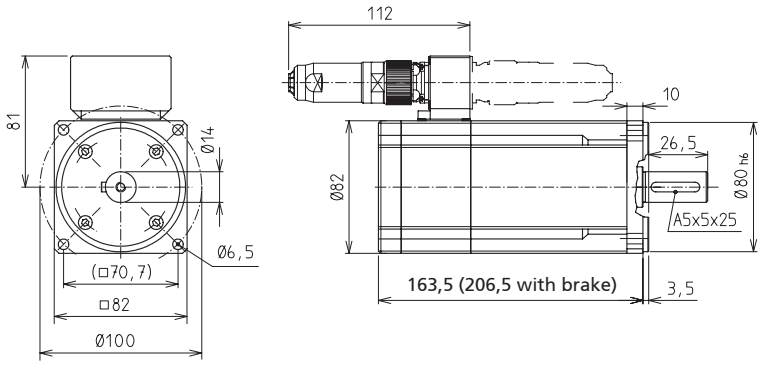
0 = Standard
1 = with brake

PLE 80	1-step 3:1 - 8:1	2-step 9:1 - 25:1
Backlash	< 9 arcmin	< 14 arcmin
Max. average input speed	4.000 min^{-1}	4.000 min^{-1}
L1	133,5	151
L2	60	77,5

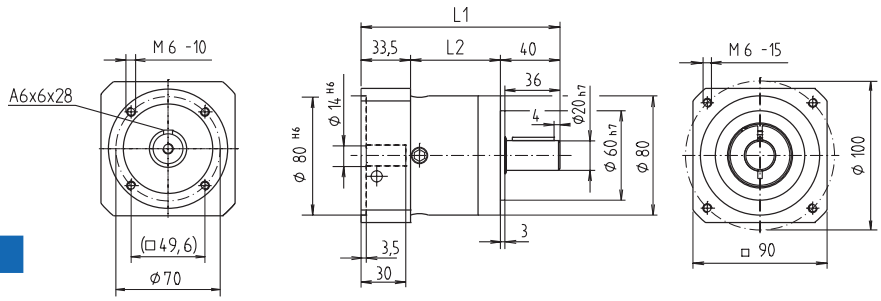
Servo motors

RK-AC 280





Gear unit
1-step i = 3:1/5:1/8:1



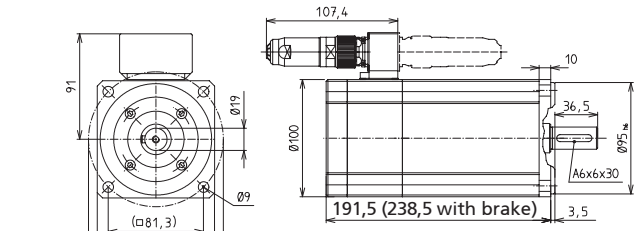
Code No.	Type
95818_ _ _ SMH	RK-AC 280

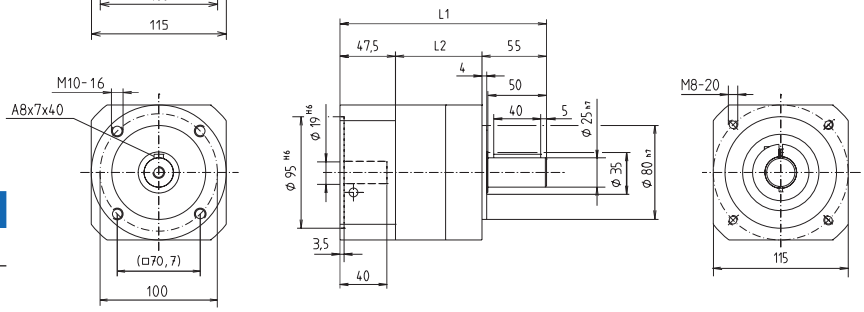
Gear selection:
03 = gear 3:1
05 = gear 5:1
08 = gear 8:1

0 = Standard
1 = with brake

PLE 80	1-step 3:1 - 8:1
Backlash	< 9 arcmin
Max. average input speed	4.000 min^{-1}
L1	133,5
L2	60

RK-AC 345





Gear unit
1-step i= 3:1 / 5:1 / 8:1
2-step i= 9:1 / 12:1 / 15:1 / 20:1 / 25:1

Code No.	Type
95813 _ _ _ SMH	RK-AC 345

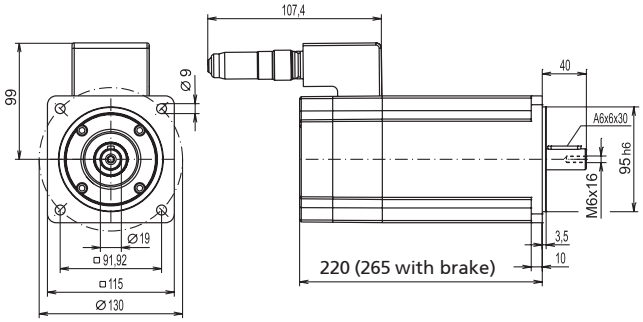
Gear selection:
03 = gear 3:1
05 = gear 5:1
08 = gear 8:1
09 = gear 9:1
12 = gear 12:1
15 = gear 15:1
20 = gear 20:1
25 = gear 25:1

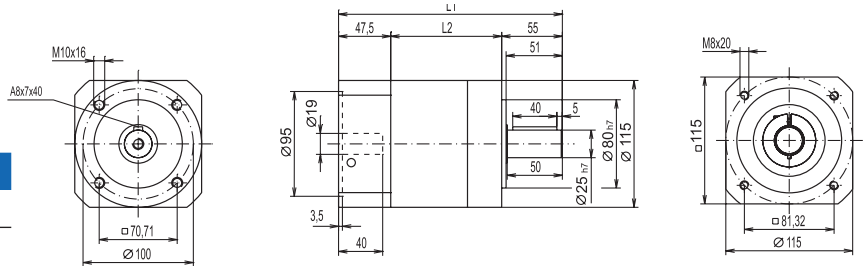
0 = Standard
1 = with brake

PLE 120	1-step 3:1 - 8:1	2-step 9:1 - 25:1
Backlash	< 8 arcmin	< 12 arcmin
Max. average input speed	3.500 min^{-1}	3.500 min^{-1}
L1	176,5	203,5
L2	74	101

Servo motors with gear

RK-AC 800





Gear unit
1-step i= 3:1 / 5:1 / 8:1
2-step i= 9:1 / 12:1 / 15:1 / 20:1

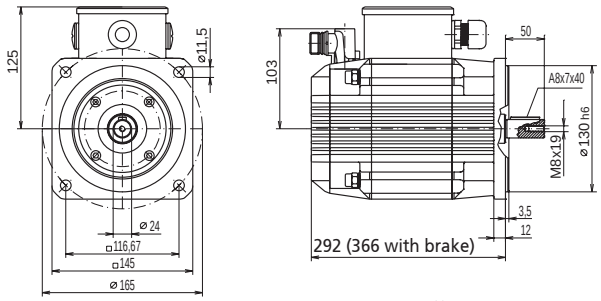
Code No.	Type
95814 _ _ _ SMH	RK-AC 800

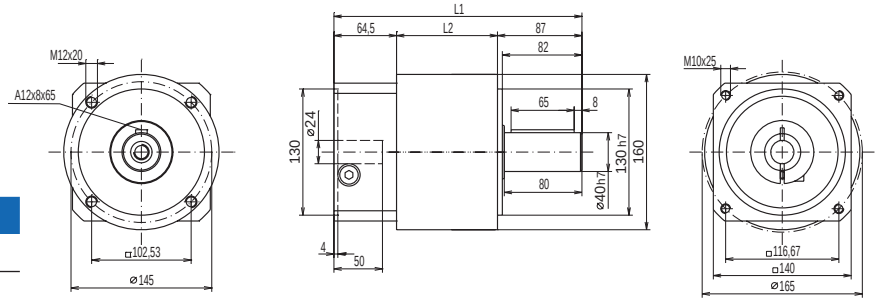
Gear selection::
03 = gear 3:1
05 = gear 5:1
08 = gear 8:1
09 = gear 9:1
12 = gear 12:1
15 = gear 15:1
20 = gear 20:1

0 = Standard
1 = with brake

PLE 120	1-step 3:1 - 8:1	2-step 8:1 - 20:1
Backlash	< 8 arcmin	< 12 arcmin
Max. average input speed	3.500 min^{-1}	3.500 min^{-1}
L1	176,5	203,5
L2	74	101

RK-AC 1252





Gear unit
1-step i = 3:1/5:1/8:1
2-step i = 9:1/12:1/15:1/20:1

Code No.	Type
on request	RK-AC 1252

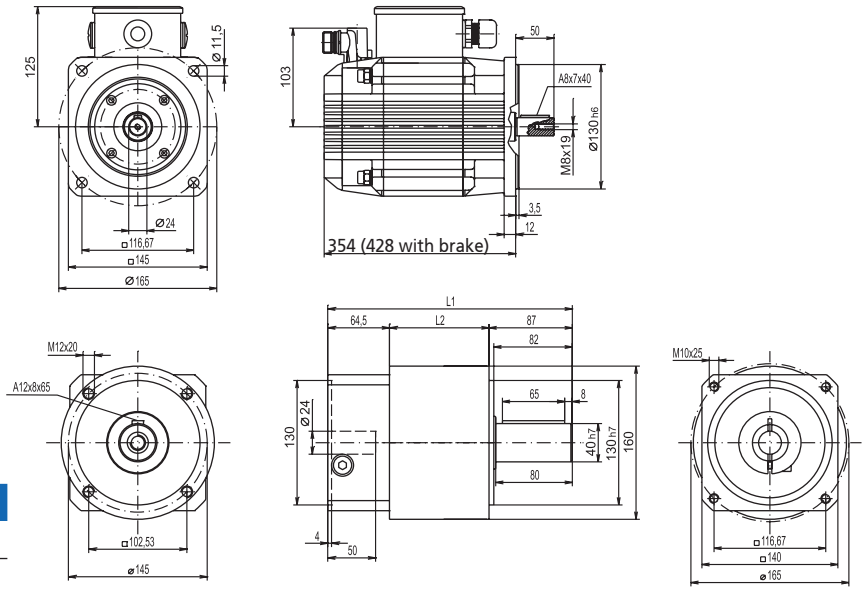
PLE 160	1-step 3:1 - 8:1	2-step 9:1 - 20:1
Backlash	< 6 arcmin	< 10 arcmin
Max. average input speed	1,700-2,900 rpm	1,950-3,000 rpm
L1	255.5	305
L2	104	153.5

Servo motors

RK-AC 1776

Gear unit
1-step i = 3:1/5:1/8:1
2-step i = 9:1/12:1/15:1/20:1

Code No.	Type
on request	RK-AC 1776

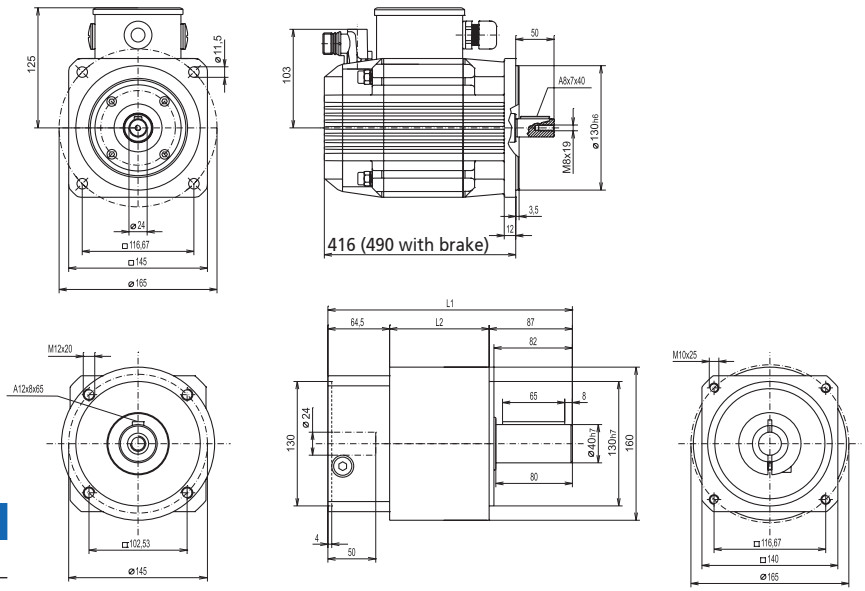


PLE 160	1-step 3:1 - 8:1	2-step 9:1 - 20:1
Backlash	< 6 arcmin	< 10 arcmin
Max. average input speed	1,700-2,900 rpm	1,950-3,000 rpm
L1	255.5	305
L2	104	153.5

RK-AC 2521

Gear unit
1-step i = 3:1/5:1/8:1
2-step i = 9:1/12:1/15:1/20:1

Code No.	Type
on request	RK-AC 2521



PLE 160	1-step 3:1 - 8:1	2-step 9:1 - 20:1
Backlash	< 6 arcmin	< 10 arcmin
Max. average input speed	1,700-2,900 rpm	1,950-3,000 rpm
L1	255.5	305
L2	104	153.5

Servo motors with gear

Motor cables/resolver cables

- For use in cable drag chains

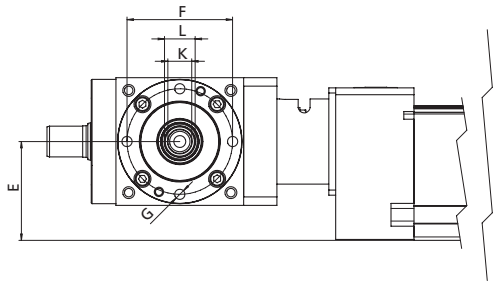
Cables for use in cable drag chains

Code No.	Type	
95702511 _ _ _ FLEX	Motor cable	RK-AC 112-800, choice of lengths
95702611 _ _ _ FLEX	Resolver cable	RK-AC 112-800, choice of lengths

Length:
0 2 5 = 2,5 m
0 5 0 = 5,0 m
0 7 5 = 7,5 m
1 0 0 = 10,0 m
1 2 5 = 12,5 m
1 5 0 = 15,0 m
2 0 0 = 20,0 m
: :
: :

Angular gear – Versions

System 1



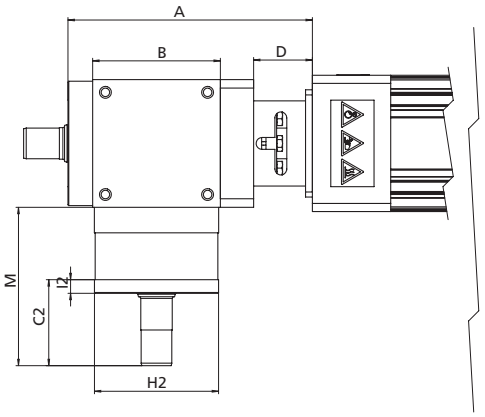


Image shows angular gear on RK DuoLine S

[mm]

Type	A	B	C2	D	E	F	G	H2	I2	K	L	M
EPX-II 30 KG	137.5	□75	50.5	28.5	37.5	LKØ62	4xM5-9 deep	Ø72.9g6	8	HWIØ14H6	HWAØ18h8	93
EPX-II 40 KG	143.5			34.5								
PLS 30	135			25.5	15							
PLS 40	137.5			28.5	20							
PLS 50					25							
PLS 60					30							
PLS 80	143.5			34.5	40							
RK DuoLine S 60	167.5	□75	50.5	58	47.7	LKØ62	4xM5-9 deep	Ø72.9g6	8	HWIØ14H6	HWAØ18h8	93
RK DuoLine S 80	143.5			34.5	58							
RK DuoLine S 120	167	□110		31.5	73.2	LKØ92	6xM6-12 deep	Ø107g6		HWIØ20H6	HWAØ24h8	100.5
RK DuoLine S 160	170.5			35	78							

System 2

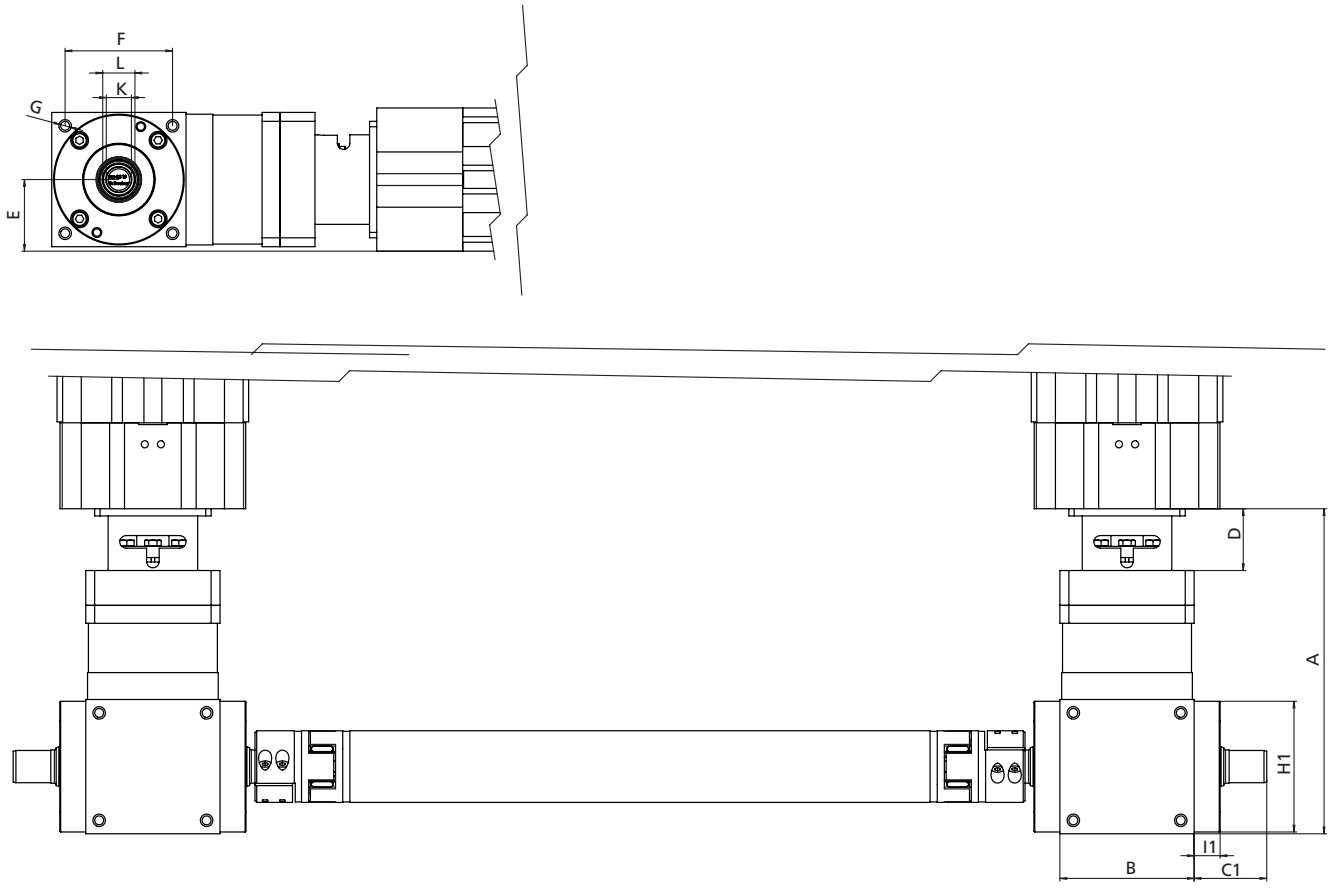


Image shows angular gear on PLS

[mm]

Type	A	B	C1	D	E	F	G	H1	I1	K	L
EPX-II 30 KG	175.5	□75	40.5	28.5	37.5	□60	4xM6-12 deep	Ø73h7	14.5	HWIØ14H6	HWAØ18h8
EPX-II 40 KG	181.5			34.5							
PLS 30	173			25.5	15						
PLS 40	175.5			28.5	20						
PLS 50					25						
PLS 60					30						
PLS 80	181.5			34.5	40						
RK DuoLine S 60	205.5	□75	40.5	58	47.7	□60	4xM6-12 deep	Ø73h7	14.5	HWIØ14H6	HWAØ18h8
RK DuoLine S 80	181.5			34.5	58						
RK DuoLine S 120	217	□110		31.5	73.2	□88	4xM8-15,5 deep	Ø108h7	10	HWIØ20H6	HWAØ24h8
RK DuoLine S 160	220.5			35	78						

Angular gear – Versions

System 3

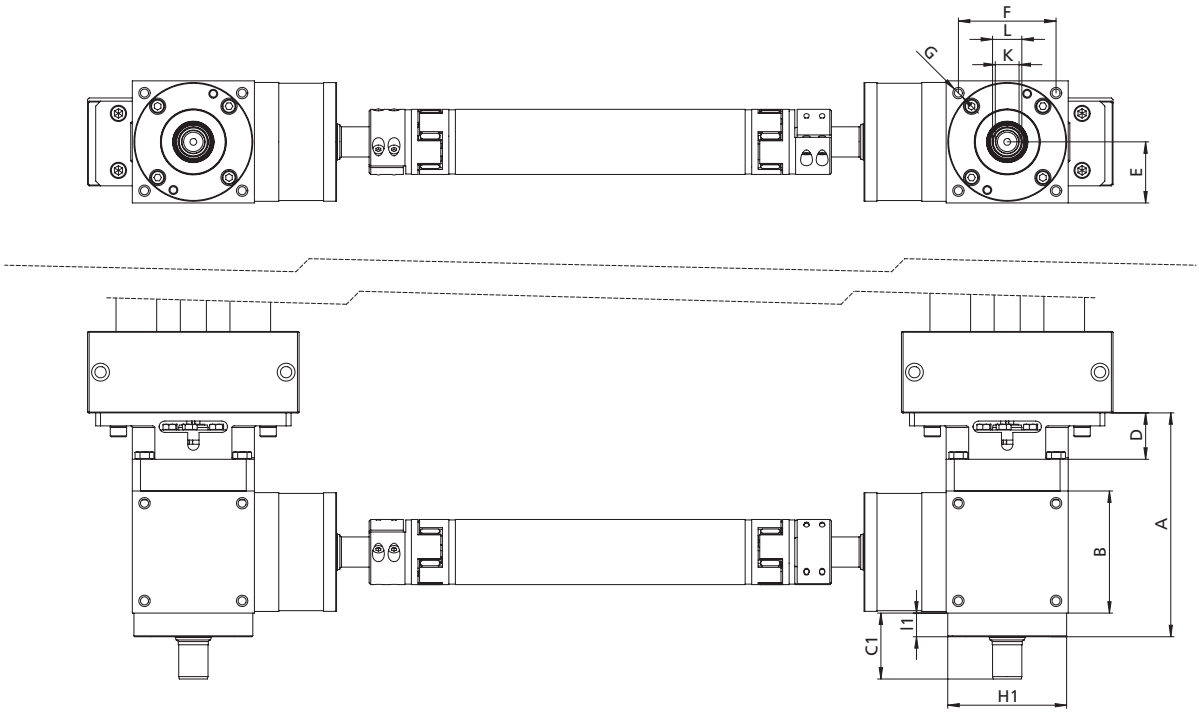
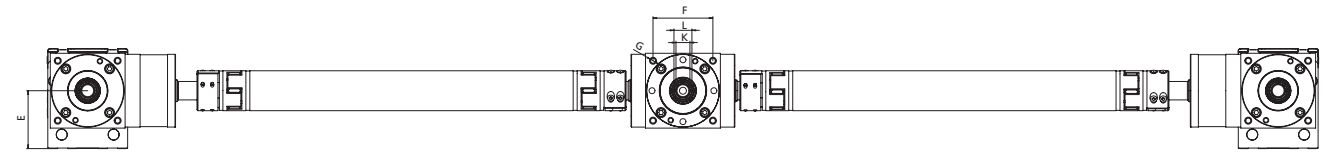


Image shows angular gear on EPX-II KG

[mm]

Type	A	B	C1	D	E	F	G	H1	I1	K	L
EPX-II 30 KG	137.5	□75	40.5	28.5	37.5	□60	4xM6-12 deep	Ø73h7	14.5	HWIØ14H6	HWAØ18h8
EPX-II 40 KG	143.5			34.5							
PLS 30	135			25.5	15						
PLS 40	137.5			28.5	20						
PLS 50					25						
PLS 60					30						
PLS 80	143.5			34.5	40						
RK DuoLine S 60	167.5	□75	40.5	58	47.7	□60	4xM6-12 deep	Ø73h7	14.5	HWIØ14H6	HWAØ18h8
RK DuoLine S 80	143.5			34.5	58						
RK DuoLine S 120	167	□110		31.5	73.2	□88	4xM8-15,5 deep	Ø108h7	10	HWIØ20H6	HWAØ24h8
RK DuoLine S 160	170.5			35	78						

System 4



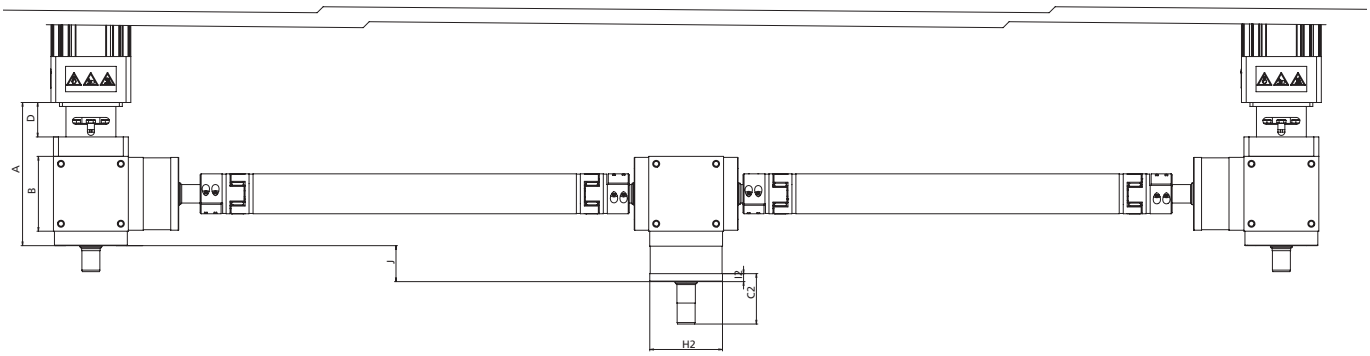


Image shows angular gear on RK DuoLine S

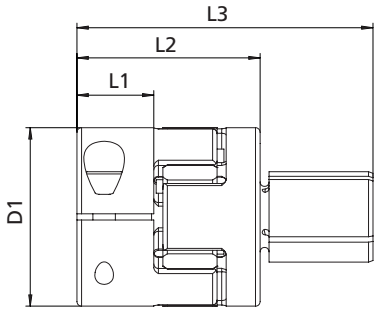
[mm]

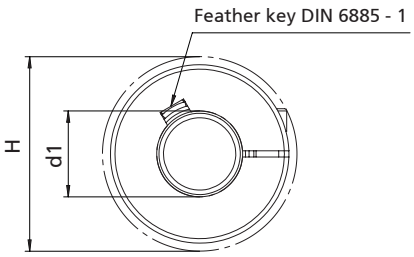
Type	A	B	C2	D	E	F	G	H2	I2	J	K	L
EPX-II 30 KG	137.5	□75	50.5	28.5	37.5	□60	4xM6-12 deep	Ø72.9g6	8	36	HWIØ14H6	HWAØ18h8
EPX-II 40 KG	143.5			34.5								
PLS 30	135			25.5	15							
PLS 40					20							
PLS 50	137.5	□75	50.5	28.5	25	□60	4xM6-12 deep	Ø72.9g6	8	36	HWIØ14H6	HWAØ18h8
PLS 60					30							
PLS 80	143.5			34.5	40							
RK DuoLine S 60	167.5	□75	50.5	58	47.7	□60	4xM6-12 deep	Ø72.9g6	8	36	HWIØ14H6	HWAØ18h8
RK DuoLine S 80	143.5			34.5	58							
RK DuoLine S 120	167	□110		31.5	73.2	□88	4xM8-15.5 deep	Ø107g6	8	48	HWIØ20H6	HWAØ24h8
RK DuoLine S 160	170.5			35	78							

Angular gear – Drive

Coupling with expansion hub

- Quick and easy assembly
- Motor connection with zero backlash

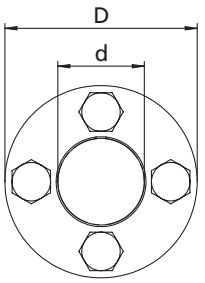


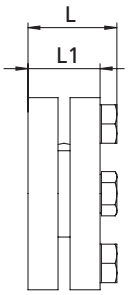


Code No.	Version for angular gear-systems	d1 [mm]	D1 [mm]	H [mm]	L1 [mm]	L2 [mm]	L3 [mm]	Maximum transmittable torque [Nm]
984008	PLS 30-80 RK DuoLine 60+80 S	14	39.5	43	17	40	65	17
984010		19						
984009	RK DuoLine 120+160 S	14	39.5	43	17	40	65	17
984011		19						

Shrink disc

- Clamping to the shaft of the angular gearbox
- Transmission of high torques
- Reducing brushes necessary
Reduzierhülsen erforderlich





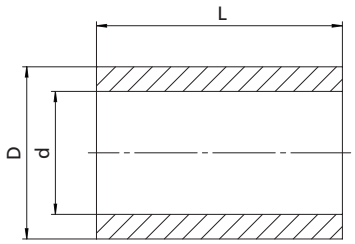
Code No.	Version for angular gear-systems	L [mm]	L1 [mm]	d [mm]	D [mm]
984001	PLS 30-80 RK DuoLine 60+80 S	18,5	15	18	40
984002	RK DuoLine 120+160 S	22,5	19	24	50

Torque can be transmitted with a motor shaft diameter of:

Code No.	6 mm	8 mm	10 mm	12 mm	14 mm	16 mm	20 mm
984001	5	4	7	22	64		
984002						49	150

Reducing bush

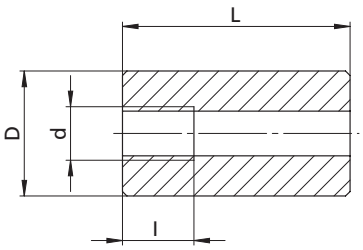
- To adapt gearbox shaft to motor shaft



Code No.	Version for angular gear-systems	d [mm]	D [mm]	L [mm]
984003	PLS 30-80 RK DuoLine 60+80 S	6	14	20
984004		8		
984005		10		
984006		12		
984007	RK DuoLine 120+160 S	16	20	24

Hollow shaft insert

- Necessary in combination with couplings clamping radial on the outside of the hollow gearbox shaft



Code No.	Version for angular gear-systems	d [mm]	l [mm]	D [mm]	L [mm]
984013	PLS 30-80 RK DuoLine 60+80 S	M6	8	14h6	25,5
984014	RK DuoLine 120+160 S			20h6	29,5

Torque adapter

- Necessary for tightening the screws of the shrink disc with the correct torque
- For torque wrench with 1/2“ outer square

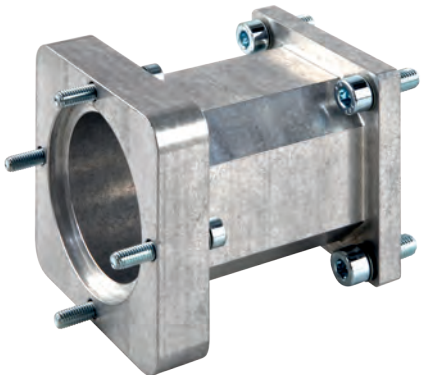
Scope of delivery:
Adapter without torque wrench or socket wrench

Code No.	Type
984012	For all angular gear-systems

Note: Further information and instructions can be found at:
www.rk-rose-krieger.com/english/service/download-documents/technical-manuals/linear-technology/

3-phase motors – Drive

Motor adaptors/couplings for 3-phase motors



Type	Three-phase motor	
	90/120W	180/250 W
EP(X) 30 EP(X)-II 30 EPX-II 30 KG	949996	–
	911940 0812	–
EP(X) 40 EP(X)-II 40 EPX-II 40 KG	949614	949414
	911430 1212	911430 1214
EP(X) 50	949614	949414
	911430 1212	911430 1214
EP(X) 60	–	949616
	–	911940 1414
EP(X) 80	–	949909
	–	911940 1420
EV 30	949603	–
	910920 0812	–
EV 40	94937	94916
	911430 1012	911430 1014
EV 50	949605	94935
	911940 1212	911430 1214
EV 60	–	949077
	–	911430 1214

Code No. Motor adaptor:
949605

Code No. Coupling with specification of pin diameter
1st end = 12 mm
2nd end = 12 mm:
911940 1212

Type	Three-phase motor	
	90/120W	180/250 W
EV 80	94958	94940
	911940 1214	911940 1414
PLS 30	94981	–
	910920 0612	–
PLS 40	949100	949101
	911430 0812	911430 0814
PLS 50	949605	94935
	911430 1012	911430 1014
PLS 60	949107	949108
	911940 1212	911430 1214
PLS 80	94958	94940
	911940 1214	911940 1414
DuoLine S 80x120	949060	949061
	911940 1212	911430 1214
SQ MT 30	949913	949949
	910920 1012	911430 1014
SQ MT 40, 40x80	949920	949921
	911430 1012	911430 1014
SQ MT 50, 50x100	949928	949929
	911430 1214	911430 1414
SQ MT 60, 60x120	949938	949939
	911940 1220	911940 1420
SQ MT 80, 80x160	949944	949945
	912855 1225	912855 2025

For further details of dimensions, please refer to the chapter on the relevant linear unit.

Motor adaptors/couplings for stepper motors

Type	Motor	
	NEMA 17	NEMA 23
PLM	91462	91472
	910714 0505	910714 0506
RK Compakt 80	91301	91302
	910714 0505	910714 0506
RK Compakt 120	91303	91309
	910714 0505	910714 0506

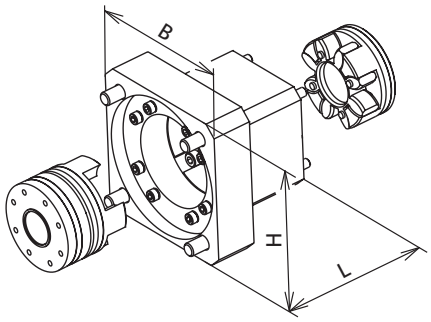
Code No. Motor adaptor:
91472

Code No. Coupling with specification of pin diameter
1st end = 5 mm
2nd end = 6 mm:
910714 0506

Motor adapter kit for RK AC three-phase motor

- Three-phase motor from the RK standard range 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 fixation material



Type	Three-phase motor	
	90/120 W	180/250 W
RK MonoLine Z 40	949111	949112
RK MonoLine Z 60	949355	949117
RK MonoLine Z 80	–	949117
RK MonoLine MT 80	–	–
RK MonoLine Z 120	–	–
RK DuoLine Z 60	949377	949378
RK DuoLine Z 80	949355	949117
RK DuoLine Z 120	949372	949373
RK DuoLine Z 160	–	–
RK DuoLine S 60	–	–
RK DuoLine S 80 trapezoidal thread	949368	949369
RK DuoLine S 80 ball screw	949363	949365
RK DuoLine S 120	949126	949127
RK DuoLine S 160	–	–

3-phase motors – Drive

Motor adaptors/couplings for servo motors*

Type	Servo motor without gear unit			Servo motor with gear unit		
	RK-AC 118	RK-AC 240	RK-AC 470	RK-AC 112	RK-AC 260 RK-AC 280	RK-AC 345
EP(X) 30 EP(X)-II 30 EPX-II 30 KG	949200	–	–	–	–	–
	911430 0811	–	–	–	–	–
EP(X) 40 EP(X)-II 40 EPX-II 40 KG	949201	949221	–	–	–	–
	911430 1112	911430 1214	–	–	–	–
EP(X) 50	949202	949222	–	–	–	–
	911430 1112	911430 1214	–	–	–	–
EP(X) 60	949203	949223	949239	–	–	–
	911430 1114	911940 1414	911940 1419	–	–	–
EP(X) 80	949901	949903	949905	–	–	–
	911940 1120	911940 1420	911940 1920	–	–	–
EV 30	949204	–	–	–	–	–
	911430 0811	–	–	–	–	–
EV 40	949205	949280	–	–	–	–
	911430 1011	911430 1014	–	–	–	–
EV 50	949206	949225	–	–	–	–
	911430 1112	911430 1214	–	–	–	–
EV 60	949052	949087	–	–	–	–
	911430 1112	911940 1214	–	–	–	–
EV 80	949401	949226	–	–	–	–
	911430 1114	911940 1414	–	–	–	–
PLS 30	949207	–	–	–	–	–
	911430 0611	–	–	–	–	–
PLS 40	949208	949227	–	–	–	–
	911430 0811	911430 0814	–	–	–	–
PLS 50	949209	949228	–	–	–	–
	911430 1011	911430 1014	–	–	–	–
PLS 60	949210	949229	949241	–	–	–
	911430 1112	911940 1214	911940 1219	–	–	–
PLS 80	949404	949230	949242	–	–	–
	911430 1114	911940 1414	911940 1419	–	–	–
DuoLine S 80x120	949053	949055	949057	–	–	–
	911430 1112	911940 1214	911940 1219	–	–	–
SQ MT 30	949910	–	–	–	–	–
	911430 1011	–	–	–	–	–
SQ MT 40 40x80	949915	949917	–	–	–	–
	911430 1011	911430 1014	–	–	–	–
SQ MT 60 60x120	949922	949924	–	–	–	–
	911430 1114	911430 1414	–	–	–	–
SQ MT 60 60x120	949930	949932	949934	–	–	–
	911430 1120	911940 1420	911430 1920	–	–	–
SQ MT 80 80x160	–	949940	949942	–	–	–
	–	912855 1425	912855 1925	–	–	–
MultiLine	–	949962	949964	949446	949447	949448
	–	912855 1430	912855 1930	912855 1430	912855 2030	912855 2530

Code No. Motor adaptor:
949962

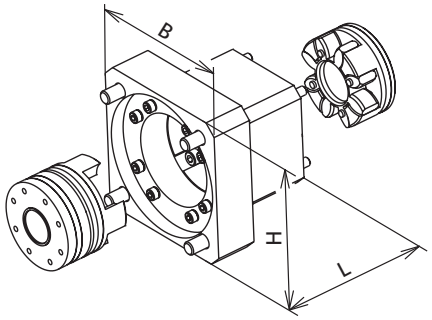
Code No. Coupling with specification of pin diameter
1st end = 14 mm
2nd end = 30 mm:
912855 1430

For further details of dimensions, please refer to the chapter on the relevant linear unit.

Motor adapter kit for RK AC servomotors

- Servomotors from the RK standard range 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 fixation material



Type	Servo motor without gear unit				
	RK-AC 118	RK-AC 240	RK-AC 470	RK-AC 800	RK-AC 1252 RK-AC 1776 RK-AC 2521
RK MonoLine Z 40	–	949132	–	–	–
RK MonoLine Z 60	–	–	949357	–	–
RK MonoLine Z 80	–	–	949133	–	–
RK DuoLine Z 60	–	949376	–	–	–
RK DuoLine Z 80	–	–	949357	–	–
RK DuoLine S 60	949388	949389	–	–	–
RK DuoLine S 80	–	949367	949366	–	–
RK DuoLine S 120	–	949123	949124	949125	–
RK DuoLine S 160	–	–	–	949340	949342

Type	Servo motor with gear unit				
	RK-AC 112	RK-AC 260 RK-AC 280	RK-AC 345	RK-AC 800	RK-AC 1252 RK-AC 1776 RK-AC 2521
RK MonoLine Z 40	949109	–	–	–	–
RK MonoLine Z 60	949350	949353	–	–	–
RK MonoLine Z 80	949113	949115	949116	–	–
RK MonoLine MT 80	–			949116	–
RK MonoLine Z 120	–	–	949344	949344	949345
RK DuoLine Z 60	949374	949375	–	–	–
RK DuoLine Z 80	949350	949353	949354	–	–
RK DuoLine Z 120	–	949371	949370	949370	–
RK DuoLine Z 160	–	–	949344	949344	949345
RK DuoLine S 60	949387	–	–	–	–
RK DuoLine S 80 trapezoidal thread	949360	949364	–	–	–
RK DuoLine S 80 ball screw	949360	949364	–	–	–
RK DuoLine S 120	949121	949122	–	–	–
RK DuoLine S 160	–	–	949341	949341	949343

Converters and controls for linear actuators

RK-Control 2S servo technology

RK-Control servo technology

- Innovative and flexible device technology

- Features:
- **RK-Control servo technology**
- Can be tailored to your applications
- Ideal drive controller for dynamic and high-precision single and multiple solutions
- Reliable and cost-effective solutions

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RK ROSE+KRIEGER

RK-Control 2S servo technology

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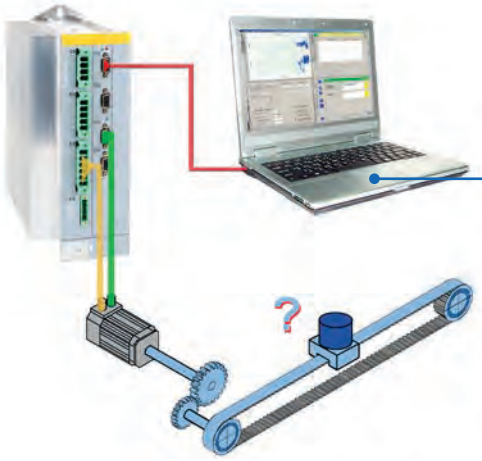
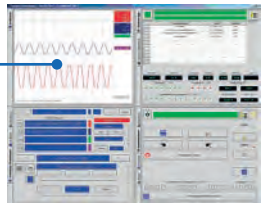
RK-Control 2S

Innovative and flexible technology for dynamic and high-precision single and multiple solutions



Commissioning and control optimisation

Motor manager



Control optimisation

Features:

- Quick and easy run in
- Guided parameterization
- All connections located on the front
- Optimally co-ordinated performance classes and technology functions
- Increased lifetime due to jerk-limited setpoint generation
- Low development costs due to safety technology
- Optimum motion control – minimal lag error
- Internal network filter
- Run in software included free of charge

Standard

- 8 digital inputs/4 digital outputs
- RS232/RS485 interface
- 2 analogue inputs
- 2 analogue outputs
- CE, UL, cUL

Enhancements

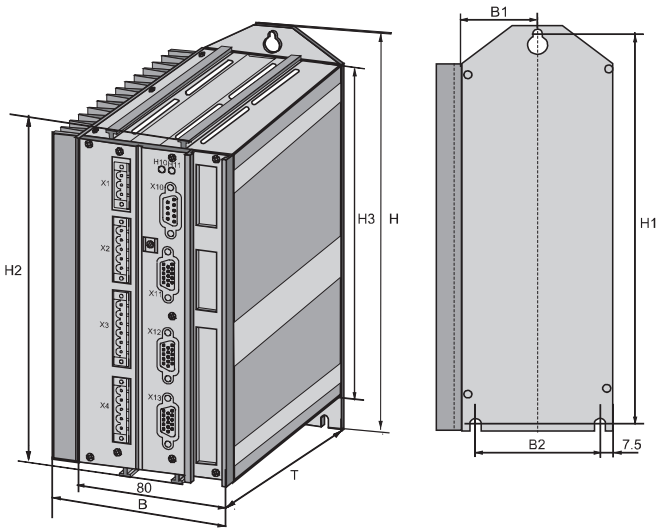
- Optimally co-ordinated technology functions
- Expansion with an additional 12 inputs/outputs (input and output both freely configurable)

- Supports all standard fieldbuses

Performance levels

Device:	Current [A_{rms}]		Line voltage	Output [kVA]	Suitable for: servo motors
RK-Control 2S	I_{cont}	I_{peak} (< 5 s)	± 10%, 50-60 Hz		
2.5 A	2.5	5.5	1 * 230/240 VAC	1.0	RK-AC 112, 118 and 210
6.3 A	6.3	12.6		2.5	RK-AC 240, 260, 345 and 470
7.5 A	7.5	15	3 * 400/480 VAC	6.2	RK-AC 800, 1252
15 A	15	30		11.5	RK-AC 2521, 1776

Size/weight



[mm]

Device:	Dimensions					Clearances			Weight [kg]
RK-Control 2S	H	B	T	H2	H3	B1	B2	H1	
2.5 A	222	84	172	203	191	40	65	210	2.0
6.3 A	222	100	172	203	191	40	65	210	2.5
7.5 A	279	115	172	259	248	40	65	267	4.3
15 A	279	158	172	259	248	39	80	267	6.8

RK-Control 2S

Connection to superordinated controls

Connection can be implemented via digital inputs and outputs.

Digital inputs/outputs
The digital I/Os can be expanded by a further 12 I/Os (optional). This enables control of the full range of 31 motion functions, instead of just the 3 motion functions (e.g. • positions).

In addition, the following fieldbus types are also supported:

Profibus	
Profibus – characteristics	
DP versions:	DPV0/DPV1
Baud rate:	Up to 12 MHz
Profibus ID:	C320

CANopen	
CANopen – characteristics	
Baud rate [kBit/s]:	20 ... 1000
Service Data Object:	SDO1
Process Data Objects:	PDO1, ... PDO4

DeviceNet	
DeviceNet – characteristics	
I/O - data:	up to 32 byte
Baud rate [kBit/s]:	125 ... 500
Participants:	up to 63 slaves

Powerlink	
Ethernet Powerlink – characteristics	
Baud rate:	100 Mbits (FastEthernet)
Cycle time:	1 ms

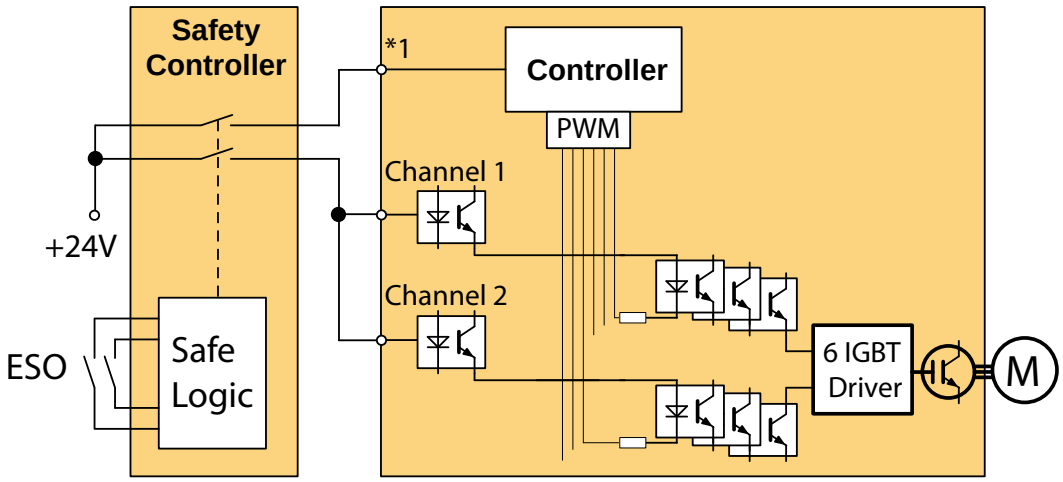
EtherCAT	
EtherCAT – characteristics	
Baud rate:	100 Mbits (FastEthernet)
Cycle time:	1 ms

Safety technology

The standard EN ISO 13849-1 introduced the term Performance Levels for the design of safety-relevant controls. In compliance with the safety category 3 PL d as defined in EN ISO 13849-1, the RK Control 2S can be used for the following functions:

Safe standstill function (zero-torque drive)

- **S**afe **T**orque **O**ff (STO)



STO function on RK-Control 2S

In combination with an external emergency stop module (optional), the STO function on the RK Control 2S can be implemented as illustrated.

- All safety motion functions require the use of a special external safety module SMX11 with the RK-Control 2S in conjunction with high-resolution absolute value encoders in the servo motors.

The SMX11 safety module and servo motors with absolute value encoders are available on request.

Safe movement functions

- Safe Torque Off, STO
- Safe Stop 1, SS1
- Safe Stop 2, SS2
- Safe Limited Speed, SLS
- Safe Operating Stop, SOS
- Safe Limited Increment SLI
- Safe Direction, SDI

RK-Control 2S – Drive/positioning

Device technology

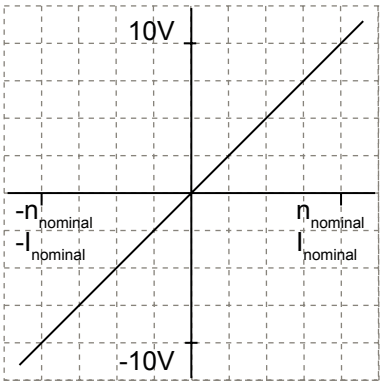
Functions: positioning version

With its generally analogue interface, or alternatively step/direction orencoder actuating signals, the RK-Control 2S offers simple and cost-effective access to the world of servo drive technology. The central control unit, e.g., PLC or PC, remains the same. This means that the RK-Control 2S is the ideal way to migrate from analogue ± 10 V drives to intelligent digital servo drives.

You can choose from a range of operating modes:

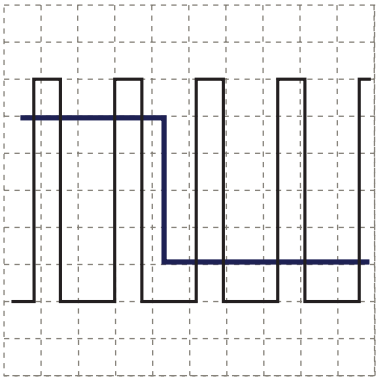
± 10 V - input

- ± 10 V set speed with encoder simulation as actual position feedback
- ± 10 V set current with encoder simulation as actual position feedback and configurable locking functions



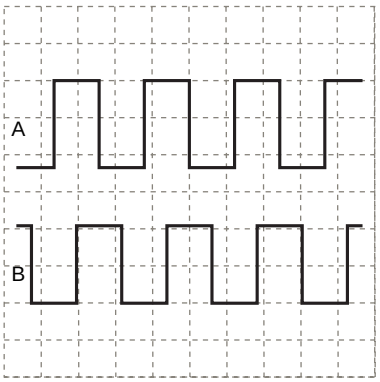
Step/direction input

- Step/direction signals as 24 V level or
- Step/direction signals in accordance with RS422



Encoder input

- RS422
- 24 V level

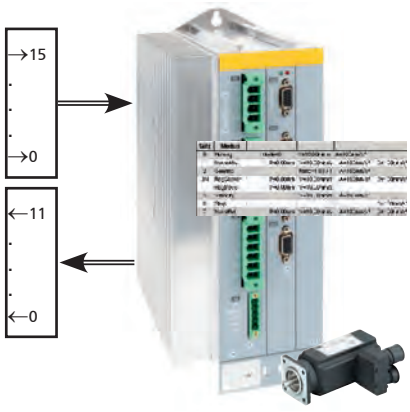


Functions: positioning version

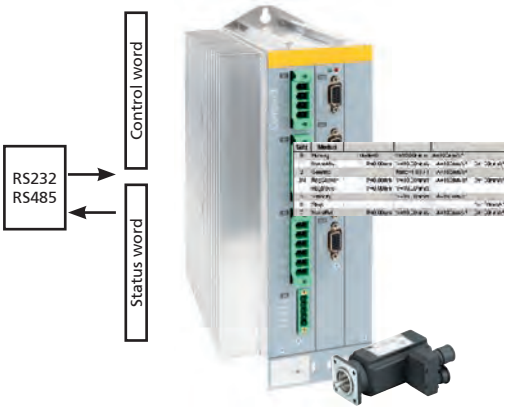
- Due to its excellent functionality, the positioning version of RK-Control 2S forms an ideal basis for many applications in high-perfor mance motion automation.
- Up to 31 motion functions can be created with the supplied PC software.
- The number of the available motion functions depends on the optional extension of the selected or unselected digital inputs and outputs.
- Storage of the motion profiles is non-volatile
- Adjustable jerk limitation
- Optional expansion of digital inputs/outputs
- Comprehensive selection of machine zero modes for adaptation of the RK-Control 2S for your application

Motion control via inputs/ outputs or serial

- Up to 31 motion functions via set table
- Status bits for each motion set

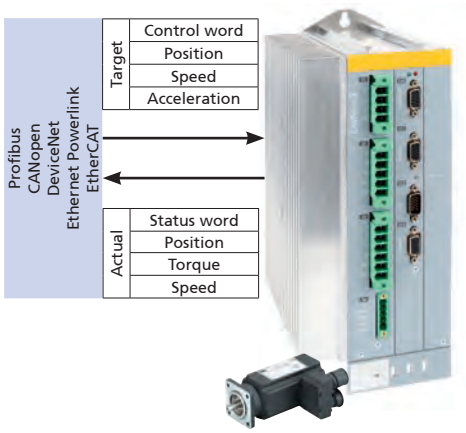


Via digital inputs and outputs



Via RS232/RS 485 by means of control and status word

Motion control via field bus

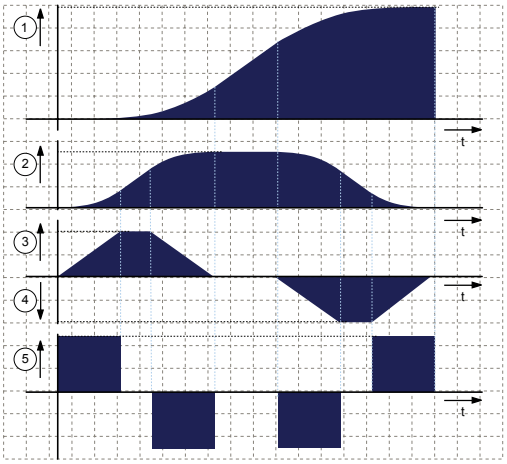


- Direct set specification via bus telegram or
- set selection (31 motion functions in set table)
- Status bits for each motion set
- Operating modes:
- Speed controller
- Direct positioning
- Positioning with set selection
- Profile-compliant via Profibus, CANopen, DeviceNet, Ethernet Powerlink, EtherCAT

RK-Control 2S – Positioning

Motion functions of positioning version

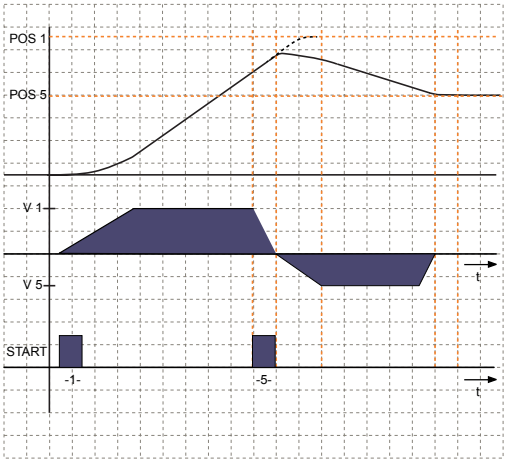
Absolute/relative positioning
MoveAbs and MoveRel



A motion set defines a complete movement with all configurable parameters:

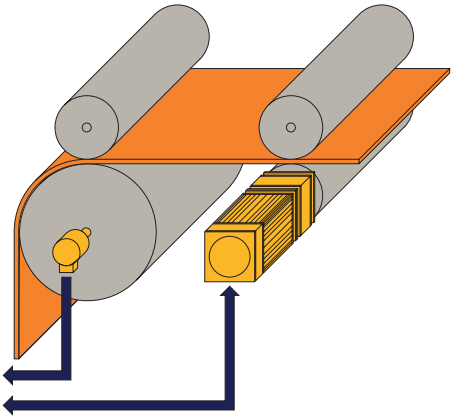
- (1) Target position
- (2) Traversing speed
- (3) Maximum acceleration
- (4) Maximum delay
- (5) Maximum jerk

Dynamic positioning



- During positioning, you can switch to a new motion profile – the transition is dynamic.

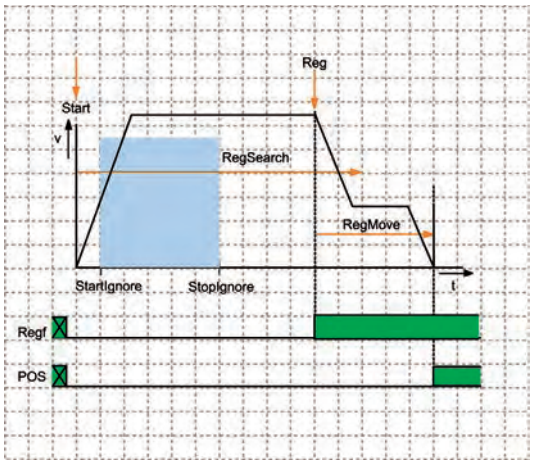
Electronic gears
Gearing



Synchronisation of two linear units via:

- Encoder simulation at the master and
- encoder input at the slave
- Motion synchronised to a leading axis with any
- transmission ratio
- ± 10 V analogue input
- Step/direction input
- Encoder input

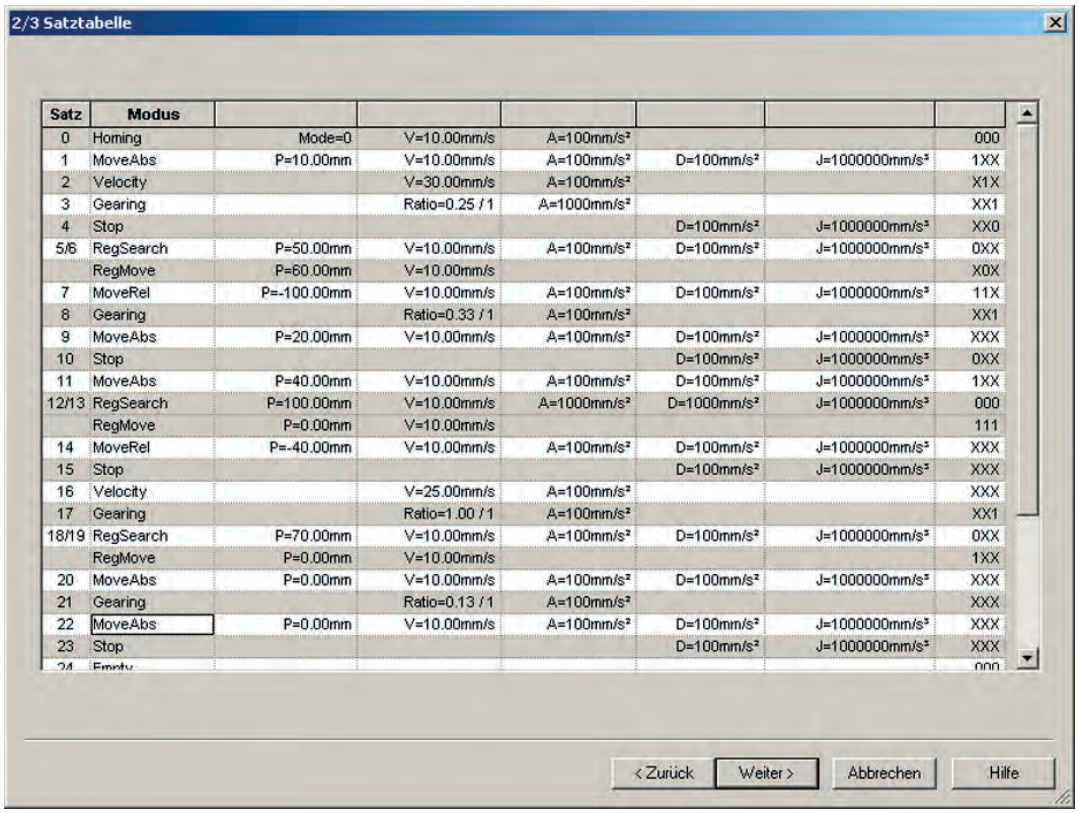
Registration mark-related positioning
Reg Search, RegMove



2 motions are defined for registration mark-related positioning:

- **RegSearch:** Search for an external signal – from a registration mark, such as an identification mark on a product.
- **RegMove:** an external signal interrupts the search motion, which is immediately followed by the second motion.
- Accuracy of mark detection < 1µs

Input of motion sets via set table



Satz	Modus						
0	Homing	Mode=0	V=10.00mm/s	A=100mm/s²			000
1	MoveAbs	P=10.00mm	V=10.00mm/s	A=100mm/s²	D=100mm/s²	J=1000000mm/s³	1XX
2	Velocity		V=30.00mm/s	A=100mm/s²			X1X
3	Gearing		Ratio=0.25 / 1	A=1000mm/s²			XX1
4	Stop				D=100mm/s²	J=1000000mm/s³	XX0
5/6	RegSearch	P=50.00mm	V=10.00mm/s	A=100mm/s²	D=100mm/s²	J=1000000mm/s³	0XX
	RegMove	P=60.00mm	V=10.00mm/s				X0X
7	MoveRel	P=-100.00mm	V=10.00mm/s	A=100mm/s²	D=100mm/s²	J=1000000mm/s³	11X
8	Gearing		Ratio=0.33 / 1	A=100mm/s²			XX1
9	MoveAbs	P=20.00mm	V=10.00mm/s	A=100mm/s²	D=100mm/s²	J=1000000mm/s³	XXX
10	Stop				D=100mm/s²	J=1000000mm/s³	0XX
11	MoveAbs	P=40.00mm	V=10.00mm/s	A=100mm/s²	D=100mm/s²	J=1000000mm/s³	1XX
12/13	RegSearch	P=100.00mm	V=10.00mm/s	A=1000mm/s²	D=1000mm/s²	J=1000000mm/s³	000
	RegMove	P=0.00mm	V=10.00mm/s				111
14	MoveRel	P=-40.00mm	V=10.00mm/s	A=100mm/s²	D=100mm/s²	J=1000000mm/s³	XXX
15	Stop				D=100mm/s²	J=1000000mm/s³	XXX
16	Velocity		V=25.00mm/s	A=100mm/s²			XXX
17	Gearing		Ratio=1.00 / 1	A=100mm/s²			XX1
18/19	RegSearch	P=70.00mm	V=10.00mm/s	A=100mm/s²	D=100mm/s²	J=1000000mm/s³	0XX
	RegMove	P=0.00mm	V=10.00mm/s				1XX
20	MoveAbs	P=0.00mm	V=10.00mm/s	A=100mm/s²	D=100mm/s²	J=1000000mm/s³	XXX
21	Gearing		Ratio=0.13 / 1	A=100mm/s²			XXX
22	MoveAbs	P=0.00mm	V=10.00mm/s	A=100mm/s²	D=100mm/s²	J=1000000mm/s³	XXX
23	Stop				D=100mm/s²	J=1000000mm/s³	XXX
24	Empty						000

Speed control
Velocity

- Defined by the speed and the acceleration

Stop movement
Stop

- The Stop set interrupts the current motion set

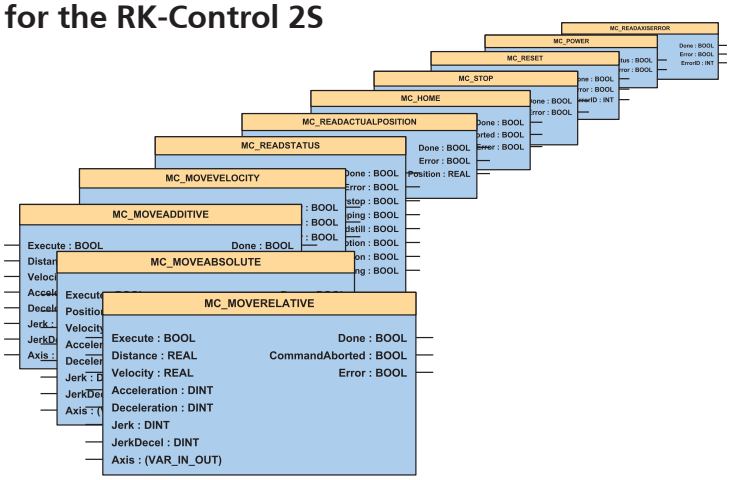
RK-Control 2S – Positioning

Functions: positioning with function blocks

- Device-specific function blocks:
  - for generating an input process image
  - for generating an output process image
  - as access to motion set table
- PLC open function locks
- Programmable according to IEC 61131-3
- Programming system: Codesys
- Up to 6,000 instructions
- IEC 61131-3 standard modules, such as timers, triggers, counters, etc.

PLCopen motion control

Function blocks for the RK-Control 2S



- Absolute positioning
- Stop
- Reading the axis error
- Relative positioning
- Machine zero
- Acknowledgement of errors
- Additive positioning
- Energising the output stage
- Reading the current position
- Continuous positioning
- Reading the device status
- Electronic gears

IEC 61131-3

IEC 61131-3 is the only globally supported programming language for industrial automation that is company and product-independent.

IEC 61131-3 includes graphical and textual programming languages.

- Instruction list
- Structured text
- Ladder diagram
- Sequential function chart
- Function block diagram

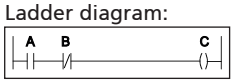
Instruction list (IL)

```
LD    A
ANDN  B
ST    C
```

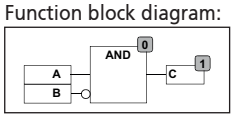
Structured text:

```
C := A AND NOT B
```

Ladder diagram:

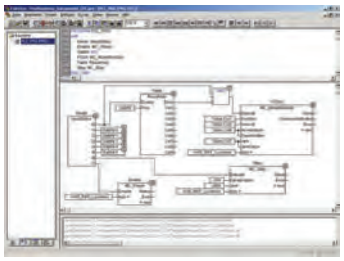


Function block diagram:



Programming with CoDeSys

- CoDeSys is a development environment for programming that enables considerable time savings when creating your application.



- Globally established high-performance development environment
- Complete offline simulation
- Visual elements
- Data exchange between devices of different manufacturers
- Complete online functionality
- Sophisticated technical features
- Comprehensive project management
- Included free of charge

Order data - RK-Control 2S

Code No.	Control	Standard	Positioning	Positioning with function blocks	Fieldbus	Additional I/O
79391A1A11	2.5A	–	•	–	–	–
79391A1B11	2.5A	–	•	–	–	•
79391A2A11	2.5A	–	•	•	–	–
79391A3A11	2.5A	–	•	–	Profibus DP	–
79391A4A11	2.5A	–	•	•	Profibus DP	–
79392A1A11	6.3A	–	•	–	–	–
79392A1B11	6.3A	–	•	–	–	•
79392A2A11	6.3A	–	•	•	–	–
79392A3A11	6.3A	–	•	–	Profibus DP	–
79392A4A11	6.3A	–	•	•	Profibus DP	–
79393A1A11	7.5A	–	•	–	–	–
79393A1B11	7.5A	–	•	–	–	•
79393A2A11	7.5A	–	•	•	–	–
79393A3A11	7.5A	–	•	–	Profibus DP	–
79393A4A11	7.5A	–	•	•	Profibus DP	–
on request	15A	–	•	–	–	–
on request	15A	–	•	–	–	•
on request	15A	–	•	•	–	–
on request	15A	–	•	–	Profibus DP	–
on request	15A	–	•	•	Profibus DP	–

RK-Control 2S

Initiator box

- For the wiring of initiators or limit switches to the RK-Control 2S
- Prefabricated and shielded cables with connector for the RK-Control 2S

Code No.	Type		For control unit
95706011_ _ _	Initiator box	Drag chain-compatible	All RK-Control 2S units

Cable length:
0 2 5 = 2,5 m
0 5 0 = 5,0 m
0 7 5 = 7,5 m
1 0 0 = 10,0 m
1 5 0 = 15,0 m

Shielded cables

- Prefabricated with connectors from RK-AC 112 to RK-AC 800 and ring terminals from RK-AC 1252 to RK-AC 2521
- Suitable for use in drag chains
- The connectors of motor and feedback cables contain a special surface shield

Code No.	Type	For motors
95702611_ _ _FLEX	Resolver cable	All RK-AC servo motors
95702511_ _ _FLEX	Motor cable	Servo motors from RK-AC 112 to RK-AC 800
on request		Servo motors from RK-AC1252 to RK-AC2521

Cable length (cable lengths > 20 m available on request):
0 2 5 = 2,5 m 0 7 5 = 7,5 m 1 2 5 = 12,5 m 2 0 0 = 20,0 m
0 5 0 = 5,0 m 1 0 0 = 10,0 m 1 5 0 = 15,0 m

Interface cable

Code No.	Type	For control unit
957010_ _ _	Interface cable SSK 1	RS232, PC <–> RK-Control 2S

Cable length (cable lengths > 5 m available on request):
0 2 5 = 2,5 m
0 5 0 = 5,0 m

Ballast resistors

- The energy generated during braking is initially absorbed by the internal storage capacity of the RK-Control 2S.

If this capacity is insufficient, the braking energy is discharged via a ballast resistor

Code No.	Type		For control unit
95701011	Ballast resistor BRM 08/01	100 ohms, 60 W continuous	RK-Control 2S 2.A
95700811	Ballast resistor BRM 05/01	56 ohms, 180 W continuous	RK-Control 2S 6.3A and 7.5A
95702311	Ballast resistor BRM 05/02	56 ohms, 570 W continuous	RK-Control 2S 7.5A
on request	Ballast resistor BRM 10/02	47 ohms, 1500 W continuous	RK-Control 2S 15A

Terminal block

- For the further wiring of inputs and outputs + additional inputs and outputs
- An extra terminal block is required for additional inputs and outputs
- Can be mounted in control cabinet on a standard DIN rail
- Incl. 2.5 m prefabricated cable, from the RK-Control 2S to the terminal block

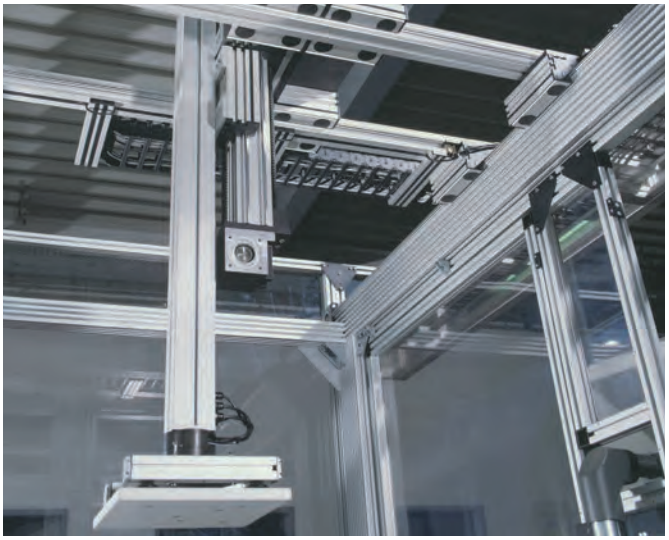
Code No.	Type	Cable length	For control unit
95701611	Terminal block	2.5 m	All RK-Control 2S units

Switching power supply

- The switching power supply is required if no 24 V DC is available

Code No.	Type	For control unit
957061	switching power supply 24 V DC, 5A	All RK-Control 2S units
957062	switching power supply 24 V DC, 10 A	All RK-Control 2S units

Modules



The wide range of possible applications demonstrates how useful and practical it is to standardise our range at component level.
This is often not possible or practical at module level.

The following shows a few basic modules that we have already successfully implemented.

Please contact us for further details!

Our product consultants can help you choose the optimum solution for your requirements or develop something completely new.

Linear Technology ..... Page 630

Connecting Technology ..... Page 640

Profile Technology ..... Page 642

Modules Linear Technology

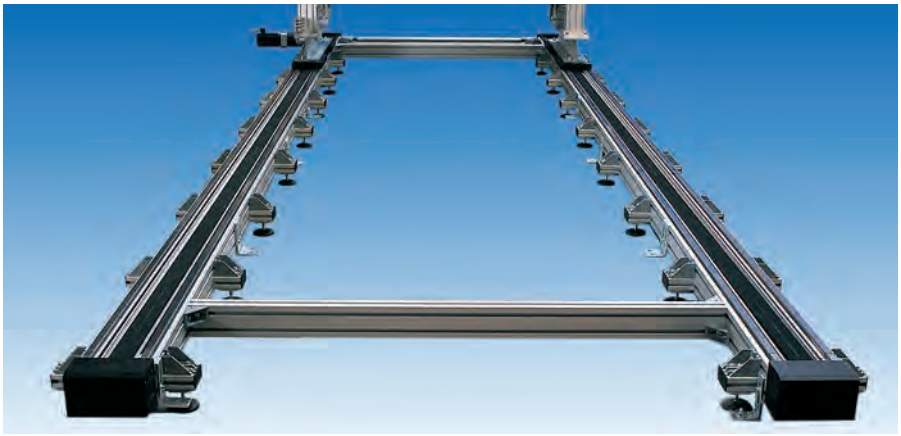
We offer a range of electric motors for our electric cylinders and linear actuators. Of course, other drives can also be used.

Linear actuator with motor

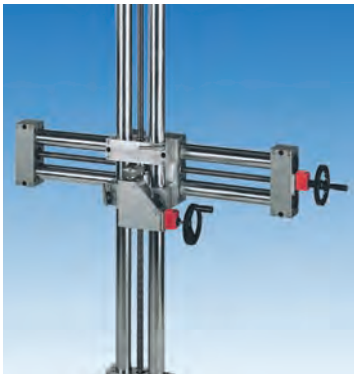
Electric cylinder with motor

We also stock suitable connecting and fixing elements for parallel or two/three-dimensional linear actuator combinations.

You too can benefit from our experience!



Parallel actuator module



Two-actuator module

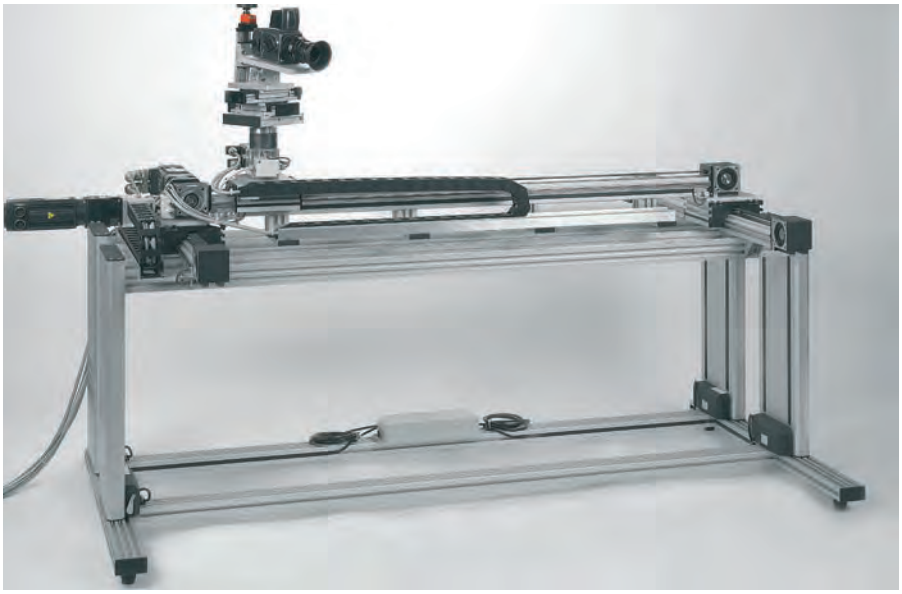
Three-actuators module

The movement of two or more lifting columns in a single module can be carried out as a parallel or synchronous adjustment.

We have the controls and the compensating elements and can tell you how to implement them successfully.

Parallel adjustment, 2-columns

Synchronous adjustment, 4-columns



Modules Connecting Technology

It rather defeats the object to modularise or standardise variable, reliable and permanent connections.

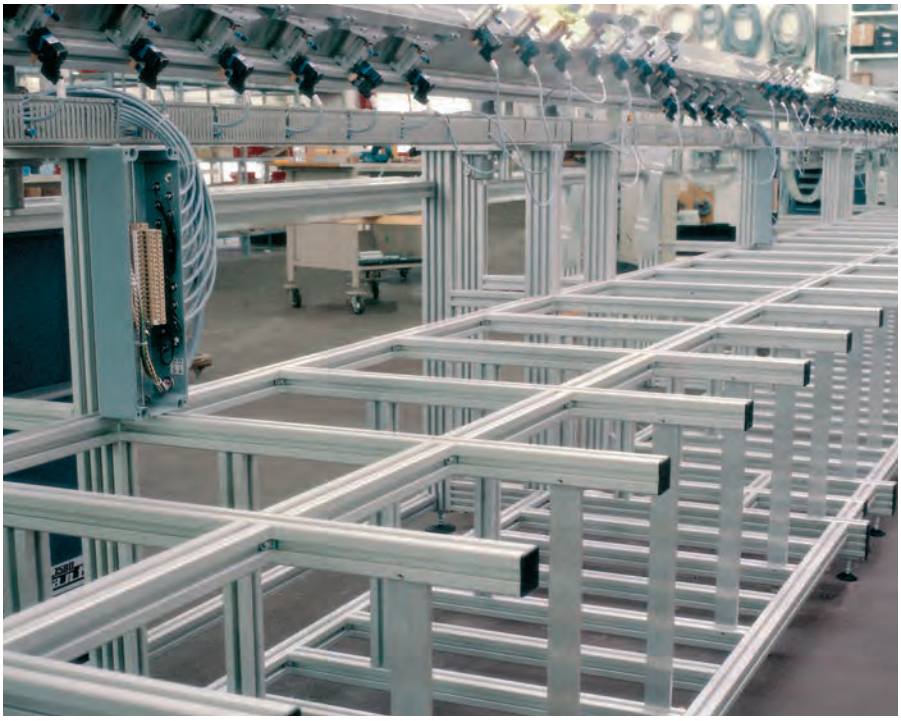
Benefit from our experience so that your connection is successfully maintained.

Modules Profile Technology

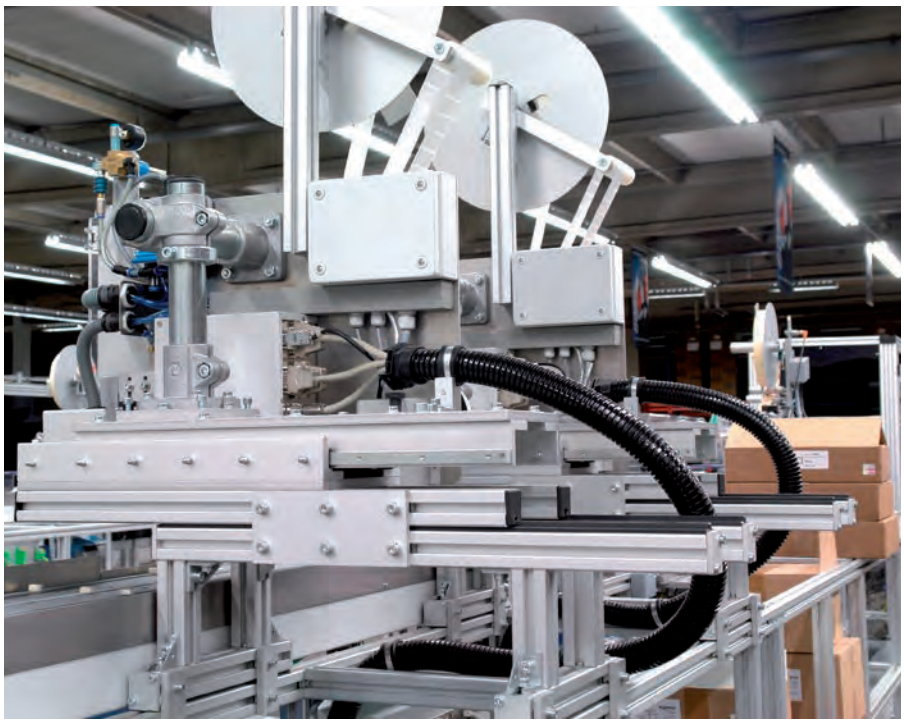
Our safety guard elements and assembly workplaces are an excellent compromise between cost and variability.

The applications are as varied as the tasks that are performed with the products.

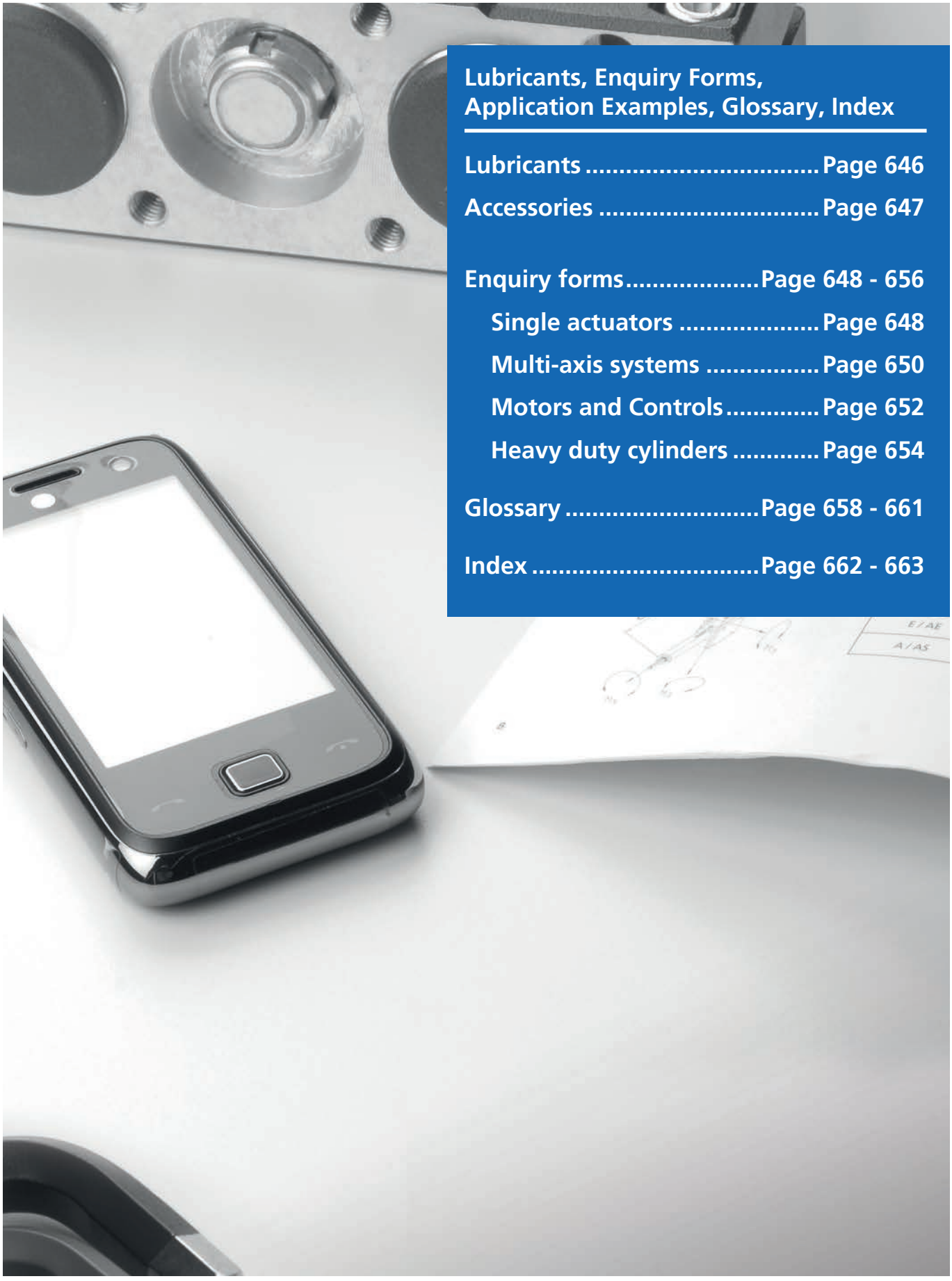
Our products offer you an ideal balance between modularity and individuality.



CNC - Bearbeitungsautomat
RK Komponenten



Appendix



Lubricants, Enquiry Forms, Application Examples, Glossary, Index

Lubricants ..... Page 646

Accessories ..... Page 647

Enquiry forms ..... Page 648 - 656

- Single actuators ..... Page 648
- Multi-axis systems ..... Page 650
- Motors and Controls ..... Page 652
- Heavy duty cylinders ..... Page 654

Glossary ..... Page 658 - 661

Index ..... Page 662 - 663

Lubricants & accessories

Lubricants

Copper paste

All RK Rose+Krieger products are lubricated prior to delivery.
Re-lubrication intervals will depend on the number of operating hours, work loads and environmental conditions (large fluctuations in temperature, high air humidity, aggressive environment, etc.).

The lubricants listed below are used during the manufacture and assembly of our linear components. To ensure smooth running and a long lifetime, we recommend the following products:

For screws, ball bearings and angular drive E-II, EP(X), EP(X)-II

Lithium soap + mineral oil

DIN 51502	KP1K -30
Temperature range:	-30° to +120°C
Consistency class	NLGI 1

Corresponds to the following manufacturer names:

Shell	Alvania EP1
ESSO	Beacon EP1
BP	Energrease LS EP1
Fina	Marsan L1
Elf	Epexa 1
Mobil	Mobilux EP1

For angular drive quad EV

Copper paste

Temperature range:	-60° to +1100°C

Corresponds to the following manufacturer names:

OKS	OKS 245
Klüber	Wolfracout CP
Molykote	Molykote Cu 7439 PLUS

Piston grease gun

Code No.	Type
95930	For oil and grease lubrication

Enquiry form for linear units

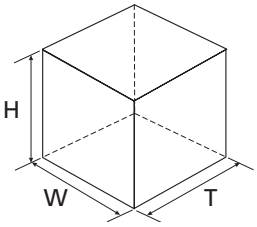
RK Rose+Krieger GmbH
Potsdamer Strasse 9
32423 Minden/Germany
Telephone: +49 (0)571 9335-0
Fax: +49 (0)571 9335-119
E-mail: anfrage.vertrieb@rk-online.de

Date:.....

Customer number: .....
Company:.....
Project:.....
Telephone:.....
E-mail:.....
Contact:.....
Department: .....

Technical data:
(max. installation space)

H: ..... mm
W: ..... mm
D: ..... mm



Accessories:
☐ Fastening
☐ Limit switch
☐ Motor adaptor
☐ Drag chain
☐ .....

E-drive:
☐ No
☐ Yes
(See enquiry form "Controllers", page 652)

Process forces [N]: ☐ No ☐ Yes (please include sketch)

Substructure: ☐ No ☐ Yes (please include sketch)

Mass: .....kg
Centre of mass in: .....x .....y .....z mm
(See page 649)
Travel speed: .... m/s
Acceleration: .... m/s^2
Stroke length: .....mm
Positioning accuracy: .....mm
Repeatability: .....mm
Base duty cycle 1h: .... %
Shift operation: .....
Ambient conditions:..... .....
....
Humidity: ..... %
Operating temperature ..... °C

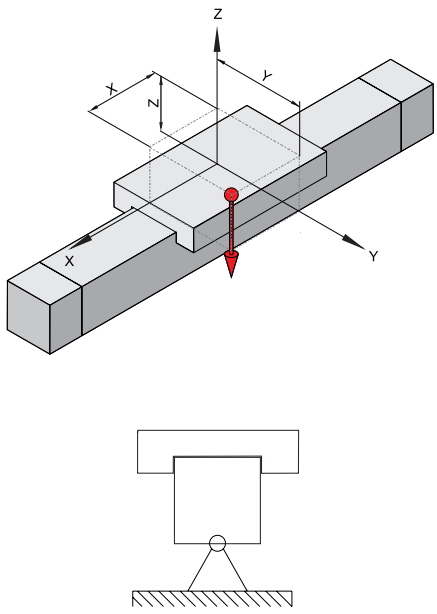
(Terminology, see also glossary starting on page 658)

Sketches & commentaries:

Enquiry form for linear units

RK ROSE+KRIEGER

Application examples: ☐1 ☐2 ☐3 ☐4 ☐5



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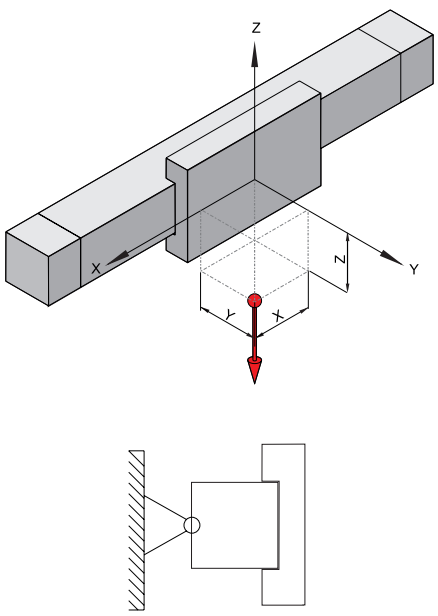
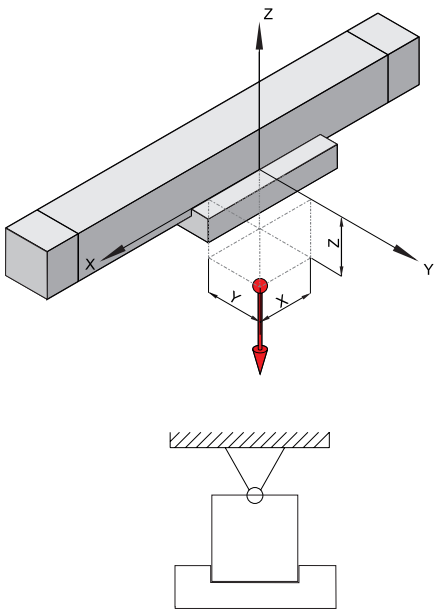
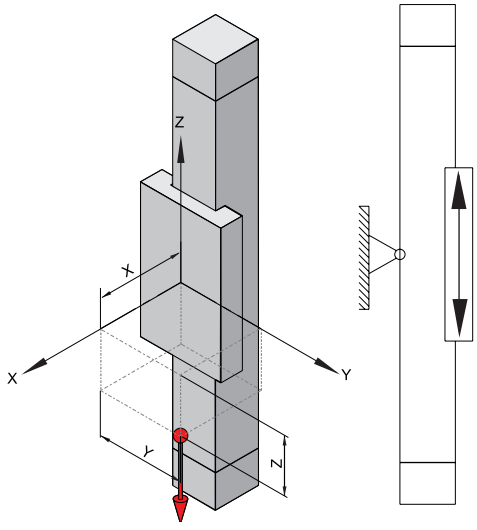


☐2



☐3



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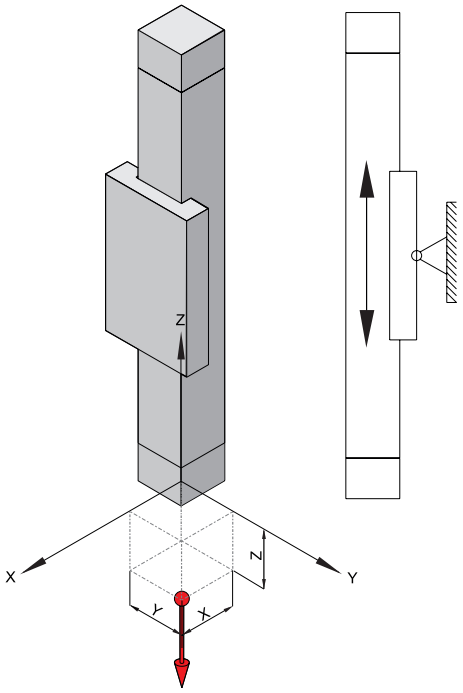


☐5

Enquiry form for multi-axis systems

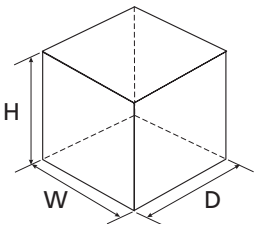
RK Rose+Krieger GmbH
Potsdamer Strasse 9
32423 Minden/Germany
Telephone: +49 (0)571 9335-0
Fax: +49 (0)571 9335-119
E-mail: anfrage.vertrieb@rk-online.de

Date:.....

Customer number: .....
Company:.....
Project:.....
Telephone:.....
E-mail:.....
Contact:.....
Department: .....

Technical data:
(max. installation space)

H: ..... mm
W: ..... mm
D: ..... mm



Accessories:

☐ Fastening
☐ Limit switch
☐ Motor adaptor
☐ Drag chain
☐ .....

Drive:

☐ No
☐ Yes
(See enquiry form "Controllers", page 652)

Process forces [N]:

☐ No
☐ Yes (please include sketch)

Substructure:

☐ No
☐ Yes (please include sketch)

Positioning accuracy: .....mm
Repeatability: .....mm
Base duty cycle 1h: .....
Shift operation: .....

Mass: .....kg
Centre of mass in: .....x .....y .....z mm
(See page 651)
Number of cycles / h .....
Travel speed in x: ..... m/s
Acceleration in x: ..... m/s²
Stroke length in x: .....mm

Number of cycles / h .....
Travel speed in y: ..... m/s
Acceleration in y: ..... m/s²
Stroke length in y: .....mm

Number of cycles / h .....
Travel speed in z: ..... m/s
Acceleration in z: ..... m/s²
Stroke length in z: .....mm

Ambient conditions: .....
Humidity: ..... %
Operating temperature ..... °C

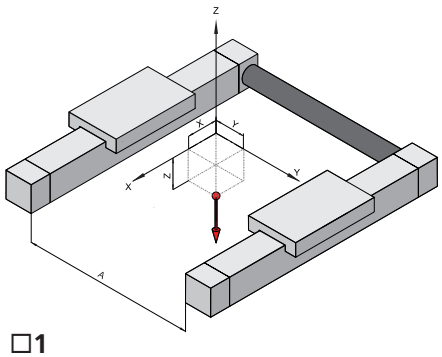
(Terminology, see also glossary starting on page 658)

Sketches & commentaries:

Enquiry form for multi-axis systems

RK ROSE+KRIEGER

Application examples: ☐1 ☐2 ☐3 ☐4 ☐5 ☐6 ☐7 ☐8 ☐9 ☐10 ☐11 ☐12



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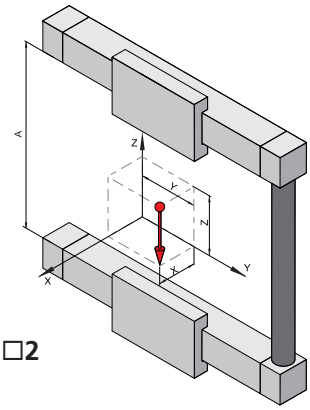

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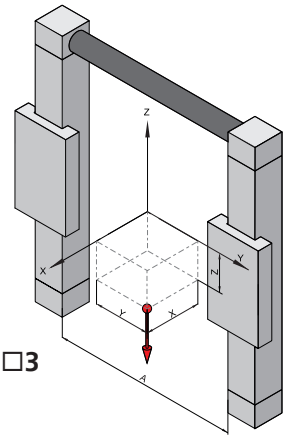

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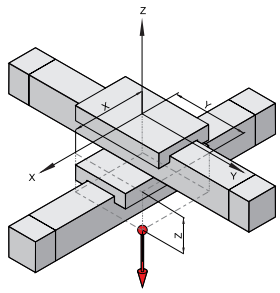

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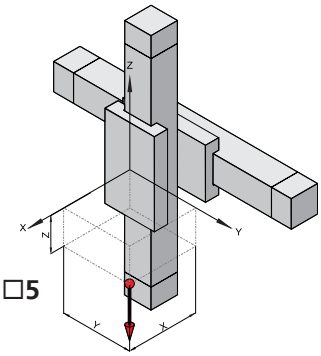

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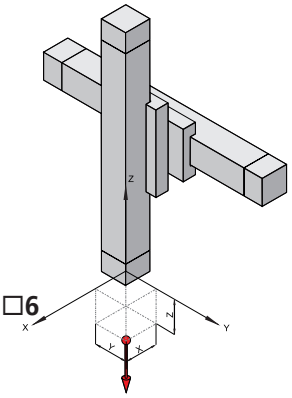

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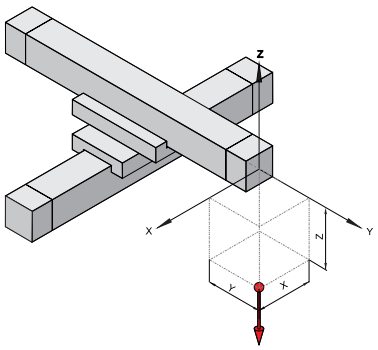

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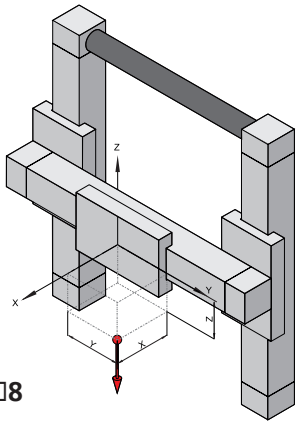
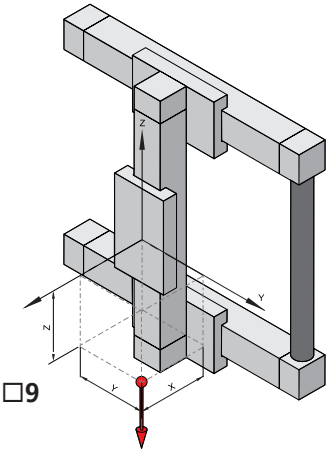


☐8



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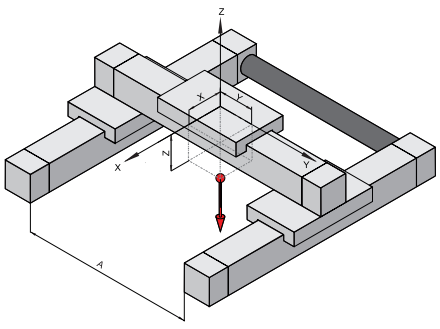
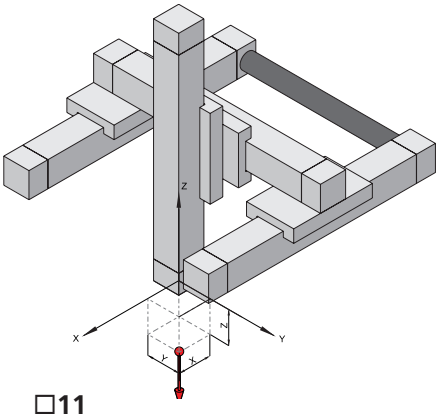


☐10



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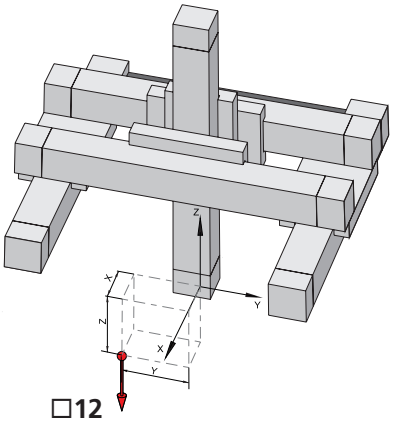


☐12

Enquiry form for motors and controllers for linear units and multi-axis systems

RK Rose+Krieger GmbH
Potsdamer Strasse 9
32423 Minden/Germany
Telephone: +49 (0)571 9335-0
Fax: +49 (0)571 9335-119
E-mail: anfrage.vertrieb@rk-online.de

Date:.....

Customer number: .....
Company:.....
Project: .....
Telephone: .....
E-mail: .....
Contact:.....
Department: .....

Motor type:

☐ DC motor

EHL electronic handwheel: ☐ Yes ☐ No
Speed controller: ☐ Yes ☐ No
LZ drive: ☐ Yes ☐ No

☐ Three-phase drive

Worm gear motor: ☐ Yes ☐ No
Spur gear motor: ☐ Yes ☐ No
Spiroplan gear motor: ☐ Yes ☐ No
Motor voltage range: V
Motor frequency: .....Hz

Motor temperature monitoring: ☐ Yes ☐ No
Required IP protection for motor/gear motor:.....
With brake: ☐ Yes ☐ No
Voltage for brake control: ☐ 24V/DC ☐ 230V/AC
Motor encoder:.....
(e.g. incremental encoder, resolver, absolute encoder)

☐ Stepper motor driver with integrated control and power electronics (24-48VDC)

Motor connection cable length: ☐ 5m ☐ 7.5m ☐ 10m
Switching power supplies which are required for operation of the motor: ☐ Yes ☐ No
Programming cable: ☐ Yes ☐ No

☐ Servo drive

Operating voltage from servo drive: ☐ 230V/AC ☐ 400V/AC

Required IP protection for servo drive/servo gear motor:.....
With brake: ☐ Yes ☐ No
Motor encoder: ☐ Absolute encoder ☐ Resolver

Positioning with set table Max. 31 motion sets: ☐ Yes ☐ No
Servo controller with function Positioning with function blocks: ☐ Yes ☐ No

Cable length between system and control cabinet:
☐ 2.5m ☐ 5m ☐ 7.5m ☐ 10m ☐ 12.5m ☐ 15m ☐ 20m

Positioning with master control system using field bus interface: .....
(e.g. Profibus, Profinet, CanOpen, EtherCAT,)

Operating temperature (0-40°):.....°

Other ambient conditions which differ from a normal hall climate (0 to 40°C): .....
.....
.....
.....

Sketches & commentaries:

Enquiry form for heavy duty cylinders

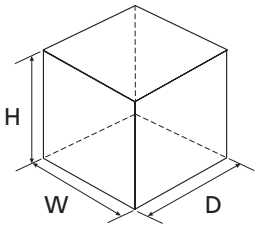
RK Rose+Krieger GmbH
Potsdamer Strasse 9
32423 Minden/Germany
Telephone: +49 (0)571 9335-0
Fax: +49 (0)571 9335-119
E-mail: anfrage.vertrieb@rk-online.de

Date:.....

Customer number: .....
Company:.....
Project:.....
Telephone:.....
E-mail:.....
Contact:.....
Department: .....

Technical data:
(max. installation space)

H: ..... mm
W: ..... mm
D: ..... mm



Max. force: ..... N
Travel speed: ..... mm/s
Acceleration: .....mm/s^2
Stroke length: ..... mm
Positioning accuracy..... mm
Repeatability: ..... mm
Base duty cycle 20 min.: ..... %
Shift operation: .....
Ambient conditions: .....
.....
Humidity: ..... %
Operating temperature ..... °C

Accessories:

☐Fixings
☐Limit switch
☐Motor adaptor
☐.....

Load on:

☐Compressive
☐and/or tension

E-drive:

☐No
☐Yes
(See enquiry form page 652)

Should several systems run synchronously with each other?:
☐No ☐Yes, quantity: .....

Other required standards?:
☐No ☐Yes (please explain).....
.....

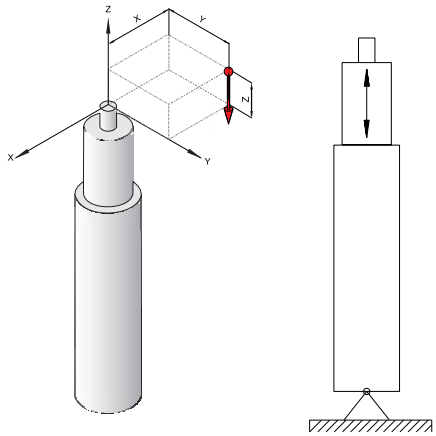
Requirement: ..... units

(Terminology, see also glossary starting on P. 658)

Where should the heavy duty cylinders be positioned?: .....
.....

Sketches & commentaries:

Application examples: ☐1 ☐2 ☐3 ☐4 ☐5 ☐6



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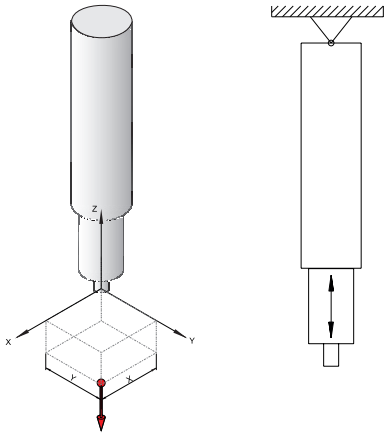

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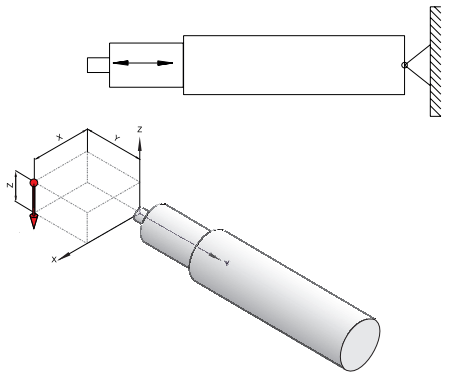

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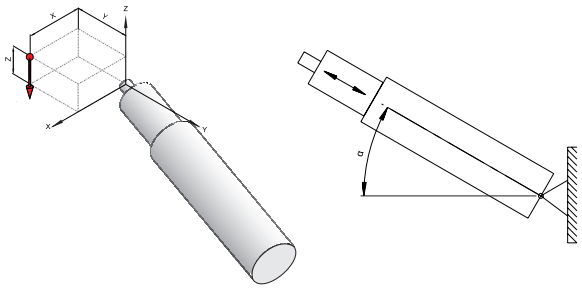

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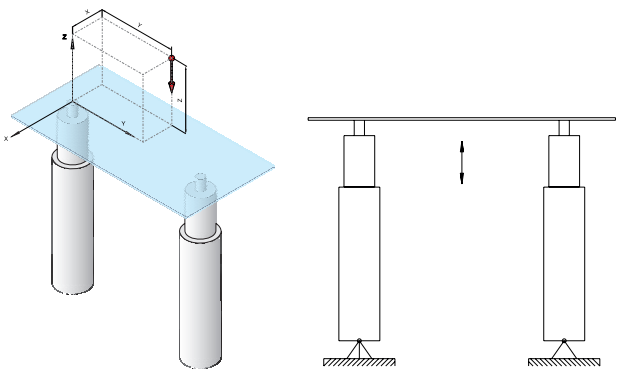

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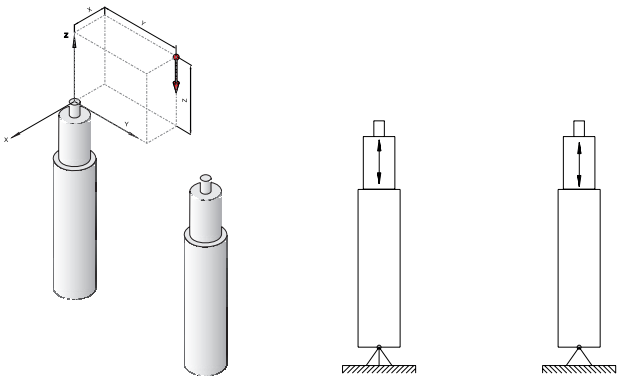


☐6

Enquiry form for motors and controllers for heavy duty cylinders

RK Rose+Krieger GmbH
Potsdamer Strasse 9
32423 Minden/Germany
Telephone: +49 (0)571 9335-0
Fax: +49 (0)571 9335-119
E-mail: anfrage.vertrieb@rk-online.de

Date:.....

Customer number: .....
Company:.....
Project:.....
Telephone:.....
E-mail:.....
Contact:.....
Department: .....

Motor type:

☐ DC motor

Control:	**Input voltage:**
☐ Hand switch	☐ 230V
☐ PLC	☐ 110V
☐ PC/USB	☐ 24V
☐	☐ Battery

☐ Three-phase drive

Worm gear motor: ☐ Yes ☐ No
Spur gear motor: ☐ Yes ☐ No
Spiroplan gear motor: ☐ Yes ☐ No
Motor voltage range: V
Motor frequency: .....Hz

Motor temperature monitoring: ☐ Yes ☐ No
Required IP protection for motor/gear motor:.....
With brake: ☐ Yes ☐ No
Voltage for brake control: ☐ 24V/DC ☐ 230V/AC
Motor encoder:.....
(e.g. incremental encoder, resolver, absolute encoder)

☐Servo drive

Operating voltage from servo drive: ☐230V/AC ☐400V/AC

Required IP protection for servo drive/ servo gear motor:.....
With brake: ☐ Yes ☐ No
Motor encoder: ☐Absolute encoder ☐Resolver

Positioning with set table max. 31 motion sets: ☐ Yes ☐ No
Servo controller with function Positioning with function blocks: ☐ Yes ☐ No

Cable length between system and control cabinet:
☐ 2.5m ☐ 5m ☐ 7.5m ☐ 10m ☐ 12.5m ☐ 15m ☐ 20m

Positioning with master control system using field bus interface: .....
(e.g. Profibus, Profinet, CanOpen, EtherCAT)

Operating temperature (0-40°):.....°

Other ambient conditions which differ from a normal hall climate (0 to 40°C): .....
.....
.....
.....

Sketches & commentaries:

Glossary

Adjustment load: Each drive type has a different, structurally-dependent, adjustment load. This variable defines the maximum compressive and tractive force that a drive can handle (for linear drives). The adjustment load is always a so-called dynamic load. The drive still performs reliable adjusting movements under the specified maximum load. The adjustment load is defined in terms of Newtons (N), whereby the following applies: 1 kg » 10 N.

Ambient temperature: RK linear units are designed for ambient temperatures of up to +80°C. Linear units are not suitable for temperatures below freezing point.
It is important to check the ambient conditions of each individual case (temperature, temperature fluctuations, installation position, load, air humidity, etc.), and to check that the necessary accessories (motor, proximity switch, etc.) meet all requirements.
Timing belts should be protected against exposure to UV rays to prevent premature ageing.

Backlash: In the case of spindle units, backlash is caused by flank clearance between the spindle and the lead nut. Flank clearance is the play required due to manufacturing tolerances, thermal expansion and lubrication. This play is approx. 0.2 mm for ACME screw drives and approx. 0.1 mm for ball screw drives. In the case of ball screw drives, it is also possible to use (on request) pre-tensioned lead nuts that are low backlash or backlash-free.

Basic length: This value is used to dimension the length of a linear unit. The basic length corresponds to the total length of a linear unit without travel. Please specify the total length (basic length + travel) in millimetres when you place your order.

BLOCAN: Product name of the RK Rose+Krieger aluminium profile system with patented connection system, which permits the quick and easy assembly of very different structures. These profiles are available in a wide range of cross-sections and sizes.

Carriage: Components that are to be positioned can be fixed to the carriage, which is moved along the guide profile on rollers, ball rail systems or slide guides. Different models are available, depending on the application.

Checkback signal: A technical means for the detection of the current position and speed of the drive. A distinction is made between the relative (incremental) and absolute (analogue) method.

Incremental (relative):
A so-called Hall sensor generates a fixed number of electrical impulses for each distance travelled. The control then calculates up-to-date information on the current position and speed relative to a defined reference point. In order to ensure the reliable operation of the drive, it is essential that a correct reference value is always available. However, if this reference value is lost, such as in the unlikely event of a power failure or a malfunction, it is essential to specify a new reference point.
Analogue (absolute):
In this case, the position/speed is detected using a so-called potentiometer. This electronic component is permanently coupled to the drive movement and adjusts its resistance value according to the current position. The control uses this information to calculate the current position and speed. This type of position determination does not require a reference point as all potentiometer values are constantly available.

Control: The control combines the various functions required to operate the drive. The switching signals of a hand switch are converted to control functions for the connected drives. At the same time, the control contains facilities for power supply and various protection devices to protect against overloads and short-circuits.
Transformer control:
The hand switch controls electromechanical relays, which, in turn, control the drive currents (the most common control technology).

Duty cycle (max): This technical variable defines the maximum time period that a drive can be operated continuously. This maximum period must be followed by a specified idle time. Both values are defined in the specified duty cycle (DC) in relation to one another. In the case of drive systems, 2/18 min has become standard in the field of drive technology, i.e. 2 minutes of continuous operation must be followed by 18 minutes idle time. It therefore follows that if the unit is operated for a shorter period, the idle time can also be shortened respectively. It is essential to ensure adherence to these specifications for periodic duty; failure to do so may cause the unit to overload and trigger protection equipment.

Timing-belt/rack:
The timing-belt and the linear roller guide used are both suitable for a duty cycle of up to 100%.

Acme and ball screw drive:
The following values have been proven in the field. The upper limit for an acme screw drive should be <= 30% per hour, while a ball screw drive supports a duty cycle of up to 100%.

Slide and roller guide:
The upper limit for a slide guide should be <= 30% per hour, while a linear ball bearing and guideway assembly supports a duty cycle of up to 100%.

Guide profile: This profile is the base body of a linear unit. The carriage moves along the profile and is positioned either manually or by means of a spindle or timing-belt. The guide profile comprises an extruded aluminium profile specially designed for a linear unit or a profile from the BLOCAN range.

Hand switch: The operator can use this device to control the full range of drive functions. A press of the button generates switching signals, which are converted to corresponding control signals in the control system.
Standard:
The hand switch is directly connected to the control system via a connecting cable; transmission of the switching signals is hard-wired.
Infra-red (IR)/radio:
Instead of the standard hand switch, an infra-red/radio receiver is connected to the control interface. The switching signals sent by the IR/radio remote control are picked up by the receiver and relayed on to the control. The IR transmitter and receiver must always have visual contact as data transmission is performed via light signals in the infra red range.

Installation dimension: This dimension specifies the installation length of the respective drive. Installation length = Basic length + Travel

Installation position: The linear units can be installed in any position. However, it must be ensured that all forces and moments fall within the tolerance range of the respective unit and do not exceed the maximum values. Ensure compliance with any pertinent installation and assembly instructions.

Lifting column: Single actuator with a special, often design-oriented linear guide. This actuator is able to reliably withstand lateral forces and ensure the necessary stability even in a fully extended position while taking the maximum torques into account.

Load values: All maximum forces and moments specified in various chapters refer to middle (axial) or upper edge (radial) of the carriage.

Memory synchronous drive: This kind of actuator is equipped with a position and stroke detection system. Information on the current position of the drive is continuously transmitted back to a synchronised control system. This memory drive is generally used in applications where the stored data can be retrieved with the simple press of a button. They are also required in applications with synchronous/memory controls.

Neoprene timing-belt properties: Moderate chemical resistance (solvents, oils etc.), optimised GT tooth shape compared to HTD, excellent running behaviour, low noise level, maximum load-bearing capacity (can withstand high loads up to 120°C), not suitable for clean room applications.

No-load torque: The moment that the drive must produce in order to move the carriage (without load). The values specified in the catalogue are empirical reference values, which may vary due to manufacturing tolerances.

Positioning accuracy: The ability of the linear unit drive to reach a set (absolute) position once from any starting point. For tolerances, please refer to the respective chapter.

Power cable feedthrough: Additional voltage tap for the supply of external devices.

Protection class: The impermeability of electronic devices against the penetration of foreign bodies and liquids is defined by means of a two-digit IP code The first number refers to the level of ingress protection against solid materials, such as dust, and the second to ingress protection against liquids. The most common protection classes are IP 20 (touch protection); IP 44 (water spray protection); IP 66 (water jet protection).

PU timing-belt properties: Good chemical resistance (solvents, greases, petrol etc.), available in black or white (on request) , good load-bearing qualities, HTD tooth shape, reduced load-bearing capacity from 60°C, suitable for clean rooms, food-safe versions available on request.

Glossary

Repeatability: Repeatability is the ability of the linear unit drive to return to a once reached position within the given tolerance limits under identical conditions.
Factors that influence repeatability (and positioning accuracy) include: load, speed, delay, direction of movement and temperature.

Self-locking: The self-locking function is often required to prevent undesired reverse movements.
Spindle units: The self-locking function is influenced by the coefficient of friction and the lead angle. If the lead angle is smaller than the coefficients of friction, the spindle drive is self-locking. The coefficients of friction may be subject to certain manufacturing tolerances (differences in the finish quality of the spindle/nut, lubrication). Clamping devices (clamping lever) may be required for safety reasons.
ACME screw drive: Only self-locking to a certain degree. Check each case individually, particularly in the case of vertical installation.
Recirculating ball screw drives: These are not generally self-locking. It is therefore necessary, particularly in the case of vertical installation, to install suitable motors with holding brakes, or, if using a handwheel to make adjustments, to ensure an additional locking device is fitted.
Timing-belt units: These types are not generally self-locking. It is therefore necessary to install suitable motors with holding brakes, especially if the linear unit is installed vertically.

Service life of drives: The lifetime depends on the drives used and the application.
Depending on the system, there is a considerable difference between the lifetime of ball screw drives and acme screw drives. The lifetime of the drives is also affected by the control systems used and the associated duty cycles. As a guideline for acme screw drives, a stroke of 500 mm, with adherence to the permitted loads and duty cycles, we estimate a lifetime of 10,000 double strokes. Any changes of application will effect a corresponding change in the expected lifetime of the drive. Ball screw drives are expected to have a considerably longer lifetime. Please contact us if you require any further advice and we will be happy to assist.

Service life of linear units: The lifetime of linear units with timing belt or ball screw drive depends on the application and expected operating factors. Under normal conditions (adherence to the permitted load, moments, speed, duty cycle and temperature, as well as clean ambient conditions) and with adherence to maintenance intervals, a linear unit can achieve a lifetime of at least 10,000 operating hours. However, it must be taken into account that the travel path should be at least 2-3 times the length of the carriage.

Straightness/torsion: The aluminium profiles used for RK Profile linear units are extruded profiles, which may show some deviations with regard to straightness and torsion due to the production process. The permitted range of deviation is specified in DIN 17615. While, in a worst case scenario, the deviations of the RK profile linear units may correspond to the specified limit values, as a general rule, they will fall well within the tolerance range. In order to achieve the desired guiding accuracy, it may be necessary to use levelling plates to align the linear unit or to affix it to a precisely aligned supporting surface.

Stroke: In the case of lifting columns and electric cylinders, the maximum travel is referred to as stroke.

Stroke length: The stroke length corresponds to the maximum distance travelled by the carriage. The design must take into account acceleration and deceleration distances, space for limit switches and any overshoot.

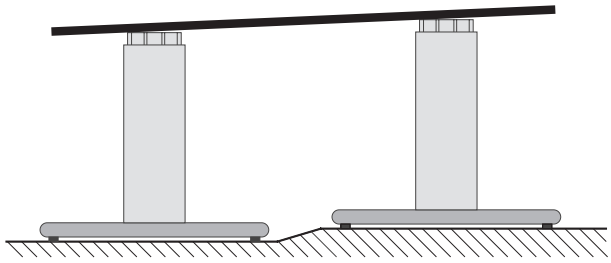
Speed: The maximum speed that can be achieved by the linear unit is determined by the feed constant of the mechanical drive element and the drive speed. In practice, the necessary acceleration and deceleration distances must be taken into account with reference to operating parameters (acceleration, load to be moved). Maximum linear speeds are often not attainable due to the required acceleration and deceleration distances or the theoretically required drive values.
The maximum possible speeds can be found in the relevant chapters for individual product ranges.

Synchronous control:
The synchronous operation of several drives at the same speed is possible even in the case of widely ranging loads. This technology is always used if a single adjusting movement is implemented via more than one drive (such as the height adjustment of workplaces).

Synchronous operation: Synchronised drives are used for the simultaneous movement of several mechanically connected columns. “Standard” drives are generally not able to meet the requirements of such applications.

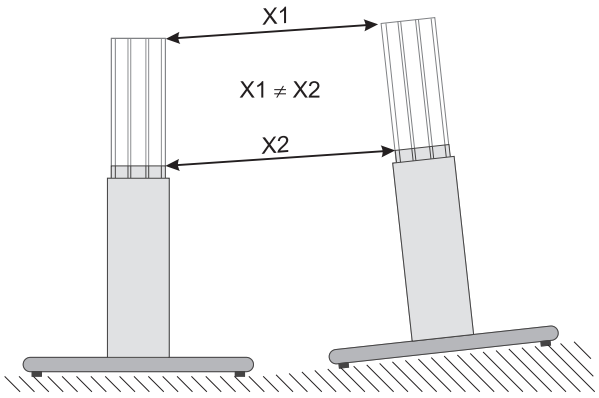
The following section contains some brief information on the best way to set up a synchronous system. More detailed information on this subject can be downloaded at our web site www.rk-rose-krieger.com (Service/Download Documents/Technical Manuals).
The following errors can occur during set-up:

Different heights:



A rigid connection between the lifting columns aligns them at the same height. Fixing the table frame in place may cause the lifting columns to distort.

Parallel alignment:



If the lifting columns are not parallel, the distance between the two upper fixing points will change during the movement. But a rigid connection keeps this distance constant, and this means that the lifting columns are subject to very strong forces.

Distorted table frame:

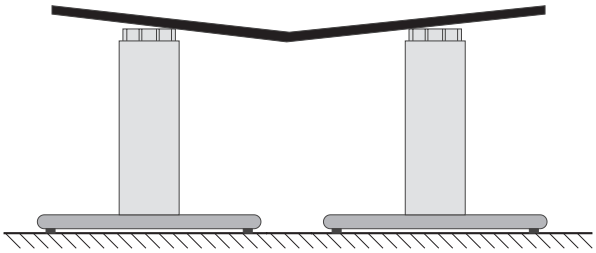
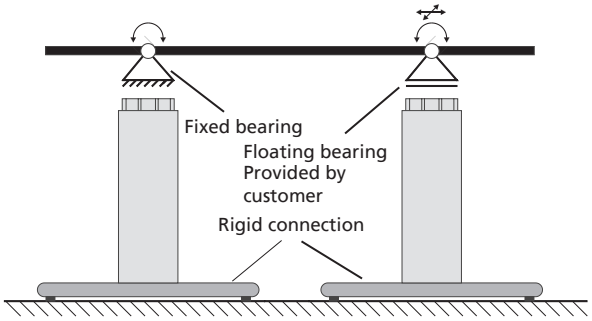


Table frames are generally made of welded steel tubes and connecting plates that connect to the lifting columns. If the connecting plates are not lying flat on the lifting column, the synchronous system will distort during screw attachment.

Failure to address these mechanical errors may impair the running properties of the drive, shorten lifetime or damage the lifting column. If using an electronic control system, this may cause the output of error messages and render the system inoperable.

Ideal set-up:



Surfaces at the foot and top of the columns must be at the same height, parallel to one another and as flat and even as possible, the columns themselves must also be aligned so that they are completely parallel. Existing tolerances and height differences due to control deviations are offset by means of a customer-provided floating bearing.

Timing belt tension: The timing belt tension preset in the factory is 80% of the maximum Fx force of the respective linear unit. This value represents the best possible compromise between running performance and dynamics.

Weight: The weight specified in the catalogue is a theoretical value, which may vary due to technical modifications or manufacturing tolerances.

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www.rk-rose-krieger.com