

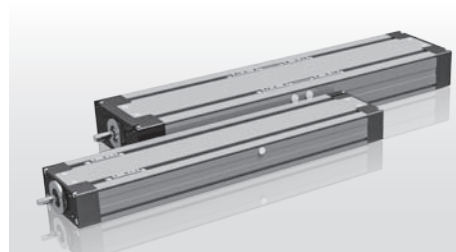
LINE

COMPACT UNITS
EXCERPT FROM MAIN CATALOGUE

V 11-15

Table of contents

- Product overview	106–107
- Design fundamentals / Lubrication / Maintenance	108
- Profile cross-sections	109
- Compact unit with ball screw drive	
- Details for ball screw drive	110
- General technical details for compact units	111
- Load ratings and torques	112
- Permissible speeds	113
- Permissible deflection	114–115
- Compact units with ball screw drive	
- Designation system	116–117
- Information for selection » Motor mounting preparation	118
- Dimensions KE1.2...AR...N (with 1 carriage and protective ribbons, without buffer)	120
- Dimensions KE1.2...AR...P (with 1 carriage and protective ribbons, with buffer)	121
- Dimensions KE1.4...AR...N (with 2 carriages and protective ribbons, without buffer)	122
- Dimensions KE1.4...AR...P (with 2 carriages and protective ribbons, with buffer)	123
- Dimensions KE2.2...AR...N (with 1 carriage and protective ribbons, without buffer)	124
- Dimensions KE2.2...AR...P (with 1 carriage and protective ribbons, with buffer)	125
- Dimensions KE2.4...AR...N (with 2 carriages and protective ribbons, without buffer)	126
- Dimensions KE2.4...AR...P (with 2 carriages and protective ribbons, with buffer)	127
- Dimensions KE3.2...AR...N (with 1 carriage and protective ribbons, without buffer)	128
- Dimensions KE3.2...AR...P (with 1 carriage and protective ribbons, with buffer)	129
- Dimensions KE3.4...AR...N (with 2 carriages and protective ribbons, without buffer)	130
- Dimensions KE3.4...AR...P (with 2 carriages and protective ribbons, with buffer)	131
- Limit switch; fitting / preparation / plug connector	132–133
- Motor mounting straight/lateral with ball screw drive	134–135
- Connecting plates	136–137
- Attachment accessories; clamps / sliding blocks	138–139
- Cross table mounting	140
- Grease points	141
- Lubrication points for customer add-on	142



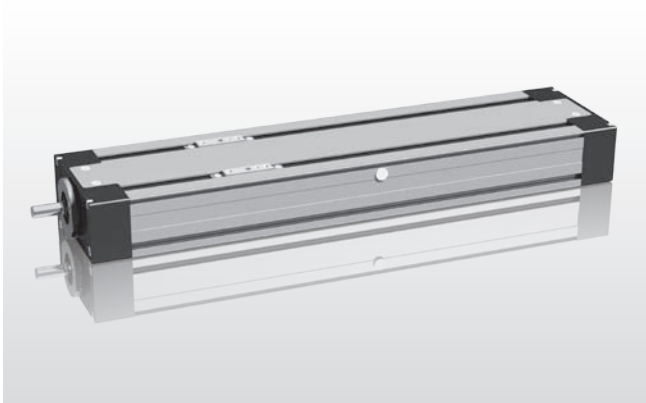


COMPACT UNITS

Product overview

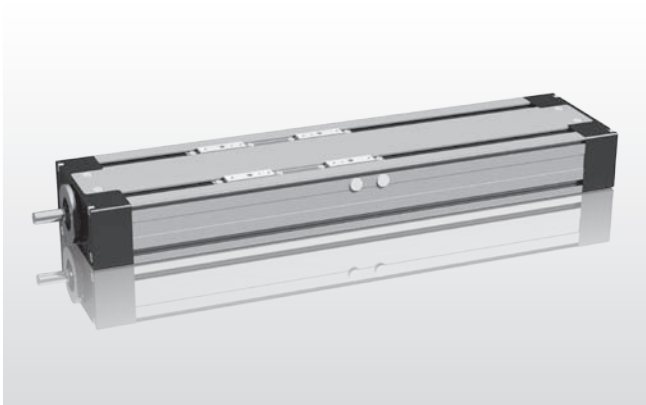
KE...2...R...

Compact unit with one carriage and ball screw drive



KE...4...R...

Compact unit with two carriages and ball screw drive



KE



Product overview

LINE TECH compact units are precision, ready-to-install, modular linear systems with linear guides and ball screw drive for high performance. Linear systems for medium loads and precision requirements are typical application areas. Three sizes (KE1, KE2 and KE3) are currently available.

Advantages

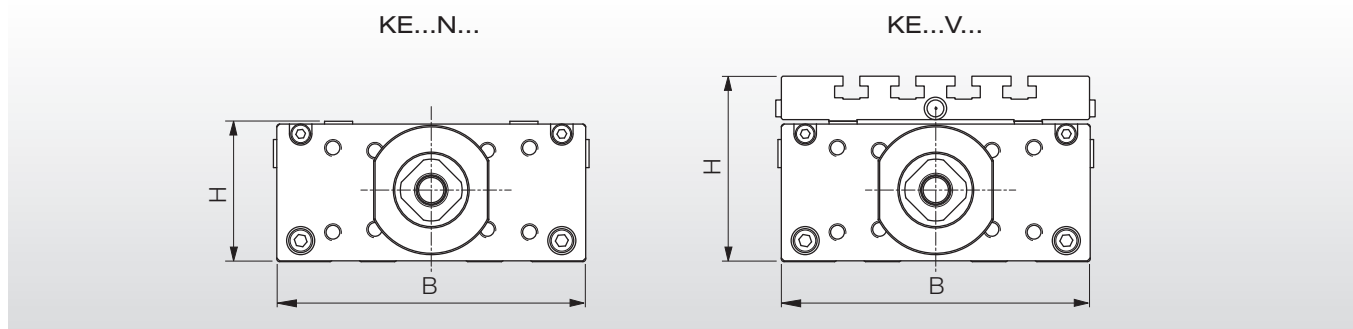
- Compact dimensions
- Optimum running performance together with high load ratings and greater rigidity with either two (KE...2...) or four (KE...4...) integrated runner blocks
- Actuation by ball screw drive
- Simple motor mounting by centering and thread on driving head
- Greasing by central grease points
- Design aligned to application possible

Structure

- Compact aluminium base profile
- Ready-to-install compact modules in any desired length
- Carriages made of aluminium

Customised options

- Connection plate (KE...V...)
- Motor mounting
- Limit switch
- Cross table mounting
- Multi-axis systems



Compact unit Type	Dimensions B x H [mm]	Load ratings	
		C ₀ [kN]	C [kN]
KE1.2...N...	90 x 40	11.2	6.5
KE1.2...V...	90 x 56	11.2	6.5
KE1.4...N...	90 x 40	22.5	13.0
KE1.4...V...	90 x 56	22.5	13.0
KE2.2...N...	110 x 50	35.0	18.0
KE2.2...V...	110 x 66	35.0	18.0
KE2.4...N...	110 x 50	70.0	36.0
KE2.4...V...	110 x 66	70.0	36.0
KE3.2...N...	145 x 65	59.9	34.2
KE3.2...V...	145 x 85	59.9	34.2
KE3.4...N...	145 x 65	119.9	68.4
KE3.4...V...	145 x 85	119.9	68.4

Please refer to pages 110 to 112 for load capacities.



COMPACT UNITS

Design fundamentals / Lubrication / Maintenance

LINE TECH Compact Modules

LINE TECH compact units with ball screw drive are modular, ready-to-install linear units with drive. Sealed guide elements are employed in all sizes. The guides and drive are protected from external factors (such as dirt and chip-pings) by synthetic ribbons. Base and cover profiles are made of aluminium alloy and manufactured by extrusion process. Additional limit switches fitted on the outside, in conjunction with motors and a controller, ensure correct positioning of the carriage and provide protection against overrun. The selected design provides for a high level of performance with the most compact dimensions.

Lubrication

LINE TECH compact modules are greased at the factory with Microlube GBU Y 131. This quality grease offers outstanding properties for the guidance and screw drive elements as well. Greasing should be carried out at regular intervals, depending on the load and area of operation. On an average, re-greasing is required every 500 hours. All roller bearings are greased for life and thus do not require any maintenance. Correct and sufficient greasing can substantially extend the life of the compact modules.

Note: Also follow here the instructions on the grease points (pages 141 and 142).

Maintenance

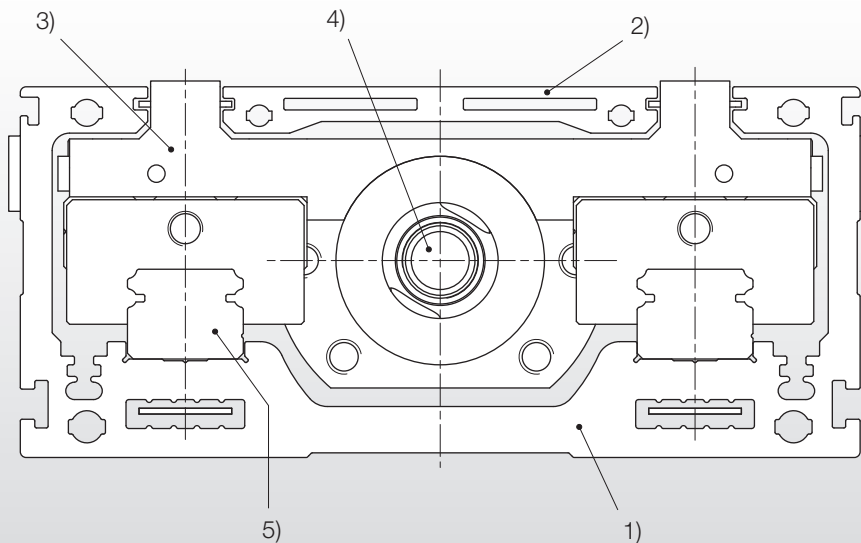
With the exception of re-greasing, LINE TECH compact modules are maintenance-free.

Service temperature

The permissible operating temperature (between 5 and 80°C) is determined by the synthetic materials used. The specifications of the relevant manufacturers apply for motors and control units.

KE

KE...R...
with ball screw drive



- | | | |
|------------------|----------------------------------|---------------------|
| 1) Base profil | 3) Carriage(s) | 4) Ball screw drive |
| 2) Cover profile | (1 (KE...2...) or 2 (KE...4...)) | 5) Linear guide |

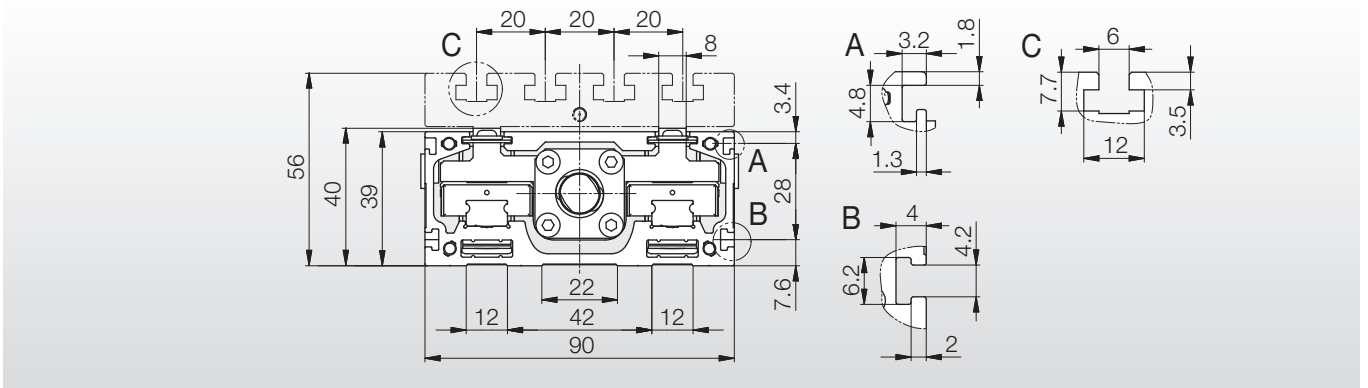


COMPACT UNITS

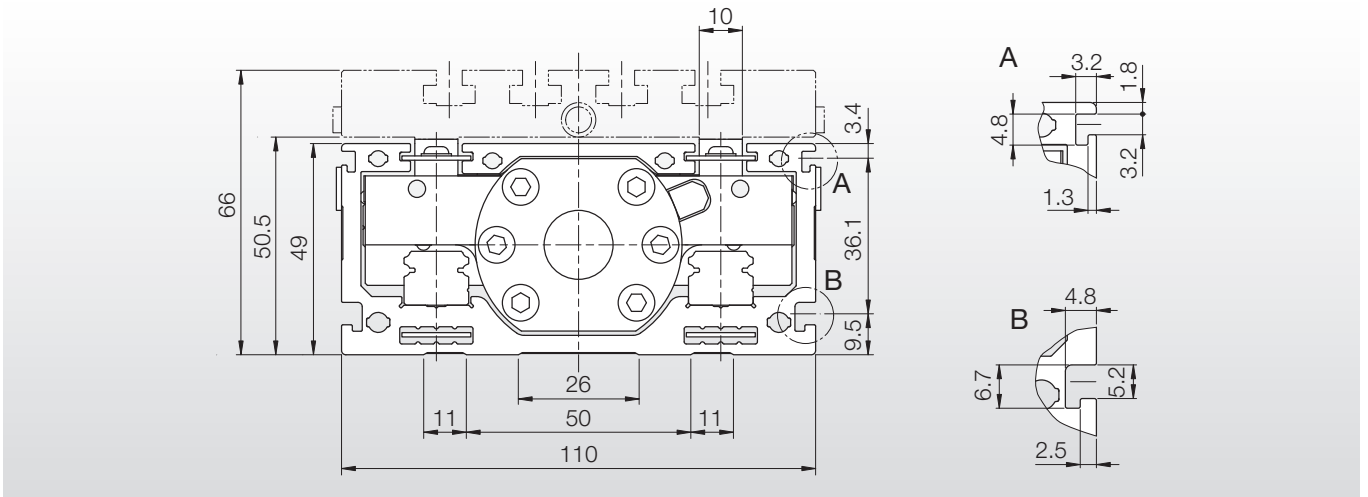


Profile cross-sections KE...R...

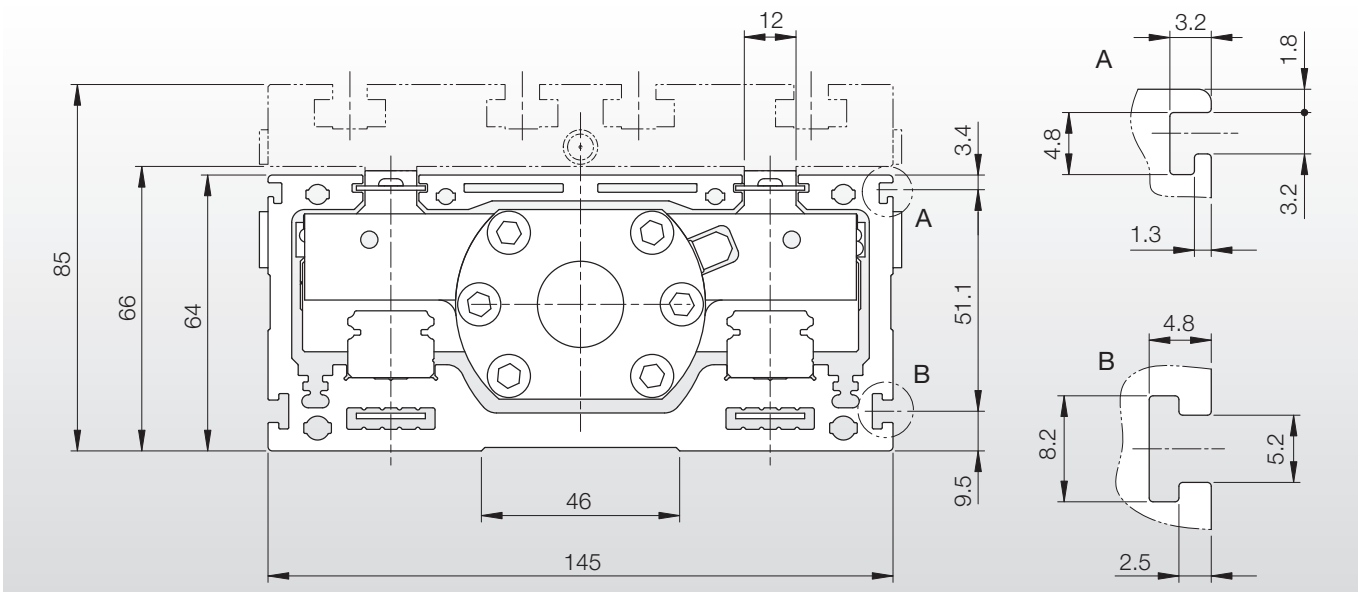
KE1...R...N



KE2...R...N



KE3...R...N

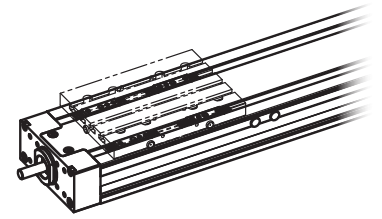


KE

COMPACT UNITS WITH BALL SCREW DRIVE



Details for ball screw drive



Details for ball screw drive (BSD)

KE	BSD	Axial load rates		Positioning accuracy	Repeating accuracy	Acceleration	Axial play		Idle torque
		C ₀	C _{dyn}				Type	Axial play	
Size	d x p					a _{max}			
	[mm]	[N]	[N]	[μm/mm]	[mm]	[m/s ²]		[mm]	[Nm]
KE1...R...	12 x 5	3333	3099	52/300	< 0.03 ¹⁾	10.0	R	< 0.02	0.020
					< 0.05 ¹⁾		A	< 0.20	0.020
					< 0.01 ¹⁾		V	—	0.090
KE1...R...	12 x 10	3333	3099	52/300	< 0.03 ¹⁾	10.0	R	< 0.02	0.045
					< 0.05 ¹⁾		A	< 0.20	0.045
					< 0.01 ¹⁾		V	—	0.180
KE2...R...	16 x 5	4551	4327	52/300	< 0.03 ¹⁾	10.0	R	< 0.02	0.030
					< 0.05 ¹⁾		A	< 0.20	0.030
					< 0.01 ¹⁾		V	—	0.100
	16 x 10	4551	4327	52/300	< 0.03 ¹⁾	10.0	R	< 0.02	0.060
					< 0.05 ¹⁾		A	< 0.20	0.060
					< 0.01 ¹⁾		V	—	0.200
16 x 16	4551	4327	52/300	< 0.03 ¹⁾	10.0	R	< 0.02	0.120	
				< 0.05 ¹⁾		A	< 0.20	0.120	
				< 0.01 ¹⁾		V	—	0.320	
KE3...R...	20 x 5	5705	4912	52/300	< 0.03 ¹⁾	10.0	R	< 0.02	0.050
					< 0.05 ¹⁾		A	< 0.20	0.050
					< 0.01 ¹⁾		V	—	0.120
	20 x 10	5705	4912	52/300	< 0.03 ¹⁾	10.0	R	< 0.02	0.100
					< 0.05 ¹⁾		A	< 0.20	0.100
					< 0.01 ¹⁾		V	—	0.250
20 x 20	5705	4912	52/300	< 0.03 ¹⁾	10.0	R	< 0.02	0.200	
				< 0.05 ¹⁾		A	< 0.20	0.200	
				< 0.01 ¹⁾		V	—	0.400	

d x p = screw diameter x thread pitch

¹⁾ backlash not factored in

R = reduced play

A = with axial play

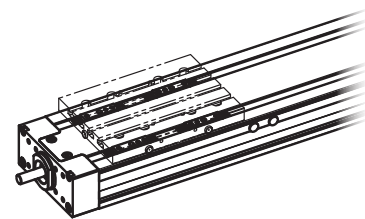
V = preloaded



COMPACT UNITS WITH BALL SCREW DRIVE



General technical details for compact units



General technical details for compact units

KE	Movement speed		Moments of inertia		Stroke max.	Protective ribbons	Feed and friction force	Moved mass
	Guide	Drive	I_Y	I_Z				
Type	V_{max} [m/s]	V_{max} [m/s]	[cm ⁴]	[cm ⁴]	[mm]		F_V [N]	m_b [kg]
KE1.2...R...	3.0	2)	11.5	95.5	1315	without	8.00	0.370
						with	12.00	
KE1.4...R...	3.0	2)	11.5	95.5	1250	without	12.00	0.680
						with	16.00	
KE2.2...R...	5.0	2)	29.4	242.5	1375	without	10.00	0.790
						with	15.00	
KE2.4...R...	5.0	2)	29.4	242.5	1290	without	15.00	1.370
						with	20.00	
KE3.2...R...	5.0	2)	93.3	746.0	1850	without	15.00	1.460
						with	20.00	
KE3.4...R...	5.0	2)	93.3	746.0	1750	without	20.00	2.470
						with	25.00	

KE

2) for ball screw drive, dependent on rotational speed characteristics, spindle length and relevant critical rotational speed.

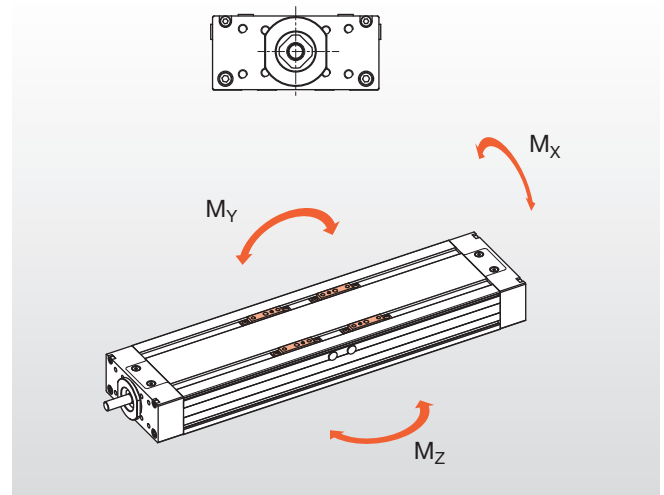
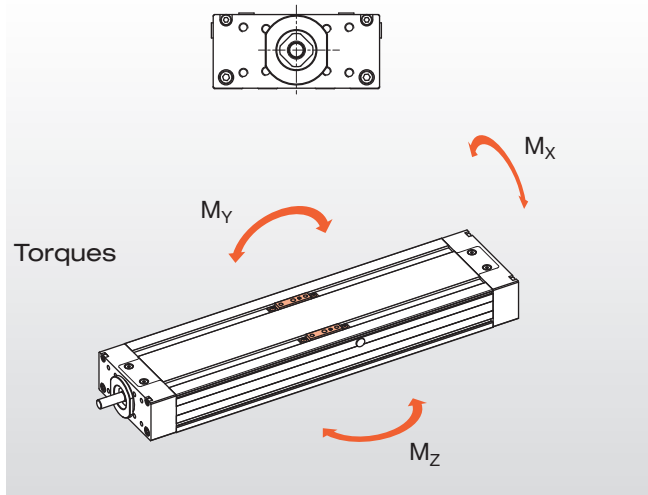


COMPACT UNITS WITH BALL SCREW DRIVE

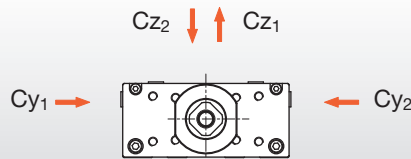
Load ratings and torques

KE...2...
with one carriage

KE...4...
with two carriages



Load ratings



Compact module Type	Maximum permissible load [kN]				Maximum permissible torque [Nm]					
	static		dynamic		static			dynamic		
	$C_{y0,1,2}$	$C_{z0,1,2}$	$C_{y1,2}$	$C_{z1,2}$	M_{x0}	M_{y0}	M_{z0}	M_x	M_y	M_z
KE1.2...R...	11.2	11.2	6.5	6.5	275	60	60	158	35	35
KE1.4...R...	22.5	22.5	13.0	13.0	550	330	330	316	210	210
KE2.2...R...	35.0	35.0	18.0	18.0	1064	204	204	590	226	226
KE2.4...R...	70.0	70.0	36.0	36.0	2120	1400	1392	1180	1180	1180
KE3.2...R...	59.9	59.9	34.2	34.2	2427	266	266	1507	202	202
KE3.4...R...	119.9	119.9	68.4	68.4	4854	2100	2100	3014	2044	2044

Note on dynamic load ratings and torques

The determination of dynamic load ratings and torques is based on a 50,000 m stroke. If comparative values must be

calculated for a 100,000 m stroke, the values for M_x , M_y , M_z and C must be divided by the factor 1.26.

Expedient load

With a view to serviceable life, loads of less than 20% of the dynamic load ratings have generally proved to be expedient.

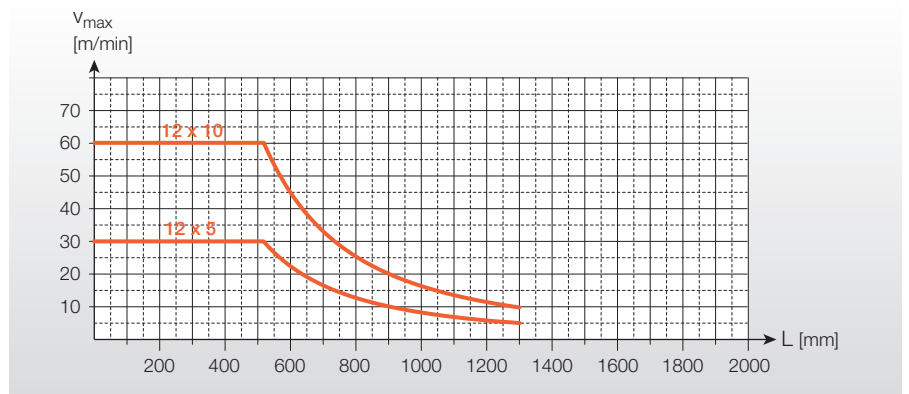




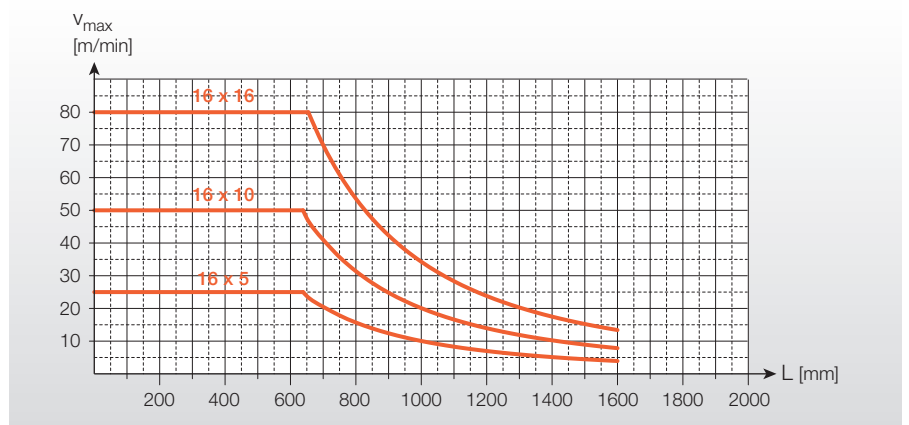
Permissible speeds

Permissible speeds...

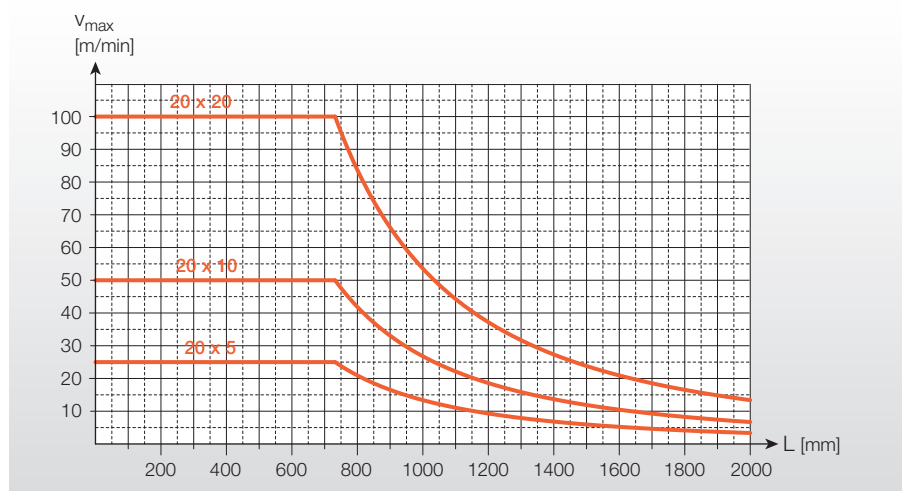
... for KE1... with ball screw drive $\varnothing 12 \times \dots$ ¹⁾



... for KE2... with ball screw drive $\varnothing 16 \times \dots$ ¹⁾



... for KE3... with ball screw drive $\varnothing 20 \times \dots$ ¹⁾



Caution:

For ball screw drive, note the rotational speed characteristics, spindle length and relevant critical rotational speed.

Please also pay attention to the motor speeds.

¹⁾ greater accuracy on request
L = overall length of compact unit

KE



COMPACT UNITS

Permissible deflection (1/2; for KE1... and KE2...)

Permissible deflection

Compact modules may be assembled self-supporting. However, the deflection (which limits the possible load) must be taken into consideration.

If the maximum permissible deflection is exceeded, the compact units must be additionally supported.

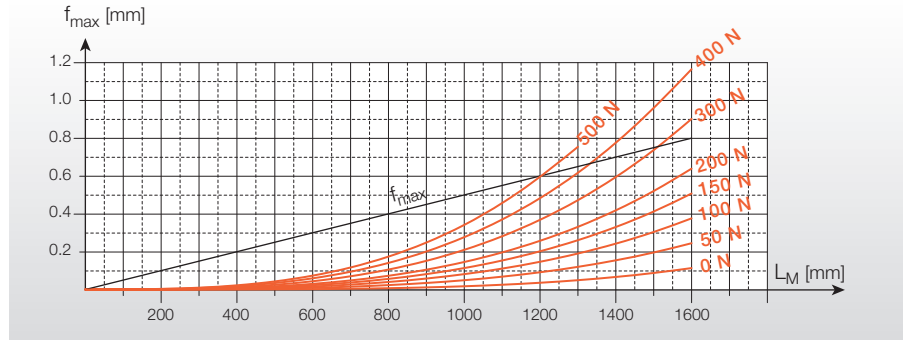
The maximum permissible deflection is limited by the maximum deflection angle of 5'. This value being exceeded will have an impact on the unit's life-cycle.

If increased demands are made on system accuracy we recommend supporting the linear modules along its entire length.

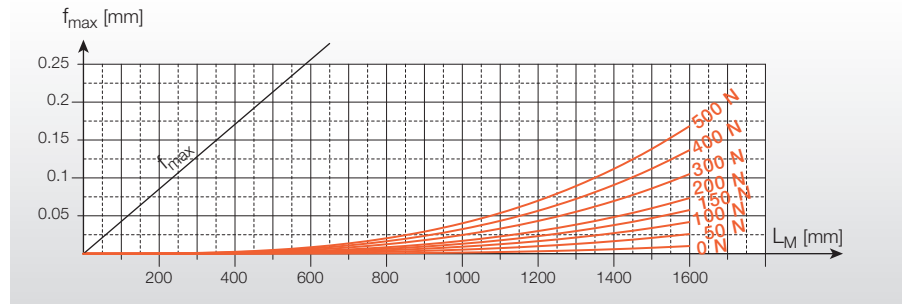
The following diagrams apply for:

- Firm clamping (40–50 mm per side)
- 3–4 screws per side
- Solid base

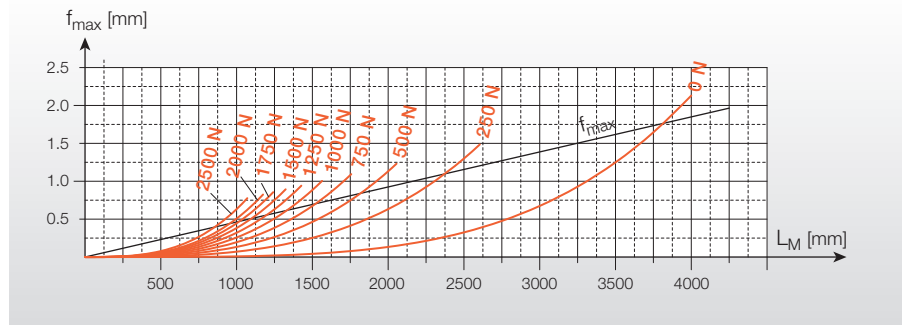
KE1... horizontal



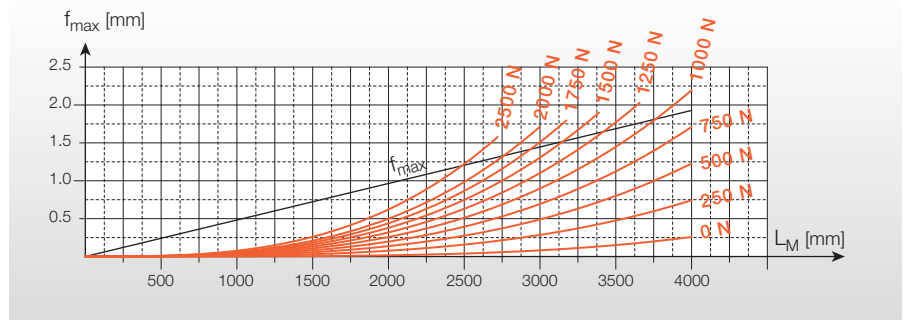
KE1... vertical



KE2... horizontal

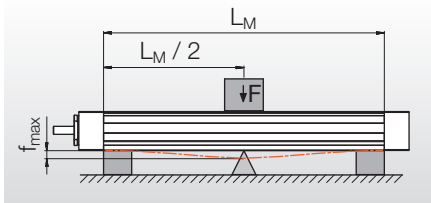


KE2... vertical

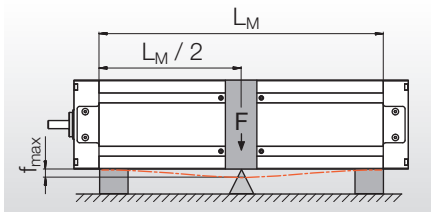


Mounting positions:

- horizontal



- vertical

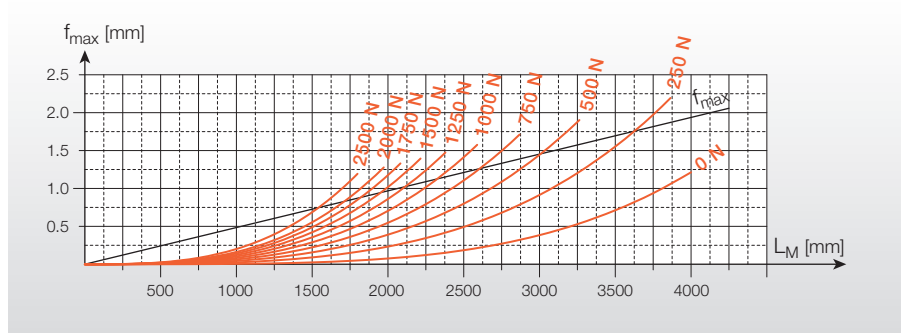


COMPACT UNITS

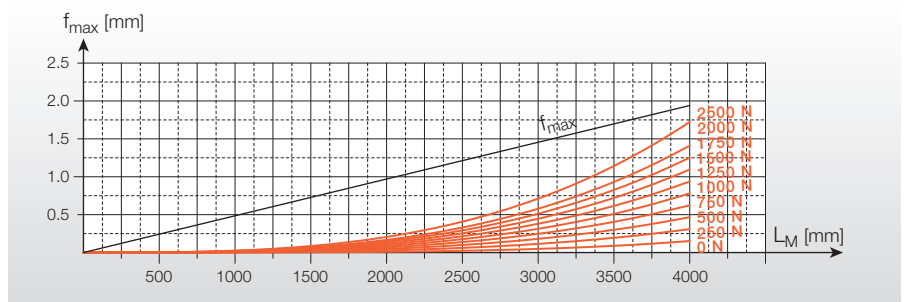


Permissible deflection (2/2; for KE3...)

KE3... horizontal

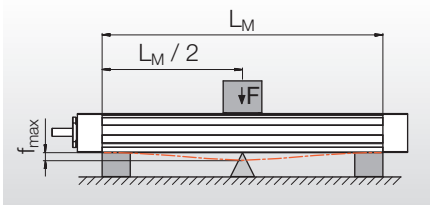


KE3... vertical

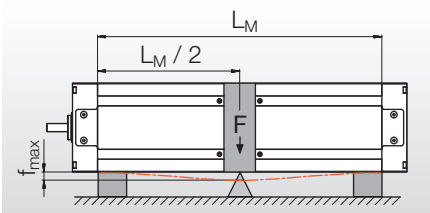


Mounting positions:

- horizontal



- vertical





COMPACT UNITS

Designation system

Compact unit (sample designation)

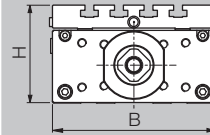
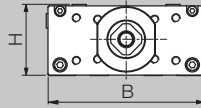
KE 2 . 2 . 0200 A R 005 . 0

Design

KE = compact unit with linear guides

Size

- 1 = size 90 mm
- 2 = size 110 mm
- 3 = size 145 mm



Size	KE...N... B x H [mm]	KE...V... B x H [mm]
1	90 x 40	90 x 56
2	110 x 50	110 x 66
3	145 x 65	145 x 85

Configuration

- 2 = 2 runner blocks (1 carriage)
- 4 = 4 runner blocks (2 carriages)

Stroke absolut [mm]

Protective covering

- A = synthetic ribbons ***
- N = without protective ribbons

Drive

- R = rolled ball screw ***
- N = without drive

Stroke per revolution [mm]

- 005 / 010 = size 1; ball screw with a pitch of 5 or 10 mm
- 005 / 010 / 016 = size 2; ball screw with a pitch of 5, 10 or 16 mm
- 005 / 010 / 020 = size 3; ball screw with a pitch of 5, 10 or 20 mm
- ... = other pitch ¹⁾

Limit switches

- 0 = without limit switch
- 1 = 2 limit switches, reference point at front (drive side)
- 2 = 2 limit switches, reference point at rear (opposite drive side)
- 3 = 2 limit switches + additional reference switch at front (drive side)
- 4 = 2 limit switches + additional reference switch at rear (opposite drive side)

* seen from motor opposite side towards motor

** available for lateral motor mounting only

*** standard version

¹⁾ on request



01 . 0 N - N 7 R N N N

5 8 3 - - - → 583... = drawing type

Option (buffer)

- N = without buffer ***
- P = with internal stop buffer

Connector box

- N = without connector box (loose cable L = 2.0 m) ***
- S = with connector box

Mounting position of limit switches / connector box

- N = without limit switches / connector box ***
- L = limit switches / connector box mounting left *
- R = limit switches / connector box mounting right *

Preload ball screw drive (BSD)

- A = BSD with axial play
- R = BSD with reduced play ***
- V = BSD preloaded
- N = without drive

Tolerance class ball screw (BSD)

- 7 = Tolerance class BSD: T7 (52 µm/300 mm) ***
- N = without drive

Connecting plate

- N = without connecting plate ***
- V = with connecting plate

Motor mounting

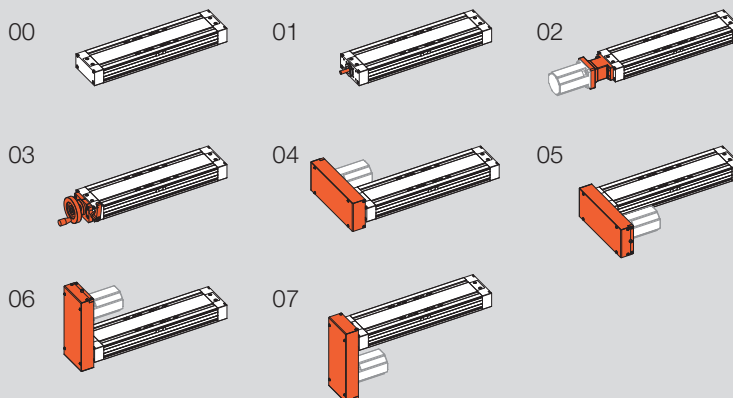
- N = without motor mounting ***
- F = mounting plate for standard motor
- S = mounting plate for special motor

Reduction

- 0 = without reduction (1:1) ***
- 1 = reduction 1:1.5 **
- 2 = reduction 1:2 **

Assembly stage

- 00 = without drive
- 01 = free spindle end ***
- 02 = with coupling and intermediate plate
- 03 = with crank and clamp
- 04 = set up for lateral motor mounting right *
- 05 = set up for lateral motor mounting left *
- 06 = set up for lateral motor mounting top
- 07 = set up for lateral motor mounting bottom





COMPACT UNITS

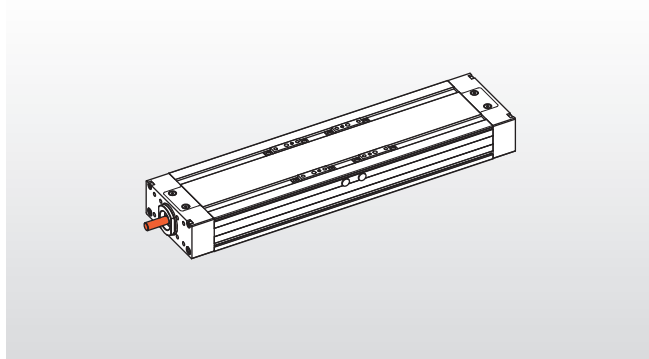
Information for selection » Motor mounting preparation

Motor fitting preparation – assembly stages with ball screw drive

LINE TECH compact units with ball screw drive can be supplied with different motor mount preparations. Refer to pages 134 and 135 for dimensions.

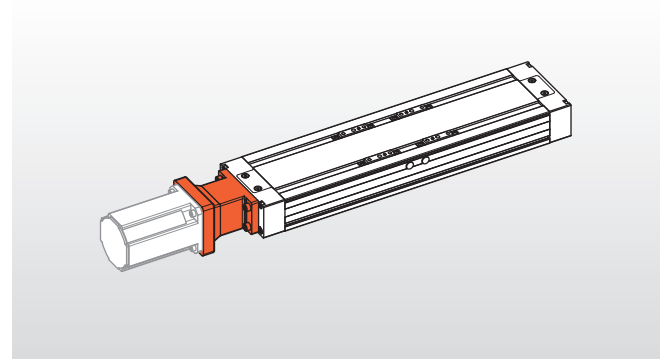
Assembly stage 01

Free spindle end



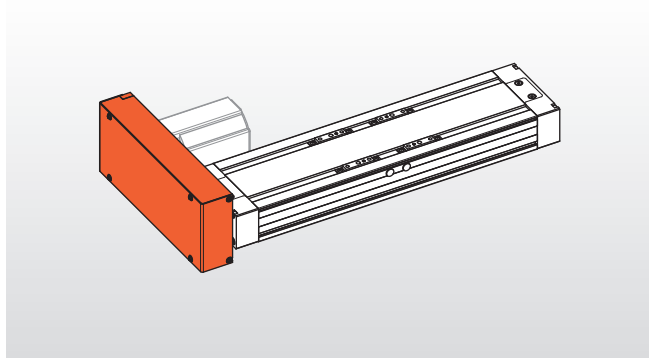
Assembly stage 02

With coupling and intermediate plate



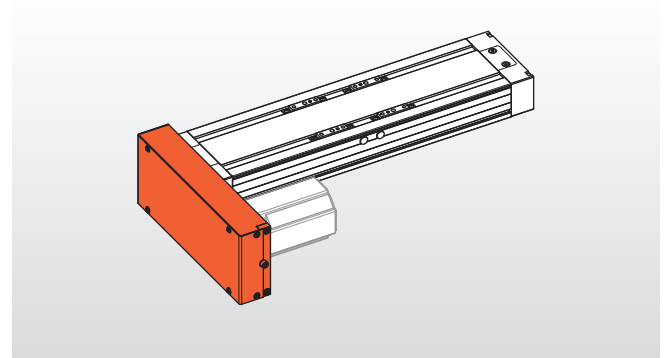
Assembly stage 04

Belt drive housing for side motor mounting right*



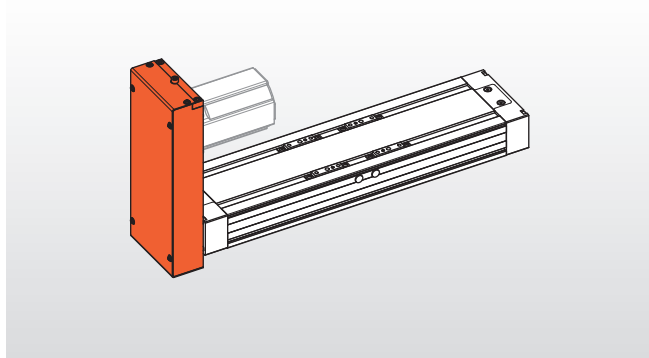
Assembly stage 05

Belt drive housing for side motor mounting left*



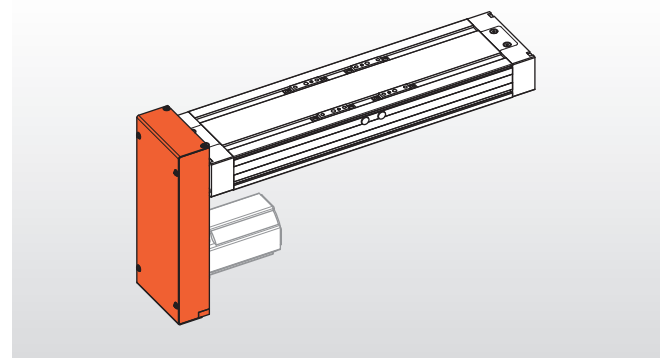
Assembly stage 06

Belt drive housing for lateral motor mounting top



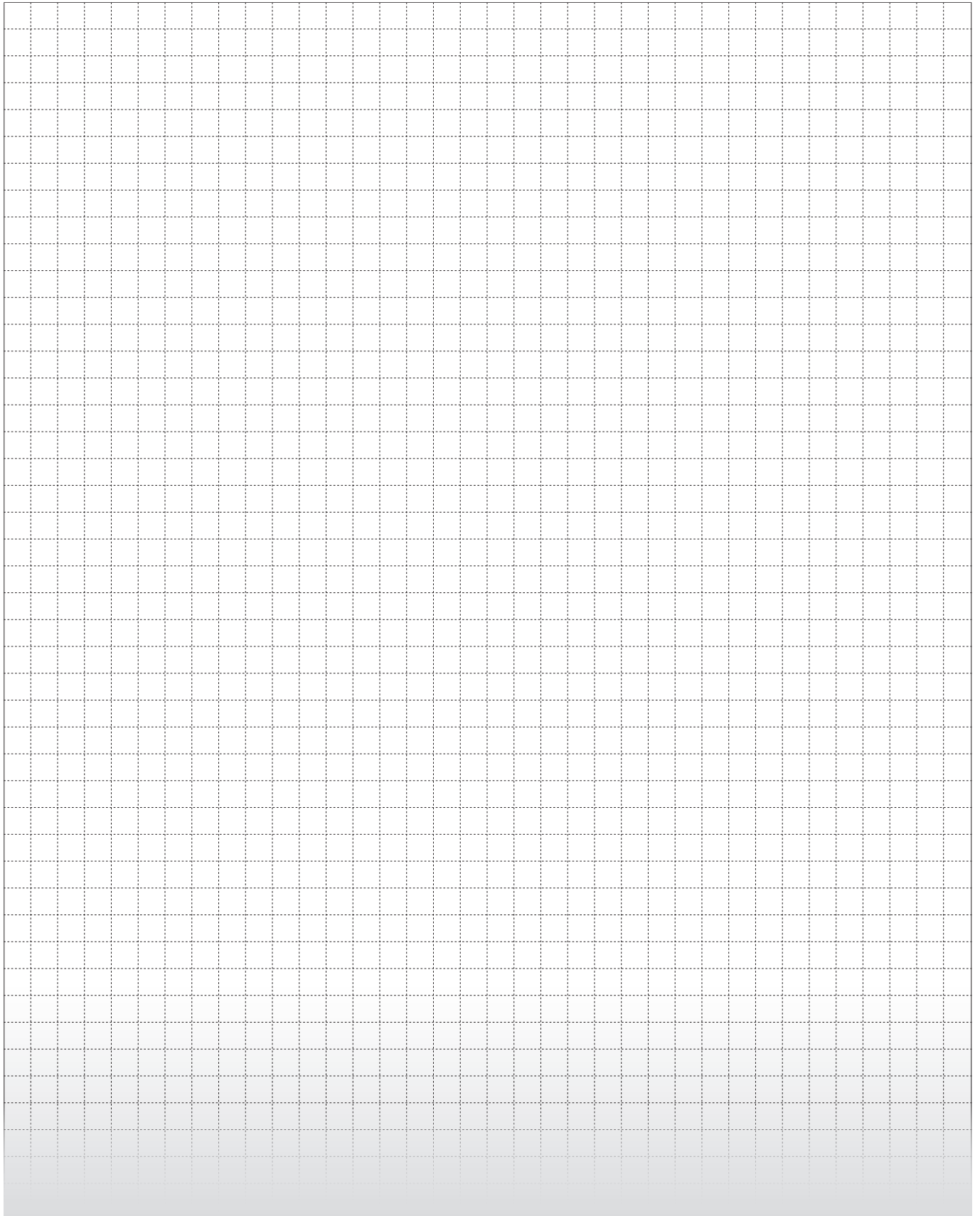
Assembly stage 07

Belt drive housing for lateral motor mounting bottom



* seen from motor opposite side towards motor

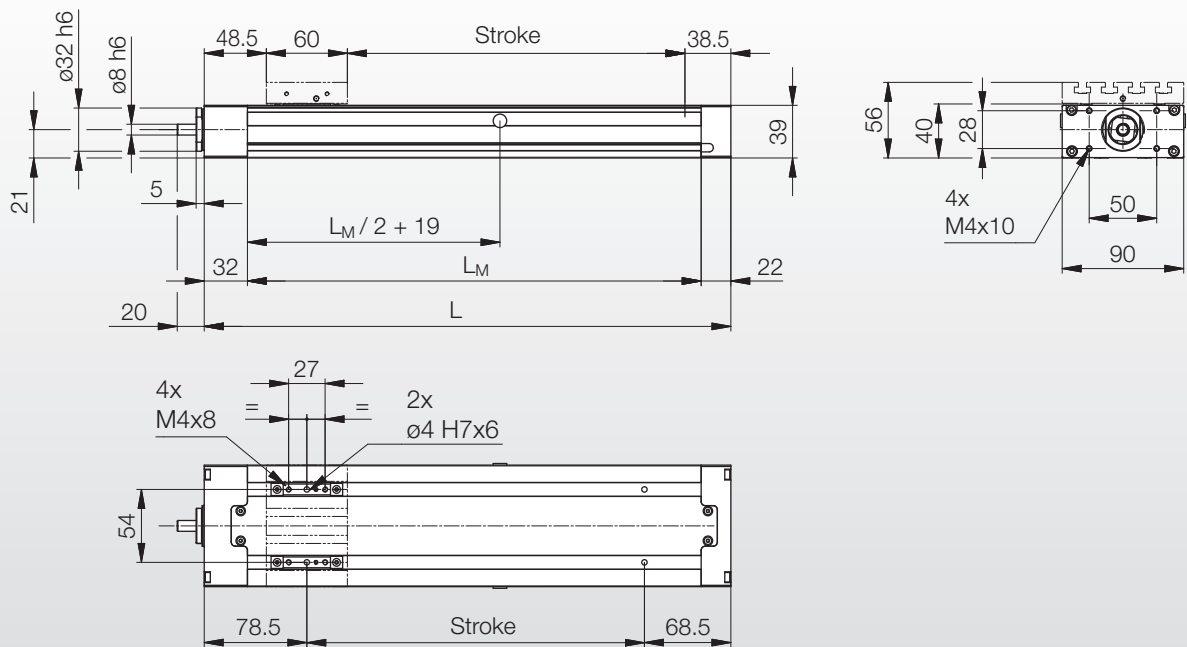
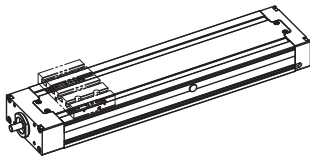




COMPACT UNIT KE1.2...AR...P



with 1 carriage and ball screw drive, with protective ribbons, **with buffer**



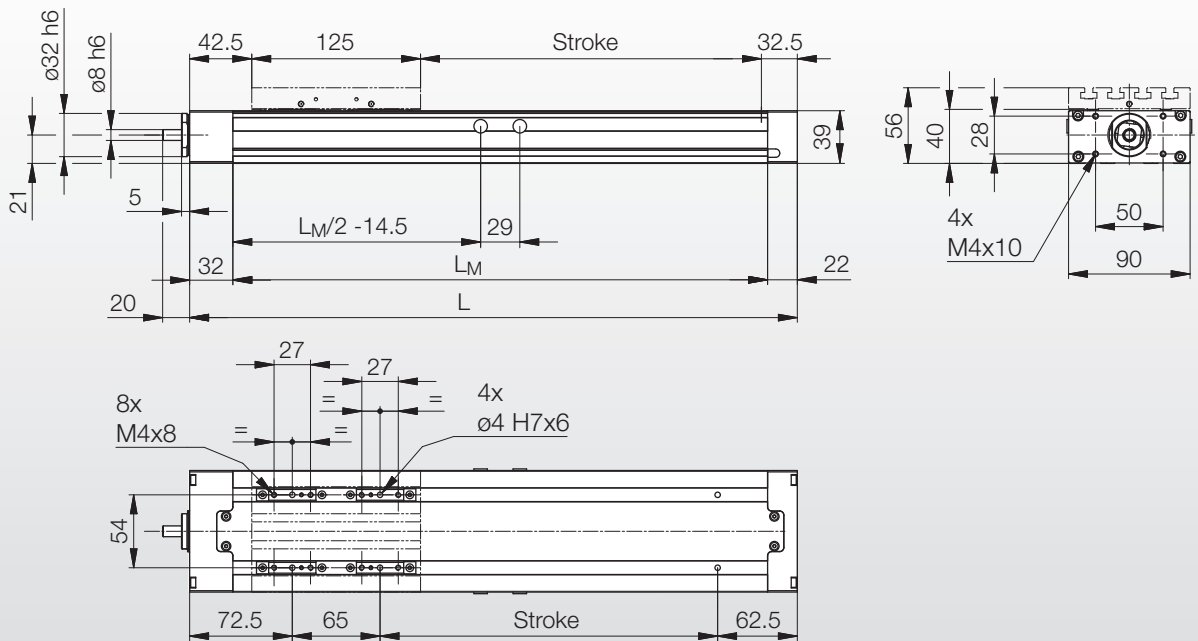
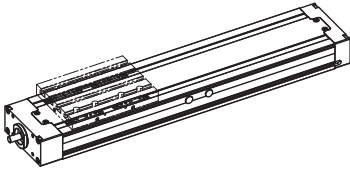
Nominal size	Dimensions				
	Designation	L (with buffer) [mm]	L_M [mm]	Length ball screw [mm]	Length protective ribbon [mm]
KE1.2...AR...P	Stroke + 147	$L - 54$	$L + 12$	$2 \times \text{Stroke} + 244$	$1.85 \text{ kg} + 0.410 \text{ kg}/100 \text{ mm Stroke}$

CAD data is available from www.linetech.ch



COMPACT UNIT KE1.4...AR...N

with 2 carriages and ball screw drive, with protective ribbons, **without buffer**



KE

Nominal size	Dimensions				
	Designation	L (without buffer) [mm]	L _M [mm]	Length ball screw [mm]	Length protective ribbon [mm]
KE1.4...AR...N	Stroke + 200	L - 54	L + 12	2 x Stroke + 285	2.35 kg + 0.410 kg/100 mm Stroke

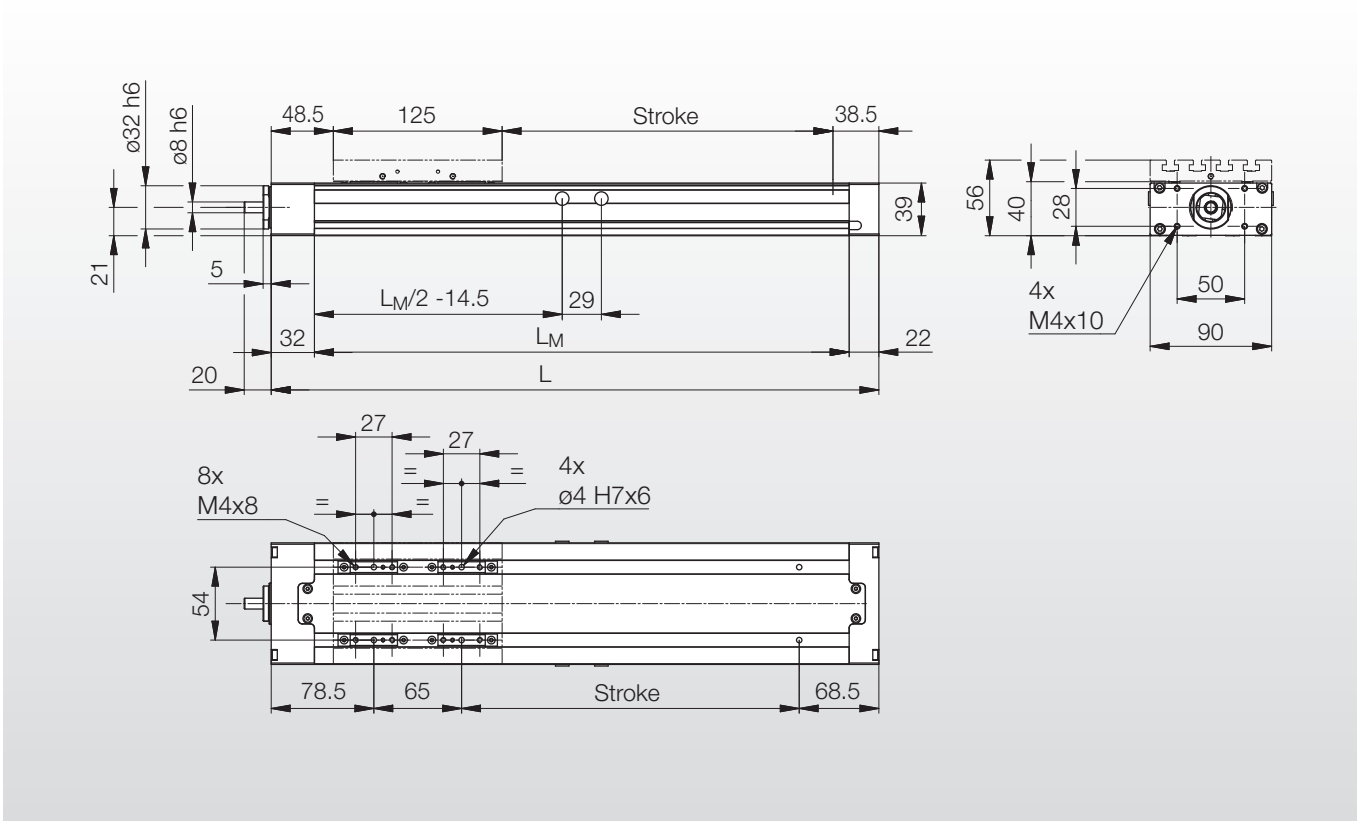
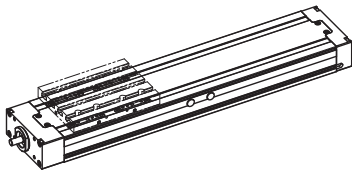
CAD data is available from www.linetech.ch



COMPACT UNIT KE1.4...AR...P



with 2 carriages and ball screw drive, with protective ribbons, **with buffer**



KE

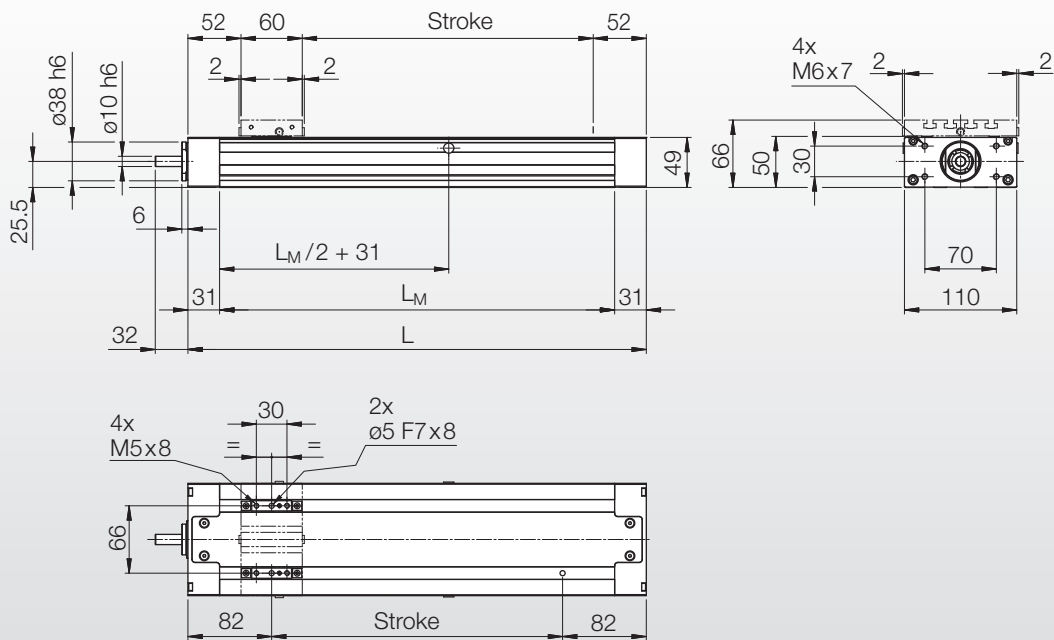
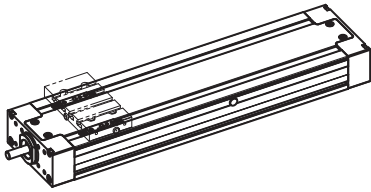
Nominal size	Dimensions				
	Designation	L (with buffer) [mm]	L_M [mm]	Length ball screw [mm]	Length protective ribbon [mm]
KE1.4...AR...P	Stroke + 212	$L - 54$	$L + 12$	$2 \times \text{Stroke} + 309$	$2.43 \text{ kg} + 0.410 \text{ kg}/100 \text{ mm Stroke}$

CAD data is available from www.linetech.ch



COMPACT UNIT KE2.2...AR...N

with 1 carriage and ball screw drive, with protective ribbons, **without buffer**



Nominal size	Dimensions				
Designation	L (without buffer) [mm]	L_M [mm]	Length ball screw [mm]	Length protective ribbon [mm]	Weight [kg]
KE2.2...AR...N	Stroke + 164	$L - 62$	$L + 12$	$2 \times \text{Stroke} + 294$	$1.90 \text{ kg} + 0.852 \text{ kg}/100 \text{ mm Stroke}$

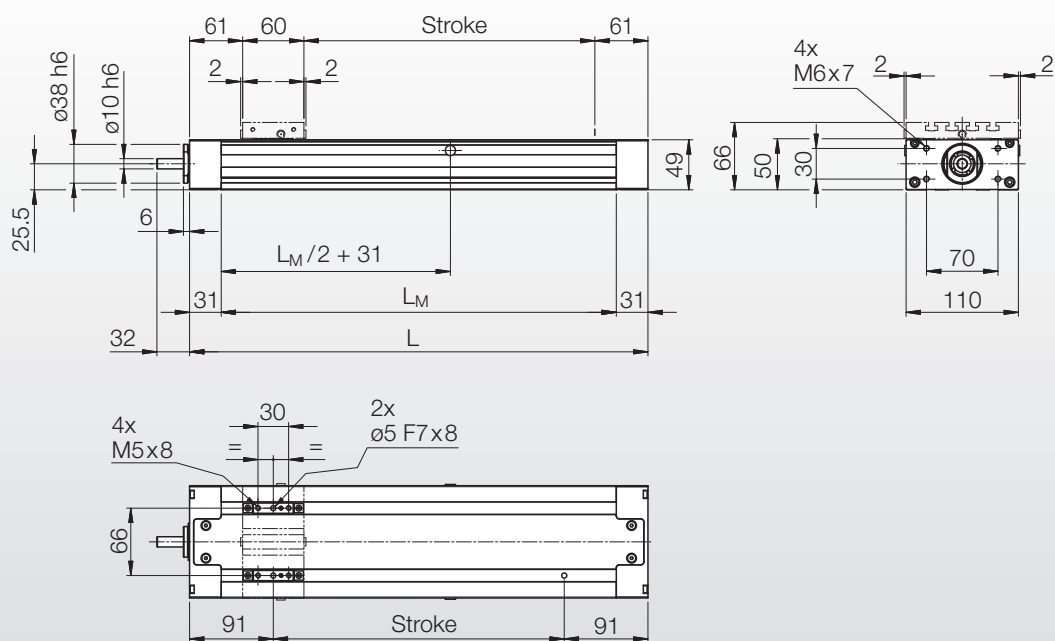
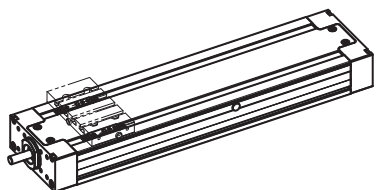
CAD data is available from www.linetech.ch





COMPACT UNIT KE2.2...AR...P

with 1 carriage and ball screw drive, with protective ribbons, **with buffer**



KE

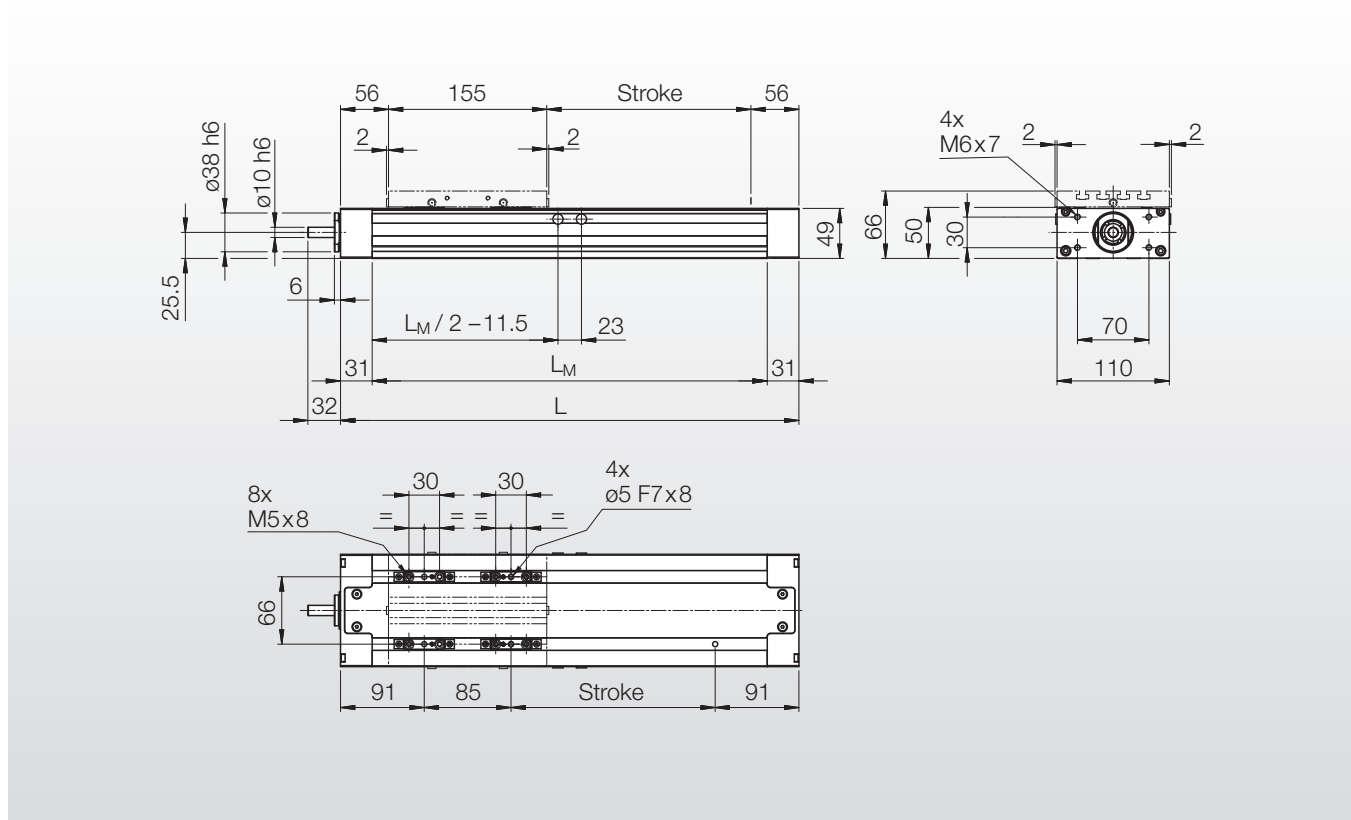
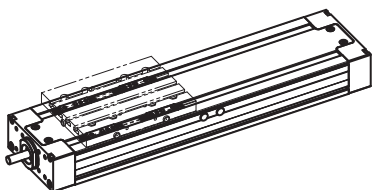
Nominal size	Dimensions				
	Designation	L (with buffer) [mm]	L_M [mm]	Length ball screw [mm]	Length protective ribbon [mm]
KE2.2...AR...P	Stroke + 182	$L - 62$	$L + 12$	$2 \times \text{Stroke} + 330$	$2.13 \text{ kg} + 0.852 \text{ kg}/100 \text{ mm Stroke}$

CAD data is available from www.linetech.ch



COMPACT UNIT KE2.4...AR...P

with 2 carriages and ball screw drive, with protective ribbons, **with buffer**



KE

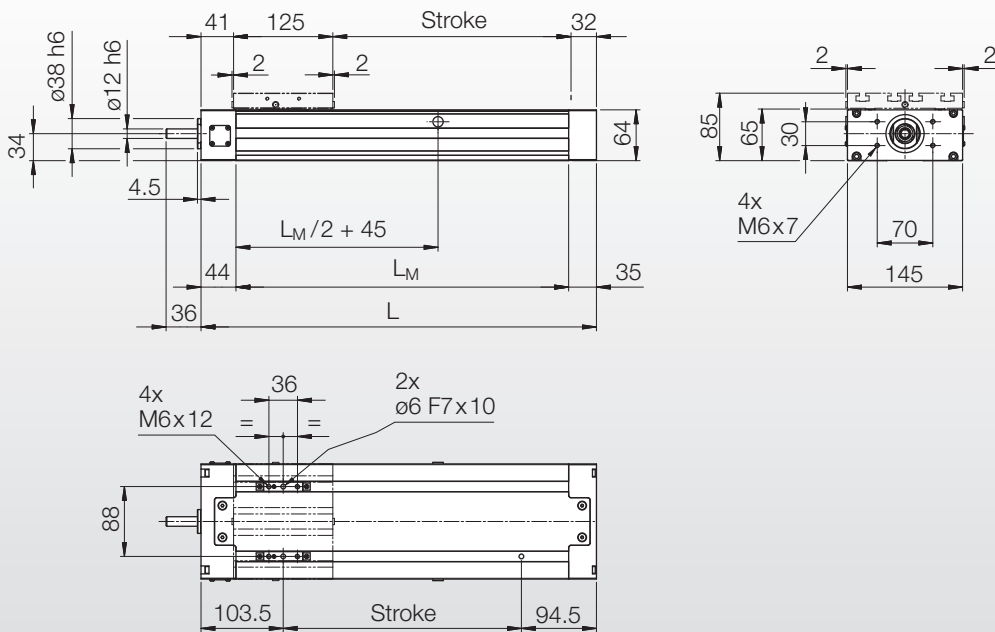
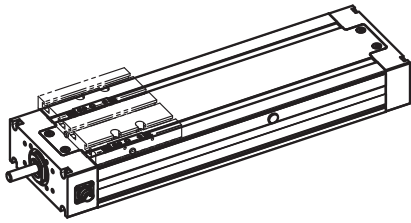
Nominal size	Dimensions				
	Designation	L (with buffer) [mm]	L_M [mm]	Length ball screw [mm]	Length protective ribbon [mm]
KE2.4...AR...P	Stroke + 267	L - 62	L + 12	2 x Stroke + 415	3.48 kg + 0.852 kg/100 mm Stroke

CAD data is available from www.linetech.ch



COMPACT UNIT KE3.2...AR...N

with 1 carriage and ball screw drive, with protective ribbons, **without buffer**



Nominal size	Dimensions				
	Designation	L (without buffer) [mm]	L_M [mm]	Length ball screw [mm]	Length protective ribbon [mm]
KE3.2...AR...N	Stroke + 198	$L - 79$	$L + 17$	$2 \times \text{Stroke} + 354$	$5.40 \text{ kg} + 1.232 \text{ kg}/100 \text{ mm Stroke}$

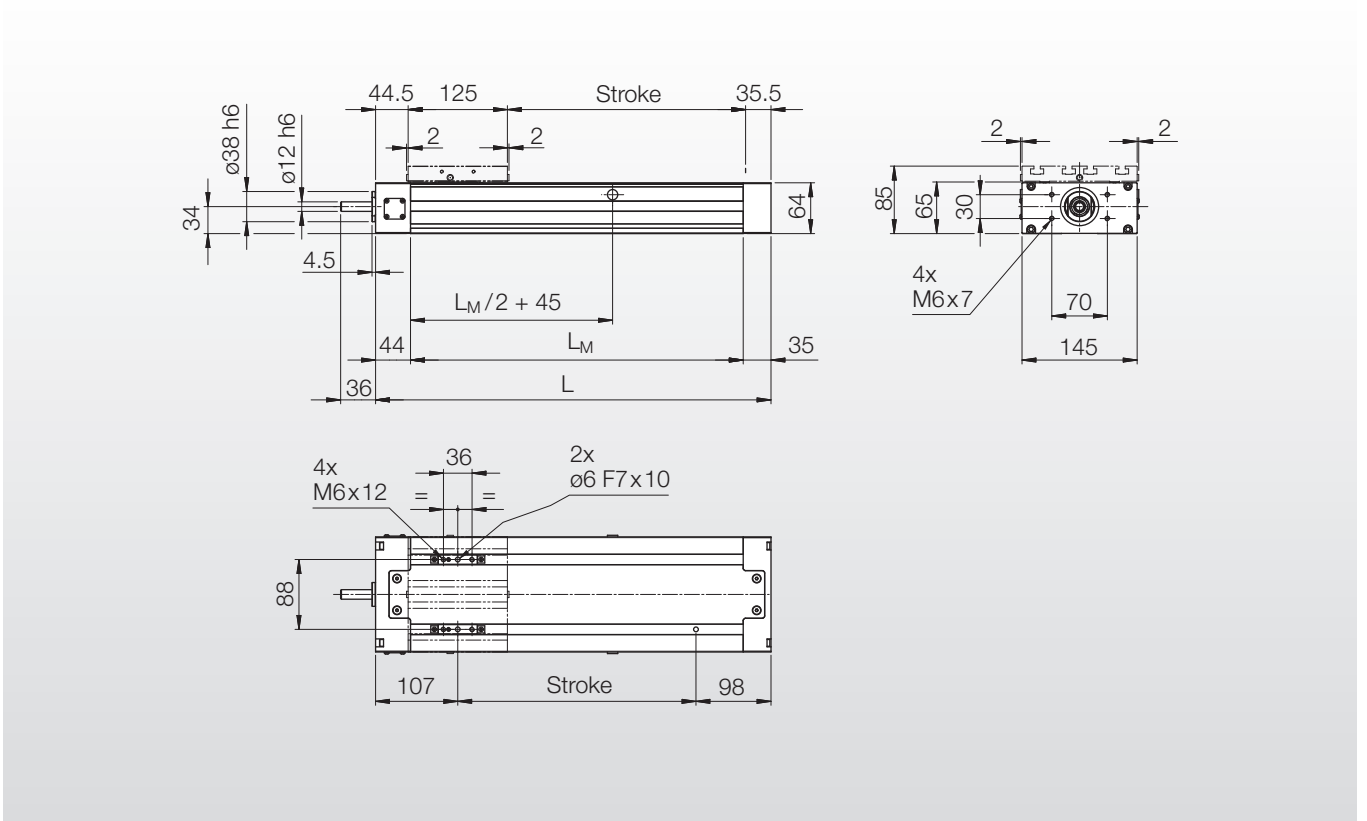
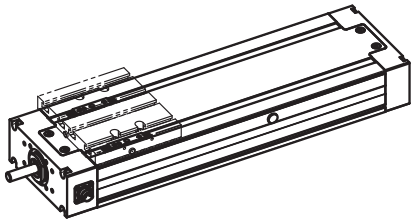
CAD data is available from www.linetech.ch



COMPACT UNIT KE3.2...AR...P



with 1 carriage and ball screw drive, with protective ribbons, **with buffer**



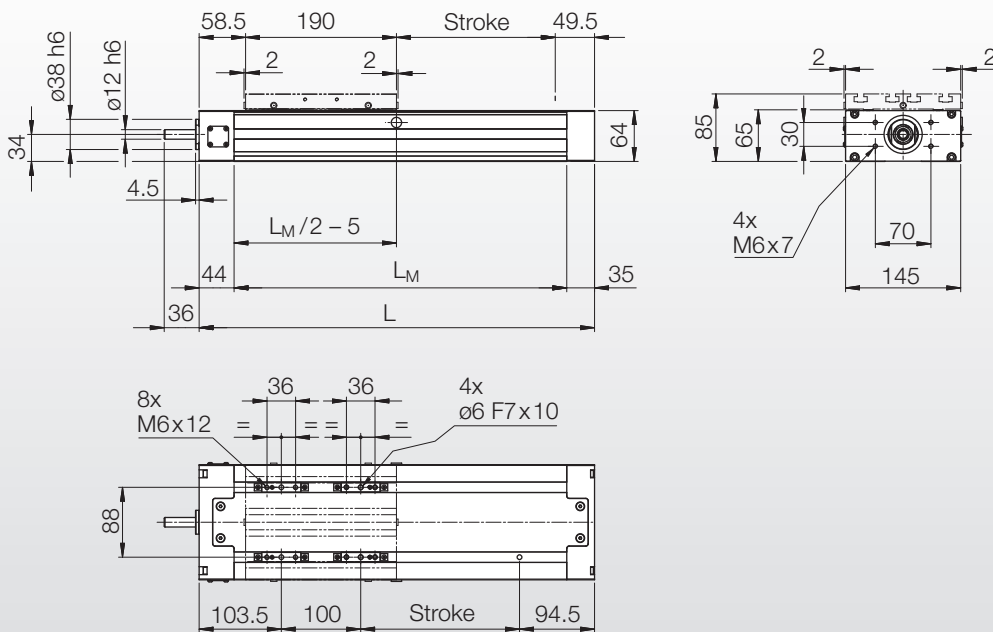
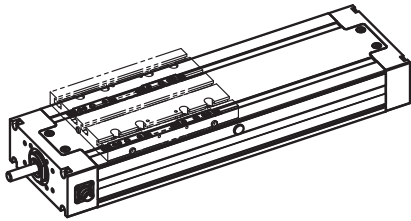
Nominal size	Dimensions				
	Designation	L (with buffer) [mm]	L_M [mm]	Length ball screw [mm]	Length protective ribbon [mm]
KE3.2...AR...P	Stroke + 205	$L - 79$	$L + 17$	$2 \times \text{Stroke} + 415$	$5.49 \text{ kg} + 1.232 \text{ kg}/100 \text{ mm Stroke}$

CAD data is available from www.linetech.ch



COMPACT UNIT KE3.4...AR...N

with 2 carriages and ball screw drive, with protective ribbons, **without buffer**



Nominal size	Dimensions				
	Designation	L (without buffer) [mm]	L_M [mm]	Length ball screw [mm]	Length protective ribbon [mm]
KE3.4...AR...N	Stroke + 298	$L - 79$	$L + 17$	$2 \times \text{Stroke} + 454$	$7.62 \text{ kg} + 1.232 \text{ kg}/100 \text{ mm Stroke}$

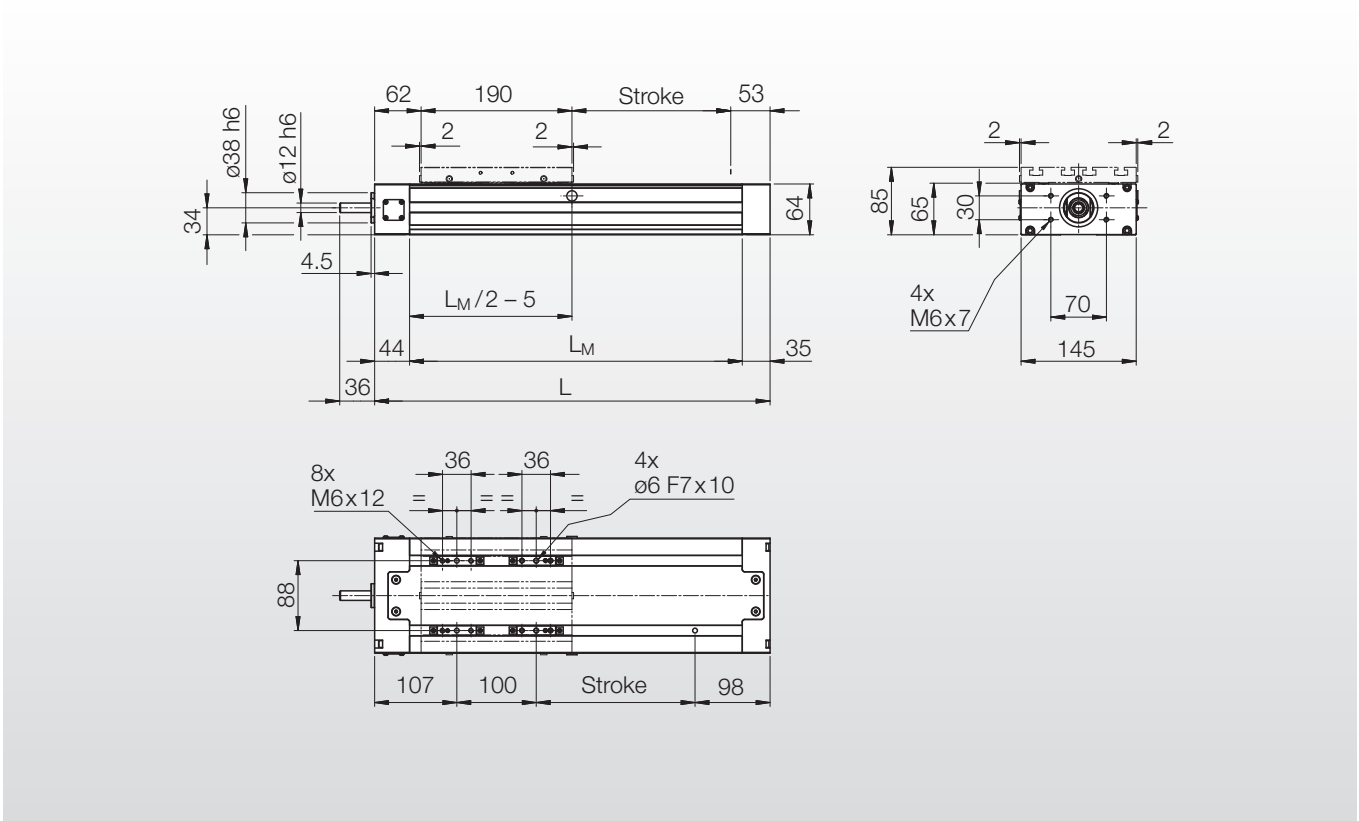
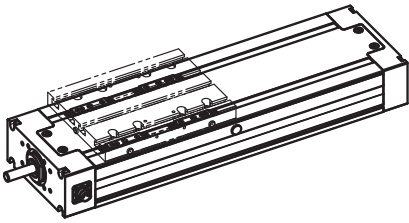
CAD data is available from www.linetech.ch



COMPACT UNIT KE3.4...AR...P



with 2 carriages and ball screw drive, with protective ribbons, **with buffer**



Nominal size	Dimensions				
	Designation	L (with buffer) [mm]	L_M [mm]	Length ball screw [mm]	Length protective ribbon [mm]
KE3.4...AR...P	Stroke + 305	$L - 79$	$L + 17$	$2 \times \text{Stroke} + 468$	$7.71 \text{ kg} + 1.232 \text{ kg}/100 \text{ mm Stroke}$

CAD data is available from www.linetech.ch



COMPACT UNITS

Limit switch mounting

Limit switches

The limit switches are used in conjunction with a control unit to limit the stroke (prevent overrunning of the carriage) and to define the reference position.

LINE TECH employs the following standard inductive limit switches:

- PNP openers (PNP-NC)
- Supply: 10...30 V DC
- Current consumption off-load: < 10 mA
- Load: max. 200 mA

On request the following non standard limit switches are available:

- PNP make type (PNP-NO)
- NPN break type (NPN-NC)
- NPN make type (NPN-NO)
- Reed switches
- Mechanical switches

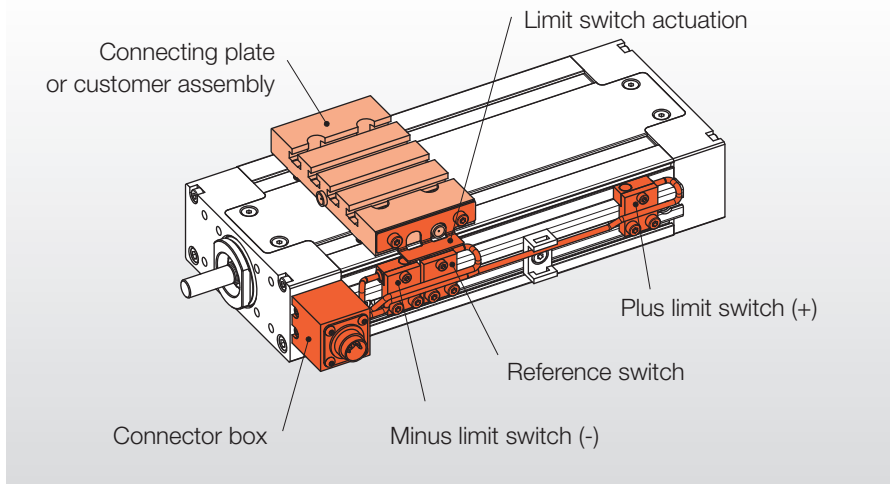
Note: At the factory the plus and minus limit switches are preset to a nominal stroke of 0 to +5 mm.

Fitting position of limit switches

The following diagrams show the mounting position of the limit switches. The reference position can be allocated either to the plus (+) or to the minus (-) limit switch.

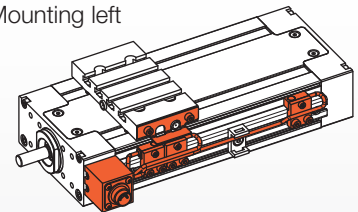
Special applications often require a separate reference point switch to be mounted between the positive and negative limit switches. The limit switch closest to the motor mounting (limit switch controller interface) is known as the forward limit switch.

Limit switches / reference switch mounting overview

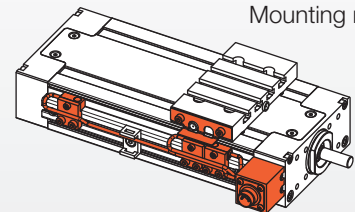


Limit switch mounting

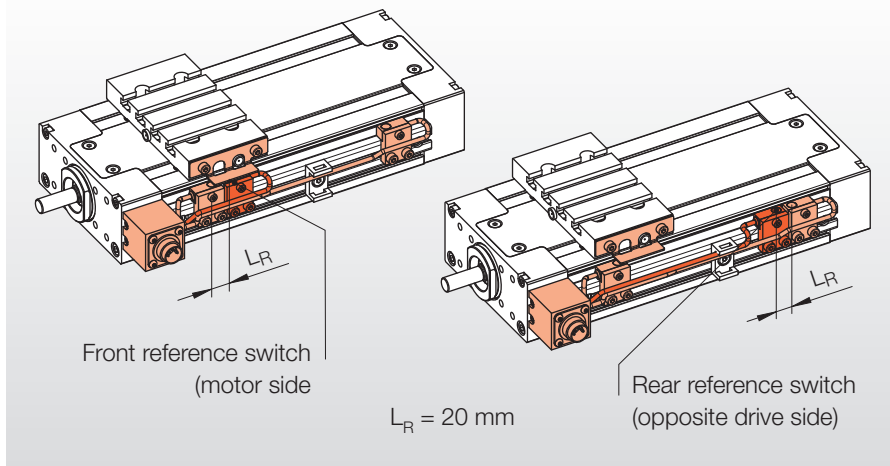
Mounting left



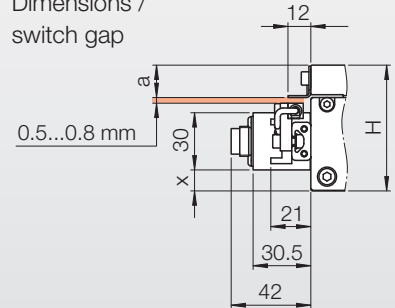
Mounting right



Position of reference switch (L_R)



Dimensions / switch gap



Size	Dimensions [mm]		
	x	a	H
KE1	3	17.5	56
KE2	13	17	66
KE3	32.5	17	85



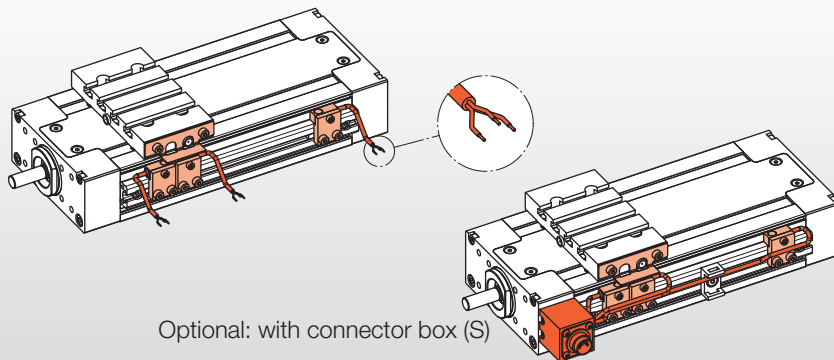
Limit switch with/without connector box

Limit switch preparation

Limit switches are supplied as standard without connector box with 2 metre long cables (order code N); a connector box with completed cabling is available as an option (order code S).

Limit switch mating connectors and cables are not included in the delivery but can be ordered ready-made from LINE TECH.

Standard: without connector box (N), with loose connector cables (L = 2 m)



Plug connector

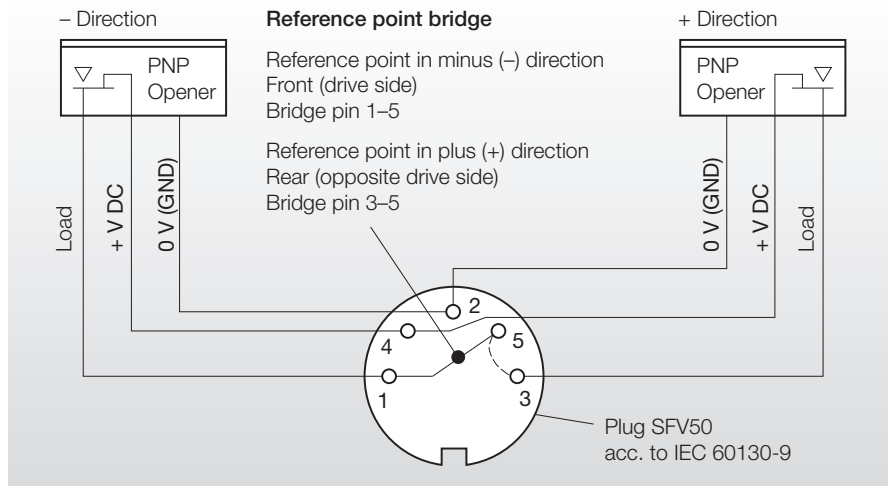
The connector pin assignment when using a connector box is shown in the diagram on the right. The individual pins are assigned as follows:

- Pin 1 Minus (-) direction (load)
- Pin 2 0 V (GND)
- Pin 3 Plus (+) direction (load)
- Pin 4 +10...30 V (DC)
- Pin 5 Reference (load)

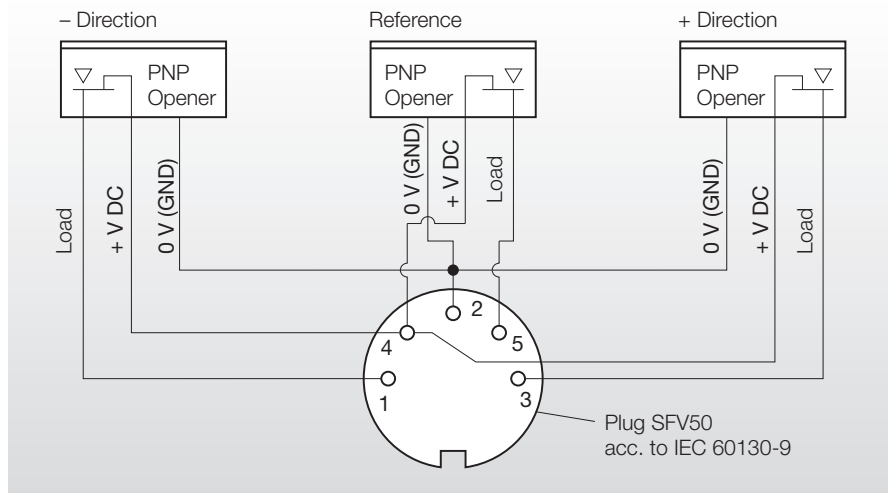
Colour code key for the diagrams:

- Load = black
- +V DC = brown
- 0 V (GND) = blue

Plug connector with reference point bridge



Plug connector with additional reference switch

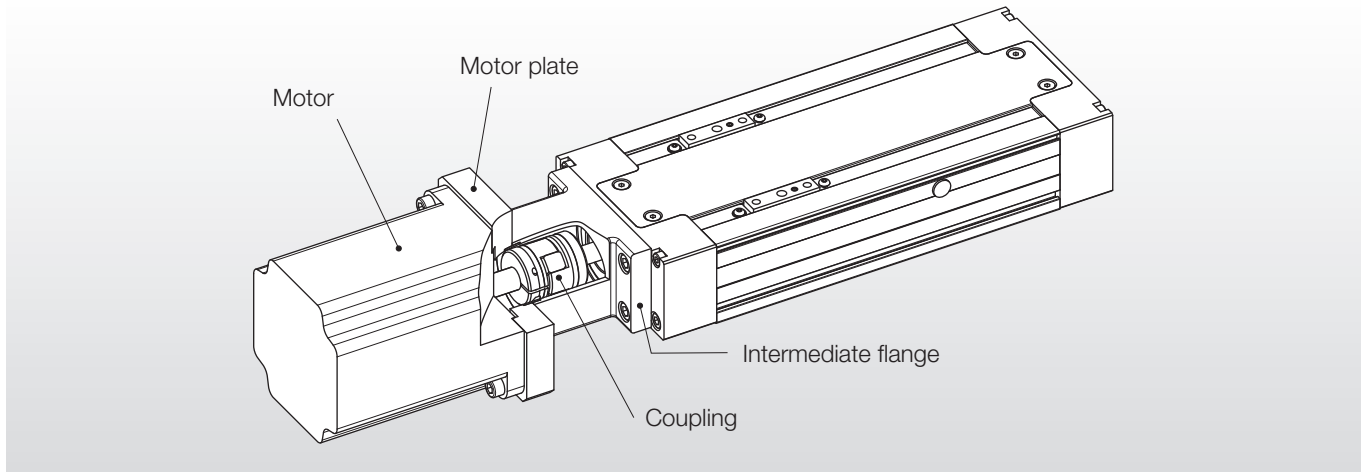




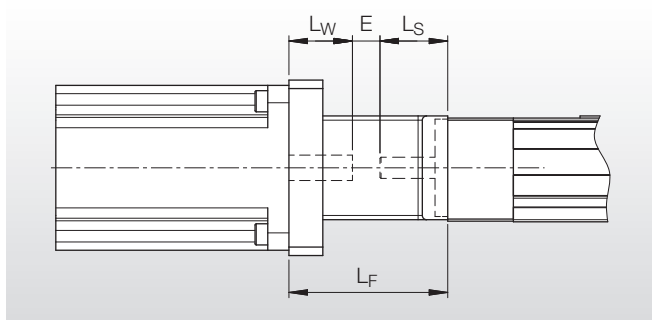
COMPACT UNITS WITH BALL SCREW DRIVE

Dimensions for motor mounting; straight fit

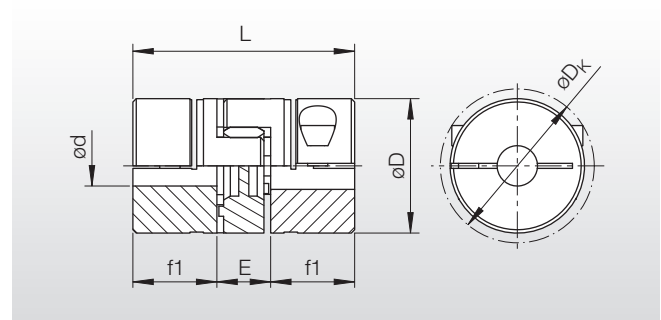
Straight motor mounting



Length of motor mounting



Coupling

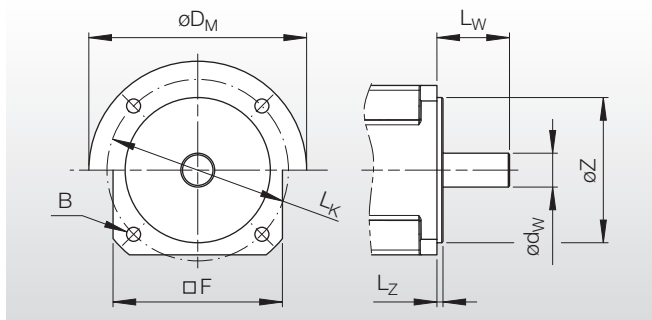


Nominal size	Dimensions			Coupling if $L_W > f_1$
	$L_F \pm 2$ [mm]	L_S [mm]	Weight* [kg]	
KE1...	$L_S + E + L_W$	20	0.350	Size 12
KE2...		32	0.500	Size 14
KE2...		32	0.580	Size 19
KE3...		36	0.640	Size 19

Size	Dimensions [mm]						Drive torque [Nm]	
	L	$\varnothing D$	$\varnothing d$	f1	E	$\varnothing D_K$	T_N	T_{max}
12	34	25	≤ 12	11	12	27.5	5.0	18
14	35	30	≤ 16	11	13	32.2	6.3	25
19	66	40	≤ 20	25	16	43	17	34

* flange including coupling

Motor dimensions **



** the following dimensions

- $\varnothing D_M$ _____ [mm]
- B _____ [mm]
- $\square F$ _____ [mm]
- L_K _____ [mm]
- L_W _____ [mm]
- $\varnothing d_W$ _____ [mm]
- L_Z _____ [mm]
- $\varnothing Z$ _____ [mm]

are required to determine the motor mounting.



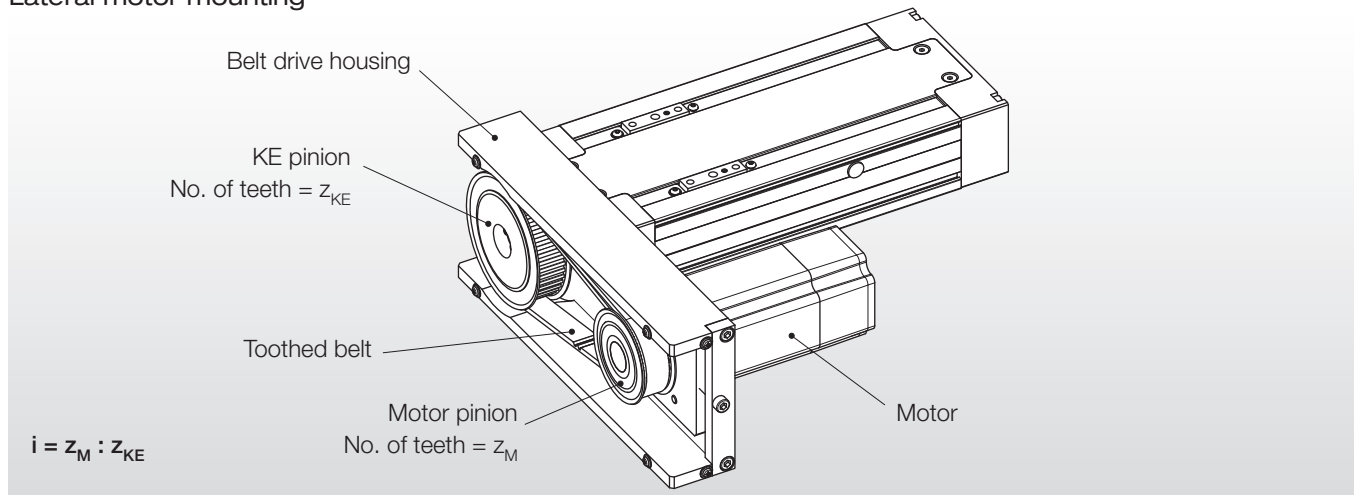
KE

COMPACT UNITS WITH BALL SCREW DRIVE

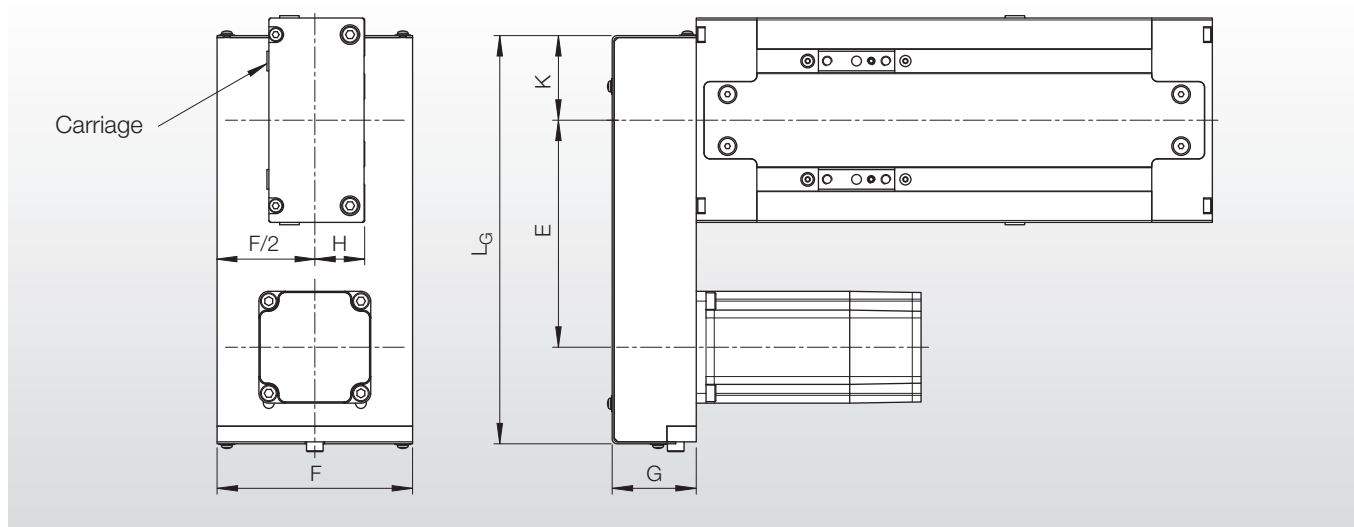


Dimensions for motor mounting; lateral fit

Lateral motor mounting



Dimensions for lateral motor mounting



Nominal size	Dimensions [mm]							No. of teeth		Max.	Belt length	Weight
	i	E	F	G*	H	K	L _G	z _M	z _{KE}	ød _w	[mm]	[kg]
KE1...	1:1	90.5...104 (92.5)						28	28	ø16	325	0.860
	1:1.5	90.5...104 (99.4)	80	41	21	39	180	28	42	ø16	375	0.990
	1:2	90.5...104 (94.8)						21	42	ø10	350	0.980
KE2...	1:1	130...135 (132.5)						32	32	ø19	425	1.600
	1:1.5	131...139 (135)	100	43	43	46	247	32	48	ø19	475	1.800
	1:2	131.5...135.5 (133.5)						24	48	ø12	450	1.700
KE3...	1:1	130...135 (132.5)						32	32	ø19	425	1.600
	1:1.5	131...139 (135)	100	43	54	46	247	32	48	ø19	475	1.800
	1:2	131.5...135.5 (133.5)						24	48	ø12	450	1.700

KE



COMPACT UNITS

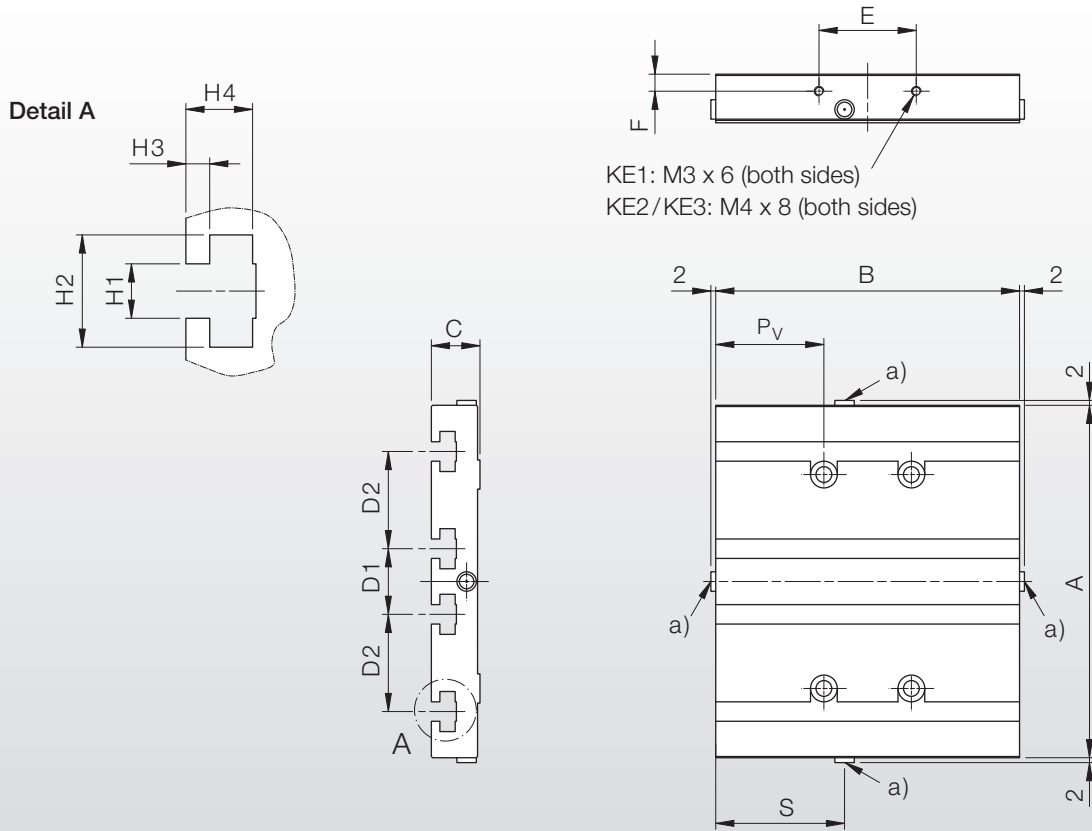
Connecting plates for KE with 1 carriage

Connecting plates for compact units

Aluminium connecting plates for LINE-TECH compact modules broaden the mounting options. They also permit

position-independent greasing, as sufficient grease points are available on the connecting plates.

Dimensions



a) funnel-type grease nipple D1a to DIN 3405

Nominal size	Dimensions [mm]													Weight [kg]	Art. No.
	A	B	C	D1	D2	E	F	H1	H2	H3	H4	P _v	S		
KE1.2...	90	60	16	20	20	30	8.5	6	12.0	3.5	7.7	16.5	37.0	0.183	KE1.2 plate
KE2.2...	110	60	16	20	20	40	7	6	12.0	3.5	7.7	15	37.5	0.213	KE2.2 plate
KE3.2...	145	125	20	27	40	40	7	8	16.5	3.5	9.8	44.5	53.0	0.727	KE3.2 plate

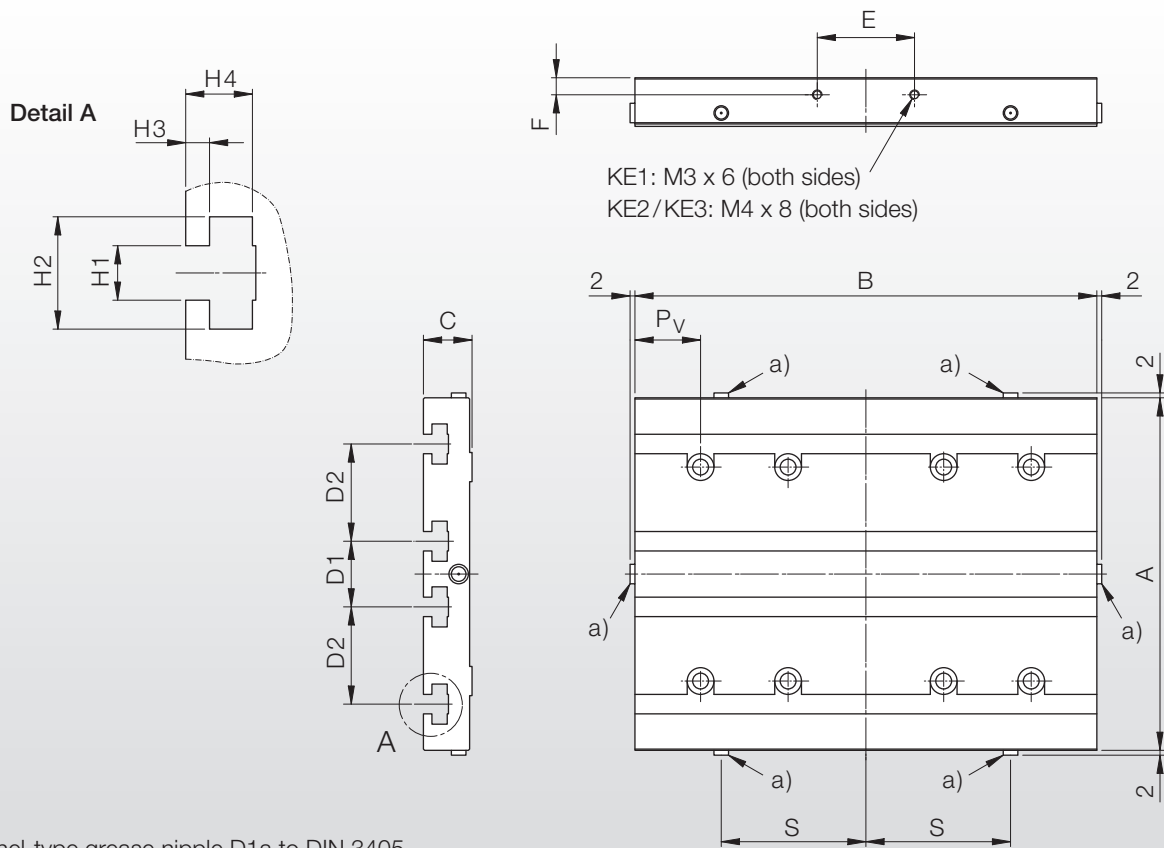


COMPACT UNITS



Connecting plates for KE with 2 carriages

Dimensions



a) funnel-type grease nipple D1a to DIN 3405

Nominal size	Dimensions [mm]													Weight [kg]	Art. No.
	A	B	C	D1	D2	E	F	H1	H2	H3	H4	P _v	S		
KE1.4...	90	125	16	20	20	30	8.5	6	12.0	3.5	7.7	16.5	25.7	0.385	KE1.4 plate
KE2.4...	110	155	16	20	20	40	7	6	12.0	3.5	7.7	20	35.0	0.565	KE2.4,plate
KE3.4...	145	190	20	27	40	40	7	8	16.5	3.5	9.8	27	59.5	1.100	KE3.4,plate



COMPACT UNITS

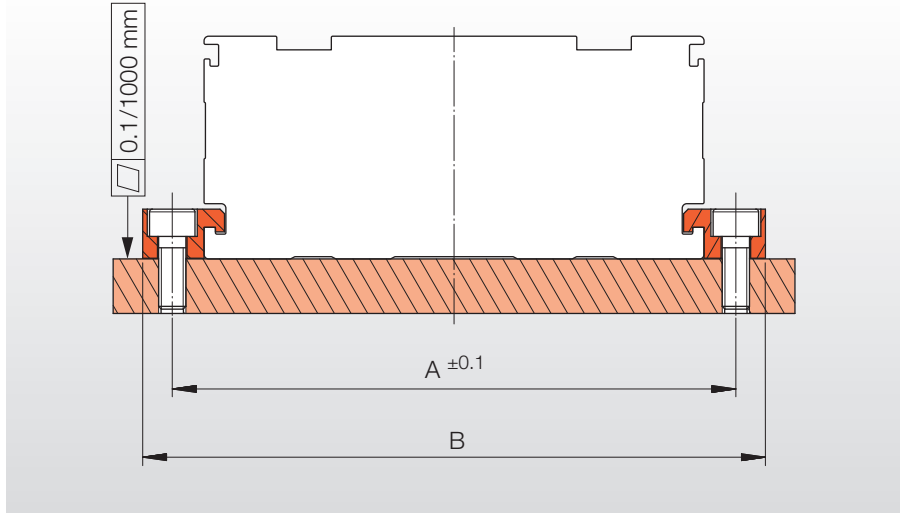
Attachment accessories; clamps

Mounting options

The compact modules are secured with clamps.

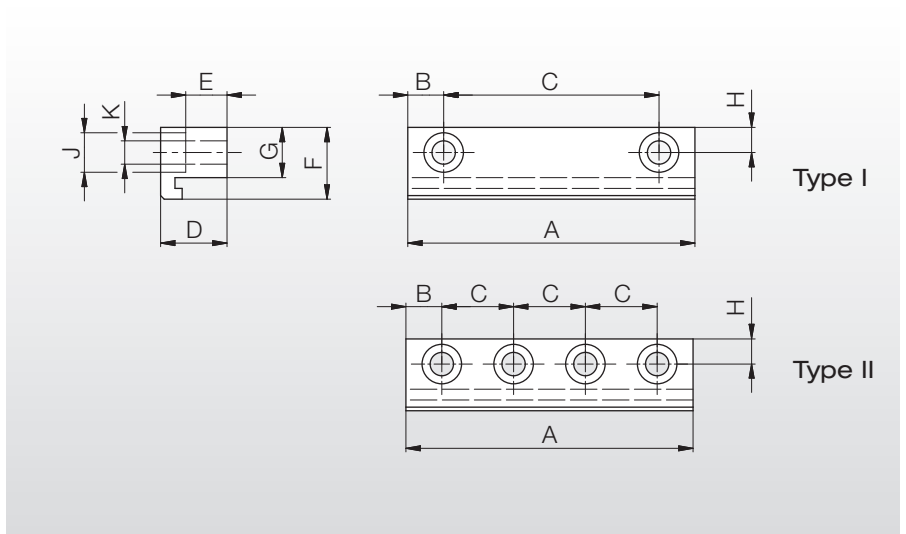
Caution: Mounting and supporting the compact units only at the base body, not at the endplates.

Nominal size	Dimensions [mm]	
	A	B
KE1...	102	112
KE2...	126	140
KE3...	161	175



Clamps

Recommended number of clamps:
4 per metre and side.



Nominal size	Dimensions [mm]											Weight [kg]	Art. No.	
	Type	A	B	C	D	E	F	G*	H	J	K			
KE1...	I	35	7.5	20									0.021	P-54434/1
	II	80	10	20	7.6	2.6	14.5	11	5	∅8	∅4.5		0.048	P-54435/1
KE2/3...	I	60		40									0.072	P-54179/1
	II	80	10	20	10.5	4.5	19.5	15	7	∅11	∅6.5		0.118	P-54181/1

KE



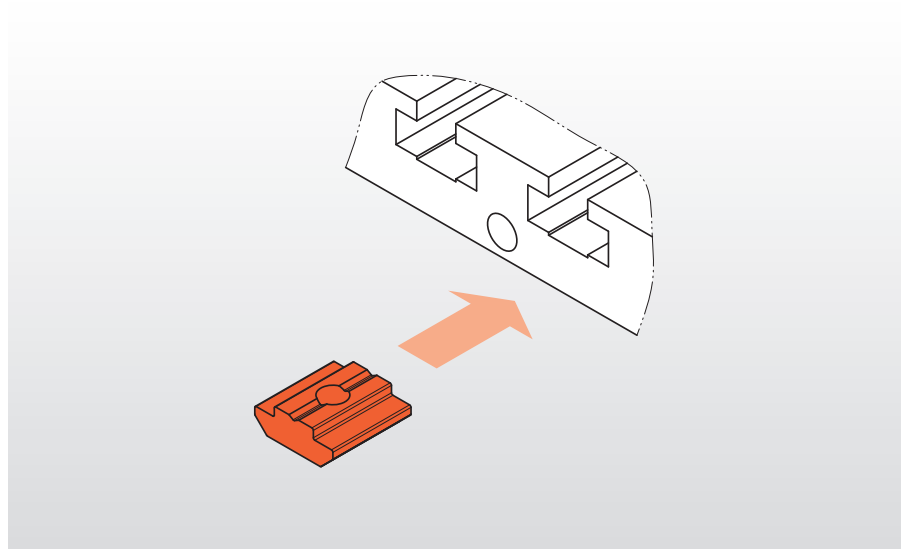
COMPACT UNITS



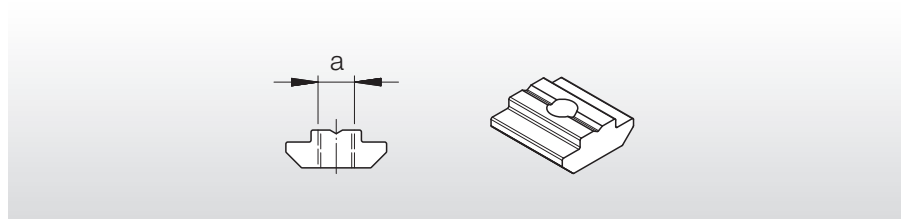
Attachment accessories; sliding blocks for connector plates

Sliding blocks

Sliding blocks with the corresponding groove width can be used to mount add-on parts on the connector plates (KE...V...).



Sliding block types NS6 and NS8 can be used in line with the groove width (see connector plates, pages 136 and 137). Sliding blocks are available from LINE TECH. Size, material and connection thread as per the following order system (e.g. NS6 St M5-KE) must be defined as the order number. The available types are listed opposite.



Dimensions [mm]		Material
Groove width	a (thread)	
6 (KE1 / KE2)	M4 / M5 / M6	Steel / Inox
8 (KE3)	M4 / M5 / M6 / M8	Steel / Inox

Order designation for sliding blocks

Examples: NS6 St M5-KE

NS	6	St	M5	-KE	
Sliding block NS				for compact units KE	
Groove width				Thread size (dim. "a")	
6				M4 / M5	
8				M6 / M8	
				Material	
				St = steel	
				Inox = inox	

KE



COMPACT UNITS

Cross table mountings

Cross tables

LINE TECH compact modules are also available as double-axis units (cross tables). A total of four mounting types are possible. The designation system opposite applies.

Mounting layout AC and AD cross tables are fitted using clamps. The lower unit must always be a version with two carriages and connector plate (KE...4...V...). For mounting layouts BC and BD, a special intermediate plate is fitted to the top units in addition. The individual compact units must be ordered separately.

Accuracy

Standard accuracy for cross table mountings is 0.1 mm/300 mm stroke. Greater accuracy on request.

Designation system

KM . KE3 / KE2 . AC

Cross table mounting

Abbreviation for lower axis

KE1 / KE2 / KE3 (Caution: version KE...4...V... is required)

Abbreviation for upper axis

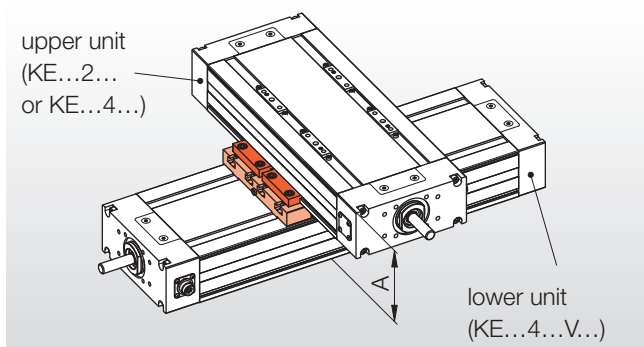
KE1 / KE2 / KE3

Mounting type

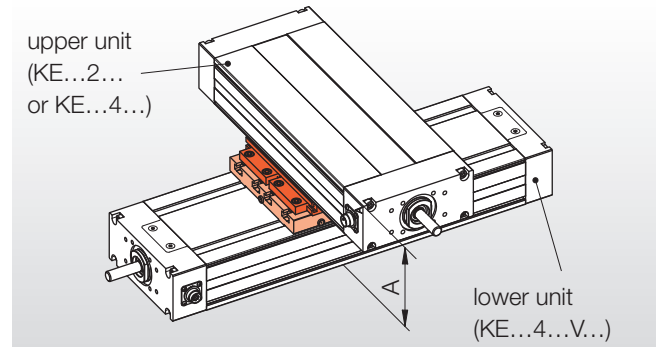
AC / AD / BC / BD

Dimension A [mm]	upper unit					
	KE1...		KE2...		KE3...	
Mounting type	A..	B..	A..	B..	A..	B..
KE1.4...V...	96	112	not possible			
KE2.4...V...	106	122	116	132	not possible	
KE3.4...V...	on request		135	151	150	169

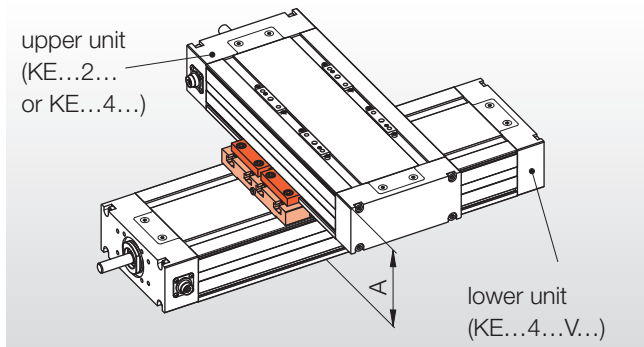
Mounting layout AC



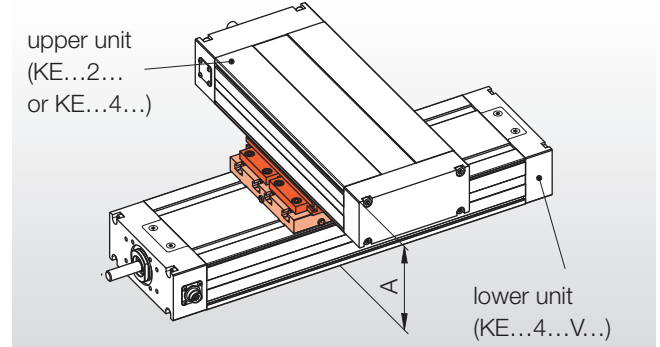
Mounting layout BC



Mounting layout AD



Mounting layout BD

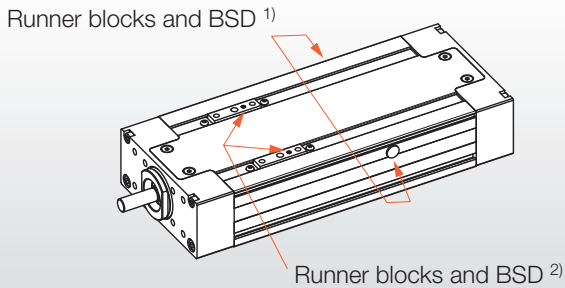


COMPACT UNITS

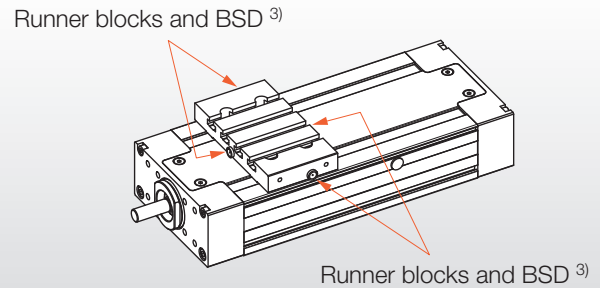


Grease points

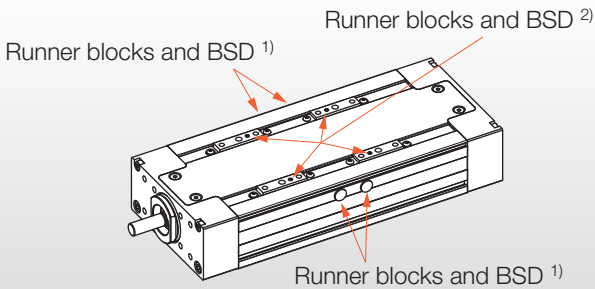
KE...2...N...



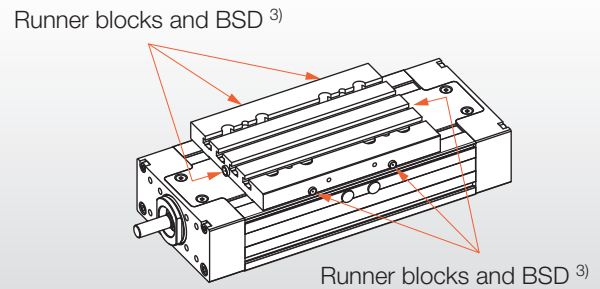
KE...2...V...



KE...4...N...



KE...4...V...



Grease points

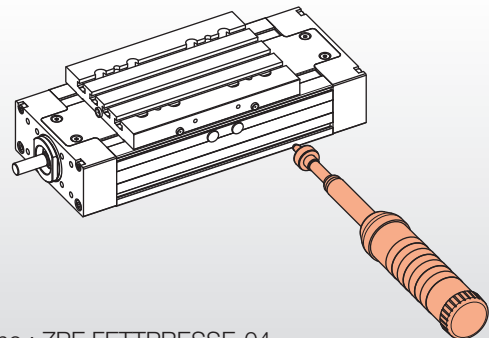
Different lubricating nipples are on the compact units:

- 1) Lubrication nipples to DIN 3405; the cover caps must be removed for lubrication. The lubrication positions are as in the table below.
- 2) The connection is as per the interface for customer add-on, page 142; the lubrication positions are not dependent on stroke.
- 3) Lubrication nipples to DIN 3405; the lubrication positions are not dependent on stroke.

Standard grease

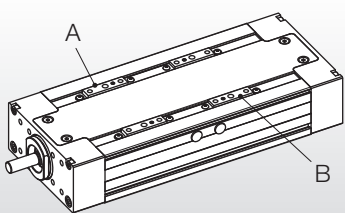
LINE TECH recommends the following grease for lubrication:
Microlube GBU Y 131

Grease gun



Art. no.: ZPE.FETTPRESSE-04

Carriage position for lubrication by the base profile



Stroke position [mm]	KE type					
	KE1.2...	KE1.4...	KE2.2...	KE2.4...	KE3.2...	KE3.4...
A: first carriage	Stroke / 2	Stroke / 2	Stroke / 2	Stroke / 2	Stroke / 2	Stroke / 2
B: second carriage	—	Stroke / 2	—	Stroke / 2	—	Stroke / 2 – 10



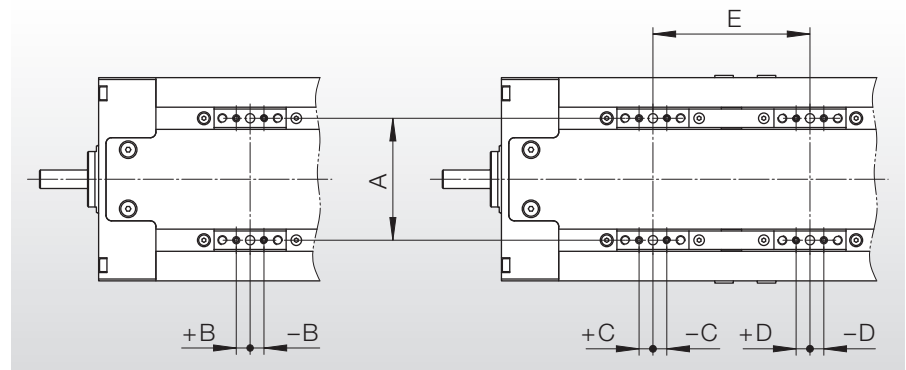
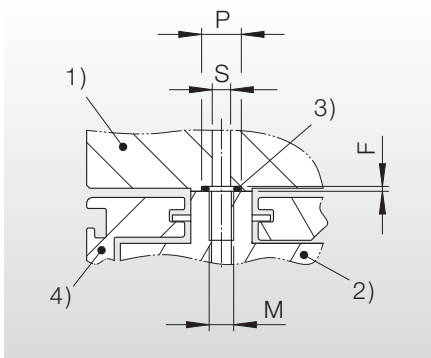
COMPACT UNITS

Lubrication points for customer add-on

Interfaces for lubrication connectors for customer add-on

The lubrication connectors in the carriages are sealed as standard by a grub screw. To use these lubrication points,

the grub screws at the relevant positions must be removed.

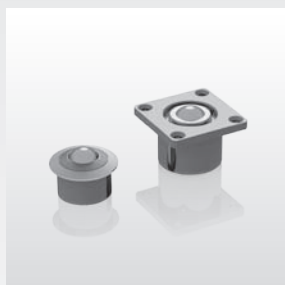
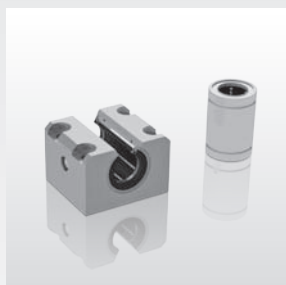
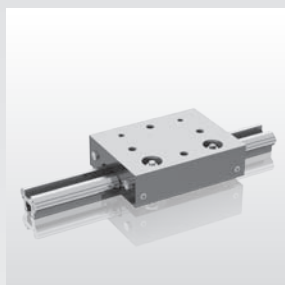
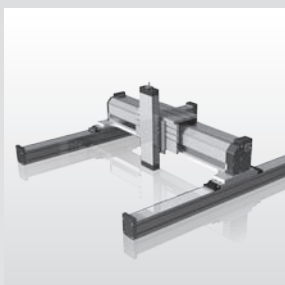
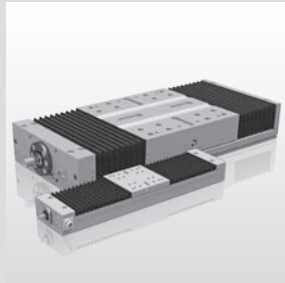


- 1) Mounting by customer
- 2) Carriage
- 3) O-Ring
- 4) Base profile

Dimensions [mm]

Size	A	B	C	D	E	F	M	P	S	O-ring
KE1	54	-6.8	-6.8	6.8	65	0.8	M3	ø6.5	ø3	ø4x1
KE2	66	-7.5	-7.5	7.5	85	0.8	M4	ø6.5	ø3	ø4x1
KE3	88	11.5	11.5	-11.5	100	0.8	M5	ø6.5	ø3	ø4x1





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