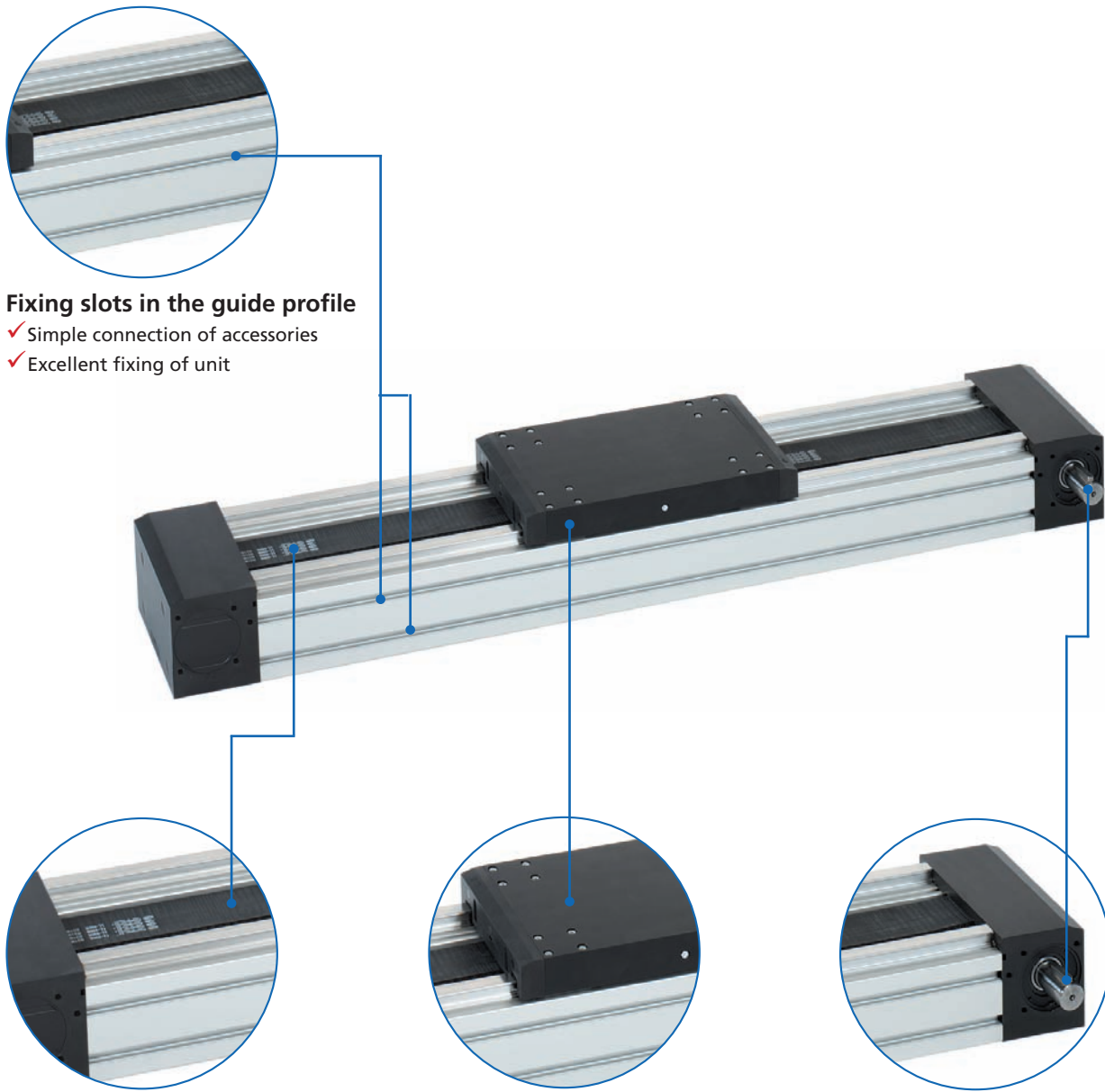


Ball rail actuator/guide - MultiLine / R

Compact ball rail actuator for high loads



Fixing slots in the guide profile

- ✓ Simple connection of accessories
- ✓ Excellent fixing of unit

Wide timing-belt (60 mm)

- ✓ Supports high axial forces

Carriage with ball rail guide

- ✓ Exact and precise running
- ✓ Supports high forces and moments

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

MultiLine / R - Table of contents

Properties/Technical data		<ul style="list-style-type: none"> ■ General information/operating conditions... 452 ■ Load data..... 453
<p>Versions (Dimensions, order numbers)</p> 		<ul style="list-style-type: none"> ■ MultiLine R guide unit..... 454 - 455 ■ MultiLine timing-belt unit..... 456 - 457
Accessories	Fixing	<ul style="list-style-type: none"> ■ Slot stones 458
	Drive	<ul style="list-style-type: none"> ■ Transmission unit..... 459 ■ Motor adaptor/couplings 460 - 461
	Position determination	<ul style="list-style-type: none"> ■ Limit switches 462

MultiLine – Technical data

General information/operating conditions

Design	Aluminium profile, timing-belt drive
Guidance system	2 parallel ball rails, external
Installation position	Any position
Repeatability	± 0.05 mm
Ambient temperature	0°C to +60°C
Protection class	IP 20

Type	Toothed belt	Pitch/width	Eff. diam. of pulley [mm]	Max. input torque [Nm]	Max. speed [m/s]	Max. acceleration [m/s ²]
MultiLine	GT 8MR	8/60	68.75	on request	5	50

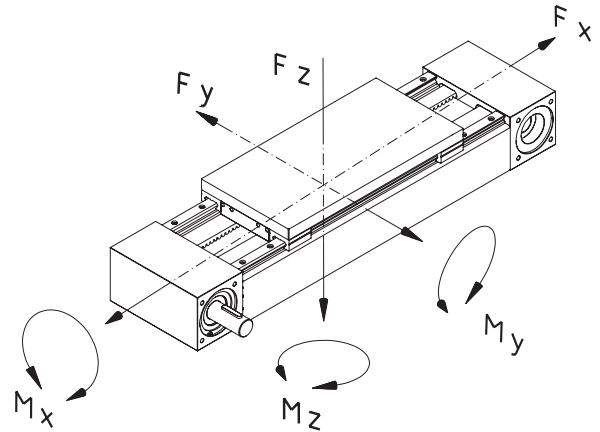
No-load torque

[Nm]

Type	Ball rail system
MultiLine	2.00

MultiLine / R - Technical data
Load data*

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



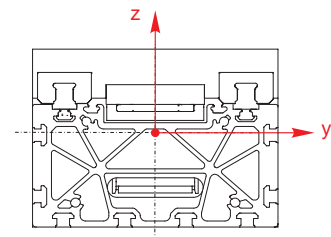
* With reference to carriage (static values, guide element resting on full surface)

Type	F _x	F _y	F _z	M _x	M _y	M _z
MultiLine (guide)						
MultiLine R	–	10000	10000	720	900	900
MultiLine linear unit						
MultiLine	4700	10000	10000	720	900	900

Geometric moment of inertia

Type	I _y	I _z
MultiLine	630.85	2643.85

[cm⁴]



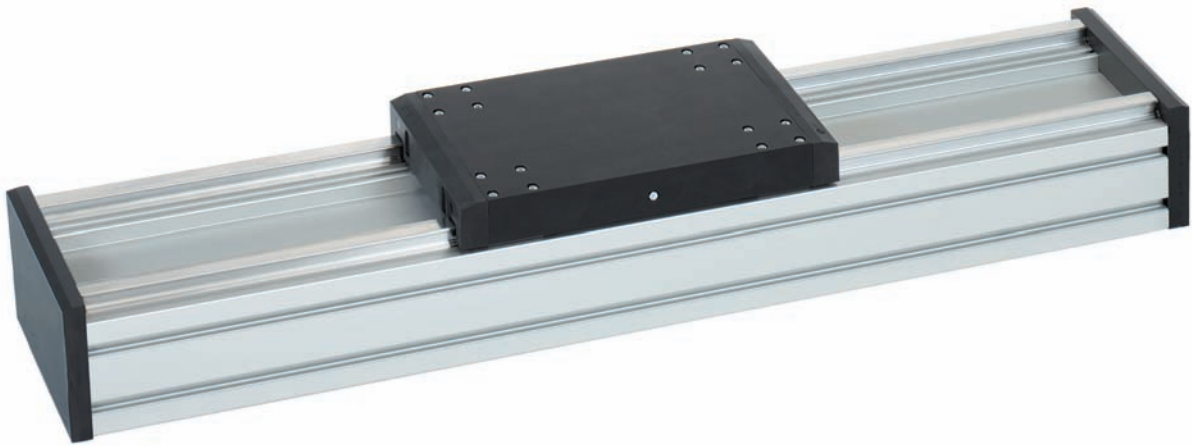
MultiLine R - Versions

Order information:

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

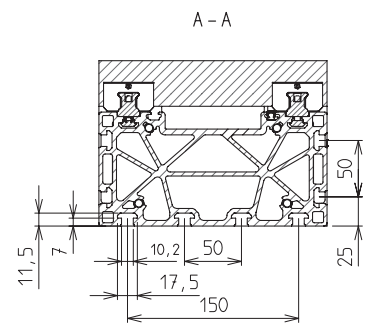
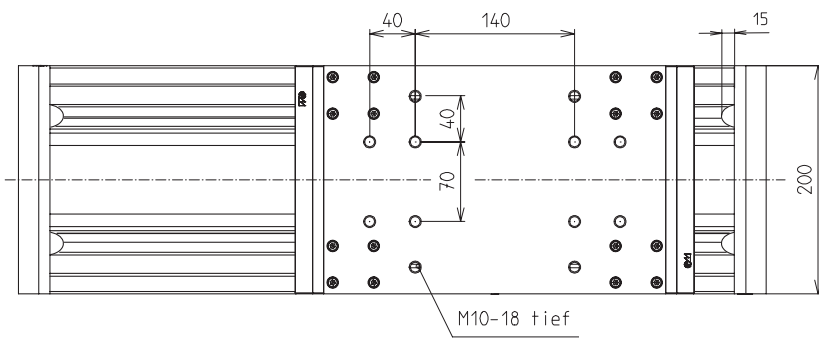
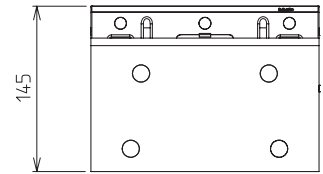
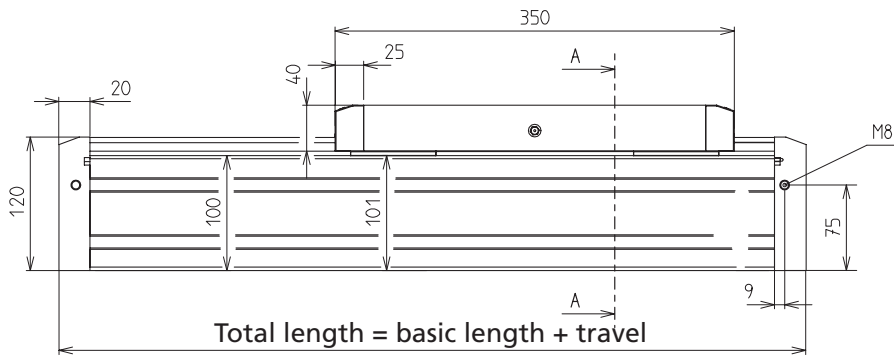
Version

■ 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



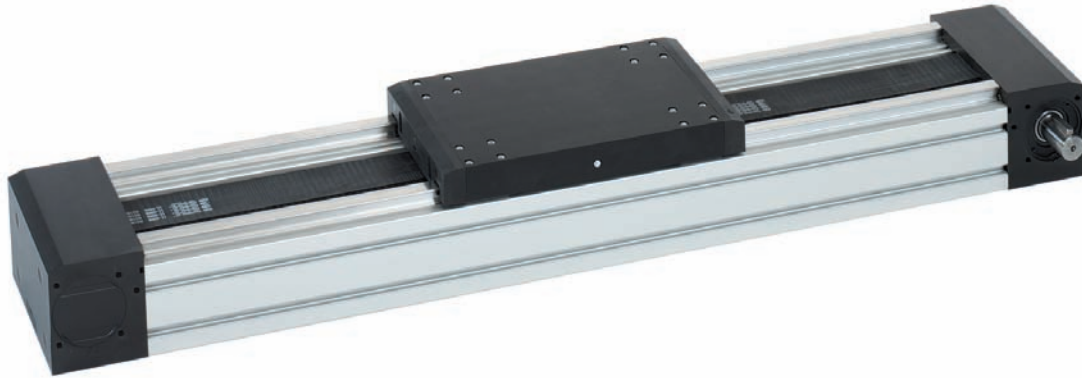
MultiLine - Versions

Order information:

- Longer travel lengths on request
- Second non driven or extended carriage available on request

Version

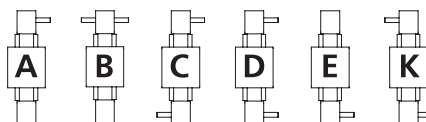
■ Timing-belt unit

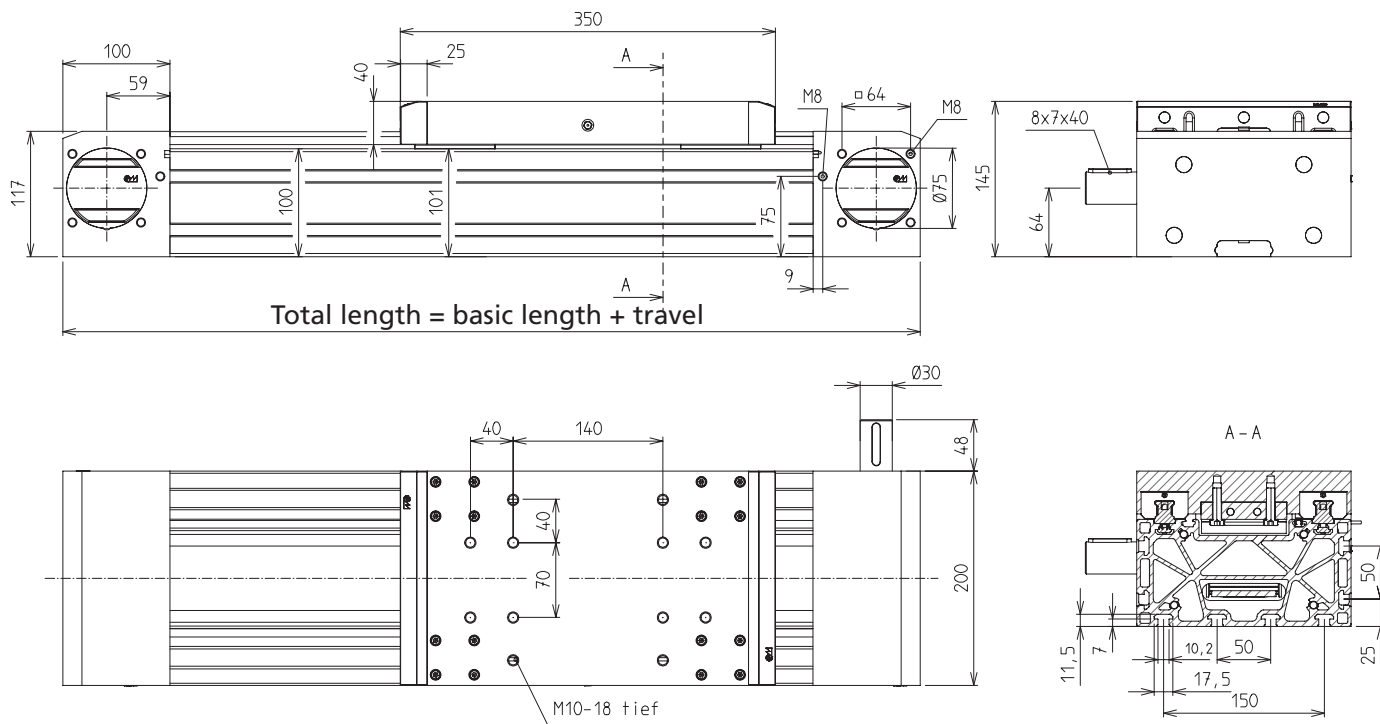


[mm]

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

Configuration of drive shaft





MultiLine – Fixing/Drive

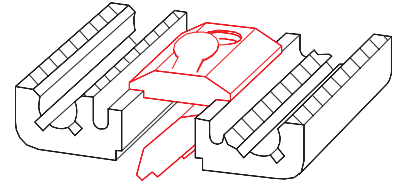
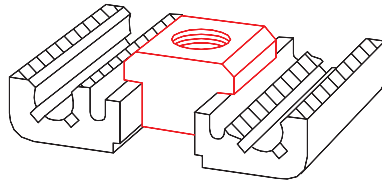
Slot stones

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

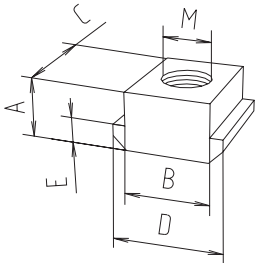
Material: galvanised steel

Slot stone -N-
can be slid into the slot

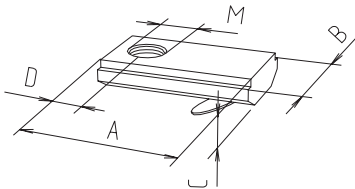
Slot stone -K-
can be swivelled into the slot



Slot stone -N-



Slot stone -K-



[mm]

Code No.	Version	A	B	C	D	E	M	F [N]
Slot stone -N-								
4026207	M5	8	10	13	15	4	M5	4000
4026203	M6	8	10	13	15	4	M6	9000
4026206	M8	8	10	13	15	4	M8	9000
Slot stone -K-								
4016212	M6	21	14	4	7	M6	5000	5000
4016213	M8	21	14	4	7	M8	8000	8000

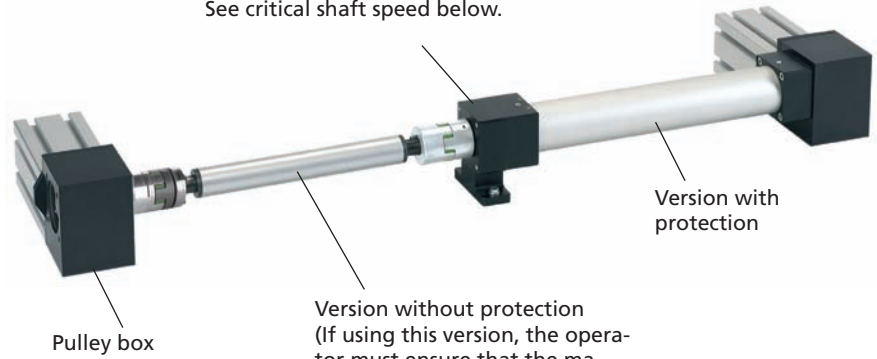
Transmission unit

- Transmission of high torques up to 120 Nm on parallel linear units
- Synchronisation of carriages via zero point alignment

Synchronous version



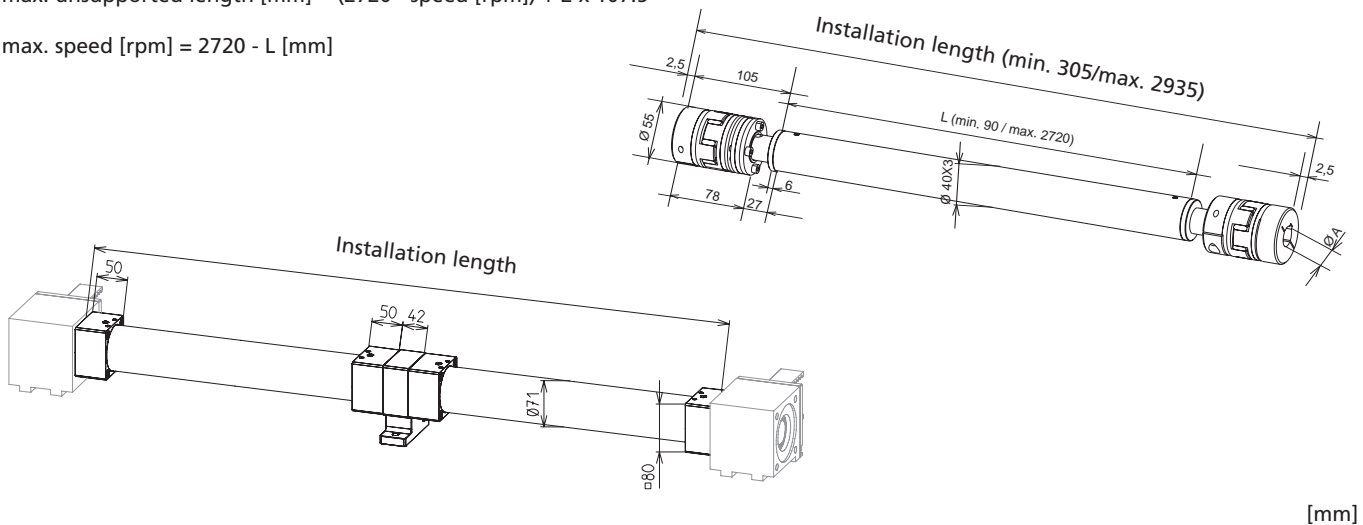
For higher speed and length a pedestal bearing support might be necessary. See critical shaft speed below.



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 [g]		
				1000 mm	/100 mm	Pedestal bearing support
9252052 _ _ _ _	Without protection	MultiLine	30	5.23	230	1700
9252152	With protection	MultiLine	30	8.56	400	1700

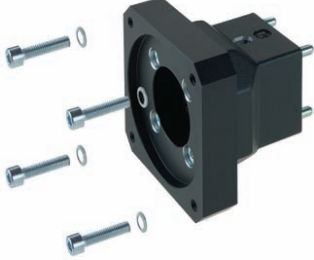
- Installation length [mm]
- Standard:**
 - 0 = without pedestal bearing support
 - 1 = with pedestal bearing support
- Synchronous:**
 - 2 = without pedestal bearing support
 - 3 = with pedestal bearing support

MultiLine – Drive

Selection table Motor adaptor/coupling

- Simple assembly
- Exact fit due to centering shoulders

Material: Aluminium, black anodised



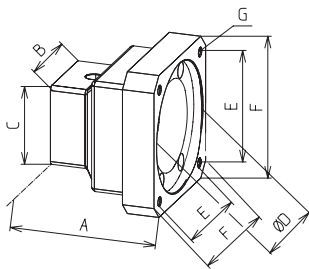
Type	Servomotor								Three-phase motor	
	RK-AC 112	RK-AC 118	RK-AC 240		RK-AC 260	RK-AC 345	RK-AC 210/470		90/120 W	180/250 W
		Gear unit		Gear unit	Gear unit	Gear unit		Gear unit		
MultiLine	949446	949961	949962	949963	949447	949448	949964	949965	949968	949969
	912855 1430	912855 1630	912855 1430	912855 2030	912855 2030	912855 2530	912855 1930	912855 2530	912855 1230	912855 1425

Code No. Motor adaptor:
949961

Code No. Coupling with specification of shaft diameter
1st end = 16 mm
2nd end = 30 mm:
912855 1630

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

Motor adaptor

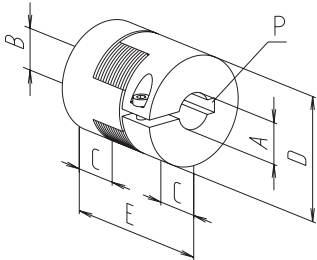


Code No.	A	B	C	D	E	F	G
949446	112	80	80	40	53	70	Ø 5.5
949961	99	80	80	60	53	70	M5
949962	99	80	80	80	70.7	90	M6
949963	112.5	80	80	80	70.7	90	M6
949447	106	80	80	60	70.7	90	Ø 6.6
949448	120	80	80	80	91.9	115	Ø 9
949964	106	80	80	95	81.3	115	M8
949965	123	80	80	110	91.9	115	M8
949968	99	80	80	57	46	80	M5
949969	99	80	80	80	100	Ø 120	Ø 6.6

Coupling

- Shaft connection without backlash
- Easy plug-in assembly

Material: Aluminium hub, polyurethane gear ring



[mm]

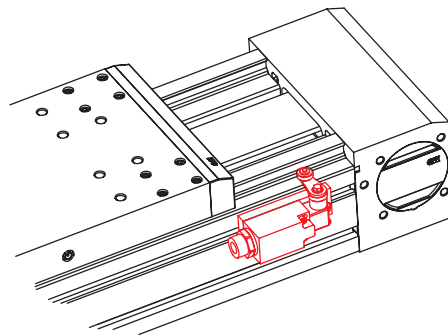
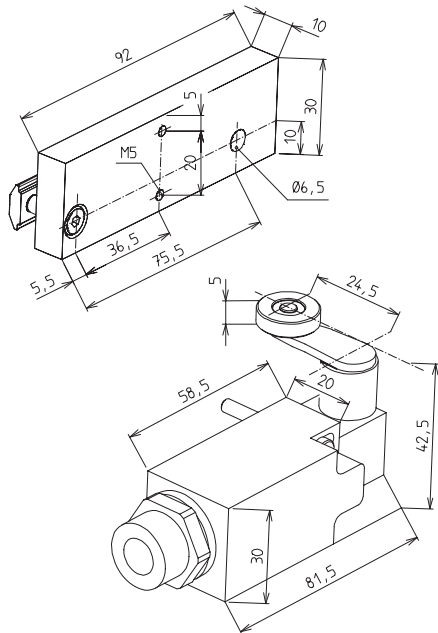
Code No.	Ø A	Ø B	C	D	E	P	Torque [Nm]	
							with feather key	without feather key
9128559530	9.5	30	30	55	78	-8 x 7	60	35
9128551230	12	30	30	55	78	4 x 4/8 x 7	60	35
9128551430	14	30	30	55	78	5 x 5/8 x 7	60	35
9128551630	16	30	30	55	78	5 x 5/8 x 7	60	35
9128551930	19	30	30	55	78	6 x 6/8 x 7	60	35
9128552030	20	30	30	55	78	6 x 6/8 x 7	60	35
9128552530	25	30	30	55	78	8 x 7/8 x 7	60	35

MultiLine – Position determination

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]

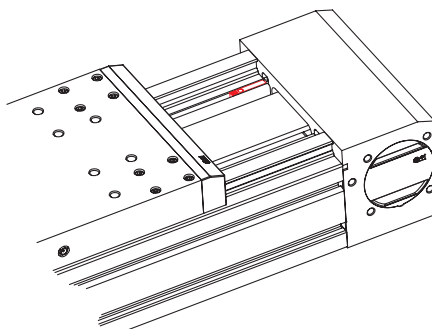
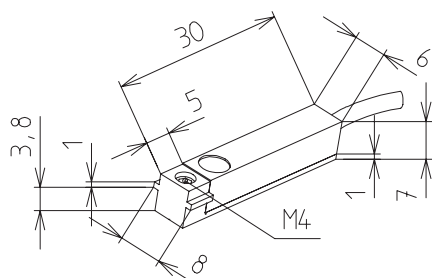
Max. voltage	230 V AC
Max. switching current	4 A
Max. starting current	10 A
Operating cycles	Max. 5,000/h
Mechanical lifetime	20 x 10 ⁶ switching cycles
Axis lever adjustment	locking by 360°
Protection class	IP 67
Ambient temperature	-30°C to +80°C

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



Parallel adjustment of a vapour deposition plant