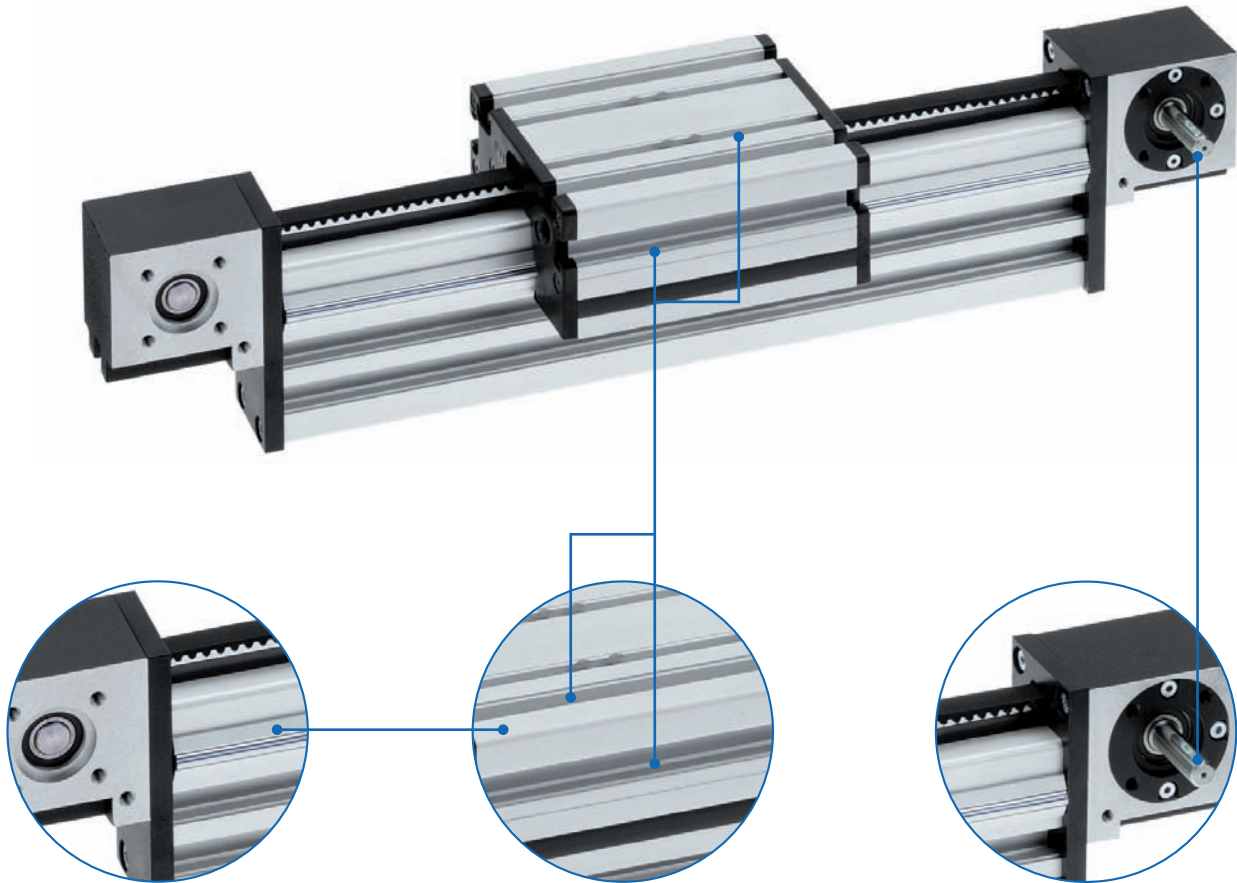


# Roller guide actuator/guides - SQ /SQZ

Timing-belt unit with optimum connecting options due to slots in guide profile/carriage



## Fixing slots

- ✓ Easy fixing of linear actuator
- ✓ Simple connection of accessories

## Configuration of drive shaft

- ✓ Either at one end or both

## Features:

- Sizes 30, 40, 40 x 80, 60, 60 x 120, 80 and 80 x 160 mm
- Guide profile made from the BLOCAN® modular profile system
- Extruded carriage with fixing slots

- Spring-mounted wiper system
- Roller cover

## Options:

- Longer stroke lengths
- Second non driven carriage
- Extended carriage

**SQ/SQZ - Table of contents**

<b>Properties/Technical data</b>		<ul style="list-style-type: none"> <li>■ General information/operating conditions... 418</li> <li>■ Load data..... 419</li> </ul>
<b>Versions</b> (Dimensions, order numbers)		<ul style="list-style-type: none"> <li>■ SQ guide unit ..... 420 - 421</li> </ul>
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<b>Accessories</b>	<b>Fixing</b>	<ul style="list-style-type: none"> <li>■ Slot stones ..... 424</li> </ul>
	<b>Drive</b>	<ul style="list-style-type: none"> <li>■ Connecting/transmission unit..... 426 - 427</li> <li>■ Motor adaptor/couplings ..... 428 - 430</li> </ul>
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## General information/operating conditions

Design	Profile, aluminium, timing-belt drive
Guide	Roller, external
Installation position	Any position
Repeatability	0.05 mm
Ambient temperature	0°C to +60°C
Protection class	IP 20

Type	Timing-belt	Pitch/ width	Eff. diam. of lock washer [mm]	Max. input torque [Nm]	Max. speed [m/s]	Max. acceleration [m/s]
SQZ 30	GT 5MR	5/8	23.87	5	5	20
SQZ 40	GT 5MR	5/11	27.06	8.5		
SQZ 40 x 80	GT 5MR	5/11	27.06	8.5		
SQZ 60	GT 5MR	5/25	44.56	on request	10	
SQZ 60 x 120	GT 5MR	5/25	44.56	on request		
SQZ 80	GT 8MR	8/40	61.12	90		
SQZ 80 x 160	GT 8MR	8/28	61.12	55		

## No-load torques

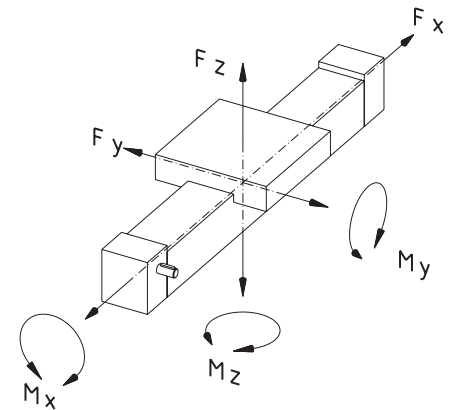
[Nm]

Type	SQZ
30	0.30
40	0.35
60	0.80
80	1.00



**Load data\***

- F Force [N]
- M Moment [Nm]
- I Geometric moment of inertia [cm<sup>4</sup>]



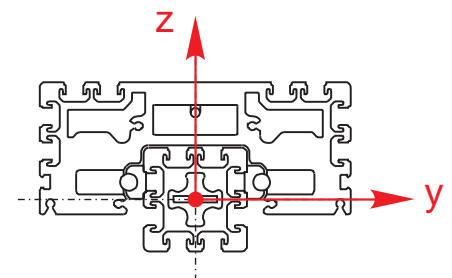
\* With reference to carriage (static values, guide element resting on full surface)

	F <sub>x</sub>	F <sub>y</sub>	F <sub>z</sub>	M <sub>x</sub>	M <sub>y</sub>	M <sub>z</sub>
<b>SQ (guides)</b>						
SQ 30	–	790	790	14	20	22
SQ 40	–	1020	1020	23	33	33
SQ 40 x 80	–	1020	1020	23	33	33
SQ 60	–	2550	2550	99	143	143
SQ 60 x 120	–	2550	2550	99	143	143
SQ 80 x 40	–	2550	2550	124	168	169
SQ 80	–	2550	2550	124	168	169
SQ 80 x 160	–	2550	2550	124	168	169
<b>SQZ linear unit</b>						
SQZ 30	160	790	790	14	20	22
SQZ 40	230	1020	1020	23	33	33
SQZ 40 x 80	230	1020	1020	23	33	33
SQZ 60	800	2550	2550	99	143	143
SQZ 60 x 120	800	2550	2550	99	143	143
SQZ 80	2810	2550	2550	124	168	169
SQZ80 x 160	1900	2550	2550	124	168	169

**Geometric moment of inertia**

[cm<sup>4</sup>]

Type	I <sub>y</sub>	I <sub>z</sub>
30	3.4	3.4
40	11.3	11.3
40 x 80	19.4	76.0
60	51.2	51.2
60 x 120	94.7	372.3
80 x 40	76.0	19.4
80	155.3	155.3
80 x 160	292.4	1090.0



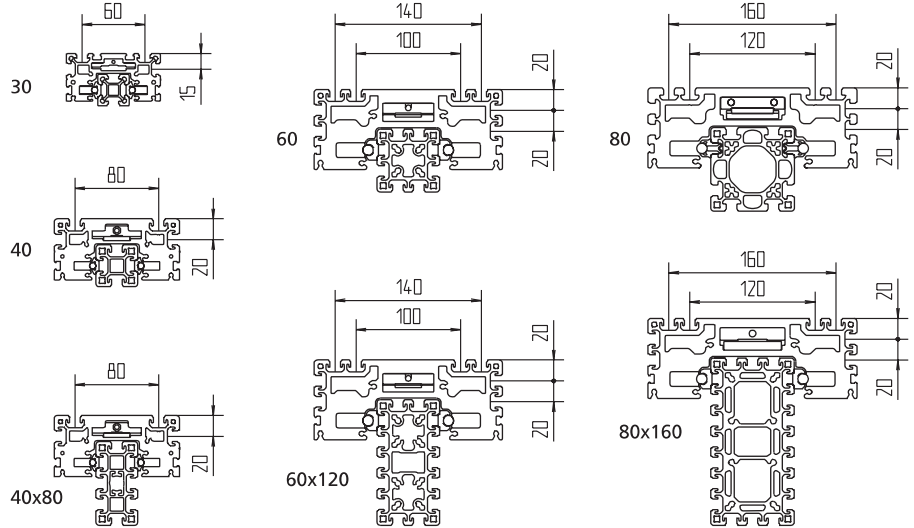
# SQ - Versions

## Order information:

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

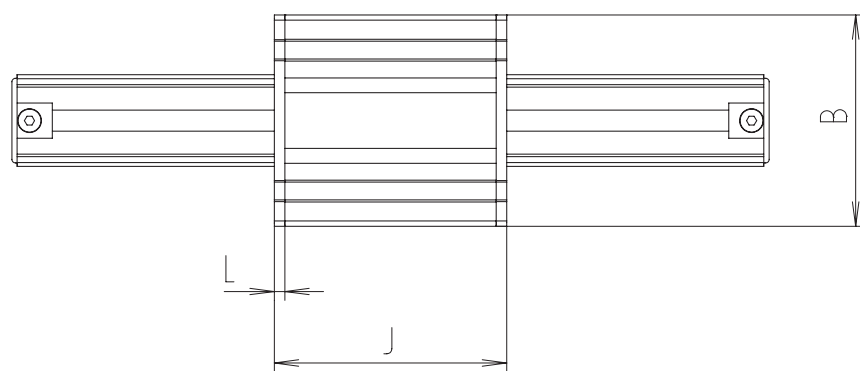
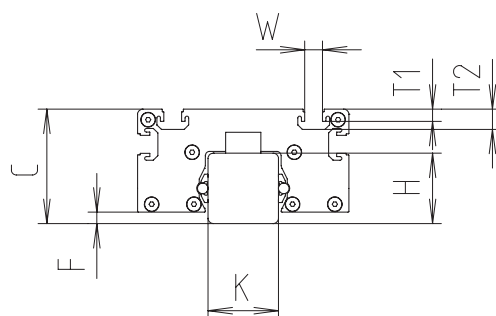
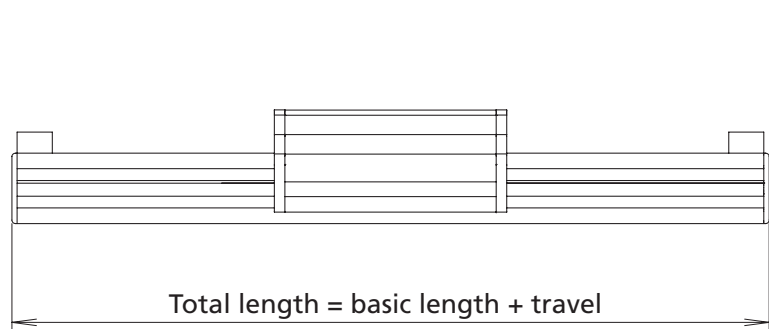
## Version

## ■ Guide



Code No.	Type	Basic length	B	C	F	H	J	O
MDA3030AA	SQ 30	148	90	50	4.5	30	102	30
MDA4040AA	SQ 40	178	120	65	6.5	40	132	40
MDA4080AA	SQ 40 x 80	178	120	105	46.5	80	132	40
MDA6060AA	SQ 60	240	180	98	21.5	60	192	60
MDA6012AA	SQ 60 x 120	236	180	158	81.5	120	192	60
MDA8040AA	SQ 80 x 40	260	200	78	1.5	40	212	80
MRA8080AA	SQ 80	260	200	118	41.5	80	212	80
MDA8016AA	SQ 80 x 160	256	200	198	121.5	160	212	80

----- 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	5850	1.3	0.15
6	11.5	7	10.1	5820	2.1	0.22
6	11.5	7	10.1	5820	2.4	0.39
6	11.5	7	10.1	5760	5.6	0.50
6	11.5	7	10.1	5760	7.7	0.90
6	11.5	7	10.1	5740	6.9	0.57
6	11.5	7	10.1	5740	7.3	0.77
6	11.5	7	10.1	5740	8.9	1.39

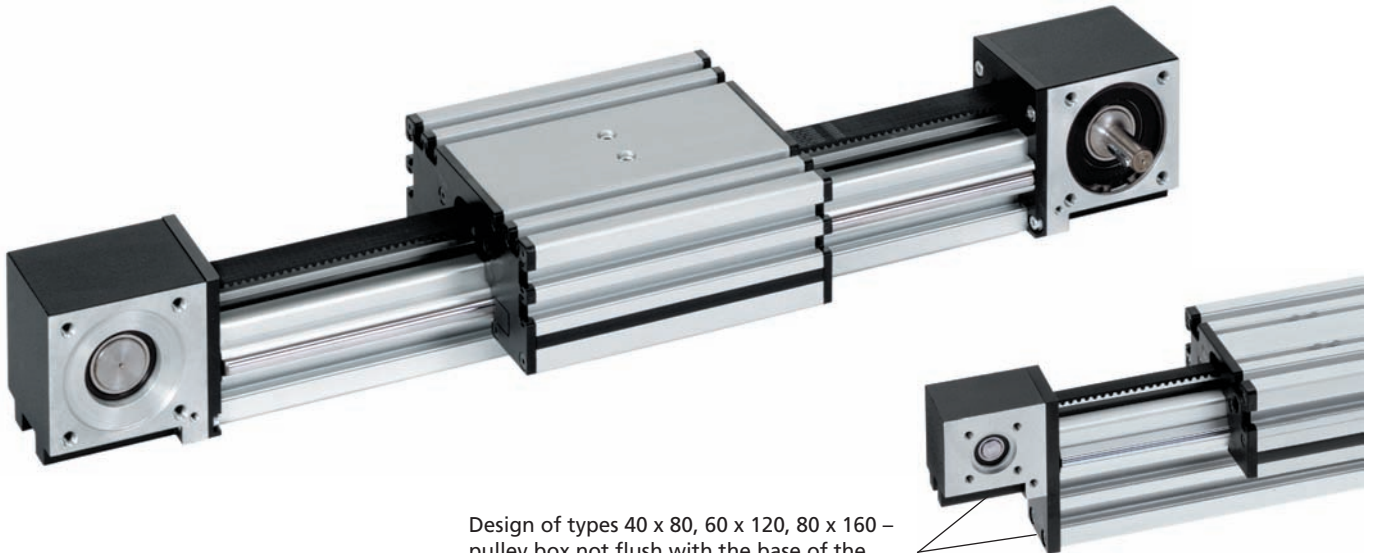
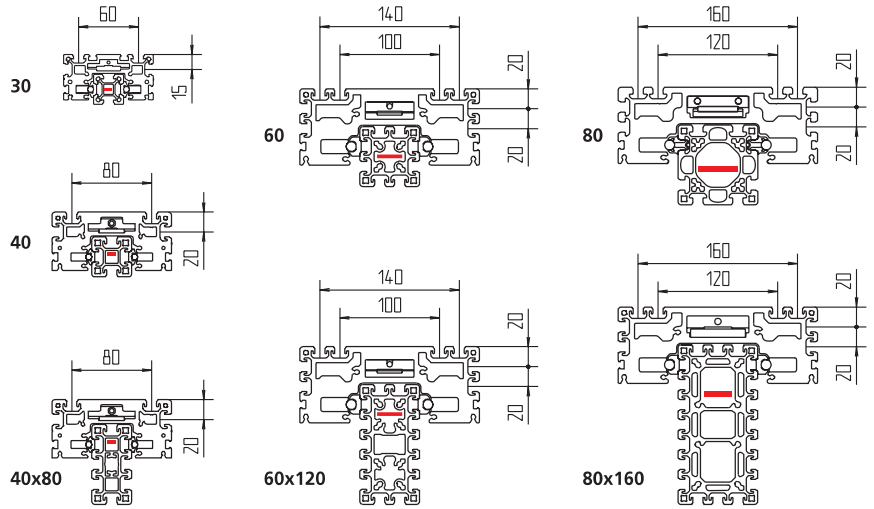
# SQZ - Versions

## Order information:

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

## Version

## ■ Timing-belt unit

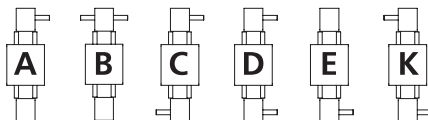


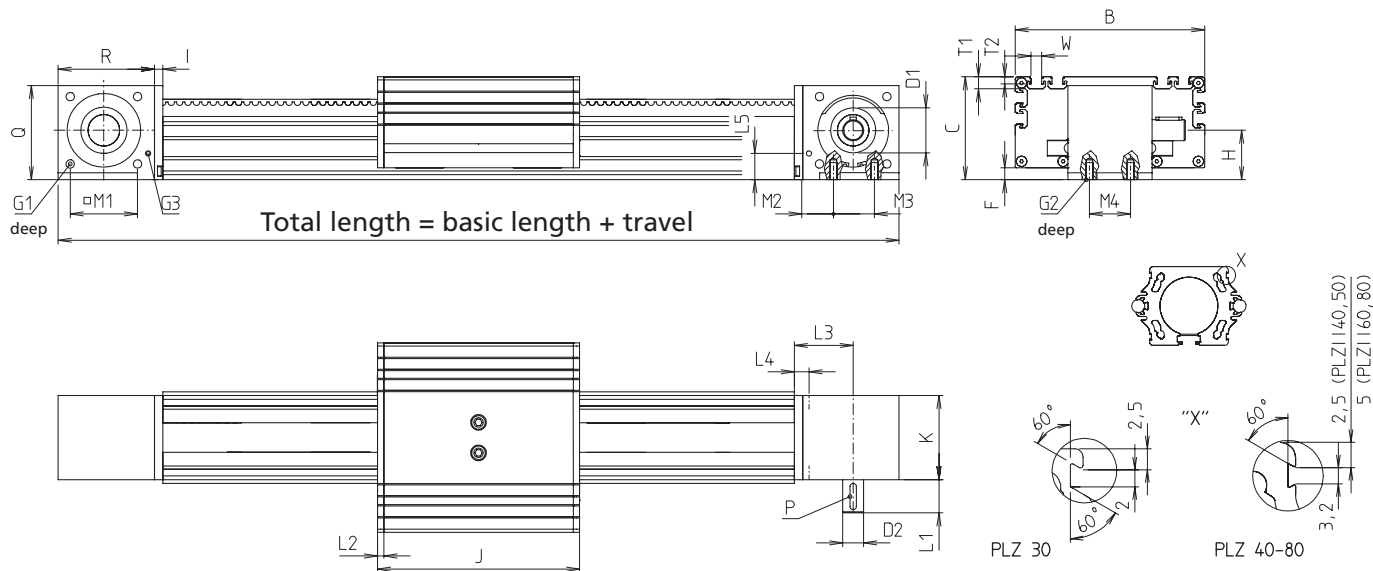
Design of types 40 x 80, 60 x 120, 80 x 160 – pulley box not flush with the base of the guide profile

Code No.	Type	Timing-belt	Basic length	B	C	D1	D2	F	G1	G2	G3	H	I	J
FEA3030_A	SQZ 30	5M-8	220	90	50	22H7	10	4.5	M4	M5	M5	25.5	6	102
FEA4040_A	SQZ 40	5M-11	270	120	65	28H7	10	6.5	M5	M6	M5	35.1	8	132
FEA4080_A	SQZ 40 x 80	5M-11	270	120	105	28H7	10	46.5	M5	M6	M5	35.1	8	132
FEA6060_A	SQZ 60	5M-25	391	180	98	70H7	15	21.5	M8	M8	M5	52	8	192
FEA6012_A	SQZ 60 x 120	5M-25	391	180	158	70H7	15	81.5	M8	M8	M5	52	8	192
TGA8080_A	SQZ 80	8M-40	428	200	118	70H7	25	41.5	M8	M8	M5	66	10	212
FFA8016_A	SQZ 80 x 160	8M-28	428	200	198	70H7	20	121.5	M8	M8	M5	66	10	212

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

Configuration of drive shaft





[mm]

O	L1	L2	C	L4	L5	M1	M2	M3	M4	P	Q	R	T1	T2	W	Max. travel	Mass [kg]	
																	Basic length	per 100 mm travel
38	25	6	34	13	10	21	17	20	20	3 x 3 x 20	48	53	8.5	4.5	10.1	5898	1.23	0.17
48	28	6	40	16	15	29	20	20	20	3 x 3 x 20	61	61	11.5	7	10.1	5868	2.76	0.23
48	28	6	40	16	15	29	20	20	20	3 x 3 x 20	61	61	11.5	7	10.1	5868	3.09	0.41
80	31.5	6	56	16	29	64	30	40	40	5 x 5 x 25	94.5	91.5	11.5	7	10.1	5808	9.33	0.56
80	31.5	6	56	16	29	64	30	40	40	5 x 5 x 25	94.5	91.5	11.5	7	10.1	5808	10.67	0.94
100	31.5	6	63	18	29	64	35	40	40	8 x 7 x 25	109.5	98	11.5	7	10.1	5788	13.42	0.79
100	31.5	6	63	18	29	64	35	40	40	6 x 6 x 25	109.5	98	11.5	7	10.1	5788	16.08	1.40



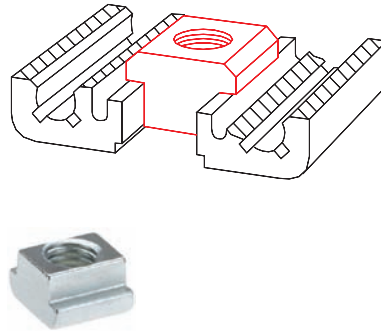
# SQ/SQZ – Fixing

## Slot stones

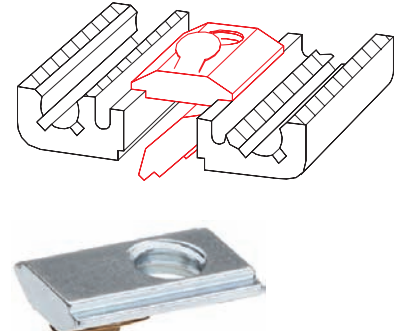
- Slot stones can be inserted and positioned at the guide profile and carriage

**Material:** Galvanised steel

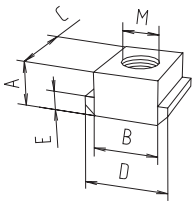
Slot stone -N- can be slid into the slot



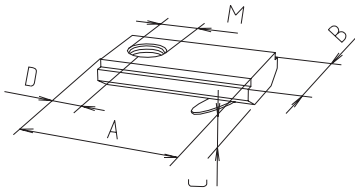
Slot stone -K- can be swivelled into the slot



### Slot stone -N-



### Slot stone -K-



[mm]

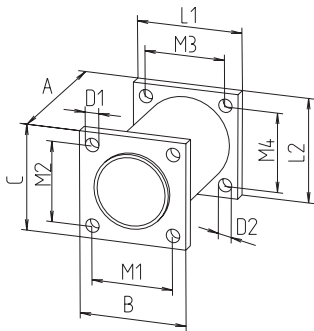
Code No.	Type	Version	A	B	C	D	E	M	F [N]
Slot stone -N-									
4006201	SQZ 30	M5	5	10	13	13	3	M5	4000
4006203	SQZ 30	M6	5	10	13	13	3	M6	4000
4006202	SQZ 30	M8	5	10	13	13	3	M8	4000
4026207	SQZ 40-80	M5	8	10	13	15	4	M5	4000
4026203	SQZ 40-80	M6	8	10	13	15	4	M6	9000
4026206	SQZ 40-80	M8	8	10	13	15	4	M8	9000
Slot stone -K-									
4006211	all	M5	21	12	4	7	M5	5000	5000
4006212	all	M6	21	12	4	7	M6	5000	5000
4006213	all	M8	21	12	4	7	M8	5000	5000
4016212	SQZ 40-80	M6	21	14	4	7	M6	5000	5000
4016213	SQZ 40-80	M8	21	14	4	7	M8	8000	8000



3-axis portal system of a machining centre

# SQZ – Drive

## Connecting adaptor 30-40



- Connecting piece between linear unit and transmission unit

**Material:**  
Aluminium, black anodised  
Fastenings, galvanised  
**Scope of delivery:**  
Adaptor with fastenings



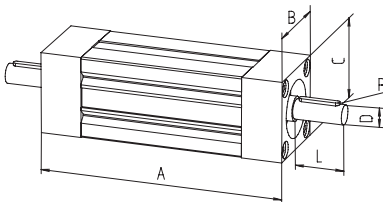
Code No.	Type	A	B	C	D1	D2	L1	L2	M1	M2	M3	M4
91305	30	62	30	30	4.3	4.3	48	30	21	21	21	21
91306	40	68	40	40	5.4	5.4	40	40	29	29	29	29

[mm]

## Connecting and transmission unit 30-40

- Transmission of torques or as connecting unit between two parallel linear units

**Material:** Aluminium, anodised



Code No.	Type	A (basic length)	B	C	D	L	P
92503	Transmission unit 30	60	30	30	8	25	2 x 2 x 20
92513	Connecting unit 30	60	30	30	–	–	–
92504	Transmission unit 40	80	40	40	10	28	3 x 3 x 20
92514	Connecting unit 40	80	40	40	–	–	–

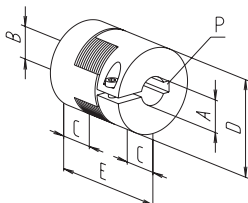
[mm]

Length [mm]

## Coupling for transmission unit 30-50

- Shaft connection without backlash
- Easy plug-in assembly

**Material:** Hub, aluminium  
Gear ring, polyurethane



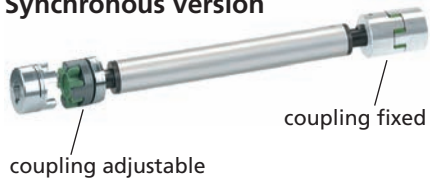
Code No.	Type	A	B	C	D	E	P	Torque [Nm]	
								with feather key	without feather key
9109200810	SQZ 30	8	10	10	20	30	2 x 2/3 x 3	5	3
9109201010	SQZ 40	10	10	10	20	30	3 x 3/3 x 3	5	3

[mm]

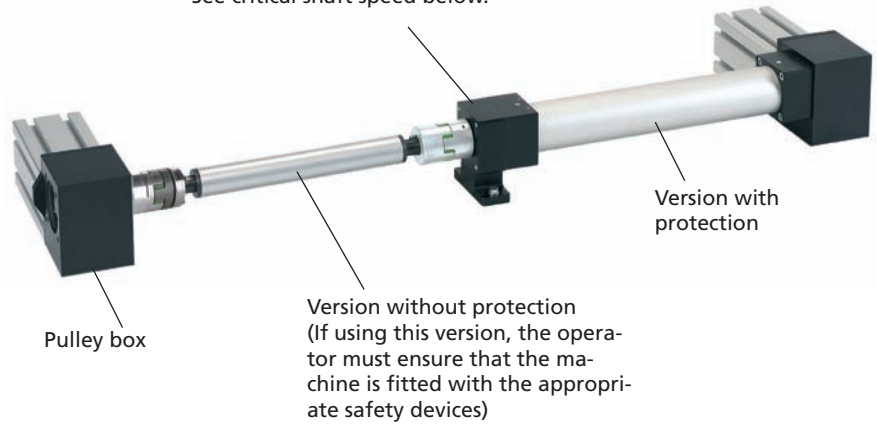
**Transmission unit 60-80**

■ Transmission of high torques up to 120 Nm on parallel linear units

■ Synchronisation of carriages via zero point alignment

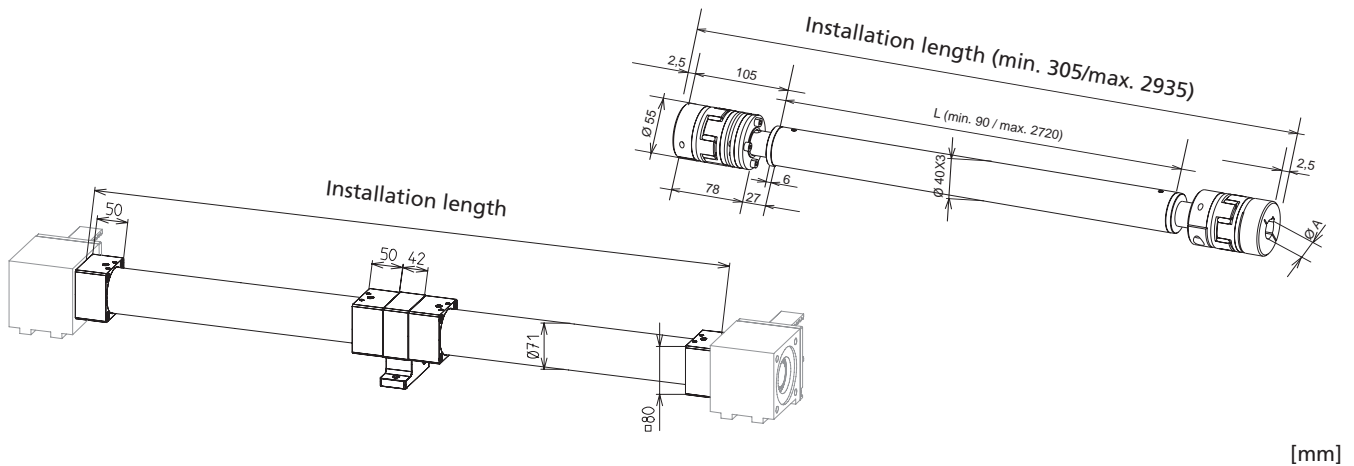
**Synchronous version**


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


**Critical shaft speed:**

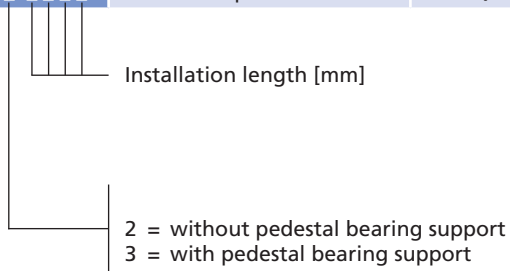
$$\text{max. unsupported length [mm]} = (2720 - \text{speed [rpm]}) + 2 \times 107.5$$

$$\text{max. speed [rpm]} = 2720 - L \text{ [mm]}$$

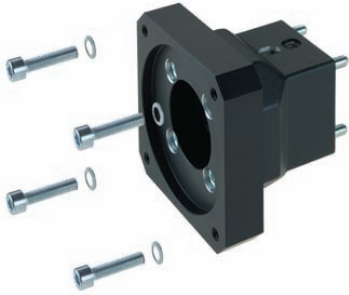


[mm]

Code No.	Version	for linear unit	A [mm]	Weight [g]		
				1000 mm	/100 mm	Pedestal bearing support
9252046 _ _ _ _	Without protection	SQZ 60	15	5.23	230	1400
9252146 _ _ _ _	With protection	SQZ 60	15	8.56	400	1400
9252048 _ _ _ _	Without protection	SQZ 80	25	5.23	230	1500
9252148 _ _ _ _	With protection	SQZ 80	25	8.56	400	1500



## Selection table - motor adaptor/coupling



Type	Servomotor									Three-phase motor	
	RK-AC 112 Gear unit	RK-AC 118 Gear unit		RK-AC 240 Gear unit		RK-AC 260 Gear unit	RK-AC 345 Gear unit	RK-AC 210/470 Gear unit		90/120 W	180/250 W
SQZ 30	–	949215	949290	–	–	–	–	–	–	94995	–
	–	911430 1011	911430 1016	–	–	–	–	–	–	910920 1012	–
SQZ 40 40 x 80	949438	949216	949291	949235	949310	949439	–	–	–	94987	94988
	911430 1014	911430 1011	911430 1016	911430 1014	911940 1020	911940 1020	–	–	–	911430 1012	911430 1014
SQZ 60 60 x 120	949440	949217	949292	949236	949311	949441	949442	949245	949319	949029	949030
	911940 1415	911430 1115	911940 1516	911940 1415	911940 1520	911940 1520	912855 1519	911430 1519	912855 1525	911940 1215	911940 1415
SQZ 80	949681	–	949682	949683	949684	949685	949686	949687	949688	949695	949697
	912855 1425	–	912855 1625	912855 1425	912855 2025	912855 2025	912855 2525	912855 1925	912855 2525	912855 1255	912855 1425
SQZ 80 x 160	949443	–	949001	949237	949312	949444	949445	949246	949320	94956	94950
	912855 1420	–	911940 1620	911940 1420	911940 2020	912855 2020	912855 2025	911940 1920	912855 2025	911940 1220	911940 1420

↓

Code No. Motor adaptor:  
**949237**

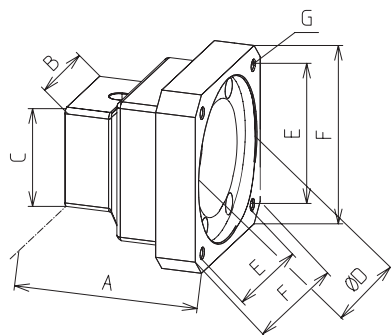
Code No. Coupling with  
specification of shaft  
diameter  
1st end = 14 mm  
2nd end = 14 mm:  
**911940 1420**

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

**Motor adaptor**

- Simple assembly
- Exact fit due to centring shoulders

**Material:**  
Aluminium, black anodised



[mm]

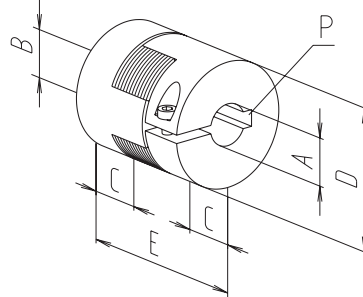
Code No.	Type	A	B	C	D	E	F	G
949215	30	63	40	40	60	53	70	M5
949290	30	70	40	40	60	53	70	M5
94995	30	65	40	40	50	46	80	M5
949438	40	75	50	50	40	53	70	Ø 5.5
949216	40	65	50	50	60	53	70	M5
949291	40	73	50	50	60	53	70	M5
949235	40	73	50	50	80	70.7	90	M6
949310	40	100	50	50	80	70.7	90	M6
949439	40	93	50	50	60	70.7	90	Ø 5.5
94987	40	73	50	50	50	46	80	M5
94988	40	73	50	50	80	100	Ø 120	Ø 6.6
949440	60, 60 x 120	84	80	80	40	53	70	Ø 5.5
949217	60, 60 x 120	67.5	80	80	60	53	70	M5
949292	60, 60 x 120	81	80	80	60	53	70	M5
949236	60, 60 x 120	79	80	80	80	70.7	90	M6
949311	60, 60 x 120	96	80	80	80	70.7	90	M6
949441	60, 60 x 120	89	80	80	60	70.7	90	Ø 5.5
949442	60, 60 x 120	114	80	80	80	91.9	115	M8
949245	60, 60 x 120	86	80	80	95	81.3	115	M8
949319	60, 60 x 120	112.5	80	80	110	91.9	115	M8
949029	60, 60 x 120	79	80	80	50	46	80	M5
949030	60, 60 x 120	79	80	80	80	100	Ø 120	Ø 6.6
949681	80	99	80	80	40	53	70	Ø 5.5
949682	80	89	80	80	80	53	70	M5
949683	80	86	80	80	80	70.7	90	M6
949684	80	102	80	80	80	70.7	90	M6
949685	80	96	80	80	60	70.7	70	Ø 6.6
949686	80	111	80	80	80	91.9	115	Ø 9
949687	80	96	80	80	95	81.3	115	M8
949688	80	112.5	80	80	110	91.9	115	M8
949695	80	86	80	80	57	46	80	M5
949697	80	86	80	80	80	100	Ø 120	Ø 6.6
949443	80 x 160	99	80	80	40	53	70	Ø 5.5
949001	80 x 160	81	80	80	60	53	70	M5
949237	80 x 160	79	80	80	80	70.7	90	M6
949312	80 x 160	96	80	80	80	70.7	90	M6
949444	80 x 160	96	80	80	60	70.7	90	Ø 6.6
949445	80 x 160	111	80	80	80	91.9	115	M8
949246	80 x 160	89	80	80	95	81.3	115	M8
949320	80 x 160	112.5	80	80	110	91.9	115	M8
94956	80 x 160	79	80	80	50	46	80	M5
94950	80 x 160	79	80	80	80	100	Ø 120	Ø 6.6

# SQZ – Drive

## 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	-/3 x 3	5	3
9109201012	10	12	10	22	30	3 x 3/4 x 4	5	3
9114309510	9.5	10	11	30	35	-/3 x 3	12	6
9114301011	10	11	11	30	35	3 x 3/4 x 4	12	6
9114301012	10	12	11	30	35	3 x 3/4 x 4	12	6
9114301014	10	14	11	30	35	3 x 3/5 x 5	12	6
9114301016	10	16	11	30	35	3 x 3/5 x 5	12	6
9114301115	11	15	11	30	35	4 x 4/5 x 5	12	6
9114301519	15	19	11	30	35	5 x 5/6 x 6	12	6
9119409515	9.5	15	25	40	65	-/5 x 5	17	10
9119401020	10	20	25	40	65	3 x 3/6 x 6	17	10
9119401215	12	15	25	40	65	4 x 4/5 x 5	17	10
9119401220	12	20	25	40	65	4 x 4/6 x 6	17	10
9119401415	14	15	25	40	65	5 x 5/5 x 5	17	10
9119401420	14	20	25	40	65	5 x 5/6 x 6	17	10
9119401516	15	16	25	40	65	5 x 5/5 x 5	17	10
9119401520	15	20	25	40	65	5 x 5/6 x 6	17	10
9119401620	16	20	25	40	65	5 x 5/6 x 6	17	10
9119401920	19	20	25	40	65	6 x 6/6 x 6	17	10
9119402020	20	20	25	40	65	6 x 6/6 x 6	17	10
9128551225	12	25	30	55	78	4 x 4/8 x 7	60	35
9128551420	14	20	30	55	78	5 x 5/6 x 6	60	35
9128551425	14	25	30	55	78	5 x 5/8 x 7	60	35
9128551525	15	25	30	55	78	5 x 5/8 x 7	60	35
9128551625	16	25	30	55	78	5 x 5/8 x 7	60	35
9128551925	19	25	30	55	78	6 x 6/8 x 7	60	35
9128552020	20	20	30	55	78	6 x 6/6 x 6	60	35
9128552025	20	25	30	55	78	6 x 6/8 x 7	60	35
9128552525	25	25	30	55	78	8 x 7/8 x 7	60	35



Headlight adjustment system



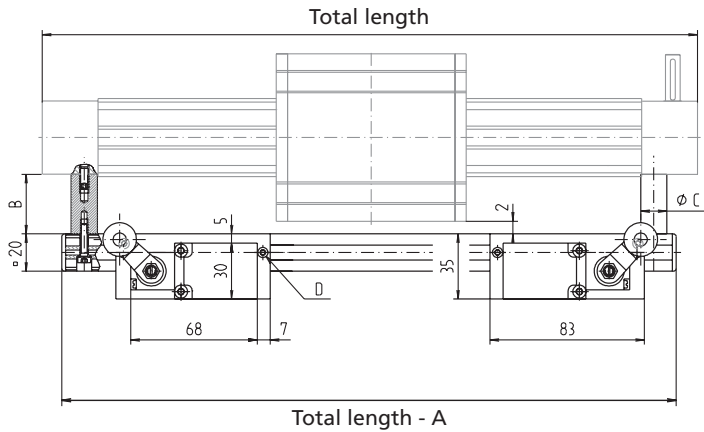
# SQZ – Position determination

## Holder for mechanical limit switch

- Limit switch can be moved and fixed axially
- Guide rail made of profile F-20 x 20
- Connecting cables can be placed in the profile slots


**Material:** Aluminium, anodised  
Galvanised fastenings  
**Scope of delivery:** Guide rail, spacer, 2 fixing plates, caps and fastenings

**Note:** The Code No. does not include the limit switch.  
For limit switch, please see page 434.



[mm]

Code No.	Type	A	B	C	D
92780 _ _ _ _	SQZ 30	66	28	14	M3 x 10
92781 _ _ _ _	SQZ 40	80	38	16	M3 x 10
92782 _ _ _ _	SQZ 60	140	52	16	M3 x 10
92783 _ _ _ _	SQZ 80	150	52	16	M3 x 10

 Total length of linear unit [mm]



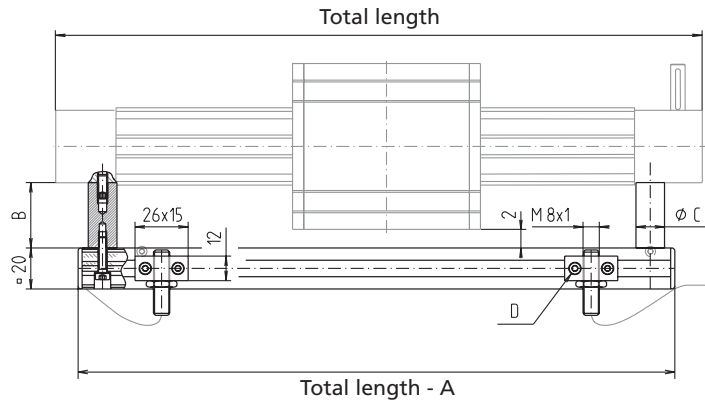
**SQZ - Position determination**

**Holder for inductive limit switch**

- Limit switch can be moved and fixed axially
- Guide rail made of profile F-20 x 20
- Connecting cables can be laid in the profile slots

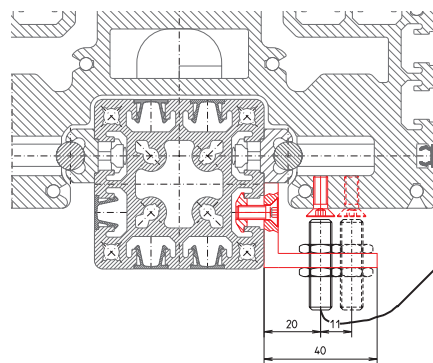
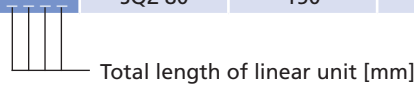
**Material:** Aluminium, anodised  
**Galvanised fastenings**  
**Scope of delivery:** Guide rail, spacer, 2 fixing plates, caps and fastenings

**Note:** The Code No. does not include the limit switch.  
 For limit switch, please see page 434.



[mm]

Code No.	Type	A	B	C	D
92980 _ _ _ _	SQZ 30	66	28	14	M3 x 16
92981 _ _ _ _	SQZ 40	80	38	16	M3 x 16
92982 _ _ _ _	SQZ 60	140	52	16	M3 x 16
92983 _ _ _ _	SQZ 80	150	52	16	M3 x 16

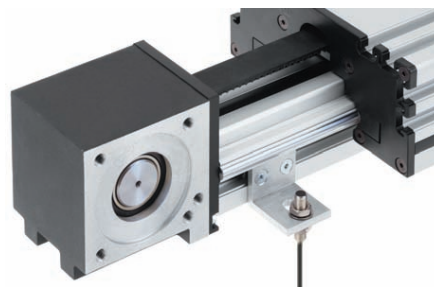
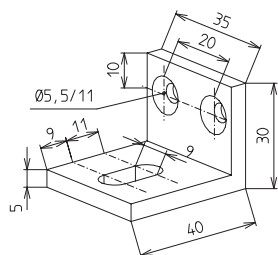


- Fixing bracket for limit switches
- Fixing in the profile slot of the guide profile
- Simple axial displacement and adjustment of holder is possible

**Material:** AlMgSi, vibratory finished

**Scope of delivery:** Holder with fastenings

The Order No. does not include the limit switch!  
 Please refer to the next page.



For technical data of the limit switch, please refer to the next page

[mm]

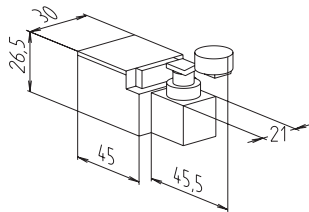
Code No.	Type
92909	SQZ- 40 x 80, 60, 60 x 120, 80, 80 x 160

# SQZ – Position determination

## Mechanical limit switch

- Limit switch with angle lever
- Compact design

**Material:** Thermoplastic, fully insulated



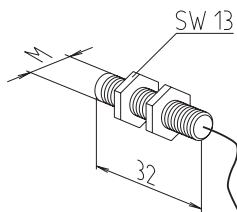
Max. voltage	250 V AC
Max. switching current	6 A
Max. starting current	16 A
Operating cycles	Max. 6,000/h
Mechanical lifetime	1 x 10 <sup>7</sup> switching cycles
Axis lever adjustment	locking by 360°
Protection class	IP 65
Ambient temperature	-30°C to +80°C

Code No.	Type	Switching function
91905	PLZ 30-80	NC/NO
92767	Fixing plate (same version as for limit switch holder on page 432, with fastenings)	

## Inductive limit switch

- Function indicator (LED)
- Maintenance-free

**Material:** Housing: stainless steel



Voltage	10-30 V DC
Max. switching current	200 mA
Max. starting current	200 mA
Operating frequency	700 Hz acc. to DIN EN 50010
Mechanical lifetime	independent of operating cycles
Operating distance	1.5 mm for steel/0.75 mm for aluminium
Protection class	IP 65
Ambient temperature	-25°C to +70°C

Code No.	Type	Switching function	M
92816	SQZ 30-80	NC contact	M8 x 1
92817	SQZ 30-80	NO contact	M8 x 1
92967	Fixing element (same version as for limit switch holder on page 433 - with fastenings)		

