



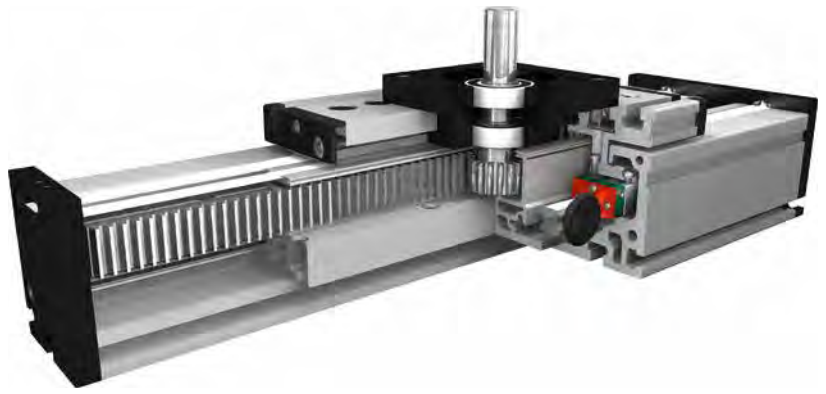
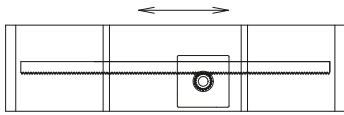


Linear system **DSZA 160, 200**

RACK AND PINION DRIVE

-  HIGH LOADS
-  HIGH DYNAMICS
-  LONG TRAVERSE PATH > 6000 MM
-  SPACE SAVING



Function:

This unit consists of a rectangular aluminium profile with 2 integrated rail guides. The carriage is driven by a pinion on a high precision rack. The rack and pinion system is suitable for highly dynamic servo operation and ideal for lifting movements. The pinion is equipped with maintenance-free ball bearings. The rack is lubricated by a toothed felt wheel. With this series, multi-part assembled units with long strokes can be realized.

Fitting position:

As required. Max. length 6.000 mm without joints.

Carriage mounting:

By T-slots.

Unit mounting:

By T-slots and mounting sets. The linear axis can be combined with any T-slot profile.

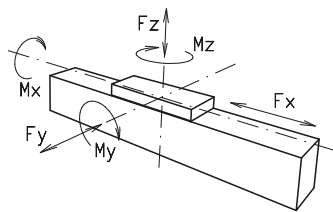
Rack:

6h23 Modul 2 (hardened and ground), repeatability $\pm 0,1$ mm.

Carriage support:

In the standard version, the carriage runs on 4 runner blocks which can be serviced at a central servicing position. For longer carriages the number of runner blocks can be increased.

Forces and torques



Size	120		160		200		
	permitted dyn. Forces*	5000 km	10000 km	5000 km	10000 km	5000 km	10000 km
F_x (N)	894	800	1900	1800	4000	3800	
F_y (N)	1776	1405	5570	3900	15600	11080	
F_z (N)	2090	1650	7050	5020	20600	14600	
M_x (Nm)	81	64	358	255	1285	915	
M_y (Nm)	97	77	369	262	1375	980	
M_z (Nm)	96	76	364	258	1345	960	
All forces and torques related to the following:							
existing values	$\frac{F_y}{F_{y_{dyn}}} + \frac{F_z}{F_{z_{dyn}}} + \frac{M_x}{M_{x_{dyn}}} + \frac{M_y}{M_{y_{dyn}}} + \frac{M_z}{M_{z_{dyn}}} \leq 1$						
table values							
No-load torque							
Nm without cover bands	1,2		1,5		2,0		
Nm with cover bands	1,6		2,1		4		
Speed							
(m/s) max	5		5		5		
Tensile force							
permanent (N)	900		1900		4000		
0,2 s (N)	1000		2090		4300		
Geometrical moments of inertia of aluminium profile							
I_y mm ⁴	5,61x10 ⁵		2,13x10 ⁶		4,81 x10 ⁶		
I_z mm ⁴	34,19x10 ⁵		12,33x10 ⁶		26,0 x10 ⁶		
Elastic modulus N/mm ²	70000		70000		70000		

For life-time calculation use our homepage.

* referred to life-time

Driving torque:

$$M_o = \frac{F \cdot P \cdot S_i}{2000 \cdot \pi} + M_n$$

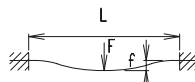
$$P_o = \frac{M_o \cdot n}{9550}$$

F = force (N)
 P = pulley action perimeter (mm)
 S_i = safety factor 1,2 ... 2
 M_n = no-load torque (Nm)
 n = rpm pulley (min⁻¹)
 M_o = driving torque (Nm)
 P_o = motor power (KW)

Deflection:

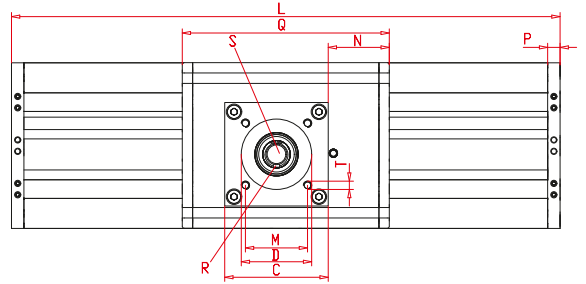
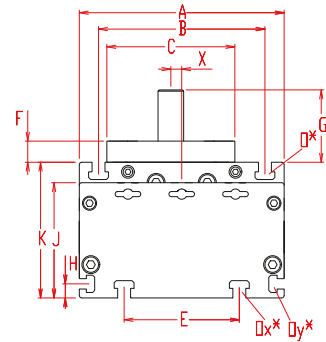
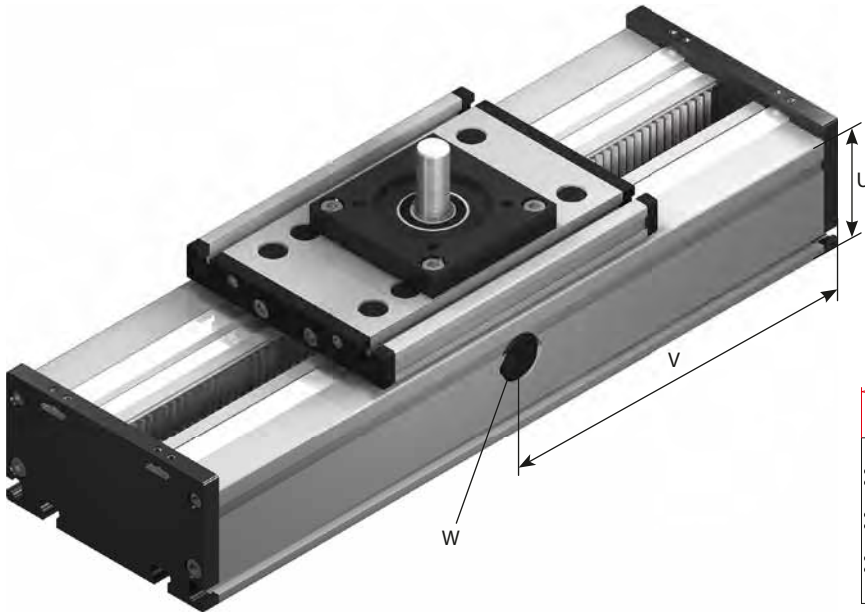
$$f = \frac{F \cdot L^3}{E \cdot I \cdot 192}$$

f = deflection (mm)
 F = load (N)
 L = free length (mm)
 E = elastic modulus 70000 (N/mm²)
 I = second moment of area (mm⁴)



Linear system **DSZA 160, 200**

Dimensions (mm)



$V = Q + 100 \text{ mm}$

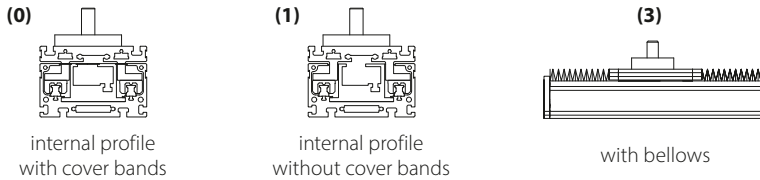
W = servicing position

*For slide nuts refer to chapter 2.2 page 2

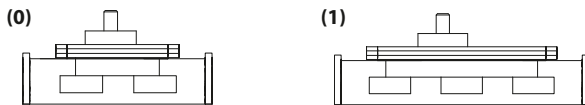
Increasing the carriage length will increase the basic length by the same amount.

Size	Basic length L	A	B	C	D ±0,05	E	F	G	H	J	K	M	N	O for	Ox for	Oy for	P	Q	T for	U	X	Basic weight	Weight per 100 mm
DSZA 160	250	160	130	100	68	90	16,5	56,5	11	90	106	60	62	M 8	M 8	M 6	12	224	M 8	80	8,5	9,4 kg	2,15 kg
DSZA 200	320	200	160	120	90	140	20	45	15	110	129	80	95	M 10	M 10	M 8	15	270	M 8	100	9	28,9 kg	7,10 kg

0 Choice of guide body profile: Stainless versions upon request.

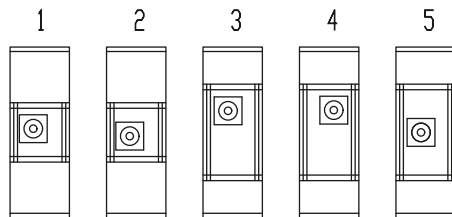


0 Choice of carriage:



Size	Version 0		Version 1	
	Q	L	Q	L
160	224	250	360	390
200	270	320	320	360

1 Drive version:



Shaft dimensions:

Size	Shaft ø h6 x length	Key	Pinion	
	S	R	mm/U	Modul
160	20 x 40	6x6x35	100,53	2
200	18 x 26	6x6x20	94,25	2





DSZA 160 1 0 0 1 0 0 1 1500 — Basic length + stroke = total length

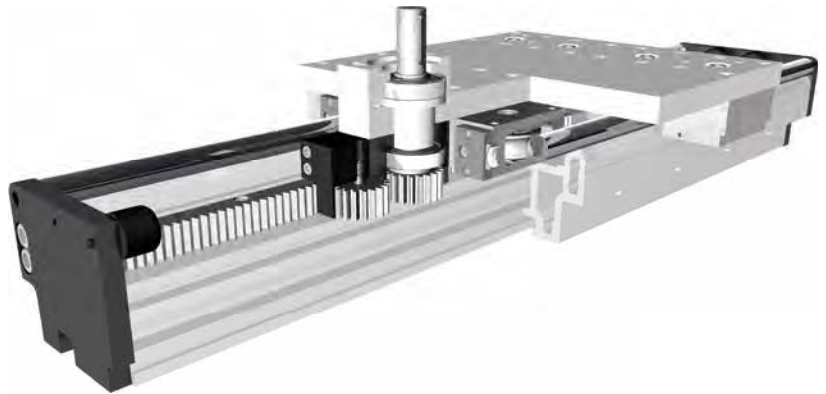
Pos. 1 2 3 4 5 6 7

Sample ordering code:
DSZA 160 with internal profile and cover bands, standard carriage, 1250mm stroke.

Linear system **ALLZQ 203**

RACK AND PINION DRIVE

-  ROLLER GUIDE
-  HEAVY LOAD
-  LIFTING SYSTEM
-  HIGH LOAD CAPACITY

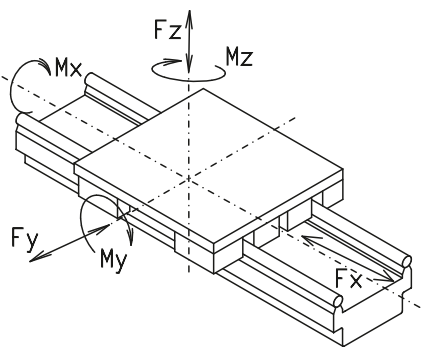


Function:

This unit consists of an aluminium profile with hardened steel guide rods mounted on top of the profile. The carriage, which has internal linear ball bearings that can be adjusted free of play, is driven along the guide rods by a high precision rack. The rack and pinion system is suitable for highly dynamic servo operation and ideal for lifting movements. The pinion has maintenance-free ball bearings. The rack is lubricated by a toothed felt wheel.

- Fitting position:** As required. Max. length 5.000 mm without joints.
- Carriage mounting:** By tapped holes.
- Unit mounting:** By T-slots and mounting sets. The linear axis can be combined with any T-slot profile.
- Carriage support:** In the standard version, the carriage runs on 8 rollers which can be adjusted and serviced at a central servicing position. For longer carriages the number of rollers can be increased. Repeatability ± 0,1.
- Rack:** 8e27 hardened and ground. Repeatability: ± 0,1 mm.

Forces and torques



Size	ALLZQ 203
Forces/Torques	
F_x (N)	4610
F_y (N)	8700
F_z (N)	8300
M_x (Nm)	1050
M_y (Nm)	1240
M_z (Nm)	2600
All forces and torques related to the following:	
existing values	$\frac{F_y}{F_{y_{dyn}}} + \frac{F_z}{F_{z_{dyn}}} + \frac{M_x}{M_{x_{dyn}}} + \frac{M_y}{M_{y_{dyn}}} + \frac{M_z}{M_{z_{dyn}}} \leq 1$
table values	
No-load torque	
Nm	3
Driving Torque	
N	154
Geometrical moments of inertia of aluminium profile	
I_x mm ⁴	2,26x10 ⁷
I_y mm ⁴	8,75x10 ⁷
Elastic modulus N/mm ²	70000

For life-time calculation of rollers use our homepage.

14.1

Driving torque:

$$M_o = \frac{F \cdot P \cdot S_i}{2000 \cdot \pi} + M_n$$

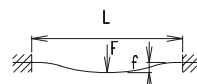
$$P_o = \frac{M_o \cdot n}{9550}$$

- F = force (N)
- P = pulley action perimeter (mm)
- S_i = safety factor 1, 2 ... 2
- M_n = no-load torque (Nm)
- n = rpm pulley (min⁻¹)
- M_o = driving torque (Nm)
- P_o = motor power (KW)

Deflection:

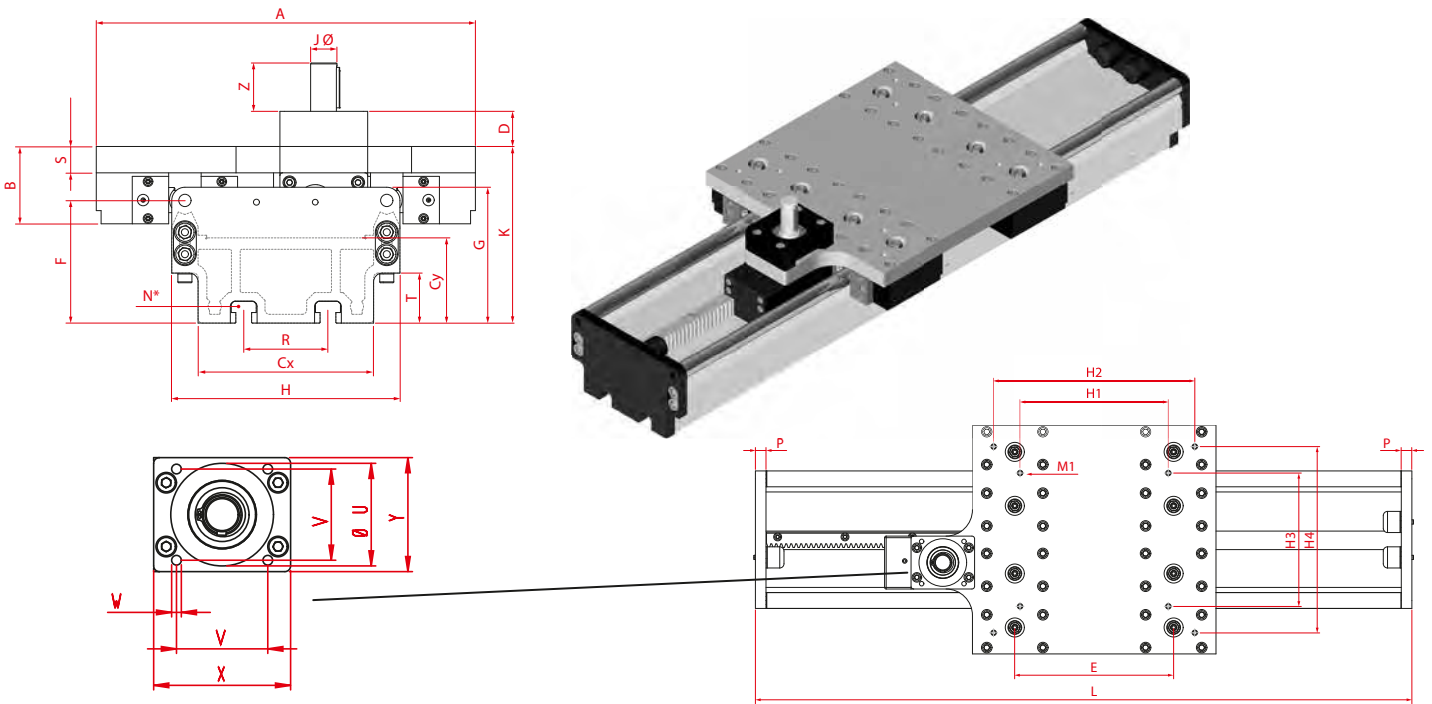
$$f = \frac{F \cdot L^3}{E \cdot I \cdot 192}$$

- f = deflection (mm)
- F = load (N)
- L = free length (mm)
- E = elastic modulus 70000 (N/mm²)
- I = second moment of area (mm⁴)



Linear system ALLZQ 203

Dimensions (mm)



Increasing the carriage length will increase the basic length by the same amount.

Size	Basic length L	A	B	Cx	Cy	D	E	F	G	H	J Ø	K	N for	P	R	S	T	U ±0,05	V	W for	X	Y	Z	Basic weight	Weight per 100 mm
ALLZQ 203	670	432	88	200	97	40	300	139,6	154,6	260	30	200,6	M16	20	96	30	57	90	80	M10	120	100	55	77,6 kg	4,9 kg

3 Guide rod size:
(3) Ø=30

Carriage	E	H1	H2	H3	H4	M1
Version (0) & (1)	300	280	380	252	352	M12
Version (2) & (3)	355	330	430	252	352	M12

0 Choice of guide body profile:
(0) Standard (2) corrosion-protected guide rods and screws
(4) expanded corrosion-protected version (depending on the availability of components)

0 Drive version:

Size	Version (0) (1)					Version (2) (3)			
	I	M	Q1	Q2	L	I	M	Q2	L
203	172,75	516	626	460	670	172,75	294	510	560

Rack and pinion accuracy

Code No.	Modul	Quality	Rack accuracy	Material	Marks
0	3	10	0,091 mm/300 mm	C45	Hardened teeth
1	3	9	0,065 mm/300 mm	C45	Milled teeth
2	3	8	0,046 mm/300 mm	X8CrNiS18-9	Milled teeth





Shaft dimensions			
Shaft ø h6 x length	Key	Pinion	
		mm/U	Modul
30 x 55	8x7x50	197,92	3

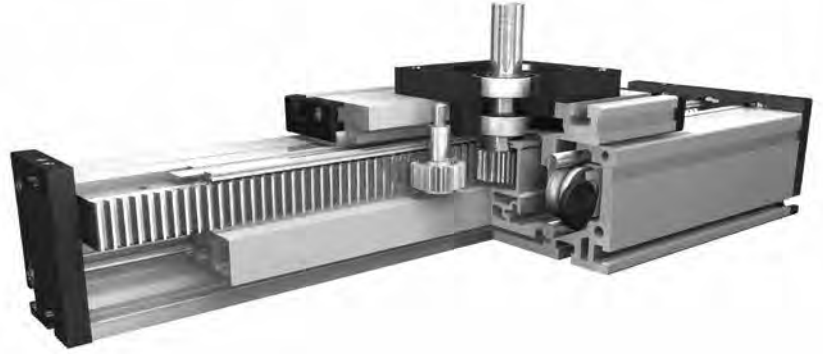
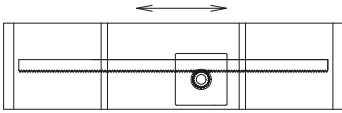
ALLZQ 20 3 0 0 0 0 0 0 2000 — Basic length + stroke = total length

Sample ordering code:
ALLZQ203, guide rods 30 mm, standard body profile, coupling position 0, rack accuracy 0,091 mm/300 mm, 1330 mm stroke.

Linear system **DLZA 120, 160, 200**

RACK AND PINION DRIVE

-  HIGH LOADS
-  HIGH DYNAMICS
-  LONG TRAVERSE PATH >6000 MM
-  SPACE SAVING



Function:

This unit consists of a rectangular aluminium profile with 2 integrated roller guides. The carriage, which has internal linear ball bearings that can be adjusted free of play, is driven along the guide rods by a high precision rack. The rack and pinion system is suitable for highly dynamic servo operation and ideal for lifting movements. The pinion is equipped with maintenance-free ball bearings. The rack is lubricated by a toothed felt wheel. With this series, multi-part assembled units with long strokes can be realized.

Fitting position:

As required. Max. length 6.000 mm without joints.

Carriage mounting:

By T-slots.

Unit mounting:

By T-slots and mounting sets. The linear axis can be combined with any T-slot profile.

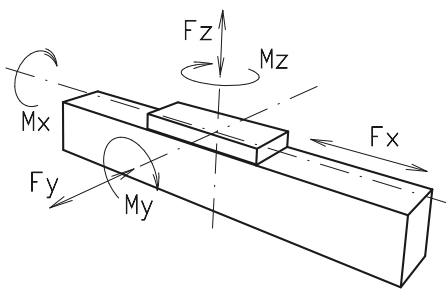
Rack:

6h23 Modul 2 (hardened and ground), repeatability $\pm 0,1$ mm.

Carriage support:

In the standard version, the carriage runs on 8 rollers which can be adjusted and serviced at a central servicing position. For longer carriages the number of rollers can be increased.

8.1

Forces and torques	Size	160		200	
	Forces/Torques	static	dynam.	static	dynam.
	F_x (N)	1900	1800	4000	3800
	F_y (N)	3000	2000	4400	3100
	F_z (N)	3500	2800	4900	4400
	M_x (Nm)	400	320	600	510
	M_y (Nm)	360	300	560	480
	M_z (Nm)	180	150	310	275
All forces and torques related to the following:					
existing values $\frac{F_y}{F_{y_{dyn}}} + \frac{F_z}{F_{z_{dyn}}} + \frac{M_x}{M_{x_{dyn}}} + \frac{M_y}{M_{y_{dyn}}} + \frac{M_z}{M_{z_{dyn}}} \leq 1$					
table values $\frac{F_y}{F_{y_{dyn}}} + \frac{F_z}{F_{z_{dyn}}} + \frac{M_x}{M_{x_{dyn}}} + \frac{M_y}{M_{y_{dyn}}} + \frac{M_z}{M_{z_{dyn}}} \leq 1$					
No-load torque					
Nm		1,5		2,6	
Speed					
(m/s) max		3		5,0	
Tensile force					
permanent (N)		1900		3000	
Geometrical moments of inertia of aluminium profile					
I_x mm ⁴		22,2x10 ⁵		63,8x10 ⁵	
I_y mm ⁴		122,0x10 ⁵		335x10 ⁵	
Elastic modulus N/mm ²		70000		70000	

For life-time calculation of rollers use our homepage.

Driving torque:

$$M_o = \frac{F \cdot P \cdot S_i}{2000 \cdot \pi} + M_n$$

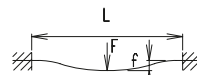
$$P_o = \frac{M_o \cdot n}{9550}$$

F = force (N)
 P = pulley action perimeter (mm)
 S_i = safety factor 1,2 ... 2
 M_n = no-load torque (Nm)
 n = rpm pulley (min⁻¹)
 M_o = driving torque (Nm)
 P_o = motor power (KW)

Deflection:

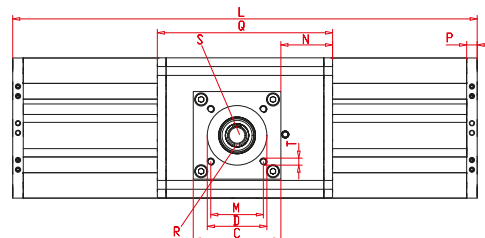
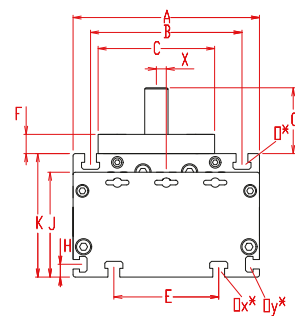
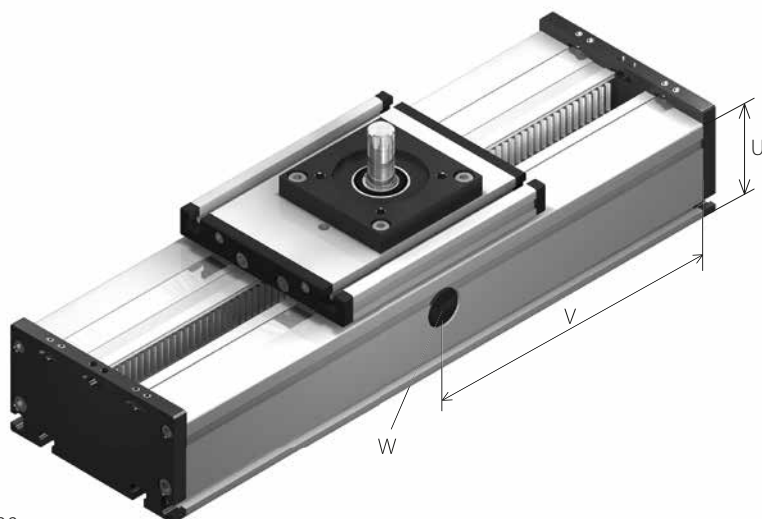
$$f = \frac{F \cdot L^3}{E \cdot I \cdot 192}$$

f = deflection (mm)
 F = load (N)
 L = free length (mm)
 E = elastic modulus 70000 (N/mm²)
 I = second moment of area (mm⁴)



Linear system DLZA 120, 160, 200

Dimensions (mm)



V = Q + 100 mm

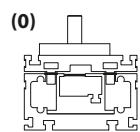
W = servicing position

*For slide nuts refer to chapter 2.2 page 2

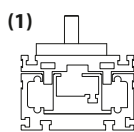
Increasing the carriage length will increase the basic length by the same amount.

Size	Basic length L	A	B	C	D ±0,05	E	F	G	H	J	K	M	N	O for	Ox for	Oy for	P	Q	T for	U	X	Basic weight	Weight per 100 mm
DLZA 160	240	160	130	100	68	90	16,5	56,5	11	90	106	60	59	M 8	M 8	M 6	12	200	M 8	80	8,5	13,0 kg	2,10 kg
DLZA 200	320	200	160	120	90	140	20	45	15	110	129	80	95	M 10	M 10	M 8	15	270	M 8	100	5	28,9 kg	6,15 kg

0 Choice of guide body profile: Stainless versions upon request.

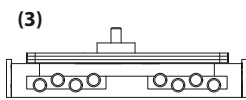
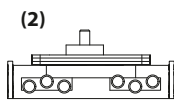
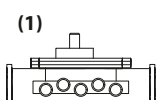
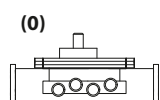


internal profile with cover bands



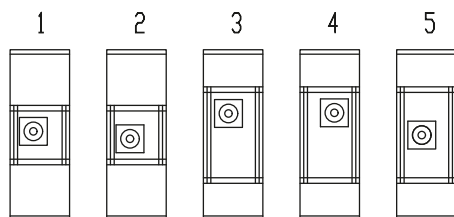
internal profile without cover bands

0 Choice of carriage:



Size	Version 0		Version 1		Version 2		Version 3	
	Q	L	Q	L	Q	L	Q	L
160	200	240	250	290	>300	>340	--	--
200	270	320	330	380	>410	>460	>535	>580

1 Drive version:



Shaft dimensions:

Size	Shaft ø h6 x length	Key	Pinion	
	S	R	mm/rev.	Modul
160	20 x 40	6x6x35	100,53	2
200	18 x 25	6x6x20	94,25	2





DLZA 160 1 0 0 1 0 0 1 1500 — Basic length + stroke = total length

Pos. 1 2 3 4 5 6 7

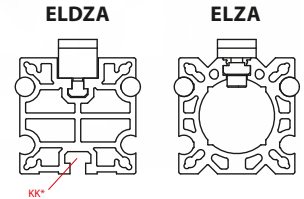
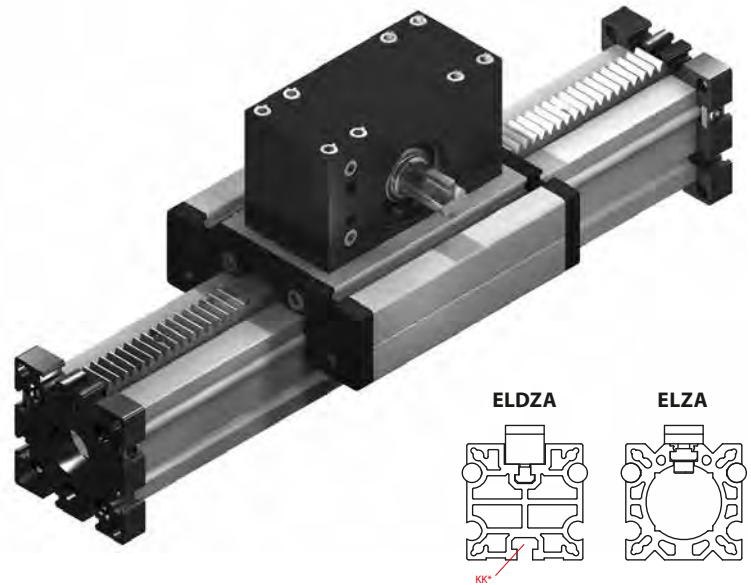
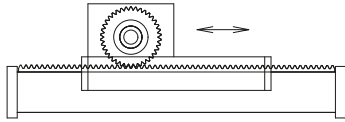
Sample ordering code:
DLZA160 with internal profile and cover bands, standard carriage, 1260 mm stroke.

Linear system **ELZA 40 / ELDZA 60, 60S, 80, 80S, 100**

RACK AND PINION DRIVE

-  **HIGH LOAD CAPACITY**
-  **LONG TRAVERSE PATH > 6000 MM**
-  **LONG SERVICE LIFE**
-  **HIGH OPERATIONAL RELIABILITY**

4.1



We have been implementing comprehensive model improvement measures so that we are able to offer our products in the segment of toothed rack drives in a more cost-effective and application-oriented way. New innovative guiding profiles ELDZA have been developed, which can be used effectively in combination with standardized toothed racks. Depending on the specific task (e. g. load, mounting position, service life or cost) it is possible to use different material combinations. With this series, multi-part assembled units with long strokes can be realized.

Function:

This unit consists of an aluminium square profile with integrated, hardened steel guide rods. The carriage, which has internal linear ball bearings that can be adjusted free of play, is driven by a rack and pinion. The pinion is equipped with maintenance-free ball bearings.

Fitting position:

As required. Max. length without joints 6.000 mm.

Carriage mounting:

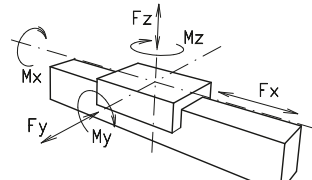
By T-slots.

Unit mounting:

By T-slots and holes in the bearing blocks, mounting sets.

Rack:

C45,Steel 1.4305 or plastic (PA 6) possible. Repeatability: ± 0,2 mm.

Forces and torques	Size	ELZA 40		ELDZA 60		ELDZA 60 S		ELDZA 80		ELDZA 80 S		ELDZA 100	
	Forces/Torques	static	dynamic	static	dynamic	static	dynamic	static	dynamic	static	dynamic	static	dynamic
	F _x (N)	900	750	1500 *	1200 *	1500 *	1200 *	2200 *	1800 *	2200 *	1800 *	2900 *	2500 *
	F _y (N)	1200	700	3000	2000	4100	3100	3000	2000	4600	3600	8000	6500
	F _z (N)	900	650	1700	1100	2160	1600	1700	1100	3000	1800	3600	2200
	M _x (Nm)	25	20	67	43	88	65	90	55	170	140	300	230
	M _y (Nm)	32	18	90	70	190	140	110	80	270	230	400	270
	M _z (Nm)	35	25	120	100	230	170	150	120	300	220	750	500
All forces and torques related to the following:													
existing values $\frac{F_y}{F_{y_{dyn}}} + \frac{F_z}{F_{z_{dyn}}} + \frac{M_x}{M_{x_{dyn}}} + \frac{M_y}{M_{y_{dyn}}} + \frac{M_z}{M_{z_{dyn}}} \leq 1$													
table values $\frac{F_y}{F_{y_{dyn}}} + \frac{F_z}{F_{z_{dyn}}} + \frac{M_x}{M_{x_{dyn}}} + \frac{M_y}{M_{y_{dyn}}} + \frac{M_z}{M_{z_{dyn}}} \leq 1$													
No-load torque													
Nm		0,4		0,6		0,8		1,0		1,5		1,7	
Speed													
(m/s) max		2		2,5		2,5		3		3		3	
Geometrical moments of inertia of aluminium profile													
I _x mm ⁴		1,32x10 ⁵		4,86x10 ⁵		4,86x10 ⁵		18,99x10 ⁵		18,99x10 ⁵		44,4x10 ⁵	
I _y mm ⁴		1,34x10 ⁵		4,87x10 ⁵		4,87x10 ⁵		18,97x10 ⁵		18,97x10 ⁵		44,8x10 ⁵	
E-Modulus N/mm ²		70000		70000		70000		70000		70000		70000	

* = Depending on material combinations Fx values could be different!
For life-time calculation of rollers use our homepage.

Driving torque:

$$M_o = \frac{F \cdot P \cdot S_i}{2000 \cdot \pi} + M_n$$

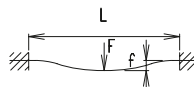
$$P_o = \frac{M_o \cdot n}{9550}$$

- F = force (N)
- P = pulley action perimeter (mm)
- S_i = safety factor 1,2 ... 2
- M_n = no-load torque (Nm)
- n = rpm pulley (min⁻¹)
- M_o = driving torque (Nm)
- P_o = motor power (KW)

Deflection:

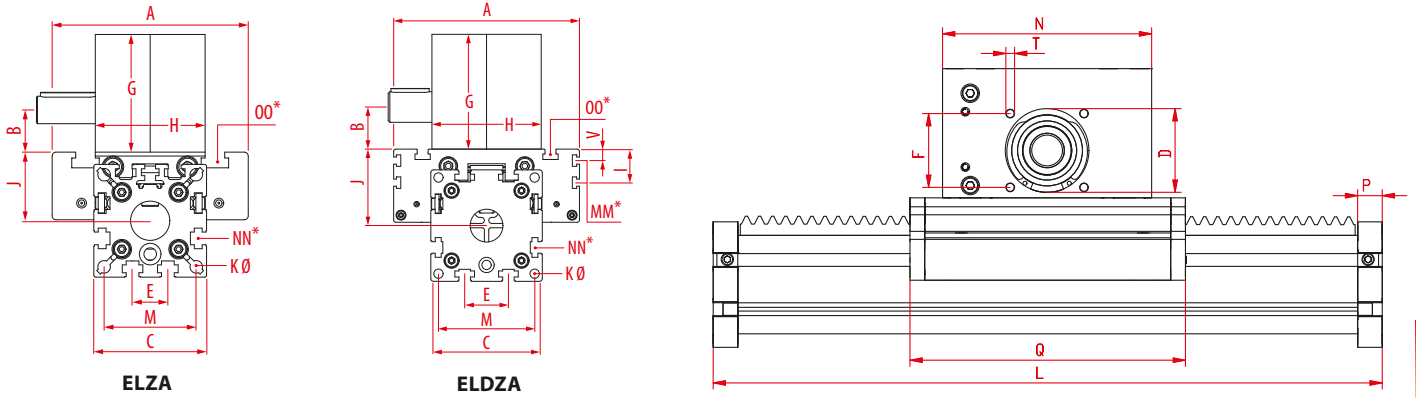
$$f = \frac{F \cdot L^3}{E \cdot I \cdot 192}$$

- f = deflection (mm)
- F = load (N)
- L = free length (mm)
- E = elastic modulus 70000 (N/mm²)
- I = second moment of area (mm⁴)



Linear system ELZA 40 / ELDZA 60, 60S, 80, 80S, 100

Dimensions (mm)



4.1

*For slide nuts refer to chapter 2.2 page 2

Increasing the carriage length will increase the basic length by the same amount.

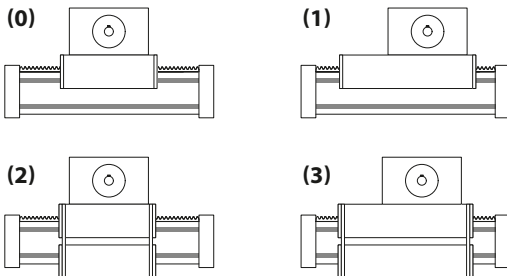
Size	Basic length L	A	B	C	D -0,05	E	F	G	H	I	J	K	KK for	M	MM for	N	NN for	OO for	P	Q	T	V	Basic weight
ELZA 40	150	100	21,5	58	37	18	32	60	56	-	35	6,5	-	47	-	100	M 6	M 6	12	122	M 6	-	2,0 kg
ELDZA 60	205	144	28,0	82	47	30	42	75	63	-	49	8,5	M 6	69	-	130	M 8	M 8	16	168	M 6	-	4,7 kg
ELDZA 60S	230	170	34,5	82	47	30	42	92	63	-	53	8,5	M 6	69	-	150	M 8	M 8	16	194	M 6	10	7,2 kg
ELDZA 80	240	170	39,0	102	68	40	60	105	100	30,5	70	8,5	-	88	M 6	170	M 10	M 10	20	194	M 8	10,5	11,9 kg
ELDZA 80S	260	190	39,0	102	68	40	60	105	100	30	71	8,5	-	88	M 6	170	M 10	M 8	20	214	M 8	12,5	12,9 kg
ELDZA 100	360	230	55,3	130	90	50	80	155	120	29	89	10,5	-	112	M 10	240	M 10	M 10	30	300	M 10	-	24,0 kg

0 Choice of guide body profile:

- (0) Standard
- (2) corrosion-protected guide rods and screws (Version 0 and 2)
- (4) expanded corrosion-protected version (Version 1 and 3) (depending on the availability of components)

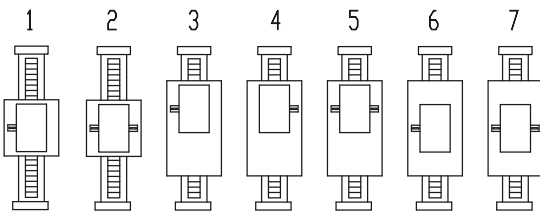
ELZA 40		0,35 kg / 100 mm
ELDZA 60	Polyamide rack	0,56 kg / 100 mm
ELDZA 60	Steel rack	0,78 kg / 100 mm
ELDZA 80	Polyamide rack	0,95 kg / 100 mm
ELDZA 80	Steel rack	1,48 kg / 100 mm
ELDZA 100	Polyamide rack	1,48 kg / 100 mm
ELDZA 100	Steel rack	1,99 kg / 100 mm

0 Choice of carriages:



Size	Version 1		Version 2		Version 3	
	Q	L	Q	L	Q	L
40	227	255	138	166	243	271
60	303	340	184	221	319	356
60S	349	386	214	251	369	406
80	369	415	210	256	385	431
80S	389	435	234	280	409	455
100	505	565	316	376	521	581

1 Drive version:



For combination kits and connecting elements refer to chapter 2.2

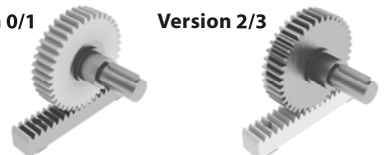
Size	Shaft ø h6 x length	Key	Pinion	
			mm/rev.	Modul
40	14 x 30	5x5x28	188,5	1,5
60	18 x 30	6x6x28	251,3	2
60S	18 x 30	6x6x28	314,2	2
80 (S)	28 x 40	8x7x35	358,0	3
100	28 x 40	8x7x35	508,9	3

0 Rack/Pinion Version: (ONLY for ELDZA)

Version	0	1	2	3
Material Rack/Pinion	Steel/Plastic (Standard)	Stainless steel/Plastic	Plastic/Steel	Plastic/Stainless steel

Version 0/1

Version 2/3



ELDZA 60 0 0 0 1 0 3 0 1500

Pos. 1 2 3 4 5 6 7





Basic length + stroke = total length

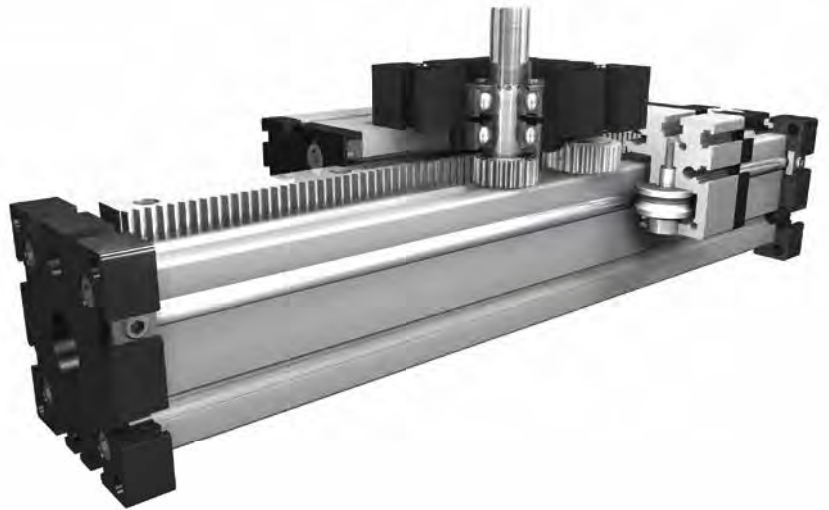
Sample ordering code:

ELDZA 60 with standard body profile, standard carriage, standard shaft, steel pinion, 1295 mm stroke

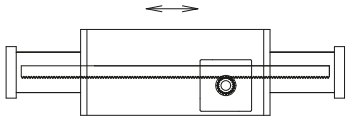
Linear system **ELZQ 60, 80, 80S**

RACK AND PINION DRIVE

-  HIGH LOAD CAPACITY
-  HIGH RIGIDITY
-  LIFTING SYSTEM
-  HIGH OPERATIONAL RELIABILITY



4.1



Function:

This unit consists of an aluminium square profile with integrated, hardened steel guide rods. The carriage, which has internal linear ball bearings that can be adjusted free of play, is driven along the guide rods by a high precision rack. The rack and pinion system is suitable for highly dynamic servo operation and ideal for lifting movements. The pinion has maintenance-free ball bearings. The rack is lubricated by a toothed felt wheel.

Fitting position:

As required. Max. length without joints 6.000 mm.

Carriage mounting:

By T-slots.

Unit mounting:

By T-slots and holes in the bearing block, mounting sets.

Rack:

Cf53, h7 = finely toothed, h6 (hardened and ground, finely toothed). Repeatability: $\pm 0,1$ mm.

Forces and torques	Size	ELZQ 60 h6		ELZQ 60 h7		ELZQ 80 h6		ELZQ 80 h7		ELZQ 80S h6		ELZQ 80S h7	
	Forces/Torques	static	dynamic	static	dynamic	static	dynamic	static	dynamic	static	dynamic	static	dynamic
F_x (N)		1800	1400	940	780	1800	1400	940	780	1800	1400	940	780
F_y (N)		3000	2000	3000	2000	3000	2000	3000	2000	4600	3600	4600	3600
F_z (N)		1700	1100	1700	1100	1700	1100	1700	1100	3000	1800	3000	1800
M_x (Nm)		67	43	67	43	90	55	90	55	170	140	170	140
M_y (Nm)		90	70	90	70	110	80	110	80	270	230	270	230
M_z (Nm)		120	100	120	100	150	120	150	120	300	220	300	220
All forces and torques related to the following:													
existing values $\frac{F_y}{F_{y_{dyn}}} + \frac{F_z}{F_{z_{dyn}}} + \frac{M_x}{M_{x_{dyn}}} + \frac{M_y}{M_{y_{dyn}}} + \frac{M_z}{M_{z_{dyn}}} \leq 1$													
table values													
No-load torque													
Nm		0,6		0,6		1,0		1,0		1,5		1,5	
Speed													
(m/s) max		4		4		4		4		4		4	
Geometrical moments of inertia of aluminium profile													
I_x mm ⁴		6,79x10 ⁵		6,79x10 ⁵		18,99x10 ⁵		18,99x10 ⁵		18,99x10 ⁵		18,99x10 ⁵	
I_y mm ⁴		6,97x10 ⁵		6,97x10 ⁵		18,97x10 ⁵		18,97x10 ⁵		18,97x10 ⁵		18,97x10 ⁵	
E-Modulus N/mm ²		70000		70000		70000		70000		70000		70000	

For life-time calculation of rollers use our homepage.

Driving torque:

$$M_o = \frac{F \cdot P \cdot S_i}{2000 \cdot \pi} + M_n$$

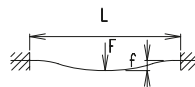
$$P_o = \frac{M_o \cdot n}{9550}$$

F = force (N)
 P = pulley action perimeter (mm)
 S_i = safety factor 1,2 ... 2
 M_n = no-load torque (Nm)
 n = rpm pulley (min⁻¹)
 M_o = driving torque (Nm)
 P_o = motor power (KW)

Deflection:

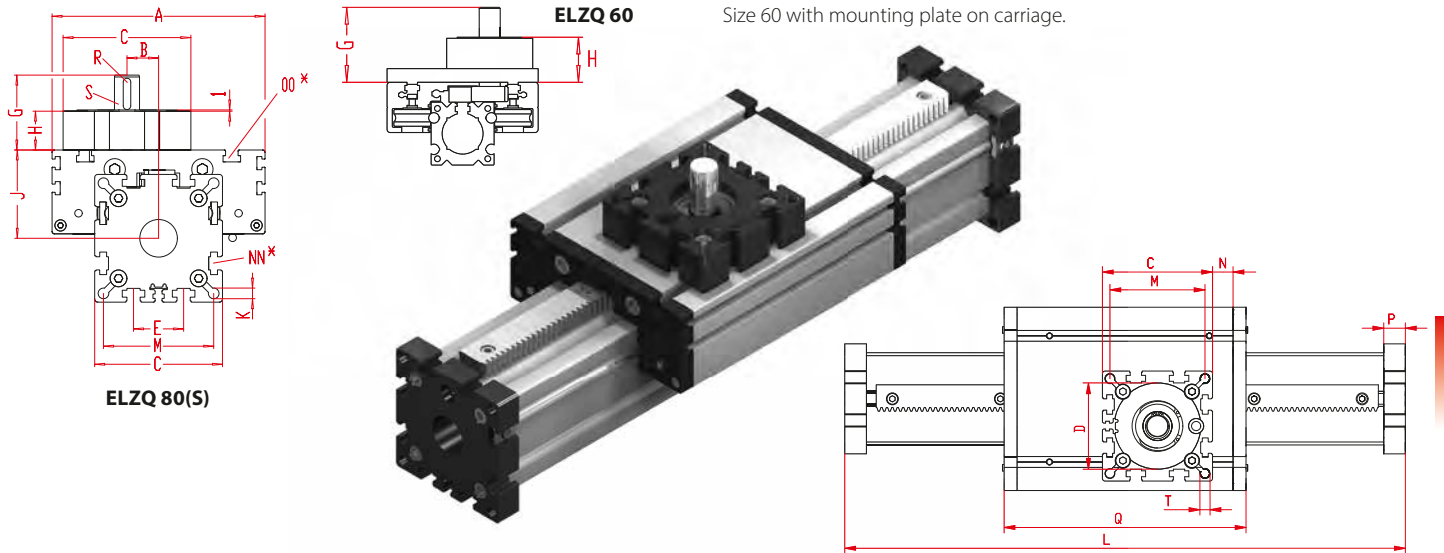
$$f = \frac{F \cdot L^3}{E \cdot I \cdot 192}$$

f = deflection (mm)
 F = load (N)
 L = free length (mm)
 E = elastic modulus 70000 (N/mm²)
 I = second moment of area (mm⁴)



Linear system ELZQ 60, 80, 80S

Dimensions (mm)



4.1

*For slide nuts refer to chapter 2.2 page 2

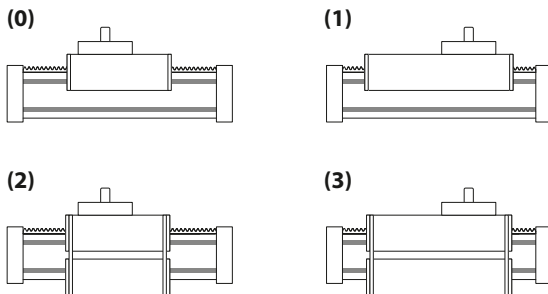
Increasing the carriage length will increase the basic length by the same amount.

Size	Basic length L	A	B	C	D Ø ±0,05	E	G	H	J	K	M	N	NN for	OO for	P	Q	T	Basic weight	Weight per 100 mm
ELZQ 60	230	144	28,83	82	62	30	71,5	42	49	8,5	69	19	M 8	M 8	16	194	M 10	5,0 kg	0,68 kg
ELZQ 80	260	170	28,83	102	80	40	60,5	31	70	8,5	88	25	M 10	M 10	20	214	M 10	11,0 kg	1,19 kg
ELZQ 80S	280	190	28,83	102	80	40	60,5	31	71	8,5	88	13	M 10	M 8	20	234	M 10	12,0 Kg	1,19 kg

0 Choice of guide body profile:

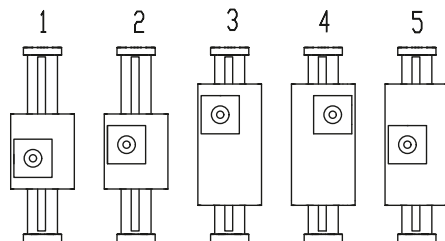
- (0) Standard
- (2) corrosion-protected guide rods and screws
- (4) expanded corrosion-protected version (depending on the availability of components)

0 Choice of carriages:



Size	Version 1		Version 2		Version 3	
	Q	L	Q	L	Q	L
60	338	374	210	246	354	390
80	384	430	230	276	400	446
80S	404	450	254	300	420	466

1 Drive version:



Size	Shaft Ø h6 x length	Key	Pinion	
			mm/rev.	Modul
60	20 x 29,5	6x6x25	100	1,6
80 (S)	20 x 29,5	6x6x25	100	1,6

0 Rack and pinion accuracy:

- (0) h7 (standard)

ELZQ 60 0 0 0 1 0 2 0 1500

Pos. 1 2 3 4 5 6 7

Basic length + stroke = total length

For combination kits and connecting elements refer to chapter 2.2

Sample ordering code:

ELZQ 60 with standard body profile, standard carriage, position of drive 1, rack and pinion accuracy class h7, 1270 mm stroke