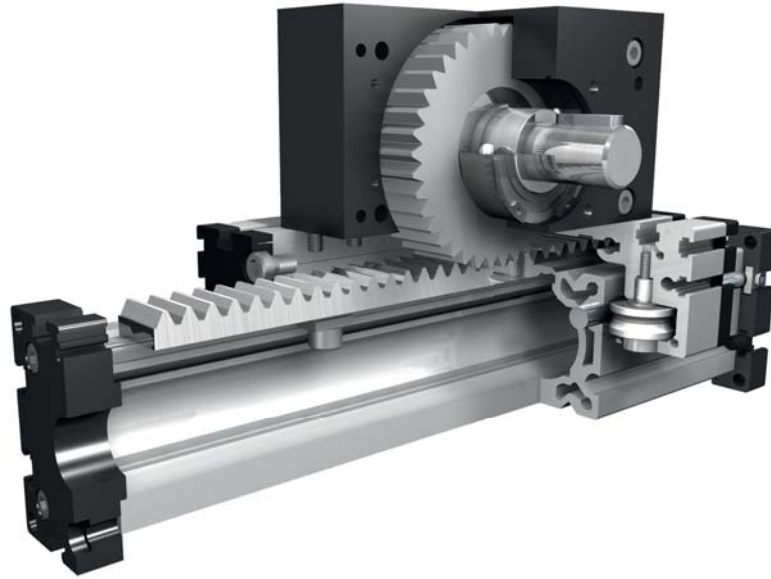


Rack and pinion drive

**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: C 45 or St 60 zinc coated, stainless steel on request. Repeatability: $\pm 0,2$ mm.

Forces and torques	Size	ELZA 40		ELZA 60		ELZA 60 S		ELZA 80		ELZA 80 S		ELZA 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 $\frac{F_y}{F_{y_{dyn}}} + \frac{F_z}{F_{z_{dyn}}} + \frac{M_x}{M_{x_{dyn}}} + \frac{M_y}{M_{y_{dyn}}} + \frac{M_z}{M_{z_{dyn}}} \leq 1$													
Speed													
(m/sec) max													
		2		2,5		2,5		3		3		3	
Geometrical moments of inertia of aluminium profile													
	I_x mm ⁴	1,32x10 ⁵		6,79x10 ⁵		6,79x10 ⁵		18,99x10 ⁵		18,99x10 ⁵		44,4x10 ⁵	
	I_y mm ⁴	1,34x10 ⁵		6,97x10 ⁵		6,97x10 ⁵		18,97x10 ⁵		18,97x10 ⁵		44,8x10 ⁵	
	E/Modulus N/mm ²	70000		70000		70000		70000		70000		70000	

For life-time calculation of rollers use our CD-ROM or homepage!

Formula: ELZA

Driving torque:

$$M_o = \frac{F \cdot P \cdot S}{2000 \cdot \pi} + M_{leer}$$

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

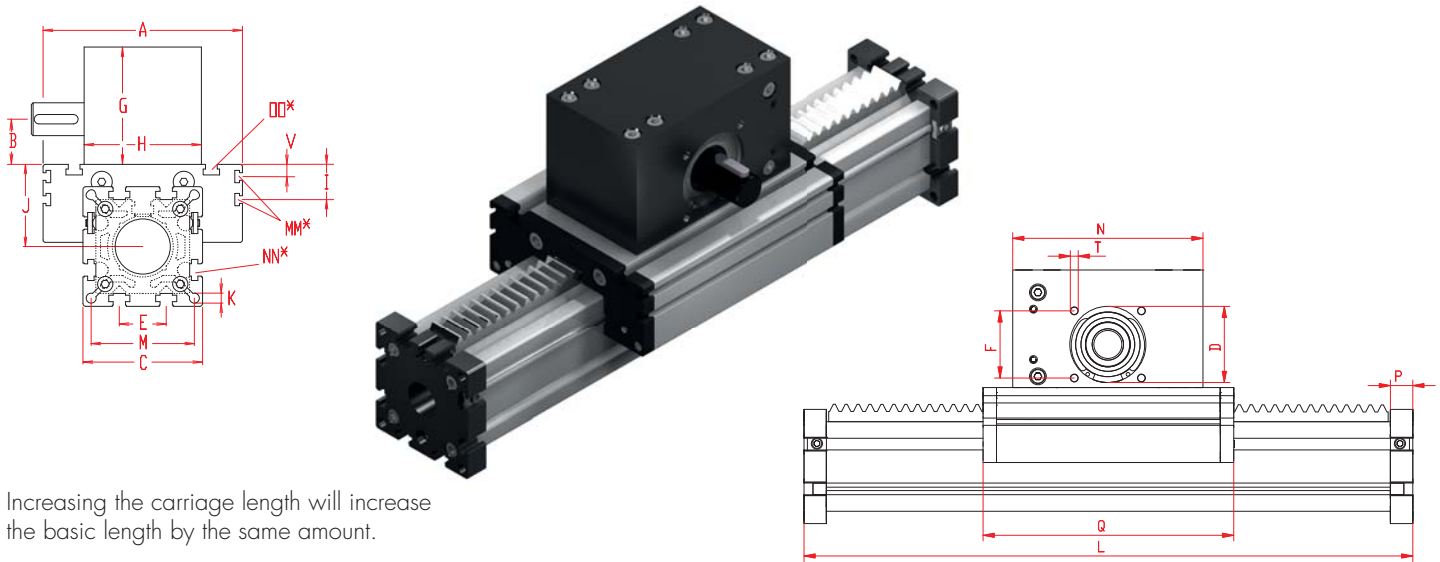
F	= force	(N)
P	= pulley action perimeter	(mm)
S_s	= safety factor 1,2 ... 2	
M_{leer}	= no-load torque	(Nm)
n	= rpm pulley	(min ⁻¹)
M_o	= driving torque	(Nm)
P_o	= motor power	(KW)

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

f	= deflection	(mm)
F	= load	(N)
l	= free length	(mm)
E	= elastic modulus 70000	(N/mm ²)
I	= second moment of area	(mm ⁴)

Positioning system ELZA 40, 60, 60S, 80, 80S, 100

Dimensions (mm)



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

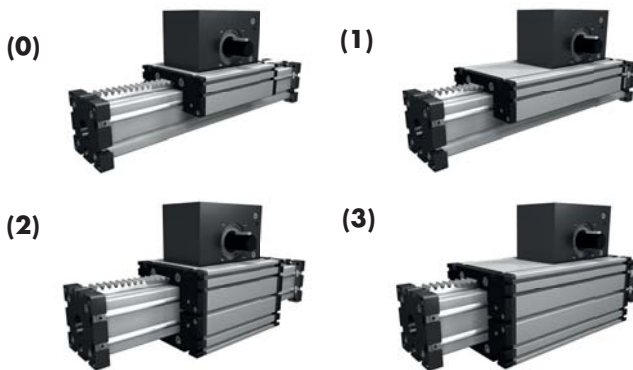
*For slide nuts refer to chapter 2.2 page 2

Size □	Basic length L	A	B	C	D	E	F	G	H	I	J	K	M	MM for	N	NN for	OO for	P	Q	T	V	Basic weight	Weight per 100 mm
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	0,35 kg
ELZA 60	205	144	28,0	82	47	30	42	75	63	-	49	8,5	69	-	130	M 8	M 8	16	168	M 6	-	5,3 kg	0,68 kg
ELZA 60S	230	170	28,0	82	47	30	42	75	63	-	53	8,5	69	-	130	M 8	M 8	16	194	M 6	10	6,3 kg	0,68 kg
ELZA 80	240	170	39,0	102	68	40	60	105	100	30	70	8,5	88	M 6	170	M 10	M 10	20	194	M 8	10	11,9 kg	1,19 kg
ELZA 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	1,19 kg
ELZA 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	1,75 kg

Choice of guide body profile:

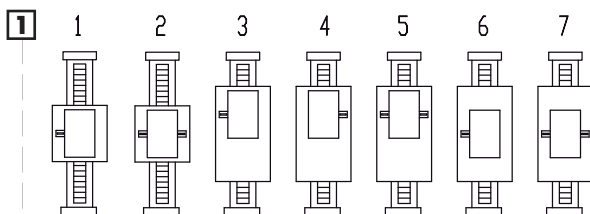
- 0** (0) Standard (1) stainless guide rods (2) stainless guide rods and screws (3) stainless guide rods, rollers and screws

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	329	366	214	251	349	386
80	369	415	210	256	385	431
80S	389	435	234	280	409	455
100	505	565	316	376	521	581

Selection of shaft mounting:



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

1500 Basic length + stroke = total length

ELZA 60 0 0 0 1 0 3 0 01500
Pos. 1 2 3 4 5 6 7

For combination kits and connecting elements refer to chapter 2.2

Sample ordering code:
ELZA 60 with standard body profile, standard carriage, standard shaft, 1295 mm stroke

