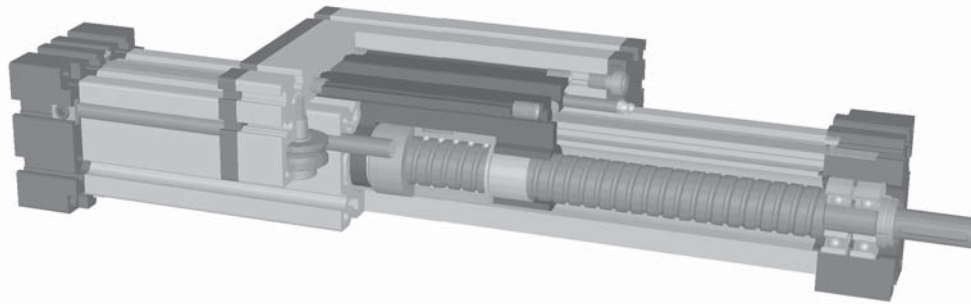


Modular Linear Actuator ELT/ELK 30, 40, 60, 80, 80S, 100, 125

Acme or Ball Screw Driven, Right and Left-handed Thread or Divided Screws



Function:

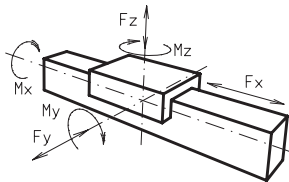
This unit consists of an aluminium extrusion body with integral, parallel ground and hardened steel guide rods. The carriage has play-adjustable ball-bearing rollers which ride on the guide rods. The rotating screw causes linear motion of the nut, which is connected to the carriage. The slot in the profile is covered by a stainless steel strip, making the unit dust and splash-proof. Lateral alignment adjustment for parallel units, or when two carriages are mounted on one unit, is provided for the carriages in the nut mounting.

Fitting length: As required, Max. length 3,000 mm

Carriage mounting: T-slots and tapped holes

Unit mounting: T-slots

Forces and torques	Size	EL 30		EL 40		EL 60		EL 80		EL 80S		EL 100		EL 125	
	Forces/Torques	static	dyna.	static	dyna.	static	dyna.	static	dyna.	static	dyna.	static	dyna.	static	dyna.
F_x (N)		750	600	1500	1200	2500	2000	5000	4000	5000	4000	10000	8000	15000	12000
F_y (N)		90	60	1200	700	3000	2000	3000	2000	4600	3600	8000	6500	12000	9000
F_z (N)		90	60	900	650	1700	1100	1700	1100	3000	1800	3600	2200	6000	4500
M_x (Nm)		12	10	25	20	67	43	90	55	170	140	300	230	600	450
M_y (Nm)		12	10	32	18	90	70	110	80	270	230	400	270	750	600
M_z (Nm)		15	12	35	25	120	100	150	120	300	220	750	500	1350	1150
No-load torque															
Acme Screw		10x3		18x4/18x8		24x5/24x10		28x5/28x10		28x5/28x10		32x6/32x12		40x7/40x14	
(Nm)		0,3		0,4/0,5		0,6/0,8		0,8/1,0		0,8/1,0		0,9/1,1		1,2/1,4	
Ball Screw		8x2,5		16x5/16x10		25x5/25x10		32x5/32x10		32x5/32x10		32x5/32x10		40x10/40x20	
(Nm)		0,15		0,2/0,4		0,4/0,6		0,6/0,8		0,6/0,8		0,7/0,9		1,0/1,2	
Geometrical moments of inertia of aluminium profile															
I_x mm ⁴		4,09x10 ⁴		1,32x10 ⁵		6,79x10 ⁵		18,99x10 ⁵		18,99x10 ⁵		44,4x10 ⁵		101,5x10 ⁵	
I_y mm ⁴		4,00x10 ⁴		1,34x10 ⁵		6,97x10 ⁵		18,97x10 ⁵		18,97x10 ⁵		44,8x10 ⁵		101,5x10 ⁵	
E-Modulus N/mm ²		70000		70000		70000		70000		70000		70000		70000	



Formula: EGTH

Driving torque:

$$M_o = \frac{F * P * S_s}{2000 * \pi * \mu} + M_{leer}$$

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

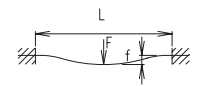
F = force	(N)
P = thread pitch	(mm)
S_s = safety factor 1,2 ... 2	
M_{leer} = no-load torque	(Nm)
n = rpm of screw	(min ⁻¹)
M_o = driving torque	(Nm)
μ = screw efficiency	
w = friction coefficient	~ 1,22
P_o = motor power	(KW)

Efficiency (M)

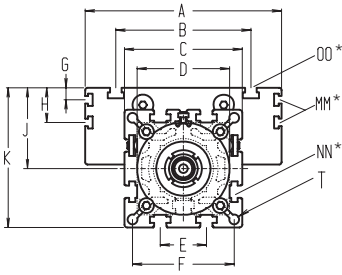
Ball Screws = 0.900

Acme Screws

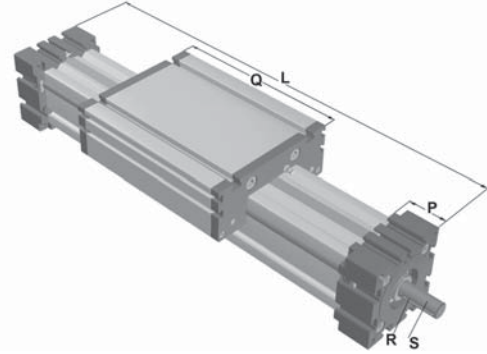
Tr 18x4 = 0.399	Tr 18x8 = 0.565
Tr 24x5 = 0.384	Tr 24x10 = 0.550
Tr 28x5 = 0.349	Tr 28x10 = 0.513

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


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



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



*For T-nuts refer to the accessory section

Size	Basic length L	A	B	C	D	E	F	G	H	J	K	MM	NN	OO	P	Q	R	S Ø x length	T Ø	Basic weight	Additional Weight per 100 mm
EL 30	120	70	56	42	40x1	13	35	-	-	26	47	-	M6	M6	18	82	-	5x16	4,2	0,7 kg	0,16 kg
EL 40	175	100	66	58	48x1	18	47	-	-	35	64	-	M6	M6	25	122	3x3x25	10x27	6,5	1,7 kg	0,37 kg
EL 60	245	144	96	82	62x1	30	69	-	-	49	90	-	M8	M8	35	168	5x5x28	14x35	8,5	5,1 kg	0,89 kg
EL 80	285	170	117	102	80x1	40	88	10	30	70	121	M6	M10	M10	45	194	6x6x40	18x45	8,5	10,0 kg	1,48 kg
EL 80S	305	190	126	102	80x1	40	88	12,5	30	71	122	M6	M10	M8	45	214	6x6x40	18x45	8,5	11,0 kg	1,48 kg
EL 100	410	230	155	130	110x1	50	112	-	30	90	155	M10	M10	M10	55	300	6x6x40	22x45	10,5	19,0 kg	2,00 kg
EL 125	510	295	200	165	130x1	60	142	-	30	107,5	190	M10	M12	M12	65	365	8x7x50	25x55	13,0	33,0 kg	2,89 kg

Screw Type:

- T** (T) Acme Screw (K) Ball Screw

Selection of screw hand:

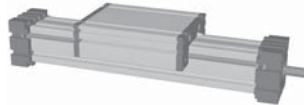
- 1** (1) righthand (2) lefthand (ball screw by inquiry)

Choice of guide body profile:

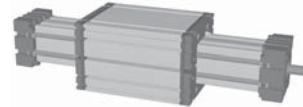
- 0** (0) standard (1) stainless guide rod (2) stainless guide rods and screws (3) stainless guide rods, rollers and screws

Choice of carriages:

- 0** (0)



- (1)**



For standard carriage length see 'Q' in table. The carriages can be provided in any non-standard length on request; the longer the carriage, the greater the load capacity.

Top and bottom carriages are rigidly joined, enabling higher loads to be applied. This increases the basic length by 12-24 mm. For thickness of jointing plate refer to the accessory section.

Choice of journal:

- 0** (0) one shaft (standard) (2) shaft on both sides

Selection of screw:

Size	Standard acme screw (trapezoidal)		Standard ball screw		Multistart-screw ball screw	
	Standard	Multistart-screw	Standard	Multistart-screw	Standard	Multistart-screw
30	(0) Tr 10x3	(1) Tr 18x8	(0) kg 8x2,5	(1) kg 16x10	(0) kg 8x2,5	(1) kg 16x10
40	(0) Tr 18x4	(1) Tr 24x10	(0) kg 16x5	(1) kg 20x20	(0) kg 16x5	(1) kg 20x20
60	(0) Tr 24x5	(1) Tr 28x10	(0) kg 25x5	(1) kg 25x25	(2) kg 25x10	(3) kg 20x50
80	(0) Tr 28x5	(1) Tr 32x12	(0) kg 32x5	(1) kg 32x10	(2) kg 32x10	(3) kg 32x32
100	(0) Tr 32x6	(1) Tr 40x14	(0) kg 32x5	(1) kg 40x20	(2) kg 32x20	(3) kg 32x32
125	(0) Tr 40x7		(0) kg 40x10	(1) kg 40x20	(2) kg 40x40	

Ball Screw pitch accuracy:

- 0** (0) 0,1 mm / 300 mm (Standard) (1) 0,05 mm / 300 mm (2) 0,025 mm / 300 mm

End play of ball nut:

- 0** (0) 0,04 mm (Standard), (1) < 0,02 mm, (2) 2% apply preload

Repeatability:

± 0,2 mm Acme Screw
± 0,025 mm Ball Screw

1500 basic length + stroke = total length

EL T 40 1 0 0 0 0 0 0 0 1500

Pos. 1 2 3 4 5 6 7

Sample ordering code:

ELT40 with acme right-hand screw, standard body profile, top carriage, one shaft, 18x4 screw, 1325 mm stroke

