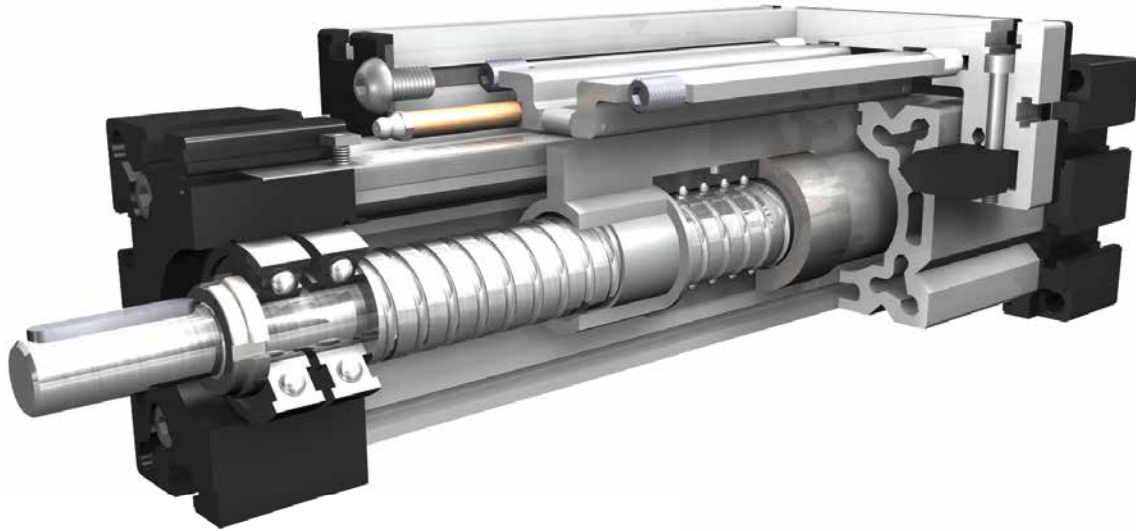


# Positioning system EGT/EGK 30, 40, 60, 80

## 1.1 Spindle driven with trapezoidal or ballscrew spindle



**Function:**

This unit consists of an aluminium square profile with lateral V-guides. The carriage, which is driven by means of a trapezoidal/ballscrew threaded spindle with lead screw, moves along the unit guided by V-slides that are adjustable free of play. Where two linear units are used in parallel or where two carriages are mounted on one unit, the leading-nut receiver can be used to adjust the symmetry of the carriages. The linear opening of the unit is sealed with a stainless steel cover band to make the unit splash-proof and dust-tight.

- Fitting position:** As required. Max. length 3.000 mm
- Carriage mounting:** T-slots, tapped holes (size 40)
- Unit mounting:** By T-slots or tapped holes in the bearing block, mounting sets.

Forces and torques	Size	EG 30		EG 40		EG 60		EG 80	
	Forces / Torques	static	dynamic	static	dynamic	static	dynamic	static	dynamic
	F <sub>x</sub> (N)	750	600	1500	1200	2500	2000	4200	3500
	F <sub>y</sub> (N)	90	60	350	315	500	450	1000	900
	F <sub>z</sub> (N)	90	60	500	450	750	675	1125	1000
	M <sub>x</sub> (Nm)	10	5	20	18	33	30	82	75
	M <sub>y</sub> (Nm)	13	6	44	40	77	70	220	200
	M <sub>z</sub> (Nm)	14	7	33	30	55	50	165	150
<b>All forces and torques relate to the following:</b>									
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									
<b>No-load torque</b>									
Trapezoidal thread	10x3	-	18x4	18x8	24x5	24x10	28x5	28x10	
(Nm)	0,4	-	0,70	0,70	0,50	0,80	0,80	1,0	
Ballscrew	8x2,5	-	16x5	16x10	25x5	25x10	32x5	32x10	
(Nm)	0,25	-	0,40	0,60	0,40	0,70	0,80	1,0	
<b>Geometrical moments of inertia of aluminium profile</b>									
I <sub>x</sub> mm <sup>4</sup>		4,09x10 <sup>4</sup>		1,35x10 <sup>5</sup>		5,65x10 <sup>5</sup>		19,14x10 <sup>5</sup>	
I <sub>y</sub> mm <sup>4</sup>		4,00x10 <sup>4</sup>		1,48x10 <sup>5</sup>		6,12x10 <sup>5</sup>		20,12x10 <sup>5</sup>	
Elastic-modulus N/mm <sup>2</sup>		70000		70000		70000		70000	

**Driving torque:**

$$M_a = \frac{F \cdot P \cdot S_i \cdot w}{2000 \cdot \pi \cdot \mu} + M_n$$

$$P_a = \frac{M_a \cdot n}{9550}$$

- F = force (N)
- P = thread pitch (mm)
- S<sub>i</sub> = safety factor 1,2 ... 2
- M<sub>n</sub> = no-load torque (Nm)
- n = rpm of screw (min<sup>-1</sup>)
- M<sub>a</sub> = driving torque (Nm)
- μ = screw efficiency
- w = friction coefficient ~1,22
- P<sub>a</sub> = motor power (KW)

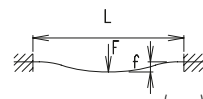
**Efficiency of lead screws:**

- All ballscrew 0,900
- Tr 10x3 0,375
- Tr 18x4 0,399
- Tr 18x8 0,565
- Tr 24x5 0,384
- Tr 24x10 0,550
- Tr 28x5 0,349
- Tr 28x10 0,513

**Deflection:**

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

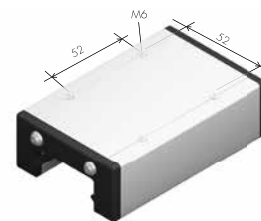
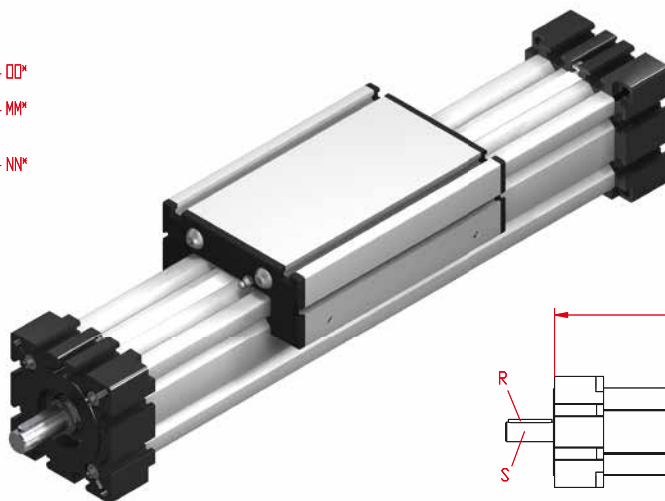
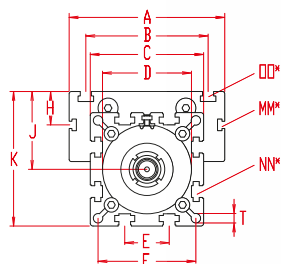
- f = deflection (mm)
- F = load (N)
- L = free length (mm)
- E = elastic modulus 70000 (N/mm<sup>2</sup>)
- I = second moment of area (mm<sup>4</sup>)



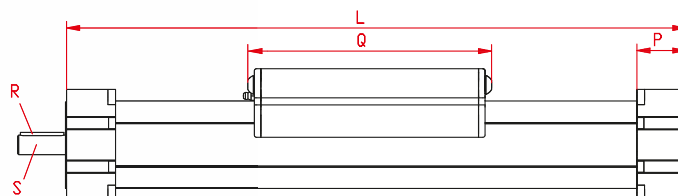
For the diagram for critical speeds of lead screws refer to chapter 4.2

# Positioning system EGT/EGK 30, 40, 60, 80

Dimensions (mm)



Size 40 without T-slots



\*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	H	J	K	MM for	NN for	OO for	P	Q	R	S Ø h6 x length	T	Basic weight	Weight per 100 mm
EG 30	120	70	56	42	40x1	13	35	-	26	47	-	M 6	M 6	18	82	-	5x15	4,2	0,6 kg	0,16 kg
EG 40	170	70	-	58	48x1	18	47	-	35	64	-	M 6	M 6	25	117	3x3x25	10x27	6,5	1,3 kg	0,36 kg
EG 60	235	100	80	82	62x1	30	69	-	49	90	-	M 8	M 8	35	165	5x5x28	14x35	8,5	4,0 kg	0,67 kg
EG 80	286	140	110	102	80x1	40	88	30	70	121	M 6	M 10	M 10	45	193	6x6x40	18x45	8,5	6,7 kg	1,14 kg

**T Spindle:**  
(T) Trapezoidal thread (K) Ballscrew

**1 Selection of screw:**  
(1) right hand (2) left hand (Ballscrew by inquiry)

**0 Choice of guide body profile:**  
(0) Standard (2) corrosion-protected guide rods (only size 30) and screws

**0 Choice of carriages:**



Size	Version 1	
	Q	L
30	94	132
40	133	186
60	181	251
80	209	302

**0 Drive version:**  
(0) one shaft (locating bearing side) (1) one shaft (non-locating bearing side) (2) shaft on both sides

Size	Standard		Multistart screw		
	Standard	Multistart screw	trapezoidal thread	Standard	Multistart screw
30	(0) Tr 10x3	(0) Kg 8x2,5			
40	(0) Tr 18x4	(0) Kg 16x5	(1) Tr 18x8	(1) Kg 16x10	(2) Kg 16x16
60	(0) Tr 24x5	(0) Kg 25x5	(1) Tr 24x10	(1) Kg 20x20	(2) Kg 25x10
80	(0) Tr 28x5	(0) Kg 32x5	(1) Tr 28x10	(1) Kg 25x25	(2) Kg 32x10

**0 Ballscrew pitch accuracy:**  
(0) 0,05 mm / 300 mm (Standard) (2) 0,025 mm / 300 mm

**0 End play of ball nut:**  
(0) 0,04 mm (Standard), (1) < 0,02 mm, (2) 2% apply prestress

**Repeatability:**  
± 0,2 mm Trapezoidal  
± 0,025 mm Ballscrew

**1500** Basic length + stroke = total length

EG T 40 1 0 0 0 0 0 0 0 0 1500

For combination kits and connecting elements refer to chapter 2.2

Pos. 1 2 3 4 5 6 7

Sample ordering code:

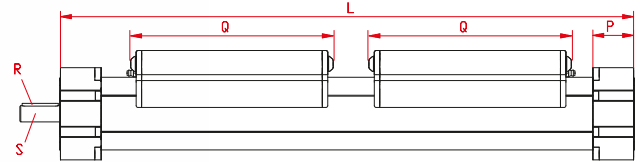
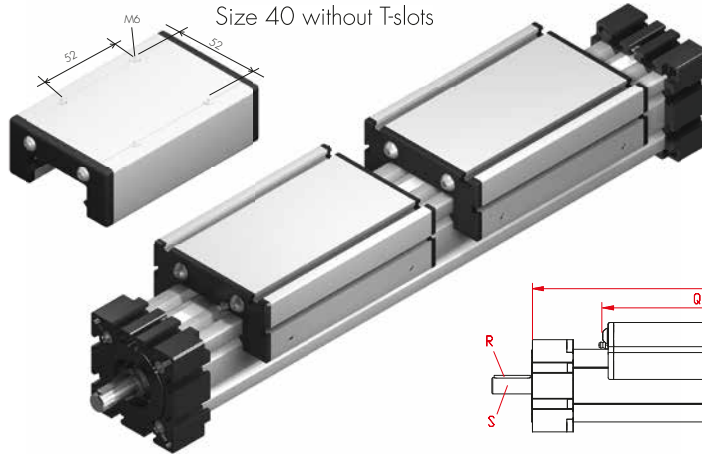
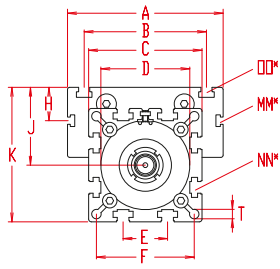
EGT40, trapezoidal right hand thread, standard body profile, top carriage, one shaft (locating bearing side), spindle 18x4, 1331 mm stroke



# Positioning system EGT/EGK 30, 40, 60, 80

Dimensions (mm)

with trapezoidal thread or ballscrew, right-hand and left-hand thread or divided spindles



\*For slide nuts refer to chapter 2.2 page 2

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

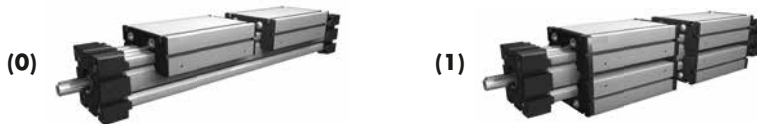
Size	Basic length L	A	B	C	D ± 0,05	E	F	H	J	K	MM for	NN for	OO for	P	Q	R	S Ø h6 x length	T	Basic weight	Weight per 100 mm
EG 30	202	70	56	42	40x1	13	35	-	26	47	-	M 6	M 6	18	82	-	5x15	4,2	1,0 kg	0,16 kg
EG 40	287	70	-	58	48x1	18	47	-	35	64	-	M 6	M 6	25	117	3x3x25	10x27	6,5	2,5 kg	0,36 kg
EG 60	400	100	80	82	62x1	30	69	-	49	90	-	M 8	M 8	35	165	5x5x28	14x35	8,5	6,2 kg	0,67 kg
EG 80	479	140	110	102	80x1	40	88	30	70	121	M6	M 10	M 10	45	193	6x6x40	18x46	8,5	12,0 kg	1,14 kg

**T Spindle:**  
(T) Trapezoidal thread (K) Ballscrew

**3 Selection of screw:**  
(3) right - left hand (4) divided spindle

**0 Choice of guide body profile:**  
(0) Standard (2) corrosion-protected guide rods (only size 30) and screws

**0 Choice of carriages:**



Size	Version 1	
	Q	L
30	94	226
40	133	319
60	181	432
80	209	511

**0 Drive version:**  
(0) shaft right hand thread (1) shaft left hand thread (2) shaft on both sides

Size	Standard trapezoidal thread		Standard ballscrew	
	Standard	Multistart screw	Standard	Multistart screw
30	(0) Tr 10x3		(0) Kg 8x2,5*	
40	(0) Tr 18x4	(1) Tr 18x8	(0) Kg 16x5	(1) Kg 16x10* / (2) 16x16*
60	(0) Tr 24x5	(1) Tr 24x10	(0) Kg 25x5	(1) Kg 20x20* / (2) 25x10*
80	(0) Tr 28x5	(1) Tr 28x10	(0) Kg 32x5	(1) Kg 25x25* / (2) 32x10*

\* = only for selection of divided spindle

**0 Ballscrew pitch accuracy:**  
(0) 0,05 mm / 300 mm (Standard) (2) 0,025 mm / 300 mm

**0 End play of ball nut:**  
(0) 0,04 mm (Standard), (1) < 0,02 mm, (2) 2% apply prestress

**Repeatability:**  
± 0,2 mm Trapezoidal  
± 0,025 mm Ballscrew

**2200** Basic length + stroke = total length

EG T 40 3 0 0 0 0 0 0 0 2200

For combination kits and connecting elements refer to chapter 2.2

Pos. 1 2 3 4 5 6 7

Sample ordering code:

EGT40, trapezoidal right - left hand thread, standard body profile, 2 top carriage, one shaft on right hand side, spindle 18x4, 1914 mm stroke