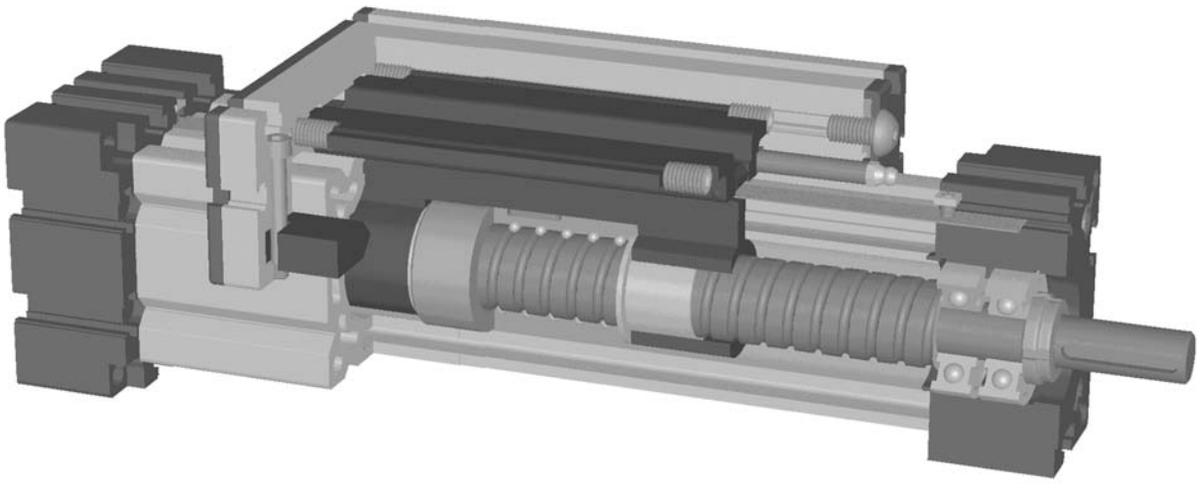
Positioning system EGT/EGK 30, 40, 60, 80

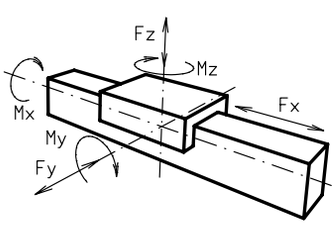
Spindle driven with trapezoidal- or ballscrew spindle



Function:
This unit consists of an aluminium square profile with lateral V-guides. The carriage, which is driven by means of a trapezoidal 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_x (N)	750	600	1500	1200	2500	2000	4200	3500
F_y (N)	90	60	350	315	500	450	1000	900
F_z (N)	90	60	500	450	750	675	1125	1000
M_x (Nm)	10	5	20	18	33	30	82	75
M_y (Nm)	13	6	44	40	77	70	220	200
M_z (Nm)	14	7	33	30	55	50	165	150
All forces and torques relate to the following: existing values / values of table	$\frac{Fy}{Fy_{dyn}} + \frac{Fz}{Fz_{dyn}} + \frac{Mx}{Mx_{dyn}} + \frac{My}{My_{dyn}} + \frac{Mz}{Mz_{dyn}} \leq 1$							
No-load torque								
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
Geometrical moments of inertia of aluminium profile								
I_x mm^4	$4,09x10^4$		$1,35x10^5$		$5,65x10^5$		$19,14x10^5$	
I_y mm^4	$4,00x10^4$		$1,48x10^5$		$6,12x10^5$		$20,12x10^5$	
Elastic-modulus N/mm^2	70000		70000		70000		70000	

Formula: EGT/K

Driving torque:

$$M_a = \frac{F*P*S_i*w}{2000*\pi*\mu} + M_{leer}$$

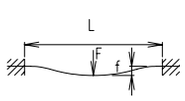
$$P_a = \frac{M_a*n}{9550}$$

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

Efficiency of lead screws:

All ballscrews: 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

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

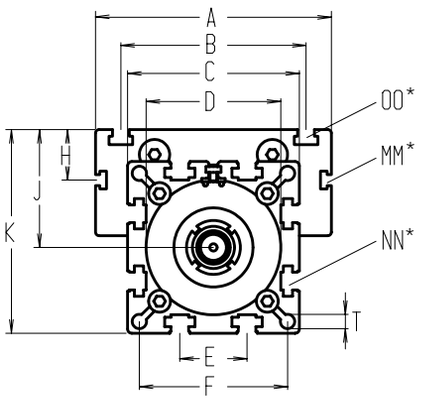


f	= deflection	(mm)
F	= load	(N)
L	= free length	(mm)
E	= elastic modulus 70000	(N/mm^2)
I	= second moment of area	(mm^4)

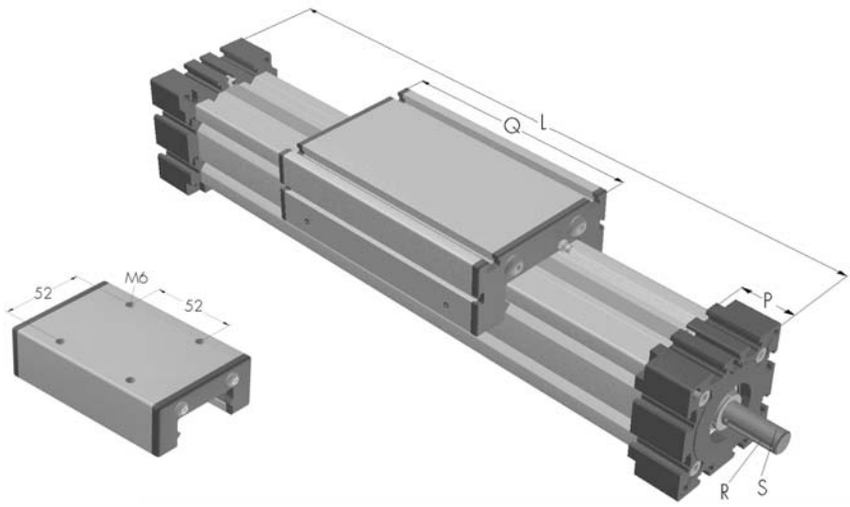
The diagram for critical speeds of lead screws refer to chapter 5.2 page 3

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	E	F	H	J	K	MM for	NN for	OO for	P	Q	R	S Ø 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	-	5x16	4,2	0,6 kg	0,16 kg
EG 40	170	70	-	58	48x1	18	47	-	35	64	-	M 6	M 6	25	118	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	164	5x5x28	14x35	8,5	4,0 kg	0,67 kg
EG 80	285	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

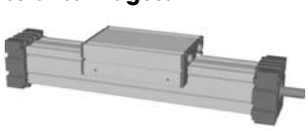
Spindle:
T **(T)** Trapezoidal thread **(K)** Ballscrew

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

Choice of guide body profile:
0 **(0)** Standard **(1)** stainless guide rods (only size 30) **(2)** stainless guide rods and screws (only size 30)

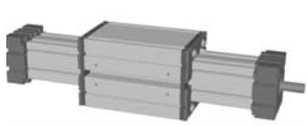
Choice of carriages:

0 **(0)**



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

(1)



Top and bottom carriages are rigidly joined, thus enabling higher loads to be applied. This increases the basic length by 12-16 mm. Thickness of jointing plate refer to chapter 1.2 page 6.

Choice of journal:
0 **(0)** one shaft (standard) **(2)** shaft on both sides

Selection of screw:
0

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

Ballscrew 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 prestress
* only in combination with **pitch accuracy (1)** or **(2)**

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	01500
		Pos.	1	2	3	4	5	6	7	

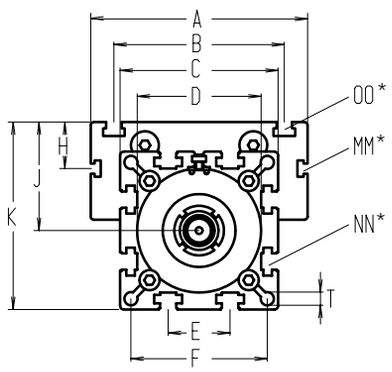
For combination kits and connecting elements refer to chapter 2.2

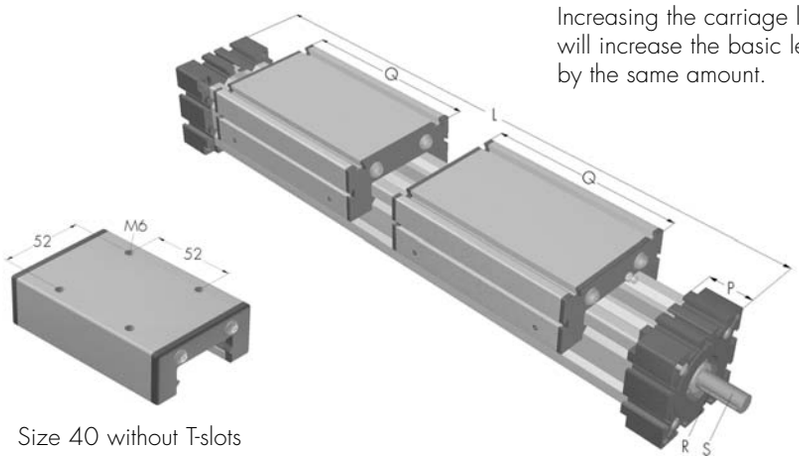
Sample ordering code:
EGT40 with trapezoidal right hand thread, standard body profile, top carriage, one shaft, spindle 18x4, 1330 mm stroke

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

Dimensions (mm)

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





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

Size 40 without T-slots

*For slide-nuts refer to chapter 2.2 page 2

Size ❐	Basic length L	A	B	C	D	E	F	H	J	K	MM for	NN for	OO for	P	Q	R	S Ø 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	-	5x16	4,2	1,0 kg	0,16 kg
EG 40	290	70	-	58	48x1	18	47	-	35	64	-	M 6	M 6	25	118	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	164	5x5x28	14x35	8,5	6,2 kg	0,67 kg
EG 80	480	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

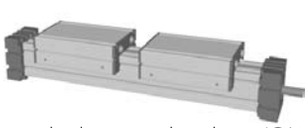
T **Spindle:**
(T) Trapezoidal thread **(K)** Ballscrew

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

0 **Choice of guide body profile:**
(0) Standard **(1)** stainless guide rods (only size 30) **(2)** stainless guide rods and screws (only size 30)

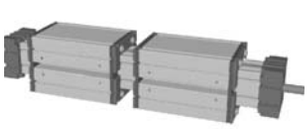
Choice of carriages:

0 **(0)**



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

(1)



Top and bottom carriages are rigidly joined, thus enabling higher loads to be applied. This increases the basic length by 24-32 mm. Thickness of jointing plate refer to chapter 1.2 page 6.

0 **Choice of journal:**
(0) shaft right hand thread **(1)** shaft left hand thread **(2)** shaft on both sides

0 **Selection of screw:**

Size	Standard trapezoidal thread	Multistart-screw trapezoidal thread	Standard ballscrew	Multistart-screw ballscrew
30	**(0)** Tr 10x3		**(0)** Kg 8x2,5*	
40	**(0)** Tr 18x4	**(1)** Tr 18x8	**(0)** Kg 16x5	**(1)** Kg 16x10*
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) 0,1 mm / 300 mm (Standard) **(1)** 0,05 mm / 300 mm **(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
* only in combination with **pitch accuracy (1)** or **(2)**

2200 Basic length + stroke = total length

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

EG	T	40	3	0	0	0	0	0	0	02200
		Pos.	1	2	3	4	5	6	7	

For combination kits and connecting elements refer to chapter 2.2

Sample ordering code:
EGT40 with trapezoidal right/left thread, standard body profile, 2 top carriage, one shaft on right hand side, spindle 18x4, 1910 mm stroke