

Slide with spindle drive

Positioning system to be used in lifting systems

**Function:**

Optimized spindle axis for wheelchair lifting systems, lifting platforms and other lifting applications. The guide body consists of an aluminium square profile with an integrated sliding guide. The plastic slide bushes integrated in the carriage ensure a very low friction resistance on anodized aluminium. The carriage is moved by means of a rotating thread spindle with an assigned follower nut. The opening in the guide body is closed by a plastic cover band. This plastic cover band is abrasion-free and is pressed into the profile by means of ball bearings.

Fitting position: As required. Max. length 3.000 mm

Carriage mounting: By tapped holes in the carriage.

Unit mounting: By T-slots or tapped holes in the bearing block and mounting sets.

Forces and torques	Size		
	GGT/K 90		
	Forces / Torques		
	F_x (N)	static	dynamic
	F_y (N)	4200	3500
	F_z (N)	1000	900
	M_x (Nm)	1125	1000
	M_y (Nm)	82	75
	M_z (Nm)	220	200
	M_z (Nm)	165	150
All forces and torques relate 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			
	Trapezoidal thread	24x5	24x10
	(Nm)	0,50	0,80
	Ballscrew	25x5	25x10
	(Nm)	0,40	0,60
Geometrical moments of inertia of aluminium profile			
	I_x mm ⁴	11,05x10 ⁵	
	I_y mm ⁴	23,60x10 ⁵	
	Elastic-modulus N/mm ²	70000	

Driving torque:

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

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

F = force (N)
 P = thread pitch (mm)
 S_i = safety factor 1,2 ... 2
 M_n = no-load torque (Nm)
 n = rpm of screw (min⁻¹)
 M_o = driving torque (Nm)
 μ = screw efficiency
 P_o = motor power (KW)

Efficiency of lead screws:

All ballscrew 0,900

Tr 24x5 0,384

Tr 24x10 0,550

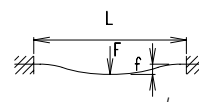
Deflection:

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

f = deflection (mm)

F = load (N)

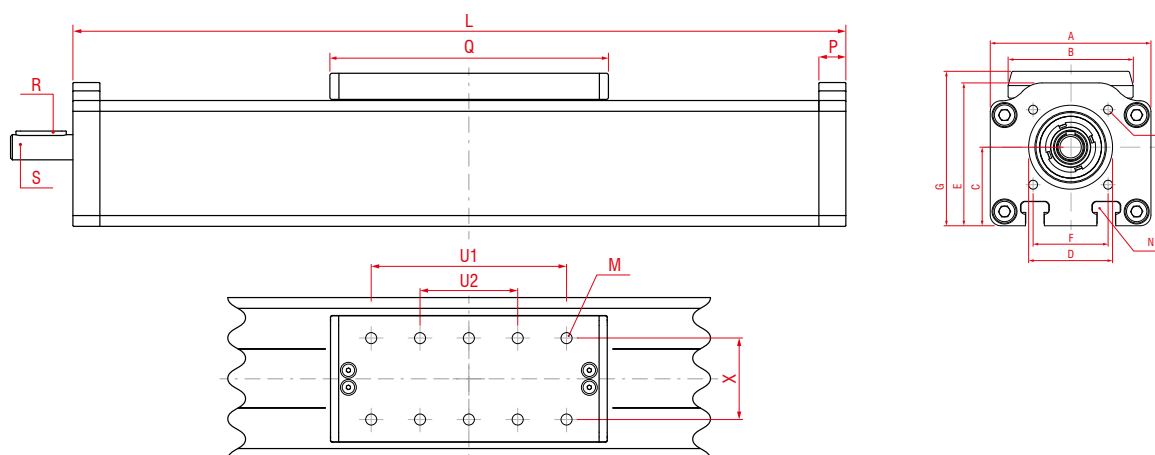
L = free length (mm)

E = elastic modulus 70000 (N/mm²)I = second moment of area (mm⁴)

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

Positioning system GGT / G GK 90

Dimensions (mm)



*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	M	N for	P	Q	Shaft		T for	U1	U2	X	Basic weight	Weight per 100 mm
													R key	S Ø h6 x length						
GGT/K 90	242	90	78	44	47	80	42	87	M8	M8	15	170	5x5x28	14x35	M6	120	60	50	4,5 kg	1,134 kg

T Spindle:

(T) Trapezoidal thread (K) Ballscrew

1 Selection of screw:

(1) right hand (Standard) (2) left hand (Ballscrew by inquiry)

0 Choice of guide body profile:

(0) Standard (1) corrosion-protected screws
(4) expanded corrosion-protected version (depending on the availability of components)

0 Choice of carriages:

(0)



0 Drive version:

(0) right (locating bearing side) (1) left (non-locating bearing side) (2) shaft on both sides

0 Selection of screw:

Tr = trapezoidal thread

Kg = ballscrew

Size	Standard	Multistart screw	Standard	Multistart screw
90	(0) Tr 24x5	(1) Tr 24x10	(0) Kg 25x5	(1) Kg 25x10 (2) Kg 20x20

0 Ballscrew pitch accuracy: (only ballscrew)

(0) 0,05 mm / 300 mm (2) 0,025 mm / 300 mm

0 End play of ball nut: (only ballscrew)

(0) 0,04 mm (Standard), (1) < 0,02 mm, (2) 2% apply prestress

GG T 90 1 0 0 0 0 0 0 1500 Basic length + stroke = total length

Pos. 1 2 3 4 5 6 7

Sample ordering code:

GGT 90, trapezoidal thread right hand thread, standard body profile, carriage version 0, drive version 0, spindle Tr 24x5, 1258 mm stroke