




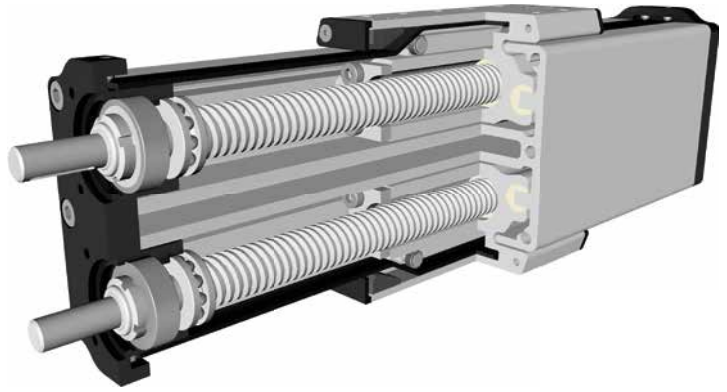
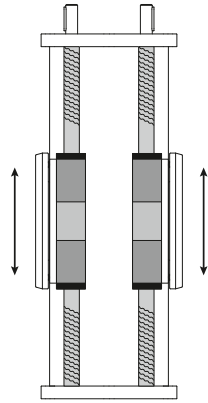


Linear system **GDGT/K 90**

1.1

SPINDLE DRIVEN

-  SLIDE UNIT
-  LIFTING SYSTEM
-  HIGH RIGIDITY
-  EASY CLEANING
-  SMOOTH SURFACES



Function:

Optimized spindle axis for lift systems, bicycle assembly stands, lifting platforms and other lifting applications. The guide body consists of an aluminium profile with an integrated sliding guide. The plastic slide bushes integrated in the carriage ensure a very low friction resistance on anodized aluminium. The so-called double G profile ensures a very high stability. The carriage is moved by a rotating threaded spindle provided with a follower nut. The opening in the guide body is closed by a cover band made of plastic material. This plastic cover band is abrasion-free and is pressed into the profile by means of ball bearings.

Fitting position:

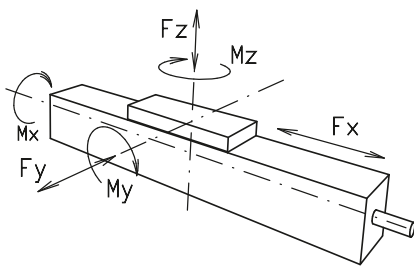
As required. Max. length 3.000 mm

Carriage mounting:

By tapped holes in the carriage.

Unit mounting:

By T-slots or tapped holes in the bearing block.

Forces and torques	Size		
	90		
	Forces / Torques		
		statisch	dynamisch
	F_x (N)	4200	3500
	F_y (N)	1000	900
	F_z (N)	1125	1000
	M_x (Nm)	82	75
	M_y (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	4,1x10 ⁶		
I_y mm ⁴	4,0x10 ⁶		
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

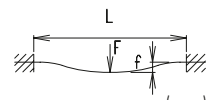
Tr 24x5 0,384

Tr 24x10 0,550

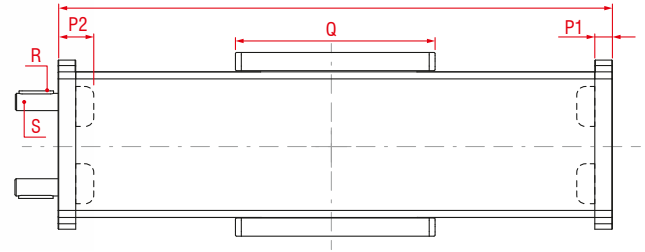
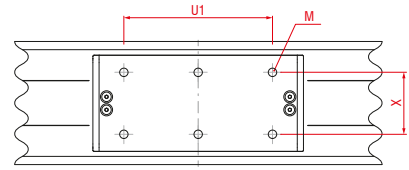
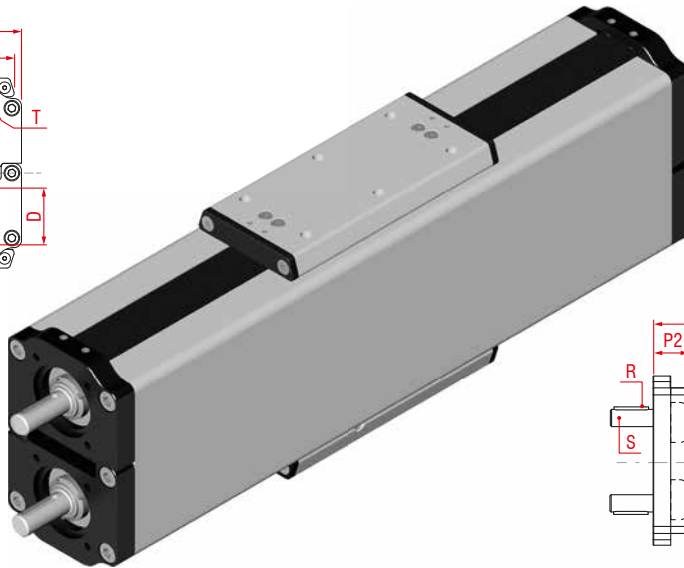
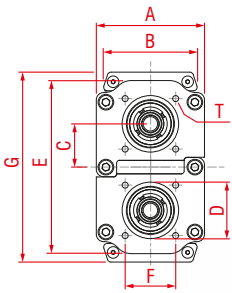
Deflection:

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

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



*For slide nuts refer to chapter 2.2 page 2

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

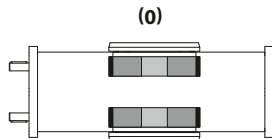
Size	Basic length L	A	B	C	D -0,05	E	F □	G	M for	P1	P2	Q	Shaft		T for	U1	X	Basic weight	Weight per 100 mm
													R key	S Ø h6 x length					
GDGT/K 90	242	90	78	36	47	144	42	158	M8	15	36	170	5x5x28	14x35	M6	120	50	7,8 kg	1,5 kg

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, only for trapezoidal thread (on request)

0 Choice of carriages:



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

Size	Selection of screw:	
	Standard	Multistart screw
90	(0) Tr 24x5	(1) Tr 24x10

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

Tr = trapezoidal thread / Kg = ballscrew

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

GDG T 90 1 0 0 0 0 0 0 1500

Basic length + stroke = total length

Sample ordering code:

GDGT 90, trapezoidal thread right hand thread, carriage version 0, drive version 0, spindle Tr 24x5, 1258 mm stroke

