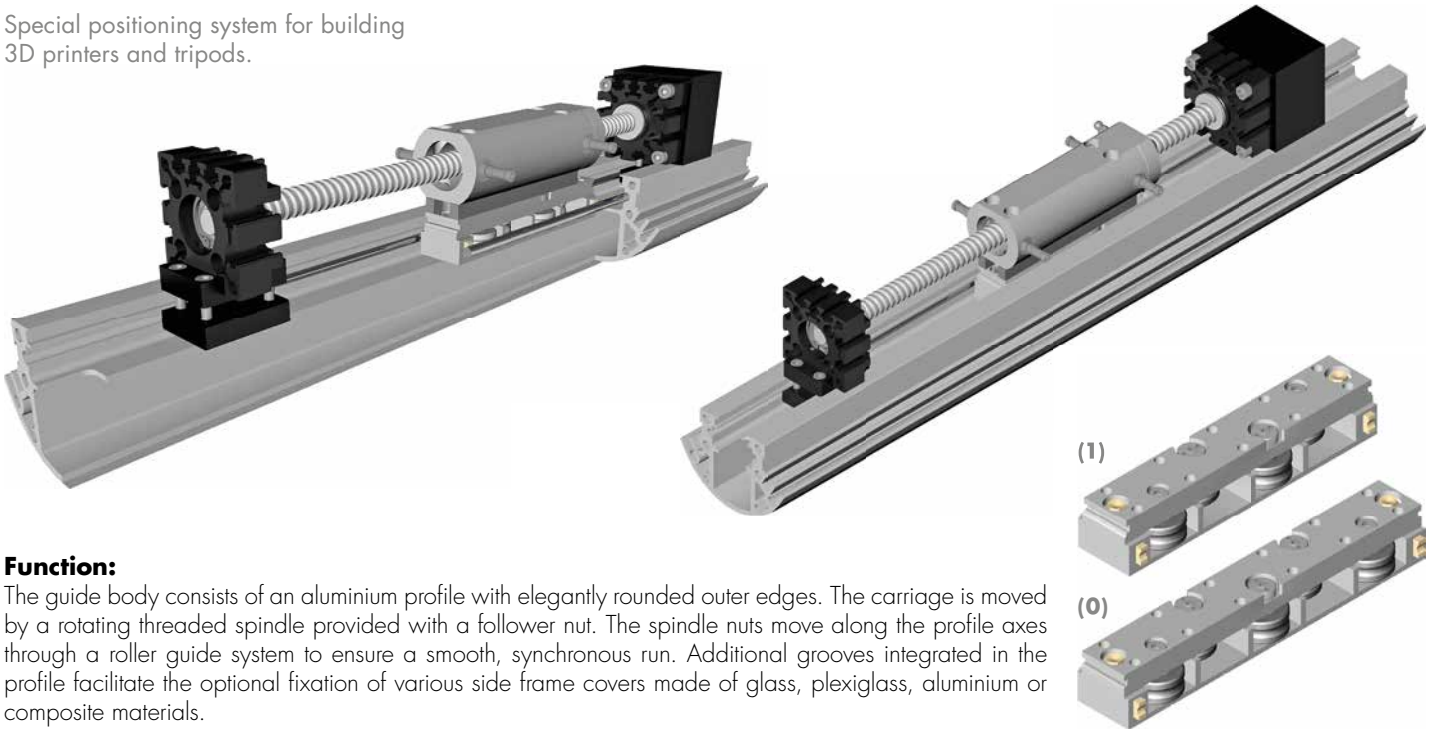
Positioning system CLLT/K 60

Belt drive

Special positioning system for building 3D printers and tripods.

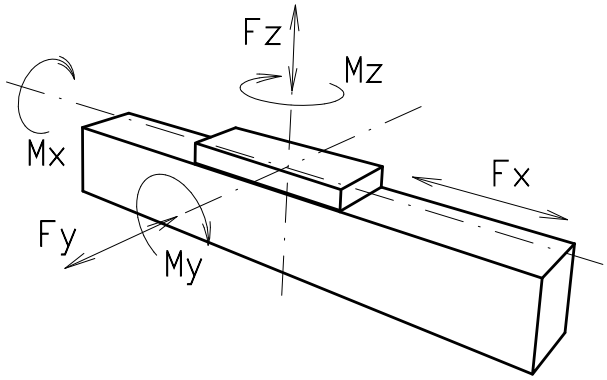


Function:

The guide body consists of an aluminium profile with elegantly rounded outer edges. The carriage is moved by a rotating threaded spindle provided with a follower nut. The spindle nuts move along the profile axes through a roller guide system to ensure a smooth, synchronous run. Additional grooves integrated in the profile facilitate the optional fixation of various side frame covers made of glass, plexiglass, aluminium or composite materials.

Fitting position: As required. Max. length 6.000 mm without joints.
Spindle version: Trapezoidal or ball screw spindle, max. length 3000 mm
Carriage support: The carriage runs on 5 rollers which can be adjusted and serviced at each central servicing position. Two grease nipples at the carriage enable relubrication of the positioning system.

Forces and torques



Size	60	
Forces / Torques	static	dynamic
F_x (N)	900	800
F_y (N)	390	325
F_z (N)	1170	845
M_x (Nm)	10	6,5
M_y (Nm)	78	65
M_z (Nm)	52	39
All forces and torques relate to the following:		
existing values / table values	$\frac{Fy}{Fy_{dyn}} + \frac{Fz}{Fz_{dyn}} + \frac{Mx}{Mx_{dyn}} + \frac{My}{My_{dyn}} + \frac{Mz}{Mz_{dyn}} \leq 1$	
No-load torque		
Trapezoidal thread	18 x 4	18 x 8
Nm	0,4	0,5
Ballscrew	16 x 5	16 x 16
Nm	0,2	0,4
Mass moments of inertia spindle		
Kg m²/ m	Tr 18x4 - $5{,}05 \times 10^{-5}$	
Kg m²/ m	Kg 16x5 - $4{,}1 \times 10^{-5}$	

For life-time calculation of rollers use our homepage · www.bahr-modultechnik.com

Driving torque:

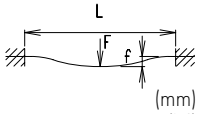
$$M_a = \frac{F * P * S_i}{2000 * \pi} + M_n$$

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

F	= force	(N)
P	= pulley action perimeter	(mm)
Si	= safety factor 1,2 ... 2	
M_n	= no-load torque	(Nm)
n	= rpm pulley	(min^{-1})
M_a	= driving torque	(Nm)
P_a	= motor power	(KW)

Deflection:

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



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

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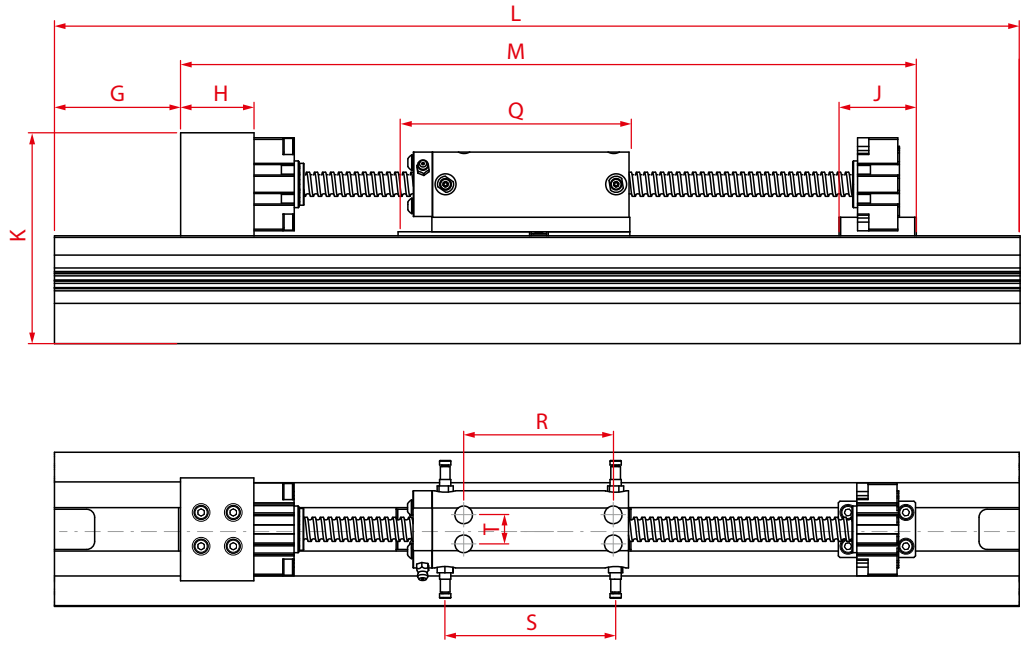
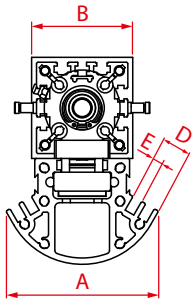
Dimensions (mm)





Size	Basic length L	A	B	D	E	G	H	J	K	M	Q	R	S	T	Basic weight	Weight per 100 mm
CLLT/K 60	269	95,6	58	18,6	6,3	variable*	71	48	131	256	144	93	106	18	3,2 kg	0,6 kg

*Motor space

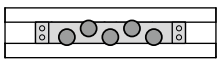
K **Spindel:**
(T) Trapezoidal thread **(K)** Ballscrew

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

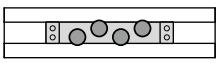
0 **Choice of guide body profile:**
(0) Standard **(2)** corrosion-protected guide rods and screws

0 **Choice of carriages:**

(0)



(1)



Carriage	Q
Version (1)	184

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

0 **Selection of screw:**

Size	Standard	Multistart screw	Standard	Multistart screw	
	Trapezoidal thread		Ballscrew		
60	**(0)** Tr 18x4	**(1)** Tr 18x8	**(0)** Kg 16x5	**(0)** Kg 16x10	**(0)** Kg 16x16

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

CLL	K	60	1	0	0	0	0	0	0	1500
		Pos.	1	2	3	4	5	6	7	

Basic length + stroke = total length

It is recommended to contact our sales department for any inquiries regarding this special system.

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