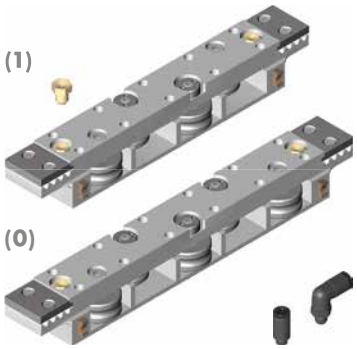
Positioning system CLLZ 60

Belt drive

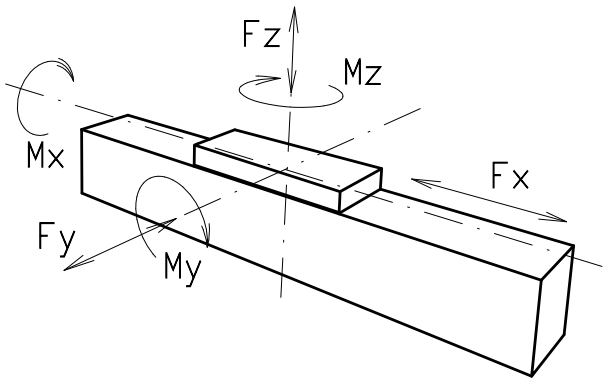
Special positioning system for building
3D printers and tripods.



Function:
The guide body consists of an aluminium profile with elegantly rounded outer edges, with a roller guide integrated into it. The carriage is moved by means of a revolving interior timing belt. At the front face there is a timing belt deflection unit with integrated coupling claws on two sides. The opposite front face is provided with a plate containing a tensioning device for the timing belt.

Fitting position: As required. Max. length 6.000 mm without joints.
Carriage mounting: By tapped holes.
Belt performance: HTD with steel reinforcement, no backlash when changing direction, repeatability ± 0,1 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)	1073	960
F_y (N)	780	650
F_z (N)	1170	845
M_x (Nm)	20	13
M_y (Nm)	78	65
M_z (Nm)	52	39
All forces and torques related 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		
Nm	0,6	
Speed		
(m/s) max	4	
Tensile force		
permanent (N)	1050	
0,2 s (N)	1150	
Geometrical moments of inertia of aluminium profile		
I_x mm^4	4,47x10^5	
I_y mm^4	5,59x10^5	
Elastic modulus N/mm^2	70000	

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

Driving torque:

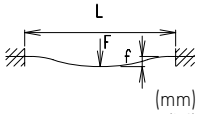
$$M_a = \frac{F * P * S_i}{2000 * \pi} + M_n$$

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

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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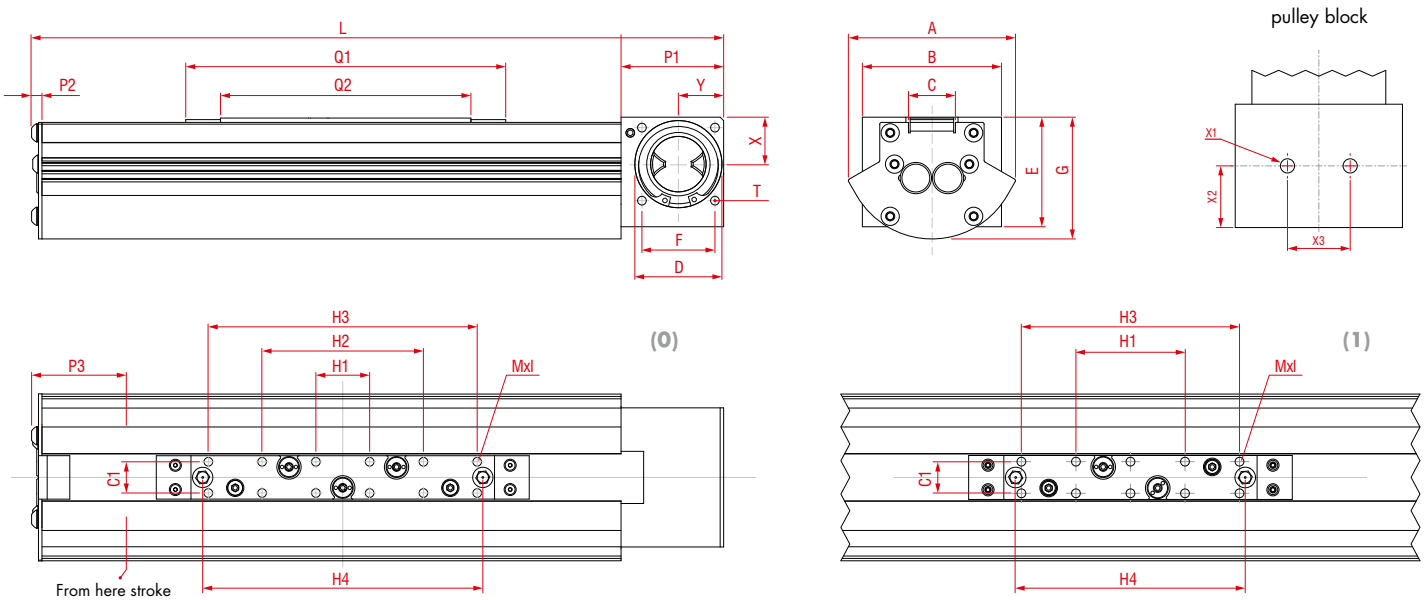


Size	X1	X2	X3
CLLZ 60	M8	29,5	30

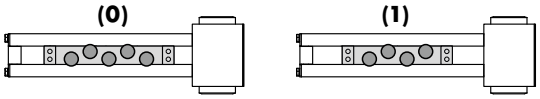
Size	Basic length L	A	B	C	C1	D	E	F Ø	G	H1	H2	H3	H4	Mxl	P1	P2	P3	Q1	Q2	T	X	Y	Basic weight	Weight per 100 mm
CLLZ 60	329	97	80	25	18	47	63	42	70	31	93	155	161,5	M6x6	59	6	55	215	175	M6	27	26	2,65 kg	0,81 kg

0 **Choice of guide body profile:**

(0) Standard **(2)** corrosion-protected guide rods and screws

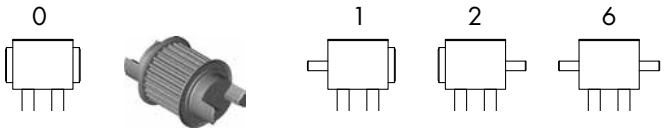
(4) expanded corrosion-protected version (depending on the availability of components)

0 **Choice of carriages:**



Carriage	L	Q1	Q2	H1	H2	H3	H4
60 Vers. (0)	330	215	175	31	93	155	161,5
60 Vers. (1)	299	184	144	62	---	124	130,5

0 **Drive version:**



Belt table:

Code No.		Size	Belt	mm/rev.	Number of teeth
0	3	60	5M 30	130	26

Shaft dimensions / Coupling claw:

Size	Shaft	Feather key	Coupling
60	14 h6 x 35	5x5x28	14

CLLZ	60	1	0	0	0	0	3	1	01500
Pos.		1	2	3	4	5	6	7	

Basic length + stroke = total length

Sample ordering code:
CLLZ60, standard body profile, double-sided coupling claw, 1329 mm stroke