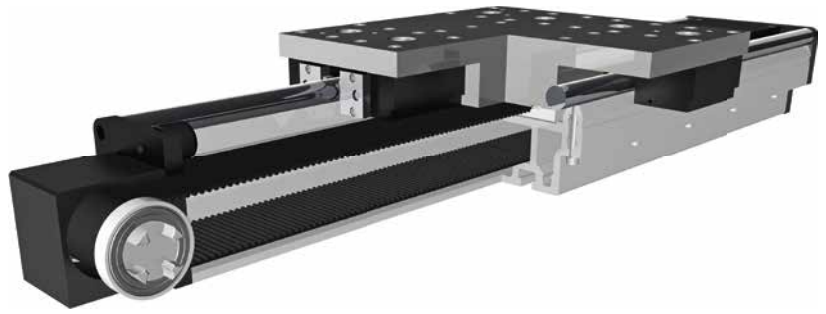


## BELT DRIVE

ROLLER GUIDE

HEAVY LOAD

HIGH LOAD CAPACITY



### Function:

This unit consists of an aluminium profile with hardened steel guide rods mounted on top of the profile. The carriage, which has internal linear ball bearings that can be adjusted free of play, is driven along the guide rods by a timing belt. The pulleys have maintenance-free ball bearings. Opposite the driven side there is an integrated timing-belt tensioner which can be readjusted by 2 screws.

### Fitting position:

As required. Max. length 5.000 mm without joints.

### Carriage mounting:

By tapped holes.

### Unit mounting:

By T-slots and mounting sets. The linear axis can be combined with any T-slot profile.

### Carriage support:

In the standard version, the carriage runs on 8 rollers which can be adjusted and serviced at a central servicing position. For longer carriages the number of rollers can be increased. Repeatability  $\pm 0,1$ .

### Belt type:

HTD with steel reinforcement, no backlash when changing direction, repeatability:  $\pm 0,1$  mm.

Forces and torques	Size	ALLZ 203	
	Forces/Torques	static	dynamic
	$F_x$ (N)	-	5610
	$F_y$ (N)	23000	18400
	$F_z$ (N)	11000	8800
	$M_x$ (Nm)	1180	950
	$M_y$ (Nm)	1870	1500
	$M_z$ (Nm)	3800	3100
	<b>All forces and torques related to the following:</b> 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		
<b>No-load torque</b>			
Nm		4	
<b>Speed</b>			
(m/s) max		8	
<b>Geometrical moments of inertia of aluminium profile</b>			
$I_x$ mm <sup>4</sup>		$2,26 \times 10^7$	
$I_y$ mm <sup>4</sup>		$8,75 \times 10^7$	
Elastic modulus N/mm <sup>2</sup>		70000	

For life-time calculation of rollers use our homepage.

Driving torque:

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

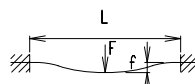
$$P_o = \frac{M_o \cdot n}{9550}$$

$F$  = force (N)  
 $P$  = pulley action perimeter (mm)  
 $S_i$  = safety factor 1,2 ... 2  
 $M_n$  = no-load torque (Nm)  
 $n$  = rpm pulley (min<sup>-1</sup>)  
 $M_o$  = driving torque (Nm)  
 $P_o$  = motor power (KW)

Deflection:

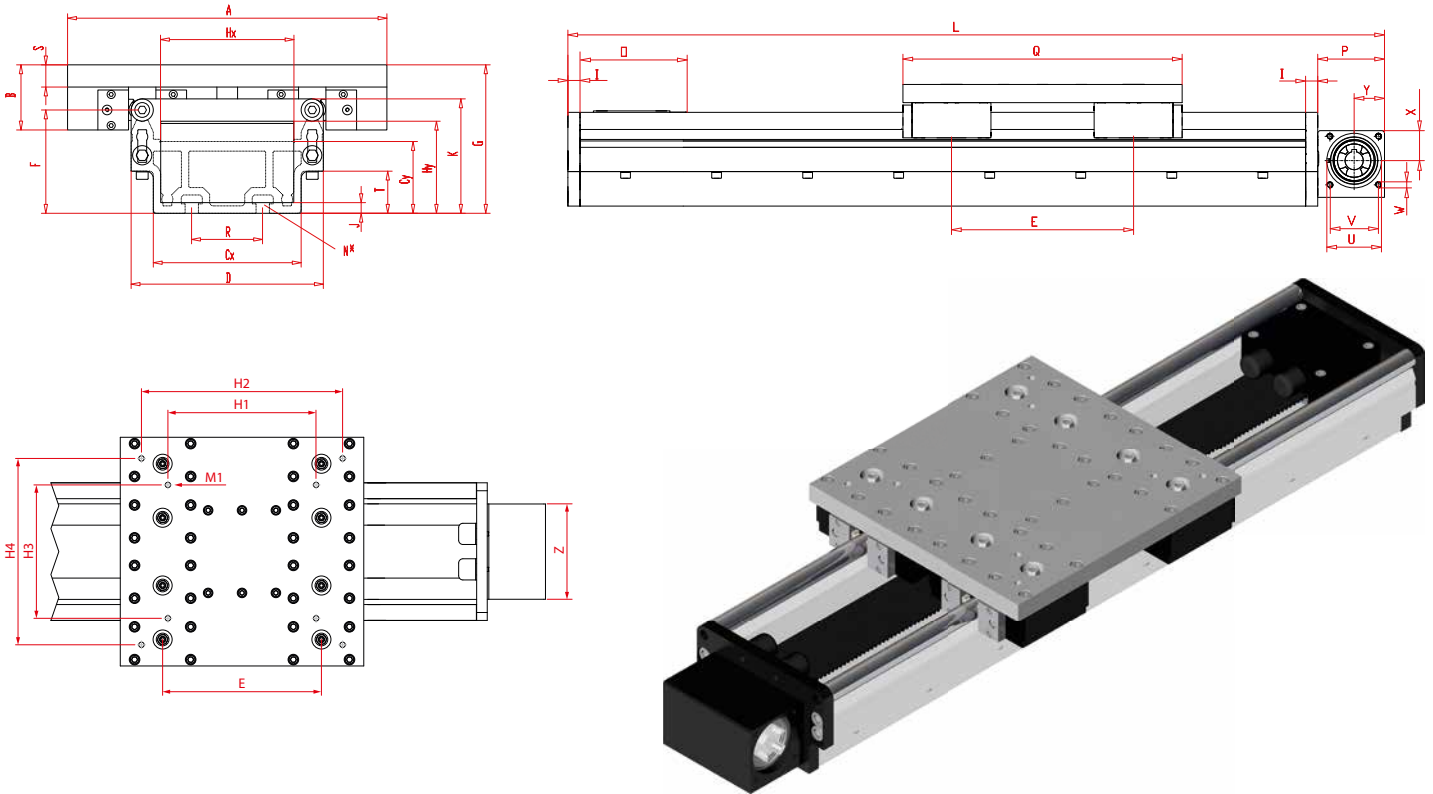
$$f = \frac{F \cdot L^3}{E \cdot I \cdot 192}$$

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



# Linear system ALLZ 203

Dimensions (mm)



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

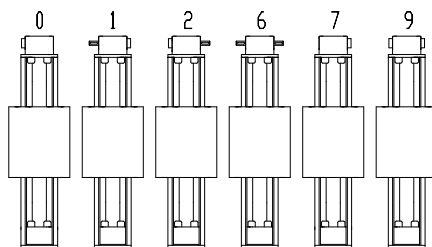
Size	Basic length L	A	B	Cx	Cy	D	F	G	Hx	Hy	I	J	K	N for	O	P	R	S	T	U -0,05	V	W	X	Y	Z	Basic weight	Weight per 100 mm
ALLZ 203	798	432	88	200	97	260	139,6	200,5	180,5	124,5	20	14,5	154,5	M16	182	110	96	30	57	90	80	10	49,5	50	180	90 kg	4,0 kg

**3** Guide rod size:  
(3) Ø=30 (4) Ø=40

Carriage	E	Q	H1	H2	H3	H4	M1
ALLZ 203	300	460	280	380	252	352	M12

**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** Drive version:



9 is as 0, but with coupling claws on both sides.

The standard version is supplied without shaft. A shaft can be retrofitted by inserting it into the pulley bore and securing it with 2 locking rings.

**Belt table:**

Code No.	Belt	mm/rev.	Number of teeth
0 7	8M100	224	28

**Shaft dimensions / Coupling claw:**

Size	Shaft ø h6 x length	Key	Coupling
203	30 x 55	8x7x50	24

ALLZ 20 3 0 0 0 0 0 7 0 2000 — Basic length + stroke = total length

Pos. 1 2 3 4 5 6 7

Sample ordering code:

ALLZ203, guide rods 30 mm, standard body profile, coupling claw on both side, toothed belt 8M100, 1208 mm stroke.

