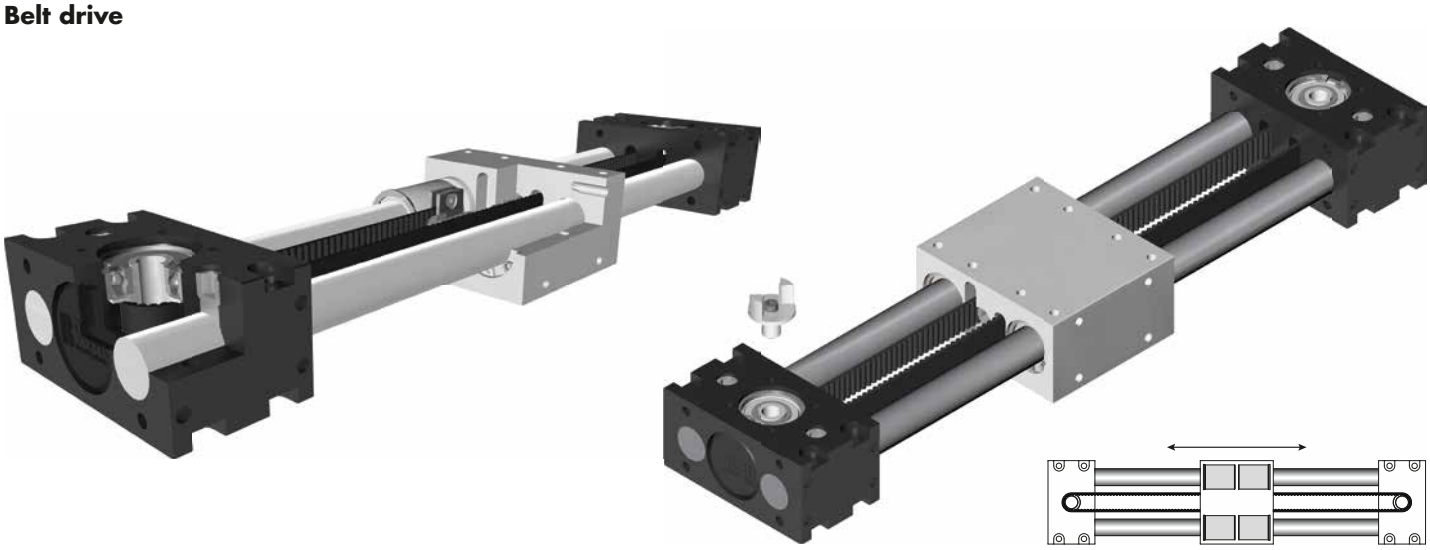
Positioning system WGVZ | WKVZ 16

Belt drive

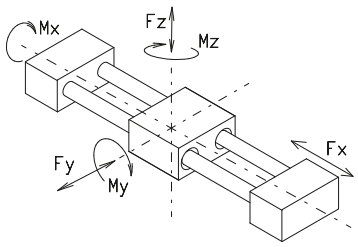


Funktion:

This positioning system is guided either by means of ball bushings (WKVZ) or sliding bushings (WGVZ). An HTD toothed belt is used as drive mechanism. The carriage is moved by means of a revolving vertical timing belt. Due to various threaded holes and a small installation height, this system can be integrated individually and easily into any application. Both bearing pieces offer the possibility to combine motors of any make, from either end by means of pivots or couplings. The open arrangement of the axes ensures that no dirt can accumulate in the interior parts. Optionally, the units are also available with two carriages, which can be driven in the same direction or in opposite directions.

Fitting position: As required. Max. length 2000 mm
Carriage mounting: By tapped holes in the carriage.
Unit mounting: By tapped holes in the bearing block.
Belt type: HTD with steel reinforcement, no backlash when changing direction, repeatability: ± 0,1 mm.

Forces and torques



Size	WGVZ 16	WKVZ 16
permitted dyn. Forces*	5000 km	5000 km
F_x (N)	200	200
F_y (N)	62	62
F_z (N)	62	62
M_x (Nm)	1,5	3,5
M_y (Nm)	5	10
M_z (Nm)	5	10
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	0,3	0,3
Speed		
(m/s) max	1	3
Moments of inertia steel shaft		
I_x mm⁴	6434	6434
I_y mm⁴	2,38 x 10⁵	2,38 x 10⁵
Elastic modulus N/mm²	2,1 x 10⁵	2,1 x 10⁵

** referred to life-time*

Driving torque:

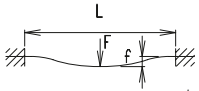
$$M_a = \frac{F * P * S_i}{2000 * \pi} + M_n$$

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

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 210.000 (N/mm^2)
I = second moment of area (mm^4)

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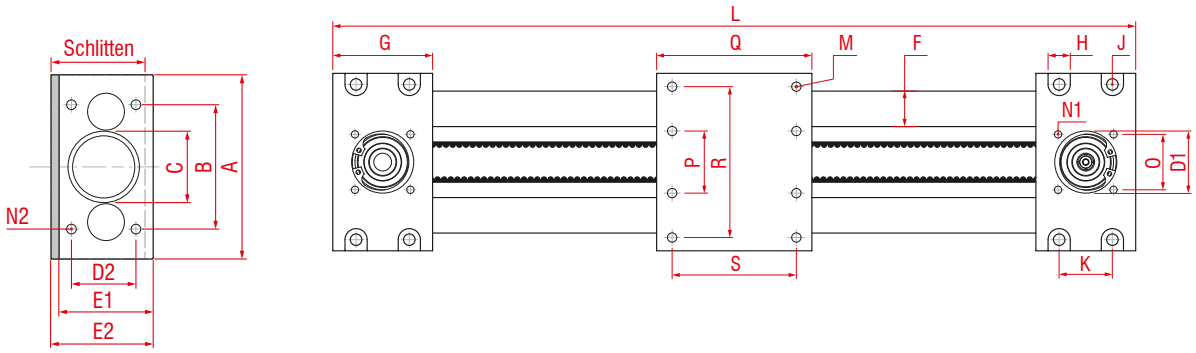


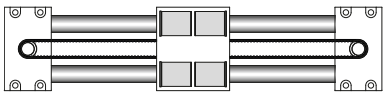
Size ❒	Basic length L	A	B	C	D1 Ø - 0,05	D2	E1	E2	F Ø	G	H	J	K	N1	N2	M	O □	P	Q	R	S	Basic weight	Weight per 100 mm
WK/G VZ 16	162	80	54	31	28	28	39	41	16	45	10	M6	24	M4x8	M5x10	M5x7	25	28	70	68	56	1,78 kg	0,35 kg

K **Version:**
(G) Slide bushing **(K)** Ball bushing

0 **Choice of guide body profile:**
(0) Standard

0 **Choice of carriages:**

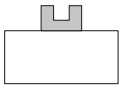
(0)



0 **Drive version:**

(0)

(0)



Belt table

Code No.		Size	Belt	mm/rev.	Number of teeth
0	**1**	**16**	3M 12	60	20

Shaft dimensions / Coupling

Size	Hollow shaft	Coupling
16	Ø 8 H7	Rotex 9

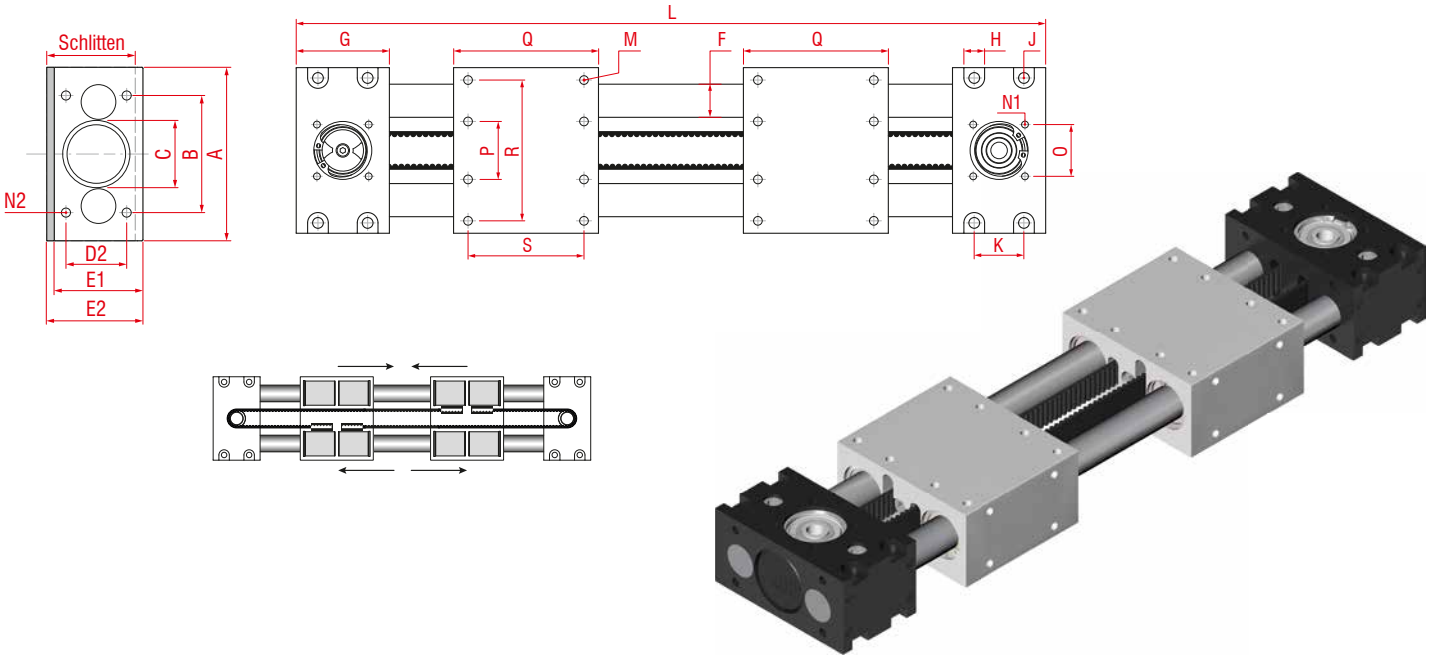
W	K	VZ	16	1	0	0	0	0	1	1	1500
			Pos.	1	2	3	4	5	6	7	

Basic length + stroke = total length

Sample ordering code:
WKVZ 16 with ball bushings, standard body profile, carriage version 0, drive version 0, 1338 mm stroke

Positioning system WGVZ | WKVZ 16

Belt drive



Size ❐	Basic length L	A	B	C	D1 Ø - 0,05	D2	E1	E2	F Ø	G	H	J	K	N1	N2	M	O □	P	Q	R	S	Basic weight	Weight per 100 mm
WK/G VZ 16	232	80	54	31	28	28	39	41	16	45	10	M6	24	M4x8	M5x10	M5x7	25	28	70	68	56	2,26 kg	0,35 kg

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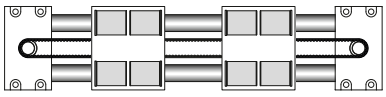
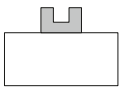


0 **Drive version:**

(0) **(0)**



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16	Ø 8 H7	Rotex 9

W	K	VZ	16	1	0	0	0	0	1	1	1500
			Pos.	1	2	3	4	5	6	7	

Basic length + stroke = total length

Sample ordering code:
WKVZ 16 with ball bushings, standard body profile, carriage version 0, drive version 0, 1268 mm stroke