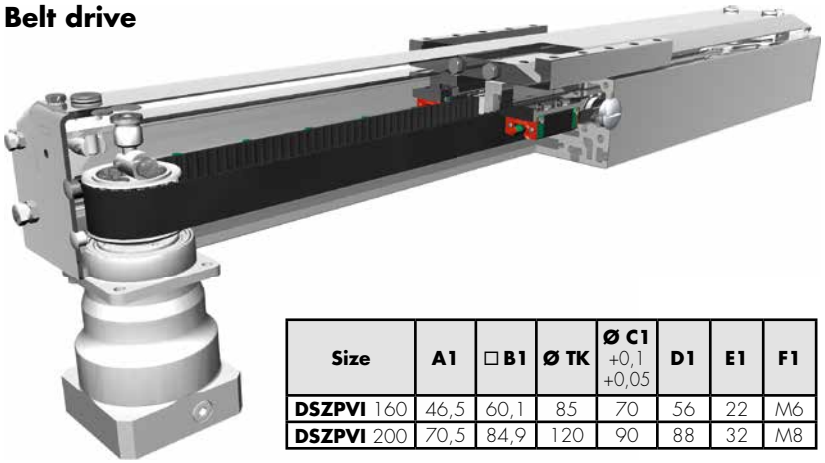
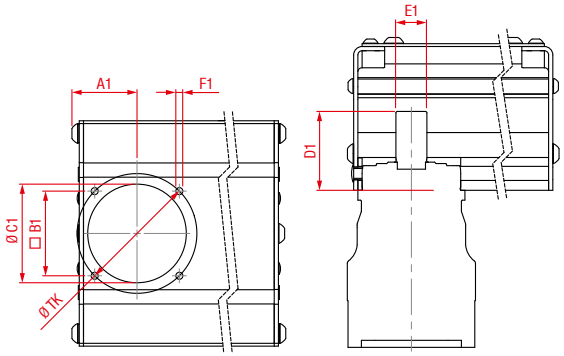
Positioning system DSZPVIE 160, 200

Belt drive



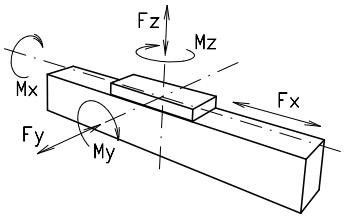


Size	A1	□B1	Ø TK	Ø C1 +0,1 +0,05	D1	E1	F1
DSZPVI 160	46,5	60,1	85	70	56	22	M6
DSZPVI 200	70,5	84,9	120	90	88	32	M8

Function:
This unit consists of a rectangular aluminium profile with 2 integrated rail guides and is covered by a stainless steel sheet (thickness 0.37mm, material 1.4301). The carriage is moved by a belt drive. On the drive side the pulley is beared on the shaft of a planetary gear. Belt tension can be readjusted by a simple screw adjustment at the opposite side of the drive. A special curved aluminium sheet is covering the carriage side. There is only a small gap between carriage and aluminium sheet. Because of its special design it is possible to drive the carriage over the pulley areas. This fact is making the unit very compact.

Fitting position: As required, max. length DSZPVIE 120 / 1600mm, DSZPVIE 160 / 1800mm, DSZPVIE 200 / 2000mm
Carriage mounting: By tapped holes
Unit mounting: By T-slots and mounting sets, bores through the cover.
Belt type: HTD with steel reinforcement, no backlash when changing direction, repeatability ± 0,1 mm.
Carriage support: In the standard version, the carriage runs on 4 runner blocks which can be serviced at a central servicing position. For longer carriages the number of runner blocks can be increased.

Forces and torques



Size	160		200	
permitted dyn. Forces*	5000 km	10000 km	5000 km	10000 km
F_x (N)	1900	1800	4000	3800
F_y (N)	5570	3900	15600	11080
F_z (N)	7050	5020	20600	14600
M_x (Nm)	358	255	1285	915
M_y (Nm)	369	262	1375	980
M_z (Nm)	364	258	1345	960
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 without cover bands	1,5		2,0	
Nm with cover bands	2,1		2,9	
Speed				
(m/s) max	5		5	
Tensile force				
permanent (N)	1900		4000	
0,2 s (N)	2090		4300	
Geometrical moments of inertia of aluminium profile				
I_x mm⁴	21,32 x 10⁵		48,07 x 10⁵	
I_y mm⁴	123,36 x 10⁵		259,99 x 10⁵	
Elastic modulus N/mm²	70000		70000	

For life-time calculation use our homepage.

** referred to life-time*

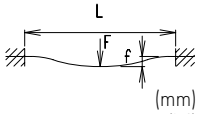
Driving torque:

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

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

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:

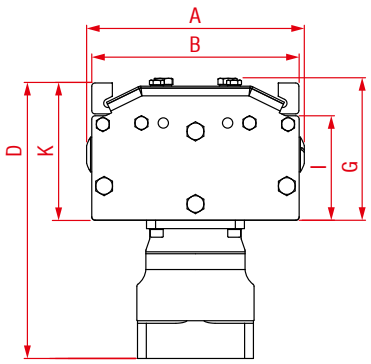


$$f = \frac{F * L^3}{E * I * 192}$$

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

Positioning system DSZPVIE 160, 200

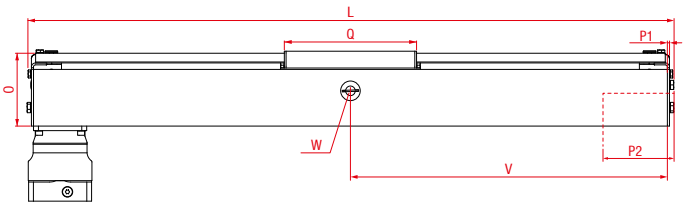
Dimensions (mm)

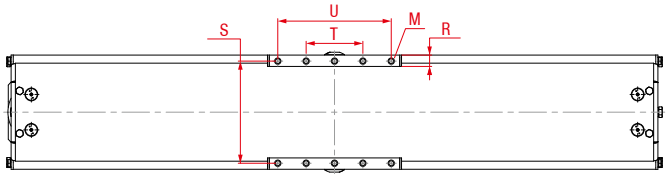


V = Q + 100 mm
W = servicing position

DS 120 M = M6 x 8
only 8 threaded holes in the carriage
DS 160 M = M8 x 12
DS 200 M = M10 x 12

Optionally available with angular planetary gearbox



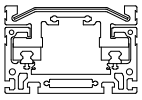


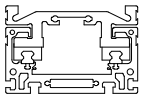
Increasing the carriage length will increase the basic length by the same amount.

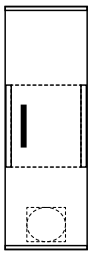
Size	Basic length L	A	C	D	G	I	K	M for	N for	O	P1	P2	Q	R	S	T	U	Basic weight *without gearbox*	Weight per 100 mm
DSZPVI 160	288	160	90	217,5	108,5	80	107,5	M8	M6	104	3	52,5	188	15	144	80	160	9,83 kg	1,98 kg
DSZPVI 200	349	200	140	251	132,5	100	130,5	M10	M8	128	3	62,5	245	17	180	100	200	18,95 kg	3,71 kg

0 **Choice of guide body profile:**

(0) corrosion-protected components
(1) as above, but with standard components
(2) like version (0), but without cover profile
(3) as above (0), but with standard components

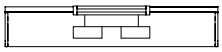
(0) | **(1)**  with cover profile

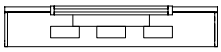
(2) | **(3)**  without cover profile

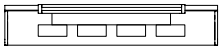


belt connection

0 **Choice of carriages:**

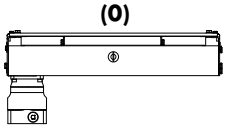
(0) 

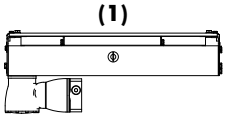
(1) 

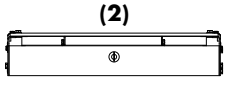
(2) 

Size	Version 1		Version 2	
	Q	L	Q	L
160	203	303	268	368
200	288	423	398	533

0 **Drive version:**

(0) 

(1) 

(2) 

(0) planetary gearbox
(1) angular planetary gearbox
(2) without gearbox

Belt table:

Code-No.		Size	Belt	mm/rev.	Number of teeth
0	**7**	**160**	8M 30	176	22
0	**9**	**200**	8M 50	224	28

DSZPVIE	**160**	**1**	**0**	**0**	**0**	**0**	**7**	**1**	**1500**
Pos.		1	2	3	4	5	6	7	

— Basic length + stroke = total length

Gearbox variants:

Gearbox		DSZPVIE 120	DSZPVIE 160	DSZPVIE 200
Neugart	(0)	PLN 70	PLN 90	PLN 115
	(1)	WPLN 70	WPLN 90	WPLN 115
SEW	(0)	PSKC 221	PSKC 321	PSKC 521
Wittenstein	(0)	SP+060	SP+075	SP+100
	(1)	SK+060	SK+075	SK+100

Sample ordering code:
DSZPVIE 160 with standard body profile, standard carriage, with planetary gearbox, 1211 mm stoke.