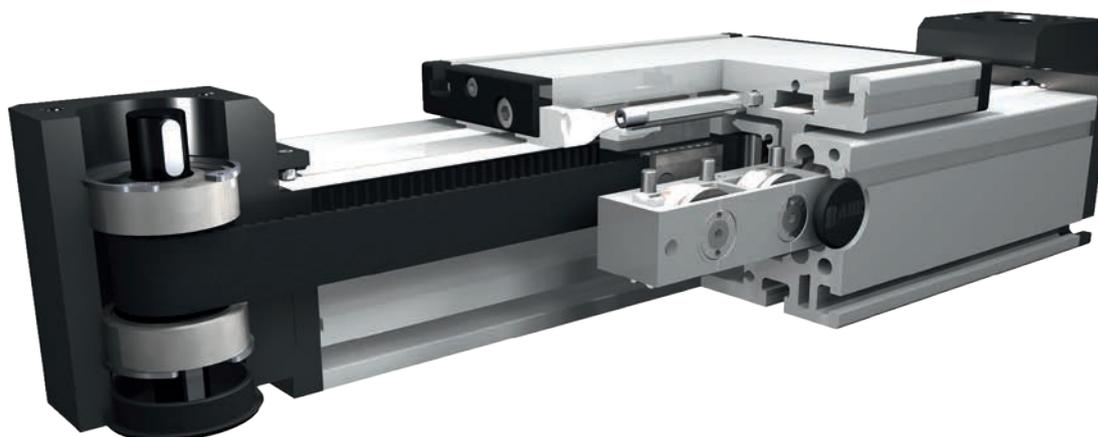


# Positioning system DLVZ 120, 160

Specifications

## Internal belt drive

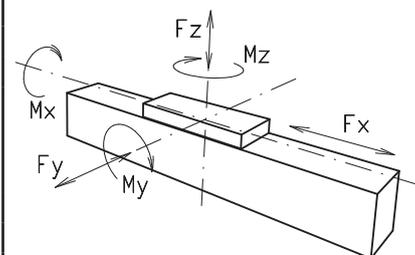


### Function:

This unit consists of a rectangular aluminium profile with 2 integrated roller guides. The carriage is moved by a belt drive. Belt tension can be readjusted by a simple screw adjustment device in the carriage. This device can also be used for symmetrical adjustment of two or more linear units running parallel. The openings of the guide body are sealed with 3 stainless steel cover bands to protect the guide from splash water and dust. Alternatively, the opening can also be covered with a bellow or can be delivered without cover bands.

- Fitting position:** As required. Max. length 3.000 mm without joints.
- Carriage mounting:** By T-slots.
- Unit mounting:** By T-slots and mounting sets. The linear axis can be combined with any T-slot profile.
- 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 8 rollers which can be adjusted and serviced at a central servicing position. For longer carriages the number of rollers can be increased.

### Forces and torques



Size	DLVZ 120		DLVZ 160		DLVZ 200	
	static	dynamic	static	dynamic	static	dynamic
<b>Forces/Torques</b>						
$F_x$ (N)	894	800	1000	840		
$F_y$ (N)	1100	900	3000	2000		
$F_z$ (N)	1250	1000	3500	2800		
$M_x$ (Nm)	150	125	400	320		
$M_y$ (Nm)	140	120	360	300		
$M_z$ (Nm)	100	90	180	150		
<b>All forces and torques relate 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 $\frac{F_y}{F_{y_{dyn}}} + \frac{F_z}{F_{z_{dyn}}} + \frac{M_x}{M_{x_{dyn}}} + \frac{M_y}{M_{y_{dyn}}} + \frac{M_z}{M_{z_{dyn}}} \leq 1$						
<b>No-load torque</b>						
Nm	1,4		1,8			
<b>Speed</b>						
(m/s) max	3		4			
<b>Tensile force</b>						
permanent (N)	900		1000			
0,2 s (N)	1000		1150			
<b>Geometrical moments of inertia of aluminium profile</b>						
$I_x$ mm <sup>4</sup>	$6,6 \times 10^5$		$22,2 \times 10^5$			
$I_y$ mm <sup>4</sup>	$38,6 \times 10^5$		$122,0 \times 10^5$			
E-Modulus N/mm <sup>2</sup>	70000		70000			

For life-time calculation of rollers use our CD-ROM or homepage!

### Formula: DLVZ

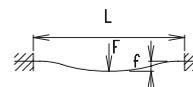
Driving torque:

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

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

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

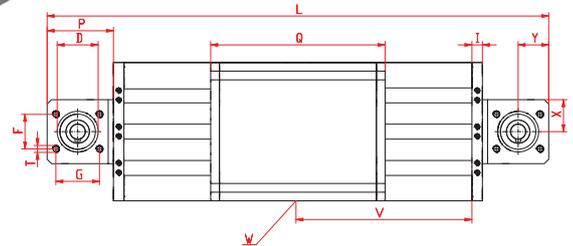
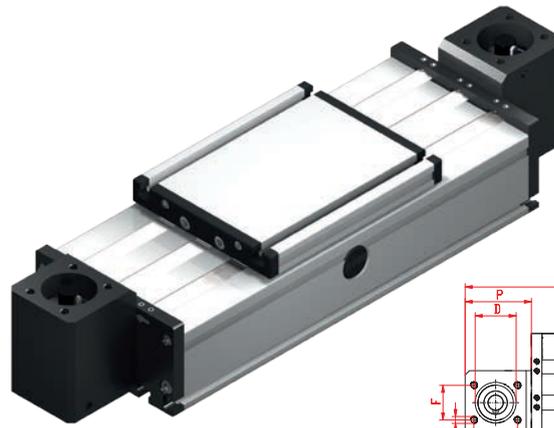
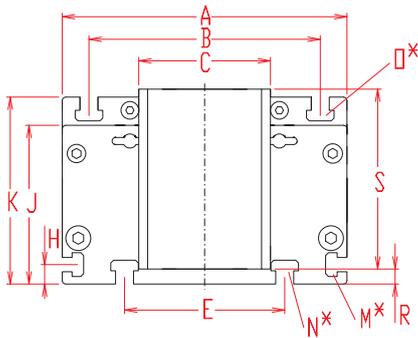
$$f = \frac{F \cdot L^3}{E \cdot I \cdot 192}$$



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

# Positioning system DLVZ 120, 160

Dimensions (mm)



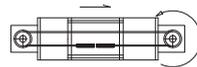
Increasing the carriage length will increase the basic length by the same amount

\*For slide nuts refer to chapter 2.2 page 2

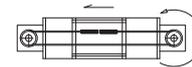
$V = Q + 100 \text{ mm}$   $W = \text{servicing position}$

Size	Basic length L	A	B	C	D	E	F	G	H	I	J	K	M for	N for	O for	P	Q	R	S	T	U	X	Y	Basic weight	Weight per 100 mm
DLVZ 120	300	120	96	56	37	78	30	36	10	10	68	79	M5	M6	M6	56	156	2,5	82	M6	60	28	24	4,62 kg	0,82 kg
DLVZ 160	410	160	130	74	47	90	40	50	11	12	90	106	M6	M8	M8	76	200	8,5	102	M 8	80	37	35	11,23 kg	1,76 kg
DLVZ 200																									

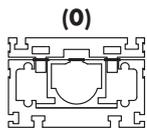
1 (1) Belt connection right



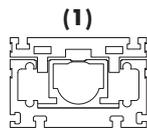
(2) Belt connection left



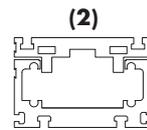
0 Choice of guide body profile:



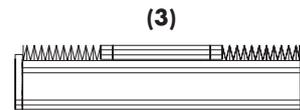
internal profile with cover bands



internal profile without cover bands



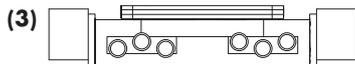
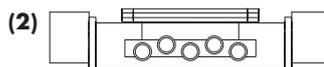
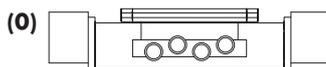
without internal profile and cover bands



with bellows

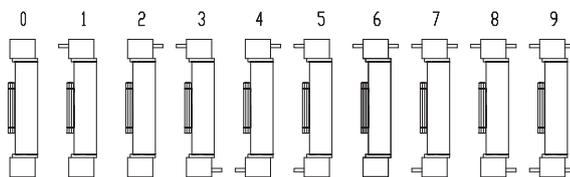
**Stainless versions upon request.**

0 Choice of carriages:



Size	Version 0		Version 2		Version 3	
	Q	L	Q	L	Q	L
120	156	300	196	340	236	380
160	200	410	250	460	>300	>510
200						

0 Drive version:



The standard version 0 is supplied with 4 flush mounted shafts.

**Belt table**

Code No.	Size	Belt	mm/rev.	Number of teeth
0 4	120	5M25	80	16
0 4	160	5M25	110	22
0 9	200			

**Shaft dimensions**

Size	Shaft $\varnothing h6 \times \text{length}$	Key
120	14 x 35	5x5x28
160	18 x 45	6x6x40
200		

Basic length + stroke = total length

DLVZ 160 1 0 0 0 0 4 1 01500

Pos. 1 2 3 4 5 6 7

For combination kits and connecting elements refer to chapter 2.2

Sample ordering code:

DLVZ 160 with belt connection right, internal profile with cover bands, standard carriage and 4 flush mounted shafts, 1090 mm stroke