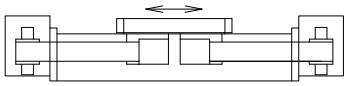
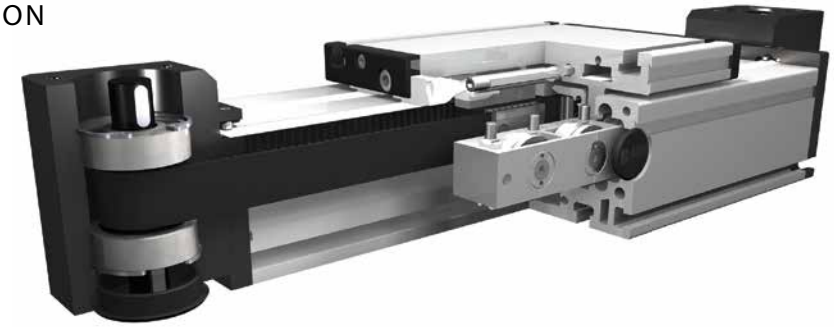
Linear system **DLVZ 120, 160**

TECHNICAL SUMMARY
REFERENCE ONLY

INTERNAL BELT DRIVE

- INDEPENDENT INSTALLATION POSITION
- SPECIAL DRIVE VERSION
- SPACE SAVING

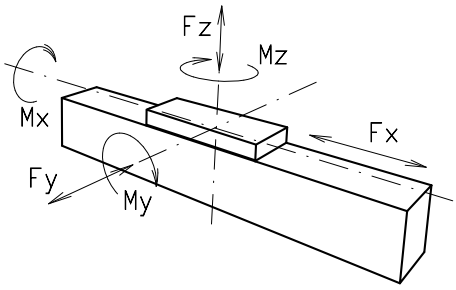




Function:
This unit consists of a rectangular aluminium profile with 2 integrated roller guides. The carriage is moved by a belt drive. Belt tension can be readjusted by a simple screw adjustment device in the carriage. This device can also be used for symmetrical adjustment of two or more linear units 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, it can also be supplied 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	
Forces/Torques	static	dynamic	static	dynamic
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
All forces and torques relate 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	1,4		1,8	
Speed				
(m/s) max	3		4	
Tensile force				
permanent (N)	900		1000	
0,2 s (N)	1000		1150	
Geometrical moments of inertia of aluminium profile				
I_x mm^4	6,6x10^5		22,2x10^5	
I_y mm^4	38,6x10^5		122,0x10^5	
E-Modulus N/mm^2	70000		70000	

For life-time calculation of rollers use our homepage.

Driving torque:

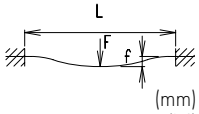
$$M_a = \frac{F * P * S_i}{2000 * \pi} + M_n$$

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

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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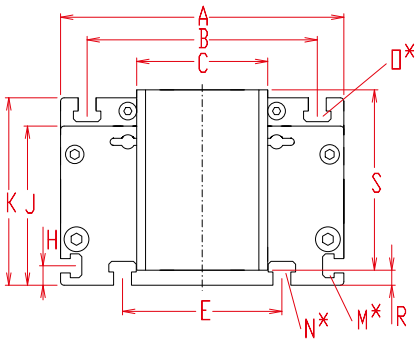
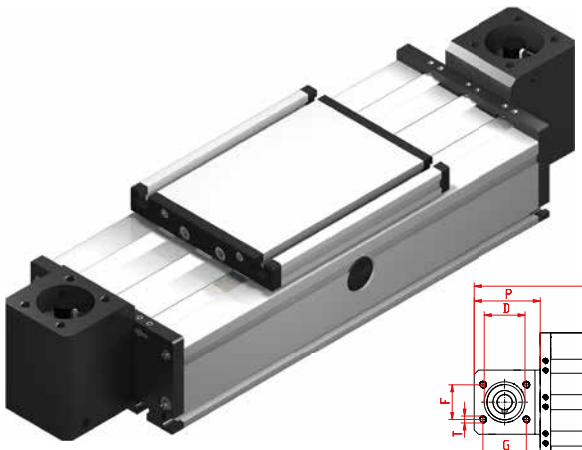
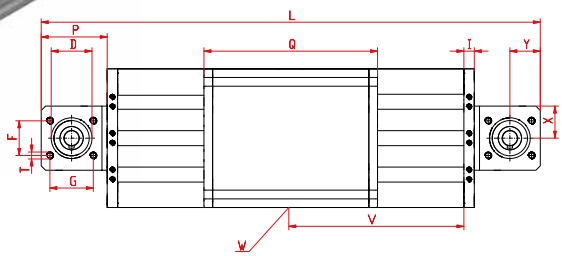
Dimensions (mm)



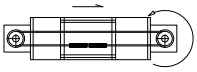
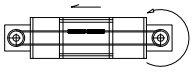




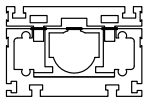
V = Q + 100 mm
W = servicing position

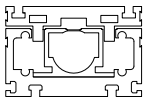
Increasing the carriage length will increase the basic length by the same amount.

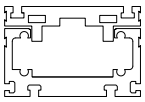
Size	Basic length L	A	B	C	D -0,05	E	F	G	H	I	J	K	M for	N for	O for	P	Q	R	S	T	U	X	Y	Basic weight	Weight per 100 mm
DLVZ 120	300	120	96	56	37	78	30	36	10	10	68	79	M5	M6	M6	56	156	2,5	82	M6	60	28	24	4,62 kg	0,82 kg
DLVZ 160	410	160	130	74	47	90	40	50	11	12	90	106	M6	M8	M8	76	200	8,5	102	M 8	80	37	35	11,23 kg	1,76 kg

1 **(1)** Belt connection right  **(2)** Belt connection left 

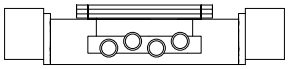
0 **Choice of guide body profile:** Stainless versions upon request.

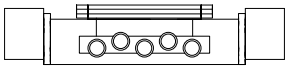
(0)

internal profile with cover bands

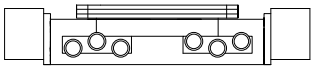
(1)

internal profile without cover bands

(2)

without internal profile and cover bands

0 **Choice of carriages:**

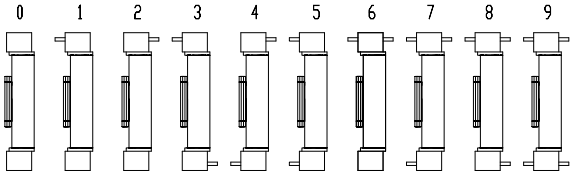
(0) 

(2) 

(3) 

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

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

Shaft dimensions:

Size	Shaft ø h6 x length	Key
120	14 x 35	5x5x28
160	18 x 45	6x6x40

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

Basic length + stroke = total length

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