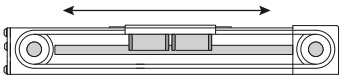
Linear system **LSN 60, 80**

NUBBED BELT DRIVE

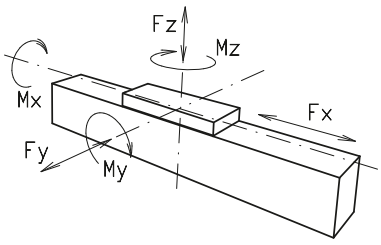
- LOW OPERATING VOLUME
- INDEPENDENT INSTALLATION POSITION
- NUBBED BELT
- LOW-VIBRATION RUN
- FOR 3D PRINTING APPLICATIONS



Function:
The guide body consists of an aluminium square profile with an integrated rail guide. The carriage is moved by a revolving interior nobbed belt. The advantage of this system: The belt is guided within the profile, so that the system is independent of the mounting position. The nobbed belt is self-tracking and has a very low operating noise level thanks to its nobs being offset by 45°. Furthermore, it is almost vibration-free in the transition sections. At the front face there is a timing belt deflection unit containing a toothed pulley with two coupling claws in the standard version. On the opposite side there is a bearing piece plate containing a tensioning device for the timing belt.

Mounting position: Variable, max. one-piece-length: 6.000 mm.
Carriage connection: By threaded holes.
Fixation: By T-slots and mounting sets. The linear axis can be combined with any T-slot profile.
Timing belt: N10 with reinforcing steel mesh, no backlash when changing direction, repeatability ± 0.1 mm.
Carriage support: In the standard version the carriage is positioned on two runner blocks which can be readjusted and maintained at each central servicing position. Two grease nipples at the carriage enable relubrication of the positioning system.

Forces and torques



Size	60		80	
permitted dyn. Forces*	5000 km	10000 km	5000 km	10000 km
F_x (N)	1170	1040	1900	1800
F_y (N)	1410	990	3570	2550
F_z (N)	3520	2500	8500	6050
M_x (Nm)	33	23	107	75
M_y (Nm)	104	73	310	222
M_z (Nm)	100	70	296	210
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	0,6		1,0	
Speed				
(m/s) max	5		5	
Geometrical moments of inertia of aluminium profile				
I_x mm^4	4,37x10^5		14,6x10^5	
I_y mm^4	5,78x10^5		17,1x10^5	
E-Modul N N/mm^2	70000		70000	

For life-time calculation use our homepage.

** referred to life-time*

Driving torque:

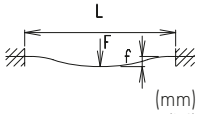
$$M_a = \frac{F * P * S_i}{2000 * \pi} + M_n$$

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

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)

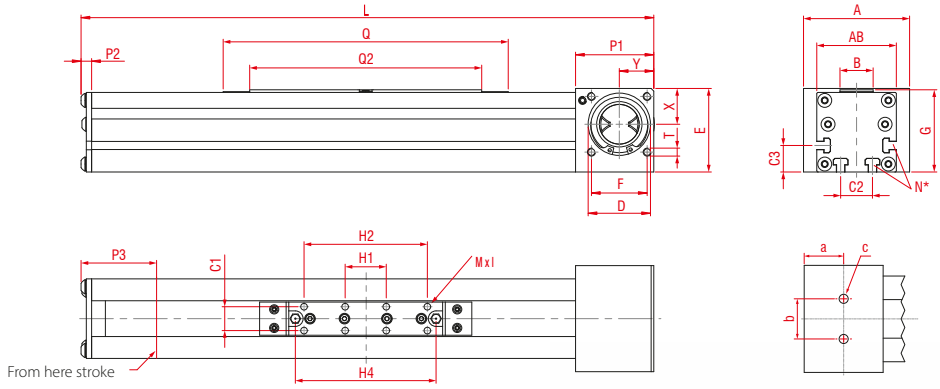
Deflection:

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

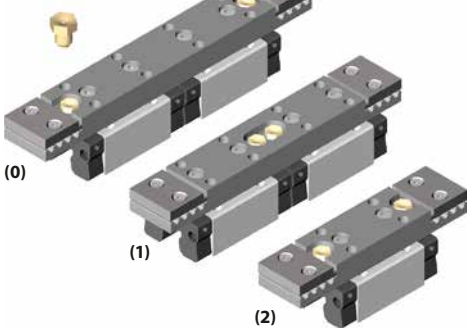


f = deflection (mm)
F = load (N)
L = free length (mm)
E = elastic modulus 70000 (N/mm^2)
I = second moment of area (mm^4)

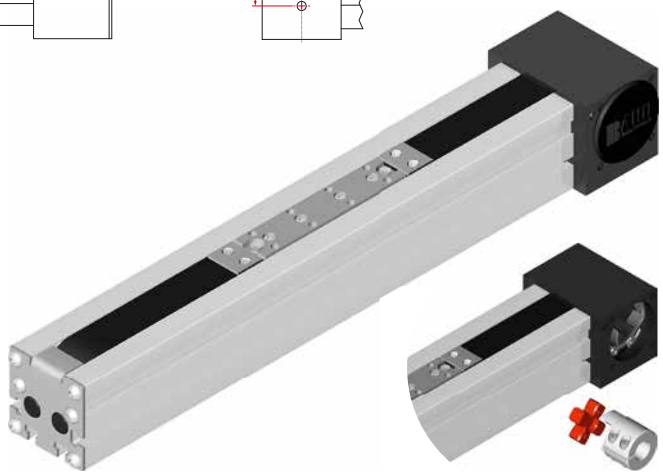
Linear system **LSN 60, 80**



2 cupped-type lubricating nipples for each carriage



Hose connections available on request.



*For slide nuts refer to chapter 2.2 page 2

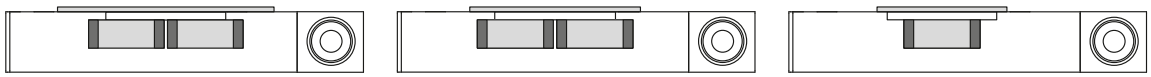
Size ❐	A	AB ❐	B	C1	C2	C3	D -0,05	E	F ❐	G	Mxl	N for	P1	P2	P3	T	X	Y	a	b	c	Weight per 100 mm
LSN 60	80	60	25	18	24	20	47	63	42	62,5	M6x10	M5	59	6	55	M6	27	26	29,5	30	M8	0,53 kg
LSN 80	100	80	25	18	30	22	68	93	60	83	M6x12	M6	90	8	73	M8	45	40	47,5	40	M10	0,87 kg

0 **Choice of guide body profile:**
(0) Standard **(1)** corrosion-protected screws

Carriage		L	Q	Q2	H1	H2	H4	Basic weight system
LS 60	Version (0)	274	160	116	31	93	106	3,06 kg
	Version (1)	254	140	96	32	84	10	2,62 kg
	Version (2)	214	100	56	31	--	48	2,07 kg
LS 80	Version (0)	382	219	149	40	120	133	7,69 kg
	Version (1)	367	204	134	40	120	12,5	7,41 kg
	Version (2)	310	147	77	40	--	60,5	6,39 kg

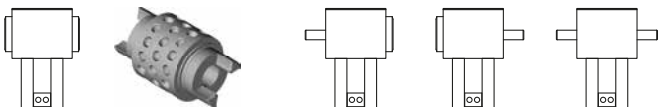
0 **Choice of carriages:**

(0) **(1)** **(2)**



0 **Drive version:**

0 1 2 6



Belt table:

Code No.		Size	Belt	mm/rev.	Number of teeth
0	8	**60**	Nubbed belt N10	130	13
0	8	**80**	Nubbed belt N10	176	18

Shaft dimensions / Coupling claw:

Size	Shaft Ø h6 x length	Feather key	Coupling
60	14 x 35	5x5x28	14
80	18 x 45	6x6x40	19

LSN	60	1	0	0	0	0	8	1	1500
Pos.		1	2	3	4	5	6	7	

Basic length + stroke = total length

Sample ordering code:
LSN60, standard body profile, standard carriage , nubbed belt, double-sided coupling claw, 1226 mm stroke

12.1