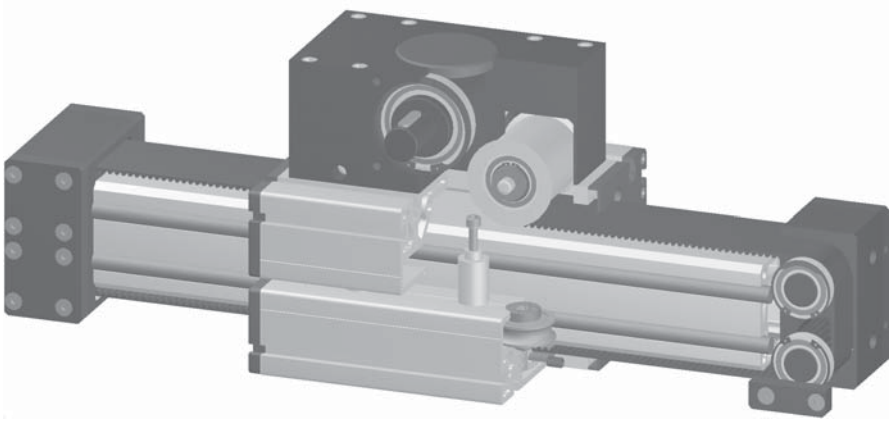
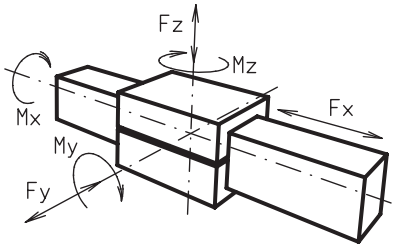


Function:

This unit consists of an aluminium square profile with hardened steel guide rods. The carriage has internal linear ball bearings that can be adjusted free of play and is driven along the guide rods by a timing belt. The rotating timing belt pulleys have maintenance-free ball bearings. One rotation of the drive pulley results in a linear movement equal to half of the drive pulley circumference. Belt tension can be readjusted by a simple tensioning device in one of the carriages. This device can also be used for symmetrical adjustment of two or more linear units running parallel.

Fitting length: As required. Max. length 6.000 mm single/extrusion.
Carriage mounting: T-slots
Unit mounting: T-slots or 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	ELFZ 80		ELFZ 100		ELFZ 125	
Forces/Torques	static	dynamic	static	dynamic	static	dynamic
F_x (N)	6200	5400	8700	7600	12000	10400
F_y (N)	9200	7200	16000	13000	24000	18000
F_z (N)	6000	3600	7200	4400	12000	9000
M_x (Nm)	340	280	600	460	1200	900
M_y (Nm)	540	460	800	540	1500	1200
M_z (Nm)	600	440	1500	1000	2700	2300
No-load torque						
Nm	1,5		2		2	
Speed						
(m/sec) max	4		4		4	
Drive torque						
max (Nm)	120		386		500	
Geometrical moments of inertia of aluminium profile						
I_x mm⁴	1,89x10⁶		4,44x10⁶		10,15x10⁶	
I_y mm⁴	1,8910⁶		4,48x10⁶		10,15x10⁶	
E-Modulus N/mm²	70000		70000		70000	

Formula: ELFZ

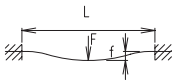
Driving torque:

$$M_a = \frac{F*P*S_i}{2000*\pi*2} + M_{leer}$$

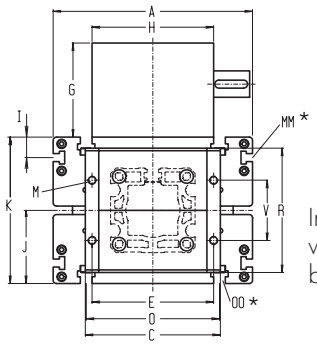
$$P_a = \frac{M_a*n}{9550}$$

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^{-1})
M_a	= driving torque	(Nm)
P_a	= motor power	(KW)

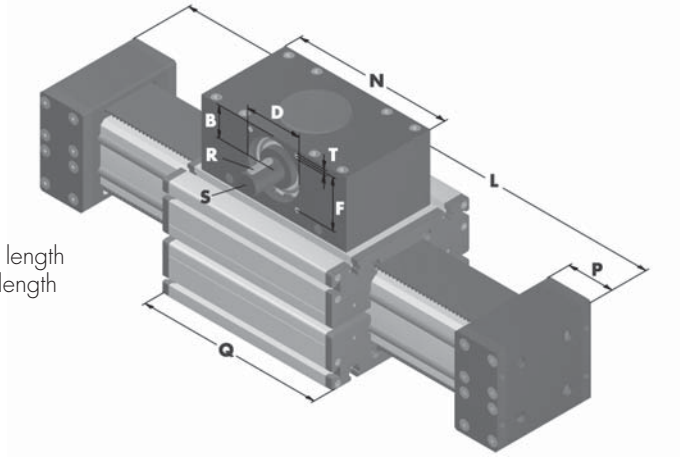
$$f = \frac{F*L^3}{E*I*192}$$



f	= deflection	(mm)
F	= load	(N)
L	= free length	(mm)
E	= elastic modulus 70000	(N/mm²)
I	= second moment of area	(mm⁴)



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



*For T-nuts refer to the accessory section

Size	Basic length L	A	B	C	D	E	F	G	H	I	J	K	MM	M	N	OO	P	Q	R	S	T	V	Basic weight	Additional Weight per 100 mm
ELFZ 80S	600	190	60	126	90	134	80	139	130	12,5	71	142	M6	M10	270	M8	130	328	8x7x32	30x35	M10	70	51 kg	1,20 kg
ELFZ 100	530	230	62	170	110	150	100	143	160	30	90	180	M10	M10	310	M10	77	365	12x8x50	40x55	M10	80	69 kg	1,80 kg
ELFZ 125	560	295	62	200	110	180	100	139	180	30	107,5	215	M10	M12	310	M12	92	365	12x8x50	40x55	M10	89	87,5 kg	2,70 kg

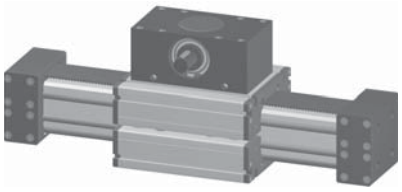
Choice of guide body profile:

0 **(0)** standard **(1)** stainless guide rods **(2)** stainless guide rods and screws **(3)** stainless guide rods, rollers and screws

Choice of carriages:

(0) Centered

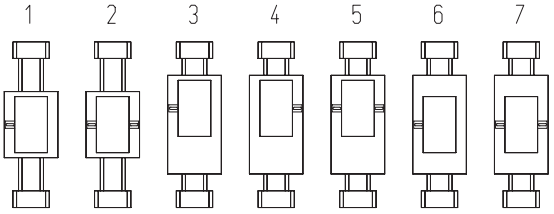
0



(1) Offset

Selection of shaft mounting:

1



Belt table

Code No.		Size	Belt	mm/rev. linear	Number of teeth
0	**4**	80	–	–	–
0	**4**	100	8M70	304/152	38
0	**9**	125	8M100	304/152	38

Basic length + stroke = total length

ELFZ	125	0	0	0	1	0	4	1	01500
Pos.	1	2	3	4	5	6	7		