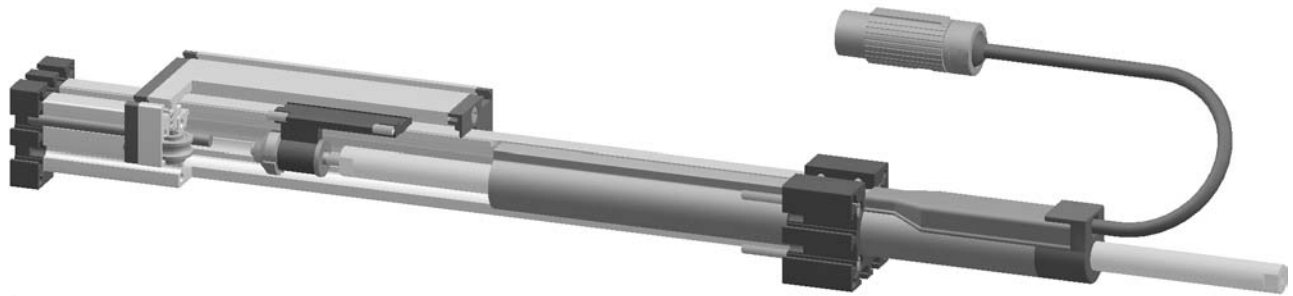


Positioning system ELP 30, 40, 60

Specifications



Function:

The unit consists of an aluminium square profile with integrated, hardened steel guide rods. The carriage consists of linear ball bearings, which can be adjusted free of play. The unit ELP is based on the principle of a linear motor. The actuator rod (secondary part), which is fitted with permanent magnets, drives the carriage directly. The stator (primary part) has got an AC winding, a positioning transmitter and heat detectors against overcharge. Several carriages can be driven independently on one guiding profile.

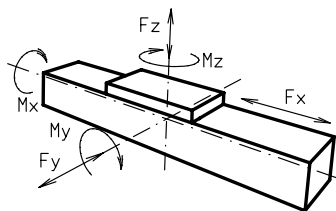
Fitting position: As required

Carriage mounting: By T-slots.

Unit mounting: By T-slots and mounting sets. The linear axis can be combined with any T-slot profile.

Carriage support: Repeatability and accuracy ± 0,1 mm.

9.1



Size	30		40		60	
	static	dynamic	static	dynamic	static	dynamic
Forces / Torques						
F _y (N)	90	60	1200	700	3000	2000
F _z (N)	90	60	900	650	1700	1100
M _x (Nm)	10	5	25	20	67	43
M _y (Nm)	13	6	32	18	90	70
M _z (Nm)	14	7	35	25	120	100
All forces and torques related to the following:						
existing values						
values of table						
$\frac{F_y}{F_{y_{dyn}}} + \frac{F_z}{F_{z_{dyn}}} + \frac{M_x}{M_{x_{dyn}}} + \frac{M_y}{M_{y_{dyn}}} + \frac{M_z}{M_{z_{dyn}}} \leq 1$						
Moving force without current						
N slider	5					
Moved mass (g) without rotor	176		520		1565	
Motor size	1	2	1	2	1	2
Motor type	P01-23x80	P01-23x160	P01-23x80	P01-23x160	P01-37x120	P01-37x240
Speed						
max. (m/s)	1,9	3,4	1,9	3,4	2,6	4,0
Motor specifications F_x						
permanent (N)	9	17	9	17	30	55
Max. (N)	44	60	44	60	160	204
Geometrical moments of inertia of aluminium profile						
I _x mm ⁴	4,09x10 ⁴		1,32x10 ⁵		6,79x10 ⁵	
I _y mm ⁴	4,00x10 ⁴		1,34x10 ⁵		6,97x10 ⁵	
Elastic modulus N/mm ²	70000		70000		70000	

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

Formula: ELP

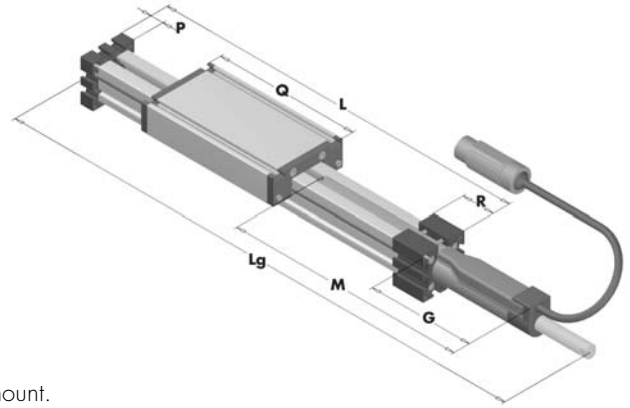
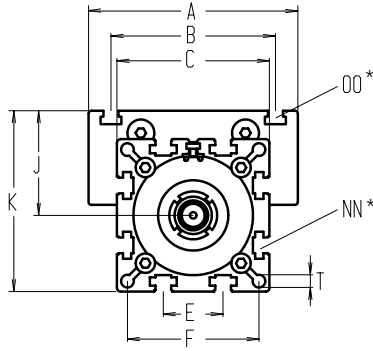
$$f = \frac{F \cdot L^3}{E \cdot I \cdot 192}$$

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



Positioning system ELP 30, 40, 60

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

Size □	A	B	C	E	F	G	J	K	M Motor size 1 / 2	NN for	OO for	P	Q	R	T
ELP 30	70	56	42	13	35	98	26	47	177 / 257	M 6	M 6	12	82	25	4,2
ELP 40	100	66	58	18	47	98	35	64	177 / 257	M 6	M 6	12	122	40	6,5
ELP 60	144	96	82	30	69	98	49	90	227 / 347	M 8	M 8	16	168	60	8,5

280+60 Stroke

1 Motor size

ELP	30	280+60	1
Pos.	1	2	

Sample ordering code:

ELP 30 with standard body profile, motor size 1, 280+60 mm stroke.

ELP 30	(1) Motor size 1 (P01-23x80)										
Stroke S*	150+60	210+60	280+60	440+60	620+60						
Length L	357	417	487	647	827						
Total length Lg	567	693	833	1153	1513						
Carriage weight with actuator [Kg]	0,4	0,5	0,5	0,6	0,8						
Total weight [Kg]	1,5	1,7	1,8	2,2	2,6						
ELP 30	(2) Motor size 2 (P01-23x160)										
Stroke S*	130+60	200+60	360+60	540+60							
Length L	417	487	647	827							
Total length Lg	613	753	1073	1433							
Carriage weight with actuator [Kg]	0,5	0,5	0,6	0,8							
Total weight [Kg]	1,9	2,1	2,4	2,8							
ELP 40	(1) Motor size 1 (P01-23x80)										
Stroke S*	150+60	210+60	280+60	440+60	620+60						
Length L	384	444	514	674	854						
Total length Lg	600	720	860	1180	1540						
Carriage weight with actuator [Kg]	0,7	0,8	0,9	1,0	1,2						
Total weight [Kg]	2,2	2,5	2,7	3,3	3,9						
ELP 40	(2) Motor size 2 (P01-23x160)										
Stroke S*	130+60	200+60	360+60	540+60							
Length L	444	514	674	854							
Total length Lg	640	780	1100	1460							
Carriage weight with actuator [Kg]	0,8	0,9	1,0	1,2							
Total weight [Kg]	2,7	2,9	3,5	4,1							
ELP 60	(1) Motor size 1 (P01-37x120)										
Stroke S*	280+80	380+80	480+80	580+80	680+80	780+80	980+80	1180+80	1380+80		
Length L	610	710	810	910	1010	1110	1310	1510	1710		
Total length Lg	941	1141	1341	1541	1741	1941	2341	2741	3141		
Carriage weight with rotor [Kg]	2,6	2,9	3,1	3,3	3,6	3,8	4,3	4,7	5,2		
Total weight [Kg]	6,7	7,3	8,0	8,6	9,3	10,0	11,3	12,6	13,9		
ELP 60	(2) Motor size 2 (P01-37x240)										
Stroke S*	160+80	260+80	360+80	460+80	560+80	660+80	860+80	1060+80	1260+80		
Length L	610	710	810	910	1010	1110	1310	1510	1710		
Total length Lg	821	1021	1221	1421	1621	1821	2221	2621	3021		
Carriage weight with actuator [Kg]	2,6	2,9	3,1	3,3	3,6	3,8	4,3	4,7	5,2		
Total weight [Kg]	7,3	8,0	8,6	9,3	9,9	10,6	11,9	13,2	14,5		

S* = working way + overrun limit switcher (60/80mm overrun with reduced force)

For standard carriage length see 'Q' in table. Usage of shock absorber shorten the stroke by ELP 40 13,2 mm and by ELP 60 32,0 mm.

The carriages can be delivered in any non-standard length upon request; the longer the carriage, the greater the load capacity. Digital - controllers, linear - encoder an power supplies refer to chapter 9.1 page 12 - 14 .

For combination kits and connecting elements refer to chapter 2.2

9.1

