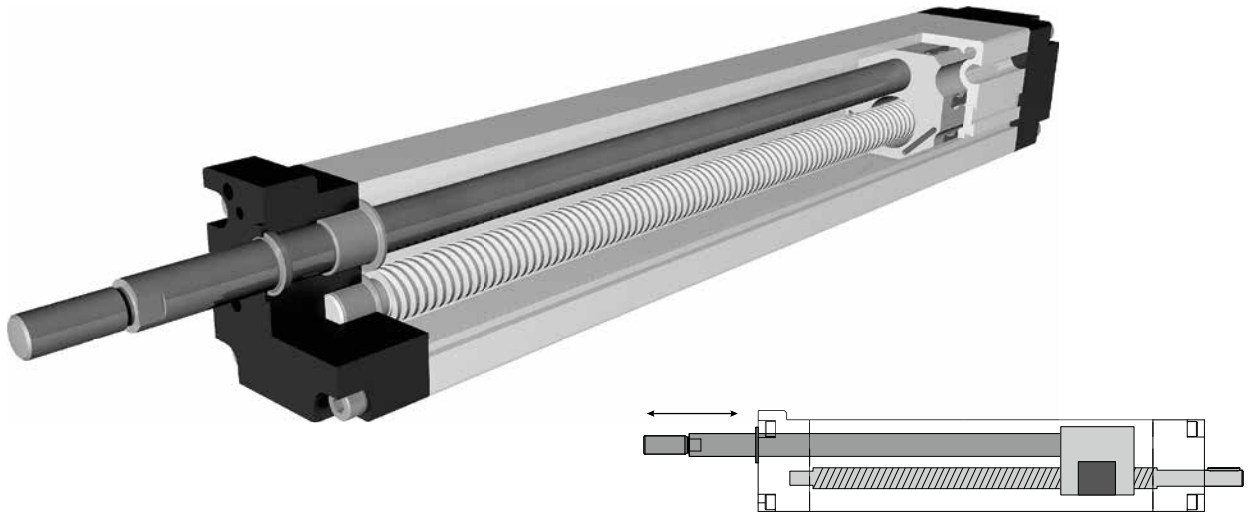


Spindle driven

**Function:**

The rotary motion of the threaded spindle is converted into a linear motion of the pressure tube. Due to the piston rod principle, high axial forces can be realised, e. g. for shelf and dosing applications. Spindle and piston rod are aligned parallel.

Mounting position:

Variable, max. length 1500 mm

Fixation:

By T-nuts, mounting sets or and tapped holes in the bearing block.

Forces and torques	Size	EH 60		EH 80	
	Forces / Torques	statisch	dynamisch	statisch	dynamisch
	F_x (N)	1800	1200	3000	2500
	F_y (N)	130	80	210	140
	F_z (N)	130	80	210	140
	M_x (Nm)	20	11	27	16
	M_y (Nm)	95	60	190	110
	M_z (Nm)	95	60	190	110
	All forces and torques relate to the following:				
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 $\frac{F_y}{F_{y_{dyn}}} + \frac{F_z}{F_{z_{dyn}}} + \frac{M_x}{M_{x_{dyn}}} + \frac{M_y}{M_{y_{dyn}}} + \frac{M_z}{M_{z_{dyn}}} \leq 1$					
No-load torque					
Trapezoidal thread		18x4	18x8	24x5	24x10
(Nm)		0,40	0,50	0,60	0,80
Ball screw		16x5	16x10	25x5	25x10
(Nm)		0,20	0,40	0,40	0,60
Geometrical moments of inertia of aluminium profile					
I_x mm ⁴		4,76x10 ⁵		15,41x10 ⁵	
I_y mm ⁴		4,88x10 ⁵		16,02x10 ⁵	
Elastic-modulus N/mm ²		70000		70000	

Driving torque:

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

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

F = force (N)
 P = thread pitch (mm)
 Si = safety factor 1,2 ... 2
 Mn = no-load torque (Nm)
 n = rpm of screw (min⁻¹)
 Ma = driving torque (Nm)
 μ = screw efficiency
 Pa = motor power (KW)

Efficiency of lead screws:

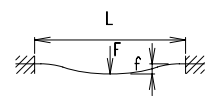
All ballscrew 0,900

Tr 18x4 0,399
 Tr 18x8 0,565
 Tr 24x5 0,384
 Tr 24x10 0,550

Deflection:

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

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

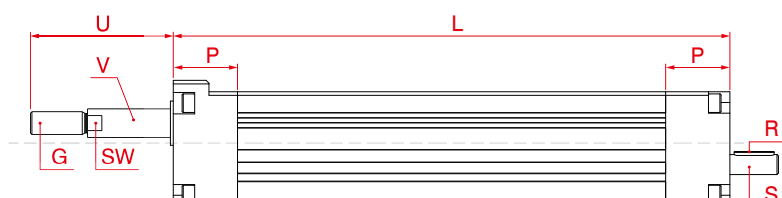
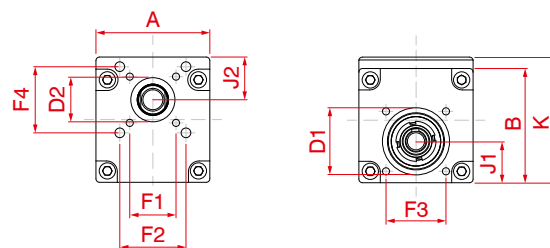
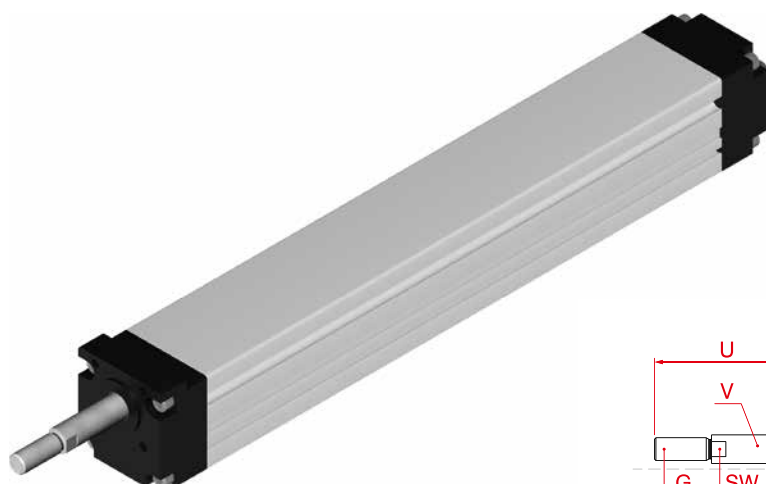


For the diagram for critical speeds of lead screws refer to chapter 4.2

Positioning system EHTX/EHKX 60, 80

Dimensions (mm)

1.1



*For slide nuts refer to chapter 2.2 page 2

Size	Basic length L	A	B	D1	D2	F1 ■	F2 ■	F3 ■	G Ø x length	J1	J2	K	P	R	S Ø x length	SW	U	V Ø	Basic weight	Weight per 100 mm
EH 60	165	60	60	37	42		49	32		22	27	70	35	3x3x25	10x27	17	77	20	1,78 kg	0,66 kg
EH 80	183	80	80	47	31	32,5	46,5	42	M16x1,5x40	29	30	88	45	5x5x28	14x35	17	100	20	3,71 kg	1,3 kg
EH 80	183	80	80	47	31	32,5	46,5	42	M16x1,5x40	29	30	88	45	5x5x28	14x35	17	100	30	3,71 kg	1,3 kg

K Spindle:

(T) Trapezoidal thread **(K)** Ballscrew

1 Selection of screw:

(1) right hand **(2)** left hand

0 Choice of guide body profile:

(0) Standard **(2)** corrosion-protected screws **(4)** expanded corrosion-protected version
(depending on the availability of components)

0

Selection of screw:

Tr = trapezoidal thread

Kg = ballscrew

Size	Standard	Multistart screw	Standard	Multistart screw
60	(0) Tr 18x4	(1) Tr 18x8		
80	(0) Tr 24x5	(1) Tr 24x10	(0) Kg 25x5	(1) Kg 25x10

Repeatability: ± 0,2 mm Trapezoidal ± 0,025 mm Ballscrew

0 Ballscrew pitch accuracy: (only ballscrew)

(0) 0,05 mm / 300 mm **(2)** 0,025 mm / 300 mm

0 End play of ball nut: (only ballscrew)

(0) 0,04 mm (Standard), **(1)*** < 0,02 mm, **(2)*** 2% apply prestress

EH	K	X	80	1	0	0	0	0	0	0	0	1000
Pos.	1	2	3	4	5	6	7					

Basic length + stroke = total length

Sample ordering code:

EHTX80, ballscrew right hand thread, standard body profile, spindle Kg 25x5, 817 mm stroke

For combination kits and connecting elements refer to chapter 2.2