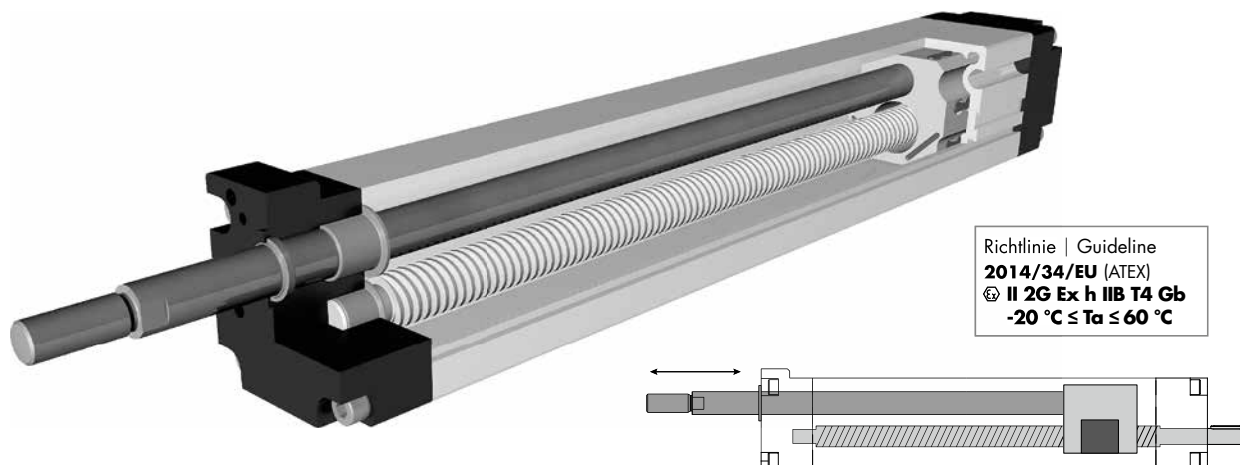


Spindle driven



Richtlinie | Guideline
2014/34/EU (ATEX)
Ⓢ II 2G Ex h IIB T4 Gb
-20 °C ≤ Ta ≤ 60 °C

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.

The products can be used as follows, according to the marking:

- a) In Zone 2 (Gas, Category 3G, EPL Gc) in explosion groups IIA and IIB
- b) In Zone 1 (Gas, Category 2G, EPL Gb) in explosion groups IIA and IIB

The qualification with regard to the surface temperature is T4; for all gases, vapours and mists with an ignition temperature > 125 °C the product is not an ignition source.

Mounting position:

Variable, max. length 1500 mm

Fixation:

By Trnuts, mounting sets or and tapped holes in the bearing block.

Forces and torques	Size	EH 80	
	Forces / Torques	statisch	dynamisch
	F_x (N)	3000	2500
	F_y (N)	210	140
	F_z (N)	210	140
	M_x (Nm)	27	16
	M_y (Nm)	190	110
	M_z (Nm)	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		
No-load torque			
Trapezoidal thread		24x5	24x10
(Nm)		0,60	0,80
Geometrical moments of inertia of aluminium profile			
I_x , mm ⁴		15,41x10 ⁵	
I_y , mm ⁴		16,02x10 ⁵	
Elastic-modulus N/mm ²		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)
 S_i = safety factor 1,2 ... 2
 M_n = no-load torque (Nm)
 n = rpm of screw (min⁻¹)
 M_a = driving torque (Nm)
 μ = screw efficiency
 P_a = motor power (KW)

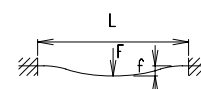
Efficiency of lead screws:

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)

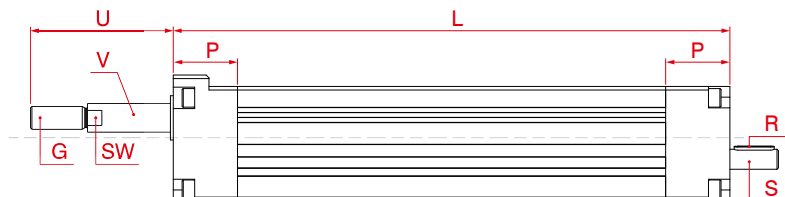
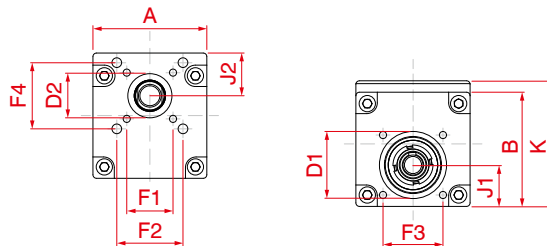
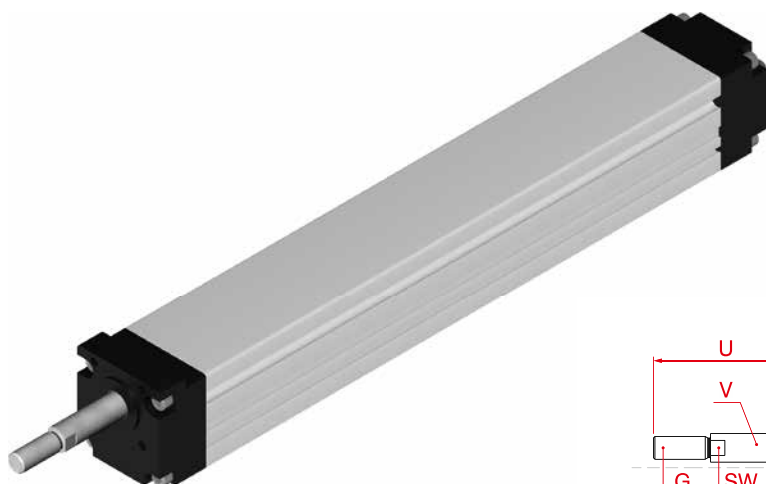


For the diagram for critical speeds of lead screws refer to chapter 4.2

Positioning system EHTX 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	J1	J2	K	P	R	S	SW	U	V	Basic weight	Weight per 100 mm
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

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)

Selection of screw:	Tr = trapezoidal thread
Size	Standard Multistart screw
80	(0) Tr 24x5 (1) Tr 24x10

Repeatability: ± 0,2 mm Trapezoidal

EH T X 80 1 0 0 0 0 0 0 1000 — Basic length + stroke = total length
Pos. 1 2 3 4 5 6 7

Sample ordering code:
EHTX80, ballscrew right hand thread, standard body profile, spindle Tr 24x5, 817 mm stroke

For combination kits and connecting elements refer to chapter 2.2