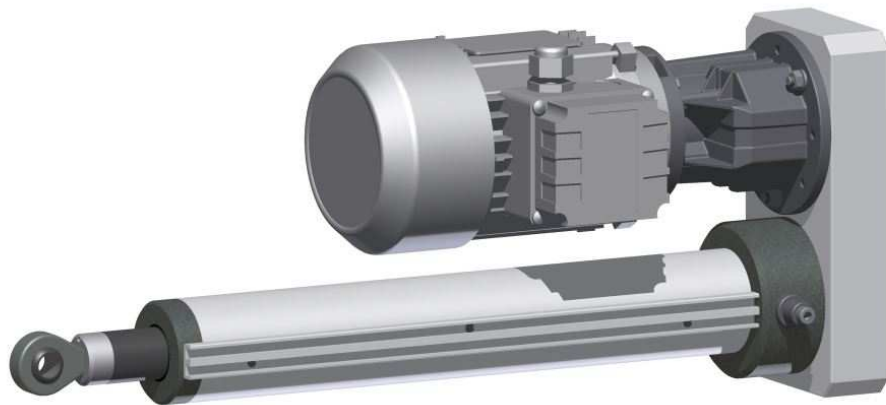
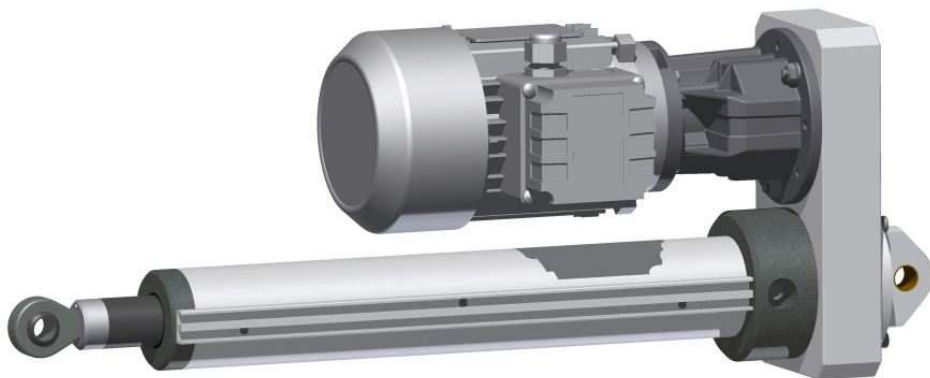


S+R automation systems GmbH

Electric Lifting Cylinder
TV / KV – 5 XE
Load up to 6.500 N



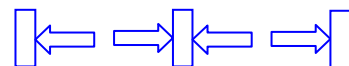
Lifting



Moving



Positioning

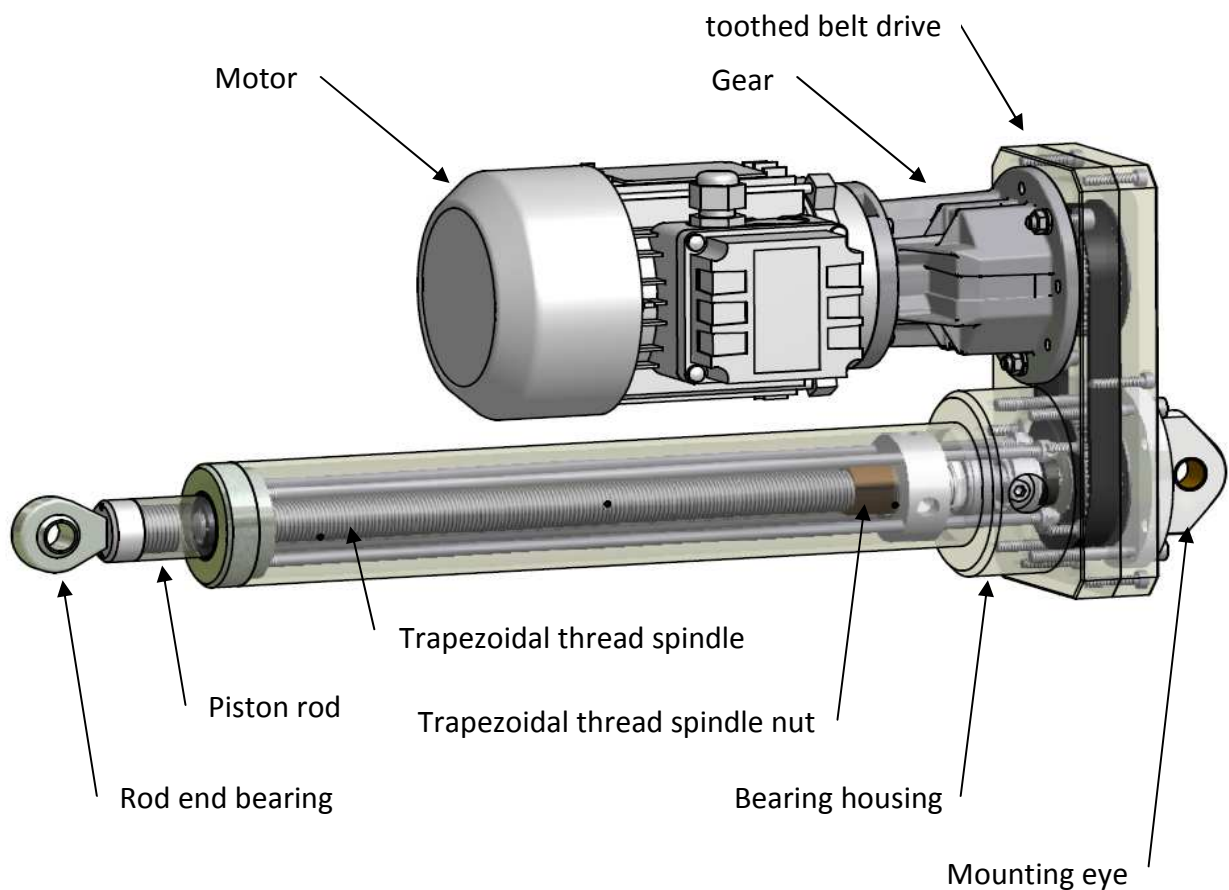


Design and function

An electric lifting cylinder is an electro-mechanical drive unit. A ball screw thread spindle or trapezoidal thread spindle are driven by an electric motor and produce a linear adjustment force. The electric lifting cylinders are offered in different designs and can be produced according to customer requirements.

Functional description using an electric lifting cylinder TV-5XE as an example

A motor drives the trapezoidal thread spindle via a gear and a toothed belt drive. This is fixed in the bearing house via ball bearings. The trapezoidal thread nut converts the rotational motion of the threaded spindle to a linear motion. The trapezoidal thread nut is connected to the piston rod via the nut housing. The piston rod is guided in a sealing ring and slideway. The nut housing has sliding bearings and is secured against twisting. A rod end bearing on the piston rod and Swivel bearing bolts on the bearing housing or a Mounting eye are used for fixing.



Electric motor

S + R deliver the electric lifting cylinder with electric motor mounted according to the IEC standard, 400V (3x230V) at 50Hz.

Other voltage and frequency can be delivered.

Performance Specifications

Ball screw threads or trapezoidal threads can be used depending on the application.

	Kugelgewinde	Trapezgewinde
Duty cycle > 50%	suitable	unsuitable
hard impacts	unsuitable	partially suitable
Efficiency	> 85 %	< 40 %
Operating temperature	-20 to +70 °C	-20 to +70 °C

TV-5XE with trapezoidal screw thread 20 x 4 (A)

Force	Speed	i_Gear	i_belt drive	Motor
5100 N	11 mm/s	6,18 (F)	1,294 (K)	IEC 63-4 - 0,12 kW (M)
4000 N	19 mm/s	6,18 (F)	1,294 (K)	IEC 63-4 - 0,18 kW (N)
3500 N	11 mm/s	6,18 (F)	1,294 (K)	IEC 56-4 - 0,09 kW (L)
3000 N	25 mm/s	3,53 (E)	1 (H)	IEC 63-4 - 0,25 kW (R)
2800 N	41 mm /s	3,53 (E)	1,294 (K)	IEC 63-2 - 0,25 kW (R)
2100 N	52 mm/s	3,53 (E)	1 (H)	IEC 63-2 - 0,25 kW (R)

TV-5XE with trapezoidal screw thread 20 x 8 (B)

Force	Speed	i_Gear	i_belt drive	Motor
1900 N	81 mm/s	3,53 (E)	1,294 (K)	IEC 63-2 - 0,25 kW (R)
1500 N	105 mm/s	3,53 (E)	1 (H)	IEC 63-2 - 0,25 kW (R)

KV-XE with ball screw thread spindle 20 x 5 (C)

(Motor with brake)

Force	Speed	i_Gear	i_belt drive	Motor
6500 N	28 mm/s	6,18 (F)	1,294 (K)	IEC 63-2 - 0,18 kW (P)
5800 N	23 mm/s	7,77 (G)	1,294 (K)	IEC 56-2 - 0,12 kW (O)
5100 N	17 mm/s	6,18 (F)	1 (H)	IEC 56-4 - 0,09 kW (L)
5000 N	36 mm/s	6,18 (F)	1 (H)	IEC 63-2 - 0,18 kW (P)
4500 N	30 mm/s	7,77 (G)	1 (H)	IEC 56-2 - 0,12 kW (O)
4000 N	66 mm/s	3,53 (E)	1 (H)	IEC 63-2 - 0,25 kW (R)

KV-XE with ball screw thread spindle 20 x 20 (D)

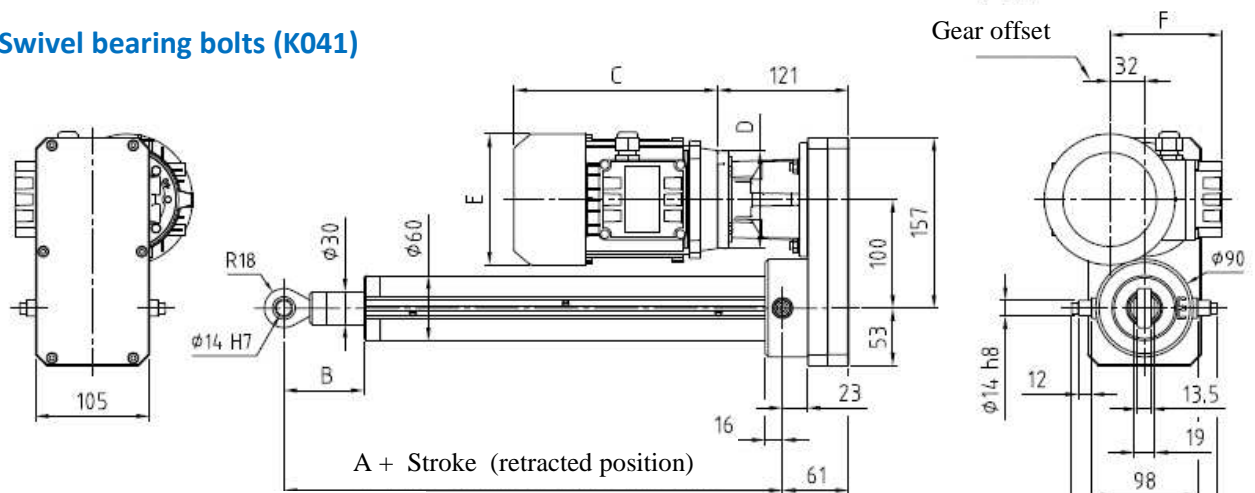
(Motor with brake)

Force	Speed	i_Gear	i_belt drive	Motor
1800 N	73 mm/s	6,18 (F)	1 (H)	IEC 63-4 - 0,12 kW (M)
1400 N	125 mm/s	3,53 (E)	1 (H)	IEC 63-4 - 0,18 kW (N)
1300 N	203 mm/s	3,53 (E)	1,294 (K)	IEC 63-2 - 0,25 kW (R)

The selection of other forces and velocities can be supplied!

Dimension

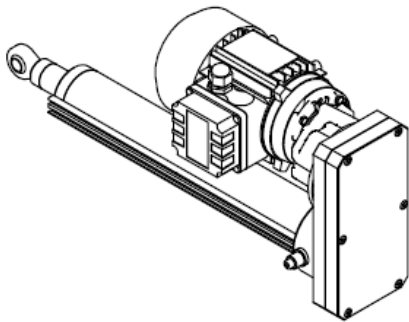
Swivel bearing bolts (K041)



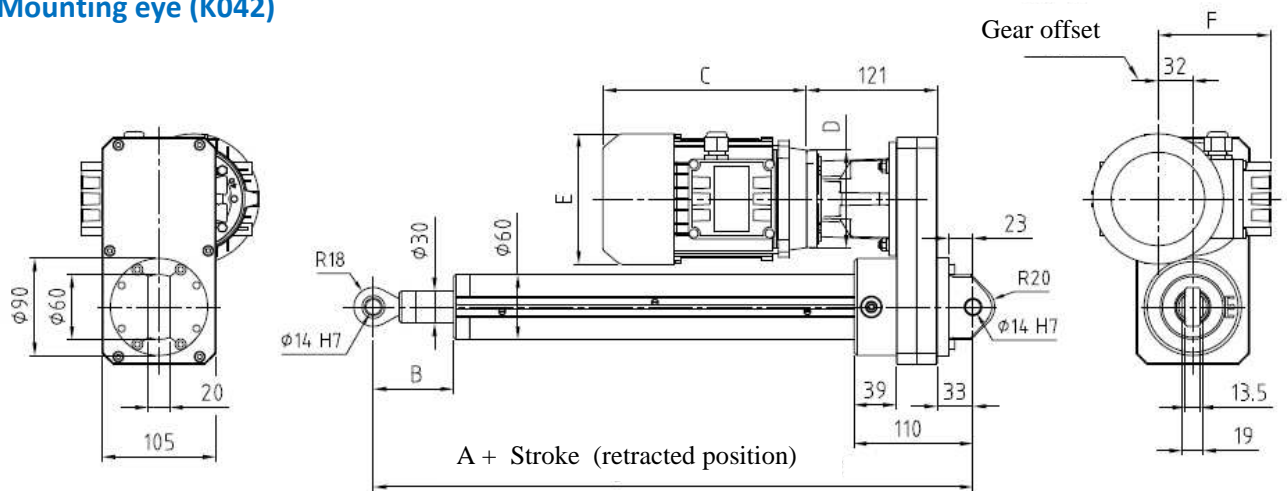
A + Stroke (retracted position)

Screw type		A	B
trapezoidal	20x4, 20x8	160	74
ball screw	20x5, 20x20	222	67

Motor	C	D	E	F
IEC 56	169	$\phi 80$	$\phi 110$	95
IEC 56 – brake	223			105
IEC63	189	$\phi 90$	$\phi 124$	104
IEC 63 – brake	246			109



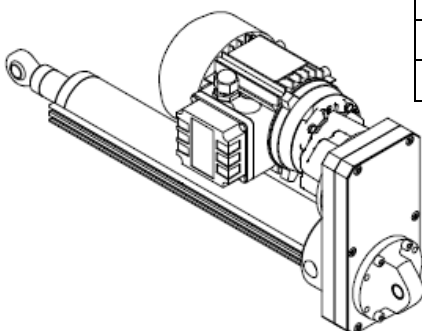
Mounting eye (K042)



A + Stroke (retracted position)

Screw type		A	B
trapezoidal	20x4, 20x8	254	74
ball screw	20x5, 20x20	316	67

Motor	C	D	E	F
IEC 56	169	$\phi 80$	$\phi 110$	95
IEC 56 – brake	223			105
IEC63	189	$\phi 90$	$\phi 124$	104
IEC 63 – brake	246			109

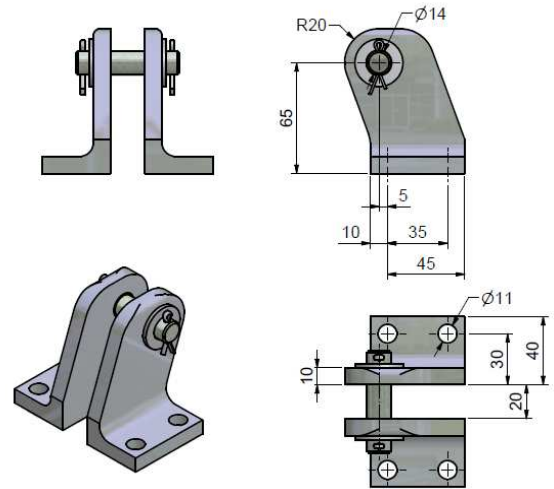


Accessories

Mounting Kits

Pivot Konsole AT 816.3 (1 piece right / 1 piece left)

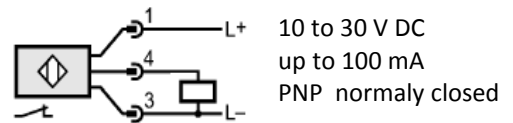
Pin Kit AT 817.4



Electric solenoid switches

Electric solenoid switches with open function are used.

If the switch is not activated, the current circuit is close and the function indicator LED lights up yellow. If the switch is activated by the magnet installed in the electric lifting cylinder, the electric circuit is opened and the LED goes out. In order to prevent malfunctions and avoid damage to the electric lifting cylinder, solenoid switches may only be used on relays or controls with self-retention system. The solenoid switches are set to the maximum stroke ex-factory and can be subsequently infinitely adjusted. Attention, this is not a safety switch!

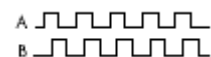


Magnetic pulse generator

The electric lifting cylinders can be equipped with a magnetic pulse generator. This magnetic pulse generator is carried out using a flange that is installed between the motor and the electric lifting cylinder. It can be used for recording the velocity or the position. The pulse generators work contact-free and are therefore wear and maintenance-free. Corresponding controls with frequency converters and synchronous run controls can be supplied for the electric lifting cylinder.

Output signals

Both square wave signals A and B have been offset by 90° to each other for recognition of direction. Pulse / pause ration 1:1



Respective data sheets can be provided.

Order Code

1	2	3	4	5	6	7	8	9	10	11	12
TV	- 5 X	- A	- E	- H	- L	- S	-GL	- KR	- 0°	ER	Options

1 **TV** trapezoidal screw thread
KV ball screw thread

2 Type: **5X**

3 **A** trapezoidal screw, Pitch 4 mm **C** ball screw, Pitch 5 mm
B trapezoidal screw, Pitch 8 mm **D** ball screw, Pitch 20 mm

4 **E** Gear ratio: $i = 3,53$ **G** Gear ratio: $i = 7,77$
F Gear ratio: $i = 6,18$

5 **H** Belt drive ratio: $i = 1$
K Belt drive ratio: $i = 1,294$

6 **L** Motor IEC 56-4, 0,09 kW **O** Motor IEC 56-2, 0,12 kW
M Motor IEC 63-4, 0,12 kW **P** Motor IEC 63-2, 0,18 kW
N Motor IEC 63-4, 0,18 kW **R** Motor IEC 63-2, 0,25 kW
(ball screw thread – motor with brake)

7 **S** Swivel bearing bolts (K041)
T Mounting eye (K042)

8 **GR** Gear offset position: right
GO Gear offset position: up
GL Gear offset position: left (Standard)

9 **KR** Terminal box position: right (Standard)
KO Terminal box position: up
KL Terminal box position: left

10 **0°** Lage Bohrung Gelenkauge / Auge hinten: 0° (Standard)
90° Lage Bohrung Gelenkauge / Auge hinten: 90°

11 **ER** Rod end bearing position: right (Standard)
EU Rod end bearing position: down
EL Rod end bearing position: left

12 **Optional Accessories:**
Electric solenoid switches
Magnetic pulse generator
Pivot Konsole AT 816.3
Pin Kit AT 817.4

