



**SPINDASYN**  
**SEZ electric cylinder.**

Precise power with energy efficiency.

**AMK**



## Powerful. Precise. Energy-efficient.

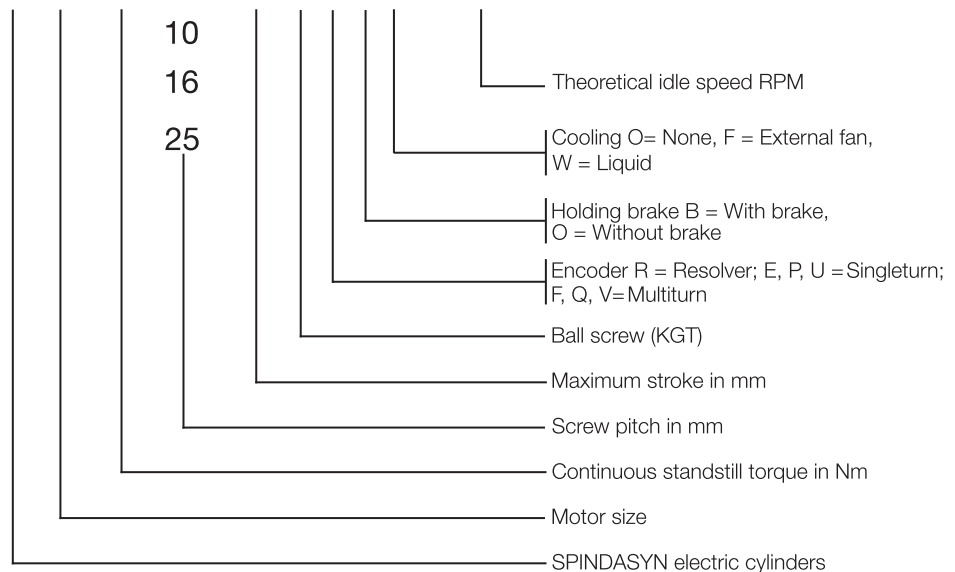
The SPINDASYN motor series is called for whenever high forces and high position accuracy are needed for linear motions.

The SEZ electric cylinders are a new addition to the product series. SEZ is an installation-ready system in which the rotor is pressed directly onto the screw. This provides you with an installation-ready system having high rigidity without additional wearing parts.

The closed-loop positioning and force control of the SEZ offers critical advantages compared to other linear technologies, such as pneumatic cylinders. In particular, the high energy efficiency of the electric cylinder and the minimal commissioning effort are positive factors.

### Type key

#### SEZ 3 – x – 5 – 20 K R B O – 3500



### Lead accuracy V300p

Tolerance class	5	7	10
Deviation mm	0.023	0.052	0.21

The lead accuracy V300p describes the maximum deviation from the position setpoint in a randomly set length of 300 mm within the effective length of the screw ball drive.

SEZ motors are delivered with tolerance class 7 as standard. Other tolerance classes are possible on request.

# SEZ 3

## Technical data

### 5 mm pitch

Motor type	Axial forces			Travel speed v [m/s]	Screw length 85 mm			Screw length 115 mm			Screw length 145 mm			Screw length 205 mm			Screw length 305 mm			Screw length 405 mm		
	F <sub>max</sub> [kN]	F <sub>N</sub> [kN]			max. Stroke [mm]	MOI [kgcm <sup>2</sup> ]	Accel. a [m/s <sup>2</sup> ]	max. Stroke [mm]	MOI [kgcm <sup>2</sup> ]	Accel. a [m/s <sup>2</sup> ]	max. Stroke [mm]	MOI [kgcm <sup>2</sup> ]	Accel. a [m/s <sup>2</sup> ]	max. Stroke [mm]	MOI [kgcm <sup>2</sup> ]	Accel. a [m/s <sup>2</sup> ]	max. Stroke [mm]	MOI [kgcm <sup>2</sup> ]	Accel. a [m/s <sup>2</sup> ]	max. Stroke [mm]	MOI [kgcm <sup>2</sup> ]	Accel. a [m/s <sup>2</sup> ]
	SEZ 3-0,5	2.1	0.7		0.37	40	0.19	10	70	0.21	9	100	0.22	8	160	0.25	7	260	0.3	5.5	360	0.35
SEZ 3-1	3.1* (4.8)	1.7	0.37	40	0.31	24	70	0.33	21	100	0.34	19	160	0.37	16	260	0.42	13	360	0.47	11	

\* limited by C<sub>stat</sub>

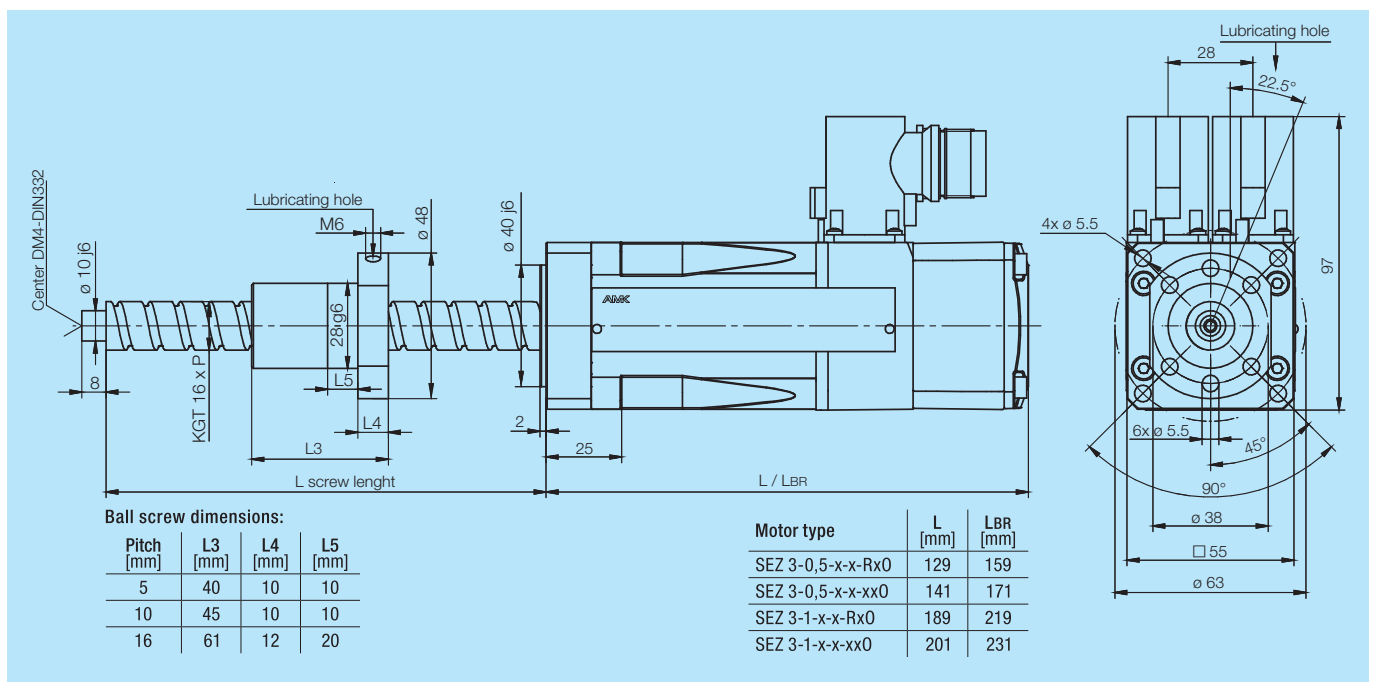
### 10 mm pitch

Motor type	Axial forces			Travel speed v [m/s]	Screw length 85 mm			Screw length 115 mm			Screw length 145 mm			Screw length 205 mm			Screw length 305 mm			Screw length 405 mm		
	F <sub>max</sub> [kN]	F <sub>N</sub> [kN]			max. Stroke [mm]	MOI [kgcm <sup>2</sup> ]	Accel. a [m/s <sup>2</sup> ]	max. Stroke [mm]	MOI [kgcm <sup>2</sup> ]	Accel. a [m/s <sup>2</sup> ]	max. Stroke [mm]	MOI [kgcm <sup>2</sup> ]	Accel. a [m/s <sup>2</sup> ]	max. Stroke [mm]	MOI [kgcm <sup>2</sup> ]	Accel. a [m/s <sup>2</sup> ]	max. Stroke [mm]	MOI [kgcm <sup>2</sup> ]	Accel. a [m/s <sup>2</sup> ]	max. Stroke [mm]	MOI [kgcm <sup>2</sup> ]	Accel. a [m/s <sup>2</sup> ]
	SEZ 3-0,5	1.1	0.34		0.73	35	0.19	20	65	0.21	18	95	0.22	16	155	0.25	14	255	0.3	11	355	0.35
SEZ 3-1	2.4	0.8	0.73	35	0.31	48	65	0.33	42	95	0.34	38	155	0.37	32	255	0.42	26	355	0.47	22	

### 16 mm pitch

Motor type	Axial forces			Travel speed v [m/s]	Screw length 85 mm			Screw length 115 mm			Screw length 145 mm			Screw length 205 mm			Screw length 305 mm			Screw length 405 mm		
	F <sub>max</sub> [kN]	F <sub>N</sub> [kN]			max. Stroke [mm]	MOI [kgcm <sup>2</sup> ]	Accel. a [m/s <sup>2</sup> ]	max. Stroke [mm]	MOI [kgcm <sup>2</sup> ]	Accel. a [m/s <sup>2</sup> ]	max. Stroke [mm]	MOI [kgcm <sup>2</sup> ]	Accel. a [m/s <sup>2</sup> ]	max. Stroke [mm]	MOI [kgcm <sup>2</sup> ]	Accel. a [m/s <sup>2</sup> ]	max. Stroke [mm]	MOI [kgcm <sup>2</sup> ]	Accel. a [m/s <sup>2</sup> ]	max. Stroke [mm]	MOI [kgcm <sup>2</sup> ]	Accel. a [m/s <sup>2</sup> ]
	SEZ 3-0,5	0.6	0.2		1.17	20	0.19	32	50	0.21	29	80	0.22	26	140	0.25	22	240	0.3	18	340	0.35
SEZ 3-1	1.5	0.5	1.17	20	0.31	77	50	0.33	67	80	0.34	61	140	0.37	51	240	0.42	42	340	0.47	35	

## Dimensions



# SEZ 4

## Technical data

### 5 mm pitch

Motor type	Axial forces			Travel speed v [m/s]	Screw length 85 mm			Screw length 115 mm			Screw length 145 mm			Screw length 205 mm			Screw length 305 mm			Screw length 405 mm		
	F <sub>max</sub> [kN]	F <sub>N</sub> [kN]			max. Stroke [mm]	MOI [kgcm <sup>2</sup> ]	Accel. a [m/s <sup>2</sup> ]	max. Stroke [mm]	MOI [kgcm <sup>2</sup> ]	Accel. a [m/s <sup>2</sup> ]	max. Stroke [mm]	MOI [kgcm <sup>2</sup> ]	Accel. a [m/s <sup>2</sup> ]	max. Stroke [mm]	MOI [kgcm <sup>2</sup> ]	Accel. a [m/s <sup>2</sup> ]	max. Stroke [mm]	MOI [kgcm <sup>2</sup> ]	Accel. a [m/s <sup>2</sup> ]	max. Stroke [mm]	MOI [kgcm <sup>2</sup> ]	Accel. a [m/s <sup>2</sup> ]
	SEZ 4-1	4.2	1.3		0.23	30	0.61	4.7	60	0.7	4.1	90	0.79	3.6	150	0.98	3	250	1.28	2.3	350	1.58
SEZ 4-2	8.3	2.5	0.23	30	0.93	6.2	60	1.02	5.7	90	1.11	5.2	150	1.3	4.5	250	1.6	3.6	350	1.9	3.0	

### 10 mm pitch

Motor type	Axial forces			Travel speed v [m/s]	Screw length 85 mm			Screw length 115 mm			Screw length 145 mm			Screw length 205 mm			Screw length 305 mm			Screw length 405 mm		
	F <sub>max</sub> [kN]	F <sub>N</sub> [kN]			max. Stroke [mm]	MOI [kgcm <sup>2</sup> ]	Accel. a [m/s <sup>2</sup> ]	max. Stroke [mm]	MOI [kgcm <sup>2</sup> ]	Accel. a [m/s <sup>2</sup> ]	max. Stroke [mm]	MOI [kgcm <sup>2</sup> ]	Accel. a [m/s <sup>2</sup> ]	max. Stroke [mm]	MOI [kgcm <sup>2</sup> ]	Accel. a [m/s <sup>2</sup> ]	max. Stroke [mm]	MOI [kgcm <sup>2</sup> ]	Accel. a [m/s <sup>2</sup> ]	max. Stroke [mm]	MOI [kgcm <sup>2</sup> ]	Accel. a [m/s <sup>2</sup> ]
	SEZ 4-1	2.1	0.7		0.46	20	0.61	9.5	50	0.7	8.2	80	0.79	7.3	140	0.98	5.9	240	1.28	4.5	340	1.58
SEZ 4-2	4.1	1.3	0.46	20	0.93	12.4	50	1.02	11.3	80	1.11	10.4	140	1.3	8.9	240	1.6	7.2	340	1.9	6.1	

### 25 mm pitch

Motor type	Axial forces			Travel speed v [m/s]	Screw length 85 mm			Screw length 115 mm			Screw length 145 mm			Screw length 205 mm			Screw length 305 mm			Screw length 405 mm		
	F <sub>max</sub> [kN]	F <sub>N</sub> [kN]			max. Stroke [mm]	MOI [kgcm <sup>2</sup> ]	Accel. a [m/s <sup>2</sup> ]	max. Stroke [mm]	MOI [kgcm <sup>2</sup> ]	Accel. a [m/s <sup>2</sup> ]	max. Stroke [mm]	MOI [kgcm <sup>2</sup> ]	Accel. a [m/s <sup>2</sup> ]	max. Stroke [mm]	MOI [kgcm <sup>2</sup> ]	Accel. a [m/s <sup>2</sup> ]	max. Stroke [mm]	MOI [kgcm <sup>2</sup> ]	Accel. a [m/s <sup>2</sup> ]	max. Stroke [mm]	MOI [kgcm <sup>2</sup> ]	Accel. a [m/s <sup>2</sup> ]
	SEZ 4-1	0.8	0.3		1.15	-	-	-	40	0.7	20.6	70	0.79	18.2	130	0.98	14.8	230	1.28	11.3	330	1.58
SEZ 4-2	1.6	0.5	1.15	-	-	-	40	1.02	28.3	70	1.11	26	130	1.3	22.3	230	1.6	18.1	330	1.9	15.2	

## Dimensions

Center DM6-DIN832

Lubricating hole

M6

ø 62

ø 60 I6

ø 40 g6

12

KGT25x P

L3

L4

L5

2

10

L screw length

L / LBR

Lubricating hole

35

22.5°

4 x ø 5.5

6 x ø 6.6

45°

90°

ø 51

□ 70

ø 75

112

Ball screw dimensions:

Pitch [mm]	L3 [mm]	L4 [mm]	L5 [mm]
5	43	10	12
10	61	10	16
25	70	10	16

Motor type	L [mm]	LBR [mm]
SEZ 4-1-x-x-Rx0	144.5	177.5
SEZ 4-1-x-x-xx0	165.5	198.5
SEZ 4-2-x-x-Rx0	176	209
SEZ 4-2-x-x-xx0	197	230

## Our know-how – Your benefits.



### Special features of SEZ

- Direct mounting of the rotor on the screw
- No belts
- No couplings
- Very rigid connection
- Statically determinate system
- No additional wearing parts
- Installation-ready system

### Advantages of SEZ

The SEZ stands out from other linear technologies, such as pneumatic cylinders, through its considerably higher efficiencies and high positioning accuracy. Multiple travel profiles can be set, and the SEZ can be integrated easily into automation processes. Generally, you achieve greater energy efficiency with the SEZ.

### At a glance:

- ▶ High and constant force
- ▶ High precision
- ▶ High energy efficiency

## The comparison.

	SPINDASYN	Toothed belt	Rack	Crank mechanism	Hydraulic cylinder	Pneumatic cylinder	Linear motor
Force	+++	-	○	--	++++	-	-
Speed	+	++	++	+++	--	○	+++
Investment costs	○	++	○	+++	○	+++	---
Operating costs	+	○	+	+++	---	---	++
Positioning accuracy	+++	+	○	-	-	---	+++
Size	+	○	○	-	+++	+	○
Dynamic response	+	+	++	+++	○	--	+++
Energy efficiency	+++	+++	+++	+++	--	---	○
Commissioning effort	+	+	+	--	--	--	+
Reliability	++	++	++	+	○	--	+++
Scalability (stroke)	+	○	+++	---	---	---	○

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