



WE MAGNETISE THE WORLD



## SERVO Line

Spring-applied single-disc brake for servo motors



INDUSTRIAL DRIVE SYSTEMS



## Kendrion – The brake experts

As a solution provider, Kendrion develops, produces and markets innovative and high-quality electromagnetic and mechatronic systems and components for industrial and automotive applications. Kendrion is very serious about its commitment to addressing the technical challenges of the future. Which is why the responsible use of resources along the entire value chain, and trustworthy business practices, are deeply ingrained in our corporate culture.

### The right brakes for every situation

The Industrial Drive Systems business unit develops and produces electromagnetic brakes and clutches for industrial drive engineering. They are used for the accelerating, braking, positioning, holding and securing of movable drive components and loads. The areas of application for our brakes and clutches are primarily in robotics and automation technology, machine tool and production machinery, as well as in medical technology and material handling.

'Servo Line', our newly designed spring-applied brake for servo motors, completes our product portfolio, enabling us to provide the ideal solution for any application.

### Worldwide availability

The headquarters of Industrial Drive Systems is located in Villingen within Germany's Black Forest. However, the business unit can also rely on additional production sites and subsidiaries in Aerzen (Germany), China, the UK and Italy, as well as numerous sales partners all over the world.

### Tradition and progress

It was the long-established BINDER brand that laid the foundations for the successful development of Industrial Drive Systems. Wilhelm Binder founded his company in 1911, and during the early 1920s he began developing and manufacturing electromagnetic components. In 1997, the business was taken over by Dutch group Schuttersveld N.V., today Kendrion N.V.

The former magneta GmbH & Co. KG has been part of the Kendrion Group since 2010. Now known as Kendrion (Aerzen) GmbH, this innovative company continues to develop and produce permanent magnet brakes for small motors, electromagnetic clutches and brakes at its site in Aerzen, along with magnetic particle clutches and brakes.

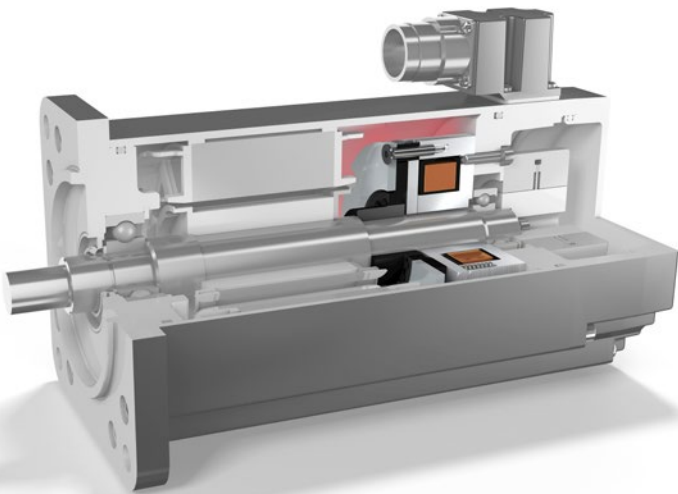
### Kendrion – We magnetise the world!

[www.kendrion-ids.com](http://www.kendrion-ids.com)



# Sectors & applications

## Servo motors



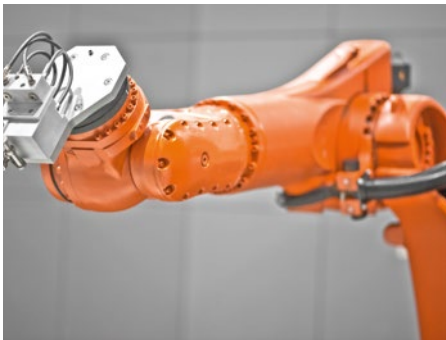
### Standard version

- Built into motor housing
- Face mounting / flange mounting

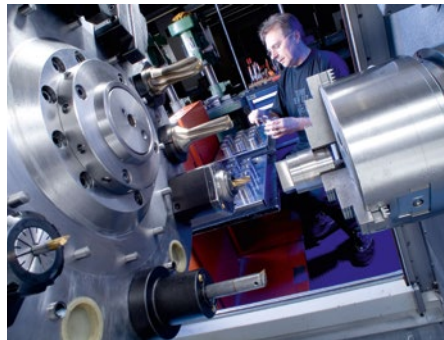
### Optional

- Mounted outside the end shield

## Automation & robotics



## Machine tools



## Packaging & materials handling



## Storage systems



## Assembly lines



## Renewable energy





*Servo Line*

## Spring-applied brake for servo motors

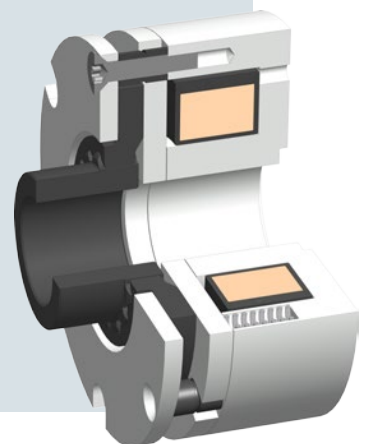
The Servo Line series of spring-applied brakes has been developed for integration into servo motors. The brakes are designed for use as holding brakes with emergency stop function.

The spring-applied single-disc brakes in the Servo Line series are designed to operate dry. They can be mounted to the A-face or B-face end shield inside the servo motor. The braking action generated by the compression springs is neutralized by applying the electromagnetic principle involving generation of a magnetic field. The brakes engage in unpowered condition and release when DC voltage is applied.

- The brakes are equipped with a flange and firmly fastened with screws.
- Thanks to a specially developed and patented manufacturing method, the rated air gap tolerance can be reduced to a few hundredths of a millimetre, providing enhanced power.
- Toothed hub/friction disc connection with minimal circumferential backlash.
- Standard version suitable for flange mounting and face mounting.

### Safety & reliability for your application

Our wealth of experience in brake design and state-of-the-art manufacturing technologies enables us to ensure an optimum brake service life for given temperature and torque specifications.



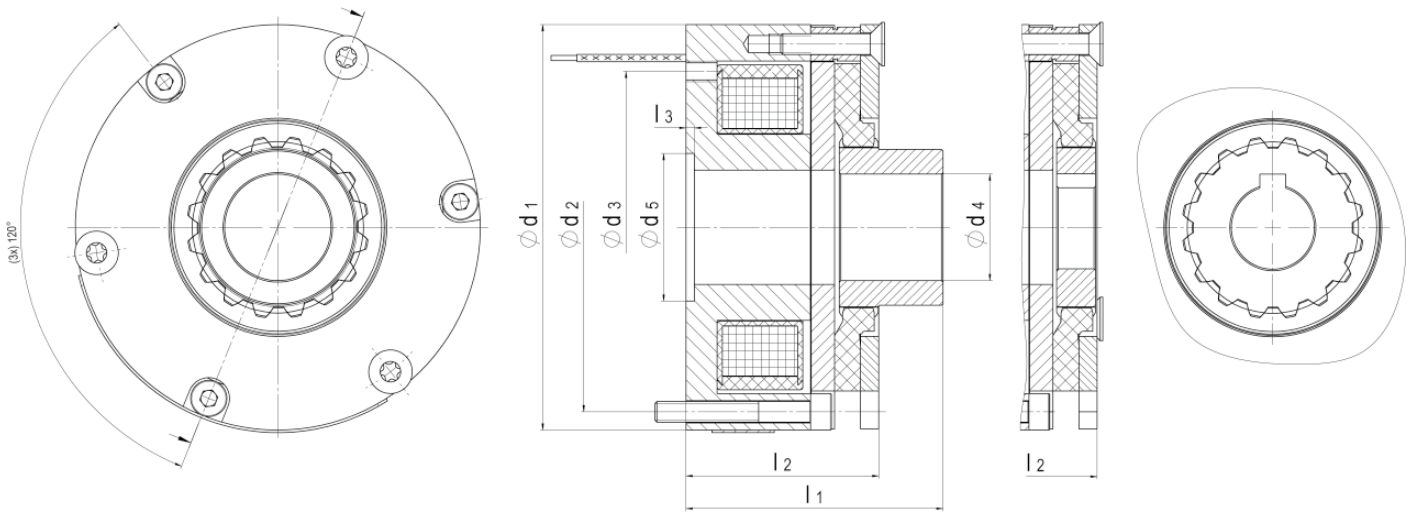
# Technical specifications

Model types	Face mounting / flange mounting KS 1xx..A00
Standard rated voltage	24VDC (±10%)
Protection	IP00
Insulation class	F
Ambient temperature	-15°C to 120°C
Minimum holding torques	0.3 to 130 Nm
Duty cycle	100%
Options	Keyway to DIN 6885
Note	The general information on specification sheets and the applicable operating instructions must be observed. Specifications subject to change without notice.



Size	Holding torque (at $T_A = 120^\circ\text{C}$ ) $M_{4\text{ MIN}}$ [Nm]	No-load speed $n_{0\text{ max}}$ [rpm]	Emergency stop speed $n_{E\text{ max}}$ [rpm]	Switching work with single switching operation $W_{\text{max}}$ [J]	Total number of emergency stops $Z_{\text{total}}$ [-]
03	0.3	10000	6000	1	500
04	1.3	10000	6000	10	500
05	2	10000	5000	40	500
06	3.3	8000	4000	70	500
07	4.5	8000	4000	100	500
08	7	6500	3000	140	500
10	16	6000	3000	600	500
12	32	4000	2500	1600	500
14	60	4000	2500	2400	500
16	80	3500	1500	5000	500
19	130	3500	1500	10000	500

# Dimensions



<sup>[2]</sup> Short version available as an option

Size	Outside diameter $d_1$ [mm]	Pitch circle diameter flange side $d_2$ [mm]	Pitch circle diameter face side $d_3$ [mm]	Length $l_1$ [mm]	Length $l_2$ [mm]	Hub bore <sup>[1]</sup> $d_{4\max}$ [mm]	Diameter (for circlip) $d_5$ [mm]	Length (for circlip) $l_3$ [mm]
03	32	28	28	34.2	28.9	7.5	14.0	1.3
04	44	39.5	40	36.6	30.0	10.5	17.0	1.5
05	51	45	45	37.9	32.0	12.5	20.0	1.5
06	62	55	42	43.7	32.2	15.5	22.6	1.5
07	72	65	54	47.4	36.6	17.5	25.0	1.5
08	78	71	60	49.5	37.0	20.5	28.4	1.6
10	102	93	72	58.7	43.0	25.5	34.2	1.7
12	124	114	94	65.0	50.0	35.5	46.8	2.0
14	147	134	97	68.5	56.0	40.5	53.0	2.3
16	164	151	120	81.3	61.3	45.5	62.0	2.3
19	188	175	167	94.1	76.3	50.5	65.0	2.6

<sup>[1]</sup> Standard shaft/hub connection through press fit or shrink fit.

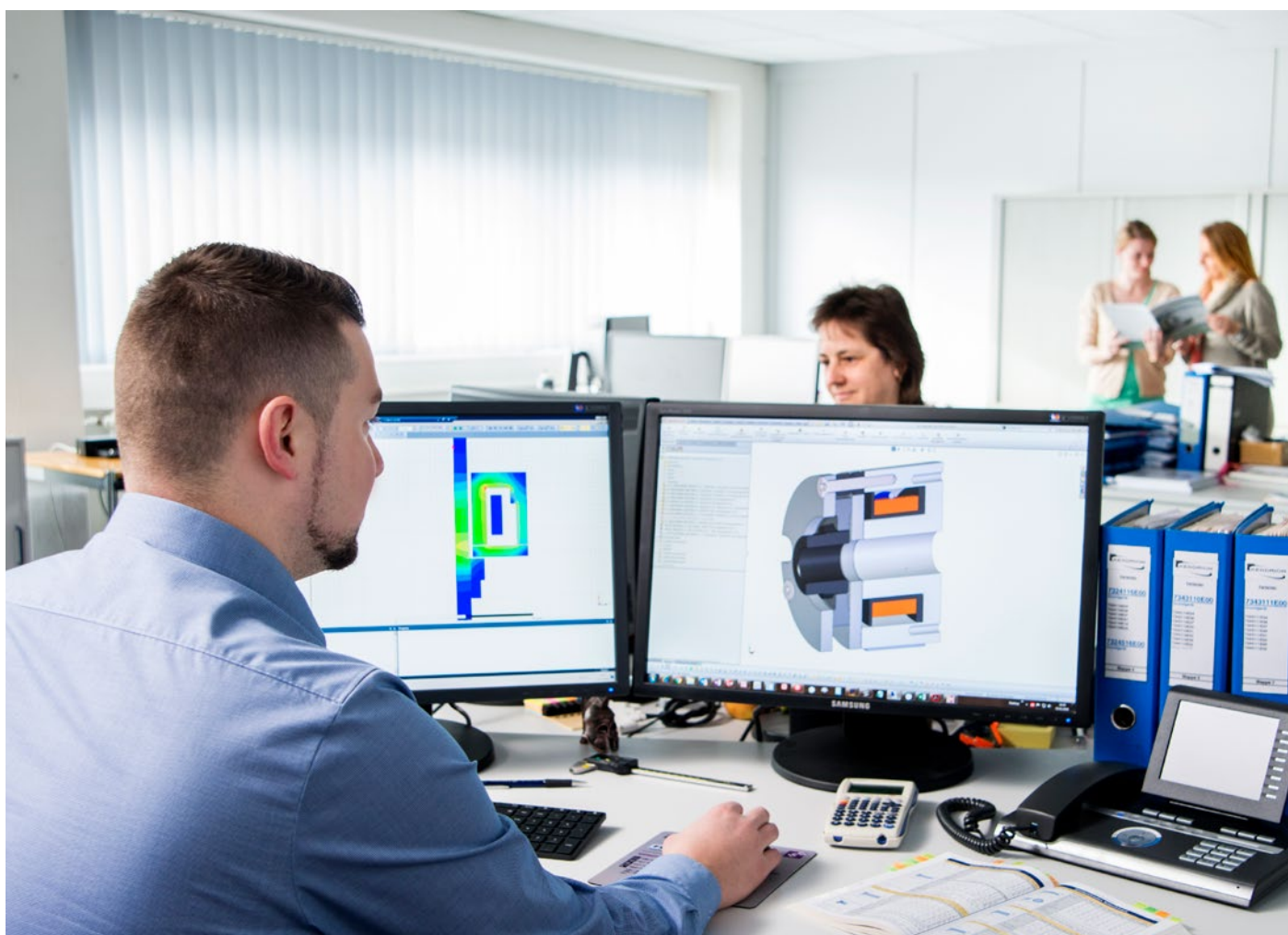
<sup>[2]</sup> Optionally, a short-version hub is available with a feather key to DIN 6885. Maximum shaft diameter upon request.

## Your dependable partner for individual brake solutions

Automation solutions have become indispensable in both industry and our everyday lives. Mechatronics helps achieve further expansion of these solutions, and increases the range of applications. In many cases, electromagnetic brakes meet the necessary safety requirements, allowing loads to be securely held and ensuring safe braking in an emergency.

Catering to different market demands while also ensuring product standardization is a challenge that Kendrion relishes. Customized solutions can be developed and manufactured on the basis of an existing portfolio of products, the prerequisite being the analysis and understanding of industry-specific customer requirements. With the right product range and a high level of expertise in automation technology, robotics, machine building and elevator engineering, Kendrion Industrial Drive Systems is your dependable partner, providing the ideal individual brake solution for any application.

*We'll be happy to help you identify the right solution, whether it's from our wide product portfolio or individually designed just for you.*





WE MAGNETISE THE WORLD

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