



Kern Brakes and Clutches Controlled Speed Reduction

Kern Brakes and Clutches - Controlled Speed Reduction

➤ *Individual needs – custom-tailored solutions*

Kern Antriebstechnik has specialised in precise drives in particular. Here we have more than 80 years of experience.

Our production programme comprises DC servomotors, brushless motors, brake-clutch systems, and friction brakes and clutches. In addition, we have also established ourselves as a specialist in coil winding technology with special know-how.

As system integrators, we offer our customers full-line service, from the design of drive components to the development and design engineering during the development phase, the construction of in-house prototypes and samples right down to series supply.



We discuss customer requirements in detail



Development using modern tools

Special tasks involving drive systems call for creative ideas

At Kern Antriebstechnik, each product is tailored to the customer's specific requirements and is thus perfectly optimised for its intended use. Installation dimensions, mounting flanges, seals or plugs: it makes no difference. We precisely adapt motors and brakes, enabling all the drive components in the customer's application to function perfectly, reliably and precisely. Our strengths are the special models, adaptations and further developments of the existing range of products.

Single parts, small- and large-scale series – we produce what makes sense from a financial point of view

Since applications vary considerably and standard products do not always fulfil customer requirements, the targeted lot size cannot be satisfied through high-volume production. This is why we have specialised in small-scale production, in combination with a high degree of development. Nevertheless, we are also optimally equipped to process large production volumes. Our products are always custom-built, are neither comparable with mass-produced items nor can they ever be regarded as such. We are also able to supply spare parts for uncommon machines.

Time-to-market – speed and flexibility win

From the idea to the finished product – today, the key to success is market readiness. This is why we have specialised in implementing customer wishes quickly and without losses. This can only be achieved through streamlined organization, short decision paths and flexible workplaces. The basis for this is provided by modern development tools, pinpoint communication and employees who are willing to deliver orders flawlessly and on time.

Content

Kern Brakes and Clutches
Controlled Speed Reduction

Electric magnet powder brakes
Precisely adjustable high torques



Page 4

Permanent magnetic hysteresis brakes and clutches
Aluminium housing, high torque without operating current



Page 5

Permanent magnetic hysteresis brakes
Plastic housing



Page 5

Permanent magnetic hysteresis brake "Campanello"
One of the smallest adjustable hysteresis brakes in the world



Page 6

Friction brakes and clutches
Power brakes for severe service



Page 6

Electric magnet powder brakes

➔ *Precisely adjustable high torques*



Magnet powder brakes

Fields and applications

- Mechanical engineering
- Textile industry
- Winding machines
- Paper machines
- Printing machines
- Test stands
- Roll-up and tension control

Advantages and special features

- Easy to change or control the braking torque
- Very smooth running even at low speeds
- Easy and reproducible to control
- Fast and easy mounting
- Nearly wear- and maintenance free
- Compact design

Type	Current [A]	Voltage [V DC]	Ohmic resistance of coil at 20°C [Ω]	Rated torque* [Nm]	Torque – currentless [Nm]	Max. speed (with heat sink) [W]	Dissipation loss (with heat sink) [min-1]	Weight (with heat sink) [kg]
MPB 10	0.5	24	54	10	<0.5	480 (1650)	25 (85)	2.3 (3.2)
MPB 25	0.8	24	29	25	<0.7	550 (1650)	40 (120)	4.0 (5.6)
MPB 50	1.3	24	19	50	<1.5	380 (1250)	60 (200)	7.6 (10.1)

* Values for torque are minimum values and may be higher; tolerance of all other values +/- 10%

Permanent magnetic hysteresis brakes and clutches

↗ high torque without operating current



Fields and applications

- Winding machines
- Packaging technology
- Applications with constant torque
- Test stands

Advantages and special features

- Compact design
- Easy to use
- Wear- and maintenance free
- Torque also while at a standstill
- Torque permanently set ex works

Type	Torque [Nm]	Max. Speed [rpm]	Dissipation loss [W]	Load on bearing		Moment of inertia [kgm ² x10 ⁻⁴]	Weight [kg]
				radial [N]	axial [N]		
BDH 1	1	1000	110	150	50	0.55	1.9
BDH 3	3	350	110	150	50	0.6	2.1
BDH 6	6	200	130	200	70	1.1	3.3-
BDH 8	8	150	130	200	70	1.3	4.5

Permanent magnetic hysteresis brakes

↗ Cost-effective plastic housing



BDH 0.6

Fields and applications

The BDH 0.6 can be used as a brake and as a clutch. As a brake, it is used where uniform torques are required.

- Textile machines
- Conveyors

Advantages and special features

- Compact design
- Easy to use
- Wear- and maintenance free
- Torque also while at a standstill
- Torque permanently set ex works

Type	Torque [Nm]	Max. Speed [rpm]	Dissipation loss [W]	Load on bearing		Moment of inertia [kgm ² x10 ⁻⁴]	Weight [kg]
				radial [N]	axial [N]		
BDH 0.2 - 0.6	0.2 - 0.6 set ex works	350*	8	120	40	0.028	Approx. 360

*observe maximum dissipation loss

Hysteresis brake "Campanello"

➔ **One of the smallest adjustable hysteresis brakes in the world**

Fields and applications

- Textile industry
- Thread brake

Advantages and special features

- Compact design
- Easy to use
- Wear- and maintenance free
- Torque also while at a standstill
- Adjustable in 11 levels
- Reproducible adjustment of the braking torque
- Patented design of the magnetic circuit



Adjustable hysteresis brake

Type	Min. torque [Nm]	Max. torque [Nm]	Max. speed [min]	Dissipation loss [W]	Weight [g]
Campanello BDH 0.05	0.008	0.05	4000*	10	Approx. 70

*observe maximum dissipation loss

Friction brakes and clutches

➔ **Power brakes for severe service**



Electric high-performance friction brake



Brake assembly

Fields and applications

Mechanical engineering

- Textile industry
- Winding machines
- Paper machines
- Printing machines
- Mixing and rolling-mill machinery
- Electro and diesel gensets

Advantages and special features

- Suitable for dry and wet operation
- Insensitive to minor soiling in dry operation
- Double magnetic flux of the armature disc enables a compact design with large through bore and high torque
- Version for high-power circuit with adjustable pole gap possible

Full-line service from Kern

➤ *Understanding customer relationships as a process*

Manufacturing tailor-made products goes far beyond the actual production process.

It involves an entire process that extends from the first meeting with the customer and continues through production and delivery all the way to the end of the service life of the application.

Accompanying the customer along this path from the beginning, recording and implementing the questions that arise, adapting products to take into account changes in requirements. Ongoing quality control in the plant and tracking the function of the installed parts is another important part of our work. This leads to long-lasting customer relationships that we greatly value, some of which have been going strong for several decades.

The entire spectrum of drive technology

Individual components that make up drive technology, modules or complete drive systems; even the complexity of the products varies greatly. Magnetic coils are, for example, required as individual parts, fitted to electric brakes, combined as brake motors or used in combination with fitted gear units, tachogenerators or control units.



Careful production and assembly



Advanced manufacturing centres

Development – from the customer's wish to the prototype

Our customers expect us to provide drive system solutions from specific details right up to the complete system. Our strength lies in our ability to understand the needs of customers and to transform these into creative ideas. Regardless of whether in the form of a completely new design or an adaptation to a standard version. This can only be achieved through the use of technology that is always state-of-the-art, whether the software used to design the motors or a 3D printer for rapid prototyping.

Production – flexibility and production depth

Since the tasks set by the customer may vary considerably, flexibility and a high degree of production depth are the basis of our success. Machining, injection moulding, coil winding machines and assembly centres, everything is performed at our own plants enabling us to react quickly and accurately. Our very own tool shop adds to our know-how.

Quality – testing and experience

Since most core components are manufactured in-house, we produce within a seamless and integrated quality chain. Complete testing of motors and a brake test bench ensure that only products that are perfectly suited to their application leave our plants. The outgoing goods inspection facility with its strict quality control plan and long-standing logistics partners ensure that customers receive their drive components on time and without any hitches.



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