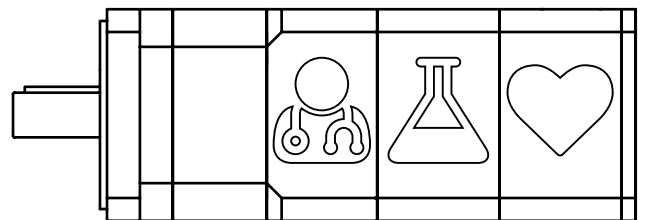


GEORGII KOBOLD

Creating Motion
since 1924



*Drive Solutions
for
Medical Technology*



Safe drive technologies from the experts. Designed for medical applications and for the lab.

"Medical Technology" - the term itself calls out different overlapping areas. On one hand, there is a person who is depending on medical support, diagnosis and therapy, and this situation requires special sensitivity. On the other hand, there are highly technical devices, which the patients and the doctors are relying on to work precisely, safely and without interference. Maximum results are needed in the application, while simultaneously providing minimal stress for the patients and the practitioners.

Drives in medical technology - we rely on them every day, but the complex know-how behind them is hard to imagine.

We at GEORGII KOBOLD have what it takes, and we are aware of our responsibility. In addition to meeting all product standards (e.g. IEC 60034 etc.), we set ourselves apart when dealing with the operational conditions where medical devices are used. With regard to functional safety, e.g. when securing encoder systems for positioning, we can meet the high mechanical requirements of the medical fields, just to name one example. Here we also rely on low-voltage regulators in the 24 - 48 V range, which are subject to special safety requirements (SIL2, SIL3). In the context of quality management at GEORGII KOBOLD, the self-evident implementation of on-demand CAPA processes is just one of many methods to sustainably maintain our high standard of quality and our Zero-fault tolerance.



Exposure Limits/EMF

As a default, our drives meet the requirements for exposure limit values of the EU Directive 2013/35/EU. Also in the case of the integrated electromagnetic brakes, we integrate magnetic shields which allow us to stay below the allowed exposure limits within the motor itself.



European standards

The basis of our work entails following the directives and laws of Europe. We meet or exceed all CE, RoHS and Reach standards. We confirm this with every offer.



Safety Integrity Level

Safety comes first. That's why we integrate components of the appropriate class which meet the specific safety requirements.



International certifications

Many of our motor series are already certified. In principle, all of the products are UL/CSA compliant and can be certified if they haven't already been. (For an overview, see the CSA Master Contract no. 231402).



Quality assurance through process optimization

Our highest standards of quality call for a corresponding process management that permanently ensures both quality and improvement.

Operational environmental management system

As part of an overall system, GEORGII KOBOLD is aware of its responsibility to the environment and is committed to sustainable, resource-efficient production - starting from product development to the final packaging of the products.

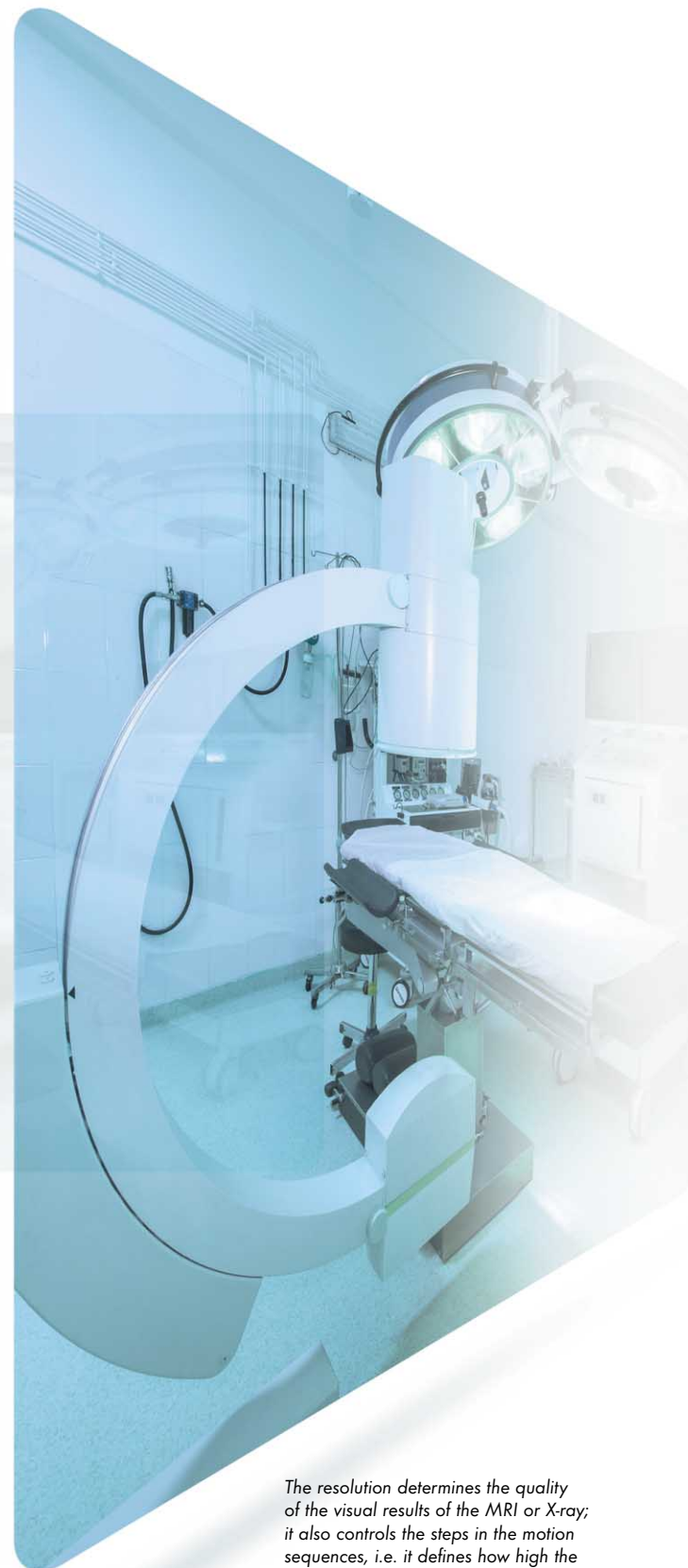


Perfect fit and reliability - drives for use at the highest level.

The C-arm moves slowly and precisely. The movement forces are enormous. The patient at the center of the action has no idea of the tremendous torques that keep the apparatus moving; he simply trusts that everything will work.

In imaging techniques, the high demands on the equipment and systems used become quite clear - whether it's static imaging or fluoroscopy diagnostics. The highest image quality is expected, but at the same time also minimal dosage. This can be achieved thanks to exact positioning and maximum freedom of movement of the device.

Motors and drives from GEORGII KOBOLD offer the right solution for these applications, which require high position accuracy, high power density, quiet operation, as well as optimal integration into the devices.



The resolution determines the quality of the visual results of the MRI or X-ray; it also controls the steps in the motion sequences, i.e. it defines how high the positioning accuracy of the detectors and sensors can be. That is why our drives can be so precisely controlled.

Flat design

- Even with an integrated brake (length = 30 mm) and/or an absolute feedback system (length = 47mm), the pancake design enables assimilation into spaces shallower than 130 mm.

Integrated Holding Brake

- A compact, integrated permanent-magnet brake enables secure locking of the axis

CSA/UL Approval

- Certification is standard for most variations



KSY 5 Q-Series -
maximum Performance
(Sample Model)

Extreme Power Density

- The high power density of the motors allows their application within very narrow installation spaces.

Optimal Motor Design

- The magnetic circuit and the winding are optimized to the requirements in order to save resources and to avoid oversizing.

DRIVECLiQ Encoder System

- Functional Safety for applications up to SIL2
- Easy integration into the existing control/regulation environment. We fulfill the highest demands on safety

Power, precision and endurance in modern diagnostics.

Whether diagnosing allergies or auto-immunity, hematology or infectious serology, automated processes have become indispensable in modern medical technology laboratories.

High repetition accuracy and faster analysis are just two advantages over manual tests. Reliability and accuracy are required to prevent valuable sample materials from being lost and, more importantly, to insure that correct results are achieved.

GEORGII KOBOLD drives play an important role here. They operate with precision and safety, run extremely smoothly with minimal operating temperature, and are adapted optimally to the demands of medical applications. High-quality laboratory findings are an important basis to achieve precise diagnosis for medical orders as well as for scientifically-sound results.



Laboratory and diagnostic equipment require drives with reproducible continuous torque transmission. From a technology perspective, the KTY-R-series of drives from Georgii Kobold are ideally designed for this.

Flat design

- The flat design allows integration into very tight spaces

CSA/UL Approval

- Certification is standard for most variations

Encoder System

- Absolute encoder with EnDat2.2 interface



KTY 6 R-Series – minimal warming (Sample Model)

Optimal Motor Design

- The magnetic circuit and the winding are optimized to the requirements in order to save resources and to avoid oversizing.

Operating Temperatures

- Especially in laboratory diagnostics, external influences, such as temperature, can have a negative impact on the results of the investigation. The motor offers minimal warming.

Cogging

- Vibrations can have negative effects in laboratory diagnostics. This motor series has been especially optimized with regards to the cogging torque.

How human motor skills become the finest of movements.

The patient is under anesthesia; the preparations are completed; now the surgical team can start their work. During surgery, the finest nerve tracts and blood vessels often require highly accurate work and optimal vision. Involuntary head movements of the surgeon are no longer an issue in surgical microscopes – unlike when magnifying glasses were still in use. Focusing, enlargements and the use of camera systems make it easier for the surgeons and assistants to work for many hours.

It goes without saying that you have to rely on the technology used. Not only the optics, but also the drive unit must function smoothly and safely.

GEORGII KOBOLD drives meet these requirements. They easily meet the high safety requirements placed on drives in medical devices. Not only can they be integrated in ceiling units, but by integrating the drive controller into the motor itself, they can also be built into mobile devices. With a low-voltage, 48-volt design, battery operation is also a possibility.

From coarse to fine positioning by the surgeon, the drives ensure fluid movements with the least amount of effort, thus supporting high-precision work for the well-being of the patient.



Human Machine Human:
Human hand movements are safely transferred into tiny, safe movements from surgical microscopes to surgical robots with finely adjustable GEORGII KOBOLD drives.



KSD-Series –
maximum Integration
(Sample Model)

Decentralized Drive Unit

- By integrating the drive controller into the motor, the cabling effort can be significantly reduced

Continuous Communication

- The motors communicate with each other via the bus system (PROFINET) – a small motor network is created.

Meeting the Highest Safety Requirements for the Controllers

- Together with SIL2-capable encoder systems, a functionally-safe drive package can be created for applications up to SIL2.

Low Voltage

- A 48-volt design allows devices to be battery operated and/or mobile, and, since no certified electricians are required for commissioning, the installation of the devices is facilitated.

Optimal Motor Design

- The magnetic circuit and the winding are optimized to the requirements in order to save resources and to avoid oversizing.

Encoder System

- Absolute encoder with Hiperface DSL interface

CSA/UL Approval

- Certification is standard for most variations

Drives of the future are intelligent and provide feedback directly from the field.

The operation is underway. The surgeon holds the surgical instruments in his hands while the attached micro-sensors help him find the exact position. Intraoperative CT systems capture the body part and display it digitally to provide important information in real time. 3D surgical microscopes provide the surgeon with high-resolution images with the spatial views needed in complex procedures. Surgery robots assist and "hold" endoscopes without shaking.

Industry 4.0 has already taken hold in medical technology.

This is an area where the technical devices assume extremely important tasks, therefore all components have to meet high requirements, as the GEORGII KOBOLD drives do.

The fact that GEORGII KOBOLD has long since taken the path of Industry 4.0 is also evident in the subject of predictive maintenance. The GEORGII KOBOLD-EWS (Early Warning System), for example, enables plant operators to permanently monitor an electric motor. Due to the early announcement of developing damages, a much greater process security is given. Downtime of a system due to motor failure is a thing of the past.

Future advancements will be made not only in digitization, but in application-oriented, tailor-made solutions as well as in efficiency improvements.

GEORGII KOBOLD has already achieved significant advances with their magnetically-gearred motors of the KOBOLD series. The integration of a synchronous servomotor and a coaxial magnetic transmission results in a completely non-contact power transmission. Such a solution is ideal for applications where high speeds, high efficiency and low noise levels are required.



Highly hygienic surfaces and sophisticated seals create safety for people, nature and technology



To be Centralized or Decentralized – that is not the question.

You can do it all well – with central and decentralized drives.

In applications with high operating influences, such as existing moisture or gases, for example, it may be advantageous to have the drives and controllers spatially separated from the motors, i.e. in order that the electronics are not adversely affected.

Elaborate equipment may require locally encapsulated control components to allow modularity.

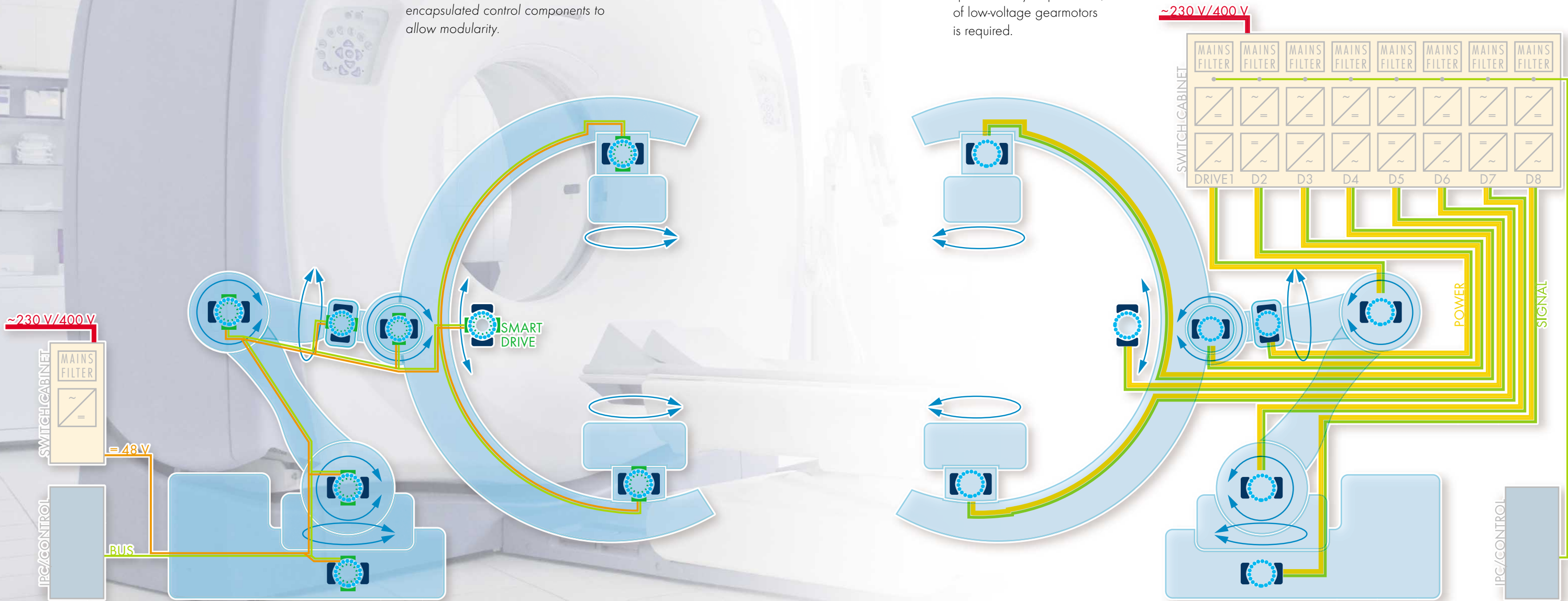
Furthermore, in operations with synchronized axes in a confined space, a central structure can be the best solution.

Often, however, decentralized drive concepts - especially in the field of medical technology - can yield significant advantages.

In robotic visualization systems, for example, GEORGII KOBOLD integrates the drive controllers and the logic units directly into the SmartDrives. This minimizes the wiring and assembly work required for the control cabinet, cuts the total weight of the drive system and reduces the connection complexity leading to a minimization of errors during assembly. With regard to the special safety requirements, the use of low-voltage gearmotors is required.

48 VDC / 34 V 3~ with integrated SIL2-certified regulators is an advantage. In mobile applications, e.g. in C-arm systems, the smart motors can be powered by battery.

No matter which application is challenging you, we'll find the perfect solution for you.



Tradition meets modernity: With know-how and technology throughout – From concept to the finished product.

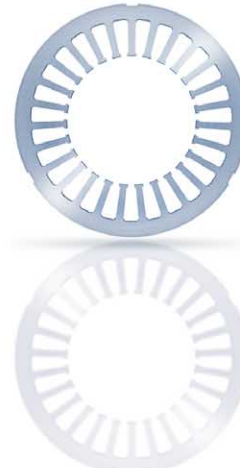
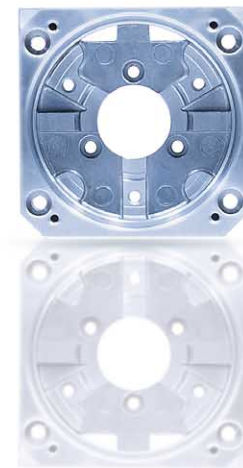
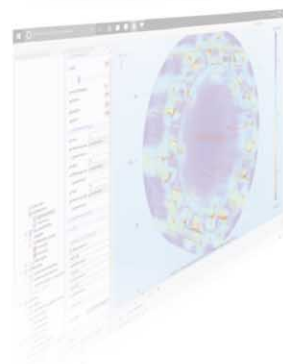
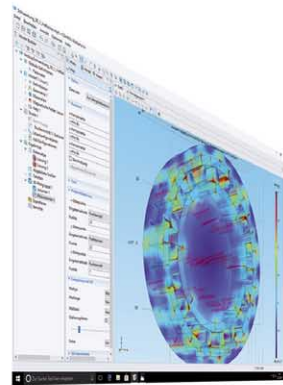
To build an entire motor at our site in Horb, GEORGII KOBOLD basically only needs an aluminum ingot, a bit of copper wire, a tin coil and a few magnets. From development, to punching, casting and winding, to the assembly and painting, all steps for the production of the motor run in-house.

The advantages are obvious. Without long supply chains, the responsibility over a large area of adding value remains completely in our control. Traceability processes for products and continuous in-line testing are carried out directly. Our sophisticated quality management system and a 100% final inspection ensure a flawless product.

CAPA processes guarantee continuous learning from experience.

Qualität – Made in The Black Forest.

But the deep vertical integration of our production results in another advantage: flexibility in our motor design. Cost-effective and tailor-made drives are possible by using the many common components available. We choose standard sheet metal sections and take advantage of tools that have been built for large series. Without having to completely redevelopment a motor, this flexibility is also available for small batches of customer-specific motors.



Product Focus

- *Stainless Steel Motors and Gearboxes*
- *Magnetically-gearred Motors*
- *Integrated Servo Gear Motors*
- *Torque Motors*
- *System Products*
- *Customized Motors*

Produktschwerpunkte

- *Edelstahlmotoren und -getriebe*
- *Magnetgetriebemotoren*
- *Integrierte Servo-Getriebemotoren*
- *Torquemotoren*
- *Systemprodukte*
- *Kundenspezifische Motoren*



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