

Energy and data transfer systems for mobile consumers

We energize mobility. Worldwide.

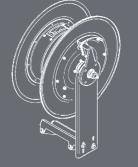




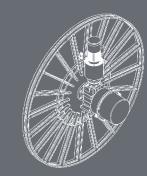


Company profile	03
Change, values and vision	04
Product portfolio	06
Product structure spring cable reels	07
Product structure slip ring bodies	08
Product structure motorised cable reels	09
Mobile Cranes	12
Ports & container	14
Bulk, mining & material handling	16
Crane technology	18
Plant engineering	20
Environmental technology	22
Entertainment	24
Installation & after-sales service	26
Customer service worldwide	27









Company profile

Expertise meets customer's needs

As one of the leading manufacturers of motorised cable reels, spring cable reels, and slip ring bodies, Hartmann & König Stromzuführungs AG supplies its customers worldwide with technologically for energy and data transfer systems for mobile consumers. The high-quality "Made in Germany" cranes, excavators or hoisting equipment of all types – and wherever mobile consumers require a reliable supply of power, data or other media.

Our expertise is reflected in an impressive product portfolio of state-of-the-art cable reels and slip ring bodies. Innovative capability, reliability as well as the flexibility of a medium-sized company contributed to the success of Hartmann & König.

Our expertise in the area of energy delivery to mobile consumers is based on more than 70 years experience slip ring systems. We support our customers with a dedicated team of engineers and designers, who develop solutions for the most challenging applications. In this way, we can offer virtually all types of motorised cable reels tailored to customer requirements for spiral or cylindrical winding and unwinding of cables, ropes or hoses.









Change, values and vision

Seven decades of change at Hartmann & König

- 1945: Karl Hartmann and Max König founded Hartmann & König KG in Graben, Germany.

 The company initially manufactures products for other sectors, such as filter systems, water pumps etc.
- 1954: The company specialises in the production of cable reels, slip ring bodies and accessories. Hartmann & König Maschinenbau OHG is established in the same year.
- 1958: The company relocates to a new production facility in Graben in order to expand its capacities and its product portfolio.
- **1980:** The second generation of the Herberger and Gross families continue the business as Hartmann & König Maschinenbau GmbH & Co. KG.
- 1993: Ursula and Hubert Herberger act as sole managing directors and successfully steer the company's fortunes to a path of continuous growth.

- 1999: To meet its growing requirements,
 Hartmann & König builds a modern administration and production facility with a total area of more than 4,200 m² in the Neudorf district.
- 2015: Following the death of Ursula and Hubert Herberger, the long-established company remains in family ownership: their daughters Sabine Gamer and Silke Rom, representing the third generation of owners, take over responsibility for the successful future of Hartmann & König Stromzuführungs AG.
- 2016: The globally successful specialist in energy supply systems constructs two new halls, thereby adding around 3000 m² to its production area. This enables the further expansion of series production but also caters for the production of bespoke large-diameter cable reels.

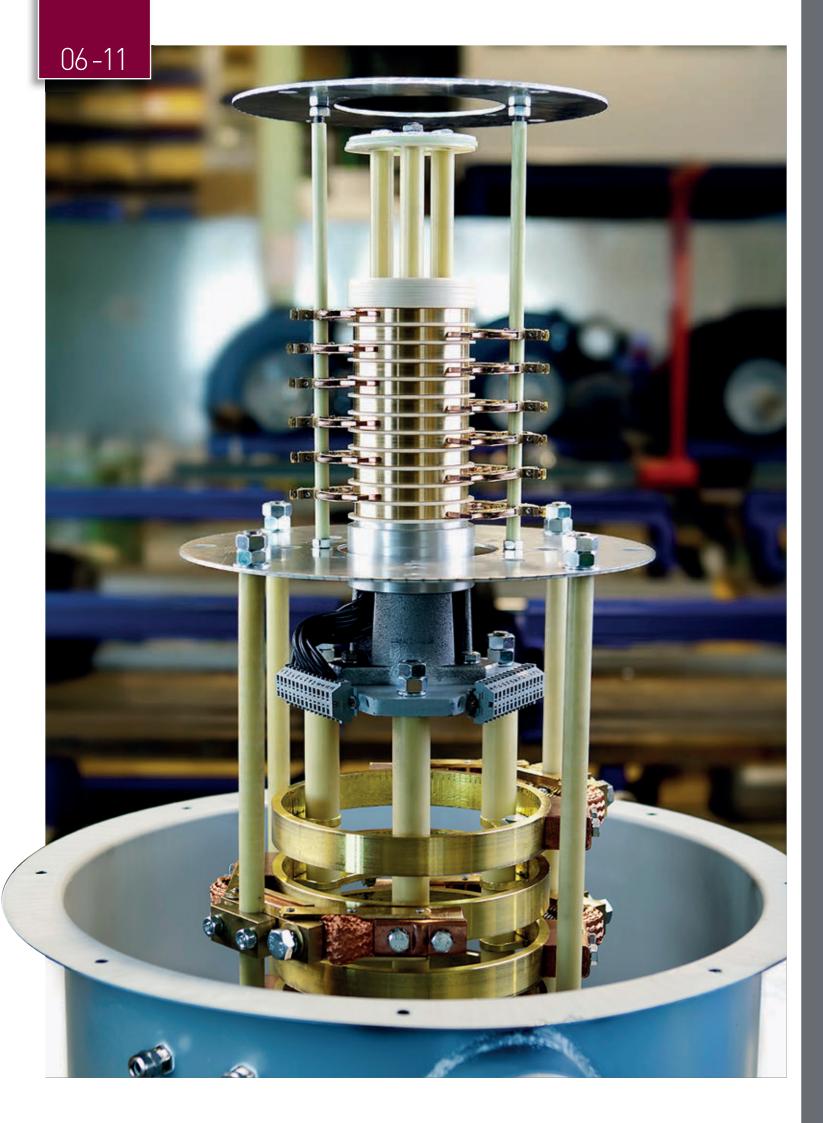
Values and visions

Throughout the company's 70-year history, three generations of entrepreneurs have shaped a corporate philosophy based on honesty, respect and honourable dealings with customers and employees. These values are reflected in strong growth and, not least, in long-standing trusting relationships with our steadily expanding customer base.

Driven by entrepreneurial vision, technical expertise and tireless dedication, this family-owned SME based in Graben-Neudorf has successfully positioned itself on the international market. Here at Hartmann & König, we have long considered ourselves quality leaders in the area of energy supply to mobile consumers. The management remains as committed to this aspiration as it has always been. Every day, our workforce of around 150 employees goes to great lengths to convince our

customers of the performance of our products, our reliability backed by a level of flexibility that is unique on the market. We invest heavily in R&D with the goal of developing and continuously expanding the most effective product range on the market.

Our highly-qualified employees and cutting-edge technology allow us to achieve a high vertical range of manufacture and flexibility. We adhere to national and international regulations and manufacture our products in accordance with processes – keeping an eye on customer satisfaction at all times. We have been certified to DIN ISO standards since 1997, and are currently certified to 9001:2008. This guarantees the highest quality standards and enables us to fulfil the requirements of our customers – which include large corporations and SMEs – as effectively as possible.



Product groups at a glance



Spring cable reels

- Maximum speed 60 m/min
- Various sizes and model series for supplying short distances – distances of up to 60 m are also possible
- Cylindrical or spiral-winding reel bodies
- For energy and data cables a s well as hoses for liquid or gaseous media
- Available from stock: Standard cable reels ready to ship in 48 hours



Slip ring bodies

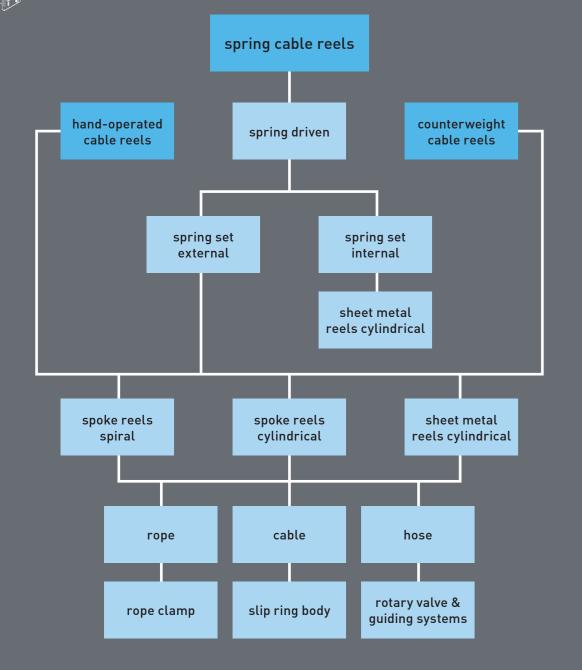
- Transfer energy, data and control signals from a rotating to a stationary technical component or vice versa
- Used in combination with cable reels or as stand-alone modules
- Areas of application: in rotating construction machines, slewing jibs, drilling machines, waste incineration plants, stage technology etc.
- Open or encapsulated slip ring bodies with or without a bearing
- Encapsulated version with protection class IP55 or higher



Motorised cable reels

- Ideally suited for high speeds, dynamic processes, long distances and high tensile forces
- Travel ranges up to 1000 m+
- Configuration of motorised cable reels and drives according to the respective customer wishes
- Spiral or cylindrical winding and unwinding of cables and hoses
- Compatible with virtually all motorised drives

Product structure spring cable reels

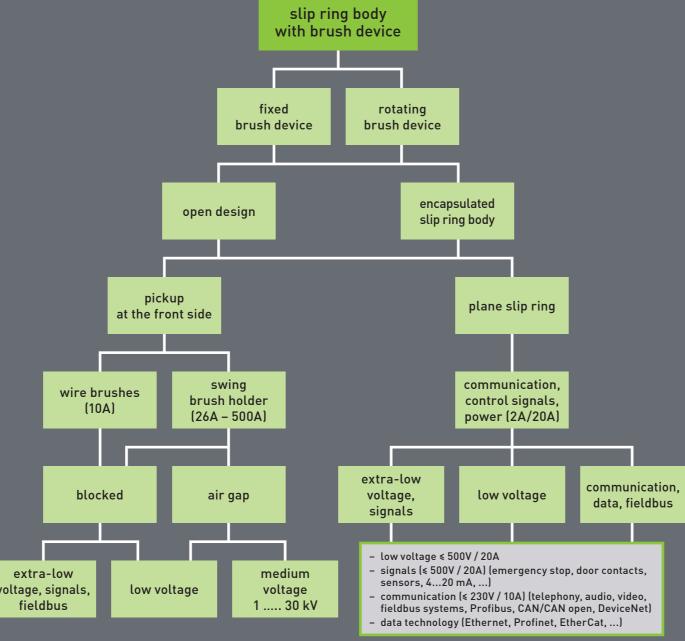


Accessories spring cable reels:

- Cam limit switch
- Ratchet
- Heating unit Spooling device
- Roller yoke
- Deflector horn
- Cable deposit roller
- Cable stopper



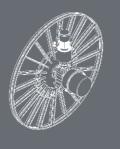
Product structure slip ring bodies



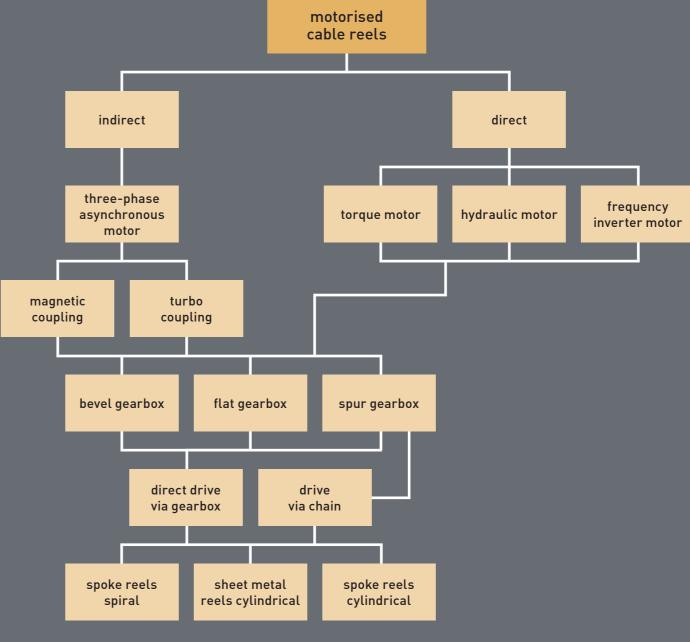
Accessories slip ring bodies:

- Heating unit
- Light wave conductor

Rotary encoder Cam limit switch



Product structure motorised cable reels



Accessories motorized cable reels:

- Roller payout guide
- Double cable deflector pulley
- cable deflector sheaves and pulleys
 Cable grip
- Centre feed funnel
- Cam limit switch
- Heating unit
- Deflector horn

Spooling device

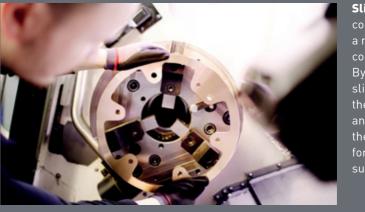
Light wave conductor

- Cable deposit roller
- Payout chain

Cable grip with absorber



made of premium-grade, texture-milled spring band steel and a slip ring body or a rotary feedthrough for hose reels.



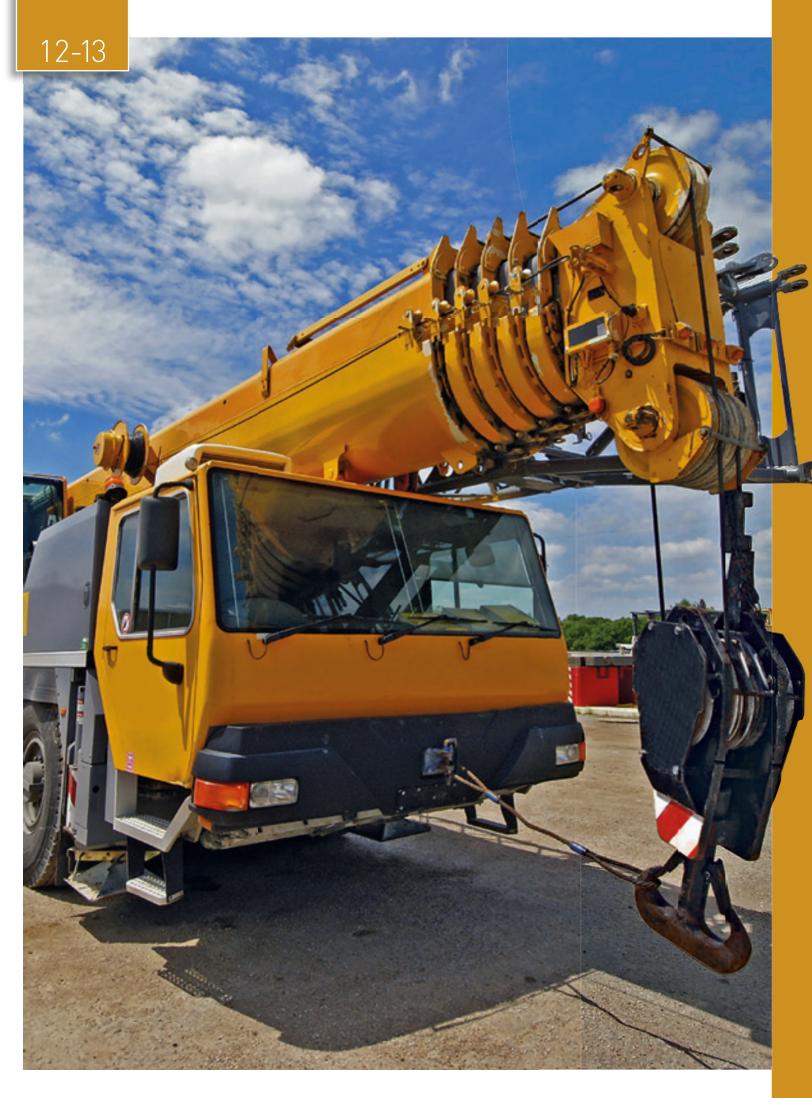
and quickly. Just one of the many factors guaranteeing the longevity of our products is the high protection class for electrical components. This ensures that they are ideally suited to harsh environmental conditions.













Mobile Cranes

Maximum flexibility

Thanks to their mobile undercarriage supported on wheel or chain travel gear, Mobile Cranes are indispensable today for the construction industry, heavy-duty transportation, or as emergency and rescue vehicles. Wherever heavy loads, great heights or physically confined working environments must be mastered, products from Hartmann & König are the pivotal points for the supply of energy to bracket arms, grabs or machinery superstructures. In particular,

spring cable reels, hose reels and slip ring bodies ensure the high functional availability of Mobile Crane They transfer power and data flows as well as other

Alternative solutions to today's fuel-intensive use of diesel-powered machines, such as excavators and loading machines, are considered a key technology

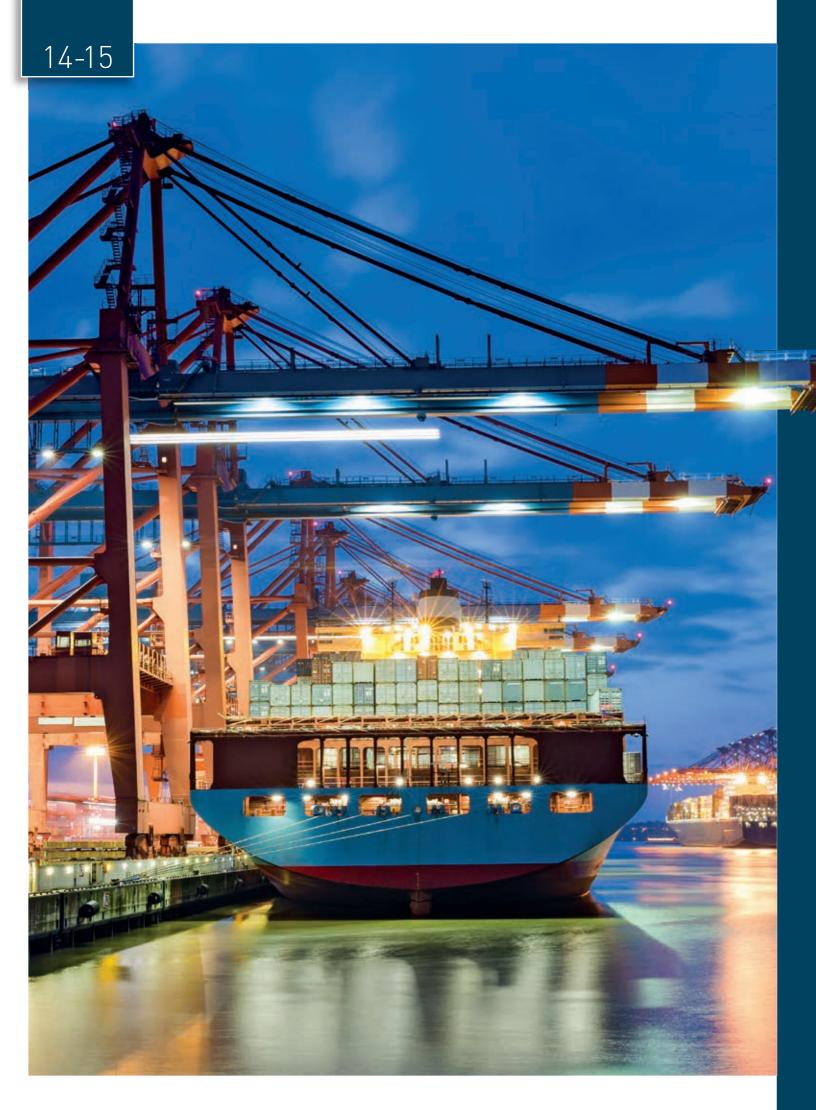
in the context of the efficient use of renewable energy. For many years, Hartmann & König has supplied systems tailored to customer requirements for the electrification of mobile excavators with the help of spiral or cylindrical winding motorised cable reels.

This electrification is particularly profitable on machines that have a predictably limited scope of movement.

Motorised cable reels by Hartmann & König are an eco-friendly solution for travel ranges of up to 1,000 m and they help reduce costs in the long run. Thanks to significant savings in terms of fuel consumption, maintenance and downtimes, the investment costs for a high-quality power supply with motorised cable reels usually pay back very quickly for the customer.

Our solutions for Mobile Cranes and material handling

Applications	Hartmann & König Products	Requirements
Mobile Cranes, emergency vehicles	 spring cable reels slip ring bodies spring hose reels snow protection more accessories 	 limited installation space low speed energy + data + control signals high durability special solutions required
Excavators / material handling machines	 cylindrical winding motorised cable reels slip ring bodies hydraulic driven cable reels hose reels spooling devices for short and long distances roller payout guides payout chains 	 eco-friendly alternative to fuel-intensive construction machines running on diesel limited installation space restricted turning radius safe cable guiding for driving along curves and in swivel operation transmit high power for machines with a predictably limited scope of movement
Agricultural machines, crawler	cylindrical winding motorised cable reelsspooling devices for long distances	electrification of agricultural machineslow speedlong distances





Ports & container

Seaworthy and sturdily designed

Today, more than 90 % of goods transshipments worldwide are transported by sea. Energy and data transmission

systems that are customised for the technical tasks to be performed play a key role in ensuring the efficiency of port and container terminals.

Dependable and low-maintenance electrical power supply components are therefore critically important when it comes to ensuring smooth operation and minimizing downtimes.

Cable reels and slip ring bodies by Hartmann & König are powerful and robust in equal measure. This makes them ideal for long-term use under the most diverse climatic conditions in ports across the globe.

As a specialist in the development of intelligent power supplies, Hartmann & König has been supplying Mobile Harbour Cranes, RMG's and RTG's as well as STS and Intermodal Cranes with environmentally friendly energy for decades. For harbour and container terminals, we design motorised cable reels with high safety classes and optimum corrosion protection to withstand even the most extreme environmental conditions. For example, we use flanges and reel bodies made of hot-galvanised steel or stainless steel as well as special paintings to maximise the service life of these components even in aggressive sea weather conditions. Hartmann & König meets the highest quality standards – for satisfied customers worldwide.

Our solutions for ports & container applications

Applications	Hartmann & König Products	Requirements
STS	 cylindrical and spiral winding motorised cable reels with magnetic coupling and frequency inverter drive slip ring bodies roller payout guides cable guides centre feed funnel 	 high dynamics high protecting class high surface protection for medium voltage cables with control conductor or light wave conductor
Mobile Harbour Cranes	 motorised cable reels with magnetic coupling hydraulic driven cable reels slip ring bodies comprehensive range of accessories 	 high protecting class high surface protection energy supply for horizontal flexibility of cranes
RMG / RTG / Intermodal Cranes	 motorised cable reels with magnetic coupling and frequency inverter drives (constant) slip ring bodies roller payout guides centre feed funnel 	 high dynamics high protecting class high surface protection medium distances for medium voltage cables electrification of RTG's
Deck Cranes	 cylindrical winding motorised cable reels most required drive unit: turbo coupling slip ring bodies rope reels to stabilize the rotary and slewing movements of grabs and spreaders deflection and guide pulleys 	 aggressive salt water environment high protecting class high surface protection





Bulk, mining & material handling

Robust technology for the harshest environmental conditions

In the bulk and mining industry, cutting-edge technology is now more important than ever when it comes to meeting the extreme challenges that apply to all aspects of raw material extraction. Wherever vast masses of earth and rock need to be moved to expose precious raw materials, you will find our bespoke system solutions for providing flexible energy supplies to the mobile machines and equipment used to extract these valuable resources.

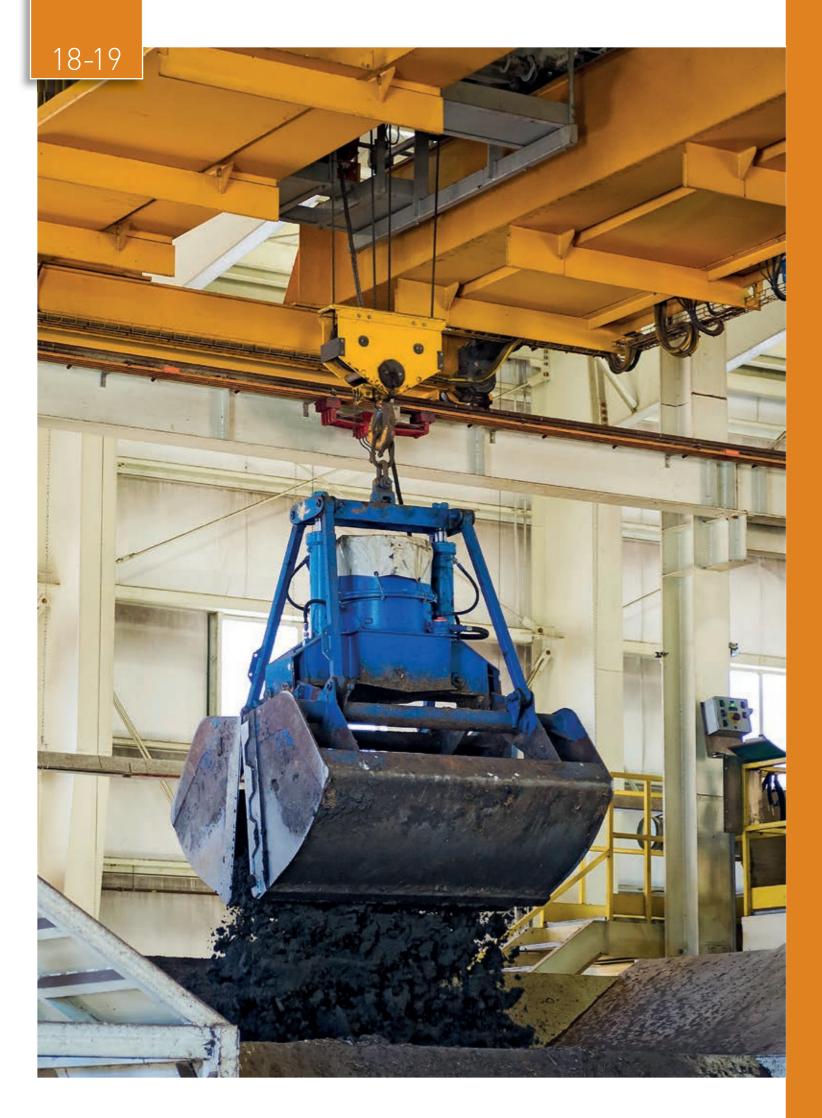
Around the world, motorised cable reels and hose reels by Hartmann & König ensure reliable supplies of energy, water, oil, compressed air and other media to large open-casting mining machines such as bucket-wheel excavators, conveyor belts, various types of crushing machines, hydraulic excavators or tunneling machines. Our rugged motorised cable reels with

magnetically coupled drives as well as hydraulically powered systems are suitable for use over longer distances.

Thanks to our know-how, we can provide our customers with targeted support in complying with increasingly stringent environmental regulations and high safety standards, while at the same time finding the most efficient solution to virtually every technical challenge. Our absolutely robust and reliable reel bodies and accessories have proven themselves in continuous operation even under the harshest environmental conditions. Our energy supply systems are characterised by high product quality, exceptional performance and impressive longevity, all of which enable our customers to boost the productivity of their development, mining and tunneling activities over the long term.

Our solutions for bulk, mining & material handling

Applications	Hartmann & König Products	Requirements
Mining	 cylindrical winding motorised cable reels with magnetic coupling hydraulic driven cable reels slip ring bodies spooling devices 	long travel distancesrobust technologyoptional with ex-protection
Stacker & reclaimer / bulk / material handling	 monospiral and cylindrical winding cable reels magnetic coupling drives hydraulic driven cable reels slip ring bodies spooling devices 	long travel distancesrobust technology
Grab construction	 cylindrical winding motorised cable reels most frequent drive: turbo coupling rope reels to stabilize the rotary and slewing movements of grabs cable deflector sheaves and pulleys 	 high dynamics seawater environment low speed long distances vertical use possible





Crane technology

Reliable systems for efficient logistics

Every industrial manufacturing enterprise must manage material flow and logistical tasks. In addition to standard applications, these usually include challenging transportation requirements - particularly regarding the critical service environments of cranes or transport goods. Indoor cranes of all types support production processes and optimise the use of available space at ground level. Even in extreme working environments, such as in the vicinity of incineration kilns in steelworks or in warm and humid environments of waste incineration, grabs and magnets must be supplied with electricity or weight information must be transmitted.

We have supplied technologically sophisticated energy delivery systems for these types of applications for many decades. Hartmann & König cable reels can be equipped with virtually all drive types and can be perfectly matched by our specialists to the respective installation set-up. For this reason, our particularly robust reels with counterweight drives or our systems equipped with turbo couplings that have proven themselves time again in 24-hour continuous operation at high air humidity levels are ideal for use in steelworks or in waste incinerators. To ensure that cranes and lifting equipment can perform critical lifting tasks safely, reliably and efficiently, our experts are always open to feedback. With extensive know-how and honest advice, they are also on hand to help customers find the optimum technical and the most economical solution.

Our solutions for crane technology

Applications	Hartmann & König Products	Requirements
EOT Cranes	 cylindrical winding motorised cable reels with magnetic coupling spring cable reels slip ring bodies 48hours-programme cable reels 	 limited installation space standard industrial environment small + medium dynamics
Steel mills	 monospiral cable reels motor driven or counterweight driven cable reels slip ring bodies 	 harsh environmental conditions high temperatures special cable guidances small + medium dynamics
Hoisting technology (magnetic)	 cylindrical winding motorised cable reels spring cable reels slip ring bodies 	feed-in of electromagnetssmall + medium dynamics
Recycling / waste incineration	motorised cable reels with turbo coupling or frequency inverter drive special cable strain relief device	 very dirty environments high temperatures continuous operation, high dynamics in some applications
Facade Cranes	spring cable reels	low velocity vertical winding (fixed spring cable reel)





Plant engineering

A passion for special solutions

Almost no other sector is as diverse in terms of applications and associated requirements as the plant engineering industry. Customised energy transfer and data transmission solutions play a key role in optimising production processes.

They are also the driving force that inspires our experienced specialists to work every day with customers to find optimum energy supply configurations. The spectrum ranges from flexible battery charging reels for supplying high currents all the way to power supplies for transfer carriages or locomotives used for intra-company transportation.

A long service life combined with uniformly high quality are not only our aim, but also our promise.

No matter how diverse the automation solutions for optimised manufacturing facilities may be, they all require energy and data transfer systems that are perfectly customised and integrated in the value added process. In this regard, our innovative products fulfil the often complex requirements, such as confined installation spaces, high speeds or acceleration, thereby helping to reduce cycle times, boost performance and optimise energy efficiency. We support our customers with a dedicated team of engineers and designers, who can develop the right solution for the most demanding applications.

Our solutions for plant engineering

Applications	Hartmann & König Products	Requirements
Plant engineering / transfer systems	 spiral and cylindrical winding cable reels (motorised and spring driven) slip ring bodies robot reels spooling devices chain reel centre feed funnel 	 low speed often limited installation space (< 800 mm) transfer of energy, data and control signals reliability and high durability
Locomotives for in-house transport	motorised cable reels	high speed applicationshigh accelerationlong distances
Automotive	spring cable reelsbattery charging reelsrobot reels	automated processhigh currentsrobust technology
Military equipment	spring cable reels (aerial cable reel)slip ring bodies	customer-specific solutionsspecial cablesdata transfer
Beverage industry	slip ring bodies for energy and data transfer	 high durability high rotation speed special solutions, as e.g. stainless steel execution
Packaging machinery industry	slip ring bodies for energy and data transfer	 central position above the stretcher energy and data transfer





Environmental technology

Reliability in harsh environments

For some time now, there has been an increased focus on forward-looking environmental technologies in industry and society. Whereas new energy generation technologies call for high-performance energy and data transfer components on the one hand, resources that have already been used must be recycled as efficiently as possible on the other. As a specialist for high-quality energy and data transfer systems, Hartmann & König has supplied cable reels and slip ring bodies for technical facilities in sewage works, recycling or wind power stations for many decades.

Ensuring reliable power supplies and control over sewage purification plants requires extremely robust energy and data transfer systems that can withstand aggressive environmental conditions. For this reason, circular scraper in sewage plants are the ideal application for our rugged

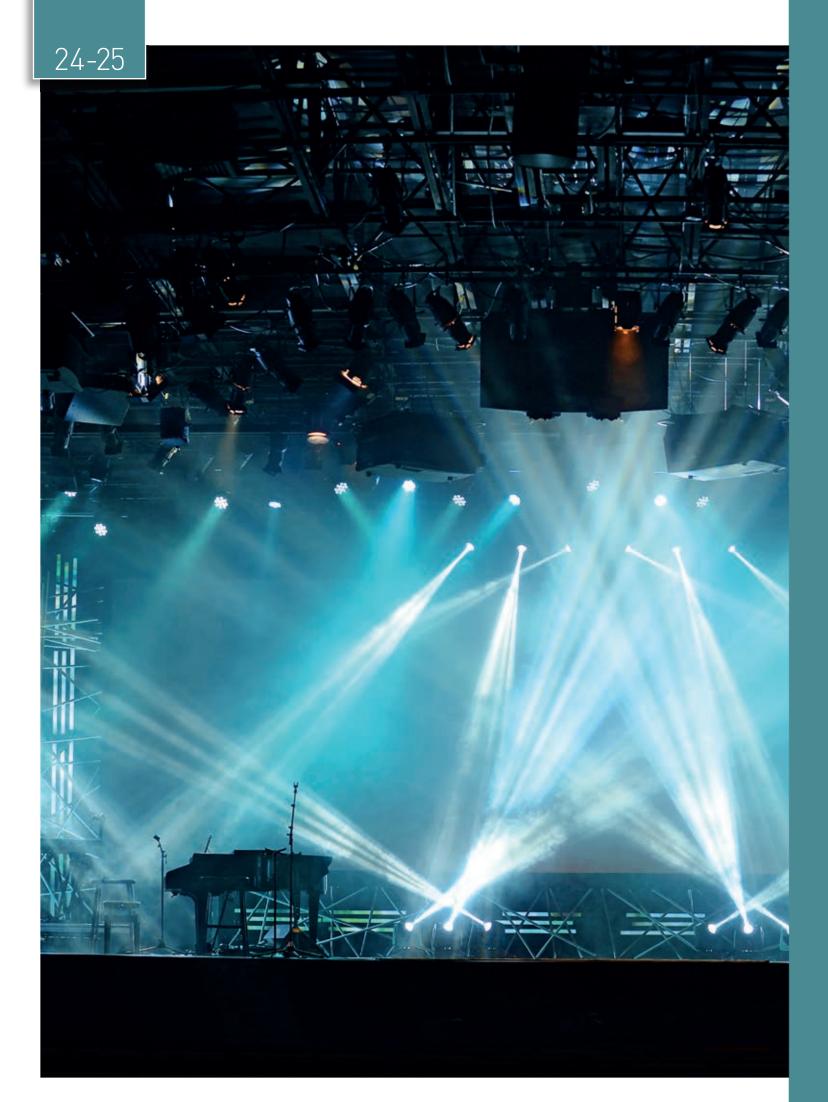
slip ring bodies, which transfer energy and data from the stationary switchgear and control systems to the drives on the rotating circular scraper bridge. In addition to optimum corrosion protection, our cable reels are also used to supply energy to longitudinal scrapers in sewage plants.

The hot-dip galvanised surface finish of the reel bodies and the use of wear-free magnetic coupling drives enables our high-quality products to withstand even the most aggressive environments.

For numerous other applications in the area of environmental technology, our experts have the necessary know-how and understanding to configure the best technical solutions for our customers – proven in practice and backed up by extensive references.

Our solutions for environmental technology

Applications	Hartmann & König Products	Requirements
Circular scraper in wastewater treatment plants	slip ring bodies for energy and data transfer	 low dynamics aggressive environment anti-corrosive protection high protecting classes
Longitudinal scraper bridges in wastewater treatment plants	 motorised cable reels for the transfer of energy and control signals spring cable reels for short distances up to 60 meters 	 low dynamics aggressive environment anti-corrosive protection high protecting classes high surface protection
Recycling/ waste incineration	 motorised cable reels with turbo coupling or frequency inverter drive special cable strain relief device 	 very dirty environments high temperatures continuous operation occasionally high dynamics
Wind turbines	 slip ring bodies for blade pitch control light wave conductors for transmitting optical signals optional 	 high dynamics high vibration resistance energy and data transfer between fixed installations and rotor blades high durability low maintenance for cost-efficient operation





Entertainment

Mobile energy for every spectacle

On stages around the world, our energy and data transfer systems always deliver award-winning performances.

Despite not being in the limelight themselves, our customised cable reels and slip ring bodies are indispensable components that bring the lighting, sound and stage technology to life.

Night after night, show after show. That's because the ensemble performance is critical, both on-stage and off-stage.

When it comes to transmitting energy and data safely and reliably in theatres, civic and multi-purpose halls, sports arenas, or on rotating exhibition stands, customers have relied on the flexible solutions from Hartmann & König for many decades. In addition to spring cable reels and motorised cable reels for virtually silent and continuous power delivery and control of spotlights and loudspeakers, our repertoire includes slip ring systems for supplying

power and transmitting audio, video and DMX signals to continuously rotating stages.

We have suitable technical solutions for all moving elements of overstage and understage machinery – from lighting gantries, loudspeakers, ceiling elements or theatrical rigging systems above the stage to lifting podiums and rotating stages below the stage. We also supply suitable components to ensure flexible supplies of energy and data to mobile rotating platforms for use in event rooms and exhibition halls.

Hartmann & König offers perfect solutions for undiluted theatre enjoyment. In addition, we keep a close eye on the strict safety regulations that apply to stage and event technology and on the needs of stage managers and stage builders.

Our solutions for entertainment technology

Applications	Hartmann & König Products	Requirements
Overstage equipment (lighting bridges, loudspeaker systems, ceiling panel)	 spring cable reels for data transfer slip ring bodies 	 data and control current supply data transfer: DMX signals Profibus Profinet Ethernet low speed customised solutions (special cables needed)
Understage equipment (lifting podiums, revolving stages)	slip ring bodies	power and control current supplyfata transfer



Installation, commissioning & after-sales service

Individual support guaranteed

Here at Hartmann & König, we see ourselves as partners to our customers. Therefore, our customer service begins long before the cable reel or slip ring system has been supplied. As a specialist for energy and data transfer systems, we provide our customers with comprehensive advice based on the appropriate cable reel specifications, cables and hoses as well as installation conditions and requirements.

Our after-sales service does not only supply spare and wear parts, but is also the point of contact for customers who need

regular service or support to solve technical issues.

Despite the fact that our products are reliable, extremely rugged and required minimal maintenance, we do offer an extensive spare parts service for several decades.

Hartmann & König trained staff provides customer care around the clock. No distance is too far for our experienced service experts to implement your complex installation projects, maintenance tasks or on-site commissioning.







Customer service worldwide

High-performance sales network

Hartmann & König is an international company.

Our commitment to quality "Made in Germany" begins with a professional initial consultation, includes development and production with a high degree of in-house production, and continues long after the final delivery. Our technical sales engineers advise and support customers throughout the project. Consequently, we can offer customised solutions that draw on our 70 years of experience and expertise.

By expanding our international network of sales representatives Hartmann & König is entering new regional markets for its technologically advanced, high-qualitative cable reels and slip ring bodies.

Our distribution network is closely integrated in long-term relationships, which allows us to ensure reliable service and the best possible technical support to our customers across the globe.

Extensive know-how, direct availability of our key experts to customers, and a spirit of partnership have fostered the successful implementation of projects all over the world. Renowned international customers in the fields of crane and port technology as well as plant and machine construction among others, profit from our wide range of products with standard and custom solutions.







