



Hartmann & König
STROMZUFÜHRUNGS AG

**Electrification solutions
for material handling machines**



Energy transfer systems by Hartmann & König

In recent decades, Hartmann & König has positioned itself in the international market as a worldwide leading manufacturer of technologically sophisticated energy and data transfer systems for mobile consumers. Besides its constantly growing product range of high-quality cable reels and slip ring assemblies „made in Germany“, the long-established company has years of expertise in providing customised electrification solutions for machines that were previously running on diesel.

This also includes the eco-friendly power supply of material handling equipment and mobile excavators.

The electrification of shovels and heavy machines by means of motorised cable reels is currently the best alternative to fuel-intensive construction machines running on diesel. Nowadays it is considered a key technology, especially with regard to the efficient use of renewable energy.

Power, data and media supply for mobile giants

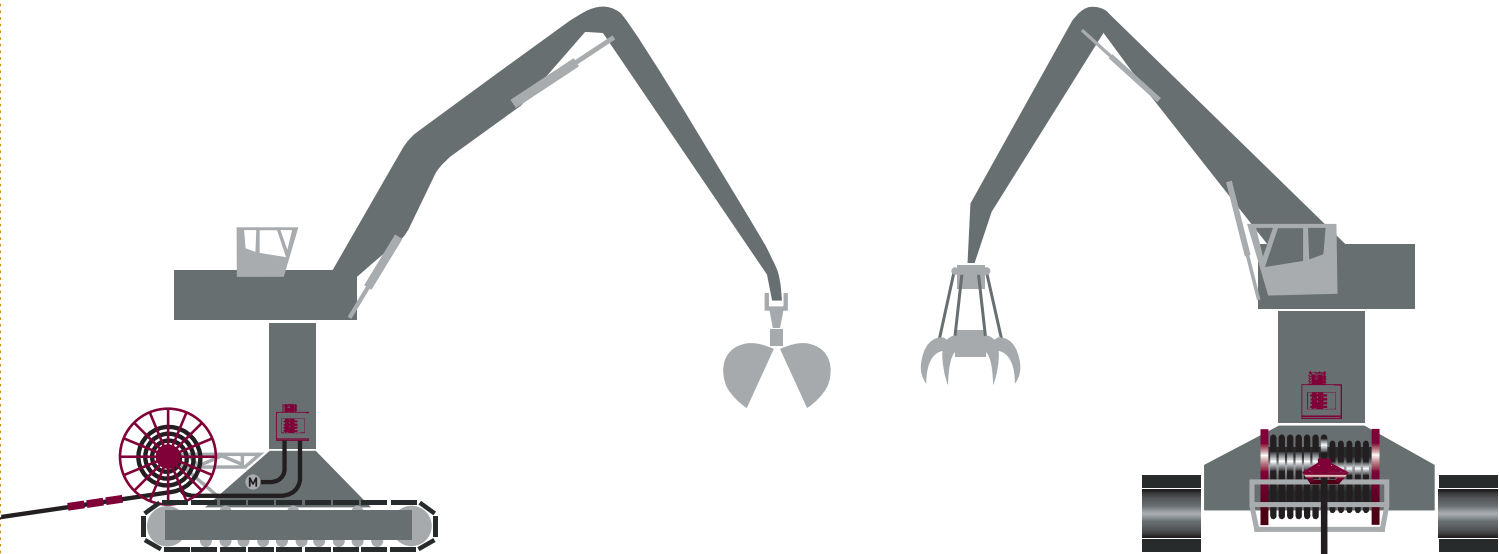
Application	H&K solution	Requirements
Excavators / material handling machines	<ul style="list-style-type: none"> spiral and cylindrical winding motorised cable reels slip ring assemblies hydraulic driven cable reels hose reels winding devices for short and long distances roller payout guides deflection link chains more accessories on request 	<ul style="list-style-type: none"> 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



Motorised cable reels tailored to customer needs

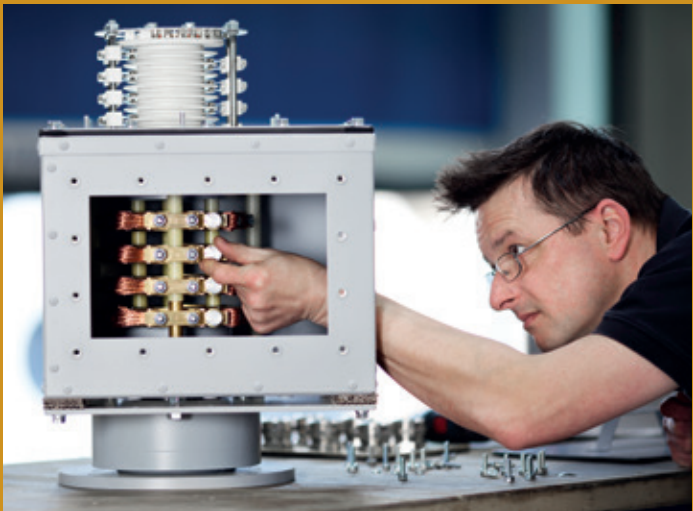
In the course of the close cooperation with several leading German manufacturers of cranes and material handling machines, Hartmann & König developed a wide range of

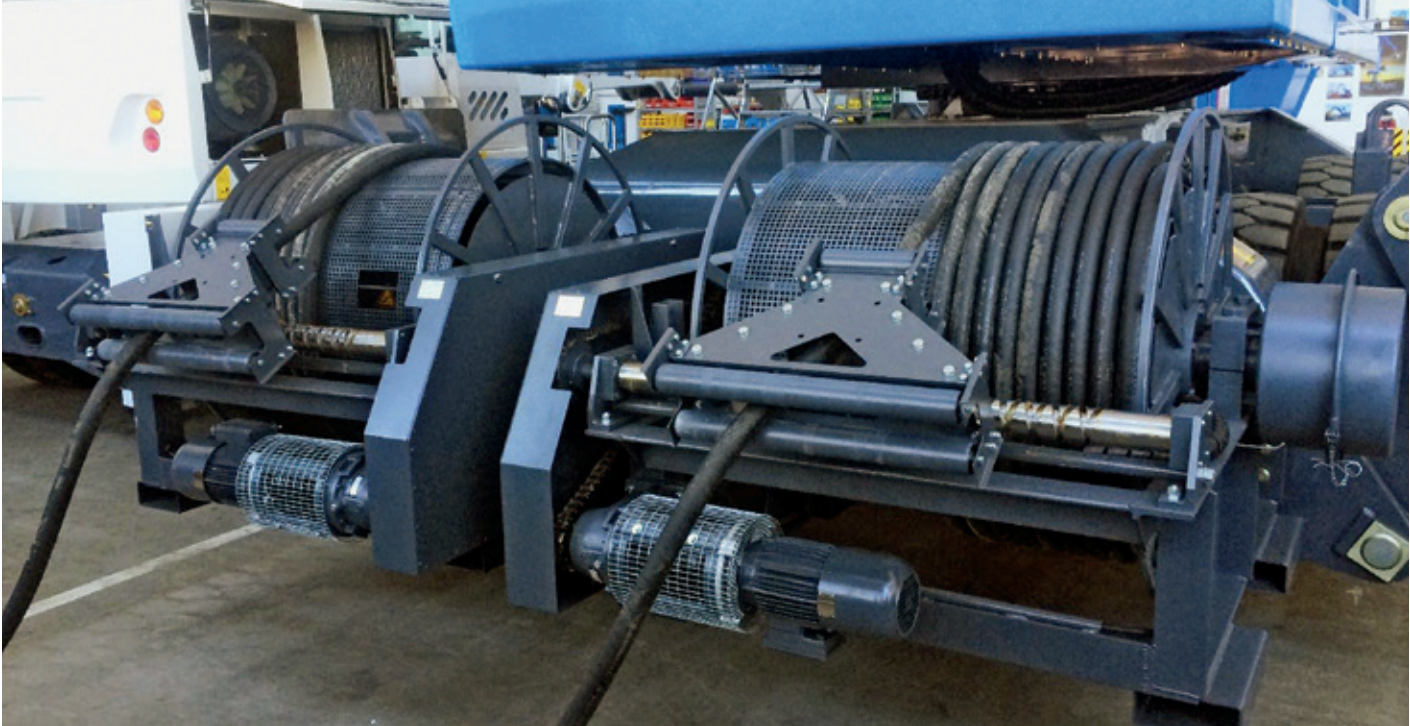
spiral as well as cylindrical winding motorized cable reels in various sizes and configurations according to our customer's requirements.



Spiral cable reel mounted on a crawler undercarriage. Suitable for higher travel speed and sufficient installation space upwards. Power transfer from cable reel via slip ring assembly in the centre of the pylon to the motor (M).

Cylindrical cable reel with console and spooling device mounted on a crawler undercarriage. Suitable for low installation height and longer travel distances. Slip ring assembly in the centre of the pylon.





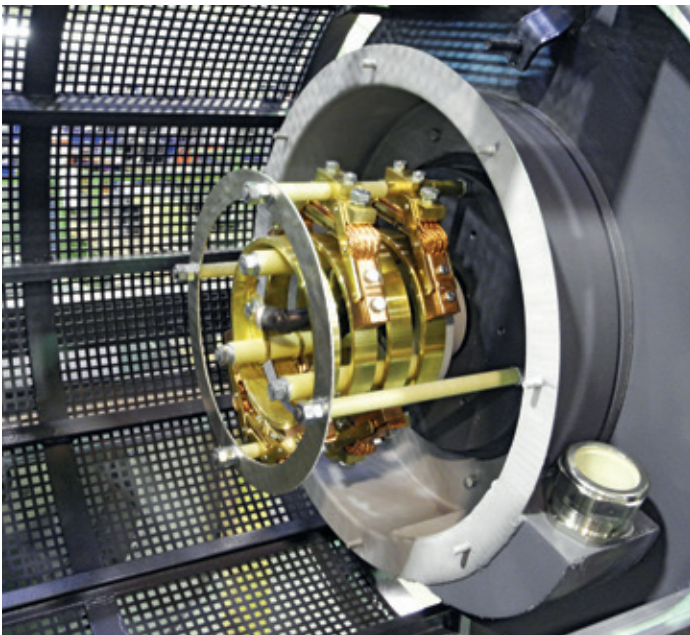
Cost-effective green energy

Motorised cable reels are an eco-friendly solution for travel ranges of up to 500 meters and more. Thanks to significant savings in terms of fuel consumption, maintenance and downtimes, the investment costs for such a high-quality,

intelligent power supply with motorised cable reels usually pay back very quickly for the customer. This electrification is particularly profitable on machines that have a predictably limited scope of movement.

Advantages at a glance

- lower operating costs by up to 50 % in comparison to diesel engines
- better efficiency than diesel-driven machines
- significantly longer maintenance intervals and reduced maintenance costs (no need for fuel and oil filters/oil changes)
- no time loss due to refueling
- independency from volatile oil prices
- environment friendly due to significant reduction in CO₂ emissions
- vibration-free drives and extremely low operating noise aim to higher operating comfort of the whole system



Cable reel specifications

Performance	Power supply for horizontal mobility
Travel speed	up to 60 m/min
Acceleration	0,2 m/s²
Coiling length	up to 150 m
Drive unit	frequency inverter drive, magnetic coupling
Feed-in	centre feed / end feed; plug version
Cable reel dimensions	according to customers' needs and the respective installation situation
Slip ring assembly	power supply, data, control signals
Voltage range	400 V / 690 V / 6 kV / 10 kV
Ambient temperature	from -20 °C up to +40 °C
Accessories	<ul style="list-style-type: none">• winding device• deflection link chain• roller payout guide• cable centre feed funnel• console



Mobility for scrap-handling machines

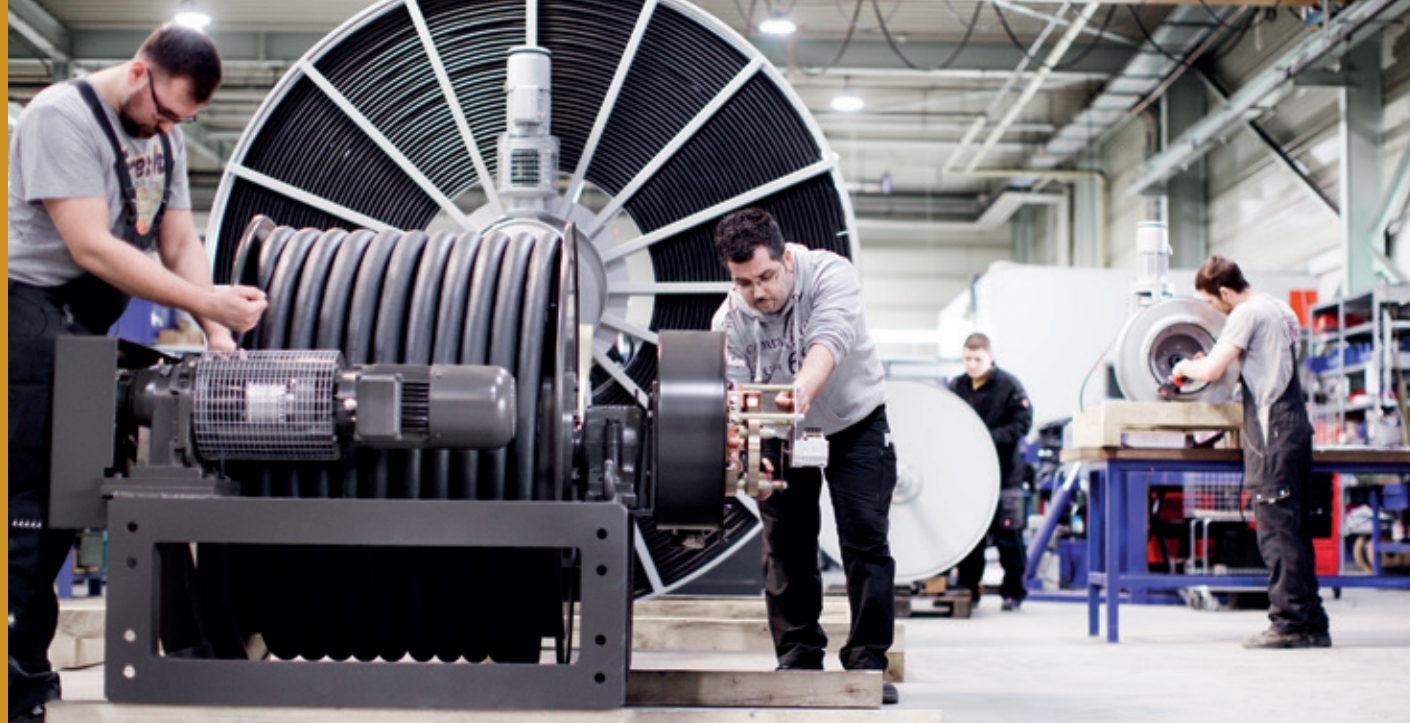
After joint and successful product development with leading German crane manufacturers in the construction and material handling sector, Hartmann & König has developed motorised cable reels for use on several mobile scrap-loading machines that have been operating reliably e.g. at the Port of Istanbul in Turkey for quite some time. The power of the loading excavator is supplied via two heavy-duty cables winding simultaneously on a spiral reel body.

Since the installation area for cable reels on mobile vehicles is usually quite limited and the functionality of the excavator

(with regard to its pivoting range, load ratios, access to/from the emergency exit of the steering cabin and engine performance) should not be impaired, the specifications of the double reel had to be optimised and adapted to the prevailing installation conditions.

Tracked vehicles usually have a restricted turning radius, which poses a constant risk to the cable on the reel body. For this reason, it was fitted with a specifically designed and constructed deflection link chain to be able to guide the cables safely when driving along curves and in swivel operation.





Torque control prolongs cable lifetime

The reel drive was fitted with a precisely adjustable, frequency-controlled three-phase motor, which Hartmann & König uses systematically in the development of new products. Motorised cable reels with an adjustable drive torque are particularly suitable for industrial plants with long travel

ranges (such as gantry cranes, loading machines and agricultural devices) because the elimination of peak forces on the cable prolongs their life and achieves increased reliability of the entire cable reel system – especially in highly dynamic processes.

Matching cable types for excavator electrification solutions

Special solutions require, above all, optimised cables to realise even the most challenging material handling tasks. According to the respective installation space, travel distance and travel speed we configure spiral or cylindrical motorised cable reels.

Rubber cable performance:

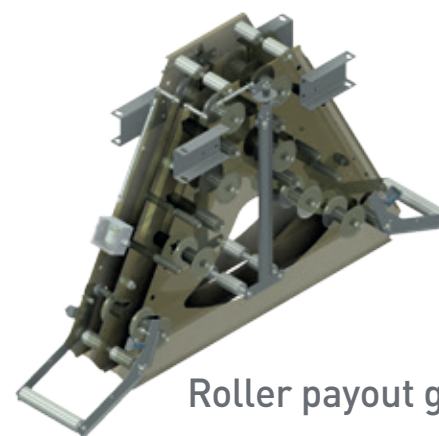
- for exceptional mechanical stress in dry, humid and wet rooms
- ideally for outdoor use
- robust cable for handling tasks of coarse materials, e.g. scrap, stone
- large cable cross sections

PUR cable performance:

- for frequent winding operation in dry, humid and wet environment
- withstand tensile stress and/or torsional stress
- compact cable, less cable cross sections
- ideally for bulk handling tasks

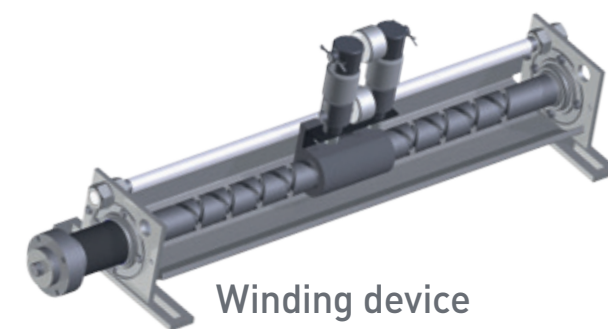


Tailor-made accessories programme



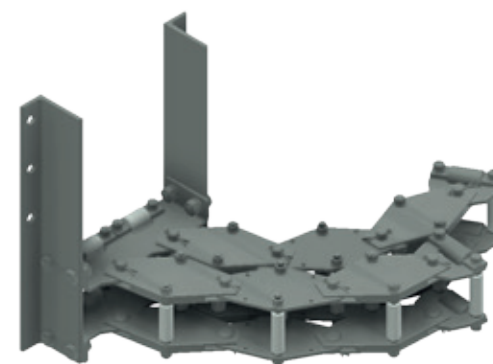
Roller payout guide

Our roller payout guides can be configured with or without monitoring functions. Roller payout guides with a monitoring function are fitted with contact-free proximity switches or mechanical limit switches. Proximity switches can be operated at a connection voltage of 15-250 VAC or 15-30 VDC.



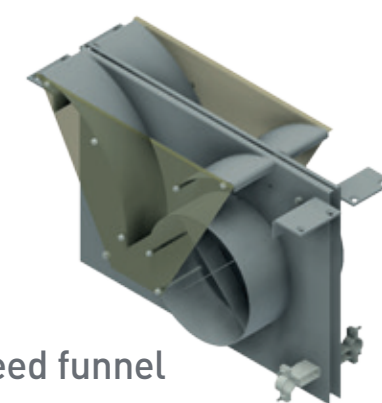
Winding device

The winding device consists of a cross spindle and a guide finger with a roller chain for the connection to the cable reel. The installation of the winding device to the cable reel ensures that the cable is evenly wound onto a cylindrical, widely winding reel body. This prevents the disorderly arrangement of several cable layers on top of each other and protects the cable from slipping or damage. The chain-driven version can be retrofitted to existing systems.



Deflection link chain

The deflection link chain was specially designed to allow the safe guidance of cables when tracked vehicles, such as mobile diggers or loading machines, are going round bends or are carrying out swivelling movements. Tracked vehicles usually have a restricted turning circle which poses a constant risk to the windable cable. The risk of damage to the cable is avoided or significantly reduced by fitting our deflection link chain.



Cable centre feed funnel

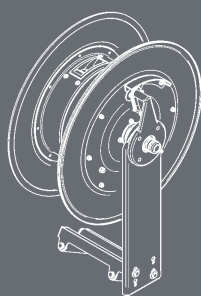
The cable deflection guide with vertical positioning is suitable for cable ducts. Typically, the commonly available deflection guide type ULTV is installed vertically in a concrete shaft for connecting the cable. In principle, it should be installed underneath the cable deposit.

- For cable entry and strain relief at the feed-in point
- For medium voltage cable up to 24 kV or up to max. 1 kV cables

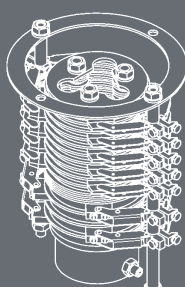


Photo: Sennebogen

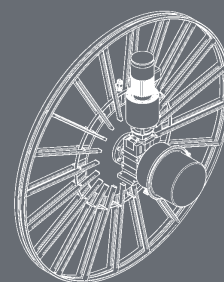
We energize mobility. Worldwide.



Spring cable reels



Slip ring assemblies



Motorized cable reels



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