



Cable Reels & Slip Ring Assemblies

for Open-Cast Mining Devices and
Mobile Construction Machines



STEMMANN APPLICATIONS

ENGLISCH

**Index**

PAGE	SECTION	THEME
002	Company	STEMMANN-TECHNIK
003		Worldwide presence
004	Cable reels in open-cast mining	Electrical supply for open-cast mining devices
005		Media supply for open-cast mining devices
006	Cable reels for construction machines	Electrical supply for mobile construction machines
007		Media supply for mobile construction machines
008	Power and data transfer	Slip ring assemblies
009		Fibre optic rotary connector
010	Accessories	Components for motor and spring-driven cable reels
011		Spooling and diverting device
012		Electric control

STEMMANN-TECHNIK

QUALITY MADE IN GERMANY

From planning to production, all under one roof



Corporate headquarters and manufacturing facility in Schüttorf, Germany

STEMMANN-TECHNIK is one of the world's leading manufacturers of energy and data transfer components and systems in industrial and transport technology.

Drawing on our 100 years of engineering and practical research, we manufacture high quality products required all over the world, and create special, innovative, customised solutions.

A fundamental key to our success is our understanding of the importance of high quality in all areas of the company, ranging from customer-oriented advice to long-term service.

STEMMANN-TECHNIK products and services aim to fulfill all our customers' requests, needs and expectations.

Every project and application is designed down to the finest detail, taking into account performance-related and economic aspects.

We guarantee high quality by upholding international standards and guidelines.

The quality management system implemented is based on standardised methods in conjunction with flexible structures for modelling and documenting all production and business processes.

Global Player – Worldwide Presence



Our company was founded in Luxembourg in 1912 by engineer August Stemmann. At that time, we were already involved with producing power supplies for cranes at steel and smelting works as well as for other mobile machines.

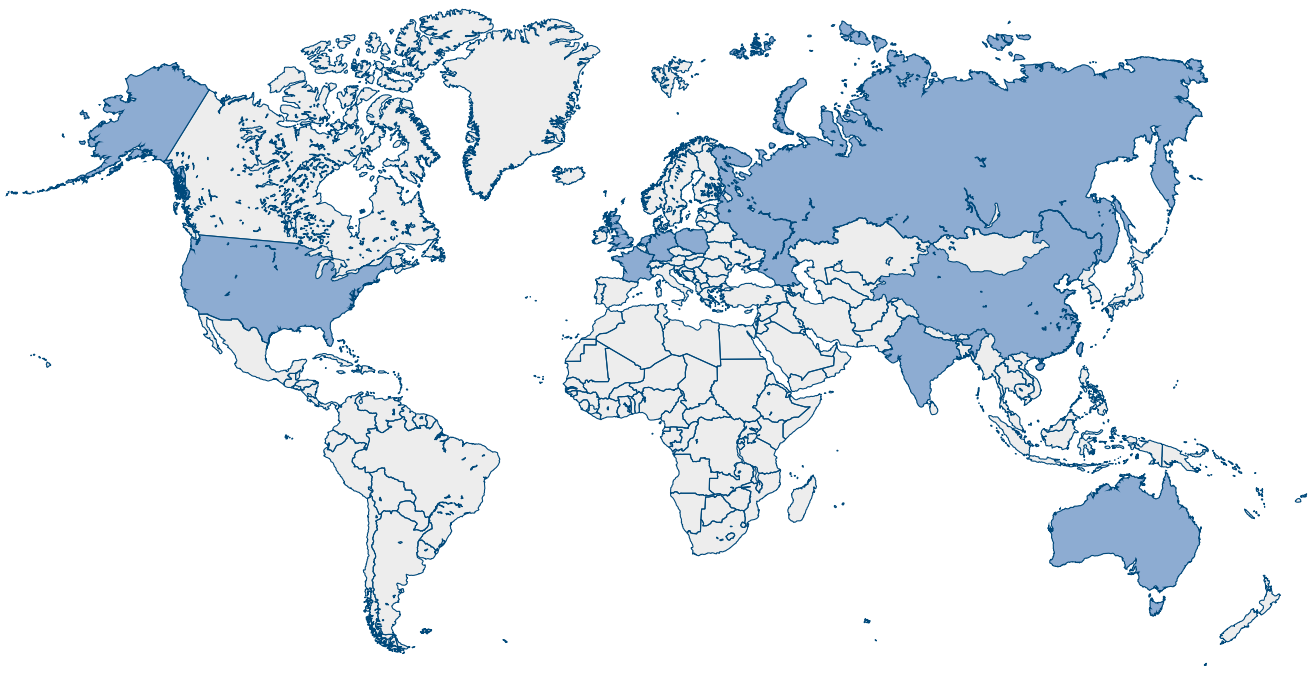
Slip ring assemblies for rotating machines and pantograph systems for railway vehicles were added later on.



We have been part of the Fandstan Electric Group since 1984 – a private holding company with subsidiaries in Great Britain, the Netherlands, Poland, France, China, India, Taiwan, the USA, Australia and Russia.

The Fandstan Group's main business fields include the development, production, start-up and sale of innovative solutions for transmitting energy, data and fluids for rotating/mobile machines.

LOCATIONS OF THE FANDSTAN ELECTRIC GROUP



Electrical supply for machines in open-cast mining



Applications of our cable reels in open-cast mining

Our motor cable reels ensure reliable energy and media supply to large open-cast mining machines like bucket excavators, conveyor belts, cable storage, stackers or hydraulic excavators.

We implement comprehensive customised solution concepts from development and special construction to commissioning and maintenance.

Mobile open-cast mining machines partly bridge very large distances and are used far away from the power feeding. Our cable reels and crawler-mounted cable reels permit reliable energy supply in these application areas and expand the action radius of those large devices.

Increased fuel costs, stricter environmental requirements and economic savings requirements are decisive for the manufacturers' and operators' decisions to retrofit their diesel-hydraulically operated vehicles to electro-hydraulic drives.

We develop optimised solutions like the cable rewinding trolley for customer-specific tasks. This vehicle permits placement, rewinding on the large devices and transport of the cables across long distances in open-cast mining.

Media supply for open-cast mining and mining machines

Our product range in the area of motor cable reels for supplying open-cast mining machines with energy is supplemented by hose reels transferring media like water, oil and compressed air.

Particularly in large-scale open-cast mining areas, operators frequently face problems with strong wind that partially remove the soil and generate large dust clouds. To avoid these clouds, open-cast mining areas are generously wetted with water via sprinkler systems particularly in the dry season.

Other areas of use for our hose reels are, e.g. the supply of mobile pump stations and sprinkler systems, and the water supply of tunnel boring machines.

Products for mining and tunnelling must meet particularly high requirements regarding robustness and explosion protection.

We design and produce cable reels with explosion protection, designed for the specific ambient conditions at the respective site of use.



APPLICATIONS

- Bucket wheel excavator
- Electrified construction machines
- Open-cast mining excavators, crawlers
- Conveyor belts
- Cable storage
- Mobile pump stations
- Sprinkler systems
- Special vehicles

COMPONENTS FOR OPEN-CAST MINING DEVICES

- Motor cable reels
- Hose reels
- Slip ring assemblies
- Fibre optic rotary connectors
- Deverting / spooling devices
- Roller bows, cable guide rollers



Electrical supply for mobile construction machines



Applications and products

Specifically for the area of energy and data transfer in mobile construction machines, such as truck-mounted cranes, excavators, elevating platforms and inclined lifts, we offer a comprehensive range of spring- and motor-driven cable and hose reels with the associated slip ring assembly.

Compact and robust developments such as combined electro-hydraulic reels with multilayer transmitter systems expand our product range for mobile construction machinery.

In particular our spring-driven cable reels are used in the area of mobile systems and devices without power supply. They permit the reeling of cables, hoses or ropes by spring tension.

We offer cable reels, hose reels, slip ring assemblies and the corresponding accessories to transfer electrical power, data or hydraulic oil in truck-mounted cranes. Optionally, the cable reels can be equipped with a recorder for the telescoping path.

Our products are proving their worth many times over in hard everyday use - specifically in mobile crane technology.

Media supply for mobile construction machines

We offer helpful accessories and sophisticated system technologies for many application areas, including the highly developed slip ring assemblies for undisturbed transmission of signal and control data for the area of truck-mounted cranes.

Many cable reels can be replaced, supplemented or optimised subsequently on demand. Mobile load elevators may be equipped, e.g. with cable reels for energy supply or with hose reels for media transmission.

Specifically developed rotary joints at the hose reel axles connect the firm connection to the reeled hose.

The spring-driven reel is produced in cylindrical or in spiral design depending on customer's wish or suitability. Cylindrical spring-driven reels are available on short notice in standard sizes and designs.



MOBILE AREAS OF USE

- Load, furniture and construction elevators
- Lifting platforms, telescopic cranes
- Crane carts
- Truck-mounted cranes
- Excavators

COMPONENTS FOR CONSTRUCTION MACHINES

- Motor cable reels
- Spring-driven reels
- Hose reels
- Slip ring assemblies
- Fibre optic rotary connectors
- Diverting units
- Spooling devices
- Roller bows
- Cable guide rollers



Slip ring assemblies



STEMMANN-TECHNIK's slip ring assemblies

We are highly specialised in the design and production of slip ring assemblies and data transmission systems as customised solutions for the applications of our customers.

The current- and data transmission in diverse application ranges is realised by our slip ring assemblies.

In case of direct installation of the slip ring assemblies to the motor cable reels the slip ring assemblies are attached in extension of the axle or inside the reel body.

In addition to the slip ring assemblies for energy supply of, e.g., electrical excavators, our standard or multi-layer systems for energy and data transmission are used in the rotary axis as well. A working rotating area of more than 360° is permitted by this.

Compact builds, robust components and the long function characterise our systems. Slip ring assemblies, contact units and data or signal technology are individually configured and produced for each requirement profile.

We can make use of a wide range of standardised series and highly developed technologies. We thus implement the technically and economically best solution both for complex requirements and extreme usage conditions for each and every customer.

For particularly sensitive areas, we deliver explosion-protected slip ring assemblies including the plug-in systems approved for mining.

Slip ring assemblies and fibre optic rotary connectors

Our slip ring assembly systems cover a wide application range in the area of open-cast mining and mobile construction machines.

SLIP RING ASSEMBLY TECHNOLOGIES

STANDARD SYSTEMS

Coal/brass system

for conventional power and data transfer

PCB system

for digital data/signals or power transmission

Cast slip rings

for applications with high speeds and strong vibrations

Multiwire slip system

with multi-layers for low-noise signal transfers

SICL10 system

the individually insulated conductor bar for very large/concentric diameters

SPECIAL SOLUTIONS SYSTEMS

Coal/coal system

specifically developed for extremely high speeds

Optical system

for contact-free transmission of signals

High-current system

for highest performance in very narrow spaces



Fibre Optic Rotary Connector

We provide very compact fibre optic rotary connectors, which have proved themselves when using optical fibre cables in combination with electrical power transmitters.

Owing to its small outer dimensions, the rotary connector is particularly suitable for use on spreader cable reels, as well as stacking cranes and railway cranes. It is resistant to vibrations.

10 years of zero maintenance operation from our fibre optic rotary connector can be assumed.



Fibre optic rotary connector

TECHNICAL SPECIFICATION

Number of effective turns	40, 60, 80, 120 and 300
Number of fibres	max. 36 fibres in parallel
Combinations	single and multimode options
Serial interfaces	V.24, V.11 RS.232, RS.422 and 20 mA
Digital transfer rates	up to 10 Gbit/s

Components for motor- and spring-driven cable reels



Components for motor cable reels

The consistent data, energy and media transmission for mobile equipment requires a dynamic cable reel system that moves along actively and permanently. Coordinated components permit best design for the respective application range under consideration of the travel patterns of the moving machines regarding direction, acceleration, speed and distance.

Our standard and special components assume important tasks to warrant interference-free operation of our cable reels. They permit, e.g., regulating the cable route direction, reducing tension and preventing mechanical wear of the cable sheath.

In addition to our comprehensive offer of cable reel components, we deliver standard and special cables suitable for motor- or spring-driven cable reels. Use of high-quality materials and careful production ensure that our cables resist a permanent tensile force of at least 20 N/mm² depending on application.

We develop and implement overall concepts for individual requirements. We warrant continuous availability of your cable reel system based on our experience and the interaction of our reels and components.

Spooling device and diverting unit

For operation of cylindrical reels with long cables, we recommend a spooling device as additional equipment. It ensures gentle, proper reeling on and off of the cable and can be expanded by suitable components. The spooling device is operated via a cardan shaft and can be combined with a tension control or other accessories.

The diverting unit is usually installed below the motor cable reel. It is used to place the cable in an under-floor channel or right on the ground when the feeding point is passed. Installed switches regulate the controlled reeling on and off of the cable on the reel body.



COMPONENTS FOR MOTOR CABLE REELS

- Diverting units (without tension control)
- Roller bowes
- Roller baskets
- Cable guide rollers
- Diverting funnels with/without tension relief reel
- Cable holding sleeves with/without tension relief spring
- Terminal boxes
- Spooling devices for cylindrical reels

COMPONENTS FOR SPRING-DRIVEN CABLE REELS

- Diverting funnel/diverting rollers
- Return movement locks
- Guide arms
- Attachments
- Roller mouth-piece
- Cable holding sleeve



Electric control



Electric controls for motor cable reels

We develop, produce and install terminal boxes and complex control cabinets for control of our motor cable and hose reels.

Our terminal boxes are used to connect the firmly laid cables to the reeled cable. Each terminal box is designed and produced customised for the customer. The terminal equipment is according to the cable parameters (diameter, number of cores, voltage) and is defined according to the order.

Our control cabinets contain the complex circuits to control the reels. The data and signalling technology is designed perfectly for the respective cable reel under consideration of the travel patterns of the moving machine regarding direction, acceleration, speed and distance.

Alternatively, we develop control panels for installation in already-present control cabinets. The design and technical system connection are performed according to specification or customer's request.

INDUSTRIAL PRODUCTS · INDUSTRIEPRODUKTE



CABLE FESTOON SYSTEMS
LEITUNGSWAGEN-SYSTEME



CABLE REELS
LEITUNGSTROMMELN



SLIP RING ASSEMBLIES
SCHLEIFRINGÜBERTRAGER



CONDUCTOR LINES
SCHLEIFLEITUNGEN

RAILWAY PRODUCTS · BAHNPRODUKTE



ROOF-MOUNTED PANTOGRAPHS
DACHSTROMABNEHMER



THIRD RAIL SHOE GEAR
DRITTE-SCHIENE-STROMABNEHMER



frost® GROUND CONTACTS
frost® ERDUNGSKONTAKTE



STINGER SYSTEMS
STINGER-SYSTEME



STEMMANN-TECHNIK GmbH
Fandstan Electric Group

Niedersachsenstr. 2
48465 Schüttorf · Germany
PO-Box · Postfach : 1460
Phone : +49 5923 81 - 0
Fax : +49 5923 81 - 100
sales@stemmann.de