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Press folder 2023

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„Mass production in millions is no problem for us“

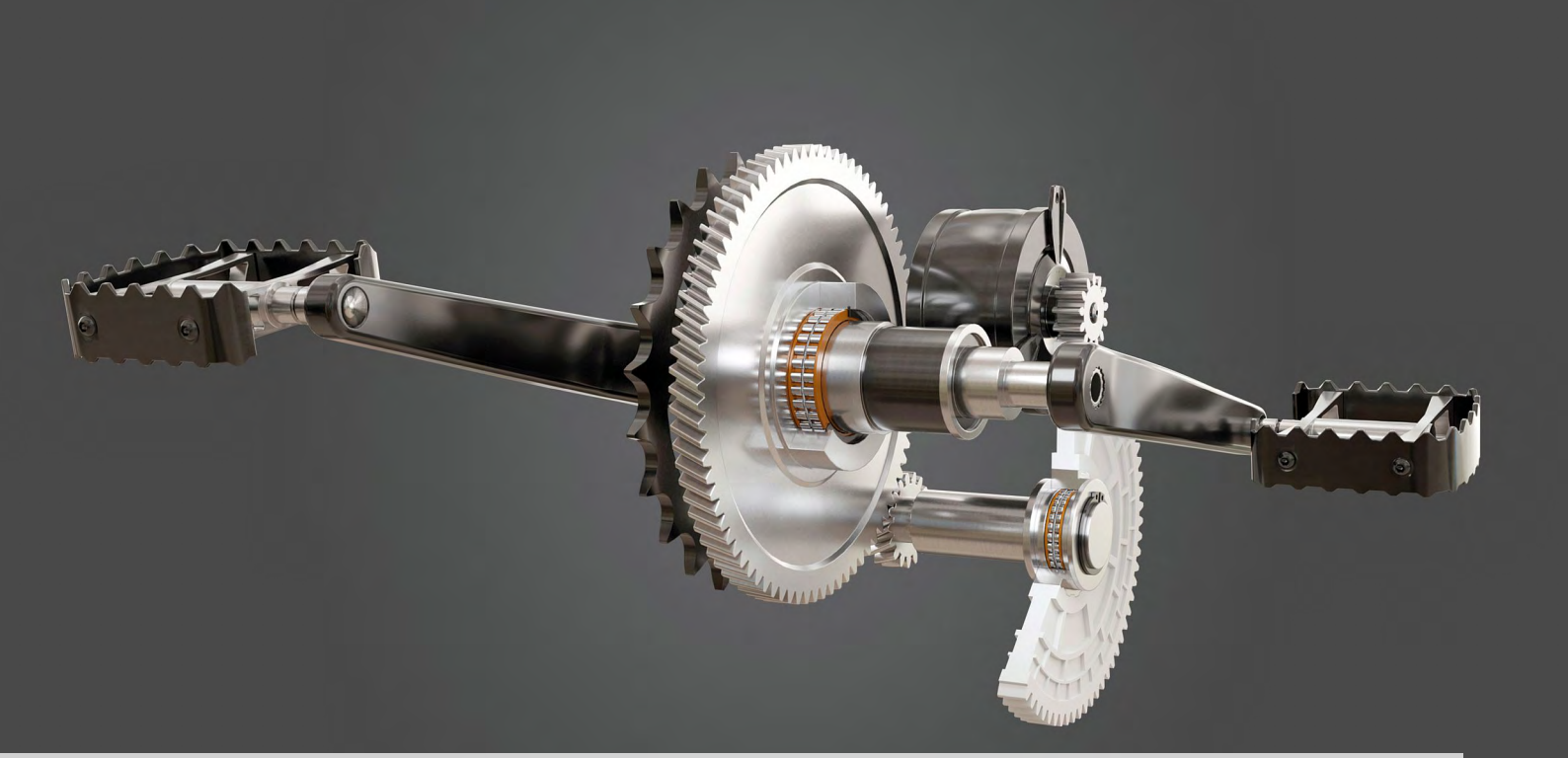
RINGSPANN is one of the world's leading manufacturers in the field of freewheel technology. In order to give designers of e-bike drives maximum scope for the realization of innovative bottom bracket and transmission solutions, the company now offers four different types of cage freewheels. They are characterized by performance-oriented additional functions and enable e-drive developers to implement space-optimized and compact drive concepts. Read here why the forward-looking freewheel design from RINGSPANN even reduces the work in module assembly.

If we take just the quantities produced as a yardstick, RINGSPANN is one of the world's top suppliers of cage freewheels for the booming e-bike industry. Based on its comprehensive freewheel know-how, the company not only entered development work at an early stage, but also installed highly automated production processes for the large-scale production of e-bike freewheels in good time at its main plant in Bad Homburg. “Today, we supply renowned manufacturers in the industry with various types of freewheels, whereby annual batch sizes of two million pieces and more are no problem for us”, reports Thomas Heubach, who heads the freewheel division at RINGSPANN and is significantly involved in many product innovations. Under his direction, the current selection of cage freewheels for use in e-bike drives has now grown to four basic types. From a technological point of view, they are likely to be among the best that the market currently has to offer in this field of e-mobility. Depending on the version, they not only allow the transmission of the highest torques or their targeted limitation; they also enable the realization of space-saving and reduced part drive systems, which ultimately even reduce the manufacturer's assembly work.

Highest quality standards

RINGSPANN offers all four types of e-bike freewheels for shafts with diameters of approx. 25 - 60 mm. Their sprags are all made of hardened chrome steel and their cages are made of polyamide. Depending on the design, they are predestined for use on the shaft of the bottom bracket or in the gearbox of the drive unit. “And what applies to all our freewheels also applies here: all functional elements of their design meet the highest quality standards and are optimally matched to each other”, emphasizes Thomas Heubach.

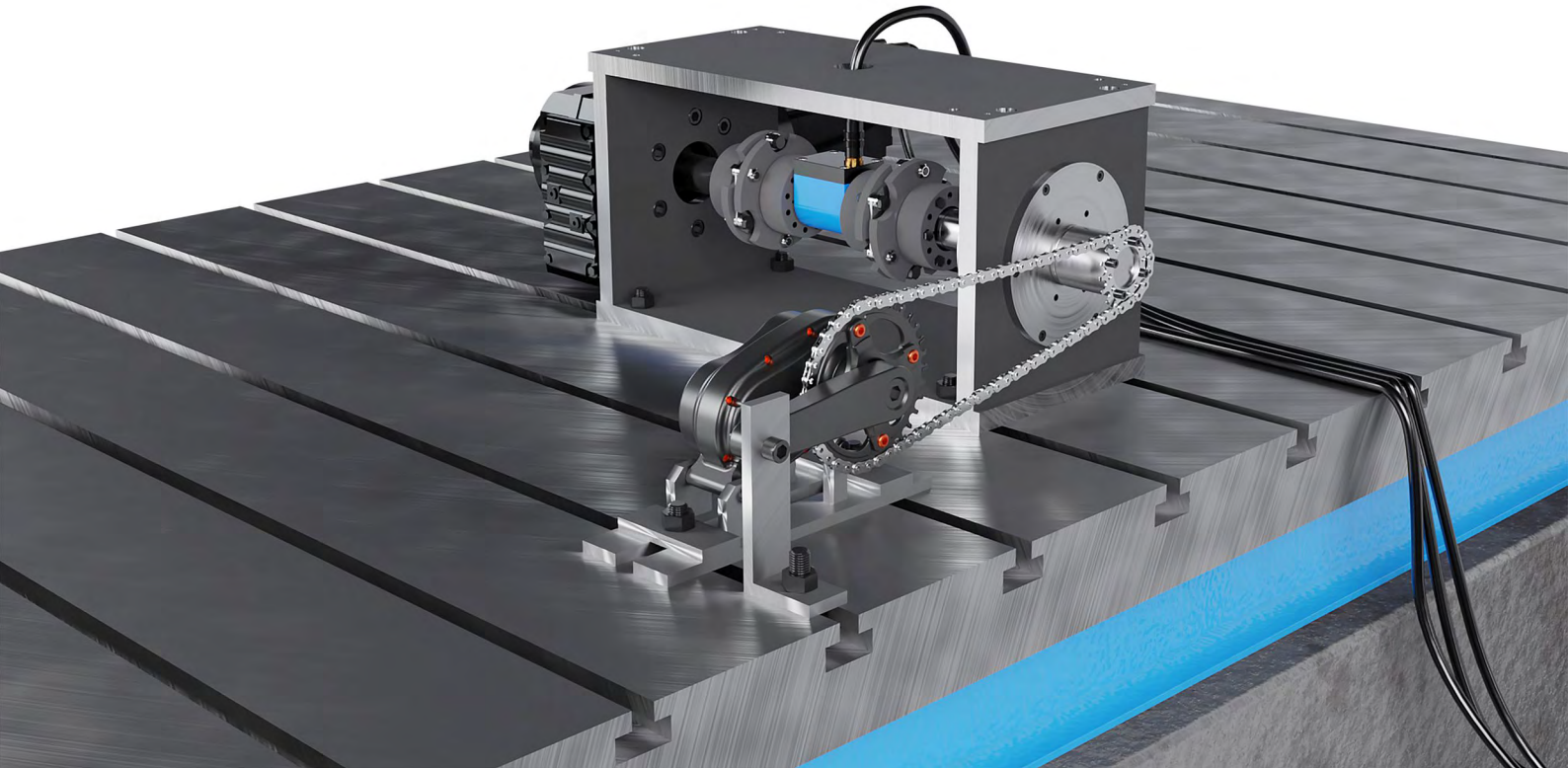
Type E cage freewheels have now proven themselves millions of times in practical e-bike use. They impress with their high transferable torque of up to 520 Nm, which makes them an extremely durable and robust universal solution for many different e-bike drive systems. According to Thomas Heubach, the torque capacity of these sprag freewheels is “three times higher than that of drawn cup roller clutch freewheels”. In addition, their optimized geometry allows high component tolerances in the design environment – for example, when installing between customer-supplied inner and outer rings.



Depending on the version, e-bike freewheels from RINGSPANN are suitable for shafts with diameters of approx. 25 - 60 mm and are predestined for use on the shaft of the bottom bracket or in the gearbox of the drive unit.

Capping torque peaks

The RINGSPANN type F freewheel has a different application focus. This cage freewheel is predestined for use on the bottom bracket shaft, where it protects against overload thanks to its integrated torque limitation. Thomas Heubach explains, "Extremely high torques can occur on the bottom bracket shaft of an e-bike, depending on the application and rider. For this scenario, we have developed the Type F, whose sprags are characterized by a special design. With appropriate component tuning, it enables targeted slipping as soon as the application-specific limit torque is exceeded. This not only protects the freewheel itself, but also all adjacent components of the drive." In this respect, the e-bike F freewheel from RINGSPANN is also an ideal solution for applications in which the maximum torque of the bottom bracket cannot be predicted and therefore cannot be designed exactly.



Innovations replace bearing

The latest RINGSPANN innovations in the field of e-drive freewheels include the two types ER and HRL. These cage freewheels are regarded as a pioneering premium solution for coupling and uncoupling the electric motor, as they leave the designers plenty of leeway for the realization of space-optimized and part reduced drive systems. The reason for this: both designs reduce the design work for the usual bearing of the freewheels. While the type ER already has an integrated radial bearing, the type HRL gains points with an integrated radial and axial bearing. "When using these cage freewheels, the e-drive designer can therefore dispense with space-consuming roller bearing assemblies. As a result, they can design the drive more compactly and also reduce the costs of assembling the entire assembly by reducing parts. Or they can use the space gained to install additional functional elements", explains Thomas Heubach.

The radial bearing of the ER freewheel is carried out via several travelling pairs of rollers that are integrated into the modified plastic cage. With the HLR type, a special bearing disc on the freewheel also ensures the axial bearing and securing, whereby an additional bearing is not required, even with helical gears on the drive shaft of the motor. "Both designs with integrated bearings are now patent pending and are already being used by the first e-drive designers", reports Thomas Heubach. In both cases, it is also conceivable to use the free space gained thanks to the elimination of the rolling bearing assemblies for a track widening of the freewheels – which can increase their torque capacities.

„All functional elements of our cage freewheels for e-bike drives meet the highest quality standards and are optimally matched to each other."

Rapid realization of customer requests

RINGSPANN attaches great importance to the fact that the design of all four e-drive freewheels basically offers many possibilities for customer- and application-specific modifications and special designs. In combination with the company's consulting expertise and high process efficiency, the use of modern 3D printers in prototyping and the operation of its own freewheel test benches, this ensures that innovative approaches and new developments quickly find their way into practical implementation at the customer's site. <<

Thomas Heubach
Head of Division Freewheels
at RINGSPANN GmbH

RINGSPANN GmbH, Bad Homburg 16.08.2022

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Optimising conveying processes via brake control

As a one-stop shop supplier for high-quality components in industrial drive technology, RINGSPANN is also implementing user-friendly system solutions for the controlled braking of heavy-duty conveyor systems. The technological core here is the innovative HCO-2R hydraulic power unit, which offers manufacturers and operators numerous possibilities for process optimisation. It can be combined with the company's hydraulic brakes and adjusted without the need for any programming on the part of the customer.

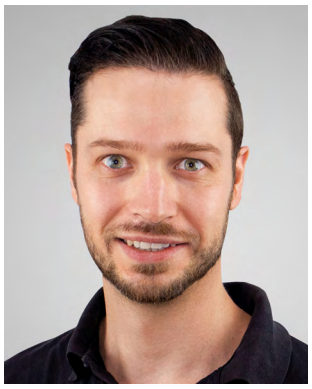
RINGSPANN offers a wide range of drum and disc brakes with clamping forces of up to 560 kN for use in the drivetrains of heavy-duty belt conveyor systems, such as those typically used in mining, bulk materials and earthmoving technology. Tailored specifically to this type of application, the company provides various system and monitoring modules that enables the implementation of intelligent complete solutions. The focus is always on increasing the degree of automation and simplifying operation. It is within this context that the HCO-2R hydraulic unit is becoming increasingly important, enabling both system manufacturers and system operators to optimise the belt conveyor processes in many ways through the targeted control of the brakes. The key aspect here is that the braking process is controlled solely by the physical value of the braking time, which considerably accelerates the entire setup work and reduces it to a minimum!

Martin Ohler, the business developer for brake technology at RINGSPANN, explains: "Our system offers the unique advantage of being able to coordinate the braking processes of several conveyor belt segments in the shortest possible time and completely without any need for programming - regardless of their length, incline, belt speed and load. What used to be an enormous time and cost factor with all kinds of uncertainties for both operators and manufacturers of belt conveyor systems can now be accomplished in a matter of seconds."

One controller and many possibilities

With RINGSPANN's HCO-2R, users are provided with a tool to adjust the brakes of their conveyor system without any programming knowledge required so that they can always

react according to their needs. All necessary adjustments due to changing belt loads, fluctuating conveyor speeds, alternating load requirements or even changing between longer and shorter holding times at different material loading and transfer points are simplified in an almost radical way thanks to RINGSPANN's own controlled braking design. "In every project our objective is to enable the customer to implement their intentions and ideas regarding process optimisation without compromise. In doing so, the unparalleled user-friendliness of our system solution gives them the ability to realise their ideas quickly, easily and at any time," says Martin Ohler. What this means in concrete terms can be seen not only in eliminating the need for any programming on the part of the customer, but also in the fact that the infinitely variable brake control is always designed in such a way that its manual operation on site is carried out merely via a single rotary potentiometer.



Martin Ohler
Business Developer Brakes
at RINGSPANN GmbH

The time factor as a benchmark

Reducing it all to a single control element has been made possible because RINGSPANN's engineering, in consultation with the customer, incorporates all relevant aspects of a conveying process in advance into the dimensioning of brakes and hydraulic unit. Specifically, this means that factors such as belt width, belt tension, number of belt sections, topographical conditions on site and many others are already factored into the specification of the brake system during the planning phase and are combined in the control factor braking time. This simplification benefits both the system manufacturer during the project planning of the conveyor system and the user during operation in practice.

"RINGSPANN's controlled brake system offers the unique advantage of being able to coordinate the braking processes of multiple conveyor belt segments in the shortest possible time and without any programming effort."
Martin Ohler

Rapidly synchronise multiple belt segments

As standard, the operator of the conveyor system can regulate the braking time on the rotary control within a range of 20 to 40 seconds with high precision. However, other control ranges can also be pre-set on request. The interaction of the HCO-2R with the brakes from RINGSPANN opens up plenty of optimisation potential - beyond the process adaptations already mentioned - especially for the operators of complex conveyor systems with long transport distances. For example, expansive conveyor systems consisting of numerous belt segments with several independently operating drives and controlled braking systems can easily be synchronised with each other. And this all takes place independently of different conveyor speeds of individual belt segments or different loads and gradients!

Easy commissioning

Thanks to its simple operation, the RINGSPANN solution for controlled braking can be put into operation with minimal effort. In addition, the ability to easily and quickly configure even complex and long conveying processes proves to be a great advantage when modifying and reconfiguring conveyor systems. Depending on the situation, the use of the HCO-2R can even prove to be a sensible alternative to the integration of complicated and sometimes costly control system technology. “When clarifying this fundamental question as well as all further steps from project planning to commissioning on site, we are at the plant operator's side as an experienced partner whose depth of expertise covers almost all aspects of industrial drive technology”, Martin Ohler emphasises. RINGSPANN not only offers a high-quality product portfolio that includes many basic components for the design of powerful and safe drives, but also possesses the engineering expertise - especially in the heavy-duty sector - to implement innovative system solutions. <<

System solutions and smart solutions

RINGSPANN is driving forward the expansion of its international presence as a one-stop-shop supplier for industrial drive technology components with a number of product innovations. Realising ready-to-install and multifunctional smart solutions and system solutions is also becoming increasingly important. Current examples of this are complete solutions consisting of shaft couplings and brake discs, shaft and overload couplings, torque limiters and belt pulleys as well as the brake systems with a control unit presented in the article. RINGSPANN's objective is always to noticeably reduce the customer's and user's costs during assembly and operation.

RINGSPANN GmbH, Bad Homburg 06.03.2023

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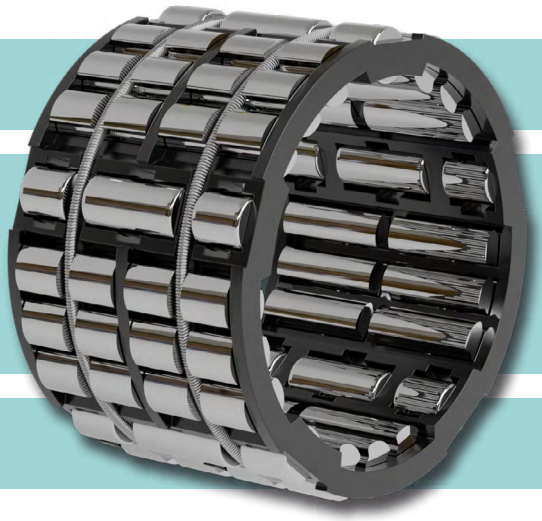

Higher torque thanks to wide-gauge design

The freewheel specialists at RINGSPANN have developed a new cage freewheel for use in e-bike drives. Especially when the radial installation space is tight, it offers bicycle designers another opportunity to implement compact solutions with higher torques in the gears and bottom brackets. Like all e-bike freewheels from the German manufacturer, this new one can also be designed and adapted to customer requirements in many ways. It will be presented to the trade audience at this year's Eurobike (21-25.6.2023) in Frankfurt.

It is the practical result of numerous discussions with customers and should raise a sigh of relief from many designers of e-bike drives: the new cage freewheel in the ER series, which RINGSPANN will be presenting at the upcoming Eurobike in Hall 80 (Stand F18). It bears the additional designation DR – for double-row – and scores with a number of features that allow the gears and bottom brackets of electric bicycles to be designed to be even more powerful, compact and safer at neuralgic points. Especially when the designer is faced with the task of having to save radial installation space without a loss of torque capacity, the new ER-DR proves to be a real solution to the problem. Thomas Heubach, who heads the freewheel division at RINGSPANN, explains the reason for this: "Thanks to its innovative cage design, our new e-bike freewheel is, so to speak, a wide-gauge double-row. This is because the special design of the polyamide cage makes it possible to cover the freewheel with two double rows of clamping pieces in order to reduce its overall diameter, while fully maintaining the torque capacity. This allows the designer to quickly gain several tenths of radial installation space without having to lose performance." In addition to the radial bearing integrated as standard in the ER series, the increase in relative width associated with the reduction in diameter gives the freewheel a high level of tilt resistance. If, on the other hand, sufficient installation space is available, the new ER-DR from RINGSPANN can also be used to increase torque.

Withstands torques of up to 300 Nm

As Thomas Heubach further emphasizes, the new cage freewheel can be adapted to very different customer wishes and design requirements as part of customizing. This applies not only to its dimensioning, but also to the selection of the clamping pieces and their positioning in the cage. "For ex-

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Freewheels for millions of e-bikes

In terms of the number of units delivered, RINGSPANN is currently one of the world's leading manufacturers of e-bike freewheels. On the basis of its comprehensive freewheel know-how, the company entered this market segment of drive technology at an early stage and set up large-scale oriented assembly lines for the automated production of compact cage freewheels at its headquarters in Bad Homburg. Today, numerous renowned manufacturers in the industry rely on freewheel solutions from RINGSPANN, which is reflected, among other things, in annual batch sizes of two million pieces and more. In terms of engineering and quality, freewheels from Bad Homburg are likely to be among the top products in this field of e-mobility. They not only enable the transmission of high torques or their limitation, but also the implementation of space-saving lightweight drive systems with reduced parts.

ample, we have realized prototypes for gearbox and bottom bracket applications for numerous customer-specific test runs, which make you forget the previously existing performance and bearing problems," reports the freewheel expert from RINGSPANN. It has also been shown that the new ER-DR can transmit maximum torques of up to 300 Nm.

Four types and many variants

With the market launch of the new "wide gauge", RINGSPANN is expanding its range of compact freewheels for e-bike applications with another type in the ER series. These cage freewheels are basically premium solutions – for example, for engaging and disengaging the electric motor – which offer great scope for part- and space-reduced assembly designs. They share the advantage of making the usual bearing of the freewheels superfluous with the E-Drive freewheels of the HRL series. In the case of the ER, this is done via the already mentioned integrated radial bearing, which is carried out via moving pairs of rollers in the plastic cage. The HRL, on the other hand, has combined radial and axial bearings through the use of a bearing disc on the freewheel. As a result, the e-drive designer can dispense completely with space-occupying rolling bearing assemblies and make the drive more compact and lighter. "Even with helical gears on the drive shaft of the motor, no further bearing is necessary," says Thomas Heubach. And of course, where fewer parts have to be installed, the assembly effort is also reduced.

Thomas Heubach
Head of Division Freewheels
at RINGSPANN GmbH

Predestined for use on the bottom bracket shaft is the type F cage freewheel from RINGSPANN. It scores with an integrated torque limiter that protects against overload damage. "Bottom bracket shafts of e-bikes have to absorb high torques depending on the type of rider and riding situation. With the appropriate coordination of the components, the special clamping piece design of the F freewheel enables targeted slipping when the application-specific defined limit torque is exceeded. This protects the freewheel and all adjacent components of the drive," explains Thomas Heubach. The F e-bike freewheel is therefore also an ideal solution for bottom bracket applications where the maximum torque cannot be accurately predicted.

Used millions of times

The undisputed best-seller among RINGSPANN's e-bike freewheels is still the type E, which will also be exhibited at the Eurobike in Frankfurt. Using 160 million sprags, it has already been installed 5.3 million times worldwide and has proven itself as a durable universal solution in many different e-bike drives. With up to 520 Nm, the torque capacity of this sprag freewheel is three times higher than that of drawn cup roller clutches. Its optimized design also allows high component tolerances in the design environment.

As standard, RINGSPANN offers the e-bike freewheels of all four series for shafts with diameters of approximately 25 to 60 mm. The clamping pieces are always made of hardened chrome steel, while the cages are made of polyamide. All freewheels are designed in such a way that application-specific modifications and special designs can be implemented quickly. <<

RINGSPANN GmbH, Bad Homburg 22.05.2023

That element of added value in competition

RINGSPANN is systematically pursuing the goal of reducing its ecological footprint and developing into a company that operates sustainably. In the course of this transformation, the manufacturer of drive components, clamping fixtures and push/pull cables is currently implementing a large number of technical and organizational measures. Embedded in a certified environmental management system, these measures cover all areas of operation and are designed as a continuous improvement process. As a result, they develop efficiency that, in addition to optimizing internal processes, also generates innovation impulses for product development.

Reducing energy demand, lowering water consumption, minimizing emissions and avoiding waste wherever possible – RINGSPANN's management has placed these four fields of action at the top of the agenda of its sustainability work. "They are laid down in our environmental statement and form the basis for our transformation into a climate-protecting and resource-saving company. At the same time, they set the framework for all ideas that we implement with the means and methods of our ISO 14001 and EMAS-certified environmental management system," says Daniel Riedel, Sales Manager at RINGSPANN. The most important sustainability projects in recent months include installing central air filter systems, commissioning a rainwater retention cistern and dismantling the heat treatment plants, which makes it possible to dispense with the use of environmentally harmful hardening salts. In addition, a 210 kWp photovoltaic system was installed, roof greening was advanced and complex groundwater protection projects were implemented – such as the installation of tub-shaped floor slabs for the production areas of a new hall at the headquarters in Bad Homburg vor der Höhe. All these measures are part of a long-term environmental and climate protection programme, under the specifications of which RINGSPANN has already carried out a large number of technical and organizational modernizations. The list ranges from the installation of smart radiator thermostats and demand-controlled LED lighting technology, through the installation of extensive thermal insulation, to the reduction of paper consumption and continuous optimization of waste management. Currently, the expansion of e-mobility charging stations and the implementation of further noise protection measures are on the company's sustainability agenda.

Qualification and monitoring

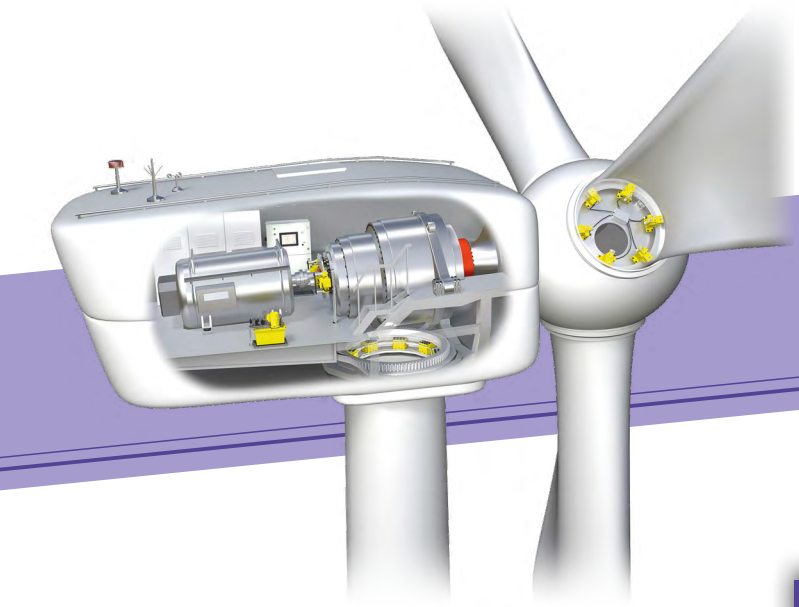
RINGSPANN's sustainability work is characterized by a great deal of diversity and a high degree of complexity between individual sections and projects. In view of the resulting requirements, Daniel Riedel sees two factors in particular that are responsible for the long-term success of the transformation process: the appropriate qualifications of the workforce and systematic monitoring. "Only if our employees

implement waste management, resource efficiency and energy-saving requirements actively will the measures taken prove to be sustainable for both the environment and the company. And professional controlling is required in order to be able to record the quantitative and qualitative impact of sustainability work and derive further insights from it", says the sales manager. Among other things, RINGSPANN achieves employee qualifications through digitized training processes and annual quality audits. Controlling, on the other hand, is part of the ISO 14001 and EMAS-certified environmental management system. It provides a high level of transparency to the measures initiated and ensures their continuous development in the sense of continuous improvement. As Daniel Riedel emphasizes, the results of the systematic monitoring of success from RINGSPANN's sustainability work "ultimately also flow into the further refinement of lean management structures".

nology, food technology, aerospace, or in general mechanical and plant engineering, see this quality of RINGSPANN products as an element of added value that gives them a decisive advantage over the competition," says Sales Manager Daniel Riedel.

Increasing the share of renewable energy

The company's current environmental statement illustrates RINGSPANN's future priorities in terms of sustainability. The top priority here is to increase the share of renewable energy in electricity consumption. By the end of this year, it is expected to be at least 70 percent. Refining the monitoring of energy data and expanding the energy supply with photovoltaic are further goals of the current program. The company is also examining how gas consumption can be lowered and how paper volumes can be reduced even further. In all this, Daniel Riedel is certain "that many of the planned sustainability measures will lead to further process optimizations in production and administration". <<



Daniel Riedel
Head of Sales & Marketing
at RINGSPANN GmbH

The decisive advantage

At RINGSPANN, the topic of sustainability is now viewed from a holistic perspective. In concrete terms, this means that aspects of resource conservation, the reduction of energy consumption or the avoidance of waste are increasingly being incorporated into the development of new product and engineering solutions. Whether it's material-optimized freewheels for wave power plants or e-bike drives, or safety brakes for wind turbines, heavy-duty shaft-hub connections, intelligent electric brakes or de-energized remote controls: everything that paves the way for the design of energy-efficient, low-consumption and long-lasting systems, and everything that accelerates the changeover from energy-intensive old units, and the realization of future-oriented technologies also supports the careful use of our resources. "Many of our customers in drive technology, conveyor tech-

Communicating sustainability progress

In order to communicate its sustainability work transparently and to document its progress, RINGSPANN is currently developing another information page for its constantly growing website (www.ringspann.com). This additional landing page will be activated in the next few days. On this page the company will present all relevant aspects of its current sustainability work in detail in the six areas: certificates, environmental statement, code of conduct, and environmental policy, CO_2 balance and history. Employees, business partners and customers can get an idea of the measures RINGSPANN has already implemented with regard to resource conservation and climate protection and which projects are currently on the agenda.

RINGSPANN GmbH, Bad Homburg 13.06.2023

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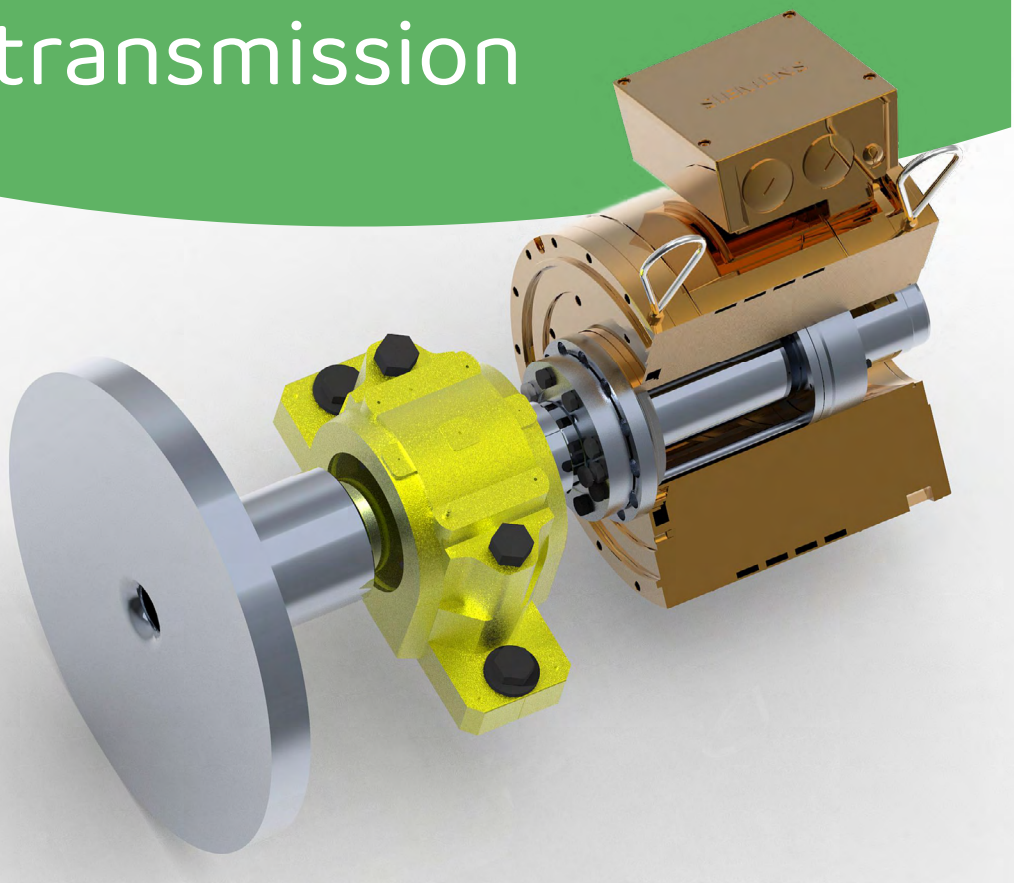
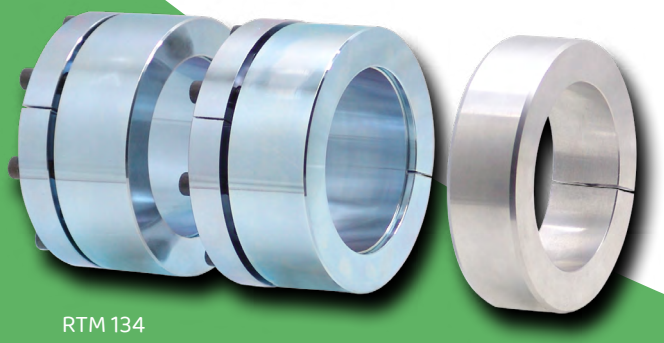
Guarantors of loss-free power transmission

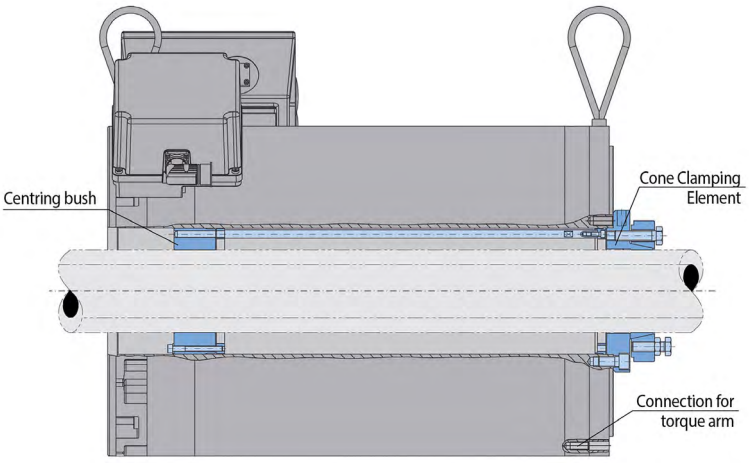


RINGSPANN offers a wide range of Shaft-Hub-Connections of various designs for frictional power transmission in the drive trains of machines and systems. The clamping systems in the RTM family play a special role here. This is because they are specially designed for the safe and precise assembly of torque motors on solid and hollow shafts. Their particular strengths include backlash-free and torsionally stiff torque transmission, excellent concentricity characteristics and a design that takes account of the specifications of leading engine manufacturers.

Torque motors belong to the group of electric servo motors and have proven themselves today as high-torque direct drives in many applications in mechanical and plant engineering. In particular, they prove to be extremely advantageous in the design of gearless drive systems, which have to flexibly implement high dynamic requirements at rather low speeds. Specific fields of application are, for example, extruders for plastics technology, film stretching systems, winders for paper processing, rotary indexing tables for machine tool and assembly technology, lifting units for powerful servo presses as well as numerous automation applications. In order to enable machine and plant manufacturers to integrate modern complete and built-in torque motors easily into their drive systems, RINGSPANN now offers four frictional clamping systems. They are grouped together in the RTM series and are all suitable for fastening and simultaneously centring torque motors on shafts and hollow shafts. Their advantages include backlash-free, torsionally rigid transmission of the torques exerted by the motor, high concentricity and application-compliant loading of the connection components. "Depending on the design, in addition to mechanical connection and centring, they also provide support for the torque motor and are designed for the standard motors of leading manufacturers. In addition, thanks to their clever design, they are easy to install and reduce maintenance costs," says RINGSPANN Product Manager Marvin Raquet.



RTM 134



Optimized for Siemens motors

The RTM 601 clamping system from RINGSPANN is explicitly designed for the installation of compact built-in torque motors. It consists of a flange taper ring and a taper ring. They are frictionally fixed to the shaft with clamping screws and transmit the torque generated by the motor into the machine shaft without backlash or loss. Both the maximum transmittable torque and the shaft diameter can be adapted to specific customer or project requirements. The situation is similar to the structurally more complex RTM 607 clamping system, which is tailor-made for fastening, supporting and centring the widely used 1FW3 complete torque motors from Siemens. This consists of a steel conical clamping element and a centring bush with aluminium flange. The clamping element ensures the transmission of the motor torque to the machine shaft and centres the torque motor on the drive side. The centring bush also supports the optimal alignment of the motor to the machine shaft. Rods and a retaining ring fix their axial position. The RTM 607 from RINGSPANN can be customized with regard to the shaft diameters in a range of approximately 60 to 125 mm.

"Flying" centring possible

RINGSPANN recommends the RTM 608 clamping systems as a further solution for fastening, supporting and centring complete torque motors on solid shafts. They are also configured according to customer requirements and allow the engine to be centred "flying". Here, a flange ring takes over the connection of the motor to the machine shaft; torque transmission is ensured either with a two-piece shrink disc or with a tapered flange ring. The RTM 608 thus enables the connection of a torque motor without pressing on the rotor of the torque motor.

In addition to the flange ring and the shrink disc, the RTM 608 from RINGSPANN has a sliding bushing. It serves as a second support point. In combination with centring, this ensures the required concentricity. In the case of very short shaft ends, a cone clamping element is mounted instead as a second support.


RTM 607


RTM 601

Easy to detach – even after a long time

RINGSPANN offers its RTM 134 clamping systems as a further alternative to the frictional, supported and centred assembly of complete torque motors. Depending on the height, one or two conical clamping elements are used between the (hollow) machine shaft and the motor to transmit the torque. A centring ring serves as a second support point. As Marvin Raquet explains, "These cone clamping elements have been specially developed to meet the specific requirements of torque motors. Their cone angle is designed in such a way that they remain easily detachable even after long periods of operation and do not leave any expansions or plastifications in the mostly thin-walled rotor shafts of the torque motors" <<

Premium class Shaft-Hub-Connections

Supported by its one-stop-shop strategy, RINGSPANN has positioned itself over the past few years as a global manufacturer of premium-class Shaft-Hub-Connections, among other things. On the basis of its international presence and with five foreign production plants, the company is ideally positioned in this product segment, both as a supplier and as a development partner for its customers. It is currently expanding the manufacturing capacities of its sites in South Africa, China and Europe.

Marvin Raquet
RINGSPANN Product Manager
of Shaft-Hub-Connections

RINGSPANN GmbH, Bad Homburg 19.07.2023

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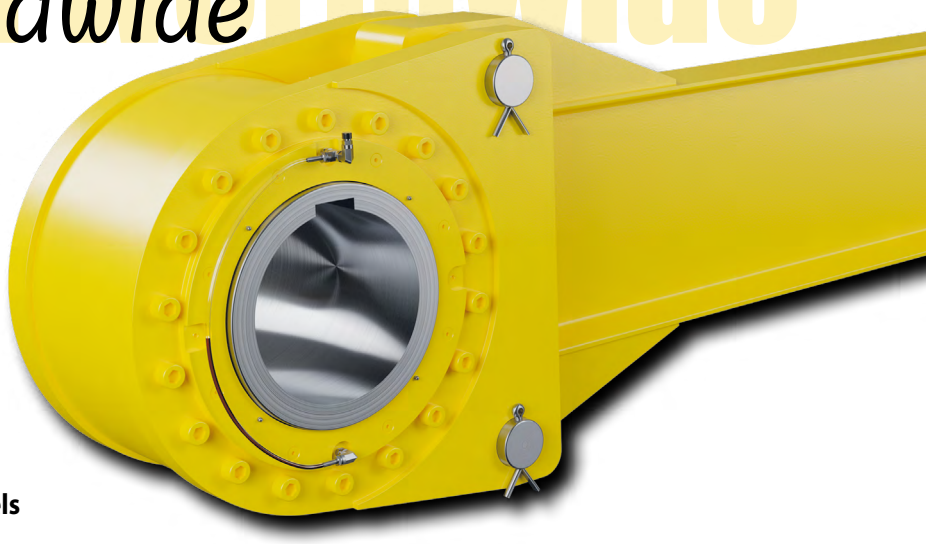
Slow runners in demand worldwide

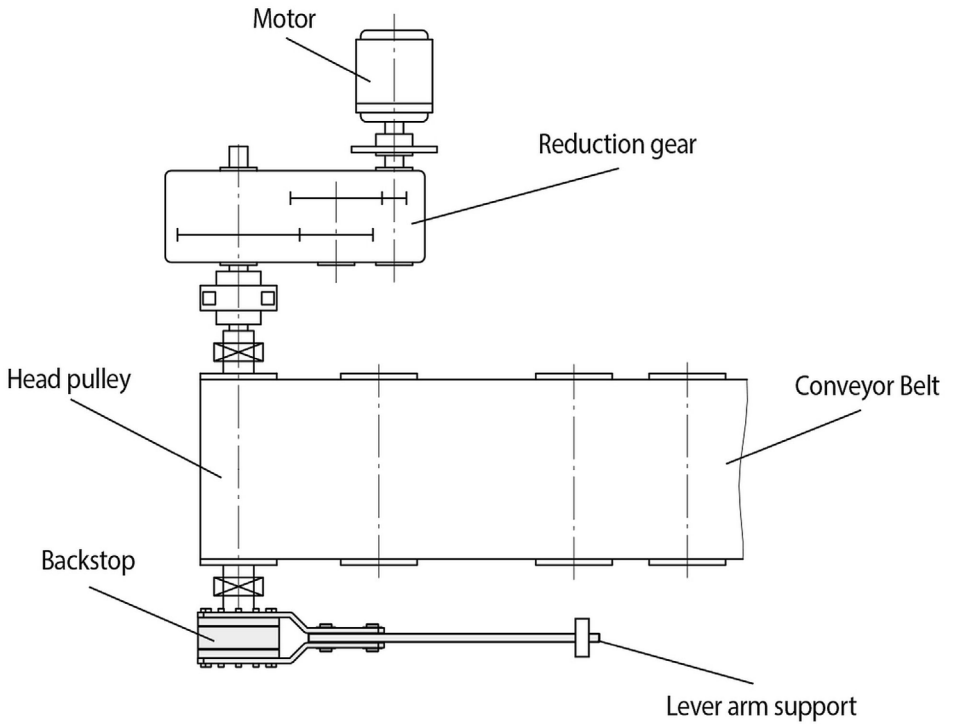


Backstops in machines and systems prevent uncontrolled and dangerous reverse rotation of drive shafts against the direction of operation. Low-speed backstops in the FRHN series from RINGSPANN are specially designed for use in inclined conveyor belt systems, bucket elevators or pumps. They have proven themselves worldwide as a standard solution that is as high in quality as it is cost-effective. Read here why these freewheels can be relied on even under adverse conditions.

Today, freewheels come in many different designs and dimensions. The current one-stop-shop from technology and market leader RINGSPANN alone offers drive technology designers and developers a freewheel selection that has at least one suitable series ready for almost every application. For example, the backstops in the FRHN series are tailor-made for use in conveyor and fluid technology. They are installed as mechanical-kinematic safety components in the drive trains of conveyor belt systems, bucket drives or pumps and prevent the unforeseen and sometimes extremely dangerous reversal of the shafts against the specified operating direction. FRHN backstops are specially designed for mounting on low-speed shafts in drive systems with low speeds. They are fixed on through shafts, or at shaft ends, and have their own lever arm for torque support.

"Features from the premium segment"

When developing these backstops, it was expedient for the freewheel specialists at RINGSPANN to optimally coordinate the two factors of cost-effectiveness and quality. In particular, internationally active manufacturers whose machines and systems have to survive in the Asian, Indian and South American low-cost markets are to be offered an attractive solution with the FRHN series. Marco Sommer, freewheel designer at RINGSPANN, therefore emphasizes: "These backstops are of high quality, impress with their robust construction and have quality features from the premium segment. These are ball-bearing and sealed clamping piece freewheels, which we provide oil-filled and ready for installation. They are also very resistant to dust and dirt."



The FRHN series currently comprises a total of twelve standard backstops for maximum transmittable rated torques of up to 500,000 Nm and speeds from 110 to 620 rpm. Depending on the version, they have bores from 80 to 300 mm as standard and weigh between 50 and 1,600 kg. "This model selection covers a wide range of applications, such as those familiar from the design of drive systems for inclined conveyors, bulk material conveyors, trough chain conveyors, troughed belt conveyors or pump systems," explains Marco Sommer. The RINGSPANN backstops always form part of the safety equipment that is usually required by law. While during normal operation the freewheels rotate at idle speed, their clamping elements intervene immediately at the moment of an unintentional reverse rotation of the shafts. In this way, the FRHN backstops are used in the context of emergency-stop scenarios for accident prevention, operational safety and occupational safety. In the case of routine maintenance, dismantling or repair work as well, the backstops prevent the conveyor systems from running suddenly and uncontrollably backwards.

Always ready to listen

In addition to the range of catalogues, the RINGSPANN engineers are always ready to listen to the individual requirements of their customers. This means that it is also possible to implement special wishes for FRHN backstops – for example with regard to the holes, the design of the lever arm or other components. "The design adaptation and fine-tuning of our freewheels to the specific conditions of the users is always part of our range of services – regardless of the freewheel series," says Marco Sommer. <<

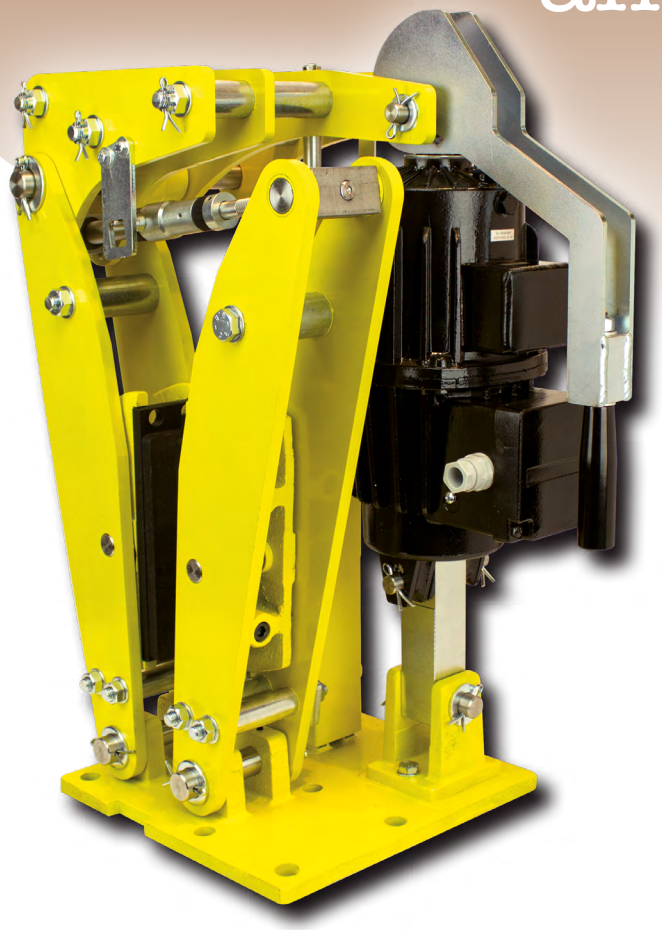
Example of an application: inclined conveyor belt

The graphic (above) illustrates the use of a low-speed 1200 FRHN backstop on the head drum shaft of an inclined conveyor belt. The lever arm is attached to the freewheel via a bolt connection. The back torque is supported by the lever arm on the foundation. In the case of a load-free conveyor belt, loosening the bolt connection allows the drum shaft to be rotated in both directions for maintenance work. The lever arm is used for torque support and must not be clamped but must have at least 12.7 mm clearance in the axial and circumferential directions.

Marco Sommer
Engineering Freewheels
at RINGSPANN GmbH

RINGSPANN GmbH, Bad Homburg 07.08.2023

A maximum of performance and transparency



Tailored to the special challenges of the mining industry, RINGSPANN implements modern system solutions for braking and emergency stop scenarios. They are used in belt conveyor systems, bucket wheel excavators and bucket elevators and can be designed for specific applications. The basis for this is provided by the manufacturer's one-stop shop, which, in addition to various drum and disc brakes, also includes regulation, control and monitoring systems. This offers numerous starting points for process optimization to designers and operators of installations.

The 24/7 availability of conveyor belts, wheel excavators and bucket elevators is a top priority in mining, bulk materials and earthmoving technology. After all, even the failure of a single component can paralyze the entire material flow and result in costly repair work," says Martin Ohler, who is jointly responsible for the Brakes Division at RINGSPANN. In order to protect both manufacturers and operators of heavy-duty mining systems from unpleasant surprises, he and his team regularly implement complete system solutions for braking and emergency stop applications on the basis of the company's one-stop shop. They are used worldwide and, depending on the situation, consist of drum or disc brakes, backstops and clutches, as well as units and modules for regulation, control and monitoring. In close partnership with the customer, RINGSPANN's engineering department ensures that all components are optimally matched to each other and that their interaction guarantees maximum performance and transparency. Martin Ohler explains what is primarily important here: "Firstly, it must always be ensured that the brake system is activated immediately when it is necessary – and actually only then. Secondly, maintenance or repair cases must be recognizable in advance – i.e., before a breakdown."

Intelligent control of braking processes

With these guiding principles in mind, the experts at the brake and freewheel manufacturer RINGSPANN implement a large number of application-specific braking and emergency stop systems year after year, which prove themselves around the globe wherever valuable raw materials are extracted for the world market, under sometimes adverse conditions. The technological heart of these complete solutions is often the HCO-2R hydraulic power unit. For example, this offers the possibility of optimizing the positioning processes of extensive conveyor belt systems that work with several drive units by precisely regulating and controlling the brakes. In this case, the focus is only on the parameter braking time, which reduces the operating effort for the user to

a minimum. In addition, in an HCO-2R-based system, the braking processes of several conveyor belt segments can be synchronized with each other quickly and without programming effort. The length, incline, speed and load of the system are irrelevant here. "What used to be an uncertain time and cost factor can now be done with high precision in seconds," says Martin Ohler.

Integration of the RINGSPANN controlled braking system in the drive train is primarily based on the design specifications of the system manufacturer. The advantage of using it on the low-speed side of the drive is the high protection factor in the event of a gear breakage – the belt conveyor or bucket elevator can then be shut down quickly and safely.

When selecting the brakes, however, it must be taken into account that they are designed to be sufficiently strong. When used on the fast-rotating side, on the other hand, the brakes can be dimensioned much smaller, and the braking force is continuously adjusted during the braking process via a compact control system and a frequency converter. "However, the gearbox must then be designed in such a way that breakage is impossible," emphasizes Martin Ohler.

Minimize downtimes as a precaution

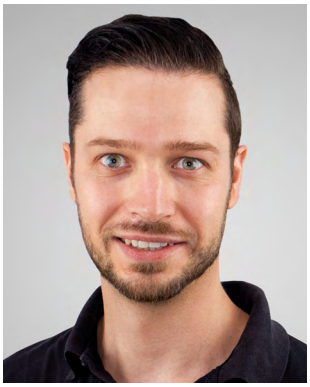
In addition to the hydraulic control system, the drum and disc brakes – and, if necessary, the backstops – the brake and emergency stop systems from RINGSPANN also include various monitoring modules for predictive maintenance. With these sensor-based monitoring units, all necessary maintenance intervals can be systematically planned and any overload and failure torques that may occur can be detected at an early stage. "In this way, we create the conditions for a plant operator's MRO team to be able to procure the required spare parts early enough and to reduce downtimes to a minimum in the event of repairs," explains Martin Ohler. Typical monitoring components of RINGSPANN's system solutions are, for example, sensors for constantly monitoring the wear level of the brake pads or operating status monitoring for our slow-running backstops.

Radical simplification

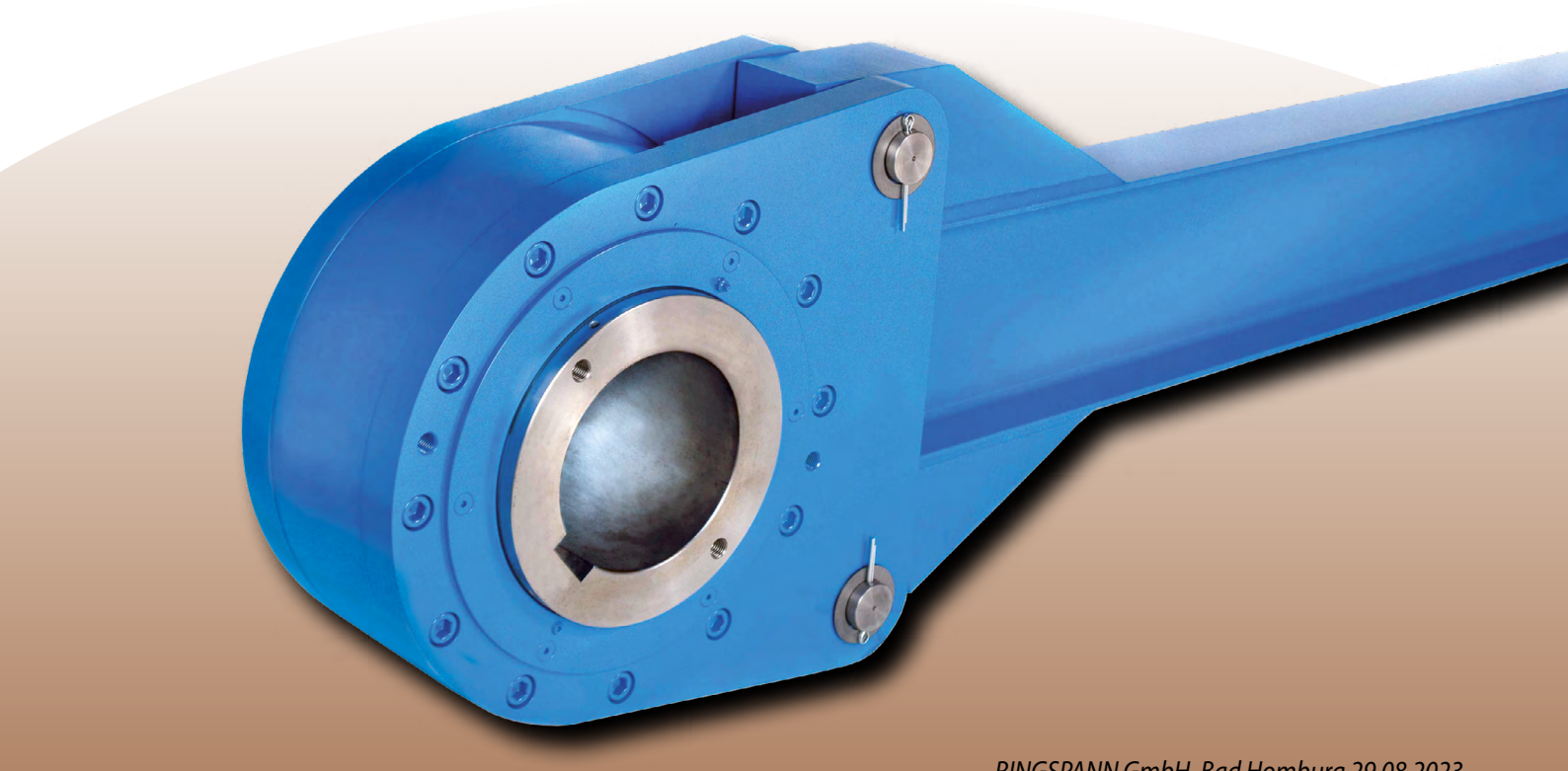
With the HCO-2R from RINGSPANN, users can adjust the brakes of their conveyor system without programming knowledge so that they always react according to demand. All adjustments due to changed belt loads, fluctuating conveyor speeds, alternating load requirements, or even the change between longer and shorter holding times, are radically simplified by controlled braking according to the RINGSPANN design. This is reflected not only in the elimination of programming work on the part of the customer, but also in the fact that the infinitely variable brake control is always designed in such a way that manual operation on site is only carried out via a single rotary potentiometer. As standard, the operator of the conveyor system can regulate the braking time within 20 to 40 seconds with high accuracy. Extensive conveyor systems consisting of numerous belt segments with several independently operating drives and controlled braking systems, can be easily synchronized with the HCO-2R – regardless of different conveyor speeds of individual belt segments or different loads and gradients!

Brakes and locks for all occasions

Finally, there is also a wide range of drum and disc brakes that RINGSPANN offers for use in the drive trains of heavy-duty conveyor systems in mining, bulk materials and earthmoving technology. They are available in numerous different series and, with clamping forces of up to 560 kN, form as it were the executive branch of the complete braking solutions. As the world market leader in the field of freewheel technology, in addition to its industrial brakes RINGSPANN has access to a large portfolio of backstops of different designs for the realization of braking and emergency stop scenarios. "As a system supplier of modern brake systems we can always access numerous alternatives, thanks to the enormous range of our one-stop shop for components for industrial drive technology. This gives us a great deal of leeway in the implementation of customer-specific projects, simplifies the automation and re-engineering of obsolete systems and also makes us a reliable spare parts partner," says Martin Ohler. <<



Martin Ohler
RINGSPANN-
Business Developer Brakes



RINGSPANN GmbH, Bad Homburg 29.08.2023

RINGSPANN®

THE BIDIRECTIONAL BROTHER OF THE BOWDEN CABLE

Push/pull cables from RINGSPANN RCS belong to the group of mechanical remote control systems and are used worldwide in almost all industries. Unlike traditional Bowden cables, they are bidirectional and can transmit both pulling and pushing forces and movements. These currentless remote actuators prove their worth in particular in safety-relevant applications that require a high level of functional reliability when triggering, locking, setting and operating.

@ CAE SHIFTING TECHNOLOGY GmbH

Basically, push/pull cables from RINGSPANN RCS are flexible mechanical transmission elements that are characterized by high-quality workmanship, excellent sliding properties and long service lives. In their function as currentless, maintenance-free remote actuators, they are used in kinematic-constructive environments where two requirements meet: it must be possible to transmit both forces and movements in the direction of pressure and tension between two locations at a distance from each other. Traditional Bowden or wire rope hoists are ruled out for this purpose, as they only cover the aspects of pulling force and displacement. The cable systems from RINGSPANN RCS, on the other hand, prove to be extremely reliable operating elements under these conditions – not least thanks to their constancy of length. They meet high demands on accuracy and can also be laid in tight radii. In addition, there is another important reason for many machine, plant and vehicle manufacturers to use push/pull cables from the German manufacturer: "The premium quality of our remote actuators is one thing; however, it is at least as important

that we can implement individually tailored cable systems for our customers that are precisely geared to their specific applications," says Frank Schneider, Sales Manager of RINGSPANN RCS.

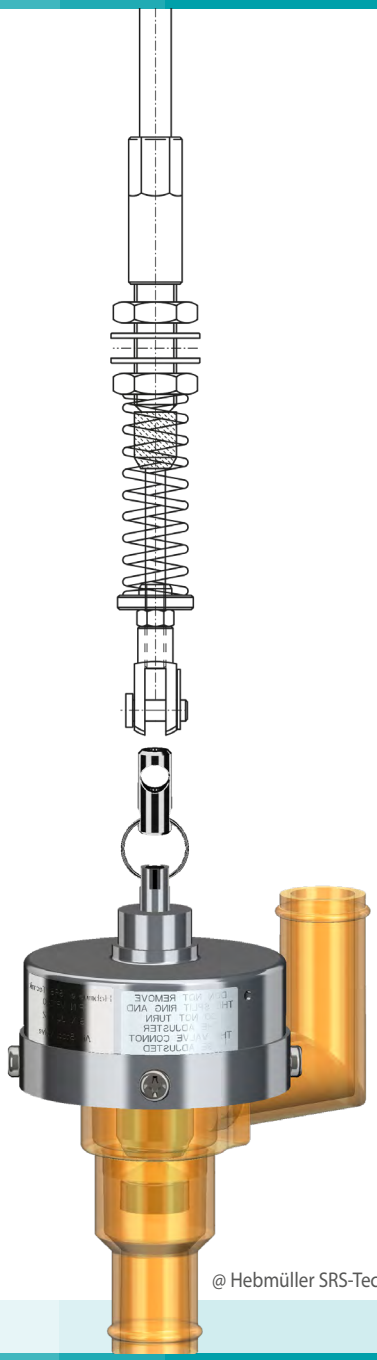
REMOTE CONTROL SYSTEMS FOR ALL BRANCHES

The company currently develops and manufactures its bidirectional operating and control cables – internationally referred to as mechanical remote control systems – for customers in almost all branches of industry. In conveyor technology, they are used in industrial trucks (e.g. speed control) or automatic storage and retrieval systems (e.g. safety gear); in e-mobility they are a functional component

Frank Schneider
Head of Sales
at RINGSPANN RCS

IN-HOUSE TEST BENCH SECURES KNOW-HOW ADVANTAGE

For about three years now, RINGSPANN RCS has had an in-house test bench, which expands the possibilities for further development and quality assurance of push/pull cables. This is a system solution designed exclusively for the company, the implementation of which took into account numerous demanding test scenarios that go far beyond the usual procedures. In this way, not only standard tests can be run, but also special force tests, friction measurements, cycle tests and idle stroke measurements, as well as routines for evaluating elastic elongation and much more. In addition to testing individual kinematic-dynamic performance parameters, the new system can be used to carry out sophisticated long-term test series and complex multiple-factor analyses, in which several different requirements are tested alternately. It can also be used in benchmarking projects.



@ Hebmüller SRS-Technik GmbH

of loading devices or steering mechanisms; in vehicle construction they support the design of transmission gears and unlocking solutions; in marine technology they enable the implementation of modern SOS systems (e.g. lifeboat releases); and in railway technology – among other things – they are indispensable components of door, parking and emergency stop kinematics. Other major areas of application are aeronautical engineering (valve actuators, brake systems, etc.), machine tool construction (hold-down devices, etc.), medical technology (blood flow regulation, etc.), general plant engineering (interlocks, etc.), agricultural technology (regulatory systems, etc.), and many other industries.

SOPHISTICATED PRECISION SOLUTION

Based on its portfolio of standard cables, an impressive number of successfully implemented customer solutions and comprehensive engineering know-how, RINGSPANN RCS can offer one or more suitable push/pull or pull cables for almost every application. They are delivered ready for installation or assembly, can be supplemented with stainless tie rods and fasteners and have galvanized or stainless steel cables for power transmission that run in high-quality Bowden cable or push/pull jackets. "Technical highlights include coated push/pull inner cores in combination with flexible inner tubes, in which the core can slide smoothly. By using special sliding plastics, we can exclude the annoying stick-slip effect. In practical use, this ensures almost jerk-free, infinitely variable and very precise adjustment movements," explains Frank Schneider. With such quality features, the push/pull cables from RINGSPANN RCS score points, for example, in vehicle construction, marine applications, railway and aviation technology, as well as in numerous applications in general mechanical engineering. <<

RINGSPANN GmbH, Bad Homburg 11.09.2023

Offset compensation in all directions

In a few days, RINGSPANN will be launching several designs of beam couplings made of steel and aluminium. With these, the company can offer designers of drive technology an additional compact and wear-free solution for backlash-free and angular synchronous connection of and on pinion and drive shafts. The huge advantage here is that, in contrast to other coupling types, beam couplings can offset both angular and oblique misalignment as well as radial and axial displacements of shafts – simultaneously and, depending on the type, even in three-dimensions!

The new beam couplings in the RBC series in RINGPANN's one-stop shop are compact shaft connections that are manufactured from a single piece of stainless steel or aluminium. Characteristic for their design is a cylindrical main body in which one or more beam grooves – the coils – are incorporated. This spiral-like shape gives the coupling one or more flexible areas with precisely calculable elasticity. One-piece production also enables the integration of multiple functions and features into a single, space-saving machine element. "Our RBC beam couplings therefore don't have any additional moving parts. This means they are wear-free and offer the advantage of high dynamic stability with vibration-free, smooth-running and low bearing loads – even with large angular, inclined, radial and axial misalignments," explains Daniel Jenny, the Managing Director of RINGSPANN AG in Zug. The RINGSPANN subsidiary in Switzerland is directing the market launch of the new beam couplings, which will be offered in three types right from the start: as couplings with a single beam, with two beames and in a cross slot version. The programme also includes the development and production of customer-specific beam couplings – for use in medical and food technology, for example. "In the field of special solutions, we have already implemented micro couplings for micro apparatus construction or beam couplings with integrated pinions for direct connection to adjustment units," reports Daniel Jenny.

Three basic types and plenty of room for manoeuvre

The single beam couplings of the new RINGSPANN RBC series transmit torques of 4.9 Nm in the aluminium version and 8.9 Nm in the steel version. They are designed for mounting on shafts that rotate at speeds of up to 10,000 rpm. The double-beam couplings have higher torque capacities of 12 Nm (aluminium) and 23.5 Nm (steel). They are primarily suitable for slower running shafts with speeds of up to 3,600 rpm. The cross slot coupling is initially only available in alumin-

ium and transmits at revolutions of up to 10,000 rpm. Torques of up to 2 Nm. For fixation to the connection shafts, RINGSPANN offers clamping hubs or set screws as standard. "On the other hand, the connections are freely selectable with the special solutions. The same applies to the material specification. The only requirement here is that the material can be machined," says Daniel Jenny.

Close on the inside, stretch on the outside

The new beam couplings from RINGSPANN are recommended as a solution for many areas of industrial drive technology. Their typical areas of application include, for example, assembly of encoders, tachometer generators or spindle drives, as well as drive trains with servo and stepper motors, as they are often found in apparatus engineering and positioning technology. In principle, beam couplings are among the standard shaft connections in general mechanical and plant engineering. They show their strengths wherever shafts in drive trains have to run with offsets and displacements. Angular displacements are a fairly common phenomenon. Beam couplings can compensate for them by closing their inner bars and stretching the outer ones. If there is sufficient space between the beam groove, displacements of up to 20° or more are possible. Radial displacements place much higher demands on a coupling. "If the coupling system cannot compensate for them, the resulting lateral forces damage the bearing points. However, the beam principle offers a way out here. Even our standard solutions allow values of up to ± 0.8 mm. Customer-specific designs can achieve even higher values," explains Daniel Jenny. If the beam is sufficiently long, a RINGSPANN beam coupling can even compensate for a three-dimensional oblique displacement in which the drive shafts do not have a common plane.

Daniel Jenny
General Manager of
RINGSPANN AG Schwiss

Almost all important types of construction

With the new beam couplings of the RBC family, the already very comprehensive shaft coupling range from RINGSPANN has been further expanded. Besides the new additions, designers of industrial drive technology will now find a wide selection of flange and compensating couplings, conical clamping couplings and gear couplings, steel belt couplings and pin couplings, as well as jaw couplings and multi-plate couplings in twenty-three series. The company's portfolio covers almost all technically relevant types and offers a wide range of solutions for compensating for axial, radial and angular misalignments for nominal torques from 2.0 to 1,299,500 Nm. This opens up a great deal of freedom for designers and engineers in plant construction to realize rigid, torsionally rigid or torsionally elastic connections between shafts, gears, motors and machines. <<

RINGSPANN GmbH, Bad Homburg 25.09.2023

RINGSPANN®

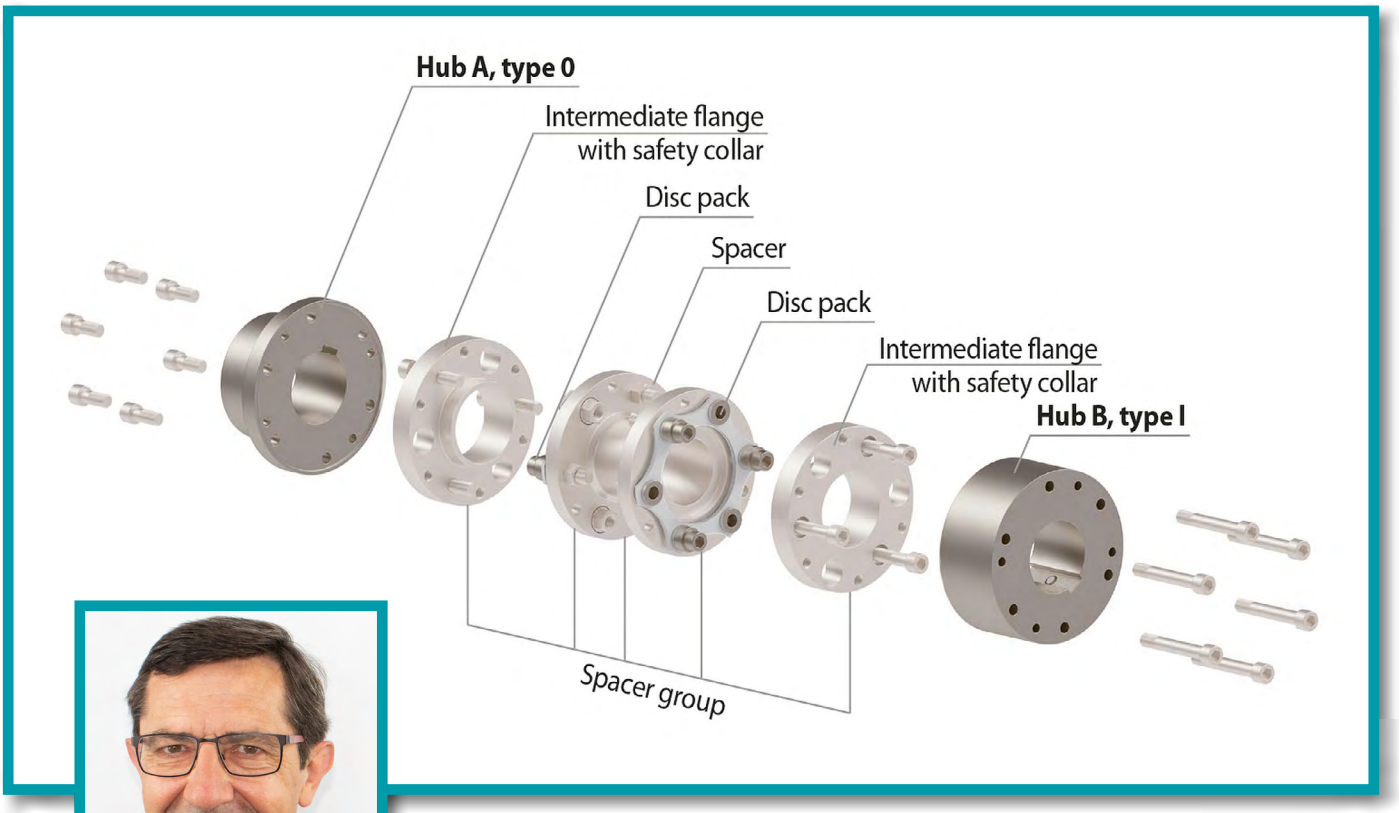
Configured online and delivered quickly

The current one-stop-shop from RINGSPANN offers a large selection of rigid, torsionally rigid and torsionally flexible shaft couplings. Constant demand from industrial drive technology in particular is enjoyed by the group of disc couplings. In order to be able to meet the needs of product developers and designers at even shorter notice, the company has now developed a practical modular system that greatly simplifies the configuration of standard disc couplings and significantly shortens delivery times. It even allows the customer to configure online on their own.

With 19 series, RINGSPANN's current overall range of shaft couplings covers all currently technically relevant types and offers solutions for nominal torques from 2.0 to 1,299,500 Nm. "In this way, we have opened up a great deal of freedom for designers and engineers in industrial drive technology to realize rigid, torsionally rigid or torsionally elastic connections between shafts of gearboxes, motors and machines, while at the same time compensating for axial, radial and angular misalignments", says Product Manager Martin Schneweis. Today, RINGSPANN shaft couplings can be found worldwide in drive systems in conveyor technology, manufacturing technology, fluid technology, construction machinery technology and many other key areas of industry. Disc couplings in the series RDL … DSO, RDL … DSZ and RDL … DSA in the company's assortment have repeatedly proved to be extremely versatile. At the heart of their design are disc packs made of stainless steel, which – provided they are installed correctly – are virtually wear-free and do not require any lubrication. In applications with nominal torques of 96 to 18,700 Nm, disc couplings from RINGSPANN therefore represent a largely maintenance-free, torsionally rigid connection. The calculated deformation of the disc packs also allows axial, radial and angular shaft misalignments to be compensated for with low restoring forces. This protects the powertrain, relieves the strain on the components of its peripherals and supports the smooth running of the entire drive unit.

Instant information on the price

At RINGSPANN, disc couplings are usually manufactured individually in connection with customer projects and orders, which is why cost and delivery times fluctuate greatly. "Especially in the recent past, however, we have observed that certain variants and types are now ordered regularly over long periods of time", reports Martin Schneweis. The product manager has picked up on this trend and, together with his team, has developed a new modular system that now makes it possible to design and configure numerous standard versions of the disc couplings of the RDL … DSO/



Martin Schneweis
RINGSPANN-
Product Manager
Couplings

DSZ/ DSA series very quickly according to customer requirements. This modular system is now available and was also integrated into the RINGSPANN webshop in the final development phase. "Here, experienced designers or buyers can also configure the required disc coupling online if required. They can find out the price and delivery date directly and download a 3D model", explains Martin Schneweis.

Modular system ensures high availability

The new modular system from RINGSPANN makes it possible to combine the various structural components of a disc coupling – such as hub type, bore and intermediate pieces – in a customer-specific and very flexible manner in order to put together optimal coupling solutions for many different applications. Since most of the individual parts and assemblies are already prefabricated, the delivery time for the individually configured disc coupling is reduced to a few weeks or even a few days. "With our new disc coupling modular system, we are able to ideally combine the two performance factors of customer-specific design and high availability for a very wide range of standard drive technology applications", emphasizes Martin Schneweis.

By the way: the abbreviations of the three series provide information from RINGSPANN as to whether the disc couplings are equipped with single-sided (RDL … DSO), normal bilateral (RDL … DSZ) or API 610-compliant double-sided disc packs (RDL … DSA). API 610 (ISO 13709) and the associated API 671 (EN ISO 10441) of the American Petroleum Institute result in technical changes compared to the standard design for the use of disc couplings in the oil, petrochemical and natural gas industries. <<

RINGSPANN GmbH, Bad Homburg 01.11.2023

RINGSPANN®

In case of direct contact in stainless steel

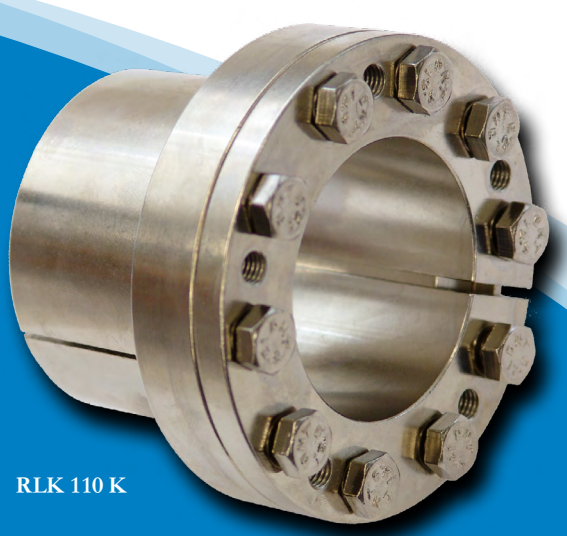
RINGSPANN is currently equipping plant manufacturers in the Food & Packaging market segment with high-quality Shaft-Hub-Connections on an increasing scale. Designers in the industry can choose between the standard series of the RLK family or stainless steel shrink discs and nickel-plated clamping sets or even OEM-specific special solutions. Typical applications for these machine elements include the drive trains of agitators, conveying and mixing systems as well as filling and packaging systems.

RINGSPANN's frictional shrink discs and cone clamping elements are currently attracting increasing interest from designers of food packaging and processing systems. "This may be primarily due to the fact that we have gradually expanded the range in this part of our one-stop shop for industrial drive technology and already optimized numerous series some time ago using an improved frictional connection calculation method," explains Marvin Raquet, Product Manager for RINGSPANN's Shaft-Hub-Connections. Another reason for this development is likely to be that, in addition to the catalogue series of its RLK line, the company is increasingly also producing stainless steel shrink discs, nickel-plated clamping sets and custom-made products. With this wide range of products, it can supply designers in the Food & Packaging sector with Shaft-Hub-Connections for drive systems that do not come into direct contact with food, as well as shrink discs and cone clamping elements for drive units that come into direct contact with food. "With the ability to meet specific OEM requirements, we are also an attractive innovation partner for plant manufacturers in the food industry," says Marvin Raquet.

Solutions for internal and external tension

Currently, it is primarily the drive systems of belt conveyors, agitators and mixers, as well as beverage filling and food packaging systems, in which the Shaft-Hub-Connections from RINGSPANN are installed. The shrink discs of the RLK family are used for the realization of backlash-free external clamping connections of hollow shafts (or hubs) on shafts, while the RLK cone clamping elements serve as backlash-free internal clamping connections of hubs on shafts. Depending on the version, the shrink discs transmit torques of up to 4,025,000 Nm, while the torque capacities of the cone clamping sets range up to 1,701,000 Nm. These two parameters alone give an idea that RINGSPANN currently covers all conceivable applications in the food & packaging sector with the technical range of its Shaft-Hub-Connections. The diameters of the shafts may be between 6 and 620 mm in the standard segment. With the exception of the RLK 300 type, all shrink discs and clamping sets are actuated with integrated screws. With a few exceptions, they centre the hub to the shaft and do not cause any axial misalignment of the hub during the clamping process. "These are factors that make our Shaft-Hub-Connections practical plug-and-play solutions that can be installed quickly without additional design effort," explains Marvin Raquet.

RLK 603 K

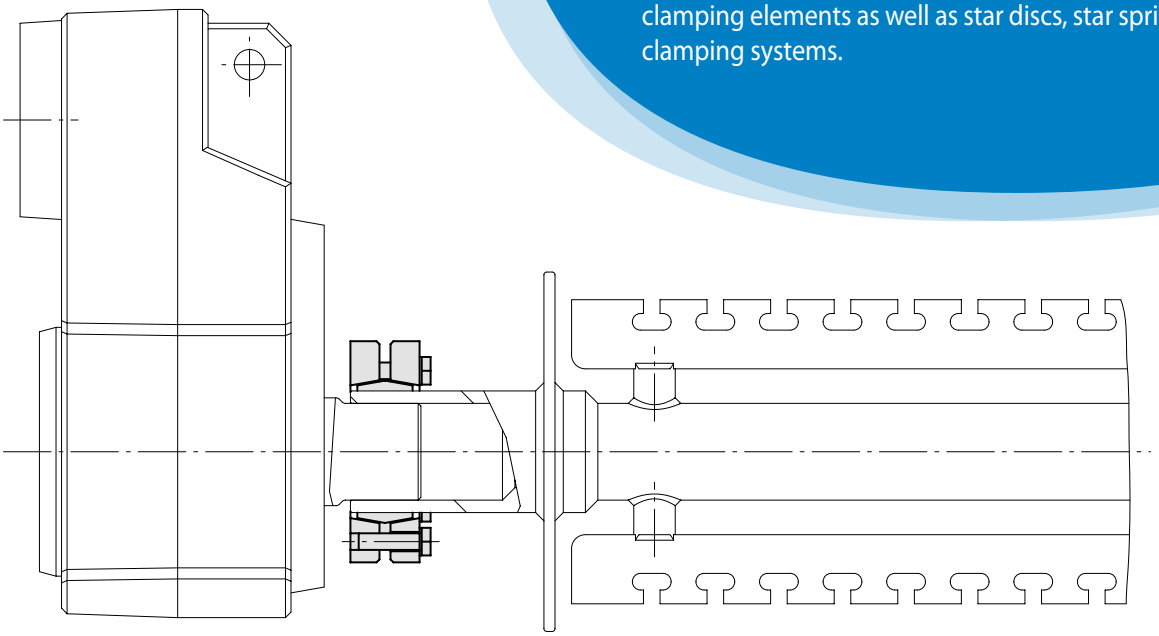


RLK 110 K

Use of a stainless steel shrink disc of type RLK 603 K for backlash-free attachment of a beater to the gearbox of a hygiene-sensitive screening plant for baking agent conditioning.

Transmission of torques without loss

In order for a drive shaft to be able to transmit its rotating force without loss, it needs a secure and firm connection to the hub or shaft of the machine element to be moved. For this purpose, RINGSPANN offers an extensive portfolio of frictional Shaft-Hub-Connections, which – depending on the design – can transmit both torques and axial forces. The current product catalogue provides a complete overview of the current portfolio of two- and three-piece shrink discs, cone clamping elements as well as star discs, star springs and torque motor clamping systems.



In stainless steel or with nickel-plated surfaces

While the steel Shaft-Hub-Connections of the RLK line from RINGSPANN are an economical solution for drive systems in the non-food-carrying sector, the corrosion-resistant stainless steel shrink discs of the RLK 603 K series and the nickel-coated cone clamping sets of the RLK 110 K series prove to be the first choice for drive trains that come into contact with food.

The stainless steel RLK 603 K is designed as a three-part assembly with which hollow shafts or hubs with outer diameters from 24 mm to 175 mm can be clamped on rotating shafts. It transmits torques from 170 Nm to 23,000 Nm. Such a premium shrink disc is, for example, part of a rotationally adjustable attachment of a beater to the gearbox of a hygiene-sensitive screening plant for baking agent conditioning. "The design of the shrink disc and all screws in stainless steel allows the realization of a drive solution that is easy to maintain and clean," explains Marvin Raquet.

The cone clamping elements of the RLK 110 K series, which are suitable as internal clamping connections for shafts with diameters from 19 mm to 60 mm, already have nickel-plated surfaces as standard. This allows torques between 190 Nm and 2,800 Nm to be transmitted, whereby these clamping elements from RINGSPANN are particularly well suited for hubs with smaller outer diameters thanks to their radially flat height. The nickel coating with a standard thickness of 35 µm gives them high corrosion resistance in accordance with DIN 50021. If only less corrosion protection is required and the budget is tight, thinner layer thicknesses can also be achieved," says Marvin Raquet.

By the way: The RINGSPANN manager and his team are currently experiencing a growing demand for corrosion-resistant Shaft-Hub-Connections. The triggering factor for this is likely to be, among other things, the steadily increasing hygiene requirements that characterize the work of designers in food technology. <<

Marvin Raquet
RINGSPANN
Product Manager of
Shaft-Hub-Connections

RINGSPANN GmbH, Bad Homburg 20.11.2023

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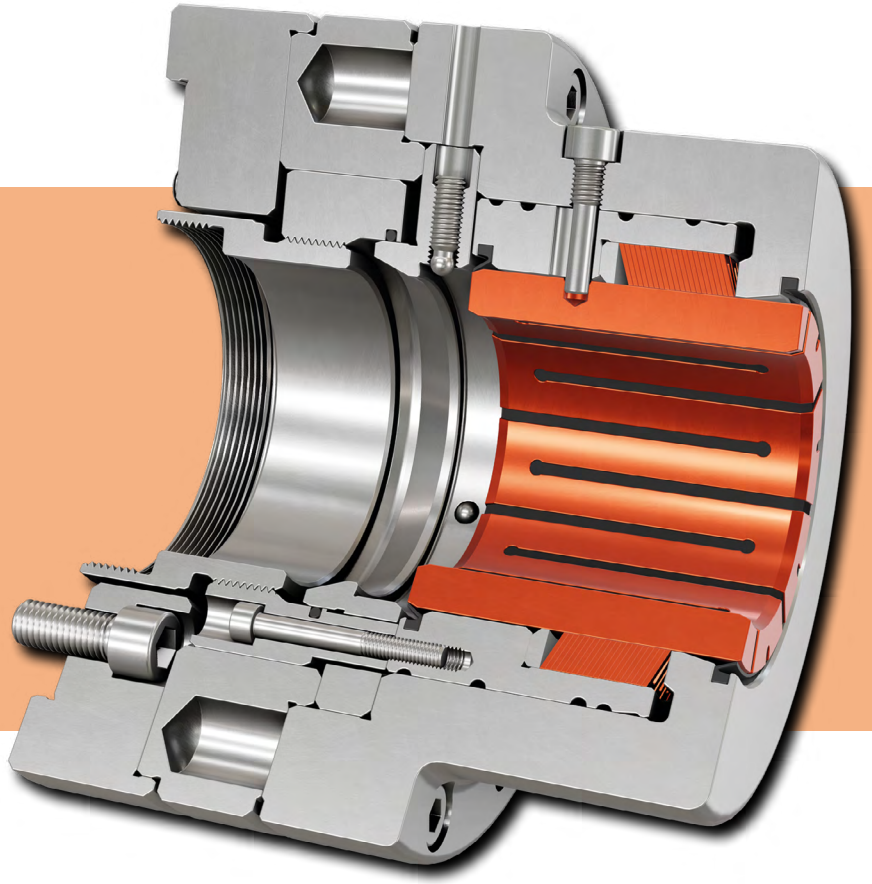


Innovation for the first and second clamping step

More flexibility in machining production and significantly reduced setup times – these are the premises under which RINGSPANN presents the new HSFS 110 clamping sleeve chuck. This innovative precision clamping system offers numerous advantages, especially for users of turning/milling machines with main and counter spindles and machine tools with bar loaders. Since it does not require pull-back action, it is equally suitable for machining bar stock and material sections in the first or workpieces from the second clamping step.

"The aspects of increasing flexibility and reducing setup times were the focus of our considerations for a new clamping system for use in machining production," says Christoph Schulz, Product Manager Clamping Fixtures at RINGSPANN. As a concrete result of the development work, the company is now presenting the HSFS 110 clamping sleeve chuck, which is of interests both machine builders and users. The new precision clamping system from RINGSPANN offers considerable efficiency advantages, especially when using machine tools with fully automatic barfeeders and turning-milling machines with two spindles. These include, among other things, the fact that it works without pull-back action - a technical prerequisite for use with bar loaders - and that its design allows for a very simple and quick replacement of the clamping sleeves. With clamping diameter range from 22 mm to 80 mm, the new HSFS 110 from RINGSPANN is an extremely versatile clamping fixture for many different tasks. It also provides the user with additional flexibility, not least because it allows the clamping diameter to be changed by up to 1.5 mm. "Our HSFS 110 allows for large workpiece tolerances and insertion clearances. It is therefore also suitable for automated loading," explains Christoph Schulz.

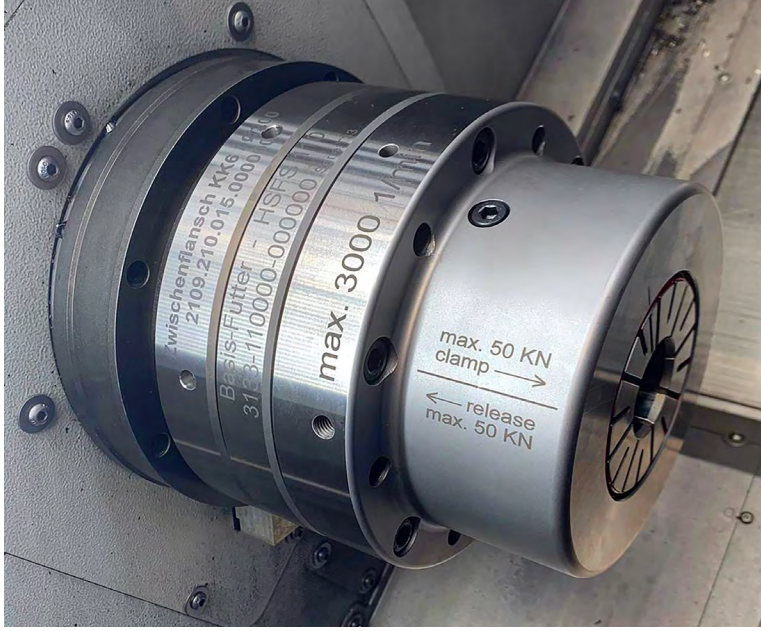
Clamping sleeve as an interchangeable part

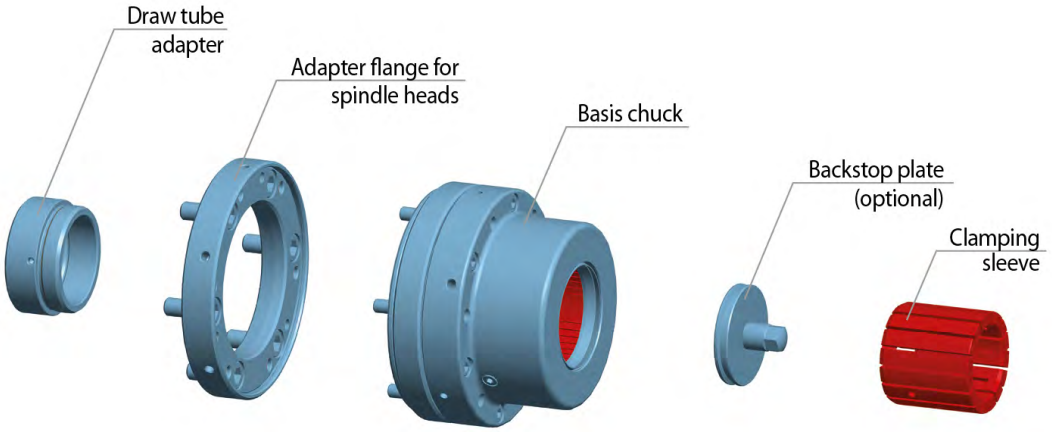
The new HSFS 110 clamping sleeve chuck from RINGSPANN is a purely mechanical clamping system and consists of a base chuck, a clamping sleeve as well as a draw tube adapter and an adapter flange. While the adapter flange connects the machine spindle to the base chuck, the draw tube adapter transfers the actuating force from the clamping force device of the machine spindle into the base chuck. The clamping sleeve is an interchangeable part that can be replaced easily, quickly and as required without special tools. "In addition, the use of individually designed stop plates makes it possible to load and process workpieces axially po-

Christoph Schulz
Product Manager
Clamping Fixtures

sitioned from the front. For this reason, the HSFS 110 can also be used for material sections in the first clamping step without any problems," explains Christoph Schulz.

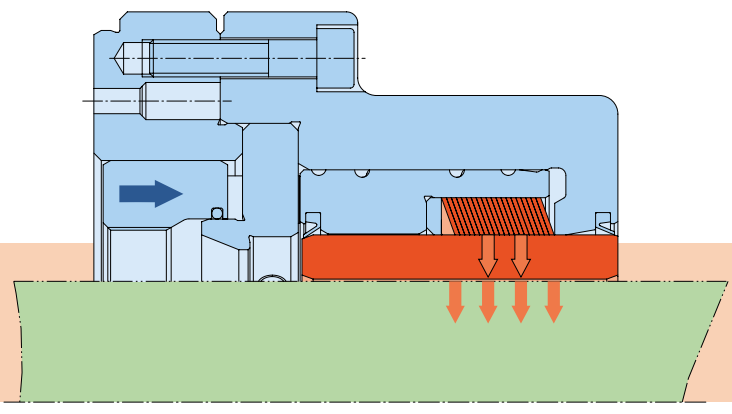
The clamping principle of the new HSFS 110 from RINGSPANN can be described in a few words: clamping discs with preload are located in an axially movable mount. If the holder is then shifted axially during clamping, the clamping discs straighten up and the clamping sleeve firmly clamps the workpiece. In this process, the workpiece is centered, and the axial actuating force is translated into a radial clamping force up to ten times greater. The maximum torque achievable depends on the diameter of the bar material to be machined. Two limits provide orientation: rods with diameters of 80 mm are clamped at up to 470 Nm, while the maximum torque for rods with diameters of 22 mm is 85 Nm. "At the same time, the chuck of the HSFS 110 ensures uniform, safe and precise 360° clamping around the workpiece at all times," emphasizes Christoph Schulz. In numerous tests, the HSFS was able to attest to an extremely smooth running.





Sleeves, flanges and plates for all occasions

The specific size of the HSFS 110 clamping sleeve is defined by the rod`s diameters or the sections and workpieces that are to be machined. As standard, RINGSPANN offers a selection of 28 different clamping sleeves for as many diameters of rods (according to EN 10278) or cylindrical workpieces.



The clamping sleeve can be changed in just a few simple steps, no special tools are required – an Allen key is sufficient!

The adapter flanges for connection to the spindle heads of various machine tools are always designed by RINGSPANN according to customer requirements. According to Christoph Schulz, "short flanges for short-cone connections are also part of the range". The draw tube adapters are also adapted to the specific case – here the spindle geometry and the design of the draw tube of the power clamping device serve as decisive specifications. As already indicated, the stop plates can be individually designed for front loading with material sections or workpieces.

The new HSFS 110 clamping sleeve chuck, RINGSPANN offers manufacturers and users of machine tools a modern precision clamping system, which many turning and milling processes of the first and second clamping step can be carried out extremely flexibly and efficiently. Thanks to its high adaptability and easy handling, it is also one of those clamping systems that can give the machining of workpieces a noticeable economic efficiency impulse. <<

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