

HMI 2019/ power transmission / machine elements / supplier / design engineering / machine and plant construction

Visual twin at Hannover Messe

The RINGSPANN freewheels of the FZ series convince with roller bearing characteristics and high torques

RINGSPANN's internal freewheels of the FZ series are suitable for nominal torques of up to 420 Nm and can be used as overrunning clutches, backstops and in the indexing function. What sets them apart is their compact design, featuring the same dimensions as the series 62 standard roller bearings according to DIN, making these freewheels a versatile, ideal solution for spatially optimised designs in the drive systems of packaging systems, food processing machinery, warehouse handling machines and conveyor belts. They are already being used for hybrid drive concepts, and they are among RINGSPANN's product highlights at this year's Hannover Messe.

Bad Homburg, February 2019. – “Time and again we find that even experienced designers mistake the internal freewheels of our FZ series for classic roller bearings”, says Thomas Heubach, divisional manager of RINGSPANN's freewheels division. And it's no surprise that one could indeed at first glance mistake the compact machine elements with roller bearings of a closed design: They look deceptively similar and correspond de facto in their dimensions with the series 62 standard grooved ball bearings according to DIN. This outward similarity is of significant advantage, because it simplifies in many cases the design work and supports the realisation of spatially optimised fitting solutions. FZ freewheels can be used in drive systems as backstops, overrunning or indexing freewheels with nominal torques ranging from 9.0 to 420 Nm. And they combine roller bearing characteristics with freewheel functions: The bearing turns – as if moved by the hand of a ghost – in only one direction.

Compact universalists

At this year's Hannover Messe, RINGSPANN will be devoting special attention to the FZ internal freewheels at its Booth D13 in Hall 25. These maintenance-free freewheels are able to cover a broad spectrum of applications in particular thanks to their “ball bearing properties”. They feature bores with diameters of up to 40 mm and are suitable as standard for use under normal operating conditions. Depending on the requirements, there are versions where the torque is transferred via press fit or keyway connection on the inner ring or on the outer ring of the freewheel. In the indexing function, RINGSPANN'S FZ internal freewheels are for example frequently used as a pair in the infinitely variable gearboxes of metering rollers of agricultural machinery, filling plants or food processing machinery: Two cam disks that are set off are arranged on the input shafts of the gearbox, which drive the outer rings of the two FZ

freewheels by means of lever arms, which then gradually turn the metering shaft. The compact RINGSPANN freewheels of the FZ series can also be found in the drive systems of many packaging systems, conveyor belts, labelling and textile machines. They have even been installed in hybrid drive concepts of environmentally friendly vehicles within the scope of various research projects. “In their drivetrains, they ensured through the alternating function between idle and driving operation that rotors did not turn when being pushed and that the vehicles could easily continue to roll during switching”, explains RINGSPANN divisional manager Thomas Heubach.

Ready for installation and food grade

RINGSPANN delivers the freewheels of its FZ series ready for installation with grease filling for integration in customer housing. The freewheels are also available with food grade lubricant for use in food technology or other hygiene-sensitive areas of application. FZ freewheels with both-sided seals made of acrylonitrile butadiene rubber (2RS sealing) will also be on display at Hannover Messe – this, too, a parallel to the series 62 standard grooved ball bearings according to DIN.

By the way: The entire range of freewheels in the FZ series can be found in the current offer in RINGSPANN’s online shop, plus many other models and types of internal freewheels. Overall, designers and technical purchasers can choose from twelve models of freewheels on this modern Internet platform (www.ringspann.de).

542 words with 4,341 characters (with spaces)

Captions (3 pictures)

Figure 1: On display at Hannover Messe in Hall 25 (Booth D13): RINGSPANN’s FZ internal freewheels, featuring the same dimensions as the series 62 grooved ball bearings according to DIN. This outward similarity supports the realisation of spatially optimised installation solutions.

Figure 2: The RINGSPANN internal freewheels of the FZ series feature bores of up to 40 mm diameter and are suitable for nominal torques of up to 420 Nm. Depending on the requirements, there are versions where the torque is transferred via press fit or keyway connection on the inner ring or on the outer ring.

Figure 3: RINGSPANN’s divisional manager Thomas Heubach: “In hybrid drive systems, our FZ freewheels ensure thanks to the alternating function between idle and driving operation that rotors do not rotate and the vehicles can continue to roll during switching.”

(All images: RINGSPANN)

((Infobox))

Driving, coupling, securing

RINGSPANN is recognised as an international market leader in the freewheels sector and currently supplies around 6,000 customers worldwide with these mechanical elements for the realisation of backstops, overrunning and indexing freewheels in drive engineering. Freewheels basically consists of an inner and an outer ring with clamping elements in between. In the one direction of rotation, there is no contact between the inner and outer ring (idle); in the opposite direction however, the clamping elements ensure a frictional connection between the inner and outer ring (driving operation).

If freewheels are used as backstops, they are entirely devoted to operational and work safety. In the drive systems of conveyor belt systems, they prevent the reverse movement of conveyor belts when maintenance work is being carried out, in emergency-stop situations or during power failures. To find out which types of backstops there are and what needs to be observed during their selection and installation, you can see a detailed specialist article by RINGSPANN's divisional manager Thomas Heubach, which you can read [here](#) on the company's website.

142 words with 1,133 characters (with spaces)

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