The new standard for frictional locking

With the new product catalogue 2017/2018 being presented just a few days ago, RINGSPANN provides a new decision-making basis for the selection of Shaft-Hub-Connections. For the first time, the company has now reconfigured all product series according to the same innovative calculation method for precise frictional locking calculation. Numerous Shaft-Hub-Connections have risen into higher performance categories as a result. Moreover, the range has been expanded with new three-part shrink discs and new premium elements with a particularly high centring accuracy.

Infobox

What keeps the hub connected to the shaft?

In order for a motor or drive shaft to pass on its rotating force without any loss, it needs a secure and fixed connection to the hub or shaft of the mobile machine element. For this purpose, RINGSPANN offers an extensive range of Shaft-Hub-Connections connected via friction lining, which – depending on the design and version – transmit both torques and axial forces, as well as lateral forces and bending moments. A complete overview on the current and expanded portfolio of two and three-part shrink discs, cone clamping elements as well as star discs, star spring washers and torque motor clamping systems is provided by the freshly launched product catalogue 2017/2018 that is supplemented with additional product series.

"With immediate effect, we now have it in black and white that many of our Shaft-Hub-Connections in fact perform much better than revealed by previous data tables", Franz Eisele, who leads the Brake and Couplings Division at RINGSPANN, was pleased to announce. In the past months, he and his team have undertaken a truly herculean task: The objective here was not only to integrate additional new product series in the RINGSPANN range of Shaft-Hub-Connections, it was also about subjecting numerous product series to a systematic recalculation. The fruits of this labour can now be found in the new product catalogue 2017/2018 for Shaft-Hub-Connections, which contains several surprises: For one, RINGSPANN now offers 25 product series (previously 18) of Shaft-Hub-Connections connected via friction lining for torques ranging from as little as 0.16 Nm, all the way up to a tremendous 4,225,000 Nm; and further, many of the newly calculated Shaft-Hub-Connections feature higher torques – this for example applies to numerous cone clamping elements. "Our mid-range product series RLK 110 and RLK 13x

particularly now boast far higher transmissible torques of up to 82,500 Nm! This results from higher tightening torques, which are permitted for the clamping screws", explains Franz Eisele.

The result of a global transfer of expertise

The performance-enhancing reconfiguration of the Shaft-Hub-Connections was made possible thanks to an improved method for frictional locking calculation. "The new methodology applied is much closer to reality than previous methods. It stems on the one hand from our close cooperation with the research association Forschungsvereinigung Antriebstechnik e.V. (FVA), and on the other hand from detailed insight that we have gained and evaluated in our RINGSPANN plants in Germany, South Africa and Asia", reports division head Franz Eisele. In the new product catalogue 2017/2018 for Shaft-Hub-Connections – it is available for download at www.ringspann.com – all product series now exhibit the torque values that have been determined using the optimized calculation method. Designers, engineers, buyers and product developers can also find all technically relevant variants of Shaft-Hub-Connections spread out over more than 90 pages: External clamping shrink discs, internal clamping cone clamping elements, internal clamping star discs and individual star spring washers for ball bearing compensation as well as clamping systems for the mounting via friction lining of torque motors on machine shafts.

Highlights in the new Shaft-Hub-Connection product range

Among the highlights of the newly incorporated Shaft-Hub-Connections in the RINGSPANN catalogue range are cost-effective three-part shrink discs (RLK 603 S product series), which convince thanks to high power densities, and RLK … TC (true centring) double-slotted premium elements with extremely high centring accuracies. After last year's product campaign, where, with the RLK 608 and RLK 603 product series among other things, two and three-part shrink discs for the external clamping of hollow shafts with very large diameters were introduced for the first time, RINGSPANN thus once again presents an expanded range of Shaft-Hub-Connections in its new catalogue 2017/2018. "The expansion of our Shaft-Hub-Connection range is another crucial step on our way to becoming an international one-stop supplier for drive elements", says RINGSPANN division head, Franz Eisele.

By the way: Coinciding with the release of the new product catalogue, RINGSPANN has also updated its online calculation tool with the improved frictional locking calculation method. Here, engineers and buyers can select the technically and in terms of cost best Shaft-Hub-Connection for them at the touch of a button. The RINGSPANN tool hereby not only processes all key parameters (hub dimensions, surface pressure, torque, tightening torque etc.), but can also calculate the torque to be transmitted, even under consideration of the axial forces and additional bending moments. All results can be downloaded as a PDF file and CAD models are also available. ■

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Franz Eisele
Head of Division Brakes and Couplings at RINGSPANN

Infobox

Frictional locking enables higher torques

Shrink discs for external clamping and cone clamping elements for internal clamping consist of conical surfaces, which are pulled onto one another with clamping screws. The thus created radial forces ensure a secure frictional locking between the machine parts involved in the transmission of torques or forces. Unlike traditional form-fit Shaft-Hub-Connections with a keyway, shrink discs and cone clamping elements from RINGSPANN can transmit significantly higher torques. The shafts can thus also be dimensioned smaller and shorter, which supports the realisation of compact drive units. As Shaft-Hub-Connections connected via friction lining, shrink discs and cone clamping elements gain increasingly in importance.