

EMO 2019/ machine tools / clamping technology / power transmission / safety engineering

Conformal projection to the thousandth

RINGSPANN's new clamping coupling for rotary/swivel tables is on the rise

Among the highlights from RINGSPANN's appearance this year at EMO is the new clamping coupling for the fixing of driven rotary/swivel tables in multi-axis machining centres. Shortly after first being presented last Autumn, this mechanical, hydraulic high-precision solution has established itself as the favourite of countless renowned manufacturers of tool machines and rotary/swivel portals. With its exceptional conformal projection and holding torques of up to 2,400 Nm, it significantly exceeds the performance capacity of conventional clamping systems.

Bad Homburg, July 2019. –In the coordinate field of modern tool machines and machining centres, rotary/swivel tables and portals position the A and C-axes. Their kinematic task is to support the precise and fast approach of the workpiece into any required angle setting. To achieve this, the positioning axes with the latest generation of rotary/swivel tables are driven by torque motors that can be controlled directly and with a high degree of precision. When they take up their defined angle settings, they are clamped in tightly and must hold their position securely under stress during machining. The market offers a range of different clamping systems to realise this. Continuously increasing demands of the user with regards to achievable accuracies and transmissible torques, however, mean that manufacturers of rotary/swivel tables and machine tool manufacturers are increasingly looking for more powerful clamping systems for their positioning axes. At RINGSPANN, this trend was identified at an early stage and a new clamping coupling was developed for the clamping of rotary/swivel tables, which should soon replace many well-known clamping system products. Several renowned mechanical engineers have since taken notice of the new clamping coupling and are planning for their deployment. And for good reason: With a maximum torsion angle of just 0.007 degrees, a holding torque of up to 2,400 Nm and a very high torsional stiffness, the new RINGSPANN clamping coupling paves the way for implementing the highest precision and force demands when fixing the driven positioning axes of rotary/swivel tables in tool machines.

Mechanically clamped, hydraulically released

At this year's EMO, trade fair visitors to RINGSPANN's Booth E22 in Hall 3 can learn directly about the advantages and features of the innovative precision clamping coupling. One of the things they will discover is that it employs high-quality clamping discs from the RINGSPANN range to transfer the axial force of screw plate pressure springs into a radial force and taper a specially designed, ring-shaped deformation element. This purely mechanical action ensures a fully anti-twist, all round clamping of the kingpin of the positioning axis. The clamping is quickly released by applying 115 bar of hydraulic pressure to the clamping coupling. This immediately frees the positioning axis

of the rotary/swivel table again for the approach into the next angle setting. The new high-precision solution from RINGSPANN thus also supports quick changes between different angle settings of a machining process.

Clamping fixture innovations in Hannover

Besides the new clamping coupling for rotary/swivel tables, at this year's EMO in Hannover (16.-21.9.2019) RINGSPANN will be presenting many more solutions from its comprehensive range of clamping fixtures. For example, precision clamping fixtures for the mechanical processing of cylindrical internal and external surfaces, which are widely available as standardised complete clamping fixtures. They are available in numerous versions, so the customer can choose between flange chucks and flange mandrels in the construction forms of bonded disc, taper collet, taper sleeve and flat element. With true running accuracies of $\leq 10 \mu\text{m}$ these clamping fixtures are ideally suited for demanding tasks in machining technology.

A major attraction at RINGSPANN's EMO booth in Hall 3 will in all likelihood once again be the innovative expanding sleeve mandrel HDDS. This economical clamping mandrel alternative to hydraulic expanding clamping tools in gearing technology and fine machining stands out thanks to true running accuracies of $\leq 5 \mu\text{m}$, takes up workpieces with bores of up to tolerance class IT10 and reduces the costs for feeding and positioning technology in fully automated operation. Depending on the version, the HDDS can clamp bores from a diameter of 23 mm.

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Note for editorial staff: Text and images available at www.pr-box.de!

Captions (5 pictures)

Figure 1a/1b: A highlight of RINGSPANN's appearance this year at EMO is the new clamping coupling for the fixing of driven rotary/swivel tables in multi-axis machining centres. (Image: RINGSPANN)

Figure 2: With a maximum torsion angle of just 0.007 degrees and a holding torque of up to 2,400 Nm, the new RINGSPANN clamping coupling paves the way for implementing the highest precision and force demands when clamping rotary/swivel portals. (Image: RINGSPANN)

Figure 3: At this year's EMO in Hannover, RINGSPANN also showcases precision clamping fixtures for the mechanical processing of cylindrical internal and external surfaces, which are widely available as standardised complete clamping fixtures. (Image: RINGSPANN)

Figure 4: RINGSPANN's innovative disc expanding sleeve mandrel HDDS is an economical clamping mandrel alternative to hydraulic expanding clamping tools in gearing technology and fine machining. It stands out thanks to true running accuracies of $\leq 5 \mu\text{m}$. (Image: RINGSPANN)

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