

Power transmission / Automation / Machine construction / Design engineering / Electrical engineering / Supplier

Guarantors of loss-free power transmission

RTM clamping systems from RINGSPANN simplify the installation of torque motors

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.

Bad Homburg, July 2023. – 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.

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.

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." *ar*

*647 words with 5,303 characters (with spaces)
Darmstadt*

Author: Alexander Regenhardt, freelance specialist journalist,

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

Captions (6 pictures)

Figure 1: The clamping systems in RINGSPANNs RTM family are specially designed for the safe and precise assembly of torque motors on solid and hollow shafts. Image: RINGSPANN

Figure 2: The RTM 601 clamping system from RINGSPANN is explicitly designed for the installation of compact built-in torque motors. They transmit the torque generated by the motor into the machine shaft without backlash or loss. Image: RINGSPANN

Figure 3: Marvin Raquet: "Depending on the design, our torque motor clamping systems realize not only mechanical connection and centring but also support for the rotor and machine shaft and their construction is designed for the standard motors of leading manufacturers." *Image: RINGSPANN*

Figure 4: RTM 607 clamping system from RINGSPANN is tailor-made for fastening, supporting and centring the widely used 1FW3 complete torque motors from Siemens. *Image: RINGSPANN*

Figure 5_en: In addition to the flange ring and the shrink disc, the RTM 608 torque motor clamping system from RINGSPANN has a sliding bushing. It serves as a second support point and prevents the formation of fretting corrosion due to micro-slip. *Image: RINGSPANN*

Figure 6: The clamping system RTM 134 from RINGSPANN remain easily detachable even after long periods of operation. *Image: RINGSPANN*

Add-on:

Video – Direct link to [RINGSPANN-Produktanimationen.](#)

((Infobox))

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.

69 words with 562 characters (with spaces)

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