

Premium solution for 360° offset compensation

RINGSPANN's one-stop-shop now offers beam couplings in seven versions

Immediately after the market launch, RINGSPANN has now expanded its range of beam couplings to seven versions made of steel and aluminium. They are now available on demand in the company's one-stop-shop. This offers drive technology designers a highly flexible premium solution for the backlash-free and angle-synchronous connection of drive and output shafts. The special advantage of is that they can simultaneously compensate for the angular and oblique misalignment as well as the radial and axial displacement of shafts in any direction.

Bad Homburg, January 2025. – Characteristic of the design of beam couplings is a cylindrical base body in which one or more helix-shaped grooves run. Their spiral shape gives this fastener one or more areas with a precisely calculable degree of elasticity. Another typical feature of beam couplings from RINGSPANN is that they are particularly high-quality machine elements that – apart from their adjusting screws – are implemented as a one-piece solution. This simplifies their installation and allows the integration of several properties. "Our beam couplings have no additional moving parts, are wear-free and score with a high dynamic stability. Even with large angular, oblique, radial and axial misalignments between the shafts, they ensure vibration-free, low-stress and silent concentric running, which significantly relieves all bearings located in the design periphery," explains Gerd Heumann, Account Manager at RINGSPANN.

Versions and materials

Within a few weeks and immediately after the market launch, RINGSPANN expanded the selection of its beam couplings to seven versions. They are now all available for direct ordering in the company's one-stop-shop. Basically, there are versions made of stainless steel and aluminium for fastening with set screws or clamping hubs. They differ in the number of circumferential grooves – the spirals – and their grouping. This results in a selection of single beam, double beam and cross-slotted versions, each in different sizes with different bore diameters. In addition to providing these standard solutions, RINGSPANN also offers the possibility of developing and manufacturing customer-specific beam couplings. This offer is currently mainly used by medical and food technology designers. "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 and positioning systems," reports Gerd Heumann.

Torques and speeds

Depending on the design, the various beam couplings from RINGSPANN cover different areas of application. For example, the single-beam couplings made of aluminium are suitable for transmitting torques of up to 4.9 Nm, while the counterparts made of steel transmit torques of up to 8.9 Nm. Their main area of application is the connection of shafts that rotate at up to 10,000 rpm. The double beam couplings offer higher torque capacities of up to 12 Nm (aluminium) and 23.5 Nm (steel). They are mainly used for slow-running shafts with speeds of up to 3,600 rpm, which are characteristic of drive systems in general mechanical and apparatus engineering. The cross-slotted version, on the other hand, is only available in aluminium and is suitable for speeds of up to 10,000 rpm and torques of up to 2.0 Nm.

In the case of special solutions, it is usually the specific requirements of the customers that determine the particular design and configuration of beam couplings from RINGSPANN. "This applies to both the choice of connections and the specification of the materials. We offer a lot of freedom here; the basic prerequisite is that the material can be machined with reasonable effort," says Gerd Heumann.

Offsets and displacements

Axial angular misalignments or displacements are by no means uncommon in the drive systems of mechanical and plant engineering. Beam couplings can compensate for them by minimizing their inner bars and maximizing their outer bars. If there is sufficient distance between the revolutions of the helical groove, axial displacements of up to 20° or more can be compensated for in this way. Loads caused by radial displacements place even higher demands on such couplings. Gerd Heumann explains: "If the shaft connection is not able to compensate for radial displacement, the resulting shear forces can cause considerable damage to the bearing points. The functional principle of our beam couplings counteracts this. Our standard solutions already allow a deviation of up to ± 0.8 mm, and with customer-specific special solutions, the balancing capacity can be even higher." If the helix is sufficiently long, a RINGSPANN beam coupling can compensate for even a three-dimensional inclined displacement in which the drive shafts have no common plane.

Typical applications for the beam couplings from RINGSPANN are, for example, the assembly of encoders, tachometer generators or spindle drives, as well as the connection of the input and output shafts of servo and stepper motors in apparatus construction, positioning technology, automation and general mechanical and plant engineering.

Shaft couplings for all occasions

The beam couplings from RINGSPANN complement the extensive shaft coupling range of the German company. Designers of industrial drive technology will also find flange and compensating couplings, cone clamping couplings and gear couplings, steel belt couplings and pin couplings, as well as jaw couplings and disc couplings. "Our current product range covers almost all technically relevant types

and offers numerous solutions for compensating axial, radial and angular displacements for nominal torques from 2.0 to 1,299,500 Nm. This opens up a great deal of freedom for engineers and designers to implement rigid, torsionally rigid or torsionally elastic connections between shafts, gearboxes, motors and machines," says Gerd Heumann. *ms*

813 words with 6,534 characters (with spaces)

Mirco von Stein, freelance specialist journalist, Darmstadt

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

Captions (5 pictures)

Figure 1: Compact beam coupling from RINGSPANN: manufactured as a one-piece solution made of stainless steel or aluminium. Helix-shaped grooves – the spirals – give this shaft connection flexible areas with precisely calculable elasticity.

Figure 2: Gerd Heumann: "Our beam couplings are wear-free and enable the realization of vibration-free, smooth-running shaft connections with low bearing loads, even with large angular, inclined, radial and axial displacements."

Figure 3: Beam couplings from RINGSPANN are available in the company's one-stop shop in seven standard designs with single beam, double beam and in cross-slotted variants.

Figure 4: If the helix is sufficiently long, a RINGSPANN beam coupling is able to compensate for even a three-dimensional inclined displacement in which the drive shafts do not have a common plane.

Figure 5: Spiral clutch or precision spring? The development and production of such customer-specific shaft connections is an integral part of RINGSPANN's range of services.

All images: RINGSPANN

((Infobox))

Special solutions and special shapes

The realisation of customer-specific special solutions and special forms of beam couplings is an integral part of RINGSPANN's range of services. In some cases, this can also result in high-precision, one-piece fasteners with bolt heads and threaded connections, the design of which is somewhere between a coupling and a precision spring due to their large number of spirals (see Fig. 5). "Often, the customer's desire for greater functional reliability or shorter assembly times is decisive," reports Gerd Heumann.

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