

*Machine elements / design engineering / pneumatics / hydraulics / design engineering*

## You can rely on the length - even in the curve!

**Push/Pull Cables from RINGSPANN RCS convince thanks to their length-preserving properties during bending**

RINGSPANN RCS' mechanical cable systems are high-quality processed products. They are designed for more than 1.0 million kinematic cycles and boast optimal gliding properties. As intrinsically safe and maintenance-free machine elements, they are proven wherever forces have to be transmitted between locally separated and stationary components, but where it must always be possible to separate the connection between input and output force by means of a flexible system. Thanks in particular to their length-preserving properties, they prove to be precise and reliable control elements even in applications with winding installation layouts.

What happens with simple Bowden cables or substandard Push/Pull Cables if the application or the installation situation requires a winding installation with tight bending radii? Correct: Not only do they become stiff, but their travel length is also "shortened". This means that their functionality is impaired, their dimensional stability is lost and, in most cases, frictional resistance increases as a result of the change in cross-section. None of this, however, occurs with high-quality push/pull cable systems from RINGSPANN RCS. Thanks to their four-part inner construction, these quality products have excellent gliding and length-preservation properties. Christian Kny, managing director of RINGSPANN RCS, explains: "Assuming the correct design, the internal structure of our cable systems enables a high-precision mechanical compensation of the length variance caused by the installation. The functional solution is in the interaction of the inner-member, the elastic guide tube, the longitudinal wire with its supporting wire winding and the plastic coating. Thanks to their sophisticated design, these layers can interact tribologically with each other and compensate changes in length."

### **Emergency safety device for spring core brakes**

Another positive consequence of the multi-part detailed engineering of RINGSPANN RCS Push/Pull Cables is their high degree of resistance to impact, vibration and shock. The trilogy of good properties – slip resistance, length preservation and mechanical stability – is a key reason why these power cable systems have firmly established themselves, for example, as actuator support elements and control elements in railway technology (wagon construction), as well as truck and bus technology. One main field of application is the realisation of (emergency) safe ventilation and release devices for spring-loaded brakes frequently used in these sectors of road and rail vehicle

construction. Push/Pull Cables here, among other things, are used for the mechanical release or unlocking of hydraulically or pneumatically released brakes during normal operation. In particular, RINGSPANN RCS supplies the Push/Pull Cables of its successful 283/284 and 274/275 series as ready-to-install components with project-specific end and operating parts (T-handles, hand levers, hinged tube connectors, etc.) just in time to the assembly lines of its customers in vehicle construction and railway technology. RINGSPANN RCS' Push/Pull Cables are also used in the design of automatic doors - for example in wagon and elevator technology.

### **Standard or customised**

RINGSPANN RCS offers four bi-directional Push/Pull Cable series as standard. Depending on the version and the travel, pushing forces of up to 3,150 N and pulling forces of up to 4,500 N can be transferred. With these standard values, the company covers a wide range of applications across all industries. In day to day project work, however, these parameters mostly serve just as a general orientation for RINGSPANN RCS' engineering department. Managing Director Christian Kny explains: "Our great strength is in realising customer-specific system solutions for vehicle construction, railway technology, airport technology or increasingly for the e-mobility sector. Here you often have completely different factors playing an important role. For example, continuous running safety, feasible laying radii, response behaviour or length-dimensional stability".

In such cases where there is little time for a comprehensive development project, RINGSPANN RCS also offers the option, from a certain batch size, to quickly customise and configure common standard versions of its Push/Pull Cables from the series range. *ar*

*648 words with 4,491 characters (with spaces)*

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***Note for editorial staff:*** Text and images available at [www.pr-box.de!](http://www.pr-box.de)

### *Images (7 motives)*

*Image 1:* The RINGSPANN RCS' mechanical cable systems are intrinsically safe and maintenance-free machine elements, they are proven wherever forces have to be transmitted between locally separated and stationary components, but where it must always be possible to separate the connection between input and output force by means of a flexible system. (Image: RINGSPANN RCS)

*Image 2:* Thanks to their four-part inner construction, the RINGSPANN RCS' mechanical cable systems quality products have excellent gliding and length-preservation properties. (Image: RINGSPANN RCS)

*Image 3:* Christian Kny, managing director of RINGSPANN RCS: "Assuming the correct design, the internal structure of our cable systems enables a high-precision mechanical compensation of the length variance caused by the installation." (Image: RINGSPANN RCS)

*Image 4:* Complete solution for rail technology: Length-compliant push-pull cable from RINGSPANN RCS with application-specific plug-in connector. (Image: RINGSPANN RCS)

*Image 5:* The measurement visualize it: With tight winding or with a close, bending-rich installation, the travel of a market standard Bowden Cable will be shortened by (here exemplified) 10 mm (26

mm) compared to the beginning in a straight laying with a travel of about 36 mm. So it loses its length dimension stability. (Image: Kny)

*Image 6:* While many commercially available Bowden Cables (above) lose their length dimensional stability when twisted and their flat wire reinforcement spreads, the travel of the Push/ Pull Cable from RINGSPANN RCS (below) remains stable and its reinforcement stay closed. (Image: Kny)

*Image 7:* In particular, RINGSPANN RCS supplies the Push/Pull Cables of its successful 283/284 and 274/275 series as ready-to-install components with project-specific end and operating parts just in time to the assembly lines of its customers in vehicle construction and railway technology. (Image: RINGSPANN RCS)

((Infobox))

### **Top quality for high forces**

The Push/Pull Cables from the premium 383/384 series rank among RINGSPANN RCS' premium products. As bi-directionally operating Bowden cables, they are suitable for the transfer of high loads, for laying with minimal bending radii and for use under constant temperatures from -50° C to 100° C. These cable systems are only equipped with spiral-shaped flat wire support, but also with Teflon-coated inner-members and a finely tuned inner pipe in the conduit. The heavy-duty cables from the 283/284 series for pushing forces of up to 3,150 N and pulling forces up to 4,500 N also have this feature. It minimises sliding friction and makes it possible to achieve very small bending radii. The standard cables from the 283/284 series, many of which are also available through a 24/7 express delivery service, are suitable for pushing forces of up to 320 N and pulling forces of up to 540 N. They, too, feature flat-wire supported and Teflon-coated inner-members, stainless steel connection parts and seals against dust and moisture.

*171 words with 1,054 characters (with spaces)*

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