RINGSPANN®

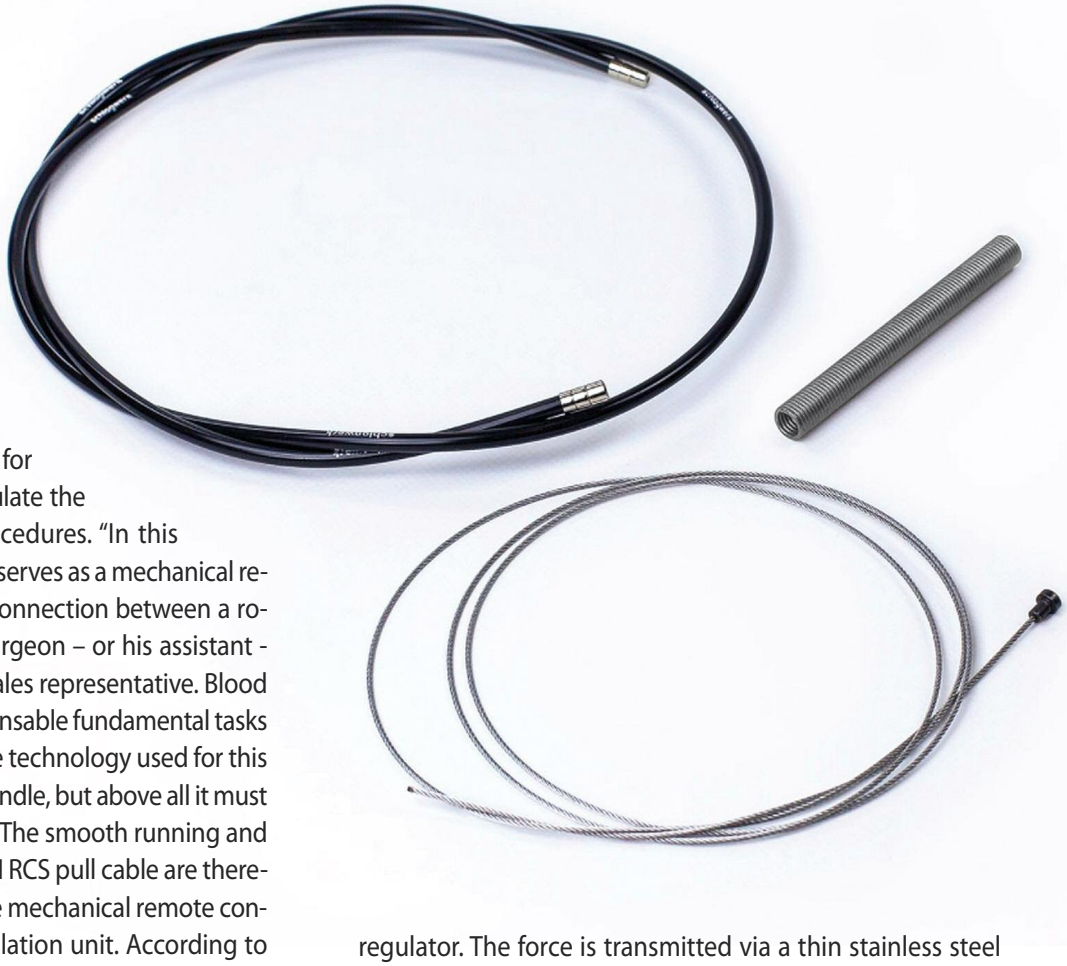
Mechanical solution for safe operations

Venous flow clamps are a traditional and proven solution for accurate and safe blood flow regulation during surgical procedures. They allow easy adjustment of the blood flow rate with the aid of a handy rotary actuator, which is operated via a flexible and extremely smooth-running power transmission cable. The German firm RINGSPANN RCS is one of the leading manufacturers of these types of custom-made pull and push-pull cables for use in medical technology.

The mechanical cable systems from RINGSPANN RCS are extremely high quality control elements that are designed for a long service life and boast excellent gliding properties. As intrinsically safe and maintenance-free remote control systems, they prove their worth wherever forces have to be transmitted between locally separated and stationary components, but where it must always be possible to manually influence the connection between input and output force by means of a flexible control element. The cable systems from RINGSPANN RCS have proven to be extremely reliable control elements – thanks in particular to their length-preserving properties – even when the cables are installed with winding installation paths and with high precision requirements. But these are not the only reasons why many medical technology device and equipment manufacturers are opting for the German company's pull cables and push-pull cables. "At least as important as the high quality of our remote control systems is the fact that we are able to create tailor-made cable systems for our customers that are precisely tailored to the conditions of their applications", emphasises Alexander Balloussa, sales representative of RINGSPANN RCS.

Between rotary actuator and flow clamp

Alexander Balloussa cites a current project as an illustrative example for the realisation of application-specific solutions for medical technology: the development and production of a high-quality pull cable for use in a venous flow clamp to regulate the flow of blood during surgical procedures. "In this case, our power transmission cable serves as a mechanical remote system and establishes the connection between a rotary actuator in the hand of the surgeon – or his assistant - and the flow clamp", explains the sales representative. Blood flow regulation is one of the indispensable fundamental tasks of many operating theatres and the technology used for this not only needs to be very easy to handle, but above all it must be absolutely reliable and fail-safe. The smooth running and functional safety of the RINGSPANN RCS pull cable are therefore two key quality features for the mechanical remote control system of the blood flow regulation unit. According to the customer, it also needed to be extremely stable, maintenance-free and easy to clean.



Sophisticated solution in detail

Based on its large selection of standard cables and the impressive number of customer solutions already implemented, RINGSPANN RCS has created a ready-to-install pull cable (type 278-U-04/04) with a stainless steel pull rod and a stainless steel connecting nipple (stainless steel 1.4305) for attachment to the clamp for the manufacturer of the venous blood flow regulator. The force is transmitted via a thin stainless steel cable, which runs in a core with a high-quality plastic sheathing. As Alexander Balloussa says, "the coated inner core in the material pairing with the flexible inner tube in which the core glides with minimal friction is one of the most important decision criteria for customers. This is because the use of special gliding plastics allows the annoying stick-slip effect to be `constructed´ out of the cable design to enable almost jerk-free and highly precise adjustment movements in practical application." For these reasons, the cable system from RINGSPANN RCS is as convincing a solution for medical technology as it is in precision mechanics and aerospace engineering.

Infobox

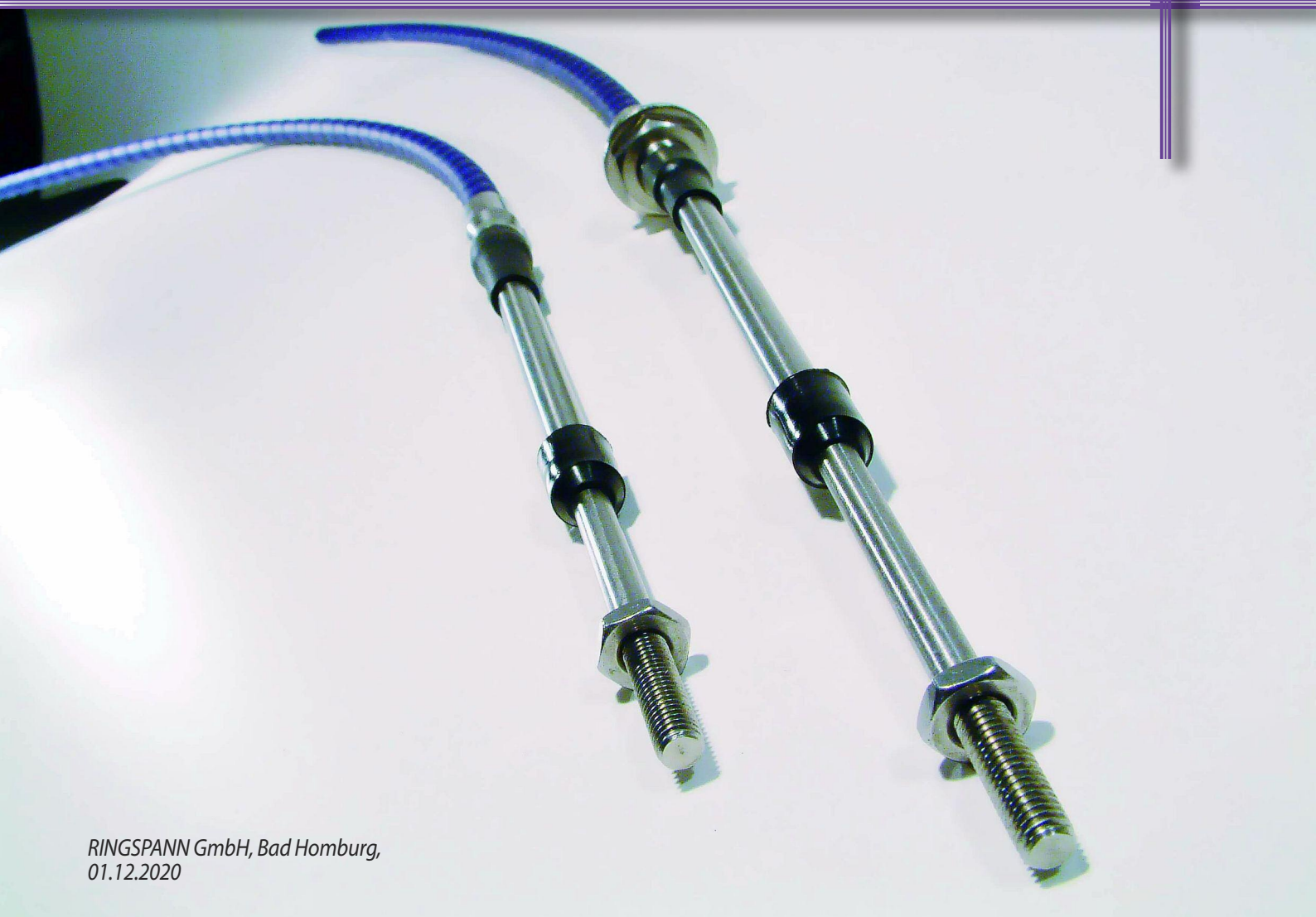
New test bench in operation

With the commissioning of a new test bench RINGSPANN RCS has considerably expanded the possibilities for the further development and quality assurance of its cable systems. It is a system solution designed exclusively for RINGSPANN RCS, the implementation of which took into account numerous demanding test scenarios that go far beyond the conventional methods. It enables not just standard tests to be run, but also special force tests, friction measurements, cycle tests and empty stroke measurements, as well as routines for evaluating elastic elongation and much more. In addition to testing individual kinematic and dynamic performance parameters, we can also use the new facility to carry out demanding long-term test series and complex multiple-factor analyses in which several different requirements are alternately tested. It can also be used for benchmarking projects. For RINGSPANN RCS, the new test bench is not only a valuable tool for internal quality audits, but also an important source of inspiration for the further technical development of push-pull cable systems.

Bi-directional cable system helps people to walk

The cable system for the mechanical remote control system of the venous blood flow clamp is just one example of many medical technology solutions already successfully implemented by RINGSPANN RCS. While this is a control element for the transmission of traction forces, elsewhere manufacturers place their trust in the company's bi-directional push-pull cables. One example of this is the development of a customer-specific push-pull cable (type 283-V) for use in a kinematically complex orthosis for people with walking difficulties. Here, the RINGSPANN RCS cable system is one of the constructional components of the power transmission system, which enables the disabled person to activate their remaining walking capability via the movement of their upper body. "This demanding orthopaedic application from human medicine places the highest demands on the functional safety and control precision of the push-pull cable. It also illustrates that our flexible development and production structures enable us to realise even small batch sizes for very special applications," says Alexander Balloussa. <<

Alexander Balloussa
Sales Representative of
RINGSPANN RCS



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