

New hysteresis coupling with wear-free overload protection

Rheine, July 23, 2020 – KTR developed a coupling that transmits the torque contactless via magnetic forces limiting the torque free from wear in case of overload; in addition, the coupling can be applied as a brake. The hysteresis coupling MINEX[®]-H is currently available in three sizes for overload torques from 1.2 to 6 Nm.



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MINEX[®]-H is a permanent-magnetic hysteresis coupling transmitting the torque synchronously and contactless between the internal and external rotor via magnetic forces.

The particular feature of this new product is the integrated overload protection: When the operating torque exceeds the selected torque, the coupling slips while ensuring wear-free torque limitation. This process generates a relative speed between driving and driven side while the polarity of the hysteresis material is continuously reversed and the material is heated up. The holding torque remains almost constant with overload yet may lightly increase with a rising relative speed and the eddy current effects related thereto.

Apart from that the coupling can be applied as a brake in permanent slipping operation. In this case one rotor side is fixed while the other rotor side limits the tensile force set.

The internal rotor of MINEX[®]-H is a hub made of stainless steel which the nickel-plated permanent magnets are arranged on. The external rotor is made up of an aluminium body that the hysteresis rings are located on. The new series is currently available in three sizes for overload torques from 1.2 to 6 Nm with a maximum speed of 1,800 RPM.

Main fields of application of the hysteresis coupling are low speed applications with frequent or permanent slipping; these include, inter alia, filling plants, winding and unwinding plants as well as medical and materials handling technology.

Vo-20-01

Press release

KTR Systems GmbH develops and produces mechanical couplings, brakes, coolers and hydraulic components for mechanical and plant engineering. KTR was founded in 1959 in the Westphalian town of Rheine and employs more than 1,150 people worldwide, more than 450 of them in Germany. The global network comprises 24 subsidiaries and 90 sales partners as well as production sites in Brazil, China, Germany, India, Taiwan and the United States.

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