Power Transmission / Design Engineering / Industrial Brakes / Automation / Intralogistics / Plant Construction

Efficiency and performance in a compact design

RINGSPANN offers an attractive range of electromagnetic industrial brakes

With its current selection of spring-operated and electromagnetically released disc brakes, RINGSPANN offers designers of industrial drive systems numerous alternatives to pneumatic or hydraulic brakes. Read here about the range of clamping forces provided by the various series, how they differ and the applications for which they are predestined.

Bad Homburg, November 2026. – More and more machine and plant manufacturers are now giving preference to spring-operated and electromagnetically opening disc brakes over pneumatically or hydraulically controlled industrial brakes. There are many reasons for this: Apart from the fact that "electric brakes" are usually very compact, they do not require any external media such as air pressure or hydraulic oil for operation and thus do not need a connection to a fluid power supply system. This not only reduces the maintenance expense for operators, but also the risk of leaks and contamination. "We identified the advance of e-brakes as a trend in industrial drive technology at an early stage and, on the basis of our many years of experience, have set up an attractive range of spring-operated and electromagnetically released disc brakes," reports Maximilian Mappes, brake designer at RINGSPANN.

A few years ago, RINGSPANN introduced the DH 012 FEM and DV 020 FEM brakes in its one-stop shop. To this day, they have proven themselves as robust holding and stop brakes in many standard industrial applications. Both versions are based on the design of traditional brake callipers and use springs to generate braking force and electromagnets to release. The maximum clamping forces are 1.85 kN (DH 012) and 3.4 kN (DV 020). Both brakes are optionally available with inductive sensors for different modes and with cCSAus approval for the Canadian and American markets.

Innovative and energy-saving

RINGSPANN has achieved an innovative leap with the compact electric brakes of the EV/EH series. This now consists of four basic sizes for parallel and right-angled mounting. The series covers clamping forces from 3.2 to 20 kN and is used for bringing to a stop and as an emergency stop for drives and loads in applications such as assembly systems, machine tools, amusement rides and offshore installations. Fan, turbine, fan and winch technology are also among the areas of application for RINGSPANN's EV/EH brakes. "All versions can compensate for axial deviations of the brake disc thanks to their floating bearings and are also available as an EFM variant with electromagnetic direct activation instead of spring force," adds Maximilian Mappes.

In the RINGSPANN EV/EH series an electronic power reduction reduces the energy requirement in the open state to a minimum. The brakes are therefore both space-saving and powerful as well as energy-efficient. Also worth mentioning: they can be equipped with mechanical emergency releasing and extended corrosion protection as well as with inductive sensors for the statuses *brake open*, *brake closed* and *pad wear adjusted*. The latter is a great advantage for applications with frequent emergency stops.

EV/EH brakes are designed for mains voltages from 220 V to 240 V as well as from 380 V to 480 V, and can therefore be used worldwide. The 230 V versions already offer a performance that was only found in 415 V brakes for a long time. Manufacturers of drives, machines and systems serving customers in the USA and Canada in particular benefit from the wide range of voltage technology in combination with the CSA/UL certification of the brakes.

Latest series sets standards

One of the latest innovations in RINGSPANN's electric brake segment is the MV series. This includes three variants with clamping forces of up to 25 kN and sets standards in shifting performance, design and energy efficiency. The brakes are suitable for a wide range of holding, emergency stop and deceleration applications in mechanical and plant engineering, automation, intralogistics as well as airport and rail technology. "The MV FEM is particularly convincing where fast shifting in short cycles is required and integration into the drive technology periphery places increased demands," states Maximilian Mappes. Compared to the EV/EH series, the MV brakes score with more clamping force and even more compact dimensions. A closed aluminium housing protects their functional components from external influences.

RINGSPANN is also implementing a new functional principle here that gives the MV brakes a long service life: more than two million shift cycles have already been achieved several times in endurance tests. It is also worth mentioning that these brakes have an extended air gap of 0.8 mm – compared to 0.3 mm for the EV/EH series. "Nevertheless, a new locking mechanism makes it possible to achieve shorter engagement times than is the case with comparable EV/EH sizes. MV brakes therefore combine a longer opening distance with a very fast build-up of clamping force," explains Maximilian Mappes. The larger air gap also facilitates installation and commissioning, and offers greater leeway for manufacturing tolerances. Unlike the EV/EH series, MV brakes can also be installed overhead thanks to their functional design. And due to the floating bearing, this brake can also compensate for axial deviations in the brake disc. RINGSPANN‘s MV series brakes are therefore an ideal solution for applications in which tolerances, thermal expansion or vibrations require increased clearance between the brake pad and the disc. With the optional coating, they also receive optimised corrosion protection and are suitable for outdoor use.

Growing product range

MV brakes are mounted parallel to the brake disc. To compensate for the operation-related lining wear, they offer the option of manual adjustment. However, there is also an optional inductive sensor for the sensory status report for *adjust for wear* and another sensor that detects the statuses *brake open/brake closed*. The sensors can also be connected to higher-level safety and control systems. Maximilian Mappes refers to other advantages, such as that MV brakes can be retrofitted very easily thanks to their compact design and electromagnetic operating principle, and that the low dead weight proves to be a plus point when installed in moving units.

In addition to the large selection of freewheels, shaft-hub connections and shaft couplings, industrial brakes now occupy a large area in the company's current one-stop shop. In fact, there are currently only a few suppliers who can provide the designers of industrial drive systems with such a wide range of disc and drum brakes as RINGSPANN. *ms*

915 words with 7,107 characters (incl. spaces) *Author: Michael Stöcker, freelance specialist journalist, Darmstadt*

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Captions (5 pictures)

Figure 1: In its current one-stop-shop, RINGSPANN offers designers of industrial drive systems a wide range of spring-operated and electromagnetically released disc brakes. The image shows an MV 033 FEM within the drive system of a bucket-wheel excavator.

Figure 2: Maximilian Mappes: "RINGSPANN identified the advance of e-brakes as a trend in industrial drive technology at an early stage and has set up an attractive range of spring-operated and electromagnetically released disc brakes."

Figure 3: Clamping forces of up to 3.4 kN: a few years ago, RINGSPANN introduced the DH 012 FEM (image) and DV 020 FEM brakes, which have proven themselves as robust holding and stopping brakes in many standard industrial applications to this day.

Figure 4: Versatile: RINGSPANN's EV/EH series electric brakes are used, among other things, for holding and as emergency stops for drives and loads in applications such as assembly plants, machine tools, amusement rides and offshore installations.

Figure 5: Ultracompact: one of the latest innovations in RINGSPANN's electric brake segment is the MV FEM series. It includes three variants with clamping forces of up to 25 kN and sets standards in shifting performance, design and energy efficiency.

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Provider:
RINGSPANN GmbH
Pia Katzenmeier
Schaberweg 30 - 34
D-61348 Bad Homburg
Tel.: +49 6172 275-118
Fax: +49 6172 275-6118
Email: info@ringspann.de/ pia.katzenmeier@ringspann.de
Website: www.ringspann.de/ www.ringspann.com

Press agency:
Graf & Creative PR
Am Schwalbenrain 6
D-64380 Roßdorf
Tel.: +49 6071 6187800
Email: info@guc.biz
Website: www.pr-box.de/en
Social Media: XING und LinkedIn