

Electric Motor with integrated torque limiter

Smart and safe drive protection

Drivelines in rotating equipment are long-term investments worth protecting. Every minute of unplanned downtime caused by overload, is a loss in production. The new cutter head motors from ELIN Motoren offer an integrated safety coupling to secure your driveline against torque overloads. Your equipment can safely operate at a maximum level.

Limit torque peaks

High torque peaks can damage the driveline and cause downtime and costs for repairing. The torque-limiting coupling protects the driveline by releasing or slipping at a precise set torque level. The electric motors MKH-SafeSet and MKH-SmartSet now have an integrated torque-limiting coupling to drive the tunnel boring machine safely and protect the driveline during maximum operation time.

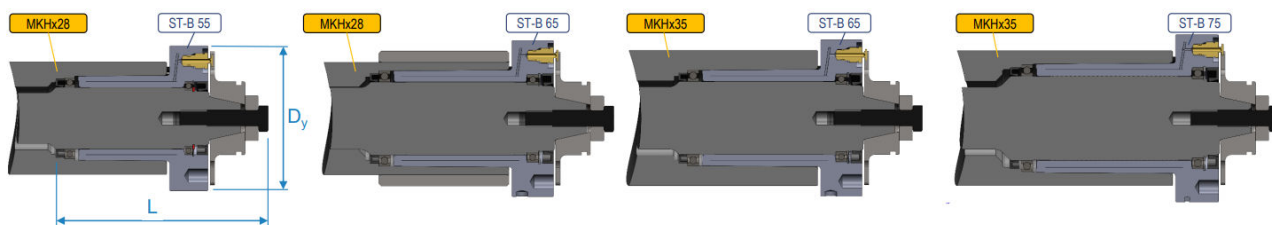
Smooth and reliable operation

To protect the driveline, the coupling can slip and release and in case the coupling releases, the other cutter head motors can continue to operate as the released coupling rotates with the motor. The TBM can continue to operate until a standstill and any released coupling can be easily reset within minutes.

Small size matters

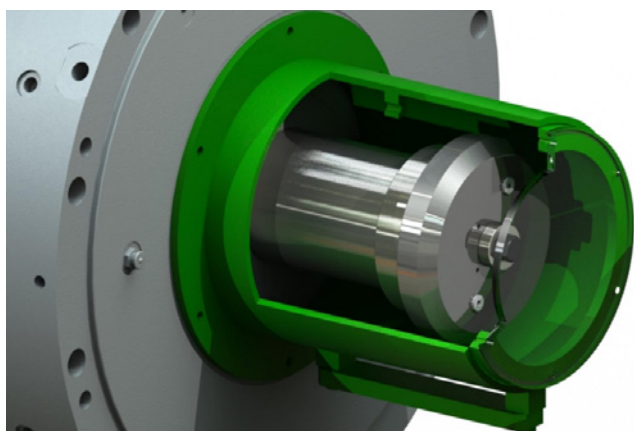
The integration of the torque limiting coupling from Voith into the electromotor from ELIN Motoren has many advantages. The size and weight of the coupling have been optimized and reduced by 80%. This means that it is effortless to handle. The lower weight also reduces the rotor inertia and bearing loads of the driveline, which means higher efficiency, lower temperature, lower costs, and longer life of the driveline.

Available MKH-SafeSet sizes



ST-B 55	ST-B 65	ST-B 75
Torque range up to 2 kNm	Torque range up to 4 kNm	Torque range up to 8 kNm
Max speed 3000 rpm	Max speed 3000 rpm	Max speed 3000 rpm
L = 190 mm, D _y = 129 mm	L = 218 mm, D _y = 139 mm	L = 240 mm, D _y = 149 mm
Weight 5,5 kg	Weight 6,7 kg	Weight 7,7 kg

Integrated torque limiter coupling with SmartSet



Add-on functionality with SmartSet

The MKH-SmartSet is an extension of the MKH-SafeSet and allows small micro-slips in the coupling by automatically turning the shear ring further without releasing the SafeSet. The coupling can slip 36°, depending on size of torque peaks and corresponding slipping. A smart automatic resetting as the TBM slows down or reaches a standstill. This allows events of high torque peaks without the need for resetting. If an average slip is five degrees, the coupling can slip seven times without releasing. Every time the motor reduces the speed below 500 rpm or goes to a standstill, the coupling automatically resets.

ELIN Motoren's portfolio of water-jacket cooled motors ranges in various sizes and performance classes. Our customers get the best support for their requirements through our customized engines with long service life, and we take care of the machine's smooth operation even after the purchase.

Key Features

Power range	up to 1000 kW
Speed range	up to 3000 U/min
Execution standards	IEC 60034, CSA-C22.2 No. 100-14, UL 1004, NEMA MG1
Voltage	up to 690 V

Key Benefits

- + Smooth operation due to smart slipping
- + Smaller dimensions and easier handling
- + Maximum protection and highest productivity
- + Running in released condition
- + Longer life-time of the driveline

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