



CASE STUDY

MAHLKÖNIG relies on ELNOR for custom plug-and-play electric driveline of shop grinders

Since 1960 the German coffee grinder manufacturer MAHLKÖNIG opted for custom ELNOR electric motors to drive larger high-end coffee grinders. The single-phase motor, especially designed for MAHLKÖNIG, outperforms commercial off-the-shelf motors in many ways. MAHLKÖNIG values the higher starting torque of the ELNOR motor, combined with the comfort and quality feel achieved through reduced noise and vibration.

ELNOR evolved from a motor component supplier to a solution provider integrating the entire custom electric driveline, including MAHLKÖNIG motor parts. During the grinder assembly MAHLKÖNIG adds its proprietary customer-specific grinding discs, hopper sets and paints the finished grinders. The result is a unique premium product – enjoyed by a growing worldwide customer base of shops, department stores, bars and coffee lovers.



Powering coffee drinking sensation

For more than 90 years MAHLKÖNIG has been turning its full attention and dedication to grinding coffee beans, spices, grains or seeds. The company has a long track record of engineering and manufacturing high-quality grinders according to any individual requirement of its global partners and end users. MAHLKÖNIG is renowned for its customer-specific grinding discs, delivering the grinding excellence that makes coffee drinking a true

sensation. In 1960 the company made the pioneering decision to have its premium coffee grinders driven by ELNOR custom electric motors.

The motor's internal windings and electric circuitry are designed to deliver the performance characteristics required by MAHLKÖNIG's demanding grinding applications. The starting torque of the motor is substantially higher than standard commercial off-the-shelf electric motors. And at the same time the motor exhibits lower noise and vibration.

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Higher starting torque ...

The custom motor is built to deliver the 750 Watt power that MAHLKÖNIG needs for its popular EK/EKK 43 line of coffee grinders. Commercial single-phase motors with a comparable power usually lack sufficient torque to start off the grinding process when beans are filling the grinder chamber. ELNOR delivers higher starting torque through a specific windings design, start-and-run electrolytic capacitors and a proprietary centrifugal internal switch.

... and lower noise & vibration

Precision is critical in the grinding process to obtain a uniform particle size – the secret of top-quality coffee. MAHLKÖNIG has a reputation in developing grinding disc geometry and texture to obtain a superior coffee experience. To support premium grinding ELNOR must keep to the very tight mechanical tolerances on the motor. Besides grinding itself, tight motor tolerances are essential in keeping noise and vibrations low, which gives MAHLKÖNIG's customers the comfort feel they can expect from a premium grinder.

To meet MAHLKÖNIG's high-precision requirements, ELNOR ensures highly accurate production and assembly of its motor parts. Engineers from ELNOR perform geometric verification measurements on a CMM as well as noise and vibration investigations in its laboratory.

Integrated electric driveline

Quite exceptional is the high level of integration between the electric driveline and the grinding housing.

In collaboration with MAHLKÖNIG, ELNOR developed a longer motor shaft to directly drive the grinding discs. For that reason, ELNOR developed a single part that integrates both the motor bearing chamber and grinding housing! This aluminium part fits directly onto one side of the motor housing. The other side is fitted with a regular cover with an integrated bearing chamber.

The result is even more compact, straightforward and robust compared to complex transmission assemblies traditionally used to connect a motor with a machine. Both the grinder and the motor are built to last for generations of coffee lovers. MAHLKÖNIG has an international network of dealers and service partners for maintaining the grinders.

The premium shop grinder with fewer parts

The collaboration between ELNOR and MAHLKÖNIG resulted in a premium shop grinder product. The motor has been integrated into the product, featuring a direct transmission to the grinding discs. ELNOR lives up to the high-precision requirements of MAHLKÖNIG's renowned grinding technology, to provide the quality and comfort level MAHLKÖNIG customers take for granted. The compact integrated motor design contributes to the commercial success of the grinder. The integrated direct transmission significantly reduces the number of components as well as the related assembly times.

ELNOR motors are available in multiple mains voltages, supporting intercontinental markets. ■