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SMART GRINDING MACHINE

PREVENTIVE MAINTENANCE

KIT 1

KIT 2

OPTIMAL MACHINE MAINTENANCE

WHAT IS MEANT BY SMART GRINDING MACHINE?

A **smart grinding machine** is defined as a system of sensors and detectors interfaced with a PLC for preventive maintenance management. Essentially, it consists of warnings and/or alarms to notify the user of the need for preventive maintenance operations on the machine, in order to avoid breakdowns or downtime and to ensure that the machine operates safely and continuously, both for the operator and for the production cycle. **The smart grinder is divided into 2 kits (packages) that can be installed separately or together on the KS250-KX250, FX20, and FX40 models.**

KIT 1: MONITORING OF WEAR AND MECHANICAL FAULTS

- ✓ **Monitor the vibration status** of the grinding spindle, caused by excessive wear/consumption of the bearings, which could make the grinding motor noisy and damage it, as well as compromising the sharpening cycle and ruining the blades due to the transmission of vibrations.
- ✓ **Measure the temperature of the coolant** inside the tank to constantly monitor the coolant temperature, signalling when the liquid temperature exceeds the maximum threshold, compromising the correct cooling of the blade being processed.
- ✓ **Monitor the wear/consumption status of the upper carriage sliding blocks**, signalling when the thickness of the block coating falls below a threshold limit, thus indicating when they need to be replaced before the guides are damaged.

KIT 2: MONITORING OF HYDRAULIC CIRCUITS

- ✓ **Monitor the hydraulic lubrication oil level of the machine**, indicating when the level falls below the tank threshold limit to ensure that the correct amount of hydraulic oil is present for the proper functioning of the machine's moving parts, such as the sliding of the carriage shoes on the base guides or the ascent/descent of the head on the Z axis. The system will give advance warning when the oil is about to run out, so that it can be refilled.
- ✓ **Monitor the constant and correct** (or sufficient) **flow of coolant** within the closed hydraulic circuit pipes to prevent obstructions or leaks that impede the correct flow of liquid during the work cycle, in order to remove the heat produced by abrasion and thus avoid blade burn during dry machining, ensuring correct cooling at the blade contact point.

It is also possible, by taking advantage of the machine's network connection, to remotely monitor the status of warnings and alarms, so that any preventive measures can be planned in a timely and predictable manner. **To this end, you can sign a remote monitoring and supervision contract with MVM.** By keeping the machine connected to the network, our technicians can be informed directly by the machine itself of any problems or needs, so that they can intervene directly to solve the problem or plan the necessary actions.

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