Leveling system for paving machines

Moba presented its broad range of control systems for construction machines at the Bauma China in Shanghai. One highlight was the Mobamatic II leveling system for pavers.

The German company offers leveling control systems for pavers since 1991. The Mobamatic I was the top-selling leveling system for road construction machinery. The company, an early member of CAN in Automation, adapted standardized higher-layer protocols such as CANopen in many of its products. The leveling system is installed on asphalt pavers of all leading machine builders such as Ammann, Bomag, Caterpillar, Dynapac, Roadtec, Sany, Voegele, Volvo, and XCMG.

A year ago, Moba introduced the Mobamatic II leveling control system. It is suitable for highways, runways, roundabouts, or parking lots. Connected sensors, e.g. via CANopen, are automatically detected and are installed and configured by means of integrated software tools. The system is compatible with many hydraulic systems. In October, Moba already sold the 1000th system this year. In 2015, 1804 pavers were sold in China, which in an increase of 3.9 % compared to 2014. By the way, this is the only construction machine with an increase in 2015 in China. Sales of all other kinds of construction machines decreased.

Features such as the automatic mode, which allows a direct operation without pre-adjustments, support an uncomplicated handling. Perfect evenness is installed at the push of one button. Designed by ergonomics, numerous other elements maximize the system’s user-friendliness. The concise 4-button design with a transflective display enables a fast, intuitive on-site operation and thus saves time during asphalt installation. Soft keys, which are also easy to use with gloves, and the special night-design make the handling in the rough construction day as easy as possible.

After its market launch, the leveling system established itself as a pioneer system and has become indispensable in road construction. Begun as a compact solution for controlling the screed, it has become the de facto standard in road construction thanks to intensive further developments and innovations over the years. Combined with the 4-sensor solution Big Sonic-Ski, it is known as a flexible, accurate, and reliable leveling system for asphalt pavers. Its long-term success is due to intensive further developments. Even now its progress does not stand still: Remote support is a next essential step in the evolution of the connected construction site of the future. Several companies tried to copy this system, but failed to achieve the same functionality and quality. Sophisticated features and robust heat- and vibration-resistant components combined with an ergonomic design make the Mobamatic II unique.

The modular approach based on CANopen enables to control the layer thickness and the slope of the screed. It allows the flexible choice of sensors, depending on the application and the jobsite. The user can select, for example, between ultrasonic, rotary, or slope sensors. Of course, Moba labels products, when appropriate.

The Big Sonic-Ski exceeds the advantages of a single ultrasonic sensor. With up to four sensors, the user can manage to level road waves. The sensor thereby achieves maximum planarity during asphalt paving. The individual sensors can each be positioned separately. The Pave-IR Scan quality control system offers the possibility to record the asphalt temperature during paving. It depicts a temperature profile for the entire project. Using this data, the system allows for conclusions to be drawn about the quality of the asphalt, including improvements that can be made to the asphalt, as well as overall road quality.

The Mobamatic II control panel on Dynapac’s paving machine (Photo: Moba)

The Mobamatic II control panel is designed for easy use: only four buttons and a clearly understandable symbolic representation. On the 3,5-inch color display, all connected sensors and system status are displayed for the operator. In addition, slope and height values are displayed. Both sides of the screed can be conveniently operated using a Mobamatic II, making it unnecessary to change sides.

"Before we started the development, we have asked current users of the Mobamatic I what they would like to see in a new system," explained Frank Schnee on Moba’s discussion forum. "Their wishes and suggestions were taking into consideration and implemented, with the outcome of a more intuitive working Mobamatic II." It is often helpful to see an additional sensor value on the display. The user can do so by selecting the sensor that fits best to the current application. For example, if you select the slope-sensor to indicate the slope of asphalt, then you see both leveling and slope in your control window. Having that option allows for higher efficiency in your daily work at the job site.

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