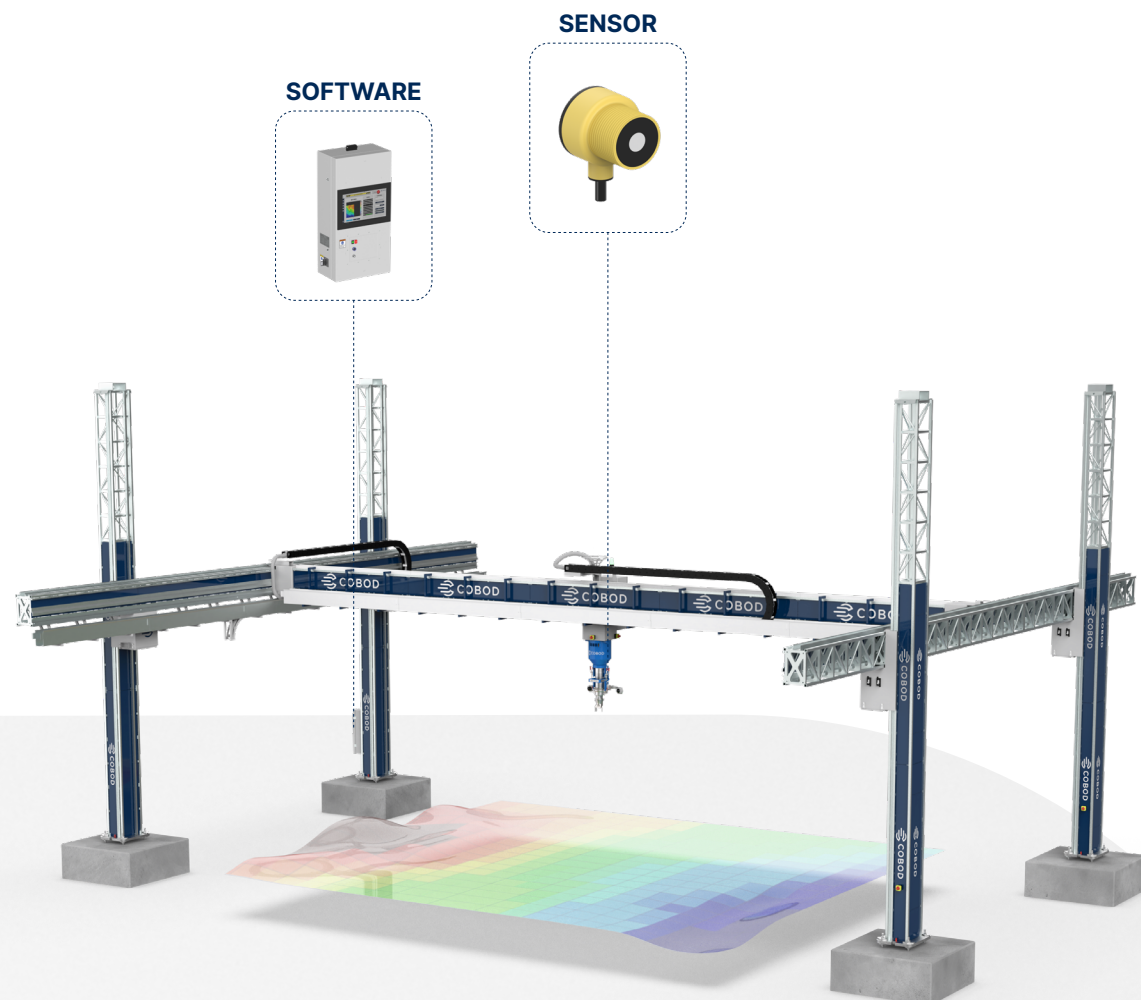


BED MESH LEVELLING 2.0

SURFACE COMPENSATION



SOFTWARE

SENSOR

The **Bed Mesh Levelling 2.0** is a comprehensive **hardware and software** solution designed for **automatic compensation on uneven surfaces** during 3D printing. This system effectively addresses irregularities within foundations using an **Ultrasonic Z-Probe Distance Sensor**. During dry-runs, the sensor actively scans the foundation, **creating a detailed height map**. This map can be uploaded to the DUET, enabling automatic bed mesh levelling compensation.

Notably, this process improves 3D printing operations by allowing machine operators to **perform dry-runs simultaneously**, significantly **reducing scanning time** and eliminating the need for separate scanning sessions. The generated height map then automatically **corrects foundation irregularities in real-time** during printing, ensuring uniform lower layers and stable wall structures without the need for manual adjustments.



Automatic Bed Levelling Compensation
A height map is generated to actively compensate for irregularities in the varying height levels within the foundation.



Integrated Data Visualization
Visualization in the form of topographical map allows for easier identification of high and low areas.



Enhanced HMI
A broader range of features ensures a more intuitive and improved user experience during operations.



Faster Scanning Process
The mapping function is active during dry runs, streamlining the scanning process and substantially decreasing the time required for mapping.

TECHNICAL SPECIFICATIONS

HARDWARE

Compatibility	The Bed Mesh Levelling 2.0 is compatible with our HT Printhead and Nozzle Accessory Platform (NAP).
Sensor Model	Ultrasonic Z-Probe Distance Sensor
Cable length	2 m 6.5 ft
Range	100 mm to 1 m 3.9 in to 39 in
Operating Temperature	-40°C to +70°C -40°F to +158°F
Frequency	224 kHz
Supply Voltage	10 to 30V dc
Analog Output	4 to 20 mA

SOFTWARE

Requirement	Bed Mesh Levelling 2.0 requires the code release 2024 R1 software.
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The Bed Mesh Levelling 2.0 is now available as a standard feature on all new printer systems. Additionally, existing printer systems have the option to be retrofitted with this solution. To learn more about the features of Bed Mesh Levelling 2.0, click the button below to read more on our customer platform, COBOD Connect. If you are interested in retrofitting this system onto an existing printer, please contact your regional sales manager.

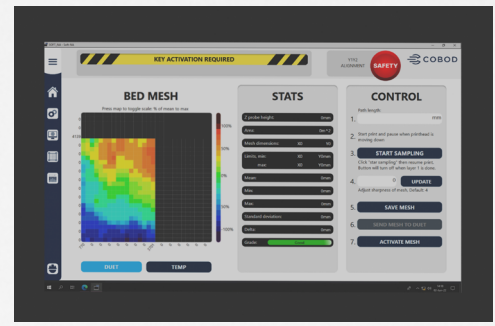
Read more



Ultrasonic Sensor

The **Ultrasonic Z-Probe Distance Sensor** facilitates **automated scanning** of the foundation within the printable area, **operating in parallel with dry runs**. It provides simultaneous scanning and data collection, **enhancing efficiency** during dry-run operations.

The **extensive range** and **high precision** of the sensor significantly improve data reliability. This combination of features makes the sensor particularly **effective at scanning nonrectangular foundations** and adept at navigating obstacles such as rebar and utility access points.



Software Release

Accessing the **HMI** through the **touch-screen of the E-box**, users can view the bed mesh visualized as a **topographical map**, also known as a height map. This map is **color-coded for easy identification** of varying foundation levels, using red to indicate high areas and blue for low areas. The detailed view assists in **evaluating the foundation's quality** by focusing on the maximum height difference shown on the bed mesh. Therefore, it serves as a reliable method to evaluate if the **foundation is adequately prepared** for optimal printing performance.