



Precision Leveling Solutions LevelMaster

LevelMaster system wirelessly senses angles and auto-adjusts CNC leveling bolts, reducing labor, training, and setup time.

Stemming out of a senior design project, students at Purdue University developed the LevelMaster product. Exact angle measurements are highly important for CNC machines since their accuracy directly relates to the quality of the finished product. The current methods used for leveling primarily involve manual adjustments with spirit levels and dial indicators. Achieving high accuracy with these methods requires experienced, skilled labor.

On the other hand, the Purdue system reads the angle data of the work surface wirelessly and autonomously; it then processes this information through a leveling algorithm and turns leveling bolts to achieve a level surface. The system includes a capacitive touch screen interface to assist the user in proper setup and provides live updates of the leveling process. There are a total of 5 edge devices that connect into this central controller, and there is one 2-axis inclinometer in the center of the work surface to read the slope of the machine frame and four separate automatic wrench assemblies for each of the primary leveling feet of the machine. Each is equipped with rechargeable batteries and wireless communication using the industry-standard MQTT protocol.

The LevelMaster offers a unique solution to a void in the CNC machine market, offering a mobile and cost-effective alternative that limits strenuous repeated movements and saves employees' time for more important and engaging tasks.

Advantages:

- Saves employee time
- Little training required
- Prevents strenuous movements
- User friendly

Technology ID

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Category

Robotics &
Automation/Perception &
Sensing
Robotics &
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Control

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Applications:

- Industrial Machinery Alignment
- Portable Equipment Installation

TRL: 4

Intellectual Property:

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