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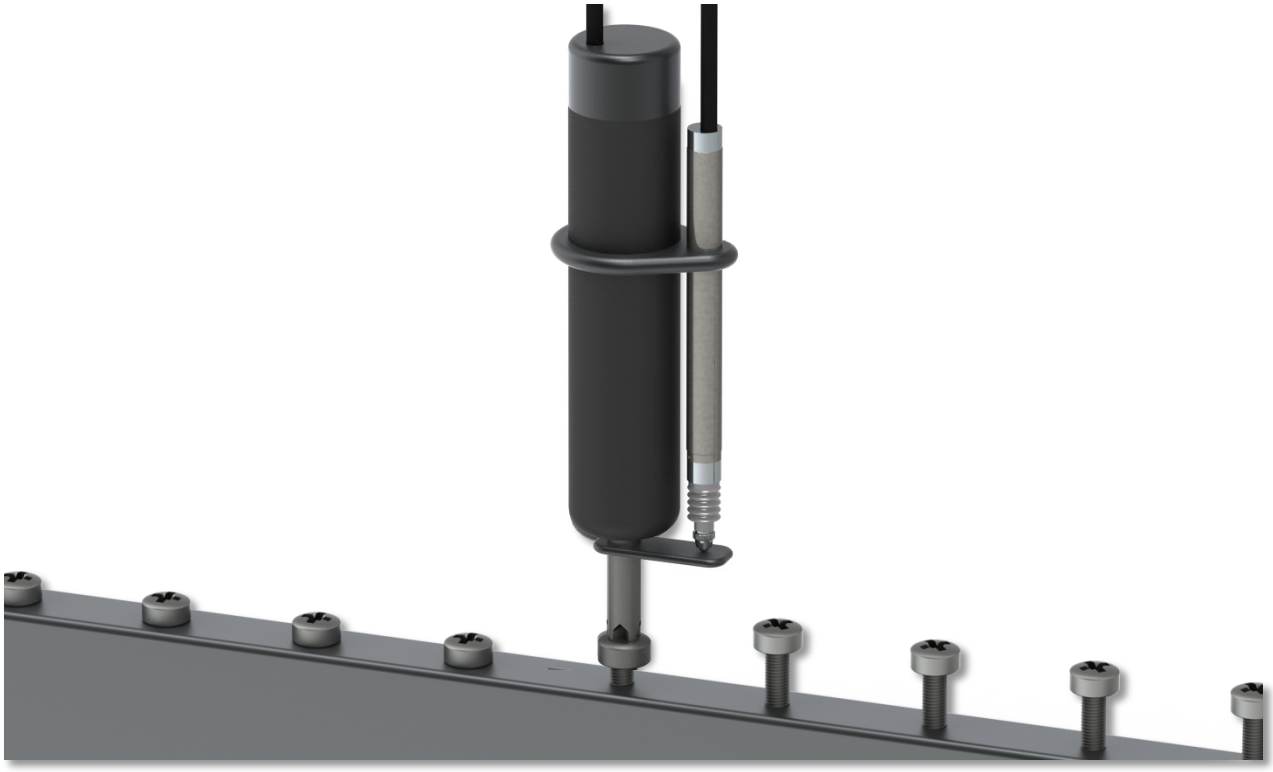
Application Story

Process Automation

Automated tool insertion using Digital Probes



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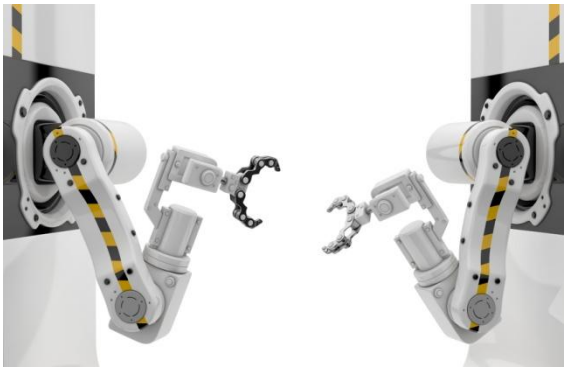
The Product

The standard DP range of Digital Spring Push Probes has justifiably become the work horse of the gauging industry. Very high resolution, excellent linearity and high data speed come as standard. Long life precision bearings, and an IP65 rating ensure that probes maintain their performance for millions of cycles.

Range: 2 to 20 mm – Accuracy: Up to 0.05% of reading – Resolution: Up to 0.01 µm – Repeatability: Up to 0.15 µm



The Challenge

The use of robots and automated processes is increasingly visible in industries across the world. Speed and less reliance on manpower is critical in many industrial processes.

Pneumatic, Hydraulic or Electrical insert tools or screwdrivers used in automated assembly systems are often fitted with a torque sensor to indicate when a component is pushed or screwed into position.

Torque sensors work well most of the time but are often unable to indicate when a component is not correctly positioned. A poorly formed screw, for example, may produce sufficient torque to indicate that a component is correctly positioned when it has actually failed.

Not identifying a failed action means that the sub assembly is passed down the line, which can prove to be costly.

The Solution

myLVDT

Retrofitting a gauge probe onto an insert tool to give true position feedback is easy to do and has become commonplace in many high volume mechatronic assembly applications where components may be small or fragile and it is critical that they are positioned precisely.

Retrofitting an LVDT displacement sensor onto an insert tool requires a little more precision in alignment, but it can have a lower cost and has the advantage of no contacting moving parts, so the life of the sensor is at least as long as the insert tool.

It is sometimes possible to build the position sensor into the insert tool, as below.

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