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## Lab automation is getting even smaller When you need the accuracy but don't have the room or the budget.

UK Robotics has recently launched a new liquid handler to shake up the lab automation market. Feedback from small biotech companies and big pharmaceuticals has been beyond the company's wildest expectations.

The Bolton based company specializes in building integrated systems for lab automation for life sciences. They have now used their 15 years of experience in the industry to create a new two valve nanolitre microplate reagent dispenser.

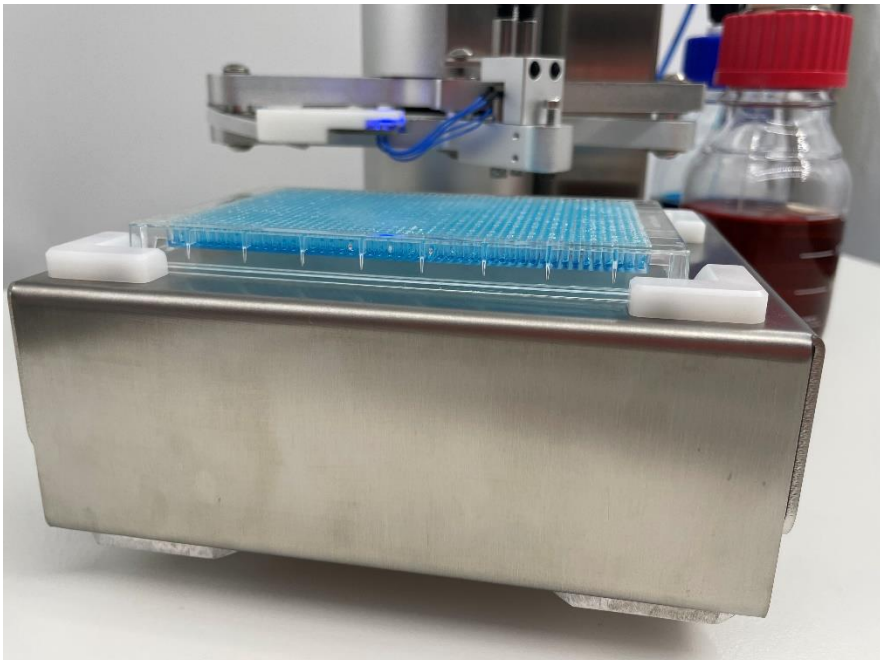
Most life sciences experiments run in biotech and pharmaceutical companies start with a microplate, a flat plastic plate with small holes (wells) used as test tubes. A 120mm x 80mm microplate will have 1536 wells; this is used to run thousands of experiments using the same volume. Before lab automation, pipettes were used to move liquids by hand into large tubes; large tubes required large volumes of liquids, which meant the number of experiments was limited. It is essential that the dispensing and fluid volume control are extremely accurate before the experiment.

Miniaturization has existed for a while but usually at a price. The UK Robotics liquid handler, the d2, is small; it is 25% smaller than other dispensers and has a lower price point. These factors are hugely important for start-ups or companies with limited lab space and budgets who still need to maintain accuracy.

The d2 uses two maxon brushless EC 60 flat motors for the arms for the X and Y coordinates. The Z-axis uses the maxon EC 45 flat with a mile encoder. The motors needed to provide consistency, accuracy, and a smooth torque curve. The sample is delivered through a hole of just 0.1mm through a dispensing head valve made of polished sapphire and ruby, which is robust enough to allow for cleaning and sterilization without damage. The machine can accurately deliver 40 samples per second.

Mike Counsell, UK Robotics founder, said 'I know there are lots of cheaper motor manufacturers, but we needed the consistency that maxon is known for. The accuracy of our product is paramount.' when you calibrate for one motor you know it will be the right calibration for the others; you don't want to be calibrating each one every time.'

For additional information, please contact us at [info.us@maxongroup.com](mailto:info.us@maxongroup.com) or 508-677-0520.



### **The Swiss specialist for quality drives**

maxon is a developer and manufacturer of brushed and brushless DC motors, as well as gearheads, encoders, controllers, and entire mechatronic systems. maxon drives are used wherever the requirements are particularly high: in NASA's Mars rovers, in surgical power tools, in humanoid robots, and in precision industrial applications, for example. To maintain its leadership in this demanding market, the company invests a considerable share of its annual revenue in research and development. Worldwide, maxon has more than 3000 employees at nine production sites and is represented by sales companies in more than 30 countries.