

Hanover Trade Fair 2016

As tactile as a human: Sophisticated handling solution from APT Automation uses Mitsubishi Electric SCARA robot

Ratingen/Hanover, Germany 25.04.2016

In the latest robot application from APT Automation, a Mitsubishi Electric overhead SCARA robot demonstrates the tactile skills of a human as it handles delicate products with high sensitivity. Real time control and a force sensor enable the robot to seal test tubes gently and securely with a plastic stopper. Visitors can see the application on the Mitsubishi Electric stand (Hall 17, Stand D38) at this year's Hanover Trade Fair which will take place from 25 to 29 April.

In the robot cell designed by APT Automation, the MELFA RH-3FHR overhead SCARA robot carries out the delicate task of inserting plastic stoppers into test tubes and then removing them again. There is no doubt that this process is demanding as handling the fragile test tubes requires an extremely delicate touch. Malte Stahnke, MD of APT Automation, describes the process: "The robot approaches the test tubes relatively quickly and inserts the stoppers. As the resistance and corresponding force to be applied increase, the speed of the robot decreases until a preset maximum force is reached and the stopper is positioned correctly. It works in exactly the same way as a human would when inserting the stopper manually."

The robot also has a force sensor mounted directly on the gripper which is linked to a control computer. That computer measures the force applied continuously and sends updated positional data to the robot at

3.5 millisecond intervals. As the stoppers are not identical due to manufacturing tolerances, force control needs to be appropriately sensitive. Communication in real time enables the robot to react immediately to increasing resistance. Malte Stahnke explains: "The robot's actions will depend on the force required and consequently it is as tactile as a human. This calls for real time control – a feature that only Mitsubishi Electric robots offer." The robot is integrated directly in the control system, where the operator can monitor the development of force quickly and easily via a display.

Note:

¹ See how Mitsubishi Electric is able to respond to today's automation demands:

eu3a.mitsubishielectric.com/fa/en/solutions

Image caption:



Picture 1: In the robot application from APT Automation, a Mitsubishi Electric overhead SCARA robot demonstrates the tactile skills of a human: Real time control and a force sensor enable the robot to seal test tubes gently and securely with a plastic stopper.

[Source: APT GmbH Automation & Produktionstechnik]

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Note to Editor: if you would like the text in another language please contact Philip Howe at DMA Europa – philip@dmaeuropa.com.

About APT GmbH Automation & Produktionstechnik

APT Automation specialises in sophisticated system solutions for the automation and production technology industries. The company's core competencies include special solutions for the semiconductor industry, robot system solutions and mechatronic precision modules. APT Automation also offers products for industrial control and building automation systems.

A team of experienced specialists in robotics, hardware and software development and process technology is able to assist customers with a wide range of projects. The company's head office is located in Bienenbüttel near Lüneburg.

For more information visit: www.apt.de

About Mitsubishi Electric

With over 90 years of experience in providing reliable, high-quality products to both corporate clients and general consumers all over the world, Mitsubishi Electric Corporation is a recognized world leader in the manufacture, marketing and sales of electrical and electronic equipment used in information processing and communications, space development and satellite communications, consumer electronics, industrial technology, as well as in products for the energy sector, water and waste water, transportation and building equipment.

With around 129.000 employees the company recorded consolidated group sales of 36,0 billion US Dollar* in the fiscal year ended March 31, 2015.

Our sales offices, research & development centres and manufacturing plants are located in over 30 countries.

Mitsubishi Electric Europe B.V., Factory Automation European Business Group (FA-EBG) has its European headquarters in Ratingen near Dusseldorf, Germany. It is a part of Mitsubishi Electric Europe B.V., a wholly owned subsidiary of Mitsubishi Electric Corporation, Japan.

The role of FA-EBG is to manage sales, service and support across its network of local branches and distributors throughout the EMEA region.

**Exchange rate 120 Yen = 1 US Dollar, Stand 31.3.2015 (Source: Tokyo Foreign Exchange Market)*

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