

Pick and place flower bulbs with new generation delta robots

Torque motors for ultimate speed and precision

The new generation delta robots have one thing in common. Their design replaces the familiar servo motors with gearbox, opting for direct drive torque motors instead. Together with Tecnotion, Brom mechatronics designed and build the first delta robot production line to place flower bulbs into pots. The build-in frameless torque motors play an important role to increase productivity and reduce costs.

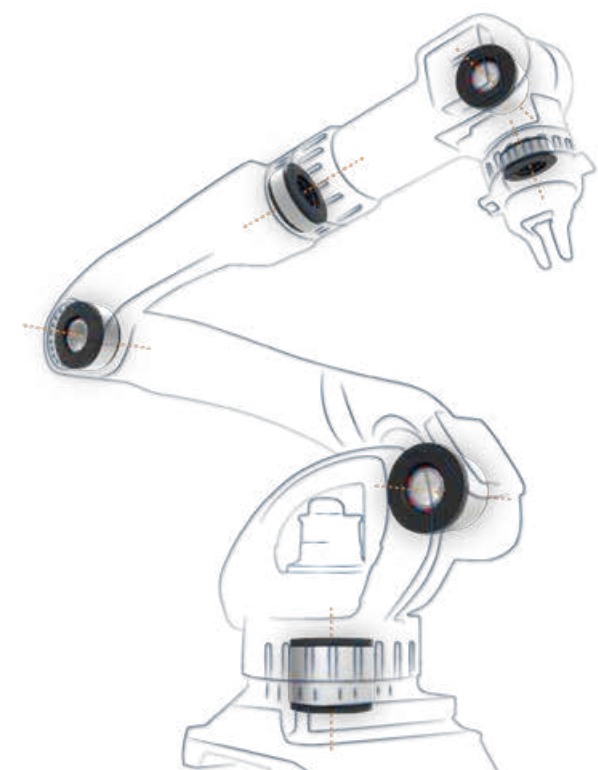
From the initial drawing up to production, Brom mechatronics and Tecnotion have co-operated to select the best fit motor. Four torque motors from Tecnotion are used in the three arms and in the tool center point of each delta robot. A direct drive motor is much more compact than a motor & gearbox. This property allows the motor to be built directly in the moving arms and tool center, with the small QTR integrated in the toolcenter to rotate the product, the delta robot can be kept more compact.

"The positioning of the flower bulbs is very important. Here the motor plays an important role for guaranteed continuous precision, long life and minimum maintenance".

Mr. Michiel Brom, Brom mechatronics

With these kind of applications, where precision and continuity are the main drivers, direct drive torque motors offer many advantages over other techniques:

- Torque motors do not need any mechanical transmission, like an expensive gearbox
- Can be mounted directly on the arms of the robot.
- Higher precision, stiff tuning, high acceleration and less maintenance.
- The size of the robots could be reduced because of the small build-in space of the motors.



Frameless torque motors

for the new generation delta robots

The 4 integrated torque motors increase the dynamic accuracy and speed of the robot.



QTL210 - Arms delta Robot

This motor has a large inner diameter suitable to route multiple cables through, allowing flexibility in the application.

It can be integrated directly into the machine structure which could reduce the size of the robot



Ultimate torque: 173 – 346 Nm

Continuous torque: 65 – 142 Nm

The build heights are: 210-65 // 210-85 // 210-105

“Tecnotion really helped with their expertise of movement profiles and the parameters that influence the robot precision and overall performance” Mr. Michiel Brom, Brom mechatronics

QTR78 - Tool center point

The QTR78 series motor is optimized for low voltage applications with a small build-space available.

To provide maximum flexibility and integration the motor is equipped with flying leads instead of a power cable.



Ultimate torque: 1.22 – 10.85Nm

Continuous torque: 0.57- 4.41 Nm

The build heights are: 78-17 // 78-25 // 78-34 // 78-60



About Tecnotion

Tecnotion direct drive motors are seamlessly integrated in a wide range of applications such as semi-conductors, machine tooling, robotics, display applications and printing industry. As independent supplier of linear and torque motors it provides specialized motor technology and integration in customers motion solutions.

We direct drive your motion technology.

About Brom

Brom mechatronics designs, develops and produces custom made machines and devices. One of their main competences is robot technology. They design the robot that meets the specifications of the end customer.