



mdp technician Yannik Charel assembles the transport unit for the medical analysis device. ©maxon motor

Take a look at blood with analysis machines

High-tech machines analyze human blood samples, detect coagulation disorders and thus help to save lives. The maxon sales company in France does not only supply the appropriate drives – in fact, it builds entire conveyor modules. A peek inside.

Our blood is a fascinating fluid. It transports oxygen and nutrients, fends off foreign objects and closes wounds. At least in normal cases. Some people, however, suffer from coagulation disorders. These cases are unpleasant for the patient and can have severe consequences – or even lead to death. This is why early detection of a blood disorder and the hunt for a cure are so important. This requires a lot of testing. Analysis devices in laboratories and hospitals run around the clock and are able to autonomously pipette samples to deliver quick results. Such industrial automation equipment has to work with high accuracy and reliability. This places high demands on all components and the developers.

Fully automated blood analysis

Stago is a French company that specializes in analysis instruments for hemostasis diagnostics, in other words for testing blood clotting. Around 20,000 devices of Stago are in use across the world – including the StarMax.

This fully automated analysis system is equipped with a three-axes robot and offers space for 215 samples and 1,000 test containers. The machine works autonomously, checks the results, compares them and monitors the processes. This saves the biologists and technicians a lot of time. Therefore, the device is particularly suitable for laboratories with a large sample volume.



The analysis system
STAR Max.
Image ©Stago

*«mdp and maxon contributed
their specialized know-how
and gave us valuable tips.»*

Jean-François Gelin,
Project manager at Stago

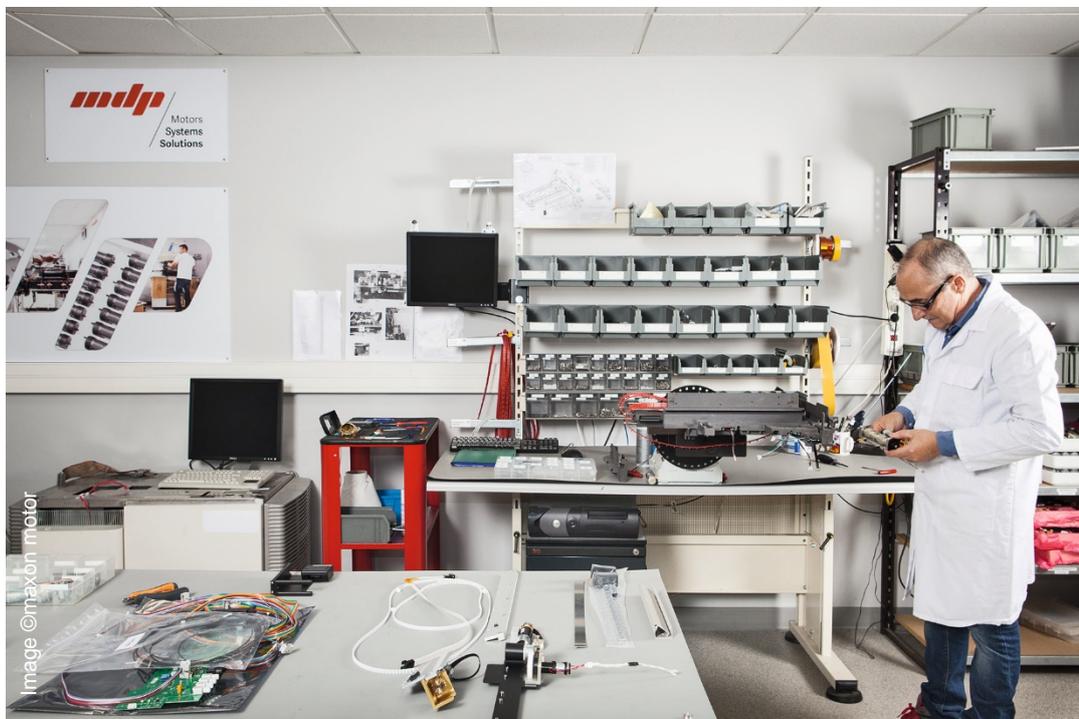
Precision on three axes

StarMax was introduced to the market in late 2014. Yet Stago developed its first analysis device with an X-Y-Z-axis robot as early as 1991. Even back then, mdp, maxon motor's sales company in France, was on board. Therefore, the drive specialist was contacted again during the first development phase of StarMax, to clarify the most important questions: How can precise movement be achieved on all three axes? How can the reagents be pipetted fully automatically? "In the end, mdp used their vast experience to adapt their standard products to match our requirements," says Jean-Francois Gelin, Project Manager Innovation and R&D at Stago. "Additionally mdp and maxon contributed their specialized know-how and gave us valuable tips."

Easy motor control

The cooperation has now become so close that mdp assembles the complete conveyor system for the pipette racks in its own production facilities in Neyron and ships it to Stago for final assembly. Various types of the A-max DC motor by maxon are used for the movements of the rack. The diameters vary between 16 and 26 millimeter. The DC motors are highly dynamic and easy to control. Additionally mdp installs matching planetary gearheads to generate the required torques. The maxon sales company therefore is not only a drive specialist, but also an expert in the fields of mechatronics and automation. “Our company slogan – Motors, Systems, Solutions – reflects that,” says Alain Pontille, Managing Director at mdp. “We work very closely with our customers and jointly create solutions that make their products an economic success.”

This worked very well for Stago. “When we started developing hemostasis analysis machines, hardly anybody believed in our success,” says Jean-François Gelin of Stago. Today the company has more than 2,100 employees and delivers its high-end products to more than 110 countries.



Sales and parts production of maxon motor

In the fall of 2014, mdp officially became part of the maxon motor Group. Previously, the company was sales partner for France. mdp was founded in 1982 as provider of micromotors of various manufacturers. The company later grew significantly through the sales of standard products that could be shipped quickly, as well as by providing a call center for technical support. Today 41 employees work at the headquarters in Neyron, outside of Lyon – in sales, development and in production, among other departments. mdp does not only offer its customers drives, but instead manufactures complete drive systems upon request, like in Stago’s case. This makes mdp one of the six global production sites of maxon motor. The other sites are in Switzerland, Germany, Hungary, the Netherlands and South Korea.

maxon products in this article



maxon A-max 22 DC motor
This brushed drive with 6 W of power offers excellent value for money.



maxon GP 22 gearhead
This planetary gearhead with a diameter of 22 mm provides the necessary torque for the application.

Author: Stefan Roschi

For additional information, please contact:

maxon motor ag
Brünigstrasse 220
Postfach 263
CH-6072 Sachseln
Telefon +41 41 666 15 00
Fax +41 41 666 16 50
Web www.maxonmotor.com
Twitter: @maxonmotor