

# AUTOMATION

## case study

## Extrusion machine throughput increases by 10% with a Nidec solution

Clariant, based in Turkey, is one of the world's leading speciality chemical companies. Their Izmit manufacturing facility is located around 70 km east of Istanbul and centers on coloration solutions for plastics and polymer products, as well as a host of other products ranging from PVC stabilizers to waxes for polyolefin compounds.

### The Challenge

The company was experiencing issues with its previous DC motor and drive system on an important extrusion machine. The motor and drive package had been in service for many years but was now ageing and proving inefficient. Furthermore, frequent maintenance was required and, as a result, the facility sought an alternative solution.

### The Solution

Clariant opted to move away from its previous supplier of motors and drives in favor of a complete automation solution. The company chose to use the Dyneo® package from Nidec, which comprises a Control Techniques' Unidrive M600 in tandem with a Leroy-Somer permanent magnet synchronous motor. The Unidrive M600 features a high performance onboard PLC, and also features CODESYS technology for machine control programming.

### The Benefits

For Clariant, it was important that the Unidrive M600 could support sensor-less open loop control which offers impressive dynamic performance and enables the more compact and higher efficiency Dyneo® motor technologies to be used. Unidrive M600 also supports simple positioning without the need for encoder position feedback. The drive's onboard PLC with real-time tasking can be used for logic control, speed following and digital lock to enhance application capability.

Serdar Kiyi, technical manager at Clariant's Izmit plant, said: "Aside from new technology and increased energy efficiency, the choice was based on the user-friendly and easy-to-use parameters of the Unidrive M600. We are now using the package to leverage more efficiency, accuracy and reliability from the extrusion machine than was possible using our previous systems."

"We really like the user friendly menu and parameters, as well as its compact, slim design. Since installing the new solution from Nidec, the extrusion machine has been working with markedly higher efficiency and precision, and our total throughput has increased by around 10 percent."

### KEY BENEFITS

- 10% increase in throughput
- User friendly drive control parameters
- Increased motor energy efficiency

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