## iQ motion control accelerates machine movements

# Dry cycle time around ten percent shorter

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**The better the motion sequence, the higher the performance. In the form of iQ motion control, ENGEL has developed a smart assistance system which automatically optimises the acceleration phases to support faster movements. This is already possible for the viper linear robots, and now it is being introduced for the injection moulding machine at K 2022. In high-performance applications, this can significantly shorten cycle times and provide a competitive advantage.**

In high speed applications, the time the injection moulding machine takes to open and close the mould is a material part of the cycle time. Like a robot arm, the moving mould mounting platen on the injection moulding machine does not simply open and close; instead it follows individual motion points. These points split the movement into phases and this is precisely where the key to optimisation lies. For each individual phase, iQ motion control software computes the optimum acceleration for the matching machine setting.

### The best possible motion for every application

The basis for the calculations is the configured mould stroke and the clamp force, but also the mould weight. iQ motion control optimises autonomously at the push of a button. The software optimises the acceleration phases, increasing the speed of the platen by doing so. This allows for faster part removal and, in turn, a shorter cycle time.

The injection moulding machine does not require additional energy for this performance boost. Higher connected loads are not needed. The software simply leverages the existing potential of the machine and the drive technology to the max without increasing the load on the machine and the drives.

ENGEL be the first

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When adjusting the opening stroke or during a mould change, for example, the motion ramps are often not optimally readjusted due to pressure of time, or a reserve is configured due to the different mould weights. iQ motion control makes this a thing of the past. No matter which parameter changes, the best possible trajectory is always computed, utilising the physical limits, to achieve the shortest possible cycle time.

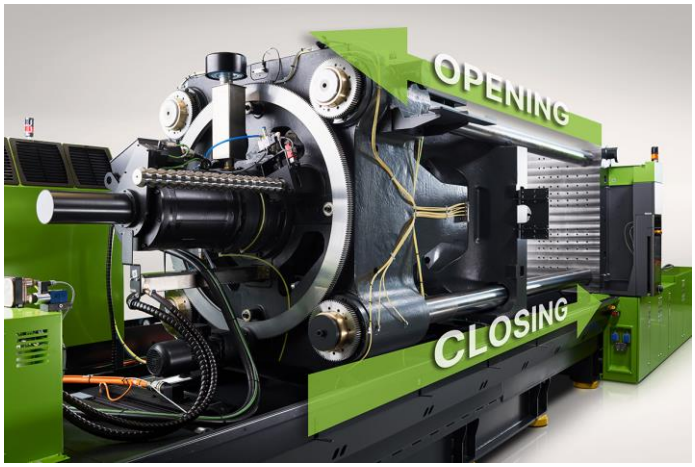
### Live at the K show in packaging production

ENGEL is demonstrating how iQ motion control works in practice at its stand in Hall 15 in Düsseldorf with a sophisticated packaging application. An ENGEL e-speed injection moulding machine is producing 125-ml round containers from rPET with a 4-cavity mould using thin-wall injection moulding and in-mould labelling. These containers are used for packaging foods. And the cycle time is accordingly critical for the producer's competitiveness. Analysis of the cycle time has shown that mould opening and closing accounts for a particularly high proportion of the total cycle time in this high-performance application. Without iQ motion control the time required for the mould movement is 1.27 seconds. With iQ motion control enabled, the machine only needs 1.12 seconds for the mould movement. This is equivalent to time savings of twelve percent. The reduction for the total cycle time is five percent, with a drop from 3.15 to 3 seconds.

### A standard feature of new machines, and available for retrofitting

iQ motion control will be included in the standard feature set of all new electric toggle-lever injection moulding machines in the ENGEL e-cap and e-speed series and can be retrofitted to older machines. e-cap and e-speed injection moulding machines are used in high-performance applications in the packaging and medical technology industries. Thanks to iQ motion control, these machines achieve a dry cycle time that is around ten percent shorter.

## ENGEL at K 2022: hall 15, stand C58




The new iQ motion control smart assistance system shortens mould opening and closing. This means that cycle times can be reduced.

Picture: ENGEL

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ENGEL is one of the global leaders in the manufacture of plastics processing machines. Today, the ENGEL Group offers a full range of technology modules for plastics processing as a single source supplier: injection moulding machines for thermoplastics and elastomers together with automation, with individual components also being competitive and successful in the market. With nine production plants in Europe, North America and Asia (China and Korea), and subsidiaries and representatives in more than 85 countries, ENGEL offers its customers the excellent global support they need to compete and succeed with new technologies and leading-edge production systems.

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