CC300
Ready for smart operation
From the beginning, ENGEL had a primary objective with the CC300: To place absolute emphasis on user-friendliness and simplification of the machine. To ensure this, development was preceded by several usability studies with customers and users of ENGEL machines, as well as intensive market research. This helped to identify potential improvements in the navigation and operation of the machine.

The design of the CC300 has resulted in a product with the ability to control all machines, no matter how large or small the system. Even robots, peripherals and third-party devices can be integrated into the control – a unique design that makes it a great deal easier to operate the systems. In keeping with consumer technology, ENGEL also decided to employ user-friendly touchscreens, and to design the menu operation along the lines of familiar interfaces such as smartphones or tablets.

Personalised, straightforward and intuitive

In the continuing development of the control, emphasis was placed on simplification and a focus on the essentials. The operator should require less detailed knowledge to conduct various tasks without error. For example, it is no longer necessary to switch screens in order to obtain basic information on the movement. Complex, highly efficient manufacturing cells can now be operated as easily as a smartphone.

Designed for the operator

Thanks to modern control logic, the ENGEL CC300 gives the user an intuitive control with a self-explanatory navigation and individual configuration possibilities. The user logs on to the panel using a personalised card, which also loads operator roles and permissions, as well as user profiles (EUROMAP 65). A user can log on to several machines, and execute his assigned tasks independent of the machine. The operator can choose between starting via the component or the task at hand - this further reduces the complexity of operation.

The central control element of the ENGEL CC300 is the "e-move". This core component provides direct and safe control of all machine and robot movements. If the user requires help, e.g. with complex maintenance tasks or stoppages, "e-help" provides support via a help menu and videos.

The CC300 contains favourites pages in which the user can assemble his frequently needed tasks, a user-group defined role system, and other well thought-out details that simplify the daily operation of the machine.
Rugged, elegant and ergonomic

With the touchscreen in the CC300, ENGEL has managed to simplify the control of injection moulding technology to the point where it has become almost as easy to operate as a smartphone. Highly sensitive, shatter-proof and soil-resistant glass, as well as excellent readability – this is how ENGEL has made the touchscreen “factory-floor compatible”. The CC300 can even be operated while wearing gloves.

Everything at a glance

The 21 inch width and crystal clear Full HD of the display provide the user with perfect picture quality. This ensures excellent contrast in all kinds of ambient light conditions. The surface of the touchscreen is equipped with extremely durable and soil-resistant safety glass.

However, ease of operation is not only provided by the display. The panel is electrically adjustable, the milled capacitive keys provide excellent tactile feedback, and LED-technology ensures the ideal illumination and visibility of the individual elements. When the manual key is pressed, a pop-up displays information on the current task - providing direct feedback to the operator.

The CC300 also sets new standards in regard to ergonomics. For example, after the user has logged on with his card, the panel automatically returns to the most recently saved working height. The generous display and its high resolution ensure excellent readability, even in poorly lit surroundings. The screen can be read well even when the user is working off to its side.

Robot control with the hand-held control unit

ENGEL C70E, the hand-held control unit, has a 7-inch touchscreen and weighs only 950 grammes. This makes it light enough to be operated with one hand. The layout of the display is the same as on the panel. This device is intended primarily to control the robots, however, it can also display all machine parameters relevant to automation. To save parameters, a USB 2.0 interface has been integrated.
**Exact, fast and precise**

“e-move” is the central control element of the ENGEL CC300. With this, ENGEL has integrated an absolute innovation into its control: “single-dial operation” of an injection moulding machine.

**Monitoring and documenting processes**

Many sectors such as the automotive industry, consumer electronics and medical technology, demand process monitoring as well as complete documentation of process data and production parameters. This serves to guarantee the traceability of products or components, or to fulfill the requirements of patent and trademark regulations.

The CC300 also handles this with the push of a button. The control software includes micrograph-based process monitoring as well as a process data log that documents information concisely and clearly. This ensures the fulfillment of official regulations or customer requirements. The CC300 has been validated according to GAMP 5.

**Supported set-up processes**

The CC300 also supports the operator in setting up the machine. In the menu-guided mould-set-up (the standard model of fully electrical machines already includes a simple version of this), a digital assistant helps to execute each step of the procedure without errors. Fully automated set-up is available as an option – setting up the mould has never been this easy.

**Perfectly integrated**

The CC300 is able to control the injection moulding system itself as well as all integrated robots and peripheral components such as the ENGEL infra-red oven. Even complex production processes become straightforward and simple. The advantage is obvious: The operator only needs to learn one software package, and can find his way around more quickly.

Many sectors such as the automotive industry, consumer electronics and medical technology, demand process monitoring as well as complete documentation of process data and production parameters. This serves to guarantee the traceability of products or components, or to fulfill the requirements of patent and trademark regulations.

A colour guide facilitates orientation and provides clear information on whether the robot or the injection moulding system itself is currently being controlled. To keep operation simple, the menu has been identically structured for both units. Task sequences and favourites pages can be created for the machine as well as the robot.

**Besides auxiliary hardware, the iQ solutions designed by ENGEL to increase process stability have been integrated into the CC300:**

- iQ weight control – intelligent process fluctuation compensation
- iQ clamp control – intelligent clamping force optimisation
- iQ flow control – consistent temperature control processes
- iQ vibration control – increase positioning speed

**Controlling the machine**

The advantages of the e-move are obvious: This intelligent control element allows the user to control all machine and robot movements with manual precision. In addition, the clearly defined functions increase safety when executing highly sensitive movements, while significantly reducing the risk of error.

The “single-dial operation” of the e-move provides the user with complete control. Machine and robot movements can be controlled precisely and without multiple steps. During set-up and start, the e-move works like an accelerator pedal: the more the operator turns the dial, the faster the system’s movements. The entire machine can therefore be accurately controlled with one hand. Just as on the touchscreen, supporting pop-ups help to ensure a smooth process, which can be tested in advance during manual operation.