

packaging

Dynamic peak performance



ENGEL
be the first

Your head start in the packaging industry

The market requires ultra-fast production and an impressive output. It demands constant quality and permanent availability. This is a challenge that we are already facing in the fourth generation at Engel: with sophisticated solutions for efficient, profitable packaging production. This means that we not only focus on the maximum performance of our machines, but also support our customers as a reliable partner through all development and manufacturing processes. Increasing numbers of major-league international companies are relying on our experience, our expertise and our world-wide on-site support in the packaging sector. A dynamic that inspires us to become even better.

Your concern: How can I produce as efficiently, profitably and cleanly as possible while at the same time optimally conserving all available resources? ENGEL packaging focuses on your maximum satisfaction. You can be certain that our machines, which are designed for durability and cleanroom capability, offer exactly the process stability that you need in your high-performance production. A strong performance that pays double dividends thanks to particularly energy-saving technology.

Maximise profits

With ENGEL packaging's flexible injection moulding solutions, you can achieve extremely short cycle times and maximum process stability. After all, individuality is our standard: ENGEL will always provide you with exactly the machine that matches your production profile and guarantees you maximum output.

Save resources

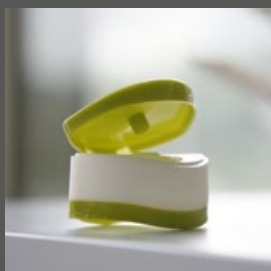
Choosing high-tech solutions from ENGEL packaging means long-term savings. In terms of energy: highly efficient hardware and software. In terms of material: through maximising the number of good parts and innovative injection moulding processes. And in terms of new investments: flexible machine solutions which can be adapted to changing production requirements.

Clean production

Cleanliness in the manufacturing process is indispensable in many areas of packaging. This is why we at ENGEL are constantly working on developing new tools that guarantee maximum cleanliness. Depending on the design, our machines are cleanroom capable up to ISO 7 and GMP-compliant due to lubricant-free tie-bars and clamping units, and encapsulated toggle-lever joints.

Caps and closures

Maximum output: the production of caps and closures requires high performance. Because your customers expect perfect quality from you in record time. With the flexible, innovative machine solutions from ENGEL packaging, you will be able to successfully fulfill these requirements. No matter whether you manufacture caps and closures for the beverage, cosmetics, cleaning or food industry. Whether your strength lies in the production of standard caps & closures or sophisticated special solutions: in cooperation with leading mould makers, we develop exactly the complete solution that you can expect from us as the world market leader in injection moulding machine manufacturing.



Increase productivity

With our all-electric and hybrid high-performance machines, for example ENGEL e-cap or ENGEL e-speed, you can achieve maximum output thanks to very short cycle times. Powerful electric and hydraulic injection units, barrier screws with high plasticising capacity and precise, parallel movements of the fast, robust toggle-lever clamping unit enable this peak performance.

Safe production

ENGEL machines offer you high process stability and an extraordinary level of safety: all process parameters are precisely monitored by the ENGEL machine control unit, while the autoprotect self-learning mould protection system ensures maximum operational reliability and availability.

Reduce operating costs

Boost output while still saving on on-going operating costs: thanks to optimum energy efficiency and minimum cooling water consumption, you can make your production far more profitable with the ENGEL e-cap, for example. And because ENGEL packaging's complete solutions have a long service life and low maintenance costs, you also have your "total cost of ownership" under control.

Deliver cleanliness

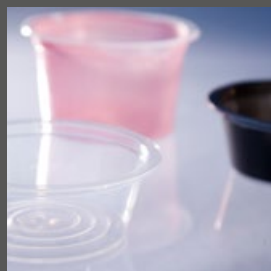
Especially in the beverage and cosmetics sector, clean caps and closures are indispensable. Thanks to ENGEL packaging machines, you can produce these in a very clean way. The ENGEL e-motion, ENGEL e-cap and ENGEL e-speed all have encapsulated toggle-lever joints with oil recirculation, and lubrication-free tie-bars. The tie-bar-less ENGEL victory machine is also lubricant-free in the mould mounting area. This means that ENGEL machines achieve a cleanroom capability of up to ISO 7 and are GMP compliant.

Flexible approach

The ENGEL victory enables the use of large, bulky moulds on a comparatively small footprint. Its tie-bar-less technology supports the use of the entire mould mounting platen surface. This allows you to leverage maximum flexibility in terms of mould dimensions while avoiding additional investment costs.

Thin-walled containers

The less packaging material, the greater the profit: the formula seems simple – but its solution is highly complex. ENGEL packaging transforms your thin-walled containers into a low-cost product with high-tech capability. With our high-performance machines you can produce extremely thin-walled containers with the greatest possible stability – in quantities and at speeds that will maximise your competitiveness. We'll work with you and leading mould makers to develop optimal solutions which not only save material through innovative technology, but which also help to reduce your energy costs through their highly efficient operation.



Save material

The thinnest of walls can be produced in a particularly efficient way with ENGEL machines: for example, with the ENGEL e-speed and the ENGEL e-motion, which both offer amazing injection performance.

Increase productivity

Maximum output thanks to very short cycle times: with high-performance machines from ENGEL packaging. For example, with the all-electric ENGEL e-motion or the ENGEL e-speed hybrid machine, each of which features parallel movements and the option of increased drive power through extremely fast dry cycle times.

Reduce operating costs

No matter which turn-key solution you choose: all ENGEL machine systems are characterised by optimum energy efficiency, minimum cooling water consumption, a long service life and low maintenance costs.

Deliver cleanliness

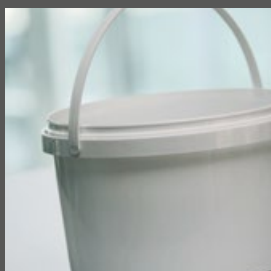
If you want to stay ahead in the food industry, your production has to be clean. For ENGEL packaging, this means: cleanroom capability of up to ISO 7 and GMP-compliant machines. Lubricant-free tie-bars on the ENGEL e-speed and ENGEL e-motion make this possible. In addition, the ENGEL e-speed and ENGEL e-motion have encapsulated toggle-lever joints with oil recirculation: this ensures optimised oil lubrication, less friction and lubricant consumption, as well as a significantly longer service life.

Safe production

High-speed production with no stress to the machine or mould: the intelligent Active Speed Setup control technology allows for simple, fast and convenient process settings and optimisation of maximum speeds while at the same time retaining harmonious opening and clamping movements. Additional bonus: a very low reject rate.

Pails & round containers

Large numbers of consistent quality: but not all pails are equal. ENGEL packaging understands that your industry today is not just about quantities. In order to be competitive with round containers of all kinds, you need to supply lightweight and at the same time very solid products. After all, you are always faced with new packaging challenges. To solve these perfectly with your pails, buckets & round containers, ENGEL develops carefully designed, highly efficient and resource-saving machine solutions in collaboration with you and leading mould makers.



Maximise output

With the powerful machines from the ENGEL e-motion and ENGEL e-speed series, you can achieve maximum output in the production of small pails thanks to very short cycle times. In addition, the high injection speed enables significant material and cost savings.

Clean production

The small pail, as a staple in the foods industry, requires cleanroom capability. Thanks to the exposed tie-bars of all your application relevant machine series, no lubricant can penetrate into the mould area. In addition, the all-electric ENGEL e-motion eliminates the need for hydraulic oil and its encapsulated toggle-lever joints with oil recirculation ensure particularly clean operation.

Flexible production

The ENGEL duo series is ideally suited for the production of large pails while also providing maximum flexibility. All of the machines in this range have the smallest possible footprint and, thanks to their long opening strokes, enable easy part removal. You can additionally reduce cycle times through parallel label insertion and part removal.

Save resources

Environmental protection and sustainability are very important to ENGEL. That is why the ENGEL e-speed, the ENGEL e-motion and the ENGEL duo are all perfectly matched to the requirements of modern, highly efficient production in terms of energy and material consumption. Take the ENGEL e-speed 650, for example, where the energy from the braking process is temporarily stored in a flywheel mass accumulator and recovered from there when needed.

Deliver quality

No matter whether you need small or large buckets: ENGEL packaging machines always provide you with consistent, high quality and ensure that you can meet your delivery obligations on time thanks to maximum machine availability.

ENGEL injection moulding machines

The ideal machine concept for every application: ENGEL reassures with its experience and expertise as the global market leader in plastics machinery. With proven and innovative injection moulding machines from 280 kN to 55,000 kN clamping force, hydraulic, all-electric, horizontal and vertical solutions.



e-cap

The caps and closures machine with maximum energy efficiency

Maximum output with minimal energy consumption: the ENGEL e-cap is the all-electric, high-performance injection moulding machine for your efficient caps and closures production. Very short cycle times, high productivity and a maximum of good parts empower you to achieve unbeatable production conditions in the future.

- Specially designed for caps and closures production
- All-electric machine solution with outstanding performance data
- Far lower energy consumption than comparable machines with a hydraulic injection unit
- Extremely clean production thanks to encapsulated toggle-lever



victory und e-victory

The tie-bar-less, universal machine

With its proven tie-bar-less technology, you can use this relatively small injection moulding machine even with large moulds. This means that you only invest in the clamping force you actually need.

- Perfect for closure production
- Fast and extremely quick mould set-up thanks to tie-bar-less technology
- Optimum utilisation of the mould area
- Constant part quality
- Particularly energy-efficient thanks to ENGEL ecodrive



e-speed

The high-speed machine for maximum output

Maximum speed, dynamics and performance: the ENGEL e-speed is built for durable high-performance from top to tail. All system components withstand the most exacting demands and are therefore ideally suited for intensive use in the packaging industry.

- Hybrid high-performance injection moulding machine
- Maximum energy efficiency thanks to innovative energy recovery concept
- All-electric clamping unit with generous opening stroke machine for IML applications
- Hybrid machine solution designed for continuous maximum performance
- All-electric clamping unit for perfect performance



duo

The powerhouse for large parts

With its flexible layout and compact size, the ENGEL duo integrates ideally with your production.

- Fastest dual-platen injection moulding machine
- Generous opening stroke
- Great flexibility for a wide variety of application options
- Less floorspace required due to compact design



e-motion

The all-electric, high-performance injection moulding machine

Greater output, more speed, higher precision, top cleanliness: the ENGEL e-motion is the optimal production cell for the ever-growing demands of a dynamic market.

- Proven and durable machine solution
- Highest servo-electric injection speeds
- Very clean clamping unit thanks to encapsulated toggle-lever and oil bath lubrication
- Extremely low maintenance costs because of an enclosed lubrication system
- Energy-efficient and durable due to linear guidance of the moving mould mounting platen



e-mac

The small all-electric injection moulding machine for standard applications

Small machine and high output for a low investment: impressive on account of its speed, precision and extremely economical, energy-efficient operation, the ENGEL e-mac is your successful entry into the world of all-electric injection moulding.

- Very small footprint thanks to compact machine design
- Appealing performance
- All-electric = energy-efficient
- Interesting price/performance ratio





Technologies

Very short cycle times, maximum output and highest energy efficiency – top performance is a must-have in the packaging industry. ENGEL not only has the right products and the necessary expertise: our solutions, which are precisely tailored to the market, enable efficient and clean production, guaranteeing your sustainable success.

ENGEL coinjection

- Cost savings due to processing recycled material in the core
- Wide range of possible combinations of injection units, which can also be used individually
- Unique surface appearance due to the possibility of optical marbling
- Decades of in-house experience

ENGEL iQ weight control

Produce moulded parts with consistently high quality: the patented ENGEL iQ weight control software guarantees a constant fill volume, shot by shot, even under fluctuating ambient conditions. The bonus:

- Substantially improved weight repeatability
- Fewer rejects and therefore higher productivity

ENGEL cube technology

The innovative production system for complex multi-colour or multi-component caps and closures: with the all-electric ENGEL cube technology, both components are produced in a single operation on one machine, ready for filling and including decorations.

ENGEL injection-compression moulding

- Reduces the required clamping force
- Maximum part precision
- Reduction of lasting stress in the part
- Modular assembly kit system tailored to individual customer requirements



ENGEL AUSTRIA GmbH | Ludwig-Engel-Straße 1 | 4311 Schwertberg, Austria
Tel. +43 50 620 0 | Fax +43 50 620 3009 | sales@engel.at | www.engelglobal.com

The information, product features and pictures contained in this brochure are intended exclusively as a technical guide. ENGEL is not responsible for any technical changes or print/typographical errors. Reproduction in whole or in part is prohibited without the prior written consent of ENGEL AUSTRIA GmbH.