PACKAGING

High reliability, high speed: complete solutions for high performance
THE PACKAGING SPECIALIST

“Packaging” ALLROUNDER: maximum productivity with low energy requirements.
Every one-hundredth of a second and every kilowatt-hour translate directly into cash - whether a closure weighing one-gram or a large-volume container. This is why we have consistently designed our ALLROUNDERS for energy efficiency and maximum performance. Special versions of electric and hybrid machines ensure maximum productivity - throughout high-volume production.

**WIR SIND DA.**
Milk stays fresh, mineral water retains its taste and paint keeps in its container. These are just a few applications for which our ALLROUNDER machines are used and that make life easier for you and your customers every day. No problems. Reliable. And, most importantly, in large unit volumes. We use the special “Packaging” (P) version and the CUBE, which is designed for cube-mould technology, to provide you with fast cycles and high reliability. Around the clock, 365 days a year.

**AT A GLANCE**

**Top performance: the “Packaging” (P) version provides the basis for maximum production efficiency.**

**Important features of the “Packaging” (P) version**

- Adapted design
- Extremely short dry cycle times
- High plasticising capacity and injection moulding speed
- Up to 30 percent reduced energy requirement
Utilising innovative technology
Packaging items require application-specific system solutions. This is precisely where the special "Packaging" (P) version of our hybrid and electric ALLROUNDERS comes into play. Our modular design means that the best possible system design can be achieved for every application. Take a cost-efficient approach to your work: with high-end injection moulding technology such as liquid-cooled servo motors, automatic clamping force control and planetary roller screw drives.

Targeted process optimisation
Our intuitive machine control system enables you to manage complex processes simply, safely and quickly. The real-time plausibility check of all entries during programming represents a major advantage. Even special production processes can be created freely, without requiring special programs. Aiming for short cycle times? Controlled start to production required? Need effective process control? Our assistance packages help ensure you always get the best out of all processes.

Comprehensive service benefits
As a technology and system partner, ARBURG offers seamless support in the packaging sector from the idea to the production-ready product - worldwide. An interdisciplinary team is on hand to provide expert advice. They can answer questions ranging from machine and process engineering to tool design and from mould tests and machine comparisons to the evaluation of various technological alternatives: the focus here is always on finding the most rational solution for you.

"PACKAGING" (P) VERSION

- FEM-optimised mounting platens and highly resilient machine bases
- Highly wear-resistant cylinder modules with barrier screws
- Servo-electric toggle-type clamping units and dosing drives
- High-performance drives for even higher screw circumferential speeds
- Synchronisable servo-electric ejectors with booster function
- Highly dynamic, position-regulated injection (servo-electric or via hydraulic accumulator)
- Individual media connections in the vicinity of the mould
- Individual bolt-type and needle shut-off nozzles
- Preparation for high-speed removal or IML system
- Control functions such as start-up parameters and dosage across cycles

Standard  Option
MACHINE CONCEPT: PRODUCTIVITY

Maximum productivity with high energy efficiency! We have innovative high-end technology for this complex task that works reliably, quickly and with high quality. Functionality, convenience, material savings and the best technical properties are increasingly required in packaging. In order to meet the trend for increasingly sophisticated products, you need flexible, individual injection moulding technology. In other words: ALLROUNDERS from ARBURG.

Underlying modular system

Closures with integral dosage aids? Tamper-proof caps for beverages? Labelled tubs with integrated barrier coating for foodstuffs? The item to be manufactured dictates the system equipment. Our modular system always allows you to create individual configurations in terms of size, drive technology and equipment.

Servo-electric toggle systems enable up to 30% ENERGY SAVING

High-performance drive technology: simultaneous movements mean that short cycle times can be implemented without limits.
Generous installation space and opening stroke: also suitable for large moulds.
Reliable and powerful: the high-quality technology behind the hybrid and electric ALLROUNDERS.
Adapted design
The reliability of injection moulding machines over their entire service life depends not least on their design. The special “Packaging” (P) version ensures:
- Minimal mould breathing, thanks to FEM-optimised mounting platens
- Low mould wear, thanks to precisely guided clamping units
- Permanent process reliability, thanks to their resilient machine bases

Electric toggle system
Servo-electric clamping units save a great deal of time and energy in comparison with hydraulic clamping units, also making them more cost-efficient. The cycle can be reduced thanks to extremely fast mould movements. Features such as energy recovery during braking effectively reduce energy requirements. Greater precision in the positioning of the servo electric clamping unit also leads to more reliable removal.

High plasticising capacity
So-called barrier screws, in which the compression zone has been replaced with a barrier zone, ensure homogeneous plasticising. In addition there is a servo-electric dosage drive. Since the melt can be dosed simultaneously and cyclically, it can also be processed more gently, even in fast cycles. High screw circumferential speeds permit minimal dosage times.

“PACKAGING” (P) ALLROUNDER
Distance between tie bars: 520 - 1020 mm
Clamping forces: 1300 - 6000 kN
Injection units: 290 - 7000

7,300,000 CYCLES
per year - the “Packaging” (P) version transforms performance into top performance
As a technology and system partner, ARBURG always looks at the whole picture. Injection moulding machine, mould and automation combine precisely, so that technical components become a fully functioning production plant. Whether in-mould-labelling or multi-component technology, machine configuration or turnkey solutions: our wide range of application-specific technical details can be relied upon always to provide you with the right production solution.

TECHNICAL DETAILS: VERSATILE

Highly dynamic: servo valves arranged close to the consumer.

High-level precision and power: servo-electric ejectors with hydraulic booster function.

Fast actuation: valve clusters with large cross sections for pneumatic functions.
**Fast, dynamic injection**
Highly dynamic filling during injection moulding is important for thin-walled items. This is the only way to achieve the shortest possible injection times on a reproducible basis. The basis for this is our unbeatable position-regulated screw. Correspondingly fast movements are achieved by means of hydraulic servo valves and servo-electrically powered planetary roller screw drives close to the consumer.

**Synchronous, powerful ejection**
Precise, reproducible dropping of moulded parts and short opening and closing times: the combination of servo-electric toggle-type clamping unit and servo-electric ejector is highly effective. The hydraulic booster function enables even shrink-fit closures to be demoulded with ease.

**Tailored expansions**
Large valve clusters help with the fast actuation of pneumatic functions in the mould. Mould cooling can be optimised through customer-specific cooling water distributors with feed lines with diameter of up to two inches. A dry air device above the clamping unit reliably prevents the formation of condensation.

**System solutions**
As a technology and system partner, ARBURG also assumes the overall responsibility for turnkey systems - from individual project planning and acquisition, commissioning and CE marking through to all the necessary services. This is made possible through close cooperation with leading manufacturers of moulds, automation systems and peripheral devices.
CUBE: EFFICIENCY FOR HIGH-VOLUME PRODUCTION

High-quality injection moulding in large unit volumes? Cube moulds make it possible to more than double output. This applies to both single component and two-component articles. Based on a specially designed ALLROUNDER CUBE mould, ARBURG, working in close cooperation with the specialist Foboha, realises tailor-made complete solutions that can significantly reduce the unit costs for large series.
Insertion, Assembly or Inspection: more processes can be integrated without impacting on the cycle time.

Simultaneous filling, cooling and removal: speeding up cycles by around 30 percent or more.

Of interest for both one and two components: twice the number of cavities with the same mould mounting surface.

Cube-mould technology offers 100% MORE OUTPUT.
Cube-mould technology increases productivity

When is it worthwhile using a cube mould? As soon as a machine with rotation technology is no longer capable of producing the required unit volumes. With four cube sides and two consecutive parting lines, high output can be achieved with fewer or smaller machines. Additional benefits: Smaller installation area, lower energy and cooling costs. Doing the maths pays off in all sectors of industry.

Precise, high-performance and energy efficient

We designed our CUBE machine for cube moulds, based on the “Packaging” (P) version. This is demonstrated by the generous installation space and the second injection unit above the mounting platen. Ideal for process optimisation: The integrated mould with servo-electric cube rotation and independent movement axes can be freely programmed by means of the machine control system.

**CUBE**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distance between tie bars</td>
<td>820 - 1020 mm</td>
</tr>
<tr>
<td>Clamping forces</td>
<td>2900 - 4600 kN</td>
</tr>
<tr>
<td>Horizontal injection unit</td>
<td>400 - 4600</td>
</tr>
<tr>
<td>Moving injection unit</td>
<td>70 - 3200</td>
</tr>
</tbody>
</table>

Moving: Second injection unit above a moving mounting platen.
CONTROL SYSTEM: SMART

Maintaining control over machine, mould, robotic and peripheral technology requires a suitably powerful central control system. “Smart technology” is called for, which can be easily integrated, supports you actively in all operating situations as well as monitors and adaptively controls your process. All the features of our SELOGICA control system are designed for a fast, secure and comfortable set-up and operating process. This allows you to get the best out of all your applications.

- Graphic sequence programming
- Direct plausibility checks
- Assistance packages and connectivity modules
- “Ready for Digitalisation”
- Central control system for complete production cells

Further information:
SELOGICA and GESTICA brochure
**Flexible sequence management**

The required production sequence can be adapted to suit the specific application, with no need for special programs. Freely configurable ramps ensure that movements remain harmonious and reliable even at high speeds. Equally unique: the monitoring of any machine, mould and peripheral signals for process- or quality control. Follow-up functions can be individually selected. Example: production will only start if compressed air is available. This kind of set-up freedom is unique to our machine control system.

**Reliable production start-up**

A controlled production start ensures maximum process reliability and efficiency. One-time setting of start-up parameters and cycles eliminates the need for manual adjustments. All values are saved in the data set.

**Process optimisation**

Whether you need synchronised movements, depending on the paths or forces, simultaneous injection as the mould closes (injection on the fly), or robotic system advancement as the mould opens, our machine control system offers you almost limitless possibilities for process optimisation.
APPLICATIONS: IN PRACTICE

In order to ensure that optimum performance is achieved on a daily basis, speed, a high degree of reliability and quality are essential. These are precisely the features that characterise our “Packaging” (P) ALLROUNDER. As a technology and system partner, our concern is with high-performance complete solutions with machines that are precisely tailored to the specific individual application. Professional advice, from the planning stage and installation on site through to service, round off our offer. This ensures that you are always on the safe side when it comes to packaging.

Turnkey: complete production cells for packaging technology from a single source.

High-quality: flip-top closures attached directly in the mould.
Cost-efficient: cube-mould technology for two-component closures.

Time-saving: simultaneous insertion of labels and removal of containers.

Dynamic: achieve long flow paths with short injection times - for example when producing cartridges.

Productive: 72 screw caps in 3 seconds through synchronized ejection.

Further information:
Turnkey projects brochure