



APPLICATION EXPERTISE

Exploiting process diversity to the full


ARBURG

DRIVING FORCE

**Choosing an individual
injection moulding solution
from all the processes.**

At ARBURG we always take the complete process into account. Why? Because we have the necessary comprehensive expertise. And because this allows us to provide ideas for greater cost effectiveness. We are able to offer you access to a pool of knowledge that unequalled in our industry. It ranges from machine, process, automation and control technology through to digital integration. We can work with you to develop the perfect manufacturing concept for any task: from the original concept to after-sales service – individually, from a single source.

WIR SIND DA.



Full modularity: equipment and configuration options, as with multi-component technology, for example.

Complete flexibility: ALLROUNDERS with clamping forces from 125 to 6,500 kN.

Fully specialised: Special ALLROUNDER versions such as Packaging (P), MORE and CUBE for special requirements.

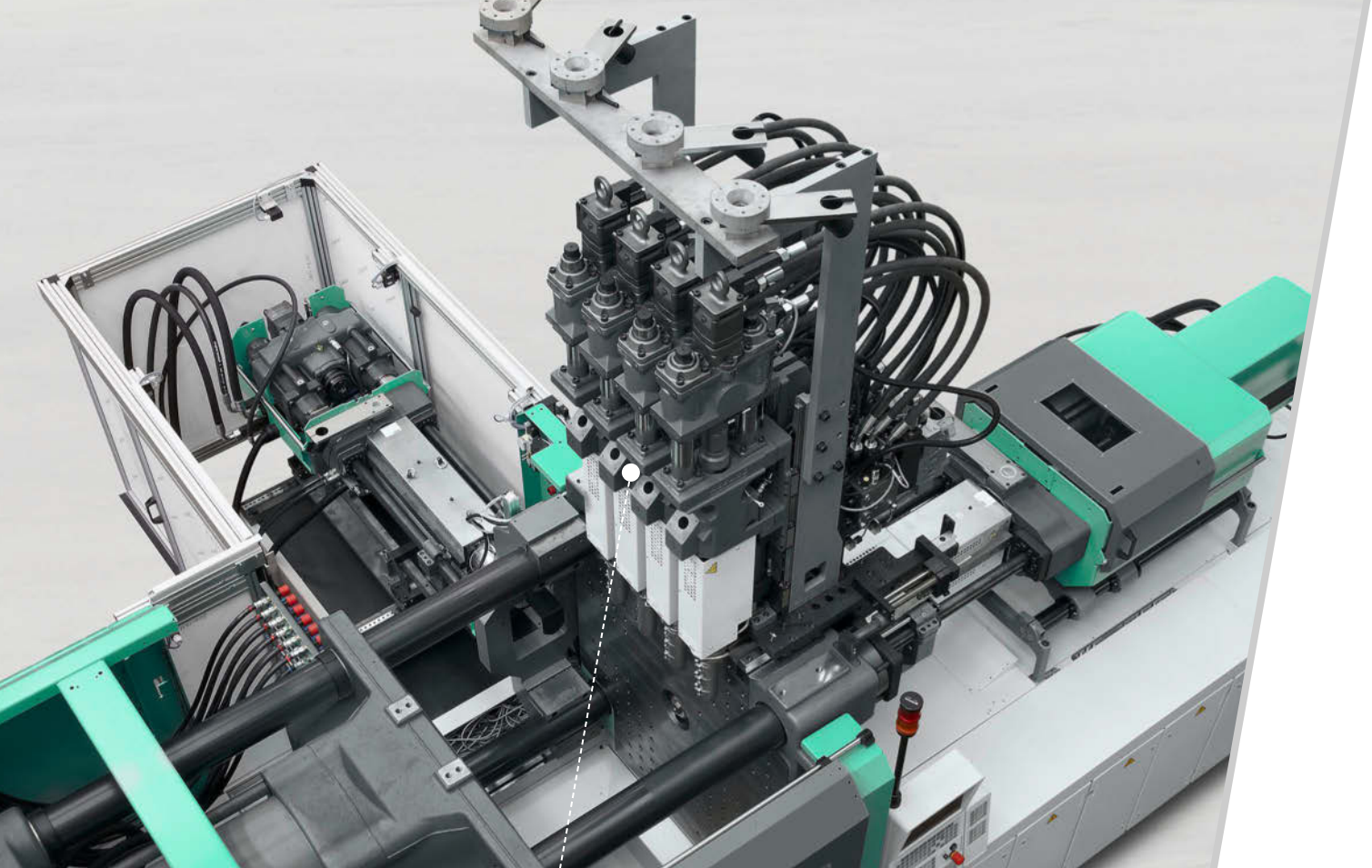
YOUR WISHES - FULLY INTEGRATED

// Want to handle demanding production tasks efficiently? Then you are in good hands with us. Simply specify your requirements and we will configure the right ALLROUNDER for you. With process-specific additional equipment. Including integrated automation and peripheral equipment as a turnkey system. Including central process control and digital data management. This is how you can get the best injection moulding technology for your company: modular, process-optimised solutions that keep operating costs low! //

Complete consistency:
"Made by ARBURG -
Made in Germany" is our
guarantee of quality.



End to end: our GESTICA takes
control – including all peripheral
equipment.



Even more components: Process up to 6 components simultaneously on one ALLROUNDER.

ADDED VALUE: MULTI-COMPONENT

// Multi-component injection moulding: we have a great deal to offer you in this area - as a technological pioneer with some 60 years of experience! From small to large, from hydraulic and electric to vertical, with a wide variety of configuration options, not only for our injection units. That's how broad our spectrum is. That's what really counts! //

i / Further information:
Multi-component brochure

Fully hydraulic to fully electric

Thanks to hydraulic accumulator technology on the ALLROUNDER S or servo-electric drives in the A series, the moving axes, and therefore the injection units, operate completely independently of each other. Reproducible mould filling and particularly high moulded part quality are achieved by the standard aXw Control ScrewPilot.

The alternative: vertical machines

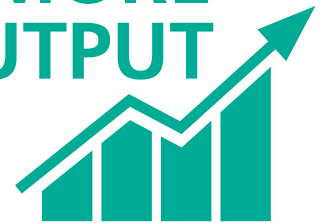
Our wide product range of machines for multi-component processing is supplemented by vertical and rotary table machines for overmoulding inserts. This means you are not limited to one rigid concept when it comes to finding the best solution. In addition to mould and process technology, we also consider aspects such as cost-effectiveness, automation and cycle times.

Flexible configuration

ALLROUNDERs allow multiple different injection unit positions in relation to each other. Freely combinable with each other, exactly as required by the mould and process technology. Special requirements are covered by special ALLROUNDER MORE and CUBE machines. For you, this means: individual, customised multi-component machines for every application.

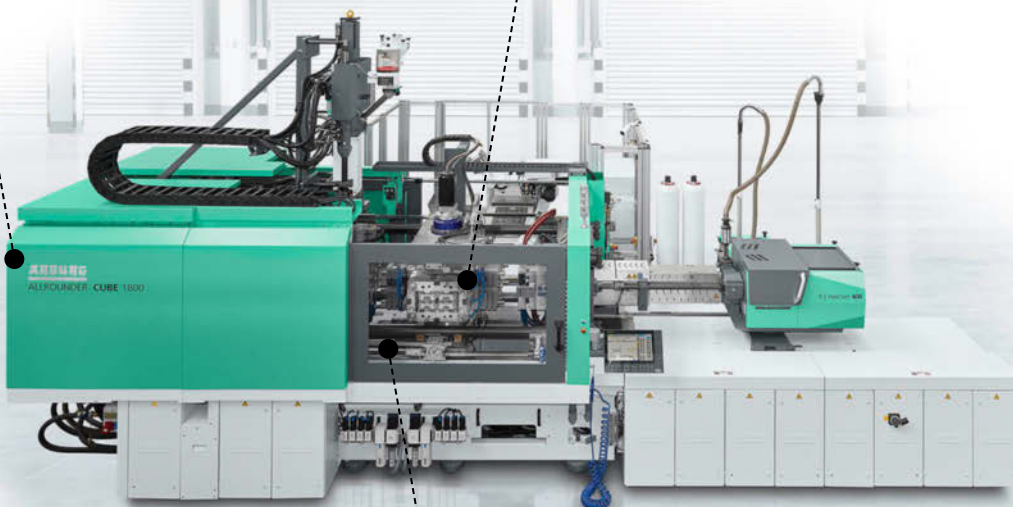
CUBE systems enable over

200 % MORE OUTPUT

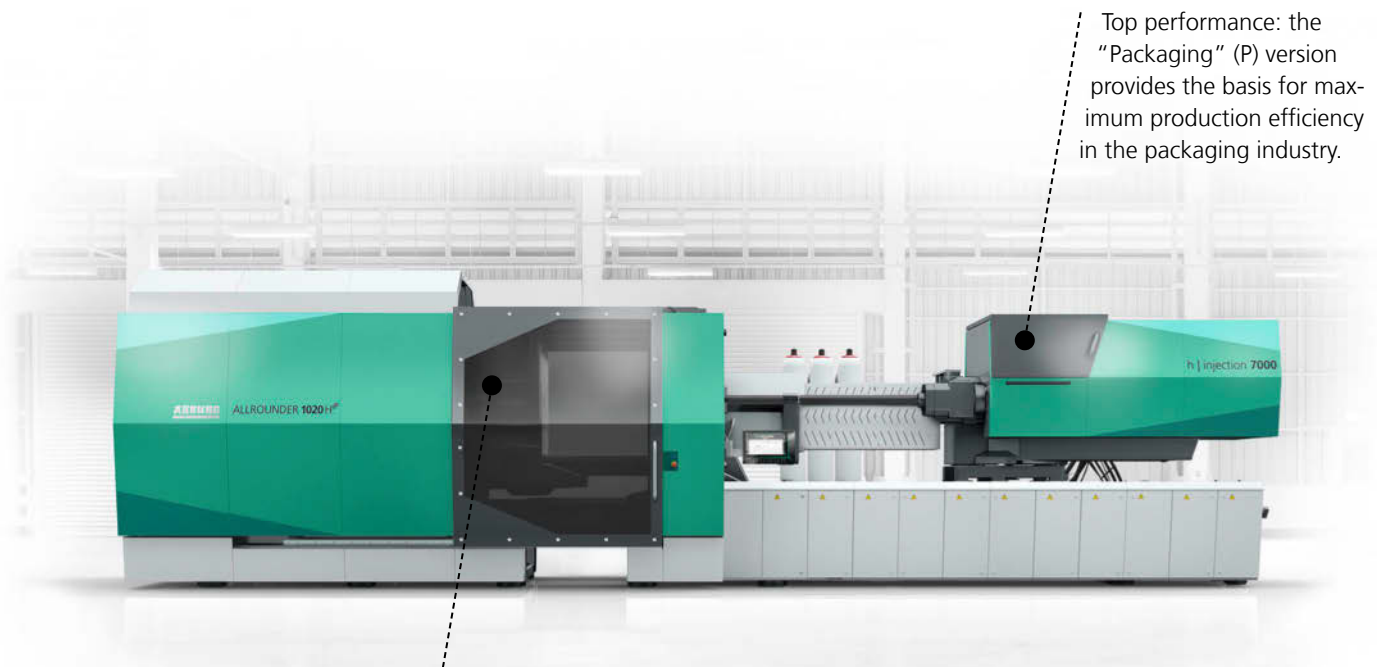


ALLROUNDER CUBE – various sizes and injection units combined with sophisticated mould technology.

Centrally controlled mould movements through precise and independent drives.



Generous installation space – optimised for the space requirements of cube moulds.



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

Great combinations: we create tailor-made complete solutions, e.g. for cube mould applications.

IN ACTION: PACKAGING SPECIALISTS

// 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 day-to-day. No problems. Reliable. And, above all, 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. \\

i / Further information:
Packaging brochure

WE DELIVER MAXIMUM PERFORMANCE.

Electric toggle system

Servo-electric clamping units save a great deal of time, energy and therefore costs in comparison with hydraulic clamping units. The cycles can be shortened 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 results in more process-reliable removal.

Synchronous ejection

Precise, reproducible dropping of moulded parts and short opening and closing times: the servo-electric toggle-type clamping unit and servo-electric ejector are extremely high-performance. The hydraulic booster function enables even shrink-fit closures to be demoulded with ease.

High plasticising capacity

Barrier screws, in which the compression zone has been replaced with a barrier zone, ensure homogeneous plasticising. A servo-electric dosage drive is also available. Since the melt can be dosed simultaneously and cyclically, it can also be processed more gently, even in the case of fast cycles. High screw circumferential speeds enable minimal dosage times.

Dynamic injection

Highly dynamic filling during injection is important for thin-walled parts. This is the only way to reproducibly achieve the shortest possible injection times. Our unsurpassed ScrewPilot provides the basis for this. Correspondingly fast movements are achieved by means of hydraulic servo valves close to point of application and servo-electrically powered planetary roller screw drives.

7,300,000 CYCLES

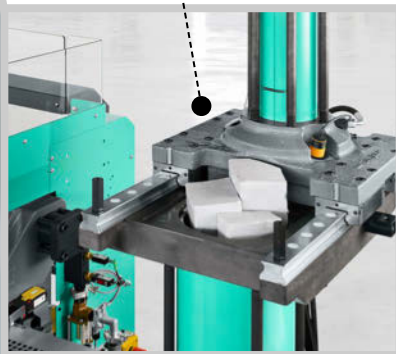


per year - the "Packaging" (P) version transforms performance into top performance

HIGHLY ELASTIC: SILICONE PROCESSING

// We were there from the outset when silicone injection moulding was developed. Our in-depth expertise and our modular technology enable us to set the benchmark in the industry. This means we can always offer you the best possible system solution - whether for LSR liquid silicone (Liquid Silicone Rubber) or HTV solid silicone (High Temperature Vulcanisation). dosing and temperature control adapted to the material, precise demoulding and reliable removal are all a matter of course. This applies throughout the entire high-volume production run. //

Material-specific: solid silicone feed with INJESTER tamping device.



Process-reliable: the cylinder module with liquid temperature control helps prevent premature cross-linking.

Adapted plasticising

The cylinder module and nozzle feature liquid temperature control in multiple zones to ensure constant thermal conditions. The zero-compression screw with a special non-return valve enables precision dosing during the injection and pressuring holding phases. In addition to an open nozzle, a number of needle shut-off nozzles featuring a standardised hydraulic drive are available. A simple cold-runner nozzle also enables sprueless part production.

Reproducible LSR processing

Additional sealing of the cylinder module ensures the necessary cleanliness during LSR processing. Interfaces for centralised actuation and monitoring of LSR dosing units are standard in our silicone package. For our complete solutions, we work closely with the applicable leading manufacturers within the sector.

Reliable HTV feed

INJESTER tamping devices have been developed for the automatic feed of paste-like materials and are fully integrated in the machine control system. All standard containers, as well as bales, blocks and strips, can be processed reliably. Optimum pre-compression is assured, resulting in minimal air and gas inclusions. No voids are formed in the components and the surfaces remain flawless. Unique: LSR micro-injection module with 8-millimetre injection screw.

Unique: LSR micro-injection module with 8-millimetre injection screw.



Matched to the mould: large selection of different nozzles.





CLEAN RUNNING: CLEAN ROOM PRODUCTION

// Automotive, optics, microelectronics and of course medical - the range of industries in which high-quality, clean production is required is wide-ranging. In order to achieve cost-effective production and consistently verifiable quality, you need the right concept for the task at hand. Our multi-disciplinary team of clean room specialists ensures that even uncommon solutions can be implemented for you. You can count on us! //

i / Further information:
Clean room technology brochure
Medical brochure

An essential part of clean production: cleaning according to precisely defined intervals.



Low-emission technology

the high quality standards of our ALLROUNDERS, including, for example, liquid-cooled drives and control cabinets help to combat contamination and emissions effectively. Moreover, there are numerous features that guarantee you the best cleaning conditions with regard to GMP A and ISO 5.

Ionised clean air

Laminar-flow boxes with ionisation ensure clean production conditions. Electrostatic charging is neutralised thereby and the number of particles on the moulded parts significantly reduced. The permanent air flow prevents particles from penetrating into the production area.

A wide variety of clean room concepts

The range includes individual clean room cells as a turnkey solution, ALLROUNDERS that operate entirely within the clean room and machines that are directly connected to a clean room. As a primary contractor, we cooperate closely with leading manufacturers of clean room technology and automation.

Qualified and validated

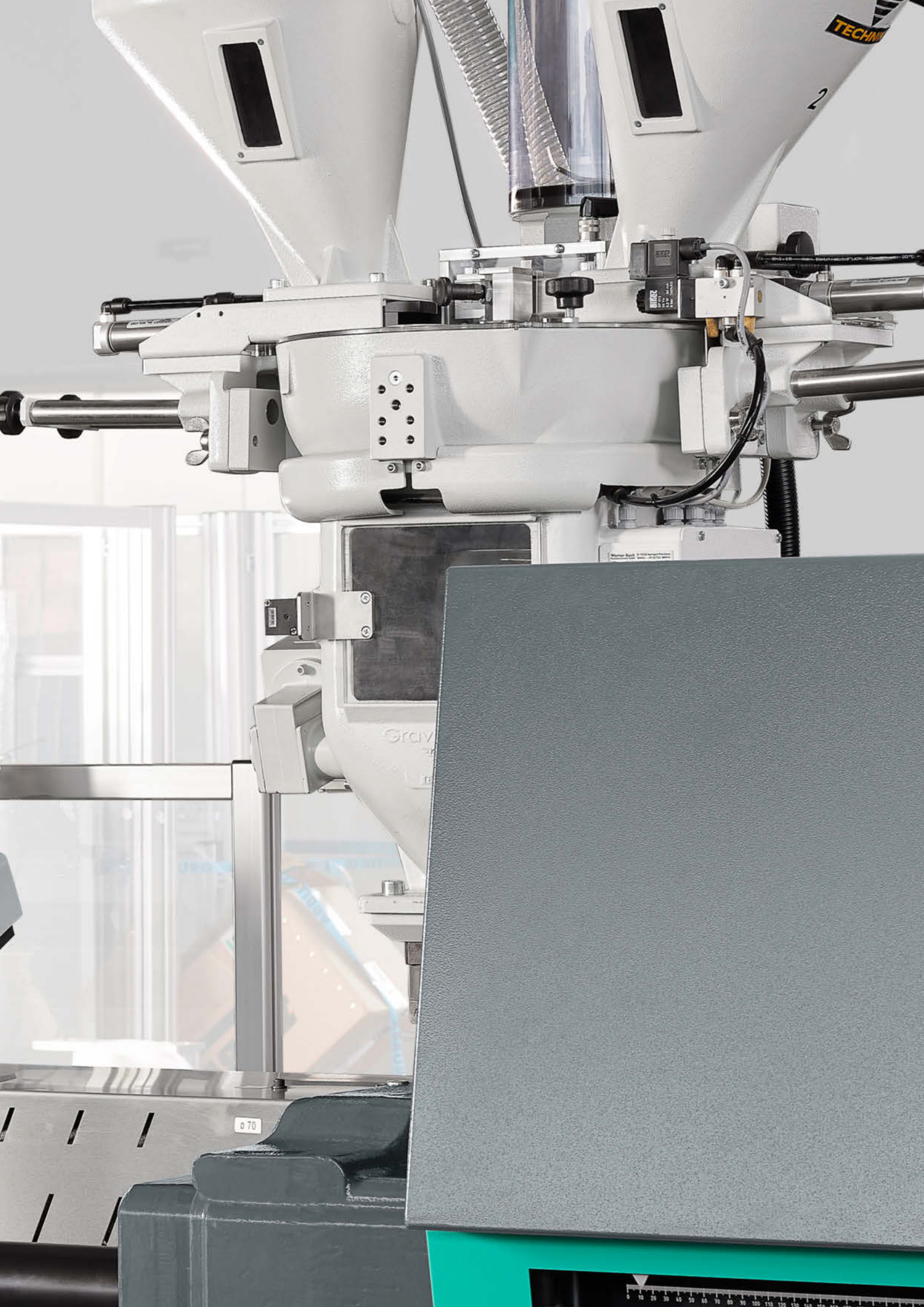
We keep extensive qualification documentation regarding our ALLROUNDERS in order to meet the documentation requirements under ISO 13485 and GMP. Also possible: a log book as proof of machine capability and regular qualified re-validation with our inspection contract.





TOP-QUALITY EXPERTISE FOR TOP-QUALITY SOLUTIONS

// The home of injection moulding: as far back as 1954, it has been our aim to further perfect plastics processing. Our extensive expertise in application technology not only benefits you in terms of our sophisticated machines and process technology, but also in our well-founded consulting offerings. We are continuously developing new solutions, benefiting from a strong network of expert partners for materials, moulds and peripherals. As a technology and systems partner, we cover all aspects of efficient plastics processing, taking care of everything all aspects, from design to cycle-time optimisation. //



TECHNI

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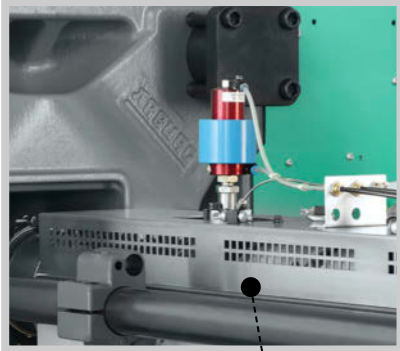
MOTOR
MILNER

Grav

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Resilience: parts with integral glass fibre reinforcement and fibre-matrix materials.



Lightweight: foamed components, e.g. with MuCell injection moulding.



PROBLEM SOLVERS: LIGHTWEIGHT CONSTRUCTION

// The potential of lightweight construction: optimised component design and production process, as well as the combination of various processes and materials. These all contribute towards achieving significant cost savings. ARBURG is acutely aware of the strengths and limitations of all the processes. ARBURG has formed partnerships in various networks that focus on the optimisation and combination of processes or materials. This enables us to offer you comprehensive advice on specific technical applications, as well as the corresponding technology. //

Scope of available processes

- Foam injection moulding
- Integrated fibre reinforcement
- Thermoplastic composites
- Combination with particle foams
- Fluid injection technology

i Further information:
Lightweight construction brochure



FDC: Fibre Direct Compounding


High-strength lightweight construction: the FDC process allows continuous fibres to be cut into lengths which are fed directly into the liquid melt and mixed homogeneously. You can choose the length and proportion of the fibres individually and thus specifically influence the component properties. This makes it easier to substitute other materials and to generate new material combinations more effectively. Moreover, all this can be achieved with inexpensive basic materials.

Thermoplastic composites

Lightweight construction in multi-material design: thermoplastic composites consist of a combination of continuous fibres (glass, carbon or aramid) and a variety of matrix materials. If these are overmoulded with conventional thermoplastics, their positive properties increase. Ideal for high-volume production: thermoplastic composites can be efficiently processed in an automated production cell.

Foam injection moulding

Lightweight construction with weight reduction: blowing agent is dissolved in the plastic melt during plasticising and escapes again as microcellular “bubbles” during injection moulding. This not only enables significant savings to be achieved in terms of material use, but also higher component quality. Thanks to the physical properties of the blowing agent, it is often also possible to reduce the cycle time and, accordingly, cost-effective production.



Integrated: BMC feed with
INJESTER tamping device.

High-quality: functions such as
injection compression moulding and
venting ensure quality in high volumes.

TOUGH CASE: THERMOSET PROCESSING

// Whether used in an automotive clutch piston, in a housing for electronic components or as an insulating strip in domestic irons, their special properties mean that granulated thermosets and moist polyesters have a wide range of applications. Our reliable hydraulic and vertical ALLROUNDERS provide the ideal basis for the reproducible processing of these materials. As well as our practical additional equipment, we can offer you exactly the production solution that you would expect from us: the right one! //



Further information:
Thermoset processing brochure

Special cylinder modules

Our customised injection units for granulated thermosets and wet polyesters (BMC) ensure high production quality:

- liquid temperature control with up to four zones and separate temperature control for the feed
- Wear-resistant bimetallic cylinders
- Special screw geometries
- Adjustable clearance between screw and nozzle

Gentle feed of BMC

Reliable and automated feed of materials with a high filler content? No problem for our INJESTER tamping devices. These ensure optimum pre-compression, which results in minimal air and gas inclusions. Their delivery pressure can be adjusted via the machine control system and their storage containers can also be filled without problems during production.

Reliable venting

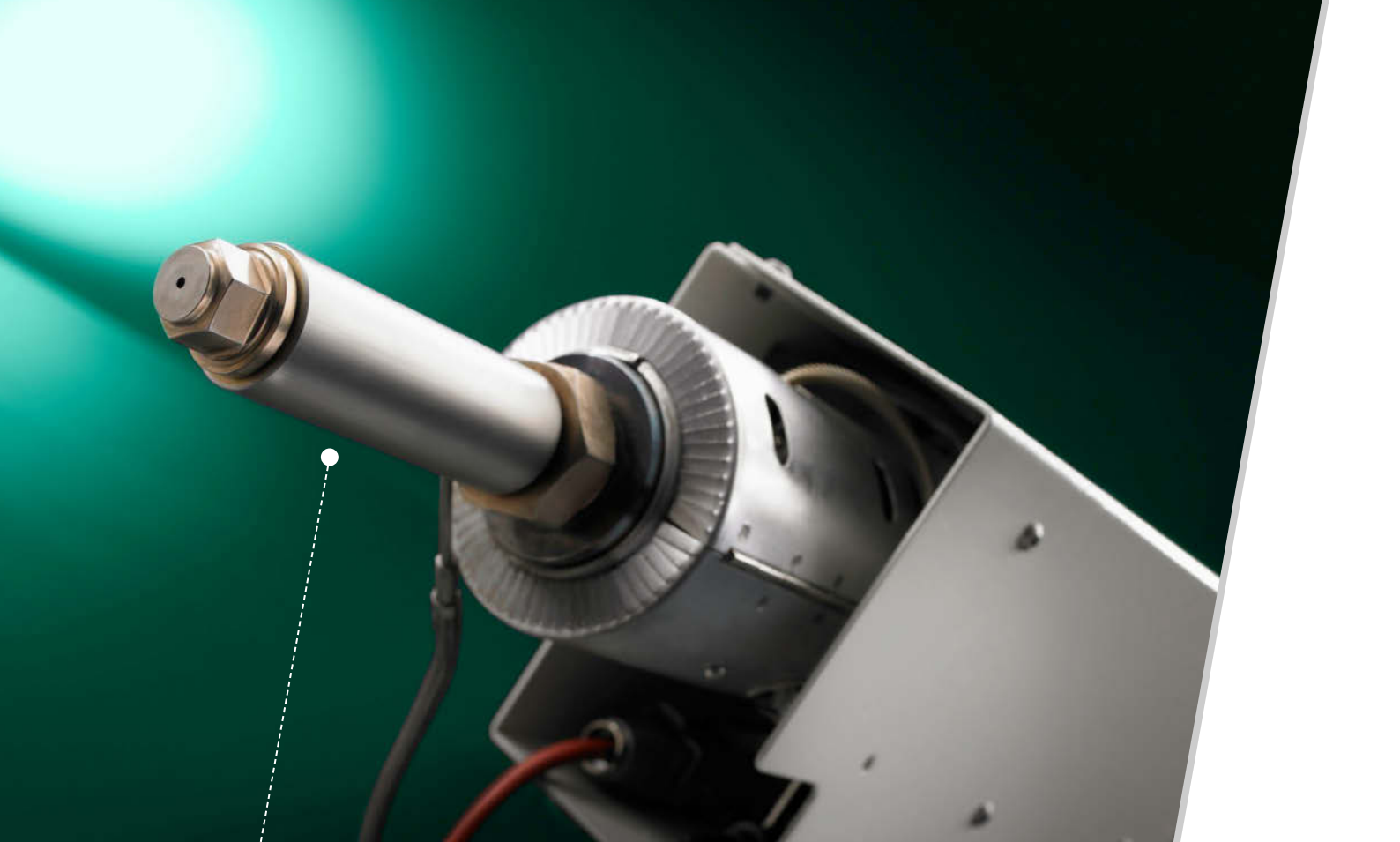
During thermoset processing in particular, it is crucial that air and cross-linking gases can escape with ease. As a result, the surface is not scorched and complete mould filling is assured for void-free components. Multiple venting operations can be quickly and reliably implemented via the machine control system, even during the holding pressure phase.



Extended cold runner nozzle
in BMC processing - up to

90%
LES WASTE





Cost-saving: extended nozzles keep sprues short and make the best possible use of expensive powder materials.

AN INNOVATIVE APPROACH: POWDER INJECTION MOULDING

// Powder Injection Moulding (PIM) gives you access to technology that offers you great freedom in designing highly complex metal (MIM) or ceramic (CIM) parts. The process technology does not differ significantly from the processing of filled plastics. This is especially true for a reproducible, qualitatively faultless production process. With us as partners, PIM users are always on the safe side. //

i Further information:
Powder injection moulding brochure

OUR EXPERTISE: ALWAYS TO YOUR ADVANTAGE.

Reproducible work processes

The unique aXw Control ScrewPilot ensures reproducible mould filling and particularly high moulded part quality. To ensure stable processes, we set the non-return valve to the relevant grain size of the powder. The geometry of the PIM screws is always adjusted to the required low compression level. This reliably prevents overheating and decomposition of the feedstocks.

Versatile expansion

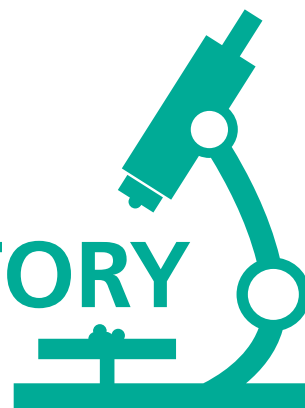
All ALLROUNDER machines are also suitable for powder processing. This applies equally to both hydraulic and electric models, whether with large or small clamping forces and injection units. From multi-component processing and dynamic mould temperature control to complete solutions with integrated peripheral equipment and automation. Our technology can be individually tailored to your requirements.

Enjoy our unique service

You can test the important process steps in practice in our headquarters in Lossburg/Germany: from feedstock mixture and testing, through to preparation and injection moulding, up to and including debinding and sintering of the moulded parts. In-depth consulting by experienced specialists is also available – on suitable powder/binder mixtures, for example. We also enable you to produce sample parts using your own moulds.

70 m² PIM LABORATORY

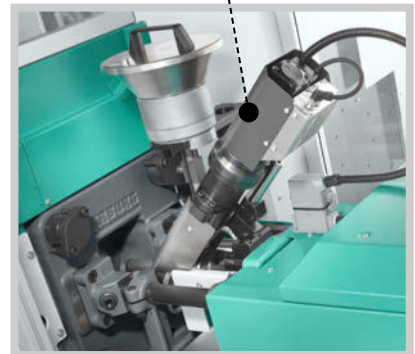
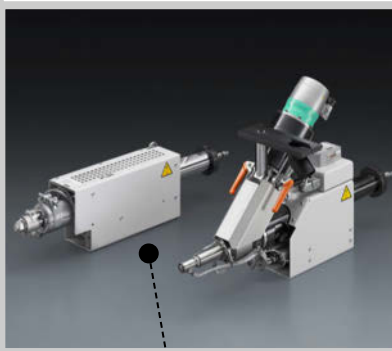
ARBURG experts can test applications and materials for you



A LOVE OF DETAIL: MICRO-INJECTION MOULDING

// Thanks to our modular ALLROUNDER machines, the manufacture of micro components with weights under one gram is "state of the art". Furthermore, this is possible in high unit volumes and at a consistently high quality level, without having to resort to expensive and complicated special machines to achieve homogeneous material preparation and a high level of reproducibility. Your production remains free for a host of other applications. Our offerings include solutions for extremely small shot weights, through to your customised turnkey system for micro components. //

Precision: the drive technology of the micro injection unit ensures highly dynamic filling.



Flexible: the micro injection module can be easily replaced with a standard cylinder module.

Further information:
Micro injection moulding brochure

ALLROUNDER: standard

The high demands placed on the high-quality production of micro components are met by our precisely controllable hydraulic and electric ALLROUNDERS. For example, by dynamically controlling screw movements using the aXw Control ScrewPilot.

Plasticising: optimised

You need to dose and inject extremely small quantities of melt with high precision? We always use screw/piston-type injection units, which process the granulate according to the first-in, first-out principle. Our range includes screws with diameters of between 15 mm and 8 mm. The geometries are adapted to short and precise travel of the non-return valve. A number of different versions, for example for abrasive materials, ensure optimum wear protection.


Micro injection module and unit

Reliable and reproducible: our micro injection module and our micro injection unit operate just the way you want to produce your precision small parts.

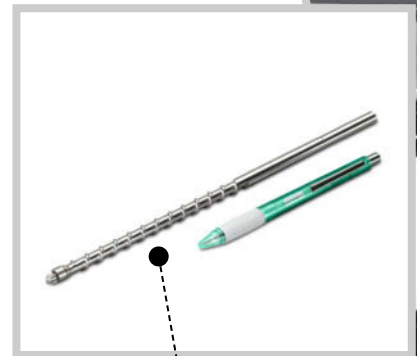
- An 8-mm injection screw enables extremely small shot weights to be implemented with great precision.
- At the same time, the dwell time of the plastic can be kept to a minimum.
- Provision of new, homogeneously processed material for each shot.

This is the only way to achieve high quality workmanship based on the first-in-first-out principle - with all commonly used plastics!

PIONEER
SINCE
1954



**Precise injection moulding
of small plastic components**



Pioneering technology: our 8-mm injection screw for extremely small shot weights of less than one gram.

TOP QUALITY CONSULTING FOR ALL

// There are virtually no limits to your options for processing plastics. For injection moulding, we bring together specially adapted technology for all processes with our in-depth knowledge to create an unbeatable service portfolio for you. Individual specification of machine, automation, peripheral equipment and process technology? Professional help with moulded part design, choice of material or mould design? Detailed process optimisation? We can provide competent advice and also implement complex production processes. To ensure that you can do one thing without fail: produce efficiently! //

The ARBURG Customer Center and worldwide Technology Centres: our service for your trials and tests.



Introduction of new processes:
here too, you can rely on
wide-ranging technical support.

International Technical Support:
our experts in the field of application
technology can also advise you on site.



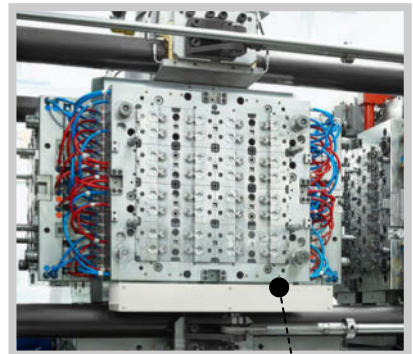
Doing the maths pays off

Reducing unit costs – optimising investment costs: we leave nothing to chance and take all influencing factors into consideration. Our know-how mix is particularly important when it comes to exploiting synergy effects or generating ideas for alternatives. Discussing the issues as a team ensures maximum creativity and confidence in realising your tasks. Our machine comparison calculator provides the economic information to ensure the right choice from a variety of possible scenarios.

Testing what matters

At our Customer Center in Lossburg, Germany, more than 30 ALLROUNDERS of all sizes are available to you for process trials, mould sampling and machine comparisons. Whether you require practical material preparation, documented clean room conditions, or fast on-site quality assessment, anything is possible: for thermosets, elastomers, silicones or powder materials. For multi-component technology, injection-compression moulding, foaming or fibre-direct compounding.

Everything from a single source: turnkey system for near-contour re-working of thermoset insulating strips.



Perfect adaptation: production of packaging items with ALLROUNDER CUBE.



Illustrative videos?

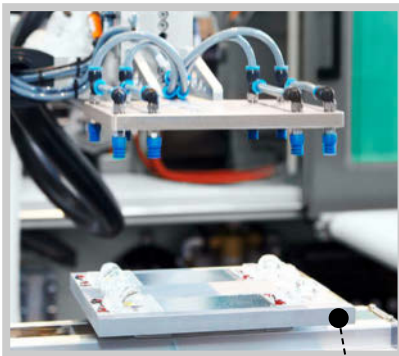
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We will work with you to develop your product idea into a reliable production-ready system – tailored to your needs.



100 percent reliability: fully automated in-mould decoration of 3D touch panels with in-line inspection.



Control of complex processes: injection compression moulding of high-quality optical lenses.



A new approach with lightweight technologies: innovative materials and processes for cost-effective production.

i / Further information:
Turnkey projects brochure
Production efficiency brochure



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captivating, entertaining.

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WIR SIND DA.