



# ALLROUNDER CUBE

Efficient cube-mould technology  
for high-volume production

**ARBURG**

---

# TOP PER- FORMANCE

**ALLROUNDER CUBE:**

**Exploit competitive advantages,  
Increase output to the max.**

OK, so when it comes to the series production of plastic parts, the requirements are high. Most of these high-tech items have to have clearly defined properties and functions. And a key point: the parts should be as cheap to produce as possible. These are tough specifications that can be solved intelligently and efficiently with cube-mould technology and our ALLROUNDER CUBE machines. With an incredibly high output combined with a tiny footprint. This will lead to considerably lower unit costs. Versatility is key: Dare to be square!

**WIR SIND DA.**



Typical CUBE system: Extremely high output significantly reduces unit costs – something of interest to every industry.

## AT A GLANCE:

// More efficiency for high-volume production with flexible adaptability – this is what characterises our cube systems. We know this technology very well. Because we can draw on years of experience in numerous projects. Because we cooperate closely with leading mould specialists to offer you customised, complete solutions. And because our hybrid ALLROUNDER CUBE machines provide a reliable basis that is specially adapted to cube-mould technology. A comprehensive carefree package for your production success. //

### CUBE systems – Made by ARBURG

- Proprietary hybrid series in three sizes
- Compact cube system with 1800 kN clamping force
- Fully integrated cube mould
- Fast servo-electric mould movements
- Reduced energy requirements

## Increased output

Cube-mould technology with the specially designed ALLROUNDER CUBE machines significantly reduce cycle times. With twice the number of cavities too. This means your productivity will be more than tripled.

## Space savings

Fewer machines, same output: one ALLROUNDER CUBE can replace up to four standard machines. This also means you can reduce your footprint by up to 75 per cent.

## Synchronisation

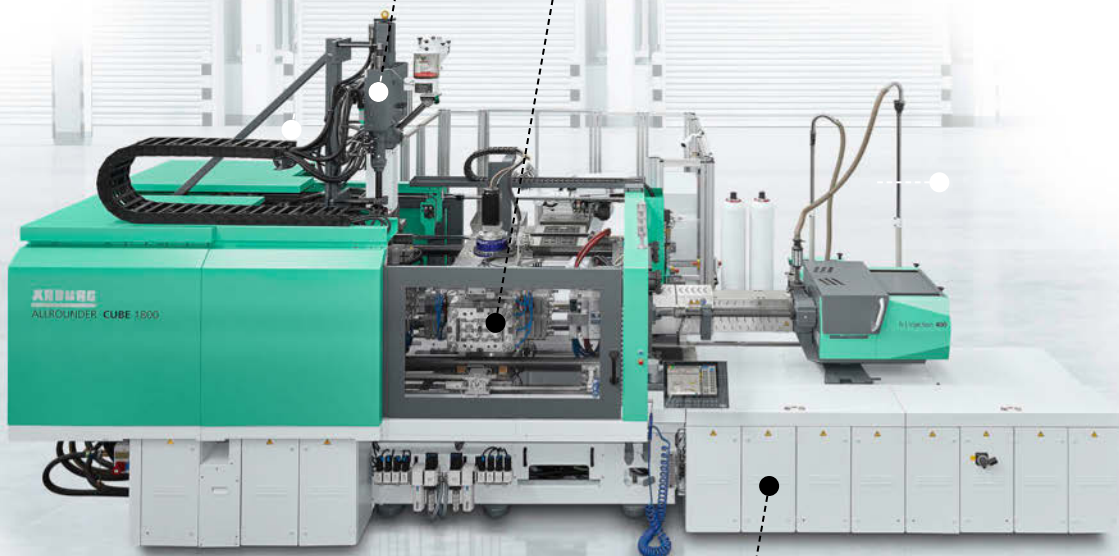
For fast and individual process sequences, your mould and machine must function as a single unit. This is exactly what our CUBE systems offer you. A cube mould fully integrated into the ARBURG machine controller with its own symbols simplifies free sequence programming and central process control.

## Diverse applications

ARBURG cube systems boast a wide range of applications. One and two-component parts can be produced as easily as special items made of three components. Process steps such as inserting, unscrewing, assembling, and testing are integrated through automation with no impact on cycle time. Unique size: the small, compact ALLROUNDER CUBE 1800.

Typical CUBE system:  
Second injection unit travelling via a movable mounting platen.

Typical CUBE system: filling,  
cooling and removal – everything  
happens simultaneously.



Typical CUBE system:  
Hybrid concept combines  
speed and precision  
with reliability and  
energy efficiency.

## CUBE

Distances between tie bars:	<b>570 - 1020 mm</b>
Clamping forces:	<b>1800 - 4600 kN</b>
Horizontal injection unit:	<b>400 - 4600</b>
Moving injection unit:	<b>70 - 3200</b>

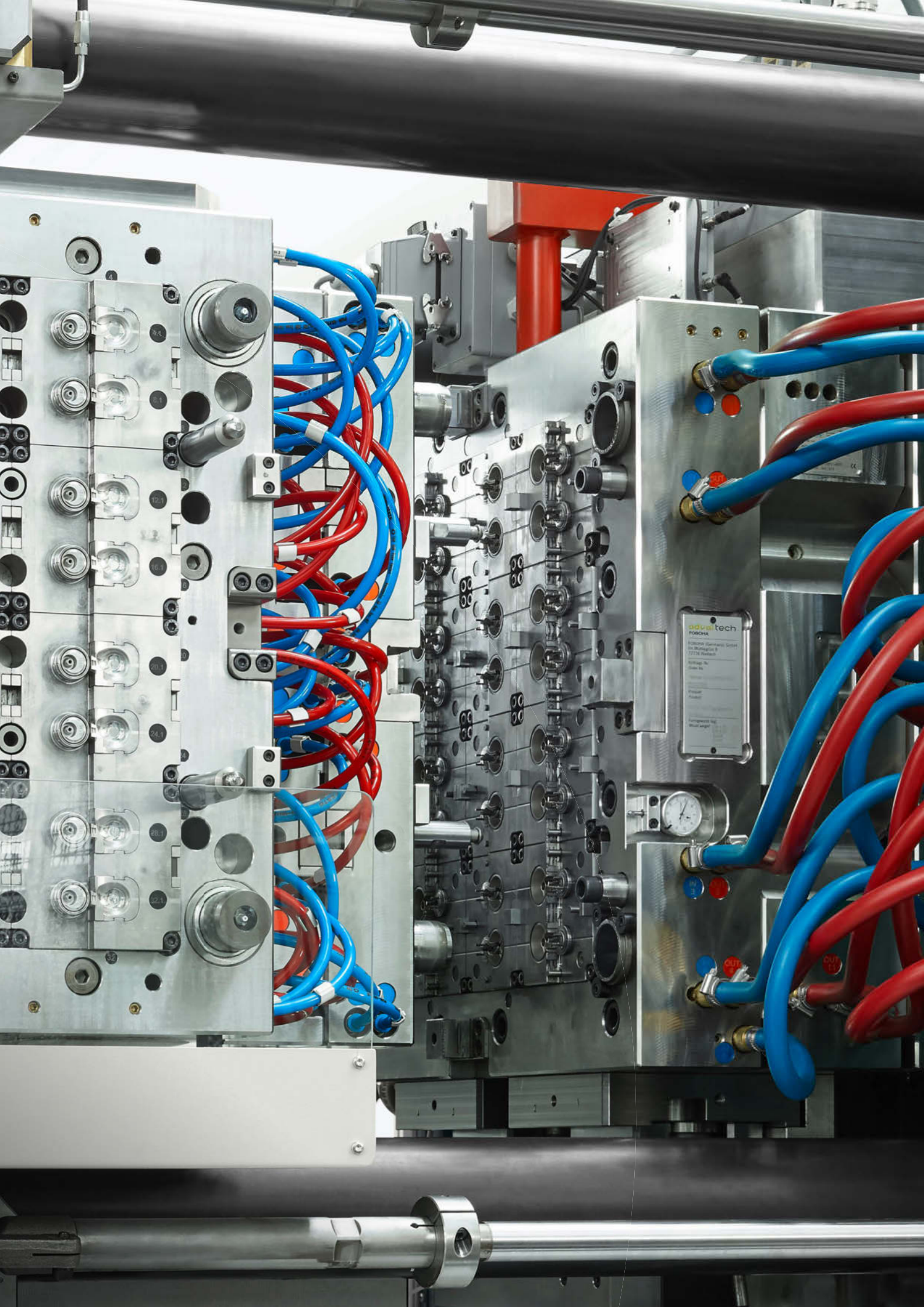


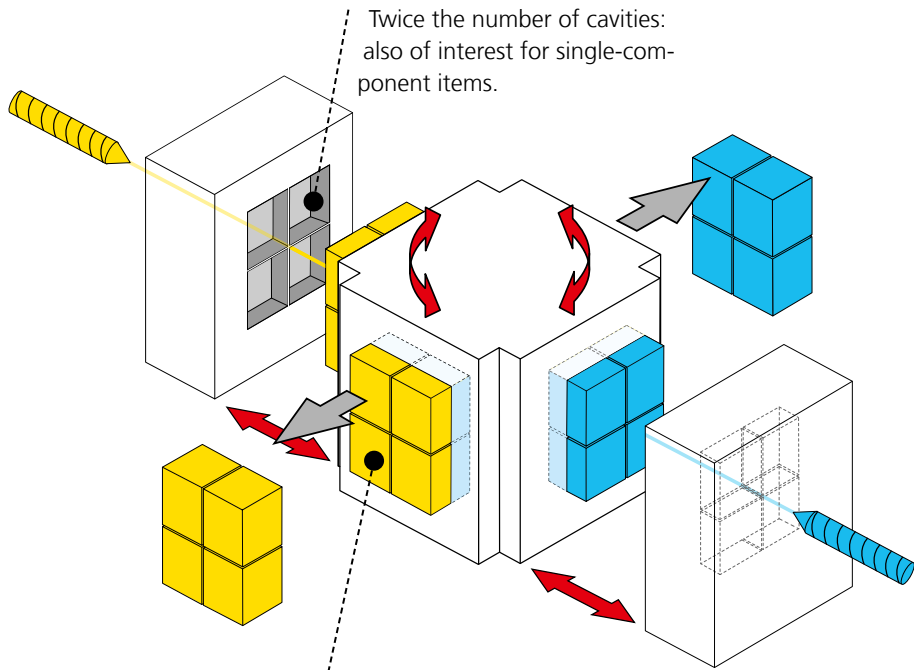


# CUBE-MOULD TECHNOLOGY: VERSATILE

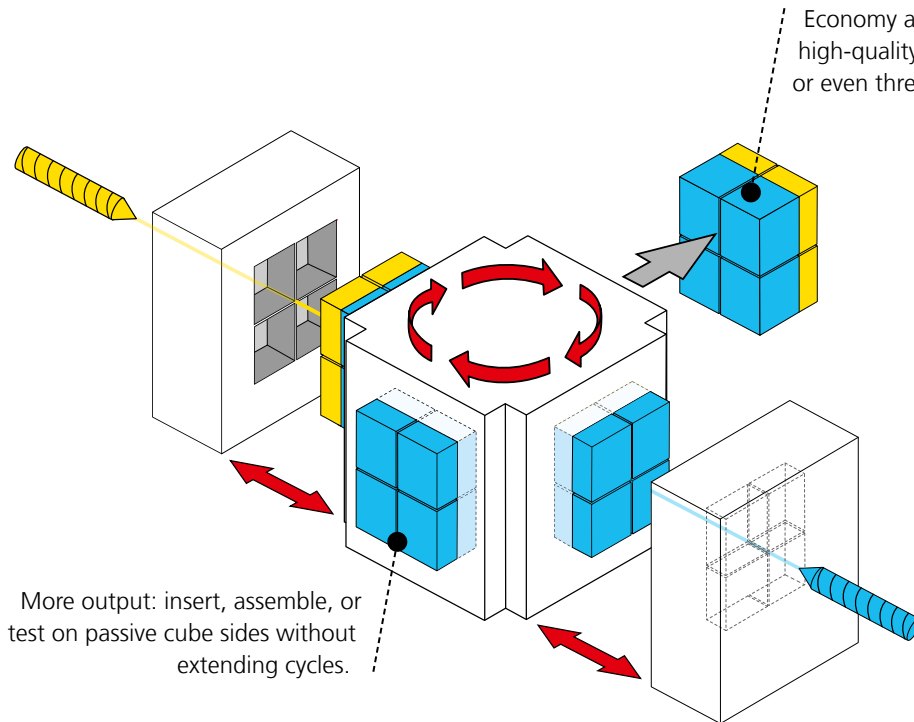
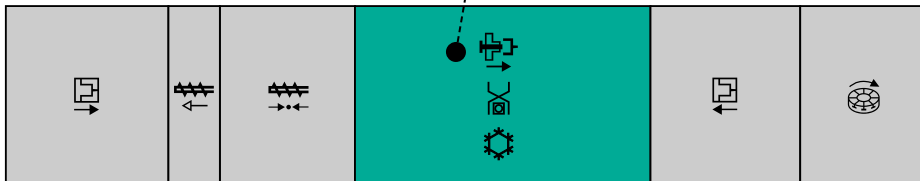
// If you want to increase your production capacities, cube-mould technology should be your first choice, as it achieves a perfect combination of more cavities and shorter cycle times. This applies equally to items made of one, two, or even three components. The results are conclusive: parts output per machine can be increased by 100 to 200+ per cent. //







Cube advantage: cooling and  
removal on passive  
cube sides saves cycle time.





# VERSATILE TECHNICAL ALTERNATIVES MAKE THE DIFFERENCE.

## Efficiency for high-volume production

When is a cube system advisable? As soon as one machine with standard moulds is no longer capable of producing the required number of parts. With four cube sides that can be used for production and two parting lines, one behind the other, high output is achievable with fewer or smaller machines. So doing the maths pays off – for every industry!

- Filling, cooling and removal – all simultaneously
- Significantly reduced cycle times – for example, cooling time can be reduced by 30 per cent
- Twice the number of cavities with the same mould mounting surface
- Smaller installation area, lower energy and cooling costs

## CUBE 1800: compact cube system

For lower cavity numbers, our product range includes the ALLROUNDER CUBE 1800, a machine that is tailored precisely to such tasks. The compact cube system is far superior to the standard mould. For example: A 16+16 cavity cube mould is the same size as an 8+8 cavity rotary mould. However the CUBE's output is more than twice as high. This means that, in order to achieve the same output with a rotary mould, a machine that is at least three classes larger must be used.

## Special designs for special tasks

We also work closely with Fobooha, the mould specialist, to create special cube systems. This includes reverse cube technology, for example, where the upper and lower mould halves rotate in opposite directions to achieve thermal separation of the mould – which also means that the components cool for longer via two stations.

Another application technology highlight: the ALLROUNDER CUBE for three-component parts with additional clamping unit for a total of three parting lines.



**Reverse cube technology**

Watch our video!

# MACHINE TECHNOLOGY: SYNCHRONISED

// High productivity on a small footprint – that's our clever solution for you and one that your competitors won't have yet. Our CUBE systems will give you those extra tenths of a second out of your production cycle that could make all the difference when it comes to lucrative orders. Our high-end technology works reliably, quickly and to a high standard – 24 hours a day, seven days a week. Because coordination between ALLROUNDERS and cube moulds is precisely synchronised. //

## Drive systems: the key to greater efficiency

Our hybrid machine concept provides you with crucial time advantages in production. Typical ARBURG features here include the uncompromising use of high-end drive systems such as liquid-cooled servo motors, planetary roller screw drives, and hydraulic accumulator technology. As a result, ALLROUNDER CUBE machines operate in an extremely reliable and fail-safe manner, even at full capacity.

CUBE drive systems: perfect interaction of electric and hydraulic components.

	CYCLE TIME	ENERGY	PRECISION	DYNAMICS
⚡ Opening/closing mould*	++	++	++	++
⚡ Rotating cube	++	++	++	++
💧 Moving cube	+		+	
💧 Injection	+		++	++
⚡ Dosing	++	++	+	+

💧 Hydraulic  
⚡ Servo-electric

+  
++ good very good





Extremely reliable: five-year guarantee for the clamping unit's planetary roller screw drive.



### **Clamping unit: detailed modifications**

The servo-electric clamping unit is the basis for cost-saving working with our ALLROUNDER CUBE machines. This unlocks significant time and energy benefits for you. Added to this is a modified design: for example, the mould installation height of the CUBE 4600 has been increased to 2.4 metres, allowing moulds weighing up to 16 tonnes to be mounted with ease.

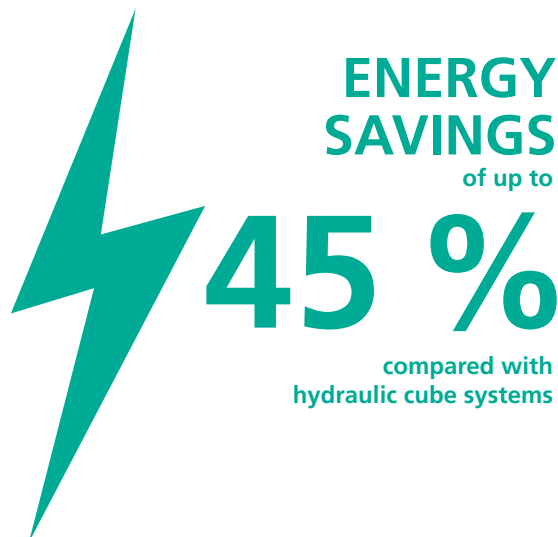
### **Injection unit: top performance**

High output that remains precise yet also energy-efficient – this is what characterises our CUBE injection units. We always dose electrically. Our unique aXw Control ScrewPilot ensures reproducible mould filling and high injection capacity through dynamic injection with active braking – keeping moulded part quality at the highest level. Another of our special touches is: from size 400, the mobile injection unit has been arranged horizontally for a compact installation height.

### **Cube functions: Independently adjustable**

Fully integrated functions in our CUBE systems for the centre block of the cube mould ensure highly dynamic process sequences. Hydraulic travel that is independent of the clamping unit simplifies mould installation and allows movements to be fine-tuned. Autonomous servo-electric rotation ensures high speeds, resulting in optimised rotation and cycle times.

Made to measure: from the toggle-type clamping unit to the cooling water supply.

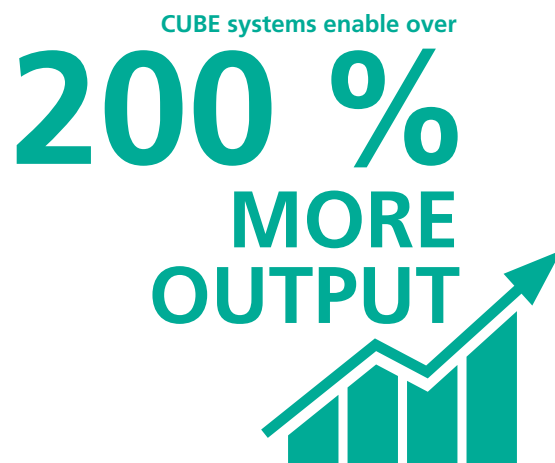


# AUTOMATION: MORE VALUE

// Cube systems will be of interest to you if you can no longer achieve your production volume with just one machine and multi-cavity mould. Our ALLROUNDER CUBE becomes even more cost effective if you also use the passive cube sides. Think outside the box: because that's precisely where loaded parts can be inserted and plastic parts can be unscrewed, assembled, or tested. What do you need? Fully integrated robotic systems – plus ARBURG, your technology and system partner, who can develop and build turnkey systems like this especially for you. //

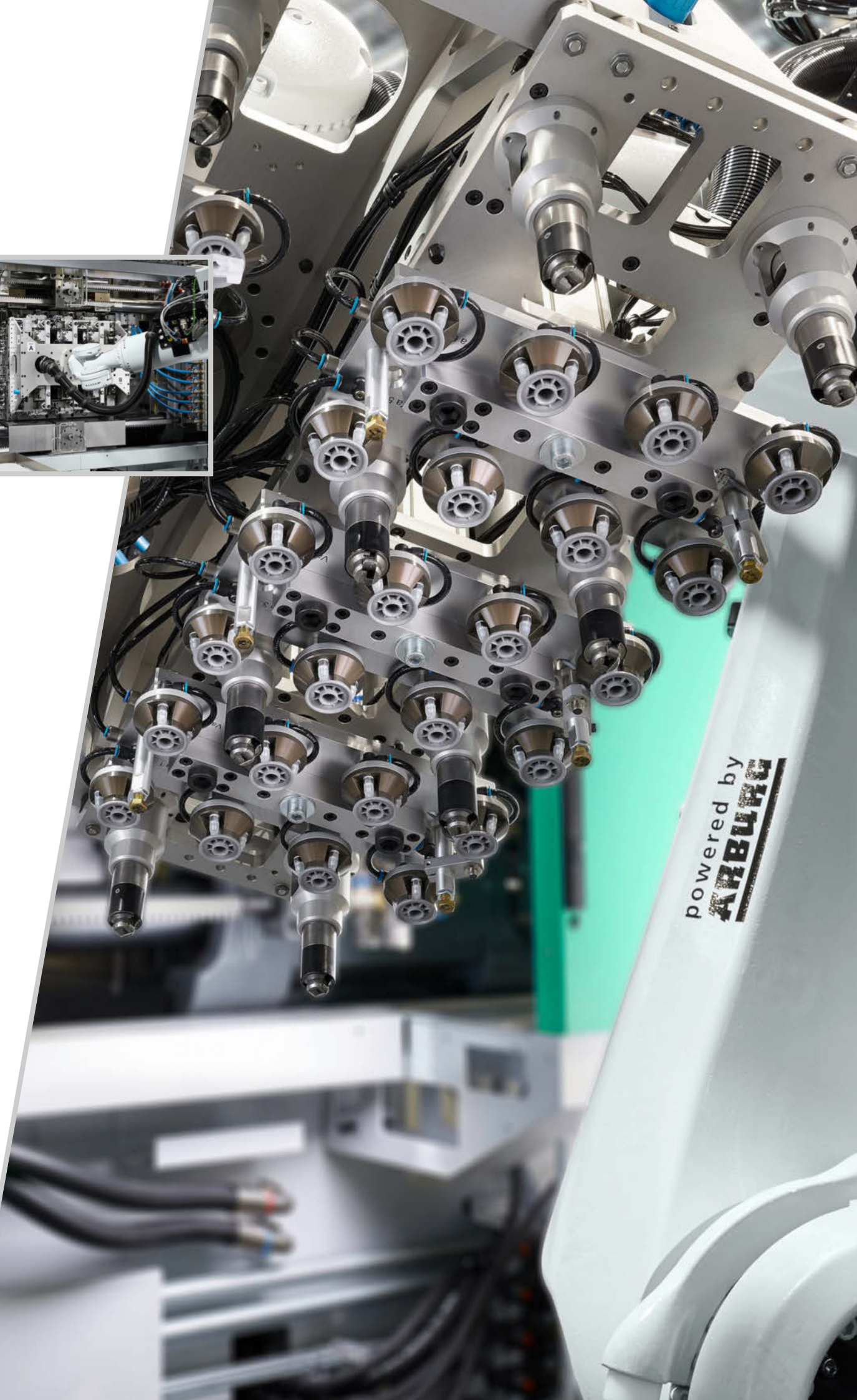
## Effective integration of process steps

Additional process steps can only be integrated effectively if they do not increase the overall cycle time. But this is precisely what happens with standard moulds, with unscrewing and removing costing several precious seconds. With cube technology, however, the cycle time remains the same. What this means: you use enormous potential to increase your output. We can help you do this, as we cover the entire spectrum of expertise – from machine and process technology to process control and automation.



**i** Further information:  
Turnkey solutions brochure





powered by  
**ABB**



Fully integrated: dedicated symbols for special cube technology.

## SMART CONTROLLER

// Maintaining control over machine, mould, robotic and peripheral technology requires a suitably powerful central control system. This calls for smart technology that offers extensive data integration options, monitors and adaptively controls your processes, and actively supports you in every operating situation.

All the features of our SELOGICA control system are designed for a fast, secure and convenient set-up and operating process. This enables you to get the best out of all your applications. //

### Highlights

- Graphic sequence programming
- Real-time plausibility check
- Assistance packages and connectivity modules "Ready for digitalisation"
- Central control system for complete production cells



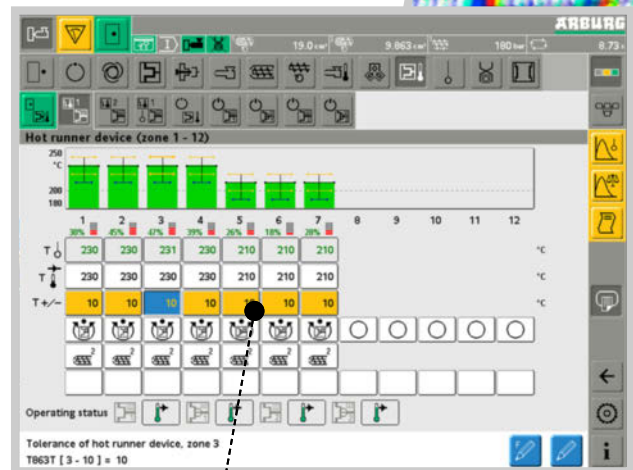
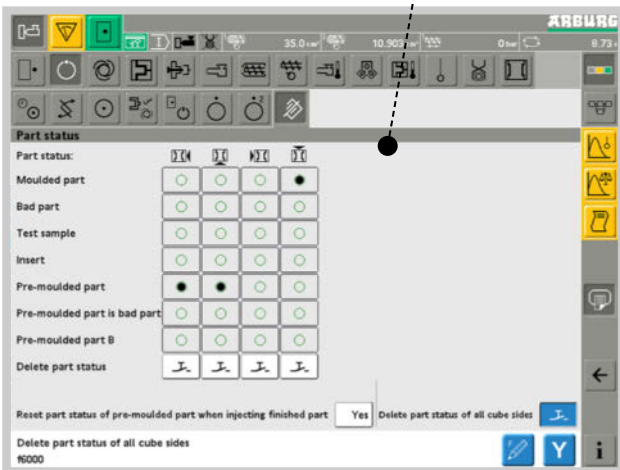
## Free programming

Production only becomes completely flexible and individual when it can be specifically optimised and completely monitored. Especially with the special processes and complex sequences used with cube technology. Our SELOGICA allows complete control of all hydraulic, pneumatic and electrical functions. There are separate symbols for moving or rotating the cube. The control system can be specifically expanded to suit corresponding cube concepts, and the operational sequences can be perfectly synchronised with the machine and the robotic system. This makes working with cube systems a simple exercise.

## Harnessing efficiency

Small but practical features make production processes easy and reliable to handle. Our SELOGICA offers you position monitoring in set-up, manual and automatic mode, for example. In other words, opening and closing the mould to move or rotate the cube are safeguarded. The control system knows the cube positions. So the ALLROUNDER CUBE and robotic system always know the position of the loaded parts, pre-moulded parts, and finished parts. The system components automatically recognise their position in the interrupted process sequence and continue it at the correct point. The parts counter also works with assembled components or assemblies.

Fully automatic: "Part status" feature makes post-interruption start-up easy and saves costs.



Very convenient: hot runner controllers can be connected via OPC UA.



# EXAMPLES: FROM PRACTICE

// More output per footprint – this requirement is relevant today not only for the packaging sector but also for many other industries such as the medical technology and healthcare sectors and for technical parts. We have made our ALLROUNDER CUBE especially with this in mind: so that you can use extremely efficient cube technology that can be individually adapted to different tasks with great precision and a high degree of automation. That's ARBURG: we have outstanding turnkey solutions for you that ensure maximum productivity throughout the entire series production process. //

Clever: technical, ready-to-use bulk items mounted directly in the mould.



Economical: cube systems ensure high output.

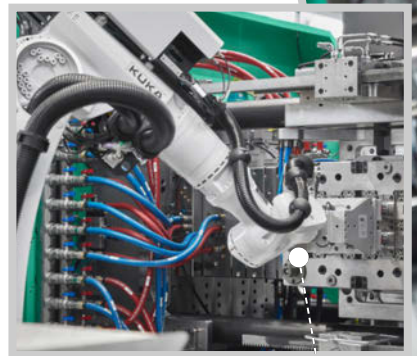
High-quality: closures made from two components combine design and functionality.



Space-saving: cube systems maximise output per footprint.



Reliable: random sampling from all cube sides for quality monitoring.



Turnkey: automated cube systems from a single source.

**i** Further information:  
Application expertise brochure



Scan this code to visit our  
Media Centre: in-depth,  
captivating, entertaining.

**ARBURG GmbH + Co KG**  
Arthur-Hehl-Straße  
72290 Lossburg  
Tel.: +49 7446 33-0  
[www.arburg.com](http://www.arburg.com)  
[contact@arburg.com](mailto:contact@arburg.com)

**WIR SIND DA.**