

Controls for bakery equipment – as individual as your recipes

AZO doesn't offer half-baked
solutions

THE SOLUTION

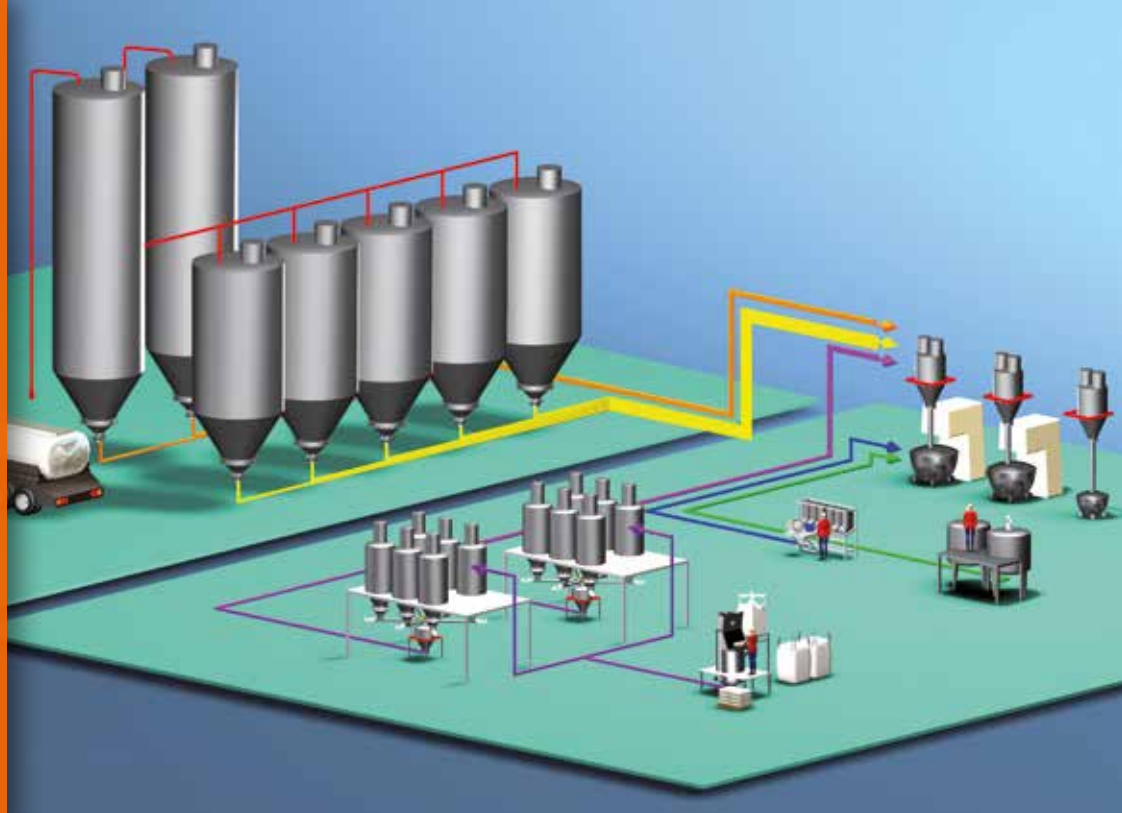


We Love Ingredients.

AZO.

»As a result of the close contact and good working relationship, we managed to simplify the workflows and recipes and simultaneously increase production output. Support from AZO was outstanding, from the initial contact to handover of the plant. We are very satisfied with the results.«

Klaus Torsten Müller,
authorised signatory and
head of production at
„Gillen – DER BÄCKER“



From preparation of raw ingredients to the baking line Outstanding control with the Kastor process control system

The fine art of baking

Traditional bakery trade and contemporary automation should create a good mixture – both literally and metaphorically. Constantly changing ingredients need to be conveyed, weighed and dosed quickly, exactly according to the recipe.

From artisan bakeries to large industrial baking operations, for bread and rolls, cakes, gateaux and biscuits, AZO provides the perfect solutions for controlling your baking line – designed to meet your specific requirements.

The recipe for success: knowing what is going into the kneading bowl – the AZO Kastor plant control system guides your employees effortlessly through production. The result: reproducible product quality.

It starts with the raw ingredients

Before you can have tasty, fresh baked goods, a certain amount of professional care is required. This begins with the handling of the raw ingredients. AZO can support you with this – no matter whether they are delivered in sacks or big bags, in a silo truck or as liquids.

Your raw ingredients are recorded by the Kastor replenishment module and deposited in the appropriate storage locations. In the process, the quantity and raw ingredient batch is saved, laying the foundation for both production and batch tracing. Monitored acceptance routines, user guidance and ease of operation are a matter of course. The characteristics of your raw ingredients are stored in the system and the necessary production parameters are added. This ensures that the raw ingredients can be automated.





Top-quality dough production Preparation

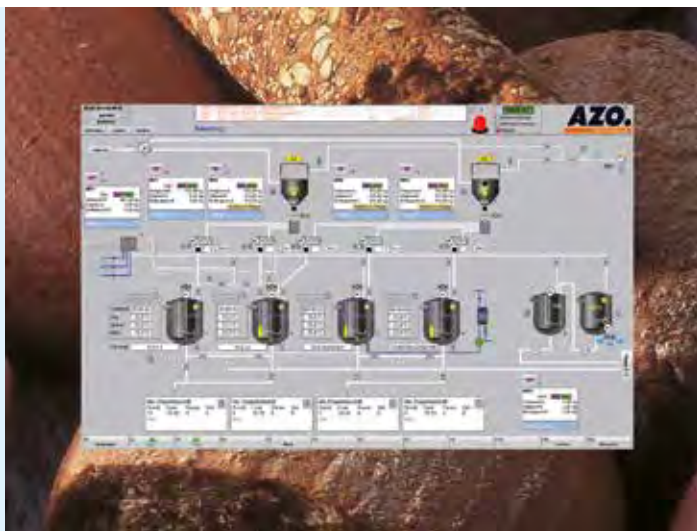
Recipes, orders and interfaces

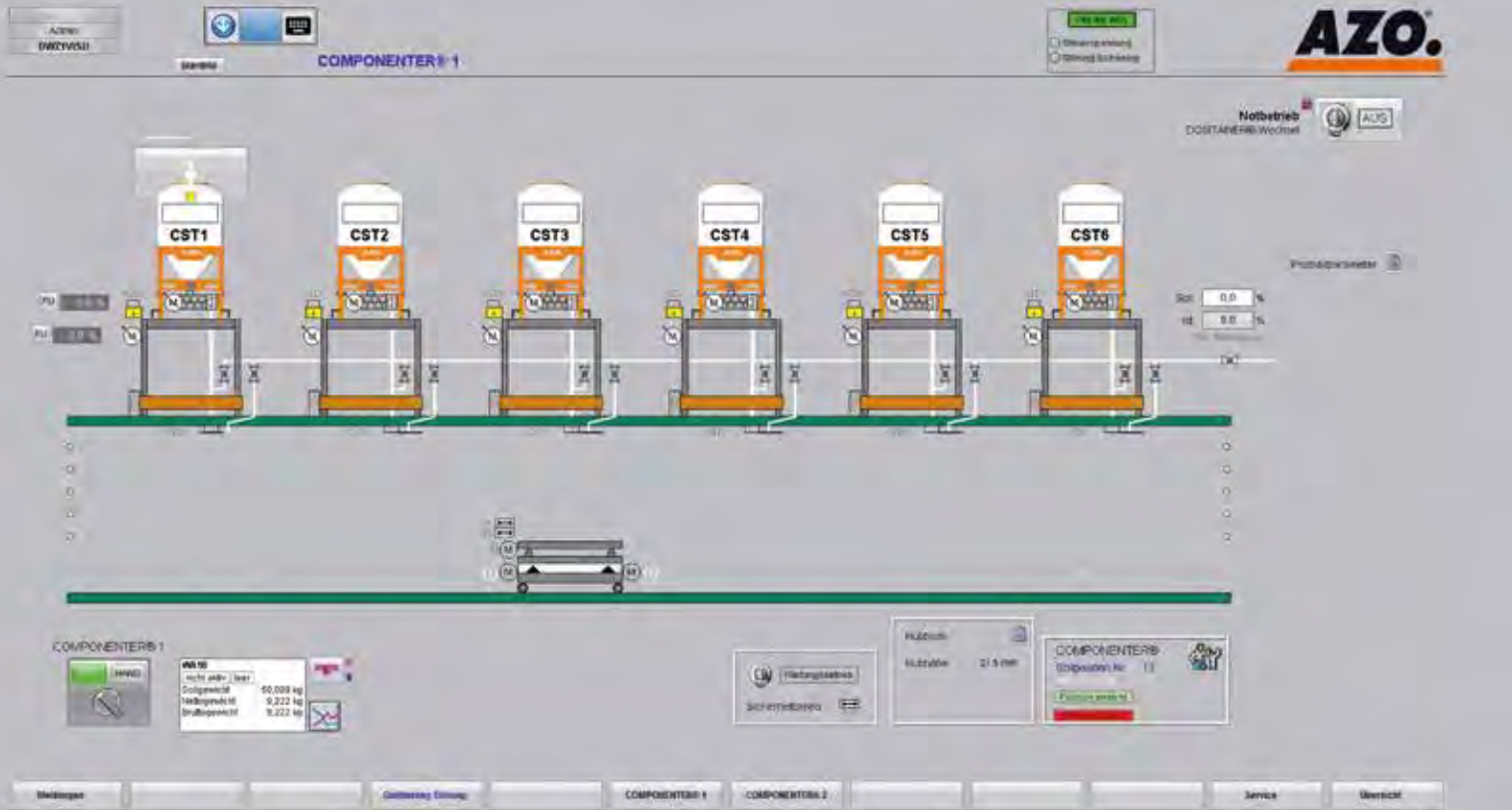
The recipes are the most important element. These can be maintained directly using the AZO Kastor master data management, or can be acquired from your ERP system – whether that is SAP or a sector-specific system. This also applies to the order data. The daily baking plan is either entered or transferred. It is self-evident that the consumption recorded can also be reported back again.

Production is thus perfectly prepared and all data are entered. The orders are distributed to the individual production areas. Each of your employees can see what needs to be produced without leaving their workstation. The AZO control system supports you with routine tasks. Everything that you produce is documented automatically: the master baker can focus on baking while the system handles the paperwork.

Sourdough in the best tradition

No matter whether it's rye sourdough or wheat sourdough, the Kastor process control system gives you a flexible setup. Do you prefer the classic three-stage proving process or perhaps the Detmolder single-stage method? Using our control system, you can design the process workflow according to your requirements. It is possible to adapt and subdivide individual dosings of water and/or flour at any time; you can even insert any number of proving steps lasting as long as you wish. Water can be added in parallel with flour dosing, preventing the formation of lumps. A temperature control in the tank casing makes it possible to preset the ideal temperature for the individual proving processes; temperature selection also takes place at the central point – the control system. The sourdough starter can remain in the tank as "leftovers" or can be pre-weighed by hand before beginning.





Micro quantities

Perfection in handling raw ingredients

Replenishing as required by production

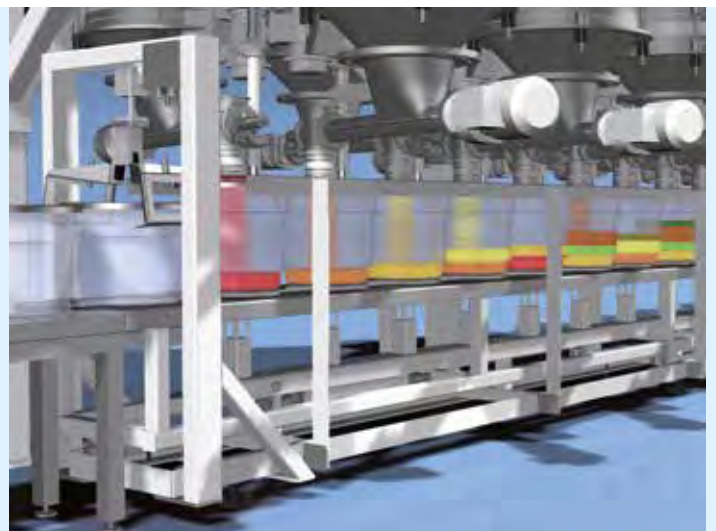
AZO offers a range of options for storing micro quantities: silo, AZO container, AZO DosiBox® or AZO DOSITAINER® – always ensuring direct reference to the batch number. This is taken care of via the Kastor database, storage and container management. All raw ingredients must be available at all times. Kastor determines the demand for raw ingredients and visualises this in the control room or directly in the storage area on touchscreen control panels.

The storage bins for all raw materials are filled under operator control and can be monitored using barcodes. The respective batch number is recorded at the same time. This ensures traceability. Raw ingredient mistakes and hence incorrect dosages are a thing of the past. Kastor also manages the monitoring of cleaning cycles and the avoidance of cross-contamination with allergens.

Accurate, fast, flexible weighing

As individual as your recipes – that's our weighing systems. For individual or multi-component dosing, volumetric or gravimetric, fully automated or manual. High-resolution measuring amplifiers guarantee outstanding weighing accuracy.

No matter whether you're using the AZO COMPONENTER® for weighing a wide range of recipes, the AZO DOSITAINER® for frequently changing components, or the tried-and-tested COMPONENTER® Step for high cycle rates – the systems are all subject to high-precision control, faithful to the recipe thanks to the special weighing processes. The mobile scales are positioned with pinpoint accuracy beneath the dosing locations, and the target hoppers are docked in place. An extractor prevents dust. The recipe is then worked through, step by step. The weighing results are saved and the batches that are made up can be used in the next production step.





Micro quantities Precisely and reliably weighed

A known quantity

The operator-controlled manual weighing centre ManDos is used when ingredients such as fruits, blocks of butter or flavourings cannot be fully automated in a profitable manner owing to their consistency or low production need. However, it is these micro quantities in particular that have a crucial impact on the recipe, meaning that proper control and documentation are essential during their addition to the manufacturing process.

Operator control, utmost weighing accuracy and automatic documentation, reliability and hygiene thus take high priority for ManDos. Multiple table or floor scales can be connected, ensuring that the best scale is available for each setpoint value. And of course, even when hand-weighing with ManDos, all raw ingredients can be identified.

Know what is going in

All manual weighing processes are also documented; this is a crucial element for continuous traceability of batches. If the batches produced are temporarily stored in hoppers, bins or other containers, Kastor makes sure that all the data are assigned to this container. The container is labelled for addition of its contents to the kneading bowl, to safeguard onward production. No matter whether an RFID transponder or barcode label is used, Kastor can process either system without difficulty.

If there is a quality issue with a raw ingredient, it is then possible to trace the production steps and raw ingredients used.

This ensures excellent product identification and guarantees product safety, even over a number of production steps.





Liquid components etc. Automated and temperature-controlled

Liquid dosing

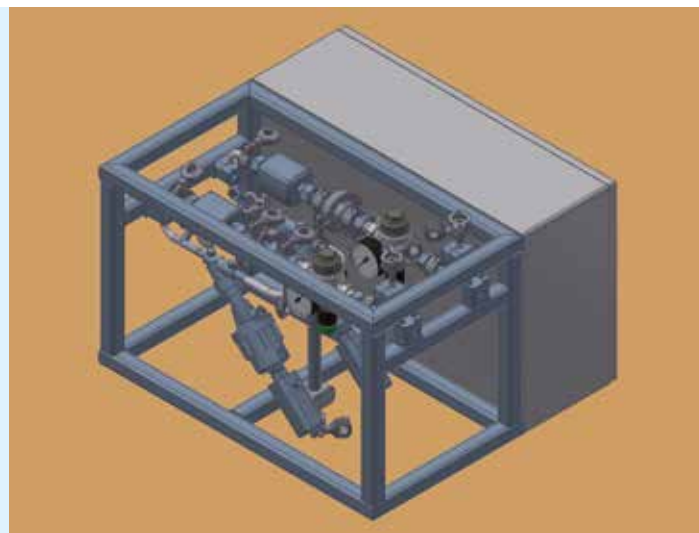
Fluid components also play a large role in the automation concept, of course. For automated dosing of the liquid raw ingredients – regardless of their viscosity – flow meters or liquid scales are integrated into the design. If temperature control is necessary, the temperatures can be recorded continuously. Measured values and batch numbers are documented. It is also possible to switch automatically between different tanks when they run empty, for example.

Your liquid system can be cleaned entirely automatically. Highly automated CIP systems with cleaning formulations that can be parameterised ensure the perfect clean. Cleaning cycles can be monitored. Safe and reliable dosing of aggressive cleaning agents – such as acids and alkalis – can be made easier for the operator, or removed from their control entirely. Improving safety is the top priority.

The perfect water

The AZO®WMD water mixing and dosing unit supplies process water at the perfect temperature for your dough production, in the required quantity, just when you need it. The setpoint values are achieved with excellent precision thanks to continuous monitoring of the process parameters – pressure and temperature – and of the flow quantities for hot and cold water at the inlet of the unit. After all, you can't make the perfect dough without the right water. Process water is valuable. Because the intake temperature is immediately and automatically considered and compensated for when the WMD starts up, no water is wasted.

The WMD unit is accommodated in a compact manner in stainless steel housing together with the control. The unit is thus a stand-alone modular piece of equipment. Suitable interfaces are available for connection to higher-level systems, e.g. for setpoint specification or data logging.





Art of baking 4.0

No risk of a “half-baked” future

Perfection in batch tracing

The batch tracing integrated into Kastor makes it possible for all products to be traced through the entire AZO plant. This is the case for raw ingredients, and it can also be expanded to include auxiliaries or packaging materials. The basis is Regulation (EC) Nos 178/2002 and 1831/2003. The requirement is that all raw ingredients added to the production process and their batch numbers are recorded.

Tracing of these ingredients through the entire process and their allocation to the end product or to the dough batch is performed by Kastor. There is no longer a need for complex manual entries or lists. Where there is an interface to an ERP system, these data can of course be transferred to the ERP. However, evaluation can also be carried out using Kastor. A range of search functions and reports are provided.

Exploiting potentials

The era of Industry 4.0 does not stop short of the bakery. Controlling bakery equipment is no longer simply about automation of manufacturing processes. With Kastor, AZO has developed a production management system that offers added value in addition to the actual plant control for supplying the bakery.

MES functions such as production planning, incorporating interfaces to downstream systems such as the oven, packaging or integration into the overarching IT environment help to avoid personnel-intensive tasks. Efficiency is increased. This automatically generates large quantities of data.

These production data can be analysed using the Kastor DataCockpit. The advantage of this is added value from previously unused data. This allows you to locate weak points and identify potential for optimisation.





Our range of services:

Right from the initial draft concept, including innovative individual components for the storage, discharge, screening, conveying, dosing and weighing of raw ingredients, to our turn-key solution, the ready-to-use complete system – we offer everything from a single source: plant construction, process engineering and process IT, perfectly harmonised with no interfaces.

For you as a customer, this means a complete solution from a single source

Our success is based above all on the quality and reliability of our solutions and on nearly 70 years of experience in automatic material feeding. With its network of production and sales organisations, the AZO Group helps successful businesses all around the world to realise their innovative projects using next-generation technology.

You too can secure your lead with innovative and cost-effective automation designs from AZO!

AZO.®

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