



*Flexible.
Efficient. Secure.*

*Diosna's automated
transport solutions for
innovative dough
production*

Efficiency & precision on the move

Flexible production logistics with **AGV-supported
automation concepts**





Innovative dough production thanks to automated guided vehicles

Consumer behaviour fluctuates and can no longer be assessed as accurately as it was a few years ago. This also affects dough production, which will have to become much more flexible in the future. AGVs (Automated guided vehicles) offer interesting and cost-effective solutions here.

The classic approach to dough production and resting has proven itself for many years. The bowls including carriage are moved quickly and reliably in a fixed arrangement. For this purpose, the room concept is tailored to the customer. Provided the right design has been chosen, automatic and efficient dough making and resting is possible for many years.

But how do you deal with new customer requirements? It can already be felt that the markets are changing. It is becoming increasingly difficult for large bakeries to react to volatile markets and uncertainties. After all, current systems are usually designed to operate for 15 to 20 years. It is true that classic room concepts can also be adapted later, but only with considerable effort.

New ideas are therefore needed so that bakeries can continue to work economically in the future. This is where spatial concepts with AGVs (Automated Guided Vehicles) come into play. They enable highly flexible, automated dough production.

The benefits of AGV automation

AGV concepts offer numerous advantages with regard to dough production:

- ➔ **Efficient:**
AGVs operate continuous and autonomous
- ➔ **Flexible:**
Solutions with low and high lift function
- ➔ **Innovative:**
Cost-efficient, optimised room concepts
- ➔ **Functional:**
Seamless integration into existing systems
- ➔ **Adaptive:**
Retrofit and capacity upgrades optional
- ➔ **Safe:**
Equipped with cutting-edge security features

Proven technology for **innovative concepts**

AGVs have been used successfully for many years in a wide variety of industries, such as automotive suppliers or in the intralogistics of many bakeries. As a result, they have been continuously optimized, for example in terms of battery life, charging, speed, durability, etc., so that proven systems are now available.

The idea: AGVs navigate independently in space and bring raw materials, bowls and dough resting boxes to the desired location with high precision and efficiency within defined work processes. For this purpose, floor-bound automated guided vehicles are equipped with the latest navigation systems and sensor technology. The big advantage: they are battery-operated and do not require rails or induction loops, which means that the routes and thus the production processes can be changed manually at any time. The typical FIFO (First-In-First-Out) process is dissolved in this way. Furthermore, all DIOSNA machines can be integrated into an AGV concept.

If necessary, the AGVs can also interact with several systems via a communication interface, as well as with their stations and a fleet management system. The latter is based on the DIOSNA production software, the Bowl Manager, which has been tried and tested for many years.



Room concepts from a new perspective

One of the greatest advantages of using an AGV is the great flexibility in dough production and the ability to easily adapt room concepts to current requirements. Process steps such as dosing, kneading, resting, and tipping become independent of location. As a result, not only is capacity expansion possible at any time, but the operators are much more flexible in designing the processes.

DIOSNA offers two different AGV solutions - both will go into operation at the turn of the year in two different large bakeries.



- ➔ **AGVs with low-lift function:**
move the stainless-steel bowls or dough resting containers on ground level and deliver them to their processing location.
- ➔ **AGVs with high-lift function:**
move the stainless-steel bowls or dough resting containers horizontally and vertically. This enables multi-level bowl storage on shelves and thus considerably less space is required for the dough to rest.





Cleaning and repair: no downtimes

But there are other advantages: The AGV can flexibly approach the dosing points to pick up the components, thus minimizing the piping for all raw materials, e. g. also for the technologically demanding pre-dough from a DIOSNA pre-dough system. And while with the classic room concept, maintenance and cleaning is only possible during a production stop, the bowls can now also be cleaned in between in a separate room. Interesting side effect: cleaning agents in production are avoided and the cleaning station does not have to be connected to the conveyor system.

In classic approaches, it is not uncommon for the entire line to be stopped in the event of problems. With AGVs, on the other hand, it is easier and quicker to exchange a bowl incl. carriage, for example, even across several production lines. Speaking of structure: Compared to a linear concept, the assembly and commissioning times are considerably shorter. Experts assume a quarter of the time that is now required for commissioning. Particularly interesting - digital twin: DIOSNA simulates all processes and routes in advance, so that there are no unpleasant surprises at the start of production.

Conclusion and Outlook

With the use of AGVs, dough production is raised to a new level. In addition to the greater flexibility, less space is also required in special cases. Getting started is easy, since a hybrid approach, i.e. solutions with and without AGV, or partial automation is also possible. The AGVs are connected to the central fleet management system, so that the integration of other system parts, such as packaging or loading, is also conceivable.

➔ **Book your free consultation now!**



Mobile **+49 541 331 04 721**
Mail **leadteam@diosna.com**

About us

DIOSNA - Quality Made in Germany

The complete range: DIOSNA's machine engineering and technology offers everything from compact systems for small-scale operations to fully automated solutions for large-scale operations. The product portfolio for the food industry includes the most important processes of dough production from dosing, pre-dough preparation and kneading to transfer logistics - for research, pilot and industrial production. It also offers mixers, granulators, dryers and coating systems for the pharmaceutical and cosmetics industries.

Joint product development with the customer, process planning as well as optimisation, efficient project management and comprehensive after-sales and value-added services are continuously optimised and customer-centred yesterday, today and tomorrow.

That is why DIOSNA's customers have appreciated our quality, performance, competence and philosophy for over 135 years.

DIOSNA Dierks & Söhne GmbH

Am Tie 23, 49086 Osnabrück, Germany
+49 541 33104-0
info@diosna.de
www.diosna.com

