

# MAXIMISING LABOUR PRODUCTIVITY & MATERIAL FLOW IN MANUFACTURING WITH AMRs

A guide for Food &  
Drink Manufacturers

Zetes eBook



# Executive Summary

The rise of Autonomous Mobile Robots (AMRs) in manufacturing, particularly in the food and drink sector, is transforming operational efficiency, safety, and scalability. As manufacturers face growing pressures from labour shortages, increasing operational costs, and the need for strict hygiene standards, AMRs provide solutions that reduce manual labour dependency, optimise material handling, and enhance production flow.

Key drivers fuelling AMR adoption include:

- ▶ **Labour Shortages and rising costs:** AMRs offer a scalable, cost-effective alternative, especially in labour-intensive sectors like food and drink manufacturing.
- ▶ **Demand for operational efficiency:** Manufacturers using AMRs report improved workflow consistency, reduced bottlenecks, and faster production times, particularly in high-volume operations.
- ▶ **Safety and compliance:** AMRs reduce the need for manual transport and handling of raw materials, ensuring safer, more compliant production environments.

By integrating AMRs with complementary technologies, manufacturers can unlock wider efficiencies that extend beyond automated product movement. For companies ready to adopt AMRs, Zetes offers a unique, proven end-to-end solution with the added benefit of international reach and local support. This ebook explores how food & drink manufacturers can benefit from Zetes innovative AMR solutions.





# Meeting manufacturing challenges with intelligent automation

In the food and drink manufacturing industry, agility, safety, and efficiency are paramount.

With the rapid growth in consumer demand and the complexities of managing high-volume production, manufacturers face increasing pressures to optimise operations. Labour shortages, strict safety requirements, and fluctuating production demands create unique challenges that require innovative solutions. **Autonomous Mobile Robots (AMRs) are emerging as a transformative technology** in addressing these obstacles, helping food and drink manufacturers streamline operations, reduce costs, and maintain high standards for quality and safety.

## Why AMRs?

AMRs bring unprecedented flexibility and efficiency to production environments, automating repetitive tasks that previously relied on manual labour. They not only ease the burden on employees but also ensure consistency and reliability. By integrating AMRs into various stages of the production process, manufacturers can better adapt to fluctuating demands while optimising workflows for maximum productivity.

- ▶ **Reduced dependence on manual labour:** AMRs take over repetitive, manual tasks, allowing employees to focus on higher-value activities.
- ▶ **Consistent, reliable outcomes:** Automation makes processes more consistent, reducing logistics errors and increasing service quality.
- ▶ **Flexible adaptation to operational changes:** AMRs provide the agility to scale and re-purpose operations in response to changing production demands.



# How AMRs can benefit your internal logistics

## Operational efficiency



AMRs enable continuous material flow without delays, eliminating bottlenecks and streamlining tasks across production stages. **Automated workflows support a faster, more efficient production environment:**

- ▶ **Efficient raw ingredient transport:**  
Automate transport from storage to processing, minimising delays.
- ▶ **Consistent movement of finished goods:**  
Ensure quick, error-free transfer of packaged goods to storage or shipping.
- ▶ **Reduced downtime:**  
Provide reliable performance around the clock, with fewer manual interruptions.

## Enhanced safety



AMRs help reduce **workplace injuries and improve compliance with safety standards**. In food processing plants, where hygiene and safety protocols are critical, AMRs:

- ▶ **Minimise physical strain on employees:**  
Automate physically demanding tasks, reducing injury risk.
- ▶ **Ensure sanitary handling of materials:**  
Reduce direct human contact with ingredients and finished products, ensuring hygiene standards.
- ▶ **Adhere to compliance standards:**  
Consistently meet safety regulations, particularly in regulated environments.

## Scalability



AMRs can easily adapt to production workflow changes, **supporting growth in the fast-paced food and drink industry:**

- ▶ **Seasonal demand handling:**  
Scale operations up or down to meet seasonal or market-driven spikes.
- ▶ **Flexible reprogramming:**  
Easily reconfigure AMRs for new tasks or production layouts.
- ▶ **Cost-effective growth:**  
Expand automation without major infrastructure change









# From ingredient transport to finished goods: How AMRs transform each stage

## Raw materials transport

Efficiently move ingredients from storage to production areas, ensuring a steady flow to keep production lines active.

- ▶ **Eliminate delays** in raw material availability and streamline supply to production lines.
- ▶ **Reduce contamination risks** by minimizing human handling of raw ingredients.

## In-process movement

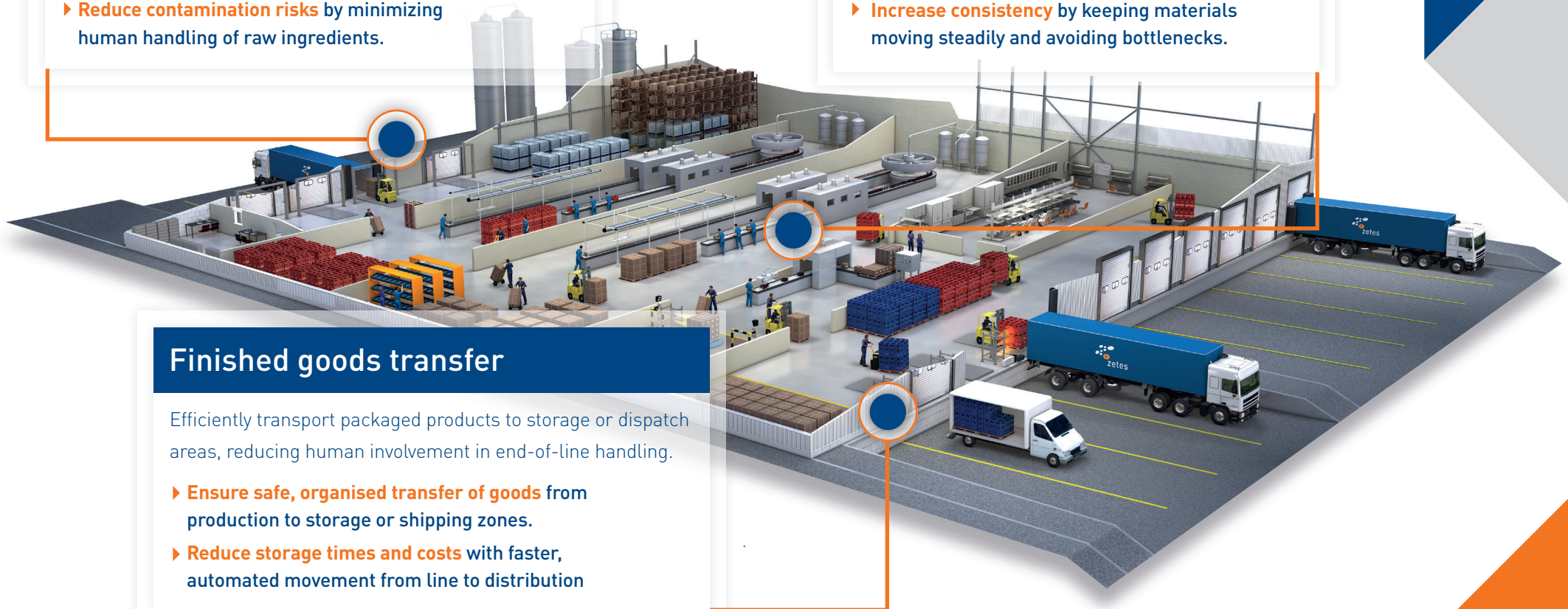
Transport items between different processing stages, enhancing production line efficiency.

- ▶ **Automate inter-stage movement**, reducing wait times between production steps.
- ▶ **Increase consistency** by keeping materials moving steadily and avoiding bottlenecks.

## Finished goods transfer

Efficiently transport packaged products to storage or dispatch areas, reducing human involvement in end-of-line handling.

- ▶ **Ensure safe, organised transfer of goods** from production to storage or shipping zones.
- ▶ **Reduce storage times and costs** with faster, automated movement from line to distribution





# Maximising productivity by combining technologies

By integrating AMRs with additional technologies, manufacturers can unlock wider efficiencies, automating movement and enhancing traceability, quality control, and order accuracy.



## Automated Pallet Labelling

Integrating AMRs with automated pallet labelling ensures precise labelling and tracking throughout production and distribution.

- ▶ Improve traceability with real-time labelling as pallets move across stages.
- ▶ Reduce human error by automating label application, saving time and improving accuracy.



## Shipping verification with ZetesMedea ImageID

AMRs combined with ZetesMedea ImageID streamline final shipping verification, ensuring that every pallet is accurately identified before dispatch.

- ▶ Enhance shipping accuracy, reducing errors and returns.
- ▶ Optimise quality control by automatically verifying shipments against order details, ensuring product consistency.



## Enhanced picking efficiency with voice picking

In addition to the benefits of human collaboration, combining AMRs with voice picking technology allows for seamless, hands-free picking, boosting order accuracy and reducing fulfilment times.

- ▶ Reduce employee errors with guided voice picking that pairs perfectly with AMR movement.
- ▶ Increase picking speed, enabling faster, more efficient order fulfilment.



# A Global Partner with Local Expertise

With 40 years of experience in supply chain execution, Zetes offers proven expertise to food and drink manufacturers. Our integrated solution combines cutting-edge AMR technology with advanced warehouse execution and logistics management capabilities.

## Why work with us?

### ▶ Global reach, local support

Zetes offers a comprehensive network of logistics experts across EMEA, making us the ideal partner for multi-national manufacturers who need consistent, single-source solutions across locations.

### ▶ End-to-end solution for automated logistics

Zetes combines AMR technology with advanced systems and technology integration, helping companies seamlessly incorporate automated solutions into existing workflows.

### ▶ Proven expertise in food and drink manufacturing

Zetes brings extensive experience in managing logistics execution and compliance requirements in the food and drink industry across EMEA.

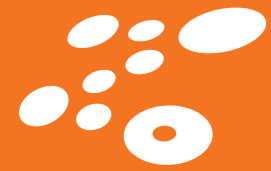




# Let's get in touch

There is always a Zetes office close to you. Check out our international network at

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