

SOLUTION STORY

No more stop-and-scan: JOLT's automatic code reading gate eliminates logistics errors at loading bays

JOLT

Belgium



Time savings
*Up to 55% per pallet
loading cycle*



Reduced loading errors
*Automatic ERP verification
of every pallet*



Full traceability
*With photographic
evidence*



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Key Benefits

- 1 **Time savings of up to 55%.** Forklift drivers pass through the gate without stopping, eliminating the dismount, scan and remount routine entirely
- 2 **Zero loading errors.** Every scan is checked against the ERP system in real time, catching wrong-pallet mistakes at the moment they would otherwise occur.
- 3 **Full traceability.** A photographic record of every loaded pallet is stored automatically, with timestamp and load reference, eliminating disputes.
- 4 **Minimal footprint.** The compact gate design (under 3 metres wide) makes it deployable in space-constrained loading bays across any industry
- 5 **Cross-industry applicability.** Suitable for logistics, pharma, automotive, food & beverage, and any other sector with loading bay operations

At a glance

Challenge: Forklift operators at loading bays must manually scan pallet manifest codes before loading. This is a time-consuming, error-prone process that causes logistics disputes and operational delays.

Solution: An automatic code reading gate developed by JOLT, powered by OMRON's VHV5-F autofocus multicode readers with liquid lens technology, that automatically read all codes as a loaded forklift drives through.

Result: Significant time savings per loading cycle, elimination of scan errors, automatic photographic evidence of loaded pallets, and seamless ERP integration.

Industries: Applicable across all sectors with loading bay operations — logistics, pharma, automotive, food & beverage, manufacturing, and beyond.



The problem is everywhere.
Anyone who ships goods has this
traceability challenge.

OMRON and JOLT partner to develop an automatic pallet manifest code reading solution that keeps forklift drivers moving.

The Problem: A hidden cost in every loading bay

Every day, across thousands of warehouses and production facilities, the same scene plays out. A forklift driver manoeuvres a loaded pallet to the loading bay, stops the vehicle, climbs down, walks to each pallet, manually scans the manifest barcode with a handheld scanner, confirms the data has registered correctly in the system, climbs back up, and only then proceeds to load the truck. Then the process starts again for the next pallet.

It is a routine that most companies have accepted as simply the way things are done. But it comes with real risks: missed scans, pallets loaded on the wrong truck, and no photographic proof when a dispute arises later.

Dieter Verhellen, Co-founder of JOLT, a Belgian machine vision integrator and OMRON Solution Partner, recognises the pattern across industries: *"The problem is everywhere. Anyone who ships goods has this traceability challenge. Pallets go missing, manifests get disputed, and without proof of loading it is very difficult to resolve things fairly. On top of that, forklift operators are harder to find than ever, so having them stop and dismount for every pallet is a real obstacle to throughput."*

It was this challenge that led JOLT to start developing a dedicated solution. Drawing on close to seven years of collaboration with OMRON and deep expertise in industrial camera applications, the two companies set out to design a gate that would take the entire scanning task out of the hands of the driver.



The Solution: A gate that does the scanning

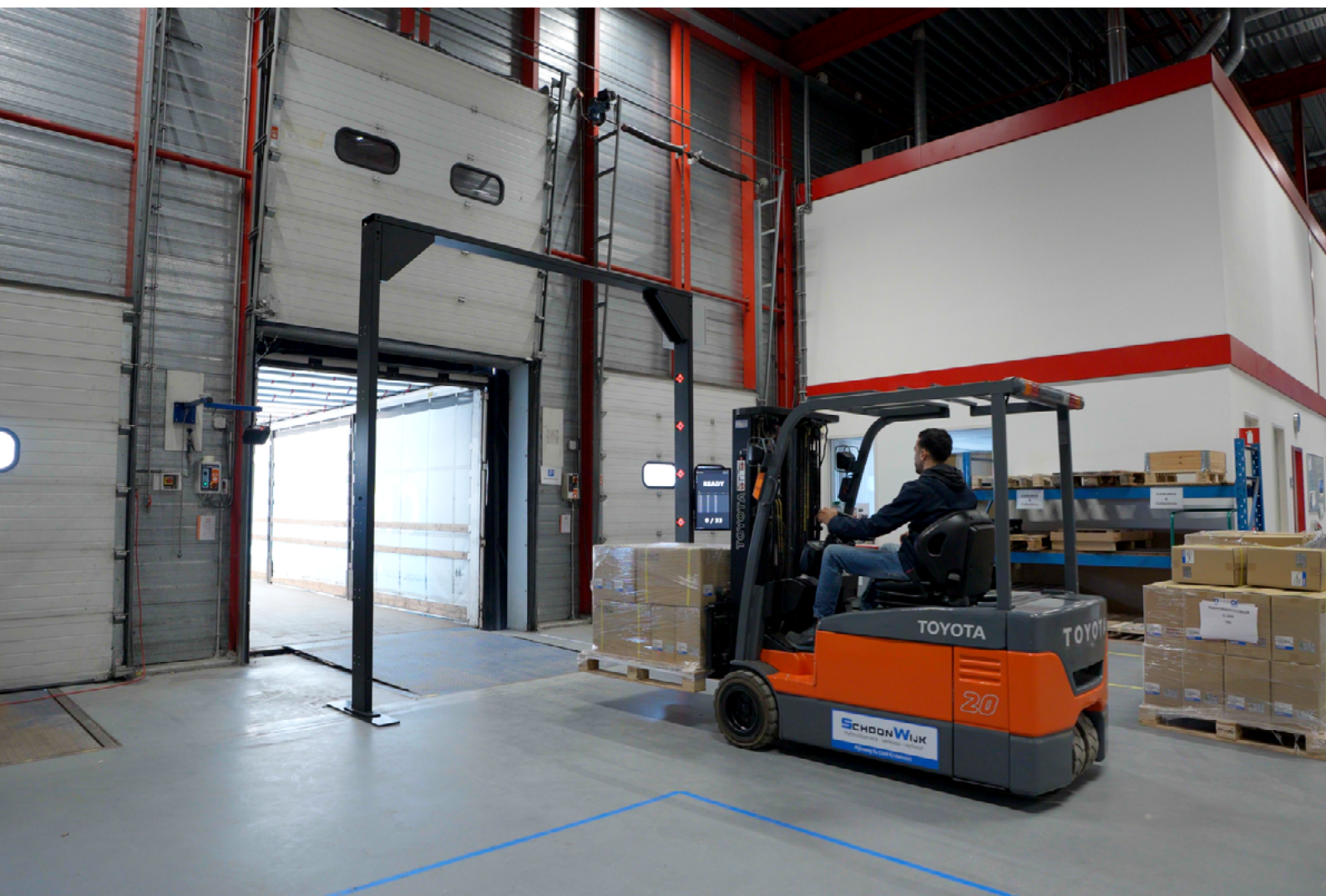
The JOLT Automatic Code Reading Gate is built around one simple idea: the forklift should not have to stop. Positioned at the entrance to the loading bay, it uses OMRON's VHV5-F autofocus multicode readers to capture and decode pallet manifest codes in real time as the forklift drives through. The data is matched against the expected load list and pushed directly to the ERP system, while a traffic light signal tells the driver instantly whether to proceed or stop. The gate also photographs every pallet loaded to the truck, storing each image with a timestamp and load reference. This provides automatic proof of what was loaded and when.

The key to making this work on a moving forklift is the VHV5-F's liquid lens autofocus functionality, which adjusts dynamically to maintain sharp focus regardless of how the pallet is positioned, something conventional fixed-focus cameras cannot reliably do. Combined with

a high-speed global shutter sensor, multi-code decoding, and standard industrial communication protocols for ERP integration, the camera handles the full range of variability found in real loading bay conditions.

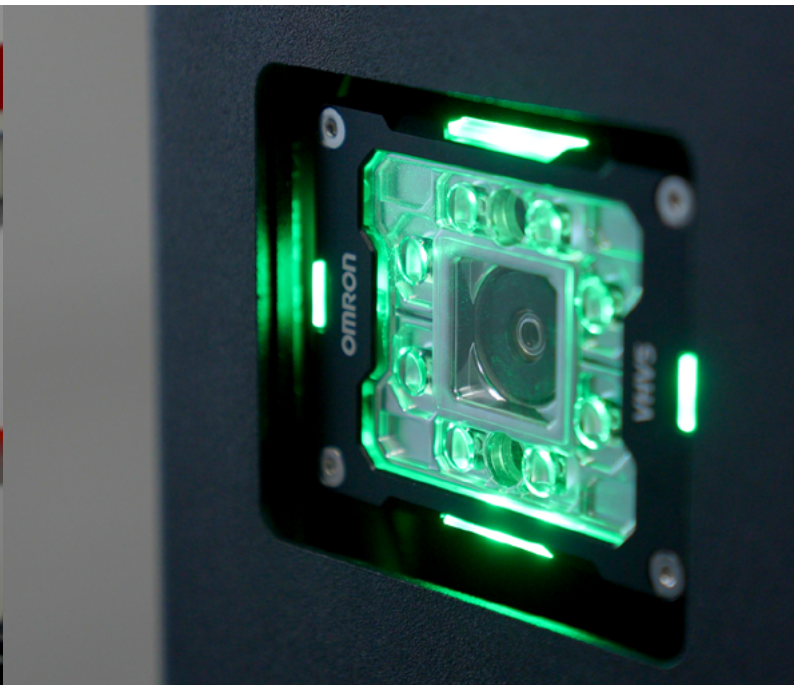
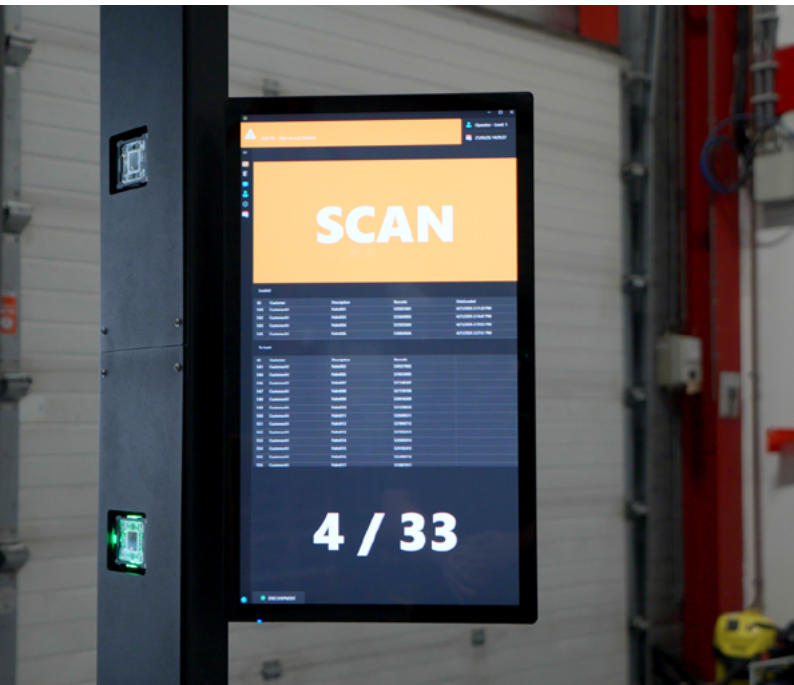
The gate also integrates OMRON's E3AS-HF photoelectric sensor to detect the approaching forklift and triggers the scan at the right moment across a sensing range of up to 6 metres, and the screen, and an optional spotlight, which provides the feedback to the driver. Tying it all together is OMRON's NX1 modular machine controller, handling the logic, communication, and ERP integration in a single platform.

JOLT and OMRON worked closely together throughout the development process, testing at customer sites to validate the solution under real operating conditions. The user interface was designed to be as simple and intuitive as possible, so that operators with no specialist knowledge of vision systems can work with it effectively, in the conditions you actually find at a real loading dock.



The Benefits: Time, accuracy, and proof

1. The time saved by eliminating the dismount-scan-remount cycle adds up fast. Where a driver previously spent an estimated 2–3 minutes per pallet on manual scanning, the gate handles the entire process without any interruption to the workflow.
2. By automating the scan and the ERP registration, the gate eliminates the most common source of loading errors. The spotlight feedback also ensures that any issue is caught at the point of loading.
3. The system also photographs each pallet loaded to the truck and retains those images with a timestamp and load reference. This means that in the event of a dispute, the documentation is already there.
4. From the moment a manifest code is read, the data flows directly into the ERP system. The load is registered, confirmed, and tracked without any manual data entry step. This closes the loop between physical logistics operations and digital record-keeping.



Early results and outlook

The traditional routine of stop-and-scan at the loading bay is something most companies have accepted as simply the way things are done. The automatic code reading gate shows it does not have to be. The response from everyone who has seen the solution in operation has been strongly positive. The concept is immediately intuitive to anyone who has dealt with loading bay operations, the problem is recognised instantly, and so is the value of removing it. OMRON and JOLT are available to demonstrate the solution to prospective customers.



About JOLT

JOLT is a machine vision integrator based in Kortrijk, Belgium, specialising in the application of camera and imaging technology to industrial automation challenges. The company works across sectors including pharma, automotive, printing and packaging, and logistics, serving manufacturing clients throughout Europe. JOLT is an official OMRON partner with close to seven years of collaboration in vision automation. For more information, please visit <https://www.jolt.be/>.



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