

NORM HOLDING SUCCESS STORY

Redefining Intralogistics with Wearable
AI and Ergonomic Automation

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The Scale of Modern Manufacturing



The Client

Norm Holding – A top 5 fastener manufacturer in Europe, operating 20 global production centers with 4,000+ employees.



The Mandate

Supplying the automotive and white-goods sectors requires absolute precision through Just-in-Sequence (JIS) logistics.



The Core Requirement

Unlike traditional models, JIS demands that components reach the assembly line at the exact time, in the exact sequence, matching individual product builds.



The Stakes

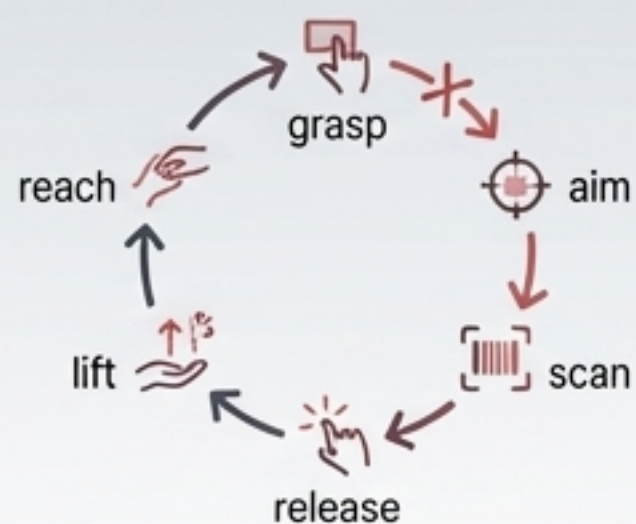
Zero tolerance for error. A single sequencing mistake during manual picking leads to catastrophic, highly expensive assembly line stoppages.

The Hidden Costs of Operational Inefficiency

“Motion Waste” Diagnostic Matrix

Micro-Interruptions, Macro Impact

Traditional 300-600g handheld terminals force a continuous physical loop—reach, grasp, aim, scan, release, lift. This continuous motion waste compounds into vast shift losses.



Cognitive Load & Error Risk

Device-handling disrupts operator focus. Momentary distractions and visual shifts during manual picking jeopardize the strict JIS sequence, risking severe production downtime.



Biomechanical Strain

Lifting a heavy device thousands of times per shift induces Repetitive Strain Injury (RSI) risks, compromising workforce health, safety, and long-term stamina.



Ergonomic Revolution via Wearable Edge Computing

Hands-Free Agility

Replaces heavy 600g terminals with a 45g wearable edge-computing device, enabling 100% natural, frictionless two-handed operation.

Instant Data Capture

An ergonomic side-trigger enables millisecond barcode scanning without ever disrupting the worker's physical workflow or grip.

Unlimited Power Architecture

Hot-swappable modular batteries ensure zero-downtime shifts, maintaining continuous momentum on the logistics floor.



IT/OT Convergence and Zero Defect Operations

Tri-Channel Feedback

Real-Time SAP/WMS Sync

The proprietary NorM middleware provides low-latency API integration, transforming dynamic ERP work orders into instant wearable prompts.



Haptic (Touch)

Instant physical vibration blocks actions when a wrong part is scanned, halting errors at the source before they happen.



Optic (Visual)

A 1.77-inch temper-glass display delivers immediate, color-coded validation directly to the back of the hand.



Acoustic (Sound)

Clear audio cues confirm successful picks or flag errors, cutting through high-decibel factory noise.

Measurable Impact & Operational Excellence

+20%

**Operational
Velocity**

Eliminating the pick-up/put-down device cycle yielded a net 20% speed increase in intralogistics, drastically boosting throughput without expanding headcount.

100%

**Pick
Accuracy**

Haptic blockage and AI-verified scanning achieved complete mistake-proofing, eliminating costly line-stoppage risks for JIS assembly.

Maximum

**Occupational
Health (OHS)**

Transitioning from 600g devices to a 45g wearable erased biomechanical stress, minimizing fatigue and reinforcing a premier safety culture.

Strategic Vision: Pioneering Industry 5.0



Beyond Digitalization

Norm Holding has transcended standard automation, embedding human-centric Industry 5.0 principles where technology augments—rather than replaces—the physical workforce.

Data-Driven Transparency

Micro-movements are now digitized into macro-insights. Intuition-based management is replaced with 100% traceable, data-driven layout and staffing optimization.

Predictive Future

Wearable data continuously trains NorM's AI algorithms, paving the way for autonomous predictive scheduling and an infinitely scalable supply chain ecosystem.



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