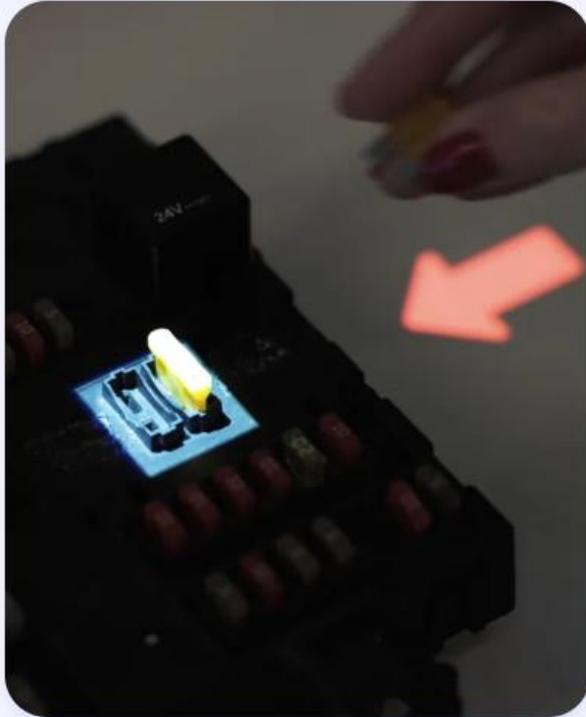




ansemat

Client Use Cases 2026

Operator Guidance Technology leads to...



90%
Less errors

Eliminate operator mistakes

50-75%
Faster training

Facilitate training on-the-job

+44%
Increase staff employability

Employ lower skilled workers for complex tasks

Operator Guidance Options



Digital **Work Instructions**

Variant, & skill-based
work instructions

Operator **action**
recording



Smart **Tightening**

Integrate with **any**
fastening tool

Tool **Position Control**



Augmented Reality (AR) & **Inspection**

Project work
instructions (AR)

Validate actions with
Machine Vision or
sensors



Ultimate

Full capabilities

Use Cases | Automotive & Off-Highway

Not allowed to disclose company name



EV Battery Assembly

No-fault-forward for new product intro



EV Battery Repair Center

No-fault-forward for ever-changing repair instructions



Powertrain Assembly

Stress-free tightening process control



Engine Assembly

No-fault forward with most advanced suite of tools



Fuse Board Assembly

Dynamic work instructions for High Mix, Low Volume



Hydrogen Fuel Cell

Process & tightening control for new product



High end car manufacturer

Complex Batching after Leather Cut

Traceability parts sorting for all vehicle configs



Motor Bike Manufacturing

End-to-end factory process control



Front Grill Assembly

Speed up training new hires



Cobot-human interaction

Human assistant with worker guidance



EV Battery Assembly

Pick-to-light from 2 separate carts



Wheel Assembly

Miss no bolt



Tier1 Automotive

Wiring Harness Routing

Faultless cable routing



Valve Assembly

Errorproof, ergonomic, fully traceable assembly

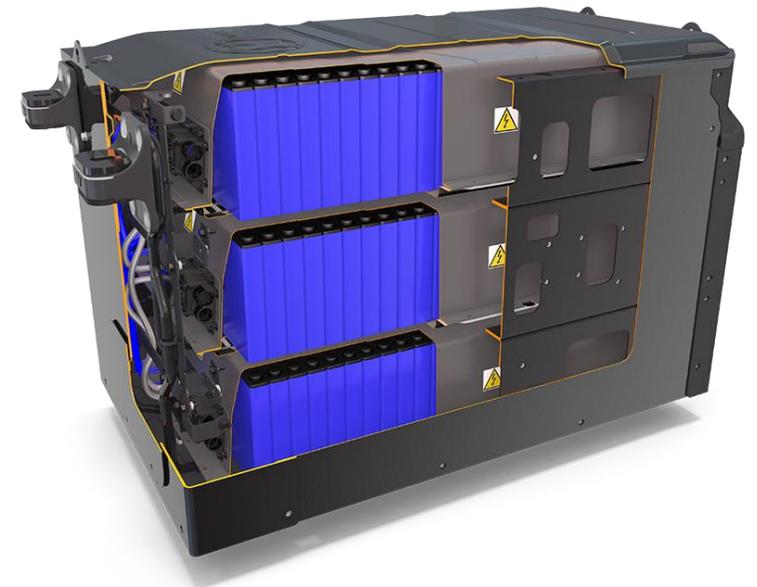




Automotive

▶ PROBLEM

- **New EV** product → needs flexible instruction configuration
- **Many fastening points & screw variants**
- **No full errorproofing** nor traceability



EV Battery Assembly (2 | 2)

SOLUTION → NO FAULT FORWARD NEW EV BATTERY

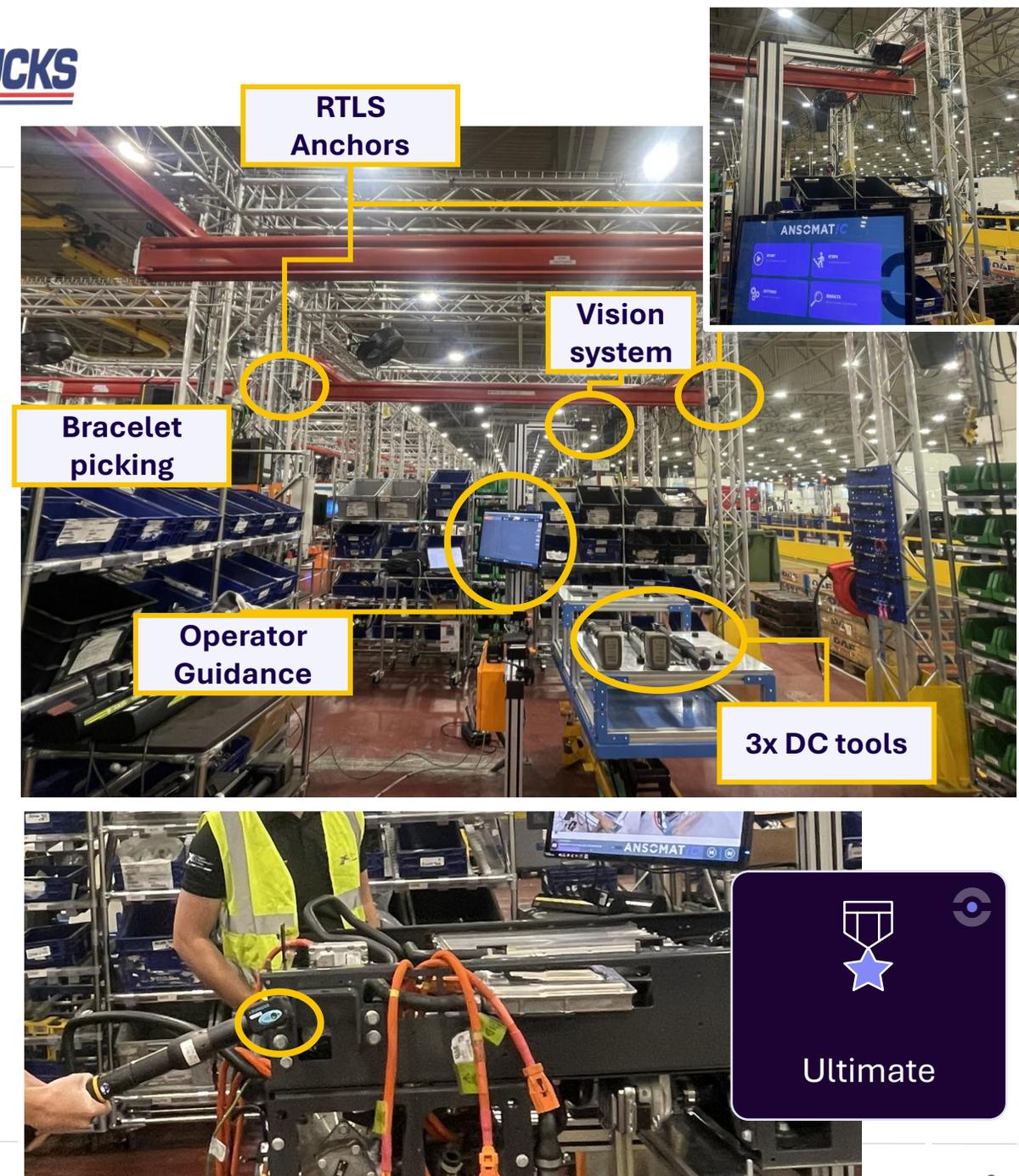
« Progress only after correct execution »

- ✓ **MES integration** to automatically trigger production order
- ✓ **Digital step-by-step guidance** for all variants
- ✓ **Machine vision** for process validation (**KEYENCE**)
- ✓ **DC fastening tools** with torque and angle control
- ✓ **RTLS-based precise tool positioning** (**ZERØKEY**)
- ✓ **Bracelet-based picking** to replace conventional pick-to-light hardware (**ZERØKEY**)

✓ **92%**
First-time-right

✓ **Strong reduction**
rework & scrap

✓ **Faster NPI**
ramp-up &
operator training



▶ PROBLEM

- Explosion of EV cars **with too many unnecessary pack replacements**
- EV battery repairs are **difficult and dangerous** if not well guided
- Perceived safety risks have **reduced consumer confidence** in **purchasing 2nd hand** electric vehicles



EV Battery Repair Center (1 | 2)

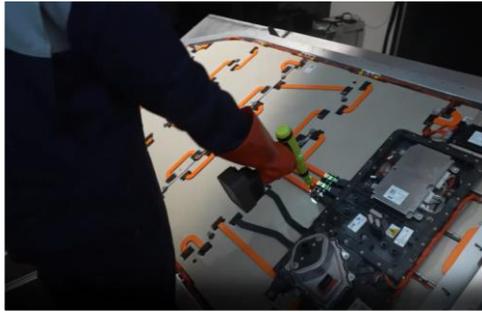


Ultimate

SOLUTION → NO FAULT FORWARD REPAIR CENTERS

✓
100% traceability & compliance

✓
Enable recruitment of unexperienced workers



1. Battery intake Part control	2. Station design Ergonomics	3. Inspection Safety	4. Battery Testing Dynamic instructions	5. Process Control No-fault forward
<ul style="list-style-type: none"> • Unload pack • Control inventory of parts 	<ul style="list-style-type: none"> • Rotating table positions battery • 2x vision & 2x projector systems on a slider for flexible and accurate inspections 	<ul style="list-style-type: none"> • Camera based PPE monitoring • RFID tool board checks if tools are present/picked. 	<ul style="list-style-type: none"> • Workflow adapts dynamically based on required repairs 	<ul style="list-style-type: none"> • Vision-based part inspection • Vision based DC-tool position control activate only at the correct bolt • Guidance through projection



▶ **PROBLEM**

- **Comply to Japanese quality standards** (Toyota way) to ensure in-line quality control of and best **ergonomics**
- Repeatability of tightening operations with the **highest torque accuracy**





▶ SOLUTION → STREE-FREE TIGHTENING

“Achieve more than double the output per shift while maintaining assured quality”

- ✓ **Barcode** scanning to select **right program**
- ✓ **ESTIC pulse tools** to **reduce strain** on operator (**ESTIC**)
- ✓ **Visualize bolt sequencing** on screen
- ✓ **Label** printing with results after each built



Speed increase
from **40 to 110**
products a day



After nearly four years of production and various programming tasks, I can affirm that **the Ansomat product is exceptionally reliable**. Its repeatability and robustness make it an **indispensable tool for our company**.

Michael Vilain – Senior Process Engineer



▶ PROBLEM

- **OEM supplier contract awards increasingly depend on Tier-1 supplier's ability to prove consistent quality control**
- **Proving process standardization and repeatability is challenging when relying on manual operations**





SOLUTION → NO FAULT FORWARD ASSEMBLY

“The flexibility of a human combined with repeatability of a machine!”

- ✓ Project work instructions (AR) onto engine
- ✓ DC tools with socket selection control (**ESTIC**)
- ✓ RTLS-based positioning to ensure precise fastening (**ZERØKEY**)
- ✓ Machine Vision workflow verification (**KEYENCE**)
- ✓ In-process image capture for traceability
- ✓ Pick-to-light bearing selection (**SICK**)
- ✓ Digital birth certificate per engine

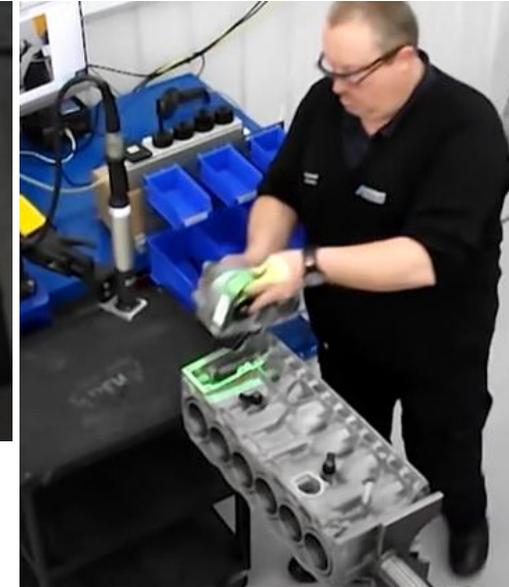


99% first-Time-right



Thanks to Ansmat solution we can reduce training time from 3 months to 1 week

Simon Warburton – CTO



► PROBLEM

- **100+ possible configurations** increase risk of human error
- **Variant-based vision job** adjustment that is **scalable**



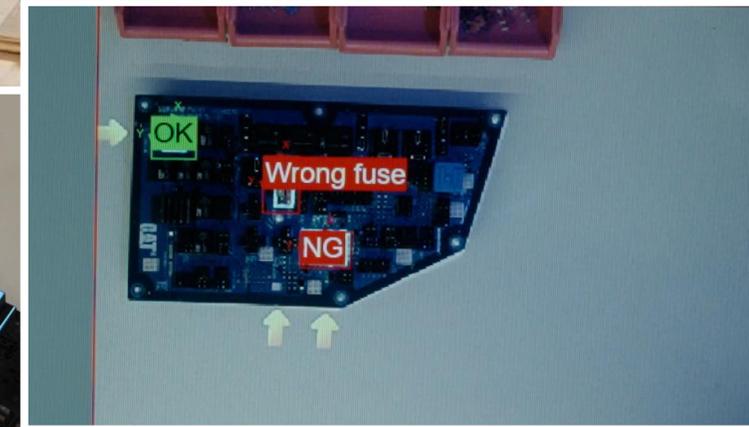
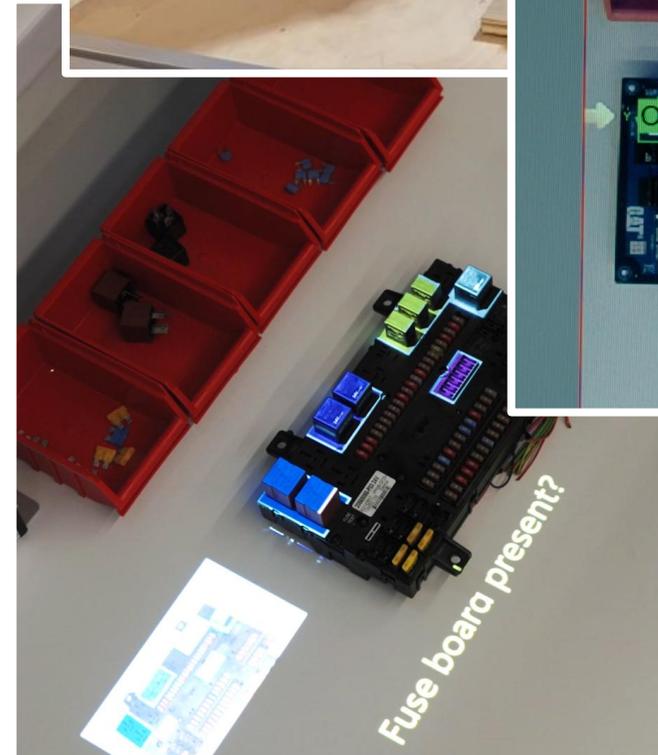
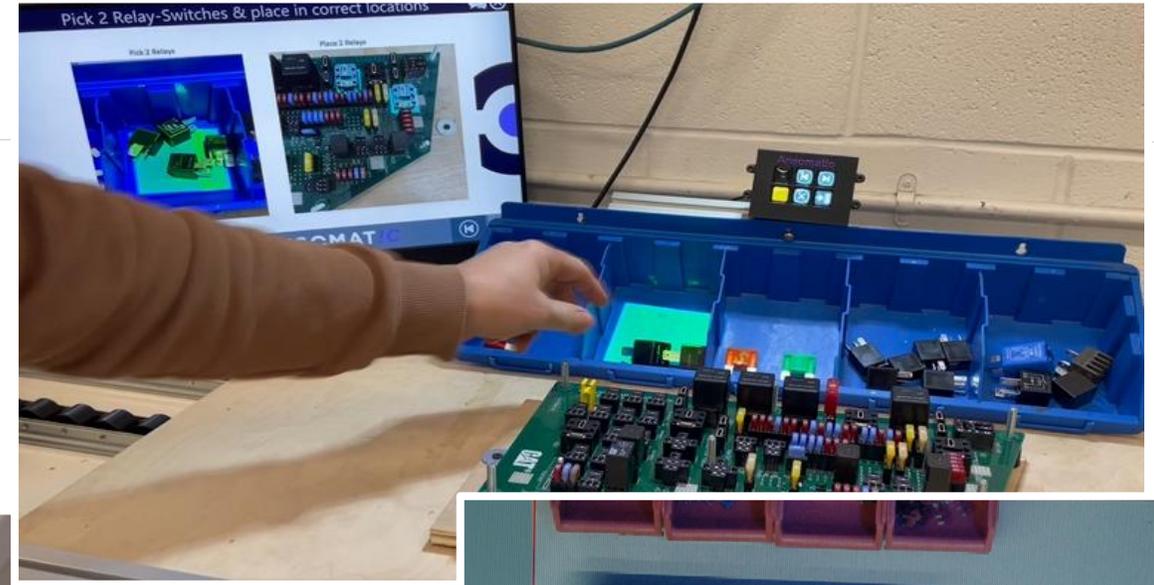
▶ SOLUTION → DYNAMIC WORK INSTRUCTIONS

“Ease of configuration high-mix/low-volume production”

- ✓ Projections (AR) highlight the correct working location
- ✓ Vision system with real-time feedback to detect potential mistakes (**COGNEX**)
- ✓ Flexible variant management, allowing to easily add or adjust new variants
- ✓ MES integration to push the correct work order

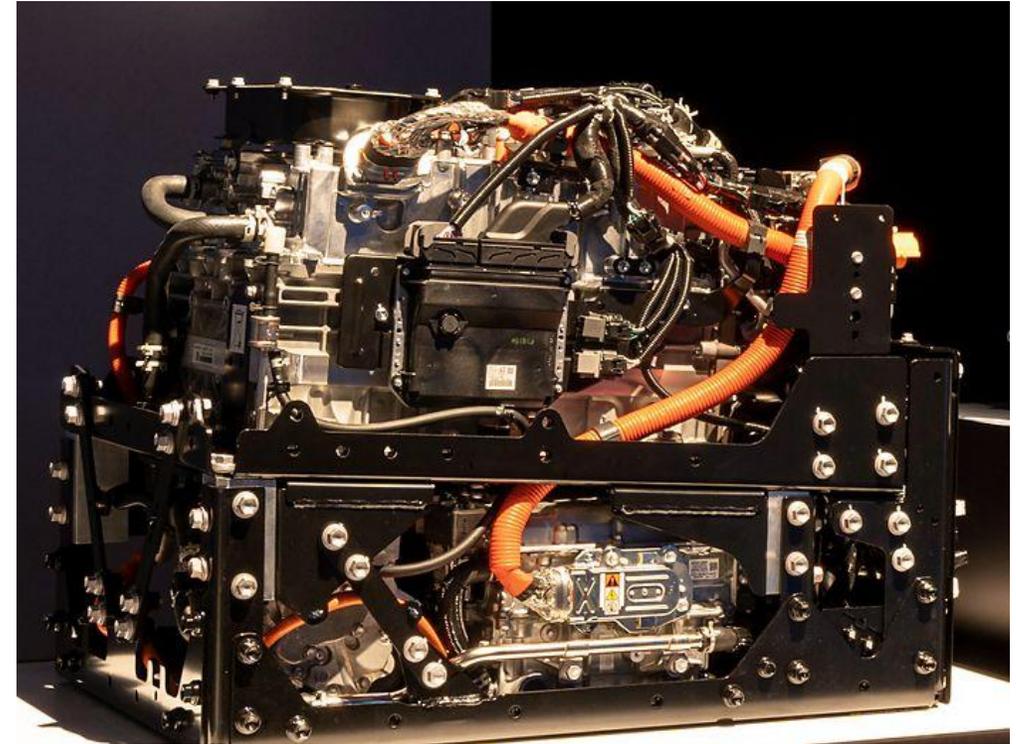
✓ Eliminate operator mistakes

✓ Speed up training



► PROBLEM

- **Hydrogen is nascent, requiring flexible processes for continuous improvement**
- **Strict compliance requirements demand full traceability**





SOLUTION → PROCESS CONTROL NEW PRODUCT LAUNCH

“Configure, adapt, improve the process instantly”

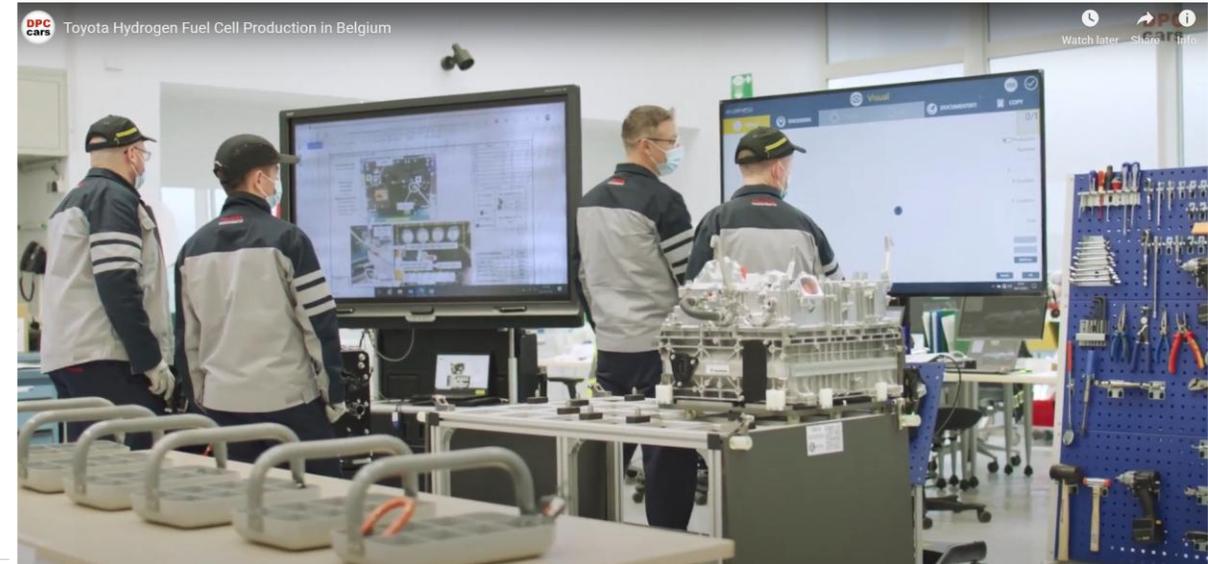
- ✓ **Barcode scanner** for automatic program selection
- ✓ Digital **work instructions** with **visual bolt sequence**
- ✓ **Intelligent torque wrenches** for controller tightening
- ✓ **Tool position control** to ensure correct bolt order
- ✓ **Pick-to-light system** for correct part selection
- ✓ **Full traceability:** torque, angle, operator ID,...



100% built-in quality
at source



Full traceability
human actions
& reporting





► PROBLEM

- **Highly bespoke interiors** (color, stitching, perforation,..)
- **100+ of leather parts per vehicle**
- **Paper-based kitting**, long setup times
- Frequent **missing parts**
- **High cost of errors** and **lack of traceability**



Complex Batching seat leather

High end car manufacturer

Digital Work Instructions

SOLUTION → TRACEABILITY PARTS SORTING FOR ANY CAR CONFIGURATIONS

- ✓ **MES** integration batch configuration
- ✓ Visual **checklist** of required parts
- ✓ **Digital verification** of present/missing parts
- ✓ **Auto-generated rework** orders for missing items
- ✓ **Full traceability missing-parts alerts**

Part Selection Verification

Upper Cut 2	Infill Driv	Infill Pass	RQ Infill Upper	RC Bolster Out
RC Bolster Inner	RS Insert Upper	FS-H Insert Upper	FC-H Bolster Outer	FC-H Bolster Inner
FS-H INS UP	FS-HRH Border F Rear	FC-H Nose	FS-HRH Border Main	FS-H Bolster
FS-H INS UP	RS-Bolster Inner	FS-HRH Facing Rear	FC-H Insert Cut 2	FS-Insert Cut 2
RS-Insert Cut 2	RS-Insert Cut 2	FS-Insert EXT Cut 2	RS-Insert Outer Cut 2	RC-Insert Cut 2

Scan Barcode
Serial Number: uhouhouh
2/22
Demo Run
Simulate OK
Simulate NOK
uhouhouh



70% rework reduction!



22% Setup reduction time

► PROBLEM

- **End-to-end** production **consistency** across assembly line
- Fasteners not meeting specifications
- Missing components, mistakes made with **lack traceability**



SOLUTION → END-TO-END ASSEMBLY PROCESS CONTROL

“Connected assembly solution for full production consistency”

- ✓ On-screen bolt sequence playback
- ✓ Crane torque wrench + socket selector verification
- ✓ Stream deck step confirmation & control
- ✓ Trigger companion app photo capture and store images
- ✓ Per-bolt validation (wrench, socket, torque)
- ✓ Centralized SQL data logging & analysis

✓ End-to-end traceability

✓ Drastically reduce scrap & rework



► PROBLEM

- Initially, DAF developed their own in-house smart benches, these **lacked scalability**
- **Logo misalignment was irreversible**
- Usage of wrong bolts and clips





Projector & vision system



SOLUTION → SPEED UP TRAINING NEW HIRES AND IMPROVE REPEATABILITY

“Increase operator confidence with structured workflow”

- ✓ **MES integration** to trigger correct production order
- ✓ **Projection of instructions** onto the front grill
- ✓ **Pick-to-light sensors** to highlight bin location (*pick to light*)
- ✓ **Machine vision** to validate correctness logo placement (**COGNEX**)

✓ Lower risk of scrap parts

✓ Speed up training new hires

 AR & Inspection 

► PROBLEM

- Manifold **weights heavy**, leading to bad **ergonomics** for operator
- Operator **mistakes** during tightening





Ultimate



SOLUTION → COBOT, THE HUMAN ASSISTANT

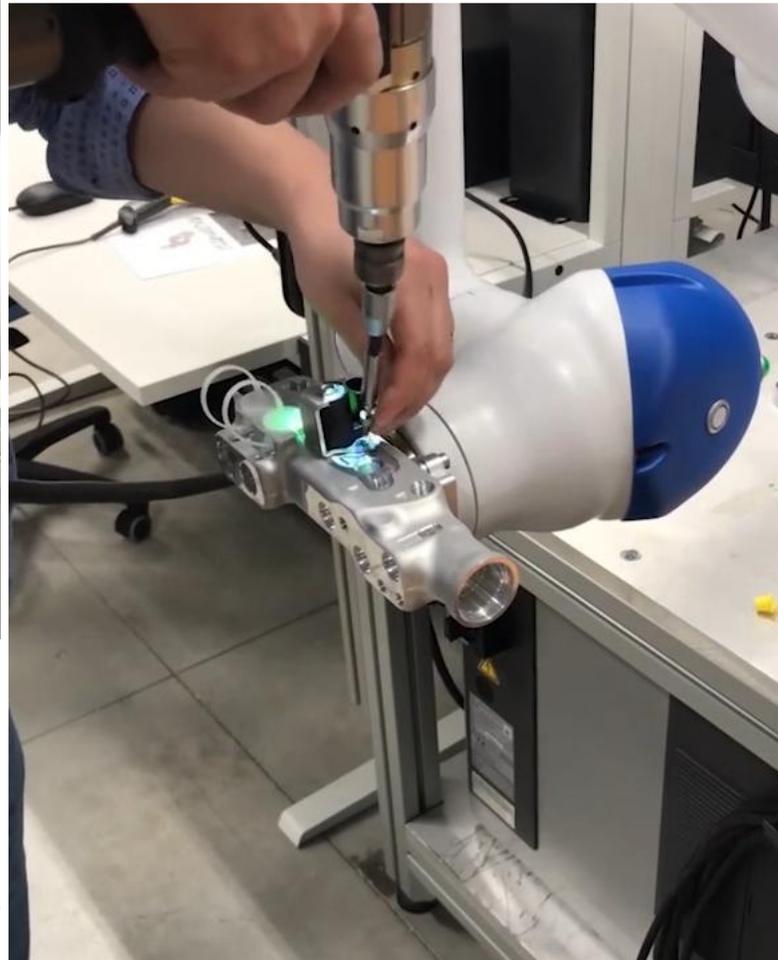
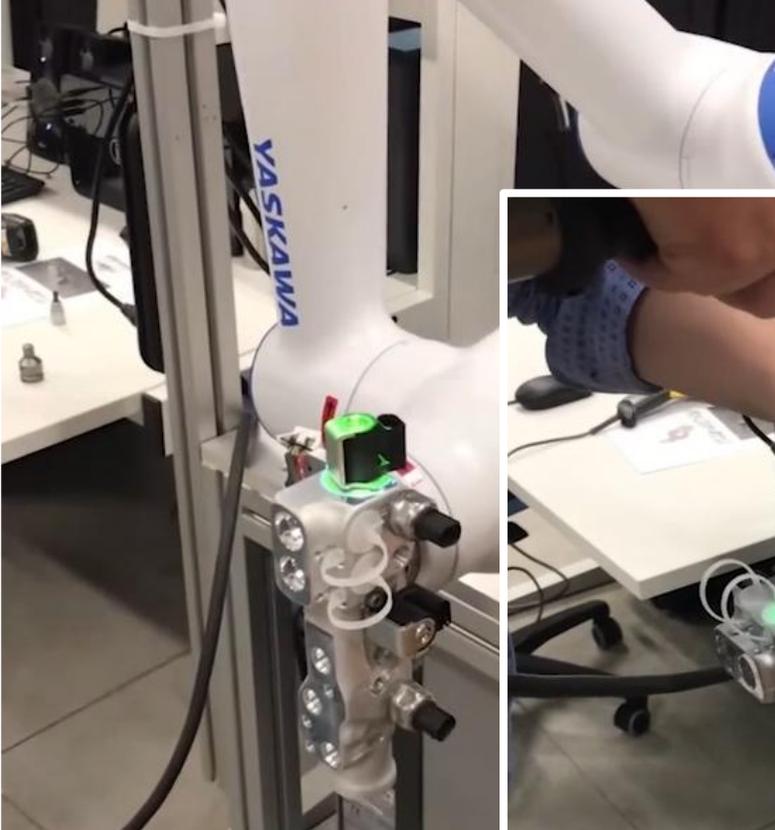
- ✓ Cobot handles manifold lifting and rotation
- ✓ Ansoamat has standard robot/ cobot integration for easy setup
- ✓ Projected work instructions onto manifold
- ✓ Vision-based action validation
- ✓ ESTIC tools for controlled tightening ([ESTIC](#))



Improved ergonomics setup

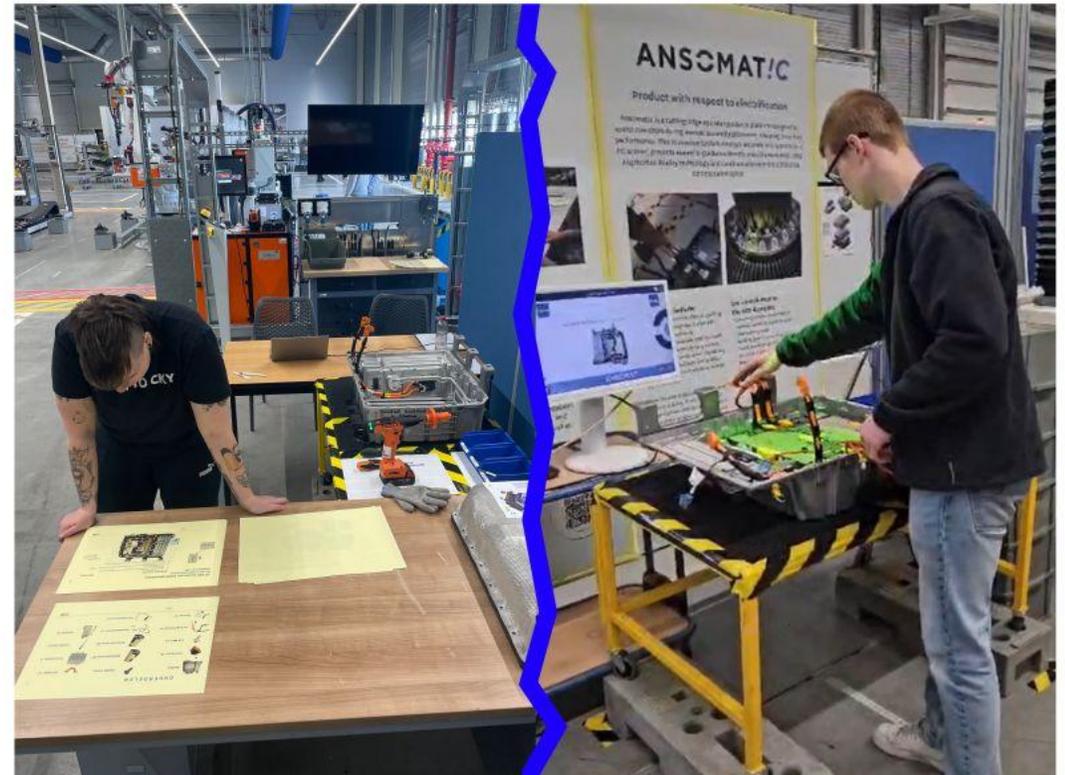


Assemble parts right sequence right conditions



▶ PROBLEM

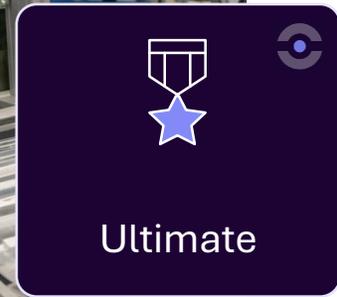
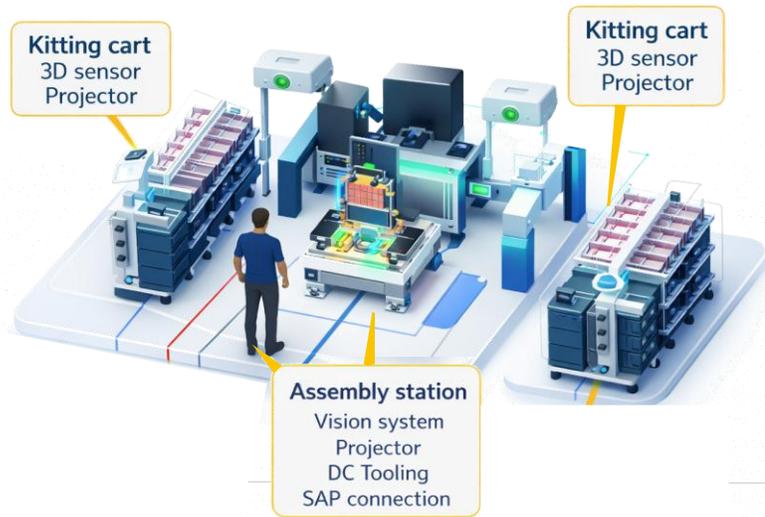
- **Paper-based work instructions are difficult to follow** and prone to more error
- Operators **lack clear visual guidance on where to pick parts from across 2 kitting carts** and main assembly station
- **High product variability from multiple OEMs** increases complexity and risk of mistakes



► SOLUTION → PICKING & ASSEMBLY GUIDANCE THROUGH SAME SOFTWARE

« Pick from multiple carts and assemble on same station »

- ✓ Each kitting cart is equipped with a **projector** and **3D sensor** that visually indicates exactly where the operator must **pick correct component**
- ✓ Assembly station provides **dynamic work instructions** that **automatically adapt** to specific battery or product variant being built
- ✓ **Vision system validates** each operator **action**
- ✓ System **projects assembly steps** directly onto the work surface



▶ PROBLEM

- **Forgotten bolts** lead to **safety issues**
- Wheel **fixture** comes **loose**



Wheel Assembly **CNH**



Tightening

▶ SOLUTION → PROCESS CONTROL WHEEL ASSEMBLY

“Fast, dependable bolt tightening”

- ✓ **Barcode scanner** for automatic program selection
- ✓ **Digital work instructions** with **visual bolt sequence**
- ✓ **Makita tool** to fasten simple bolts (*Makita*)
- ✓ **Stanley tool** for highly controlled accurate tightening (**STANLEY**)
- ✓ **Full traceability**: torque, angle, operator ID,...



0% safety incidents
time

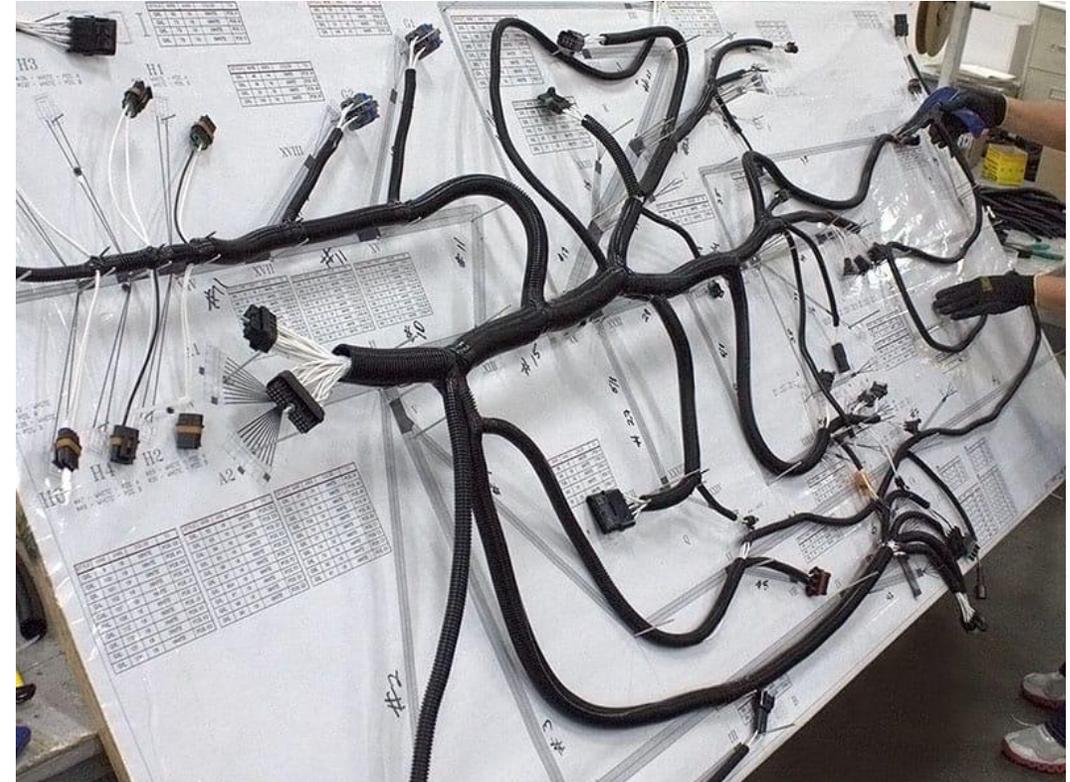


100% traceability



► PROBLEM

- **Dozens of wires & connectors** leading to multiple potential **issues**:
 - Incorrect routing
 - Connectors not fitting
 - Wrong wiring length
 - ...



Wiring Harness Routing



SOLUTION → FAULTLESS CABLING ROUTING

“Efficient, reliable cabling solution”

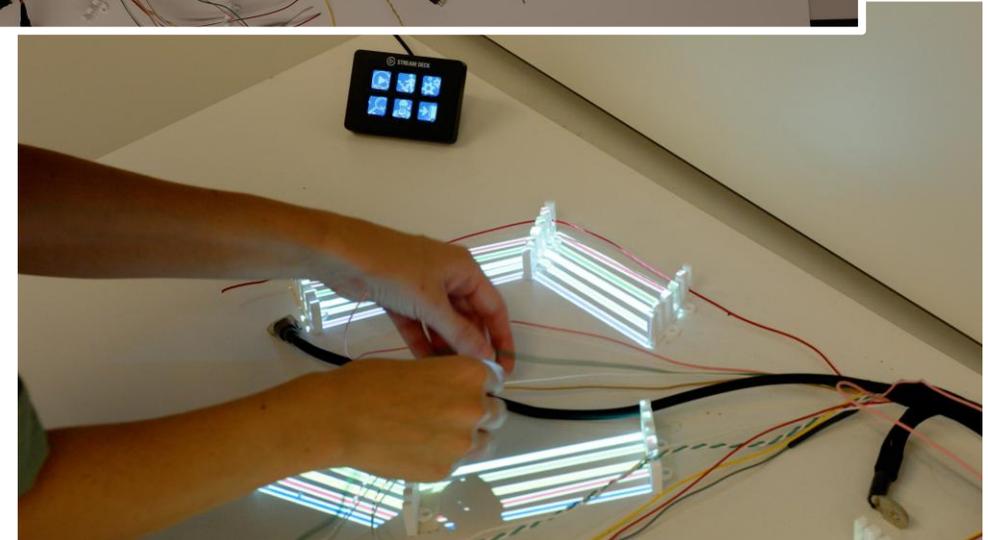
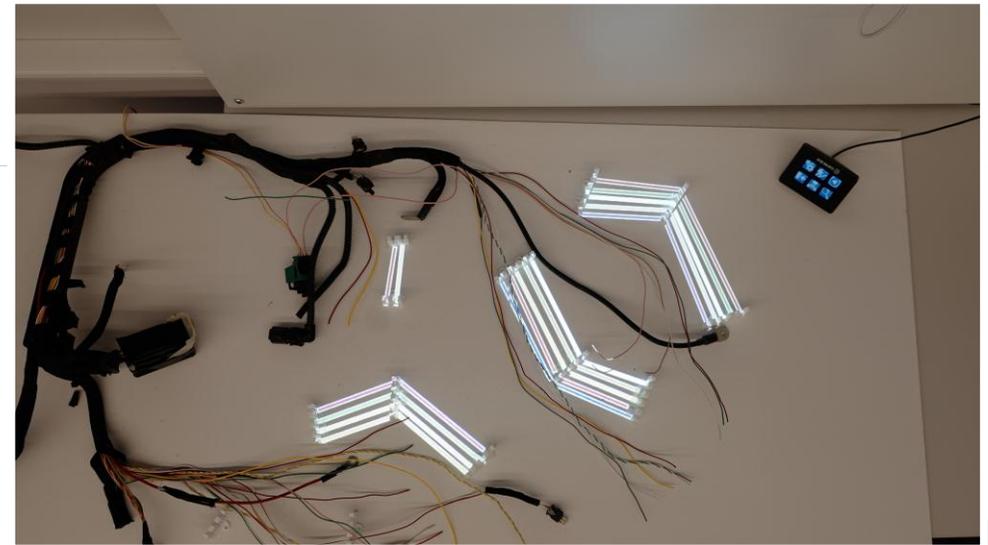
- ✓ Visualize wiring routes with integrated color-coded guidance
- ✓ Use machine-vision checks to verify correct connectors and tape placement
- ✓ Present accurate, configuration-specific work instructions for each wire



13% reduction
setup time



69% reduction
training time

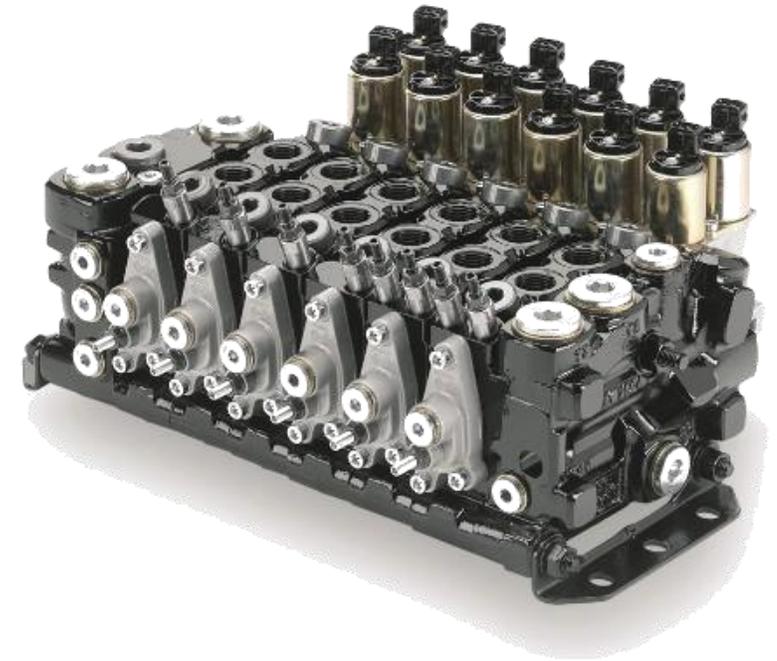


Ultimate



► PROBLEM

- **Poor operator ergonomics** when handling heavy hydraulic valve assemblies
- **Missing O-ring** leading to **internal leakage** and **costly rework**
- **Excessive number of nuts, bolts** and manual process steps, increases **risk of assembly errors**



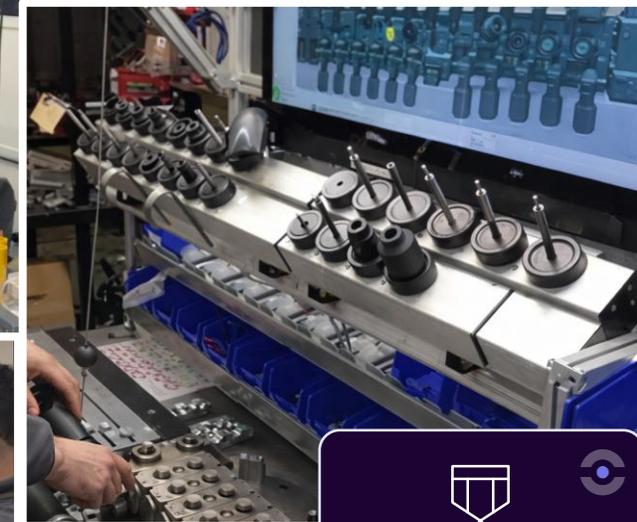
Hydraulic Valve Assembly (2 | 2)



► SOLUTION → ERROR-PROOF, ERGONOMIC, FULLY TRACEABLE

« Improved ergonomics and lower defect rates »

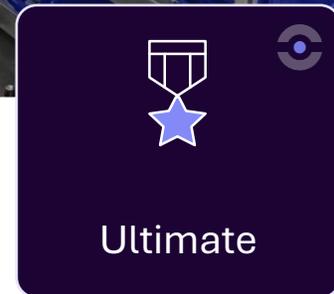
- ✓ **Machine vision** for O-ring verification ( KEYENCE)
- ✓ PLC-controlled **height-adjustable fixture positioning** for **optimal working height** to reduce operator strain
- ✓ **Controlled fastening tools of plugs:** fastening tools monitor torque and angle and provide automatic feedback ( STANLEY)
- ✓ **Tool Position Control with Reaction Arm** ( DOGA)
- ✓ **Automatic Socket & program selection:** automatically load the correct tightening program



100% built-in quality
at source



Full traceability
human actions
& reporting





Want to learn more?
info@ansomat.be