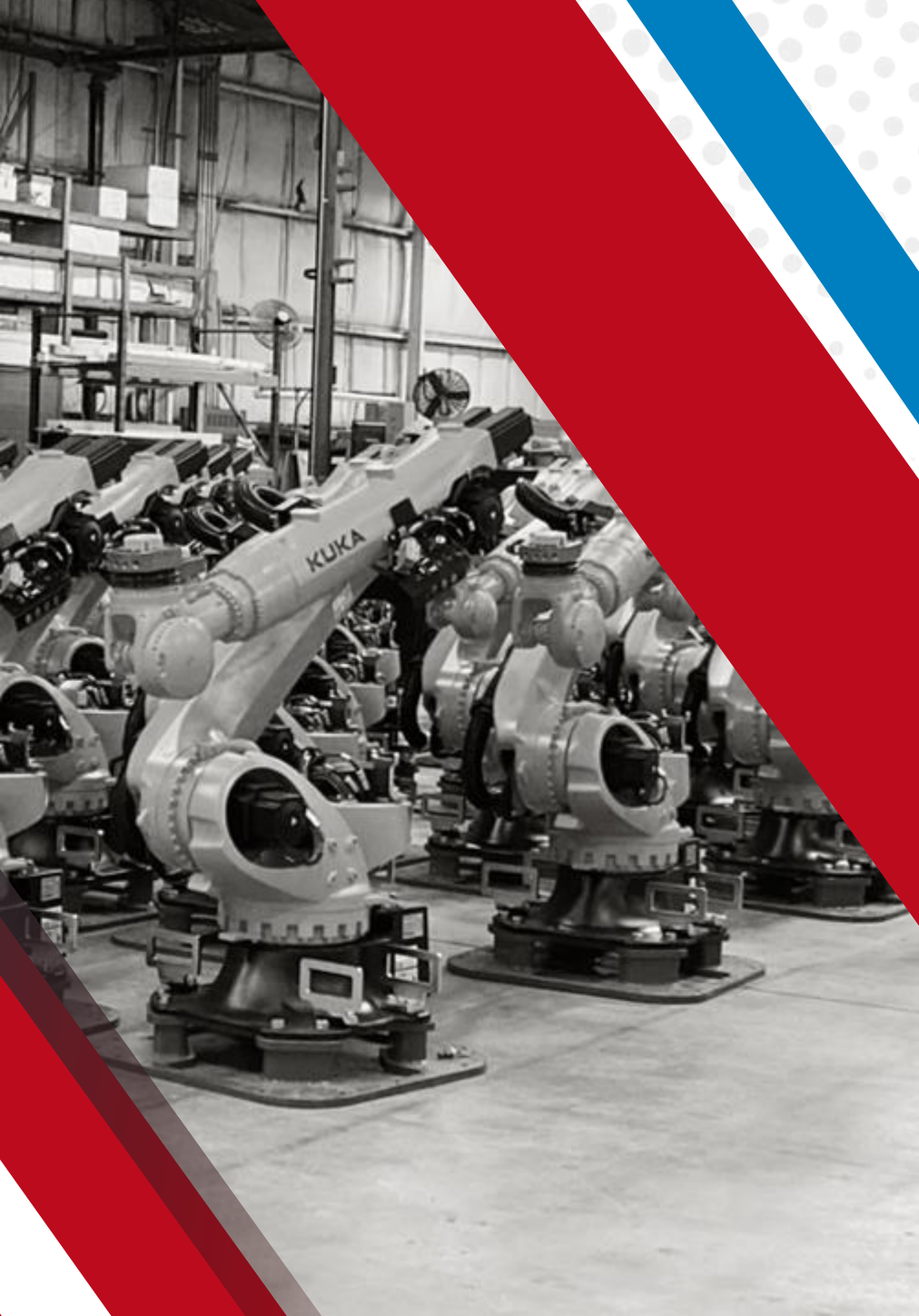


DRM

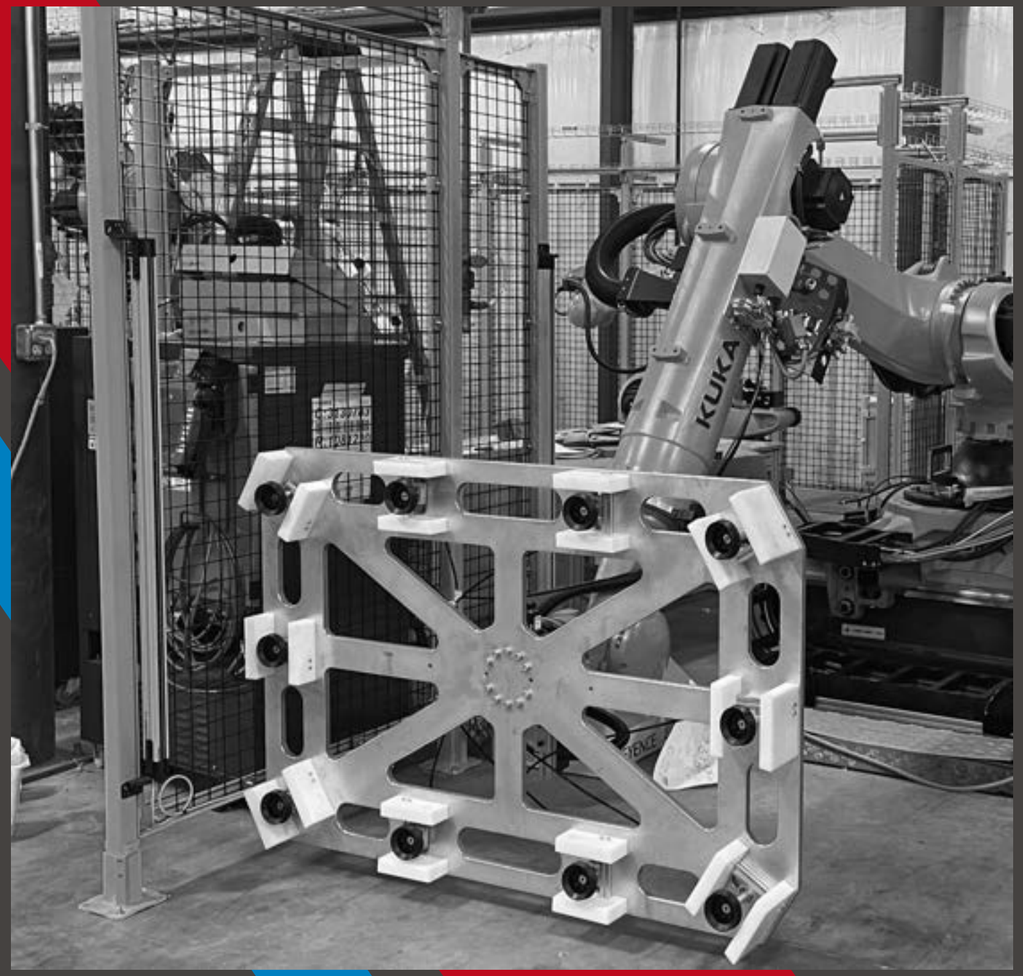
TOTAL PLANT INTEGRATION

COMPLETE INTEGRATION FROM POWER TO PROCESS

INTEGRATING CUTTING-EDGE GLASS INDUSTRY SOLUTIONS

GLASSBUILD 2025

DRM, LLC | Lawrenceburg, Tennessee



EXPERTS IN GLASS INDUSTRY SOLUTIONS

At DRM, we **move**, **install**, and **integrate** glass manufacturing equipment while adding value with advanced automation, inspection, safety, and data collection.

We make glass equipment work for you.

DRM

TOTAL PLANT INTEGRATION

AUTOMATION CHALLENGES

GLASS AUTOMATION CHALLENGES

- Fragile product handling requires precision and repeatability
- Legacy controls and wiring limit flexibility and uptime
- High scrap rates from defects like chips, cracks, or distortion
- Manual processes slow changeovers and increase labor costs
- Operator safety concerns around heavy panels and sharp edges

CORE CAPABILITIES

- Glass line integration and controls modernization
- Robotic dispensing and encapsulation systems
- Automated glass loading and unloading
- Vision systems for crack, chip, and edge inspection
- Safety upgrades with light curtains and guarding
- Data collection and recipe management tools

INSTALLATION SERVICES

- Glass equipment installs performed during scheduled downtime
- Staged integration designed for minimal disruption to production
- Reverse-engineering support when prints or legacy code are missing

What it means for you:

- Faster installs with less impact on glass production
- Confidence in safety, motion, and controls validation
- Reduced risk when upgrading aging infrastructure

DRM
TOTAL PLANT INTEGRATION

CASE STUDY

Machine Integration

From disconnected to fully integrated

Challenge

New glass equipment required integration into existing lines:

- **Outdated controls**
- **Mechanical mismatches**
- **Limited documentation**

Solution

- **DRM manages mechanical moves and system tie-ins**
- **Integrated glass machinery into existing lines**
- **Verified controls, logic, and safety for production readiness**

Results

- **Rapid install and startup**
- **Reduced changeover delays**
- **Reliable integration with systems**
- **Built-in safety and diagnostics**

Ensure compatibility and maximize efficiency with DRM’s expertise.

A fleet of KUKA robotic arms staged in DRM’s facility, ready for deployment. The image highlights the scale of the operation and the advanced automation systems in place.

CASE STUDY

Automated Material Handling

Challenge

Manual glass panel handling created issues:

- **Slower cycle times**
- **High labor costs**
- **Frequent safety risks**

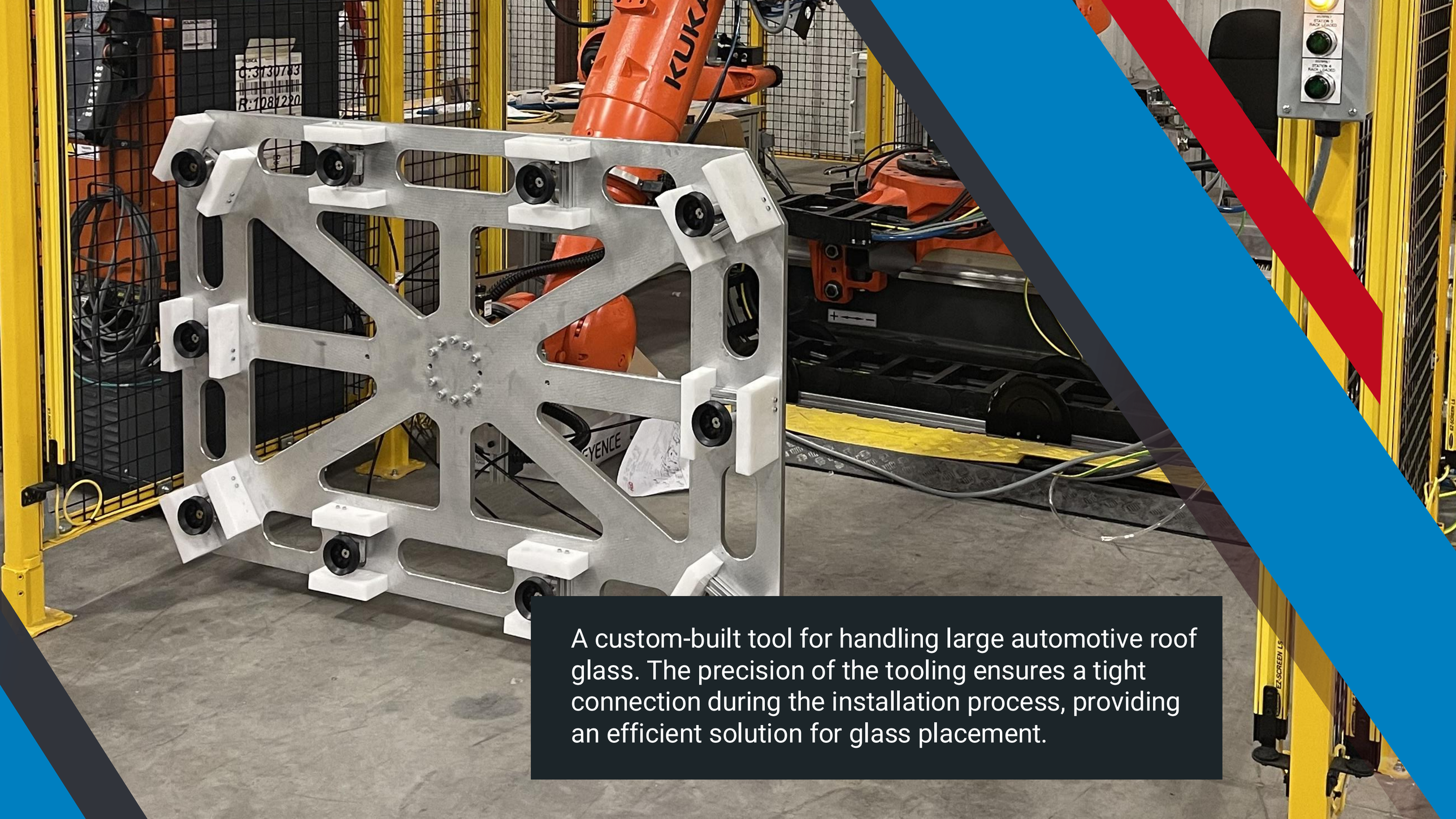
Solution

- **DRM engineered custom robotic handling systems**
- **Designed to handle large glass panels safely**
- **Integrated with line controls and vision systems**

Results

- **Faster throughput/fewer bottlenecks**
- **Reduced labor dependency**
- **Consistent, repeatable positioning**
- **Improved uptime and safety**

Enhance productivity and safety with automated material handling.



A custom-built tool for handling large automotive roof glass. The precision of the tooling ensures a tight connection during the installation process, providing an efficient solution for glass placement.

CASE STUDY

Safety Integration

From risk-prone to safety-certified

Challenge

Legacy glass machinery lacked modern safety measures:

- No light curtains or presence sensing
- Inconsistent guarding
- Increased injury risk

Solution

- Retrofit systems with light curtains and guards
- Added protective barriers and interlocked access point
- Verified compliance with UL 508A and TÜV safety standards

Results

- Reduced operator exposure
- Fewer safety-related stoppages
- Equipment safety compliant
- Stronger buy-in from plant safety

Protect your operators and maximize production safety.

A robotic system installed on rails, used for handling glass panels. This setup, equipped with light curtains and fencing for safety, is designed for the production of automotive glass roofs.

CASE STUDY

Advanced Glass Inspection Solutions

Challenge

Manual inspection methods led to:

- **Missed cracks and chips**
- **High scrap and rework rates**
- **Inconsistent product quality**

Solution

- **DRM deployed vision systems for real-time defect detection**
- **Integrated with PLCs and line controls**
- **Tuned inspection parameters for each product type**

Results

- **Fewer quality rejects**
- **Better traceability and reporting**
- **More consistent product output**
- **Less manual rework**

Ensure flawless glass products with automated vision systems.

A vision system used for inspecting automotive glass for defects and ensuring correct fret placement, color, and quality. The system is designed to validate the glass before it moves to the next stage of production.

CASE STUDY

Data Collection Systems

From guesswork to data driven-decisions

Challenge

Lack of real-time data made it difficult to:

- **Track production throughput**
- **Spot performance issues**
- **Make informed decisions**

Solution

- **DRM installed data collection hardware and software**
- **Captured key metrics from machines and PLCs**
- **Delivered real-time dashboards and reports**

Results

- **Better visibility into line performance**
- **Faster response to downtime events**
- **Data-backed production decisions**
- **Ongoing insights useful for continuous improvement**

Gain valuable insights with DRM’s data collection solutions.

PARTNERS & AFFILIATIONS

KUKA Official System Partner Platinum

AUTHORIZED SYSTEM INTEGRATOR FANUC

COGNEX

KEYENCE

A3 ROBOTICS

RA GOLD OEM Partner ROCKWELL AUTOMATION

DIAMOND PARTNER SYSTEMS INTEGRATOR

AVEVA REGISTERED System Integrator

Ignition! Registered Integrator

TÜVRheinland CERTIFIED

UL CERTIFIED