



# DRM

TOTAL PLANT INTEGRATION

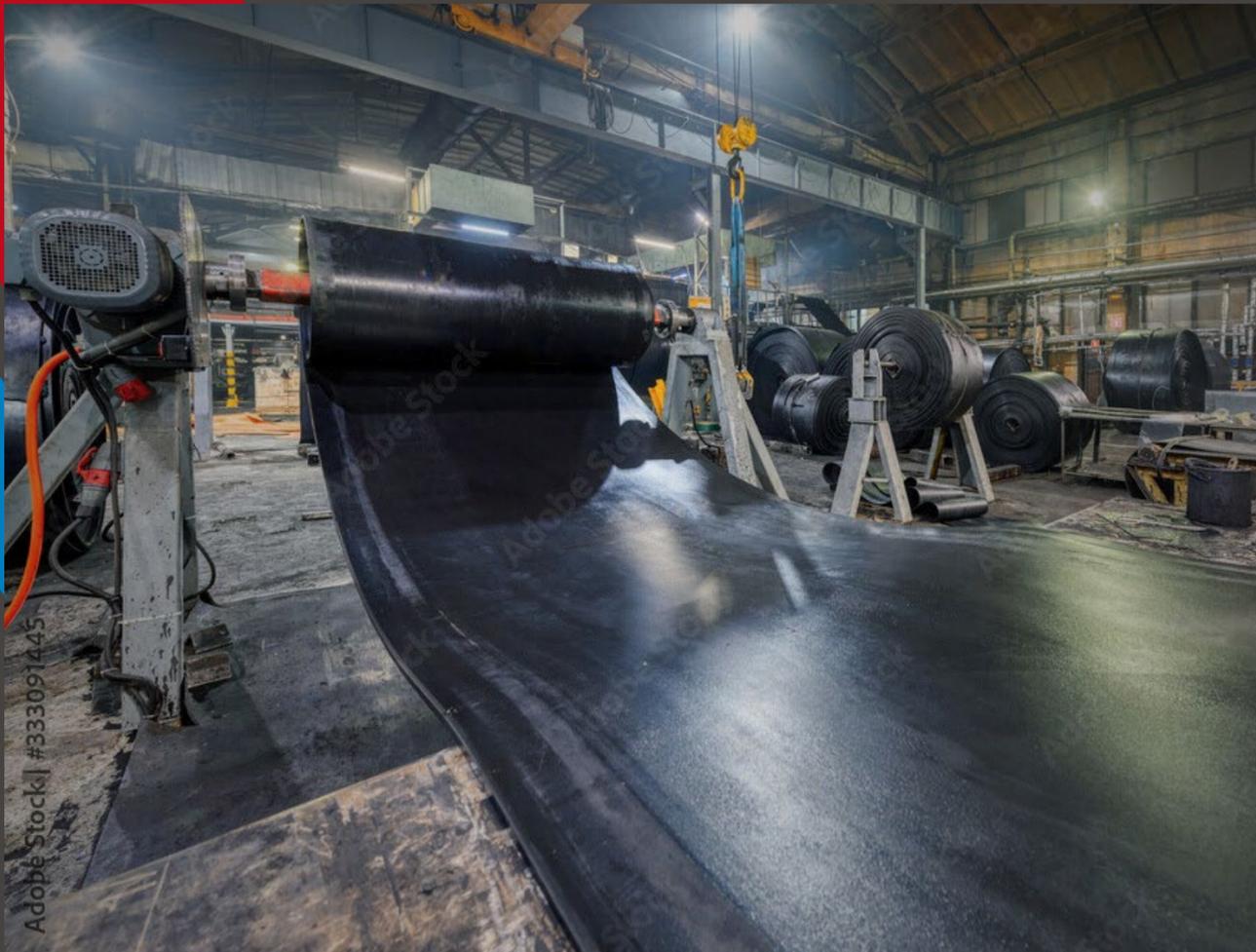
**COMPLETE INTEGRATION  
FROM POWER TO PROCESS**

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**AUTOMATION SOLUTIONS  
FOR THE RUBBER INDUSTRY**

**GLOBAL POLYMER SUMMIT**

DRM, LLC | Lawrenceburg, Tennessee



# WHY DRM FOR RUBBER AUTOMATION?

## INNOVATING SINCE 1995

- Built for real plant conditions
- UL 508A panel design, TÜV-certified safety
- Partnerships with Rockwell, KUKA, Mitsubishi, & more
- Full-line expertise: power distribution to process
- Proven systems in production, phased upgrades

# AUTOMATION CHALLENGES

## RUBBER AUTOMATION CHALLENGES

- High temperatures and carbon black dust shorten equipment life
- Aging infrastructure with legacy PLCs, DC drives, and relay logic
- Product variability (block weight, sheet uniformity, deformable parts)
- Manual setups prone to error and downtime & ergonomic challenges
- Safety risks in heavy, heat-intensive environments

# CORE CAPABILITIES

- **CALENDER LINE MODERNIZATION**
- **MIXER & EXTRUDER CONTROLS UPGRADES**
- **AUTOCLAVE LIFTS & LOADING SYSTEMS**
- **ROBOTIC PALLETIZING/DEPALLETIZING**
- **SAFETY UPGRADES & RECIPE/DATA SYSTEMS**



# INSTALLATION SERVICES

- Sprint-based upgrades performed during scheduled downtime
- Staged projects designed for minimal disruption to production
- Reverse-engineering expertise when prints or legacy code are missing

## What it means for you:

- Minimize downtime while modernizing
- Confidence that every phase is engineered and validated
- Reduced risk when upgrading aging infrastructure



# Calender Line Upgrade

*From scrap-heavy to recipe-driven*

## Challenge

### LEGACY SYSTEM:

- Old PLCs
- DC drives
- single-channel safety

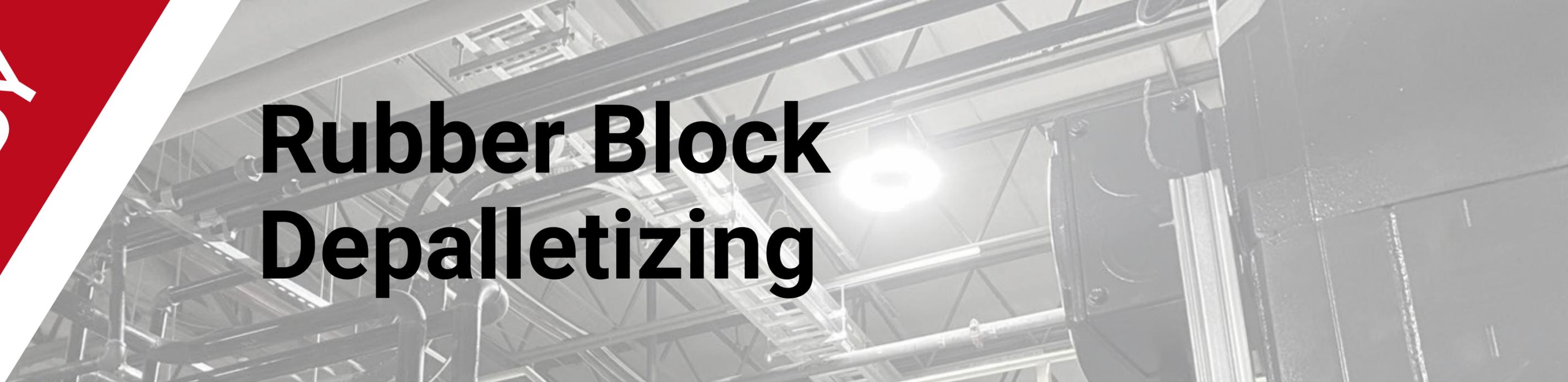
## Solution

- Reverse-engineered logic
- VFDs
- Recipe roll control
- Hydraulic autoclave bridge lift

## Results

- Scrap cut from 20–30%
  - down to <10%
- Reduced shutdowns
- Improved safety
- Improved process consistency

**Scrap reduced from 20–30% to under 10%, with faster, consistent roll setup.**



# Rubber Block Depalletizing

## Challenge

- Operators were manually lifting 80 lb natural rubber blocks; blocks deformed and stuck together.

## Solution

- Custom vacuum tool with compliance, simple HMI, facility-wide light signals.

## Results

- Eliminated standby operators
- Reduced cycle time by 50%
- Improved operator safety
- Operator ergonomic compliance

**Eliminated standby operators, reduced cycle time by 50% from 40+ seconds to 20 seconds, and improved operator safety.**



# Mixer Controls Modernization

*Bringing old mills up to new standards*

## Challenge

- Fire-damaged mills ran on obsolete relay logic and outdated safety.

## Solution

- New ControlLogix system
- UL-listed control panels
- OSHA/ANSI safety upgrade

## Results

- Reliable operation restored
- Compliance improved
- Better diagnostics

**Operation restored, compliance improved, diagnostics enhanced.**



# Calender Line Modernization

*From outdated controls  
to modern visibility*

## Challenge

- Aging calender line with outdated Modicon controls and no recipe capabilities
- Integrating existing mechanical systems into new controls

## Solution

- ControlLogix system with HMI
- Recipe system with Ignition data collection
- Rockwell PowerFlex drives, new MCC, OSHA/ANSI safety

## Results

- Better quality consistency
- Safer operation
- Improved visibility
- Production data insight

**Quality, safety, and production visibility were all improved with modern controls.**



# Plant-Wide Calender & Mixer Upgrades

## Challenge

- Legacy Modicon controls
- Worm-gear gauging
- Obsolete safety on mixers and calenders

## Solution

- ControlLogix upgrades across mixers and calenders
- Hydraulic gauging upgrades
- New TCUs, control room, 13.8 kV switchgear, MCC, and UPS

## Results

- Higher process reliability
- Upgraded safety compliance
- Improved control of mixing and gauging operations

**Improved reliability, safety, and process control across multiple lines.**



# Autoclave Hydraulic Lift Replacement

## Challenge

- Autoclaves used screw jack bridge lifts that were slow and maintenance-heavy.

## Solution

- Designed and installed hydraulic bridge lifts
- New MCC room with 13.8 kV switchgear for compressors and pumps

## Results

- Cycle time cut from ~5 minutes to under 1 minute
- Safer & reliable operation
- Reduced downtime for maintenance

**Cycle times dropped to under a minute with safer, more reliable operation.**

# PARTNERS & AFFILIATIONS

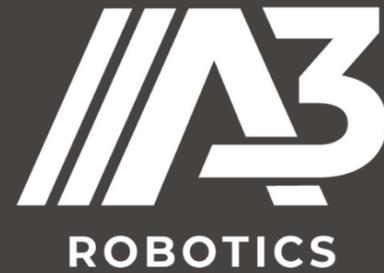
**KUKA**

Official System  
Partner

Platinum



**COGNEX**  
**KEYENCE**



GOLD  
OEM Partner

ROCKWELL AUTOMATION



**DIAMOND  
PARTNER**

SYSTEMS  
INTEGRATOR

**AVEVA**

REGISTERED  
System  
Integrator

**Ignition!**

Registered  
Integrator



**TÜVRheinland**  
CERTIFIED



CERTIFIED

