POWDER process group

High-Speed Bag Depalletizer & Slitter System

A Cybernetik Application Solution

A Safer, Dust-Free, High-Speed Production Environment

Objective

The primary goal was to automate bag depalletizing and slitting operations to achieve:

- A high-speed production environment.
- Dust-free operations for improved hygiene.
- Enhanced operator safety.
- Maximized productivity by eliminating manual handling.

Challenge

The customer faced several operational hurdles:

- Manual intervention slowed down production and increased labor costs.
- Maintaining a dust-free environment during bag emptying was critical for product quality and compliance.
- Empty bag disposal needed to be automated without disrupting workflow.
- Ensuring operator safety in a high-speed industrial setting was non-negotiable.

Cybernetik's Solution

Cybernetik engineered a fully automated Bag Depalletizer & Slitter System designed for speed, safety, and cleanliness. Key features included:

Rotatable Robot Grippers

- Alternates unloading 3 and 2 bags for continuous, uninterrupted operations.

Dust-Free Environment

- Integrated dust collector ensures clean air and compliance with hygiene standards.

Safety Compliance

- A safety curtain halts operations instantly if a human enters the restricted zone.

Automated Bag Disposal

- Bag compactor efficiently removes empty bags without manual handling.

High Capacity & Speed

- Handles 150 kg payload at 600 bags/hour, meeting high-volume demands.

Key Benefits Delivered

Increased Productivity

- Multiple unloading platforms and rotary tables enable non-stop operations.

Worker Safety

- Automated shutdown when personnel enter restricted areas ensures zero compromise on safety.

Hygienic & Dust-Free

- Integrated dust collection system meets industrial cleanliness standards.

Flexible Handling

- Rotating arm gripper optimizes speed by alternating unloading patterns.

Results

The implementation delivered a fully automated, safe, and high-speed system that:

- Eliminated manual handling, reducing labor dependency.
- Maintained a dust-free environment, improving product quality and compliance.
- Enhanced operator safety through advanced safety protocols.
- Achieved maximum efficiency, processing up to 600 bags per hour.

Impact

This project transformed the customer's production line into a state-of-the-art automated system, setting a benchmark for:

- Operational excellence in bulk material handling.
- Worker safety and hygiene compliance.
- Scalable automation for future growth.

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