

Use Case - Packaging

Improving Efficiency and Minimising Downtime in Packaging Operations

In packaging manufacturing, whether producing caps, thin-wall containers, folding cartons, or corrugated boxes, reliability and precision are critical for maintaining high product quality standards. However, operations often encounter persistent machine failures, inefficiencies in thermal management, and challenges in material handling that can compromise efficiency and result in costly downtime. Mathematical proven solutions such as iPID technology offer actionable insights to address these challenges and drive optimal performance.

The Challenge.

Packaging operations across food, cosmetics, pharmaceuticals and flexible materials rely on precision and uninterrupted flows. Yet recurring issues in key systems threaten overall performance and delivery reliability.

Thermal instability in injection moulding leads to deformities in caps and containers, while **electric drive** and **ink pump failures** disrupt carton production, causing misprints and packaging defects. In flexible lines, **web tension drift** triggers misfeeds and jams, wasting material and halting output.

These failures delay shipments, increase rework and drive-up maintenance costs. Furthermore, they undermine quality standards and customer trust. In fast-paced packaging environments, even a short stop can affect the entire supply chain.

The Solution.

iPID technology, a predictive monitoring solution designed to keep packaging machinery running at peak performance providing real-time monitoring and diagnostics for critical components. By deploying iPID across major system components, manufacturers can proactively identify performance anomalies and mitigate issues before they disrupt production.

→ Electric Drives

Purpose: Ensure precise movement of packaging materials at every stage for optimal line performance.

iPID Impact: Detects early signs of misalignment in conveyor belts or wear in servo motors used to position bottles on food filling lines and transport blister packs in pharmaceutical packaging.

→ Ink Pumps

Purpose: Maintain consistent ink flow and pressure during printing.

iPID Impact: Identifying ink flow inconsistencies during high-speed printing of expiry dates on packaging or detecting leaks that could affect cosmetics labelling, leading to misprints.

→ Web Tension Flows

Purpose: Keep material properly aligned and tensioned throughout processing.

iPID Impact: Predict tension drift, helping prevent material misfeeds in pharmaceutical blister pack production or avoiding alignment issues in folding cartons, reducing defects and waste.

Your Added Value.

Leverage iPID technology and get results:

Minimised Downtime – Stop unplanned stops.

Early warnings keep your production running at peak efficiency.

Enhanced Quality – Real-time monitoring of ink flow and machine health supports consistent, high-quality results.

Optimised Throughput – Advanced tension control and drive analytics mean maximum material yield and uninterrupted operations.

Cost Savings – Condition-based maintenance driven by predictive diagnostics cuts down on repairs and prolongs equipment life.

Conclusion.

Adopting iPID monitoring transforms packaging operations by shifting maintenance strategies from reactive to predictive. With precise, real-time insights into thermal management, material handling, and key component health, manufacturers are empowered to sustain uptime, maintain quality, and manage costs effectively.

Enhance your performance with iPID technology.

Contact us for a demo.
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