

Revolutionizing Gel Pack Packaging with the VertoBagger Falcon

A Sustainable and Efficient Solution

Case Study 2025

Introduction



ThermoGard had a challenge: as demand for its gel packs surged across the pharmaceutical and food logistics sectors, their manual and semi-automated packaging lines struggled to keep pace. Bottlenecks emerged. Throughput stalled. Material waste crept upward. They needed more than a quick fix; they needed a smarter system that could scale without sacrificing precision or product integrity.

Enter Unified Flex and the **VertoBagger Falcon**.

What followed was a game-changing transition. The [VertoBagger Falcon](#), a vertical form fill and seal machine engineered for high-speed, heavy-duty applications, was seamlessly integrated into ThermoGard's production floor. This wasn't just about upgrading machinery. It was about rethinking how gel packs could be packaged with greater control, consistency, and cost-efficiency. With automation, tight sealing tolerances, and intelligent film handling, the Falcon delivered a dramatic lift in output while reducing film waste and human error. Sustainability wasn't the headline; it was the natural outcome of smarter engineering.

ThermoGard at a Glance

ThermoGard started in the late 1990s in New Zealand, born out of necessity when King Salmon exporters needed a reliable way to ship fresh seafood to Europe. A local inventor crafted a revolutionary gel pack that kept fish arriving “in perfect condition”, and ThermoGard was born. Today, ThermoGard is a **global leader** in cool-chain packaging, trusted by major pharmaceutical companies, meal-kit providers, and food logistics operators.

Here’s what they were up against:

Market Overview: The Rising Demand for Gel Packs

The global market for **gel packs** has been projected to grow significantly, driven by:

- **E-commerce & Cold Chain Logistics:** The rise of online grocery and pharmaceutical delivery has fueled the demand for temperature-controlled packaging.
- **Food & Beverage Industry:** Restaurants and meal kit providers increasingly rely on gel packs to maintain freshness.
- **Pharmaceutical & Biotech Applications:** Vaccines, biologics, and temperature-sensitive medications require reliable cooling solutions.
- **Sustainability Trends:** Companies face growing pressure to reduce single-use plastics and transition to eco-friendly alternatives.

Despite this growth, traditional gel pack packaging methods present challenges, including excessive material waste, high labor costs, and inefficient packaging processes.

The Challenges of Traditional Gel Pack Packaging

Before implementing the [VertoBagger Falcon](#), ThermoGard faced several obstacles:

1. **High Material Waste:** Traditional rigid packaging required excessive plastic, increasing costs and environmental impact.
2. **Manual Labor & Inefficiency:** Legacy packaging systems often relied on labor-intensive processes, slowing production and driving up costs.
3. **Limited Packaging Flexibility:** ThermoGard needed a solution capable of handling diverse packaging sizes and formats.

4. **Environmental Concerns:** Sustainability initiatives called for compostable or recyclable packaging materials without compromising performance.
5. **Product Integrity:** Maintaining precise gel pack weights and ensuring leak-proof seals were critical concerns.

Unified FLex's VertoBagger's Role in High-Volume Gel Pack Manufacturing

The VertoBagger Falcon was introduced to revolutionize ThermoGard's gel pack production, providing them with a highly automated, precise, and sustainable packaging system.

1. Unmatched Efficiency and Automation

The **VertoBagger Falcon** automated ThermoGard's entire packaging process, reducing manual labor while increasing speed and consistency:

- **High-speed production:** Capable of producing up to **100 gel packs per minute**
- **Automated pouch forming, filling, and sealing**
- **PLC-controlled precision** to ensure uniform gel pack weights
- **Quick changeover system** for various gel pack sizes

2. Significant Material Waste Reduction

Unlike traditional packaging methods, the Falcon optimized ThermoGard's material usage:

- Flexible film usage reduced plastic waste by up to 60%
- Compatible with sustainable materials, including recyclable PE-based films and ASTM D6400-certified compostable films
- Precision sealing technology minimized leaks, reducing product waste

3. Enhanced Product Integrity & Seal Strength

Gel packs require leak-proof, high-barrier packaging to ensure reliability:

- Pneumatic sealing system guarantees airtight and watertight seals
- Digital temperature controllers maintained consistent sealing conditions
- Servo-controlled pulling belts prevented pouch deformation and ensured uniformity

4. Sustainability-Driven Packaging Options

The VertoBagger Falcon enabled ThermoGard to align with their sustainability goals while maintaining high-performance packaging:

- Supports fully recyclable and biodegradable films
- Lightweight packaging reduced transportation emissions
- Minimized overall energy consumption with efficient automation

Results:

Reduction in Packaging Waste: Switching to flexible, lightweight films cut down plastic usage

Increase in Packaging Speed: Fully automated processes streamlined production
Sustainability Compliance Achieved: Adoption of recyclable and compostable films met industry regulations

Operational Cost Reduction: Lower labor costs and minimized material waste improved profit margins

The Future of Gel Pack Packaging with the VertoBagger Falcon

By leveraging the VertoBagger Falcon, ThermoGard successfully upgraded its packaging capabilities, ensuring sustainability, efficiency, and cost-effectiveness. As regulations tighten and consumer demand for eco-friendly packaging grows, manufacturers must invest in automated, flexible packaging solutions to remain competitive.

Why Leading Brands Like ThermoGard Choose the VertoBagger Falcon:

- Eco-friendly packaging compatibility (recyclable & compostable films)
- Automated precision for higher efficiency & reduced waste
- Cost savings through optimized material usage & labor reduction
- High-speed operation for increased production capacity
- Strong, airtight seals to prevent leaks and extend product reliability

Conclusion: A Game-Changer for Sustainable Gel Pack Packaging

For manufacturers seeking to elevate their sustainability efforts without compromising on efficiency or cost-effectiveness, the VertoBagger Falcon provides the ideal solution. By adopting this advanced VFFS machine, businesses like ThermoGard have achieved greater profitability, enhanced operational performance, and a reduced environmental footprint.

Ready to Upgrade Your Gel Pack Packaging Process?

[Contact Unified Flex today](#) to discover how the VertoBagger Falcon can revolutionize your gel pack packaging operations.