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The First Specialized Monthly Magazine of Tray Sealer, Thermoforming and Vacuum Chamber Packaging Machinery Industry

VORMEK

Vormek an Innovation-based Machinery Company, an Knowledge & Progress Center with Superior Technology and High Reputation in its Field

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What Makes the Meat Line Stand Out in Ground Meat and Hamburger Patty Packaging?



ISO 9001 Certificate in the Field of
Packaging Machines Manufacturing



Achieving CE Certificate from European
Country in the Field of Packaging
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VORMEK

Editor's Note



Dear Readers,

In every issue, our digital magazine explores a key segment of the food industry from a fresh perspective. In this 22nd edition, we turn our attention to the red meat industry, where product quality is heavily influenced by packaging, storage, and distribution conditions, from processing to consumption. Choosing the right technology can directly impact product quality, shelf life, and commercial value.

Red meat is a highly sensitive and valuable product. Factors such as oxygen exposure, temperature, humidity, environmental contamination, and transportation conditions can significantly affect its quality. Meanwhile, discoloration, drip loss, and changes in product appearance are among the most important factors influencing consumer purchasing decisions. Packaging, therefore, goes far beyond simply protecting the product. It plays an essential role in preserving quality and maintaining product value throughout the supply chain.

In this issue, we explore the applications of tray sealing, vacuum sealing, Modified Atmosphere Packaging (MAP), and other advanced packaging solutions in red meat processing and distribution. These technologies can help maintain product quality, extend shelf life, reduce waste, improve operational efficiency, and support higher product standards. We also examine how packaging technologies can address the practical needs of meat processors, retail chains, and international markets.

In today's competitive red meat market, success is no longer determined solely by livestock quality or production capacity. The ability to preserve product freshness, deliver an appealing and trustworthy presentation, and ensure that products reach consumers in optimal condition is a fundamental part of creating value. In this context, packaging technology can become a powerful tool for reducing hidden costs, improving customer satisfaction, and expanding market opportunities.

If your business is looking to minimize waste, enhance packaging quality, improve production line efficiency, and strengthen its position in modern retail and international markets, we hope this issue provides valuable insights and practical perspectives to guide your technology choices and future investment decisions.

We are pleased to continue supporting and earning the trust of forward-thinking managers, industry professionals, and food manufacturers as we work together to advance packaging technology and innovation.

Together, Shaping a Smarter, More Sustainable Future for Food Packaging.



Mr. Simon Füllenbach
(CEO of VORMEK)

Pack Meister VTS-500:

An Automatic Tray Sealer for Premium, Hygienic Packaging with Minimal Manual Handling

The **Pack Meister VTS-500 automatic tray sealing machine** is designed to meet the growing demand for efficient, hygienic, and visually appealing food packaging. Combining precise control systems, robust industrial construction, multiple packaging methods, and compatibility with auxiliary equipment, the machine can operate as a standalone unit or as part of a fully automated packaging line.

One of the key strengths of the VTS-500 is its flexible configuration, allowing manufacturers to tailor the machine to their specific products, production capacities, and automation requirements.

Three Packaging Methods in One Machine

One of the most important features of the Pack Meister VTS-500 is its ability to support three primary packaging methods: Sealing Only, Vacuum Packaging, and Modified Atmosphere Packaging (MAP).

In Sealing Only mode, the tray is sealed directly with a top film, making it suitable for products that do not require vacuum or gas flushing.

In Vacuum Packaging mode, air is extracted from the package before sealing. This method is suitable for products where reducing the amount of air inside the package is important for maintaining quality or meeting specific storage requirements.

The third method is Modified Atmosphere Packaging (MAP). During this process, air is removed from the package and replaced with a selected gas or gas mixture before sealing. Depending on the product and storage conditions, MAP can help preserve quality and extend shelf life.

This versatility makes the VTS-500 suitable for a wide range of food products, including dairy products, ready-to-eat salads, pickled foods, nuts and dried fruits, bakery products, fresh fruits and vegetables, seafood, red meat, poultry, and processed meat products.

Production Speed and Flexibility

In MAP mode, which includes vacuum extraction and gas flushing, the machine operates at approximately 5–7 cycles per minute. In Sealing Only mode, the speed increases to approximately 7–8 cycles per minute.

The VTS-500 is also designed to accommodate trays of different sizes and shapes. Each tray format requires a corresponding mold, and once the mold has been installed and the necessary adjustments completed, the machine can resume packaging with the new configuration.

This flexibility allows manufacturers handling multiple products or tray sizes to use a single adaptable packaging system rather than investing in a separate machine for each product.



Designed Around Production Line Requirements

One of the major advantages of the VTS-500 is its modular design and upgrade potential. The machine can operate independently or be integrated with various auxiliary systems to create a complete automated packaging line.

Compatible equipment includes automatic tray denesters, single-to-multi-lane converters, conveyors, gravity fillers, piston fillers, multihead weighers, volumetric fillers, UV tunnels, checkweighers, metal detectors, inkjet printers, labeling machines, and rotary tables.

This modular approach allows manufacturers to select the level of automation that matches their current production capacity while leaving room for future expansion.

Precise Process Control with Touchscreen HMI and PLC

The VTS-500 is equipped with a 7-inch Delta touchscreen HMI. Its PLC-based control system and full-color interface allow operators to adjust and monitor various machine parameters.

Key settings include temperature, vacuum level, gas flushing volume, pressure, and operating speed. The intuitive interface supports both English and Persian, making machine operation more accessible to different operators.

In addition to the main control system, the machine features an advanced Gold Automation PC-based control system. This technology supports remote diagnostics and communication, helping technicians identify faults and provide technical assistance more quickly and accurately.



The Mold: A Critical Factor in Packaging Quality

The mold plays a fundamental role in ensuring consistent, repeatable sealing performance in a tray sealing machine.

The VTS-500 features a precision-machined, one-piece cast mold housing designed to support accurate packaging operations, particularly in MAP applications.

Its construction incorporates several important engineering features, including:

- **Standardized silicone sealing strips**
- **A specially engineered base plate**
- **AISI 304 stainless steel guide pins**
- **Phosphor bronze bushings**
- **Independent heating elements and thermocouples for each sealing section**
- **Precision-profile cutting blades**
- **Dedicated cable routing channels**

The mold can also be changed in less than 10 minutes.

This quick-change capability is particularly valuable for production lines handling multiple tray formats or product types, where minimizing changeover downtime is essential for maintaining operational efficiency.

Robust Industrial Construction and Hygienic Design

The VTS-500 is constructed from AISI 304 stainless steel, offering excellent resistance to corrosion, discoloration, and commonly used cleaning agents. This makes it a practical choice for demanding food processing environments.

Its reinforced frame, appropriately selected sheet metal thicknesses, and low-vibration design contribute to long-term operational stability.

The machine also incorporates hygienic design principles, with accessible components that simplify cleaning, routine maintenance, and daily sanitation procedures.

Safety as an Essential Design Priority

Operator safety and the management of abnormal operating conditions are important considerations in the design of the VTS-500.

The machine incorporates several safety features, including:

- **Emergency stop buttons**
- **Automatic chain tensioning system**
- **Torque monitoring and automatic shutdown in the event of excessive torque**
- **Tower signal lights**
- **Smooth, carefully finished surfaces without sharp edges**

Together, these features are intended to create a safer working environment and prevent the machine from continuing to operate under conditions that could pose risks to personnel or equipment.





Red Meat Packaging with MAP and Vacuum: Preserving Quality and Extending Shelf Life

Red meat is highly perishable due to its high water activity and susceptibility to microbial growth and oxidation. Therefore, the shelf life of red meat depends not only on its initial quality but also on storage temperature, microbial load, oxygen exposure, and packaging method

Meat Color and the Role of Oxygen

Meat color is closely linked to myoglobin. Oxymyoglobin gives meat its desirable bright red color in the presence of oxygen, while the formation of metmyoglobin through oxidation can cause the surface to turn brown. Under low-oxygen conditions, deoxymyoglobin produces a dark red to purplish color, which does not necessarily indicate spoilage.

MAP or Vacuum Packaging?

In Modified Atmosphere Packaging (MAP), the air inside the package is replaced with a carefully controlled gas mixture.

In certain fresh meat applications, oxygen (O_2) helps maintain the desirable red color, while carbon dioxide (CO_2) inhibits the growth of many aerobic spoilage bacteria through its bacteriostatic properties.

However, high oxygen concentrations can accelerate lipid and protein oxidation. For this reason, the gas mixture must be selected according to the specific product and its cold chain requirements.

In vacuum packaging, reducing oxygen levels helps inhibit the growth of many aerobic microorganisms. However, vacuum packaging does not prevent the growth of all microorganisms, making proper temperature control essential.

Packaging Quality Depends on More Than the Machine

The performance of a tray sealer or vacuum chamber machine depends not only on vacuum levels and residual oxygen but also on the packaging film, its gas barrier properties, and, most importantly, seal integrity.

Even with an optimized gas mixture, a leak or inadequate seal can allow air to enter the package, altering its internal atmosphere and compromising product quality.

Choosing the Right Packaging System

The choice between MAP and vacuum packaging should be based on the type of meat, distribution and retail conditions, desired shelf life, and cold chain requirements.

Using the right packaging film, reliable sealing, effective oxygen management, and proper temperature control can help preserve meat color and quality, slow deterioration, and extend the shelf life of red meat.



Merzion Machinery:

From a Repair Workshop to Specialized Food Processing Equipment Manufacturing

A Journey Through Three Decades of Experience, Innovation, and Technological Development in the Food Processing Industry

The story of **Merzion Machinery** began in 1991, when the company started out repairing and refurbishing equipment used in meat processing operations. Hands-on experience with industrial machinery and a deep understanding of the challenges faced by food manufacturers laid the foundation for its expansion into the design and manufacture of food processing equipment.

A major turning point came with the design and development of a chicken deboning machine. Developed as an alternative to imported equipment and costly belt-type deboning systems, this innovation marked a significant step toward developing specialized meat processing technology.

From Individual Machines to Complete Production Lines

Over time, Merzion Machinery expanded beyond manufacturing individual machines to designing and implementing complete production lines.

Today, the company's expertise covers a wide range of food processing applications, including sausages, processed meat products, hamburgers, and nuggets, as well as vegetable processing, prepared salads, date paste, fruit leather, and various types of cheese. Its technical capabilities also include the manufacture of bowl cutters, microcutters, industrial meat grinders, filling machines, chicken deboning equipment, and industrial cooking systems.

Engineering Driven by Real Production Needs

A defining characteristic of Merzion Machinery's development has been its ability to transform practical experience into specialized engineering expertise.

Years of working directly with industrial equipment have provided valuable insights into the operational needs of food manufacturers.

Reliable machine performance, ease of operation, maintainability, and spare parts availability are all critical factors when selecting food processing equipment.

By focusing on these priorities, manufacturers can develop solutions that support production efficiency, minimize downtime, and improve long-term equipment reliability.

Merzion Machinery's journey demonstrates how hands-on repair experience and a thorough understanding of industrial equipment can evolve into advanced machinery design and practical manufacturing solutions. It also highlights the importance of engineering expertise, continuous innovation, and technological development in strengthening the capabilities of the food processing industry.



Red Meat From Production to Shelf Life

Why Is Red Meat Highly Perishable?

Red meat's high moisture content, water activity, and nutrient availability create favorable conditions for microbial growth.

The key factors affecting shelf life include:

- Initial microbial load
- Storage temperature
- Oxygen exposure
- Packaging conditions



1

Why Does Meat Change Color?

Meat color is largely determined by myoglobin, a protein found in muscle tissue. Exposure to oxygen can produce the desirable bright red color, while myoglobin oxidation can lead to brown discoloration. This makes oxygen management one of the key challenges in red meat packaging.



3

MAP: Managing Shelf Life and Product Appearance

In Modified Atmosphere Packaging (MAP), the air inside the package is replaced with a controlled mixture of gases.

For red meat:

- CO₂ - Helps inhibit microbial growth
- O₂ - Helps maintain the desirable bright red color



The optimal gas mixture depends on the type of meat, storage temperature, and required shelf life.

5

The Journey from Processing to Packaging

After slaughter, meat goes through several stages: Chilling - Cutting - Deboning - Preparation - Packaging before entering the distribution chain.

Proper temperature control and strict hygiene practices throughout these stages are essential for maintaining product quality and shelf life.



2

What Causes Red Meat to Lose Quality and Shelf Life?

Meat quality deterioration is primarily associated with:

- Microbial growth
- Lipid oxidation
- Color changes
- Development of undesirable odors and flavors
- Drip loss.



An effective packaging solution should help control these factors as much as possible.

4

Vacuum and Skin Packaging

In vacuum packaging reducing oxygen levels helps limit oxidation and extend product shelf life.

In Vacuum Skin Packaging (VSP) a flexible film is drawn tightly around the product under vacuum, closely following its contours.

Key benefits of skin packaging include:

- Premium product presentation
- Reduced product movement inside the package
- Reduced visible drip accumulation
- Improved shelf-life potential



Vacuum Packaging

Vacuum Skin Packaging

6

The Role of Tray Sealing Machines

A tray sealing machine can perform the meat packaging process through the following stages:

Product Loading - Vacuum - Gas Flushing - Sealing - Cutting

Precise control of vacuum levels, gas composition, sealing temperature, sealing time, and sealing pressure is essential for producing high-quality, reliable packages.



7

The Cold Chain: An Often-Overlooked Factor in Packaging

MAP, vacuum packaging, and skin packaging are not substitutes for proper temperature control.

Temperature increases can accelerate microbial growth and deterioration reactions.

That's why effective packaging and a well-controlled cold chain must work together to protect product quality.



9

Why Packaging Film and Seal Integrity Matter

Meat packaging films should offer:

- Effective gas barrier properties
- Reliable heat-sealing performance
- Adequate mechanical strength
- High transparency
- Anti-fog properties

Even a minor seal leak or contamination along the tray flange can alter the gas composition inside the package and reduce product shelf life.



8

Conclusion

Extending the shelf life of red meat requires more than a single solution

Cold Chain Control + Process Hygiene + Proper Film and Tray Selection + Optimized Gas Composition + Leak-Free Sealing

Together, these factors determine the actual quality and shelf life of packaged meat. In red meat packaging, consistent quality is achieved when every element of the process works together effectively.

10

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Mr. Alexander Hoffmann
(Deputy CEO of Vormek)

Precision Film Tension Control:

Ensuring Consistent Sealing, Package Integrity, and Reduced Production Waste

From Technology Adaptation to Specialized Equipment Manufacturing and International Market Expansion

Bioven Machinery began its operations in 2000 with a focus on designing, manufacturing, and supplying food processing machinery. Drawing on extensive technical expertise and industry experience, the company has developed a strong presence in food processing equipment manufacturing, particularly in production lines for potato chips, nuggets, schnitzels, and breaded food products.

Industrial Achievements and Experience

One of Bioven Machinery's notable achievements was the development and manufacture of a potato slicing machine based on technology from the American company Urschel.

Between 2000 and 2009, the company manufactured more than 25 potato slicers and successfully exported potato chip production machinery and equipment to Armenia, Azerbaijan, Iraq, and Afghanistan.

Its technical expertise also extends to the design and installation of nugget production lines, the manufacture of breading and coating equipment, and the development of fully automatic industrial autoclaves.

Specialized Products and Equipment

Bioven Machinery's product portfolio includes industrial fryers, schnitzel presses, predusters, breading machines, spiral mixers, powder blenders, sauce mixers, and sauce application machines.

These machines are engineered to deliver consistent processing results, precise operational control, easy cleaning, and improved efficiency across food processing lines.

Commitment to Quality and Industry Development

With a strong emphasis on manufacturing quality, equipment safety, and customer satisfaction, Bioven Machinery is committed to delivering practical, reliable solutions tailored to the needs of food manufacturers.

The company's experience in adapting advanced machinery technologies, delivering industrial projects, and exporting specialized equipment reflects its technical expertise, manufacturing capabilities, and ongoing contribution to innovation and productivity in the food processing industry.





Bioven Machinery:

A Leader in Food Processing Machinery Design and Manufacturing

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Dr. David Sterling
(Editor-in-Chief)

A Practical Guide to Evaluating the Total Cost of Ownership (TCO) of Tray Sealing Machines Why the Cheapest Machine Isn't Always the Most Cost-Effective Choice

In the red meat industry, a packaging line shutdown is more than just a technical issue. It can lead to product losses, delayed deliveries, increased waste, and even damage to a brand's reputation. That's why focusing solely on the initial purchase price of a tray sealing machine can be one of the most costly mistakes in equipment investment decisions.

Two machines may both be classified as "tray sealers" and perform similar functions, yet differ significantly in component quality, engineering design, control systems, ease of maintenance, spare parts availability, and after-sales support.

The right question, therefore, isn't "Which machine is cheaper?" but rather "Which machine will cost the business less over its entire operating life?"

The answer lies in Total Cost of Ownership (TCO).

TCO: What Does a Machine Really Cost?

The true cost of owning a machine goes far beyond the price listed on the quotation. Total Cost of Ownership (TCO) includes all expenses associated with equipment from its initial purchase through to the end of its operational life.

In simple terms:

$TCO = \text{Purchase Price} + \text{Installation and Commissioning} + \text{Maintenance} + \text{Repairs} + \text{Production Downtime} + \text{Decommissioning Costs}$

Among these factors, two often have the greatest impact on a machine's long-term economic performance: repair costs and production downtime costs.

For a red meat processing facility, a packaging machine breakdown can trigger a chain reaction of expenses. Products awaiting packaging may be held up, deliveries may be delayed, and additional pressure may be placed on cold storage facilities and personnel.

As a result, the money saved by purchasing a cheaper machine can quickly disappear after its first major breakdown.

This is where two essential maintenance and reliability indicators come into play: MTBF and MTTR.

MTBF: How Reliably Does the Machine Operate?

MTBF (Mean Time Between Failures) measures the average operating time between failures of repairable equipment.

This indicator helps determine how long a machine can operate, on average, before experiencing an unexpected failure. A higher MTBF generally indicates greater equipment reliability and fewer breakdowns.

For a tray sealing machine, a high MTBF can result from several factors:

- Well-engineered machine design
- High-quality, standardized components
- Precision manufacturing of mechanical parts
- Proper control of heating and pneumatic systems
- Reliable electrical and automation system design
- Effective preventive maintenance practices

For red meat producers, a higher MTBF means fewer unexpected packaging line shutdowns and more predictable production schedules.

This is particularly important in food processing, where equipment reliability is an essential part of overall production efficiency.

MTTR: How Quickly Can the Machine Get Back Up and Running?

Even the most advanced industrial machinery can experience failures during its service life. Therefore, reliability isn't just about how often a machine breaks down; how quickly it can return to production is equally important.

MTTR (Mean Time to Repair) measures the average time required to diagnose, repair, and restore equipment to operational condition following a failure.

A lower MTTR often reflects an efficient maintenance and after-sales support system.

To minimize MTTR, a tray sealing machine manufacturer should be able to provide three essential capabilities:

1. Remote Troubleshooting and Technical Support

Many issues involving electrical systems, PLCs, sensors, machine settings, or pneumatic components can be diagnosed and resolved through telephone or online technical support.

With guidance from an experienced technician, operators or maintenance personnel can often restore normal operation without requiring an on-site service visit.

2. Rapid On-Site Technical Assistance

When a breakdown requires a technician to visit the facility, response time becomes critical.

Every additional hour of downtime can result in significant financial losses for the producer.

A responsive technical service team helps minimize production interruptions and ensures that equipment can return to operation as quickly as possible.

3. Reliable Spare Parts Availability

Even a technician who arrives promptly may be unable to restore production if the necessary spare parts are unavailable.

For this reason, maintaining an adequate inventory of essential wear parts and critical replacement components is a fundamental part of effective after-sales service.

How MTBF and MTTR Affect TCO

From a management perspective, high MTBF combined with low MTTR represents one of the most desirable performance combinations for industrial equipment.

A machine with a high MTBF experiences fewer breakdowns, while a low MTTR ensures that any failures can be resolved quickly.

Together, these indicators contribute to higher equipment availability, fewer production interruptions, lower maintenance-related costs, and ultimately a lower Total Cost of Ownership.

Conclusion

In the red meat industry, a tray sealing machine is a critical component of a highly sensitive production process. Its reliability directly affects product quality, production capacity, operating costs, and delivery schedules.

The purchase price is only the tip of the iceberg when it comes to the true cost of industrial equipment.

A significant portion of the actual cost remains hidden throughout the machine's operating life, including breakdowns, repairs, spare parts, and, most importantly, unplanned production downtime.

For this reason, a well-informed equipment purchasing decision should consider three key factors together:

Low TCO + High MTBF + Low MTTR

Ultimately, the best tray sealing machine isn't necessarily the one with the lowest purchase price. It's the one that delivers the lowest total operating cost and the highest level of production continuity throughout its service life.



Mr. Simon Füllenbach
(CEO of Vormek)

What Makes the Meat Line Stand Out in Ground Meat and Hamburger Patty Packaging?

Introduction: Packaging as the Final Critical Stage of Production

Products such as minced meat, hamburgers, and similar meat products are particularly susceptible to microbial contamination due to the nature of their raw materials. Maintaining strict hygiene standards throughout production and packaging is therefore essential.

In modern food processing facilities, minimizing human contact, ensuring accurate portion control and product positioning, increasing production speed, and achieving consistent packaging quality are among the most important operational requirements.

The Hygienix VRM-530 fully automatic packaging line has been developed to address these challenges.

By integrating multiple production stages into a single coordinated system, Hygienix handles the entire packaging process for minced meat and hamburgers, from tray feeding and product loading to final sealing, date coding, labeling, and product collection.

Minimizing Human Contact: An Important Step Toward Better Hygiene

One of the most significant advantages of Hygienix is its ability to substantially reduce manual handling during the packaging process.

The less direct contact operators have with food products, the easier it becomes to maintain controlled hygienic conditions.

In conventional manual operations, transferring products into trays, moving containers, and performing additional packaging tasks may involve direct contact between the product, operators, or handling equipment.

In an automated packaging line, these operations are carried out mechanically in a controlled and consistent sequence.

Of course, automation alone does not guarantee food safety. Proper sanitation, equipment cleaning and disinfection, temperature control, and compliance with food production procedures remain essential.

Nevertheless, eliminating unnecessary product handling can significantly reduce contamination risks while improving process consistency.

Six Stages of a Fully Integrated Packaging Process

The Hygienix packaging line consists of six main stages, each performing a specific function within the overall packaging operation.

1. Automatic Tray Feeding

The process begins with an Automatic Denester, which separates individual trays from a stacked supply and places them onto the conveyor without manual intervention.

Positioning this unit parallel to the main production line provides convenient access while making more efficient use of the available floor space.

This configuration is particularly valuable for food processing facilities where space is limited.



2. Automatic Product Loading

In minced meat packaging, the product is first processed through a meat grinder and prepared for portioning using a dedicated pressing and dividing system.

The prepared portions are then transferred to a designated loading point, where the product handling system is synchronized with the tray conveyor.

Minced meat is automatically placed into the trays without direct hand contact.

In addition to increasing production speed, this automated process helps improve portion consistency, product positioning, and overall workflow efficiency.

The same operating principle can also be adapted for hamburgers and similar processed meat products, depending on product specifications and production requirements.

3. Additional Processing and Ingredient Application

Once the trays have been filled, they move to the next section of the production line.

This area is designed to accommodate additional processing operations based on the manufacturer's requirements, such as applying sauces or adding other ingredients.

The section features an approximately two-meter-long conveyor, providing sufficient space for integrating additional equipment or processing functions.

This flexibility allows the production line to accommodate different products and recipes rather than being limited to a single application.

4. Single-to-Multi-Lane Conversion

The filled trays then enter the Single-to-Multi-Lane Converter.

This system rearranges trays from a single lane into multiple lanes, matching the tray configuration to the number of cavities in the tray sealer's mold.

For example, when using a three-cavity mold, the trays are arranged into three lanes. With a two-cavity mold, the system creates a two-lane configuration.

This synchronization helps maintain a steady product flow, optimize packaging speed, and prevent bottlenecks between production stages.

5. Final Packaging with an Automatic Tray Sealer

The main packaging operation is carried out by a Pack Meister automatic tray sealing machine.

In addition to sealing the trays, this system supports different packaging configurations based on product characteristics and the desired final presentation.

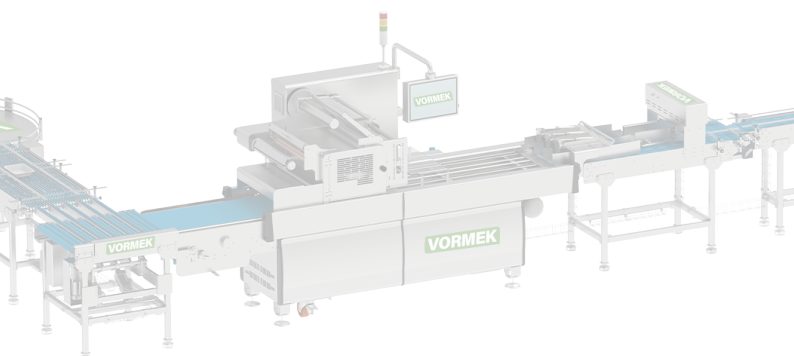
Available options include Inside Cut, Outside Cut, and Skin Packaging.

In Inside Cut, the packaging film is trimmed within the designated sealing area, producing a clean, precise, and visually consistent finish.

In Outside Cut, the film is cut along the outer edges of the tray.

With Skin Packaging, the film closely follows the contours of the product, creating a distinctive, premium appearance.

The most suitable packaging configuration depends on the product type, package design, storage requirements, and the manufacturer's marketing and distribution strategy.



6. Product Discharge, Date Coding, and Labeling

Once the packaging process is complete, the sealed products leave the tray sealing machine.

At this stage, an optional Pop-Up Transfer System can redirect products by 90 degrees.

This feature is particularly useful in production facilities where conveyor routing and efficient use of floor space are important considerations.

The line can also be equipped with an automatic date coder and labeling machine.

Finally, the packaged products are collected on a rotary accumulation table, allowing operators to transfer them into cartons or crates for secondary packaging.

At this stage, manual involvement is primarily limited to handling sealed products rather than direct contact with the food itself.

Key Benefits of Hygienix for Food Manufacturers

Together, these capabilities make Hygienix much more than a standalone packaging machine. It serves as an integrated solution for modern meat processing and packaging operations. Its key advantages include:

- 1.Reduced direct product handling, supporting improved hygiene control and lower contamination risks.
- 2.Greater process consistency, minimizing errors associated with manual operations.
3. Higher production efficiency, with smoother product flow and fewer bottlenecks between processing stages.
- 4.Multiple packaging options, including Inside Cut, Outside Cut, and Skin Packaging.
- 5.Flexible integration of additional processing operations, allowing the line to be adapted to different production requirements.
- 6.Efficient use of production floor space, supported by optimized conveyor layouts and product transfer systems.
- 7.Compatibility with auxiliary equipment, including date coders, labeling machines, and rotary accumulation tables.
- 8.Reduced dependence on manual labor during the final packaging stages.
- 9.Consistent, professional product presentation, helping manufacturers achieve a uniform appearance across finished packages.

Conclusion

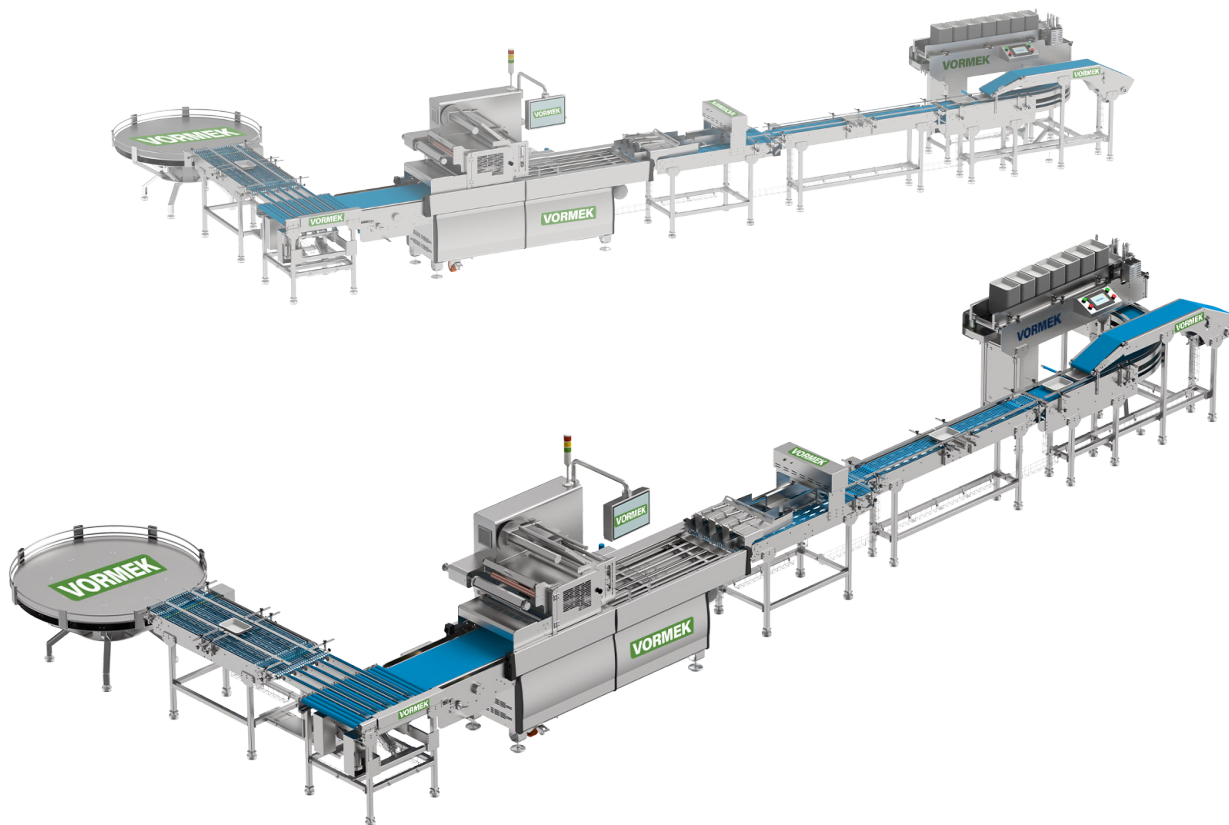
The Hygienix VRM-530 represents the growing shift toward fully integrated and automated packaging solutions in the meat processing industry.

By combining tray feeding, automatic product loading, additional processing, lane conversion, sealing, date coding, labeling, and product collection into a coordinated workflow, the system streamlines the packaging process from start to finish.

For food manufacturers, the value of automation extends well beyond increased production speed.

Reduced manual handling, greater process consistency, better utilization of production space, and more precise operational control all contribute to improved long-term production efficiency.

Hygienix demonstrates how an integrated packaging line can help meat processors achieve more hygienic operations, consistent packaging quality, and greater production efficiency while reducing reliance on manual handling.





From an Initial Purchase to a Long-Term Partnership: Mountain Heritage Foods' Journey to Formexon

Mountain Heritage Foods, managed by **Mr. Samuel Payton**, specializes in meat production and packaging, including minced meat products. The company's journey began with the purchase of two packaging machines and gradually evolved into a long-term partnership.

As its operations expanded and demand for additional packaging equipment increased, the company invested in more advanced solutions, eventually ordering a Formexon machine and a Hygienix system, both designed for high-volume packaging operations. Today, Mountain Heritage Foods operates a fleet of nearly 10 packaging machines across various models.

During our conversation with Mr. Graham Stone and Dr. Benjamin Baker, the company's production line managers, we discussed the performance of the machines and their experience using them in meat packaging operations. Currently, four packaging machines are in operation on the production line, with output adjusted according to order volumes.

Since the company requires a shelf life of approximately two days, modified atmosphere packaging (MAP) is not currently necessary. Instead, the packaging process uses approximately 10% vacuum for meat products and 30% vacuum for minced meat. However, if a longer shelf life is required, gas flushing can be incorporated alongside vacuum packaging.

One of the most significant improvements achieved through the transition to the new packaging method has been the substantial reduction in packaging-related problems and the elimination of returns caused by packaging defects.

Previously, the products were wrapped in plastic film, which sometimes led to moisture-related issues, affecting product quality and resulting in customer returns. By switching to tray sealing and vacuum packaging, these problems have been resolved. According to the company, there have been no packaging-related product returns since implementing the new system.

Consumer feedback on the new packaging has also been extremely positive. Beyond improving product presentation and maintaining quality, the transition has had a direct impact on the company's profitability and contributed to an increase in customer orders. Packaging capacity is adjusted based on daily demand. For example, using two semi-automatic machines, the company can produce and package approximately 5,000 packs in around three hours. However, the machines are capable of even higher output, allowing production to scale up when order volumes increase.

Overall, Mountain Heritage Foods' experience demonstrates that choosing the right packaging solution goes far beyond product appearance. The right technology can help reduce product returns, better preserve product quality, improve customer satisfaction, and ultimately increase business profitability.



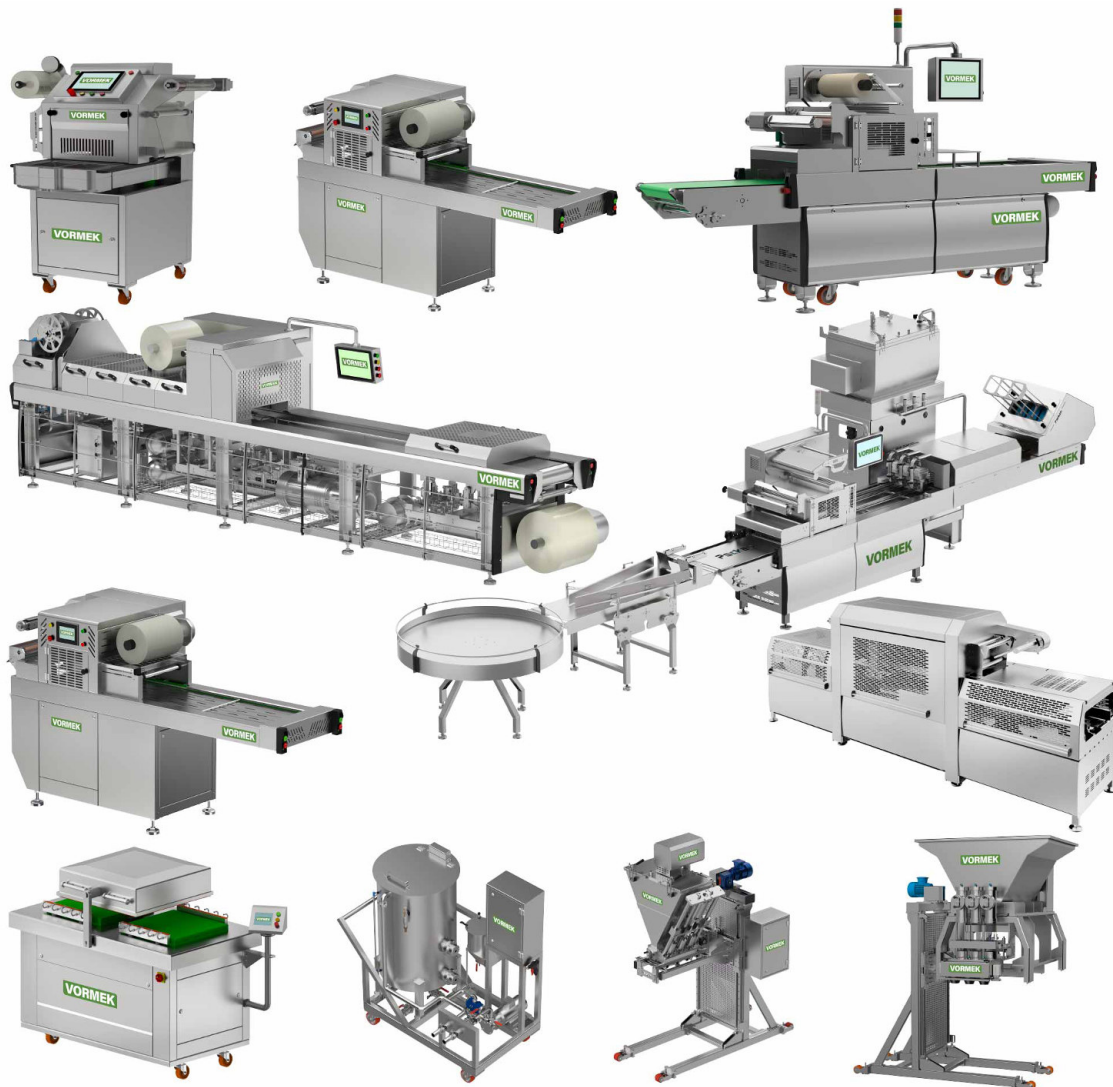
The Importance of Using Tray Sealer, Thermoforming, and Vacuum Chamber Machines in Today's Packaging Industries

Not too long ago, food packaging was simple and inefficient. Products were placed in a container, covered with a layer of film, and it was hoped they would remain safe until consumption. Reality, however, was different: short shelf life, inconsistent quality, an unprofessional appearance, and contamination risks that often went unnoticed by operators.

Today, expectations have changed. Consumers no longer buy food based solely on taste and freshness; they also value attractive packaging, hygiene, and extended shelf life. Manufacturers who still rely on traditional packaging methods find themselves at a disadvantage when competing with industries that embrace modern technologies.

Fortunately, today's innovations have addressed these challenges. Tray sealers offer easy operation and simple maintenance while enabling the packaging of a wide range of food products. They help extend shelf life and give products a professional, appealing appearance. Thermoforming machines go a step further by forming containers, filling, and packaging products within a single integrated process. Vacuum chamber systems remove air completely, preserving freshness, enhancing food safety, and significantly extending product shelf life. In addition, packaging lines equipped with these machines and a variety of optional features make the packaging process more efficient, hygienic, and faster.

This technological integration elevates product packaging, modernizes production processes, and positions your brand as a trustworthy and forward thinking business in the minds of customers. Packaging is not merely the final step in production; it is a window through which customers perceive your expertise, commitment to quality, and reliability.



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