



YANTAI HAIRUI Food Equipment Co.,Ltd.

CEO: Mr. Edward
+86-535-6836326

Creating A Fresh World

We are Committed to the R&D and the manufacturing of food processing equipment.

We provide Safe, hygienic and reliable products for the food industry

Company Profile



Yantai Hai Rui Food Equipment Co., Ltd.



Location: Yantai, a beautiful coastal city in China

Mission: Technology-driven food equipment research and manufacturing.

Commitment:

- Safe, reliable products for the food industry.
- Experienced team ensures advanced technology and stable quality.
- Prompt service for customer satisfaction.

Motto: Quality, technology, integrity & effective management.

Vision: Creating a fresh world through delicious food.



Company Recognition

Our products trusted by numerous food processing factories in **China** and Abroad including: **Japan (Calbee, Nissin), Taiwan (Hsu Fu Chi), United States, Germany, United Kingdom, Netherlands, Mexico, Brazil, India, Thailand, Philippines, Indonesia, Cambodia, Tajikistan**

• Academic Recognition:

- Endorsement from the Academy of Agricultural Sciences and Agricultural University, China

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- ❖ Triplus Slide-Type Sorter
- ❖ Potato Hydraulic Cutting Machine
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- ❖ Strawberry Destemmer





VF260/400/600 TSR Vacuum Frying Equipment



- ❖ Avoids the production of acrylamide and does not generate carcinogens.
- ❖ Maximizes the retention of original nutrients.
- ❖ Has approximately 30% higher frying efficiency compared to other manufacturers.
- ❖ Longer oil lifespan.
- ❖ Dynamic oil circulation ensures uniform frying temperature.
- ❖ Modular integrated manufacturing of equipment.
- ❖ High level of automation, reducing maintenance probability.
- ❖ Preserves the original color and aroma of the product.
- ❖ Efficient condensing system unaffected by seasonal climate.
- ❖ Utilizes a vacuum centrifugal deoiling machine to significantly reduce oil content.

VF260/400/600 TSR Vacuum Frying Equipment Configuration (Part 1):

- **Vacuum Frying Pot:**
 - Imported seals and Japanese-imported bearings.
- **Oil Heating System:**
 - Consists of oil circulation pipes, energy-efficient and hygienic-grade oil pumps, heat exchangers, oil filters, and related valves and monitoring instruments.
- **Vacuum System:**
 - Comprises the vacuum frying pot, dual-stage water vapor condensers, dual-stage vacuum pump units, water cooling system, and associated valves and pipelines.
- This system maintains extremely high and stable vacuum levels during the frying process.





VF260/400/600 TSR Vacuum Frying Equipment Configuration (Part 2):

Pneumatic System:

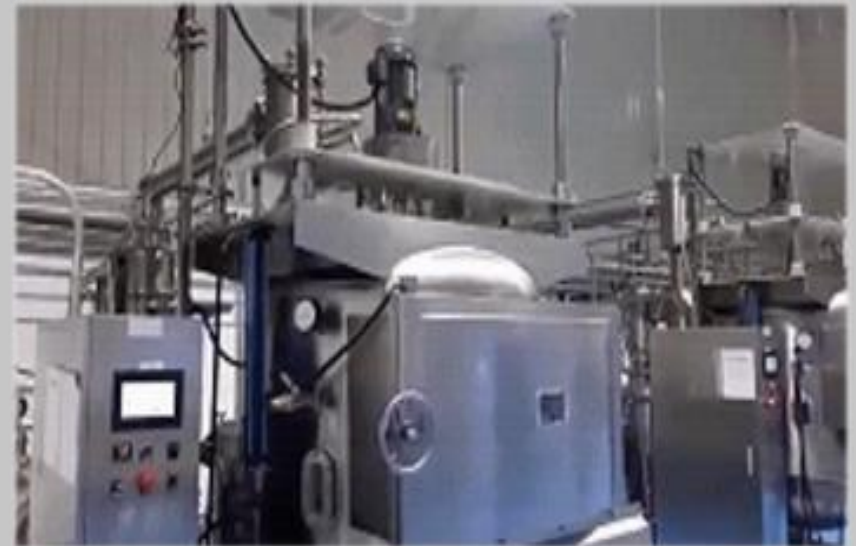
- Comprises an air compressor (customer-provided or optional) and pneumatic cylinders.
- Enables manual control for lifting and automatic frying basket processes.

Electronic Control System (High-Quality Components):

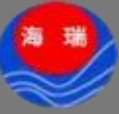
- Utilizes Mitsubishi PLC, touchscreens, ABB and Mitsubishi inverters.
- Incorporates Schneider low-voltage electrical components.
- Features German JUMO temperature sensors for precise measurement.
- Digital vacuum gauges ensure accuracy and stability.

De-oiling System:

- Performs vacuum centrifugal de-oiling to reduce oil content in fried food.
- Adjustable parameters for oil control.
- Various agitation methods ensure uniformity.



Combined Frying Equipment



Frying Pot Components:

- Maintains an internal vacuum.
- Operates below atmospheric pressure, allowing water to boil at lower temperatures.
- Fries snacks (potatoes, apples, yams, etc.) without browning.
- Controls acrylamide formation.
- Keeps oil frying temperature below 120°C to prevent acrylamide.
- Requires less space and energy than traditional vacuum fryers.

De-oiling System:

- Integrated centrifuge reduces oil content.
- Lowers free fatty acid formation during preheating.
- Preserves product quality (natural color, taste, texture).
- Saves labor while ensuring hygiene and safety.
- Short frying time, high efficiency, energy-saving, and low fat.



Continuous Vacuum Frying Machine Conti-VFA-

ULTRA Series:

Features:

- Continuous feeding system
- Vacuum discharge lock
- Inspection window with lighting
- Automatic oil level control
- In-place cleaning system
- Temperature and pressure control
- PLC operation
- Stainless steel structure
- Continuous automatic de-oiling

Vacuum System:

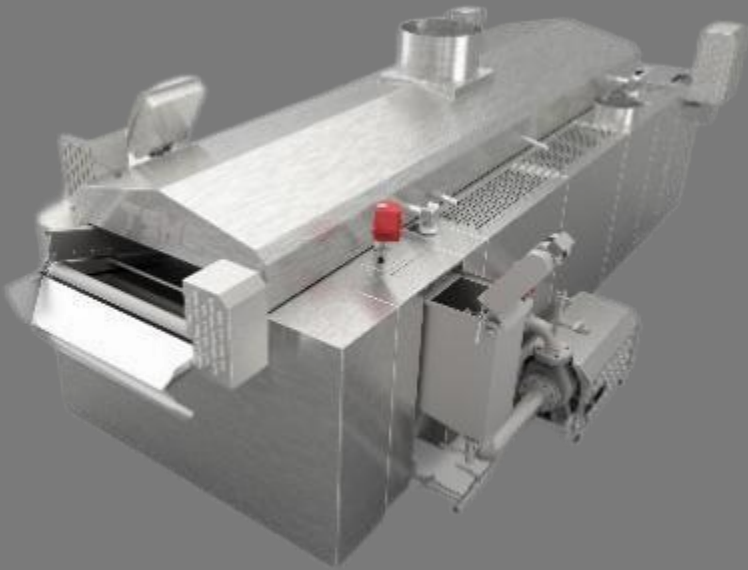
- Vacuum pump
- Air filter
- Condenser
- De-oiler
- Condensate water collection box

Oil Circulation System:

- Oil pump
- Heat exchanger
- Automatic oil filter



High-Temperature Frying Line



Precise Temperature, Product, and Oil Flow Control:

- Ensures high-quality potato chips with uniform color and consistent moisture content.
- You can use the same frying machine to set different temperatures for producing various types of products.

Ideal Applications:

- Traditional potato chips, ridged and wavy potato chips, and French fries.

Heat Source Options:

- Hot air, thermal oil, steam, and electric heating.

Other Supporting Equipment Includes:

- Batter applicator, flour applicator, starch immersion machine, and high-temperature frying machine.



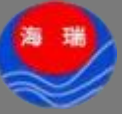
Sizing machine

- Apply batter evenly to lotus root slices, chicken, beef, pork, fish, and shrimp by passing them through a double-layer batter curtain and a bottom batter bath.
- In the dripping method, a powerful air knife is used to remove excess batter.



Powder machine

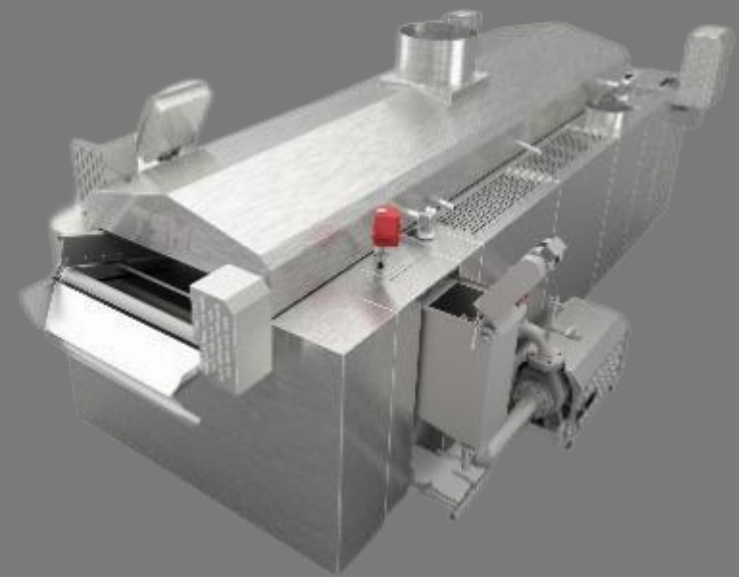
- Products are evenly coated with a layer of mixed powder when passing through a conveyor belt, adapting to the requirements of the subsequent process. This can be connected to batter-coating machines and breadcrumb applicators, forming production lines for different products. Thus, it completes the powder, batter, powder; batter, powder; and batter, powder, powder process.
- Top and bottom powder application ensures reliable and uniform coating. It is suitable for various pre-coatings, starches, mixed powders, and fine breadcrumbs ($\leq 3\text{mm}$).
- Adjustable thickness of the top and bottom powder layers.





Dipping machine

- The slurry dipping machine is a machine that immerses the product into Pulpliquid, thereby producing Coat the food with a layer of tempura Powder. Suitable for tempura products Ordinary sizing products.



High temperature frying machine

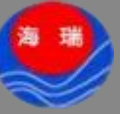
- • The fried product maintains high quality, The quality is uniform and stable.
- • Equipment automation level high, low failure rate.
- • High efficiency, can maximize the workers' efficiency.
- • The whole body is made of food grade Made of stainless steel.
- • No sanitary dead corners, Easy to clean.

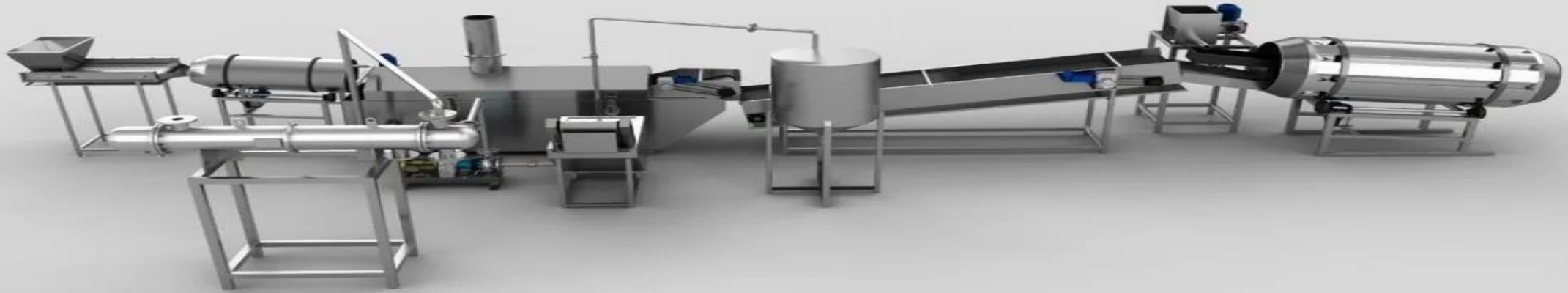


Industrial air fryer (steamer and baker)

- Small product weight loss (humidification baking)
- Dual-zone independent temperature control
- Adjustable processing time
- Trinity: hot air cooking - steam cooking - baking
- PLC control system
- Full color touch screen

Some of the finished product exhibition





Belt type continuous frying production line

- This fried snack processing system is designed for industrial use and includes
- Feeding system, continuous frying system, de-oiling system, Seasoning system
- and cooling system. Therefore, it is fully automatic, With high capacity and
- Continuous process, any worker's mistakes can be avoided, more accurate, Even
- Get perfect fried food efficiently.



Drum continuous frying production line

Application Range:

- Puffed snacks
- Puffed granules
- 3D extruded products
- Pig skin
- Salmon skin
- Cod skin



Cleaning Processing production line

Features:

- **Purpose:** Large-scale continuous cleaning of leafy vegetables.
- **Output:** Discharge via conveyor with adjustable water flow.
- **Ideal for:** Supermarkets, schools, canteens, and central kitchens.
- **Material:** Stainless steel construction.

Washing Process:

- Coarse peeling of root vegetables.
- Sorting and cutting.
- Initial cyclone washing.
- Initial vibration-based impurity removal.
- Secondary cyclone washing.
- Secondary vibration-based impurity removal.
- Discharge conveyor for drying.

Benefits:

- Aesthetically pleasing design.
- Small footprint.
- High production efficiency.
- Good product quality.
- Easy operation and maintenance.



Even Continuous micro dermabrasion machine

Key Features:

Brush Cleaning System:

- Nylon filament brush roll continuously cleans material surfaces.
- Functions include material cleaning, polishing, and peeling.
- Equipped with an internal spiral and water spray system.
- Detachable wedge-shaped mesh filter for residue removal.
- Mobile impurity collection tray.
- Variable frequency drive for overall machine control.
- Adjustable brush angle design.

Material Composition:

- Made of **SUS304 stainless steel**.
- Surface treated with sandblasted matte finish.



Cyclone washing Vegetable Machine

Key Features:

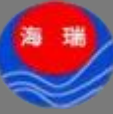
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- Adjustable brush angle design.

Material Composition:

- Made of **SUS304 stainless steel**.
- Surface treated with sandblasted matte finish.





Cyclone Cleanser Washing machine

Key Features:

360-Degree Rotatable Drain Valve:

- Suitable for various workshop design needs.
- Multiple vibrating screen surfaces can be adjusted based on material requirements.
- Reduces production costs.
- Dual filtration system (trough and water tank) allows water recycling, saving resources.

Application:

- Ideal for cleaning leafy vegetables, rhizomes, and melons/fruits after cutting.
- Made of SUS304 stainless steel with a sandblasted matte finish.
- Excludes motors and electrical components.



Bubble washing machine

Key Features:

Bubble Generation Device:

- Enhances soaking and cleaning effectiveness.
- Conical bottom design for efficient sediment collection.
- Plastic chain conveyor for gentle material transport.
- Quick-detach guard panels for easy maintenance.
- Dual side doors for convenient access.
- SUS304 stainless steel construction with sandblasted matte finish.



Blanching machine (Pre-cooker)

Key Features:

360-Degree Rotatable Drain Valve:

- Suitable for various workshop designs.
- Multiple vibrating screen surfaces for material adjustment.
- Reduces production costs.
- Dual filtration system (trough and water tank) allows water recycling.

Application:

- Ideal for cleaning leafy vegetables, rhizomes, and melons/fruits after cutting.
- Allows synchronous mixing with water for material cleaning.
- Made of SUS304 stainless steel with a sandblasted matte finish.



Air Drymachine

Key Features:

Bubble Generation Device:

- Enhances soaking and cleaning effectiveness.
- Conical bottom design for efficient sediment collection.
- Plastic chain conveyor for gentle material transport.
- Quick-detach guard panels for easy maintenance.
- Dual side doors for convenient access.
- SUS304 stainless steel construction with sandblasted matte finish.

Oil management system



Key Features:

- **1 Micron Filtration:**
 - Removes deposits before hot oil combustion or carbonization.
 - Extends the system's lifespan.
- **Dry Debris Expulsion:**
 - Minimizes oil carry-out.
 - Reduces breakdown due to solid combustion.
- **TPC and FFA Reduction:**
 - Decreases total polar compounds (TPC) and free fatty acids (FFA).
 - 1 micron filtration slows or eliminates oil breakdown.
 - Combining with oil in the product delays or eliminates TPC/FFA growth.
- **Continuous Treatment:**
 - Utilize Continuous Treatment Systems (CTS) and FFA absorbents.
 - Maintain FFA levels below 0.10%.
- **High FFA Recovery:**
 - Batch processing systems can recover oil with FFA content up to 0.9%.



Key Components:

Basic Configuration: Oil storage tank, Agitator, Auxiliary filtration conveyor system, Oil filter and Oil pump



Application Range:

- Primarily suitable for leisure food, chicken, fish, vegetables, fried potatoes, pre-made foods, and baked goods requiring oil filtration during frying.



Benefits and Usefulness:

- **Efficient Oil Dispensing Control:**
 - Precise measurement and reduced wastage.
 - Optimizes resource utilization and lowers operational costs.
- **Accurate Inventory Management:**
 - Real-time monitoring prevents stockouts.
 - Ensures uninterrupted workflow.
- **Reduced Contamination Risks:**
 - Minimizes equipment failures and costly repairs.
 - Preserves oil quality for optimal performance.





Centrifuge

➤ Purpose:

- The centrifuge/rotary machine is used for dehydrating and oil-frying food items such as lettuce, salad, onions, vegetables, or their mixtures.
- It is also suitable for dehydrating raw materials in the plant-based/meat substitute industry.

➤ Design and Suitability:

- Specifically designed for delicate products like tender lettuce leaves.
- Works well for high-density products like chopped onions.
- Achieves low product moisture content, thereby extending product shelf life.

➤ Features:

- Our centrifuge production line includes a conveyor belt and control panel.
- Available in different sizes, capacities, and gravity levels.
- Dual centrifuges are also an option.

➤ Capacity:

- The capacity of each centrifuge depends on the volume of the product you need to process.

➤ Models:

- We offer models: HRC500, HRC800, and HRC1000.



Wireless thawing equipment (high frequency thawing)

Process Overview:

- Products are placed on a conveyor belt.
- They pass through an RF unit (tunnel) between upper and lower metal plates.

Capacitor Formation:

- The plates (electrodes) create a capacitor.
- Product between the plates acts as the dielectric element.
- Electrode plate connects to a high-frequency radio generator.

Vibration and Heat Generation:

- RF generator applies AC voltage at millions of cycles per second.
- Dipole water molecules in frozen product vibrate and rotate.
- Friction generates heat evenly throughout the mass.

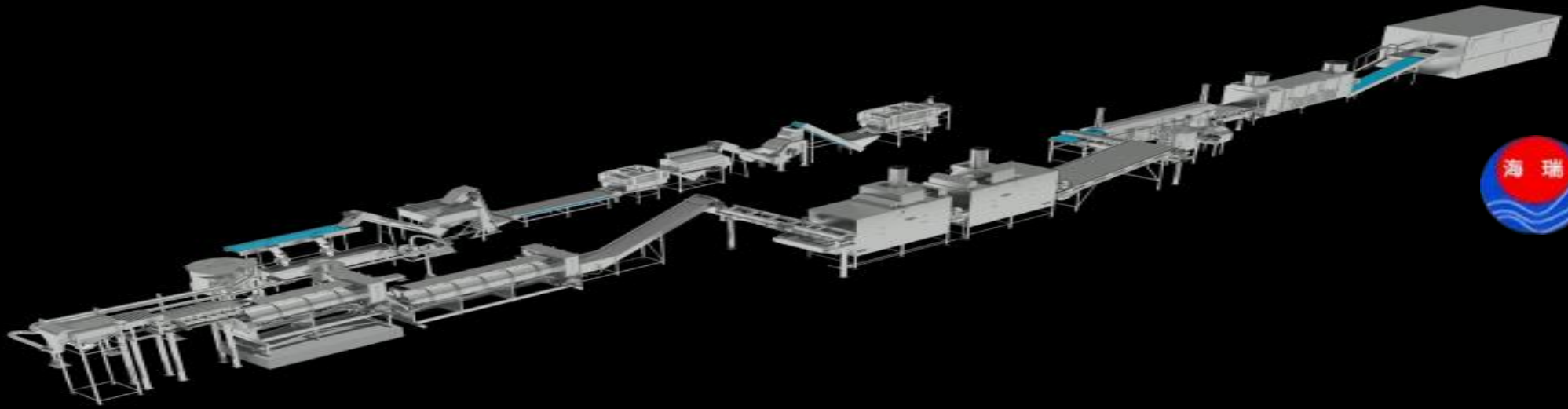
Precise Control:

- Voltage and conveyor belt speed are precisely adjusted.
- Ensures controlled heat generation and defrosting time



Part of the finished product exhibition





Potato production line

(French Fries, Potato Chips, Crisps)

Process Overview:

- Potatoes are initially cleaned and rid of dirt.
- Peeling follows the cleaning process.
- Sorting ensures quality control.
- Pulsed Electric Field (PEF) treatment is applied.
- Hydraulic cutting produces desired shapes.
- Blanching removes excess water.
- Drying prepares for frying.
- Frying adds flavor and texture.
- Pre-cooling maintains freshness.
- Quick freezing preserves quality.
- Optical sorting ensures uniformity.
- Packaging completes the process.

Process

- **Gentle Mixing:**
 - Automatic and uniform mixing of permeation liquid and product.
 - Minimizes material damage.
- **Temperature Control:**
 - Automatically adjusts liquid temperature.
 - Maintains stable sugar content.
- **High Efficiency:**
 - Permeation drying process is highly efficient.



Novus Belt Sorter



High-Speed Scanning:

- Scans up to 4000 times per second.
- Optical resolution of 0.3 mm.
- Highest resolution in the laser sorter market.

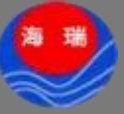
Impurity Detection:

- Easily detects small impurities:
 - Thin wood splinters in frozen vegetables.
 - Shell fragments in nuts.
 - Even glass splinters.

Versatile Applications:

- Fresh, dried, or frozen potato products.
- Fruit and vegetables.
- Crustaceans and shellfish.
- Confectionery and nuts.

Nexus Slide-Down Sorter



➤ Purpose:

- Developed for sorting nuts, dried fruit, and small products.
- Ideal for frozen vegetables and berries.

➤ Features:

- Free-fall laser sorter.
- Available in various scan widths (up to 1800 mm).

➤ High-Speed Scanning:

- Scans up to 4000 times per second.
- Optical resolution of 0.3 mm (highest in the market).

➤ Impurity Detection:

- Detects smallest impurities:
 - Stalks (cap-stems) in raisins.
 - Shell fragments in nuts.
 - Even glass splinters.

Triplus Slide-Down Sorter



Triplus is designed for sorting products with various optical defects. It accurately detects color changes, deformities, and foreign objects, ensuring their removal from the production process. Triplus can be used for potatoes, vegetables, fruits, and seafood.

Key Features

- **Optical Inspection:** Triplus uses advanced sensors to identify defects in real time.
- **Precise Sorting:** The system separates defective items from the production line.
- **Versatility:** Suitable for potatoes, vegetables, fruits, and seafood.

Benefits

- **Improved Quality:** Ensures high-quality products reach consumers.
- **Increased Efficiency:** Streamlines sorting process and reduces manual labor.
- **Cost Savings:** Minimizes waste and optimizes resources.



Potato Hydraulic Strip cutting machine

Waterjet cutting machines are essential industrial food processing equipment. They use high-pressure water jets to precisely cut and slice food products. These machines offer several advantages, including improved sanitation, reduced human contact, and consistent cutting results.

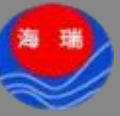
Key Features

- **Precision Cutting:** Waterjet machines provide accurate cuts, minimizing product waste.
- **Versatility:** Easily cuts various shapes and sizes of food products.
- **Disinfection:** High-pressure water jets can disinfect products during the cutting process, reducing bacterial contamination risks.

Overall Benefits

- **Enhanced Efficiency:** Waterjet cutting streamlines food production.
- **Reduced Labor:** Typical installations save up to 7 people per shift compared to manual cutting.

Part of the finished product exhibition



Microwave vacuum expansion Chemical equipment



Microwave vacuum puffing is a technology based on the following principle: if the rate of water vaporization within the cellular structure of a material exceeds the rate at which it escapes through the cell walls, internal pressure within the material increases. This pressure increase results in the “puffing effect.” The process occurs under low pressure conditions, creating a significant pressure differential.

Key Properties

- **Porosity:** The final product’s porosity resembles freeze-dried products.
- **Rehydration Capability:** Similar to freeze-dried products.
- **Color and Flavor:** Superior to most freeze-dried items due to shorter puffing times (minutes vs. hours).

Benefits

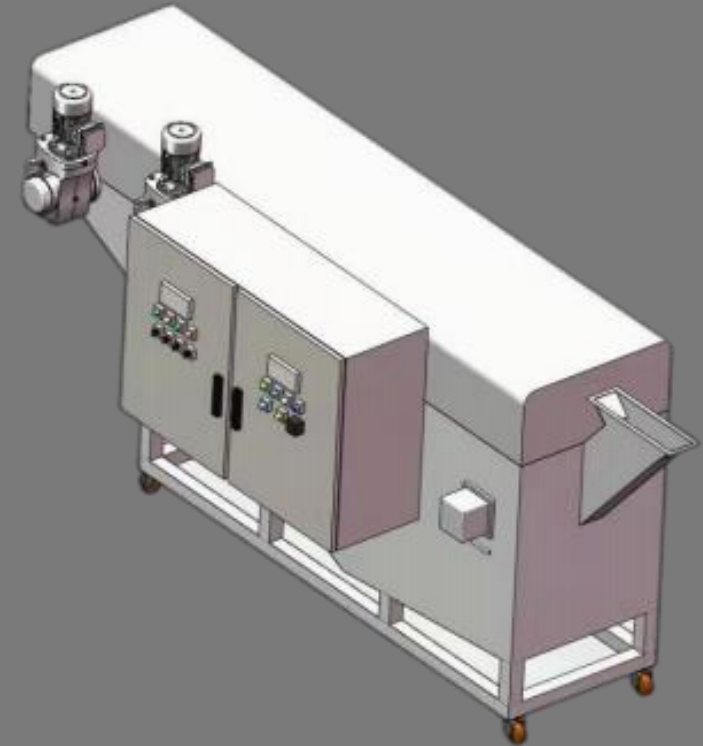
- **Efficiency:** Rapid drying process.
- **Quality:** Preserves biologically active ingredients.
- **Output:** High production capacity (5–9 tons/hour).

PEF Pulsed electric field

PEF is an emerging non-thermal, non-chemical solution based on electroporation—a physical phenomenon. It efficiently perforates cell membranes without heat, preserving product quality.

Key Benefits

- **Energy Efficiency:** PEF uses high-energy, short pulses effectively.
- **Cost Savings:** Reduces energy and water consumption.
- **Enhanced Productivity:** Boosts production yield.



Strawberry stem remover



- **High Yield:** Average production of 50 to 300 strawberries per minute.
- **Labor Efficiency:** Reduces labor needed for removing calyx (50-85% reduction).
- **Hygienic Cutting Process:** Ensures high-quality, consistent results.
- **Easy-to-Clean Design:** Production line designed for easy maintenance.



Vacuum frying

Our equipment and processing methods, most materials can skip the freezing step.

The yield (feeding volume) is based on 9x9mm fries. Different models of batch-type equipment:

For example, carrots, sweet potatoes, pumpkins, potatoes, bananas, apples, shiitake mushrooms, etc.

200 – 500 kg/hr



Vacuum Frying Process



❖ Raw Material Selection

- Choose suitable fruits, vegetables, or seafood.
- Quality matters for the final product.

❖ Processing Steps

- **Sorting:** Screen and select raw materials.
- **Cleaning:** Thoroughly clean selected items.
- **Slicing:** Cut into slices or segments.
- **Blanching:** Heat treatment (optional).
- **Draining:** Remove excess water.
- **Freezing:** Freeze raw materials.
- **Vacuum Frying:** Low-temperature frying.
- **Vacuum Deoiling:** Remove excess oil.
- **Seasoning:** Add flavorings.
- **Packaging:** Ready for market.



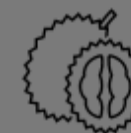
❖ Benefits of Vacuum Frying

- **Nutrient Retention:** Low heat preserves nutrients.
- **Crisp Texture:** Maintains crunchiness.
- **Extended Shelf Life:** Reduced oil content.
- **Quality:** High-quality fried snacks.



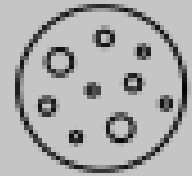
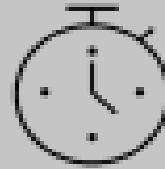
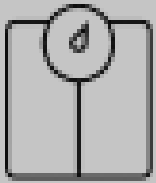
❖ Conclusion

- Vacuum frying enhances food quality.
- Ideal for healthy snacks and gourmet products.





Vacuum Frying Parameters



Vacuum Level:

- Common: 95-96% (40-50 mBar).
- Our equipment achieves 98-99% (10-20 mBar).

Frying Temperature:

- Typically, the oil temperature ranges from 90°C to 110°C.
- When the vacuum level is good, we can fry at lower temperatures, around 60°C, which helps maintain product color and flavor.

Frying Time:

- Higher vacuum levels mean shorter frying times.
- Faster oil heating also reduces frying duration.

Batch Size:

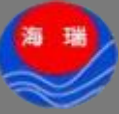
- Reasonable batch sizes lead to shorter frying times and higher production yield.
- Avoid overloading the fryer; it affects frying uniformity and overall product quality.

Oil Content:

Lower oil content results in less greasy finished products.



Testimonial



Some of ur equipment was used by Calbee in Japan.

- We compared its performance to other products, see results below:

Labor Efficiency:

- Reduced labor needed for calyx removal (50-85% reduction).

Hygienic Cutting Process:

- High-quality and consistent results.
- Designed for easy cleaning.

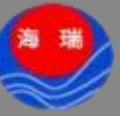
Customer Satisfaction:

- After three months of testing, the customer purchased our equipment.
- Later, they bought six more units for Calbee's Philippines factory.

Calbee



✓ Part of the finished product exhibition



Customer Service



➤ Design Solutions:

- We provide free comprehensive pipeline design solutions for clients.
- Layouts for each equipment in the production line are included.
- Customized product designs are available.

➤ Quality Assurance:

- A 12-month quality guarantee period is provided.
- Our company handles equipment commissioning.
- During on-site commissioning, we offer free training for two operators.
- Operators learn daily operation, maintenance, and equipment performance.

➤ Quality Support:

- Within the warranty period, we promptly address quality issues.
- Defects related to design, process, materials, or components are our responsibility.
- Repairs, replacements, or refunds are covered by us.
- Incorrect use or maintenance issues are repaired, with only material costs charged.
- Beyond the warranty, we continue maintenance, charging for responsible repairs.

➤ Regular Visits:

- After equipment runs smoothly, we visit users annually, providing necessary services.
- We offer spare parts and repair services at favorable prices throughout the equipment's lifetime.



Welcome again to Yantai Hai Rui

Contact us via the details below



Yantai Hairui Food Equipment Co., Ltd.

Located at 26 Jinchuang Road, Economic and Technological Development Zone, Penglai District, Yantai City, Shandong Province.

Email: Sales@vacuumfryer.net

Tel/Fax: +86-535-6836326

Mobile: +86-15688633001

Website: Yantai Hai Rui

