

# Reliability Without Borders

• **Taiwan Headquarters**

**HORNG TAIR INDUSTRIAL CO., LTD.**

No. 79 Heping East Rd., Yong Kang Dist., Tainan City, 710002, Taiwan  
Tel. (+886) 6 253 7062 Fax. (+886) 6 253 5432  
E-mail. sales@hung-thai.com.tw



• **Mainland Kunshan Company**

Room 9, Kunshan International Mold Town Mold Manufacturing District 23  
Building, Beimen Road No.3888, Yushan Town, Kunshan City, Jiangsu  
Phone : (+86) 0512 5012 2294 Fax : (+86) 0512 5519 9929  
E-mail : sales@hung-thai.com.tw

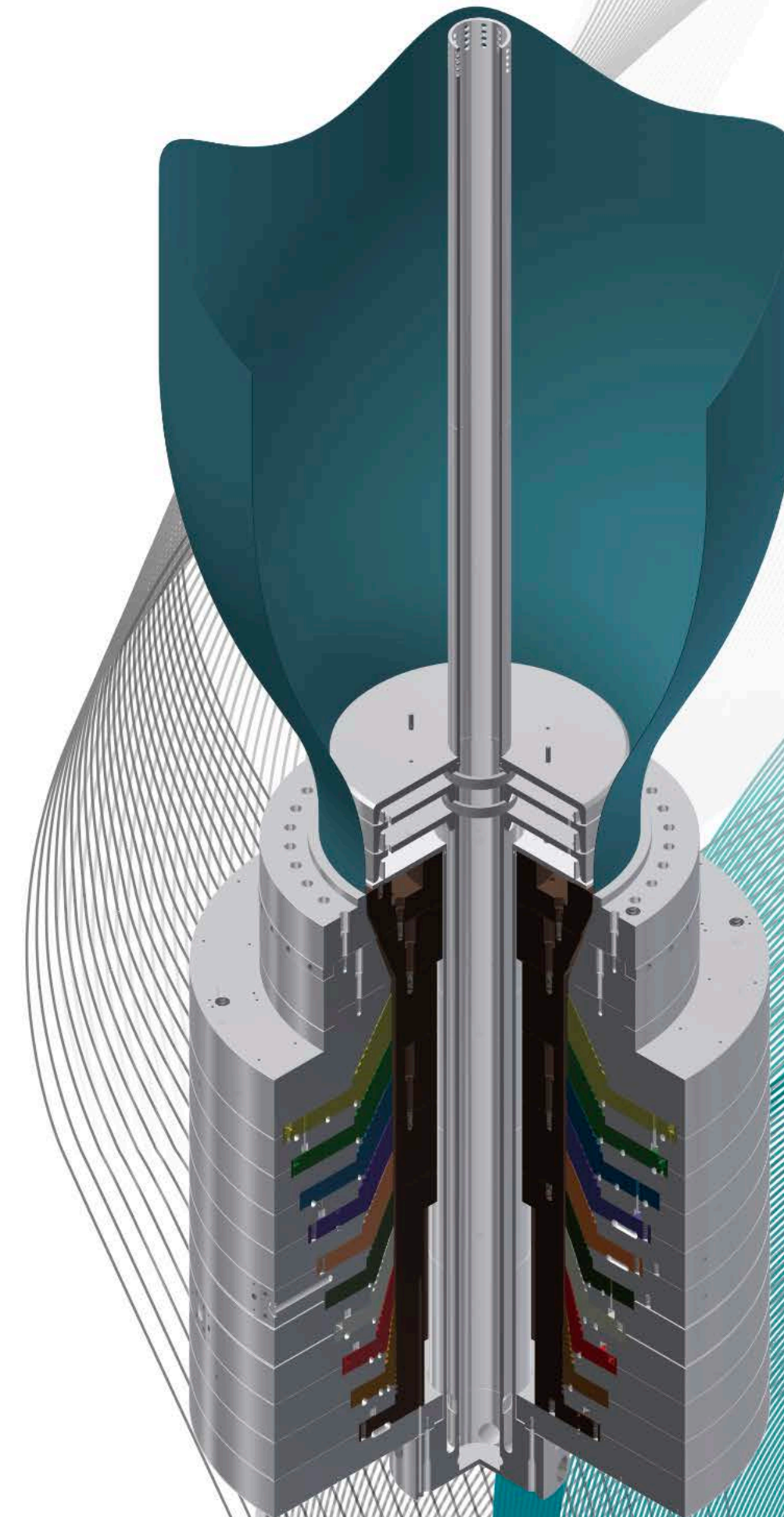
• **Vietnam Company**

Hamlet 3, An Vien Commune, Dong Nai Province, Viet Nam  
Phone : (+84) 97 1058 9014  
E-mail : sales@hung-thai.com.tw

**H-T HORNG TAIR**

# MELT, UNDER CONTROL

Multilayer die design integrating extensive customization experience and melt rheology understanding, ensuring long-term stable production of complex multilayer structures



[www.hung-thai.com.tw](http://www.hung-thai.com.tw)

# 1988

Founded as a company dedicated to the design and OEM manufacturing of blown film die heads.



Expanding into the mainland market, China headquarter is established in Kunshan, Jiangsu. To ensure prompt delivery of product solutions to our customers, we have established extensive branch networks across regions including Guangdong, Zhejiang, Shandong, and Liaoning.

# 2004

# 2010

With "seven-layer plastic blown film extrusion module with automatic film thickness control", Horng Tair received a subsidy from the Industrial Bureau of the Ministry of Economic Affairs to assist the traditional industrial technology development program (CITD) and obtained multiple patents from various countries.



# QUALITY EXCELLENCE & TECHNOLOGICAL INNOVATION 2011

# 2012

Obtained EU CE certification and won the Italian International Invention Gold Medal Award with newly developed die head series.



# 2013

Awarded the 21st Taiwan Excellence Award and the 20th SME Research & Innovation Award (MOEA). Recipient of the Russian International Invention Silver Medal. Our blown film die head molding module is protected by multiple international patents.

# 2017

Registered "Go Incubation Board for Startup and Acceleration Firms(GISA)" of Trading Center, STOCK CODE: 7518.

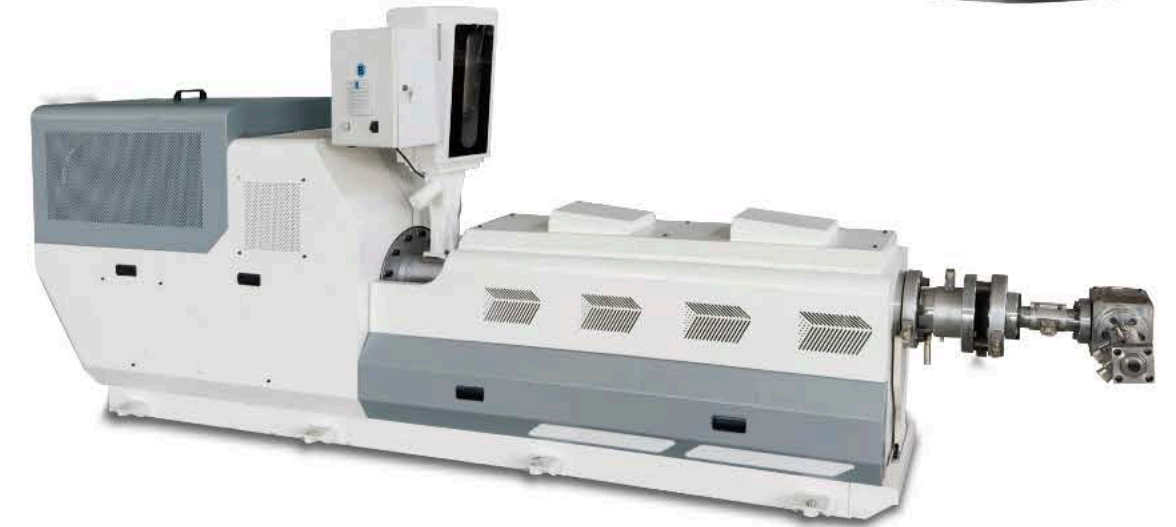
Won the title of Tainan City's 106th Annual Innovation and R&D Outstanding Enterprise.



# 2023



Successfully developed a nine-layer high barrier film die head and passed the EU RoHS non-toxic and environmentally friendly certification.



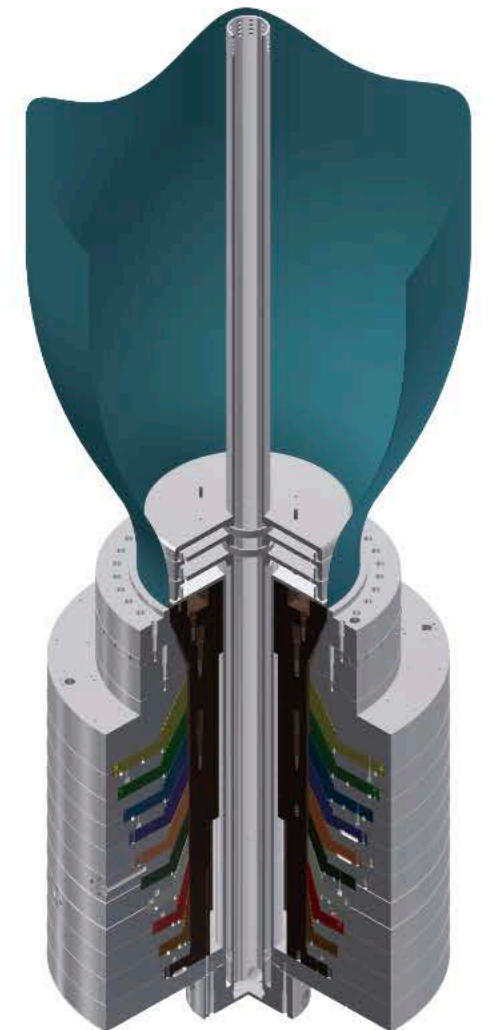
# QUALITY EXCELLENCE AND TECHNOLOGICAL INNOVATION

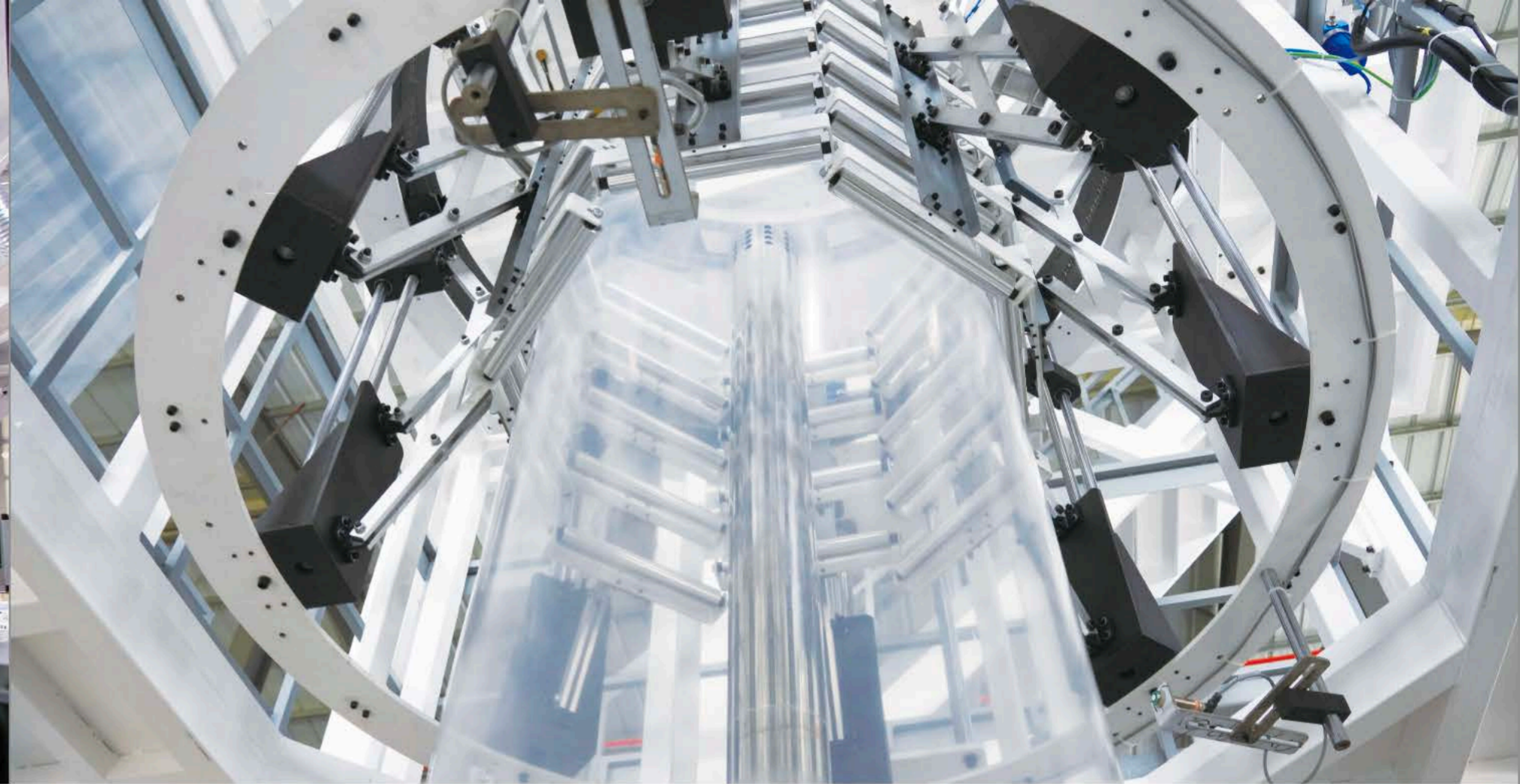
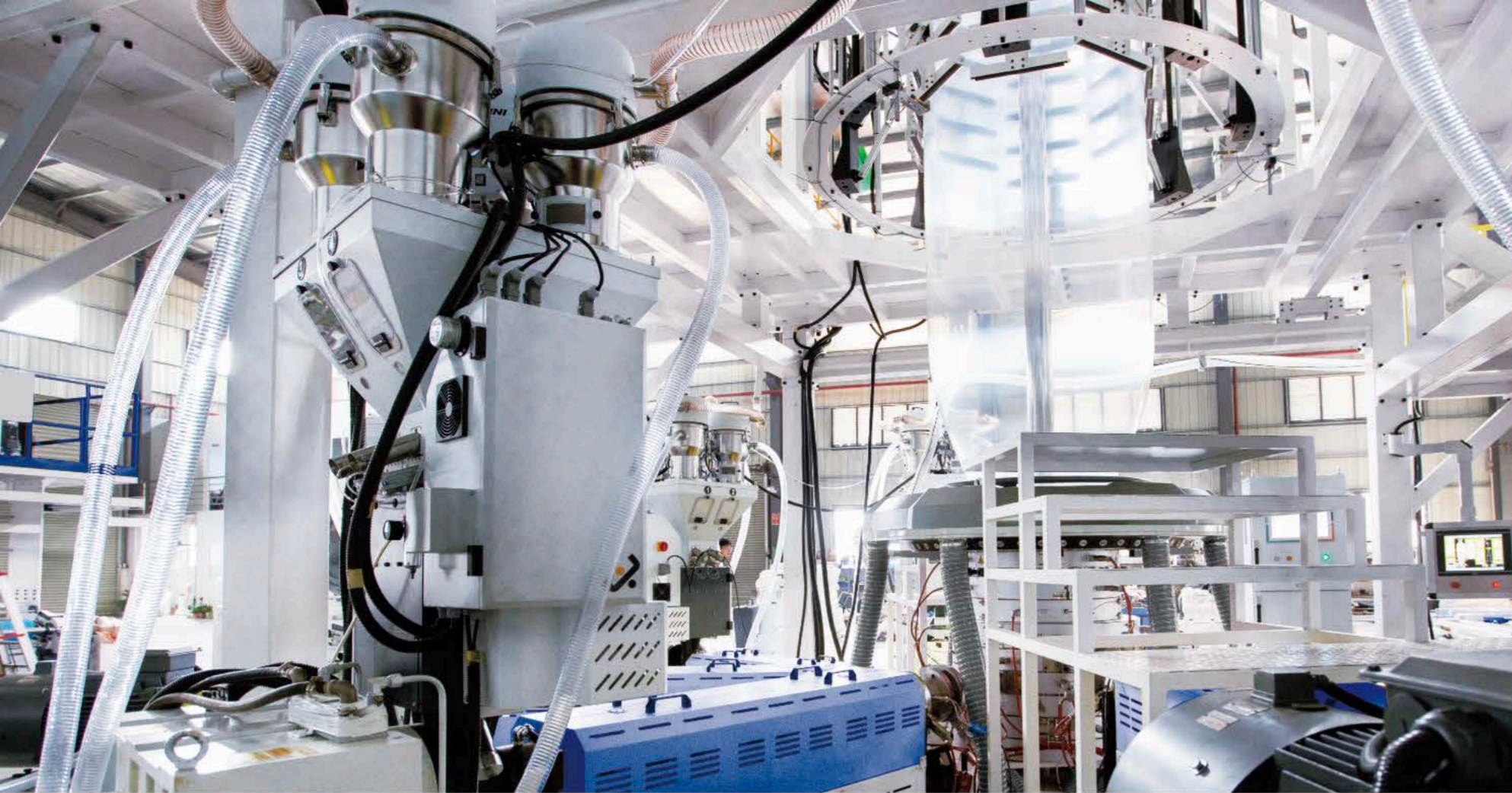
As a leading Taiwanese manufacturer, Horng Tair delivers the region's finest processing quality. From material procurement to heat treatment, polishing, and plating, every stage follows our rigorous standards. Our designs are driven by innovative engineering and decades of proven expertise. Our people are the key to our quality. By pairing the wisdom of our founding engineers with the next generation of talent, we ensure our mastery is preserved. This continuity of specialized skill is the bedrock of Horng Tair's innovation.



# 2025

We successfully developed and installed a ten-layer high-barrier film die head.





## THE EVOLUTION OF LAYER STRUCTURES

### 3-Layer Structures: The Foundation of Blown Film

The three-layer structure is the baseline for blown film. Outer layers ensure high gloss and printability, while the middle layer allows for recycled materials or CaCO<sub>3</sub> to balance cost and stability. Ideal for general packaging, Horng Tair provides tailored, high-output solutions that ensure even entry-level dies achieve maximum productivity.

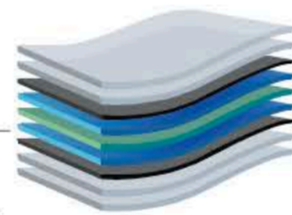
### 5-Layer Structures: A Milestone in Die Design

The transition to five-layer structures is a milestone in die engineering. By incorporating barrier and tie layers, films achieve an optimal balance of strength, clarity, and protection. Horng Tair's 5-layer dies feature high-output designs and POD (Polyolefin Dedicat-

ed) technology. This enables flexible layer ratios and broader material compatibility—significantly cutting costs without sacrificing capacity—showcasing our expertise in precision die design.

### 7-Layer Structures: Advanced Barrier Performance

Seven-layer structures enhance performance by embedding EVOH or PA barrier layers at the core, shielded by outer layers for maximum efficiency. Beyond traditional symmetry, Horng Tair offers asymmetrical designs with off-center barrier placement or composite layers. These configurations optimize heat-sealing and anti-curling properties, meeting the rigorous demands of food and medical-grade applications.



### 9-Layer High Barrier Food Packaging

● Layer ● Distribution ● Raw materials

1	16%	PE	—
2	16%	PE	—
3	10%	TIE	—
4	6%	PA	—
5	6%	EVOH	—
6	6%	PA	—
7	10%	TIE	—
8	15%	PE	—
9	15%	PE	—

- ✓ Excellent Oxygen And Moisture Barrier
- ✓ High Transparency
- ✓ Reliable Sealing
- ✓ Stable Processing
- ✓ Suitable For Vacuum And Sauce Packaging

## THE VALUE OF MULTI-LAYER FILMS

In structures with nine or more layers, the barrier material is no longer concentrated into a single thick layer, but is distributed into multiple extremely thin sublayers, each only 2–3 μm thick. This reduces the overall consumption of EVOH/PA while significantly enhancing the barrier effect through interlayer synergy.

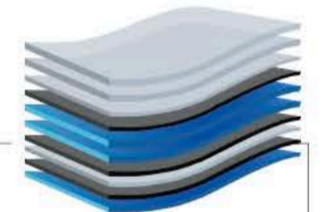
Multi-layer structures do more than just enhance barrier properties; they also improve film flexibility and formability, preventing cracking during vacuum packaging or thermoforming. Symmetrical designs ensure visual and structural stability, while asymmetrical layouts allow for off-center barrier placement. This reduces material costs while enhancing heat-sealing and anti-curling performance.

**Multilayer films are most commonly used in functional film applications:**

food vacuum packaging, cold-chain preservation, medical and pharmaceutical packaging, electronic or industrial protection. These sectors require the long-term protection and controlled release functionalities that only multilayer structures can deliver.

**The essence of multilayer films is the optimization of materials engineering:** each layer works at the most appropriate location and thickness, reducing waste of expensive raw materials while maximizing barrier properties, strength, heat sealing, and appearance.

**Horng Tair's core value lies in high-barrier die design:** enabling superior performance with less material. We help customers optimize costs and eliminate the time-intensive burdens of downstream processing, ensuring a seamless entry into high-end markets.

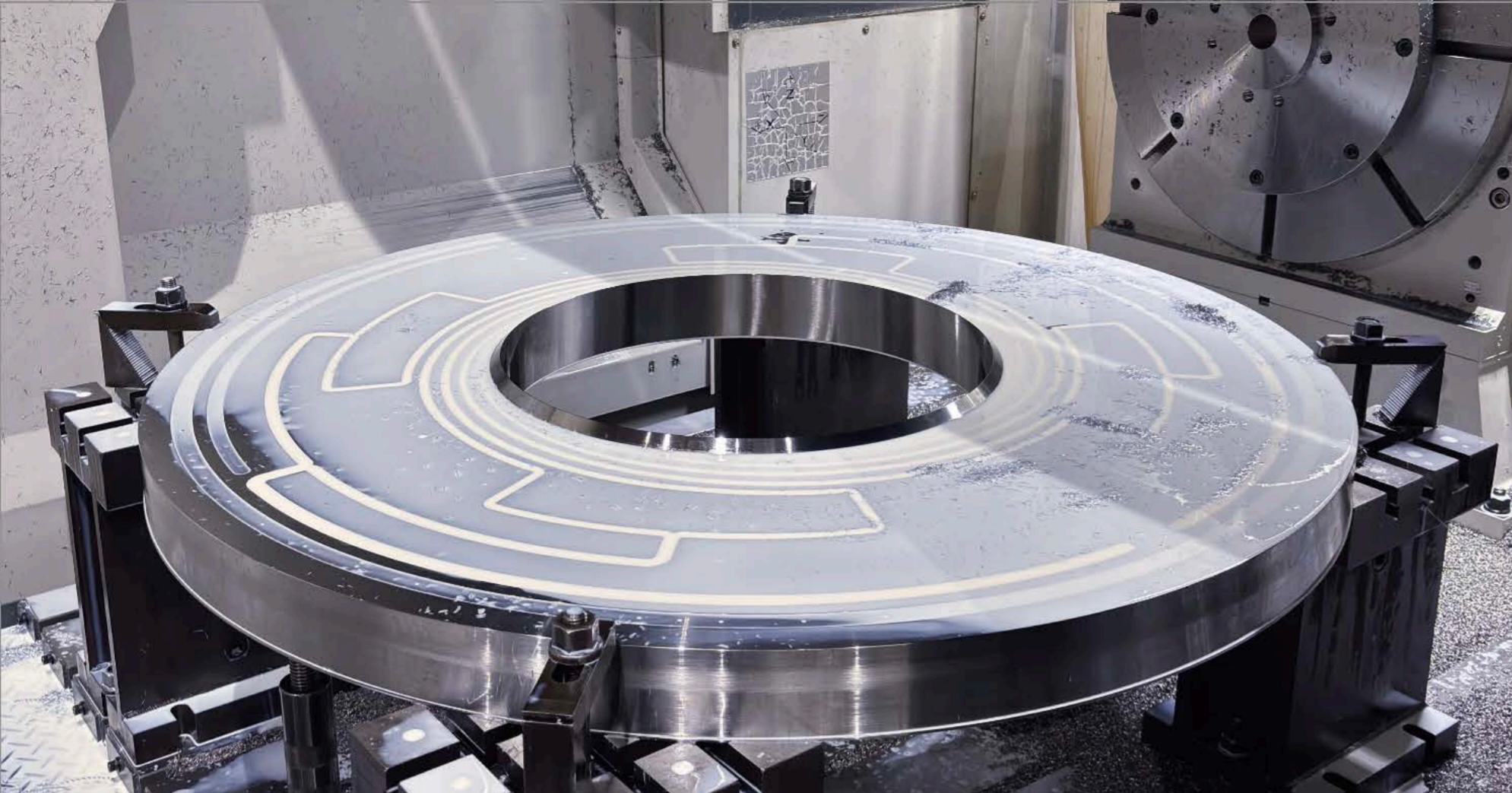


### 10-Layer High-Strength Medium Barrier Packaging

● Layer ● Distribution ● Raw materials

1	15%	PE	—
2	15%	PE	—
3	10%	PE	—
4	9%	TIE	—
5	6%	PA	—
6	6%	PA	—
7	9%	TIE	—
8	10%	PE	—
9	10%	TIE	—
10	10%	PA	—

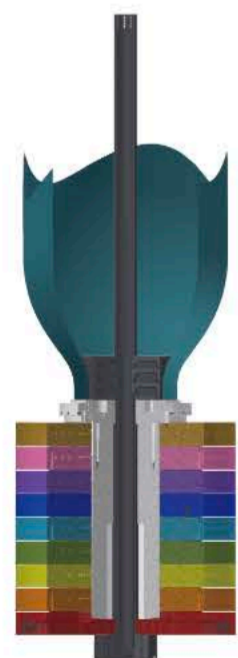
- ✓ High Impact and puncture resistance
- ✓ Excellent abrasion resistance and stiffness
- ✓ Stable sealing
- ✓ Rigid appearance
- ✓ Suitable for frozen and industrial packaging.



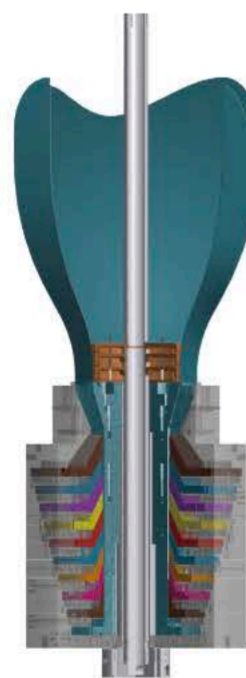
## EXPERTISE DRIVEN BY ADVANCED TECHNOLOGY

*Your Premier Partner for Customized Blown Film Solutions*

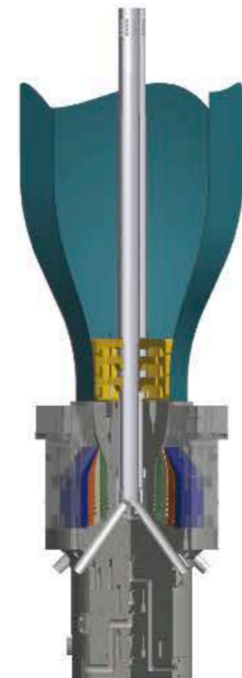
As a leader in high-output co-extrusion, we provide tailored designs that ensure precise pressure control and superior thickness uniformity. Our stringent surface treatment standards eliminate material degradation and minimize waste. By delivering optimized engineering solutions, we ensure the highest level of performance and reliability for our customers.



Hong Tair's co-extrusion dies are optimized for materials with high melting point differentials. Through independent layer temperature control and precise flow distribution, we deliver superior film stability across wide operating windows.



For high-barrier applications, Hong Tair provides specialized models engineered for superior oxygen and moisture resistance. These systems ensure peak performance in packaging integrity and freshness preservation.



Designed for high throughput and user-friendly operation, Hong Tair's die series offers both stable output and fast adjustments. It is the ideal solution for mass-production clients who prioritize efficiency and long-term stability.

## MOVING FORWARD WITH OUR CUSTOMERS LEADING WITH NEW MATERIALS



To meet evolving market demands, we lead the industry in blown film technology for next-generation materials. Our proven solutions include specialized equipment for lamination, protective, and medical-grade TPU films. We respond rapidly to new material trends, ensuring our customers always stay ahead of the curve.

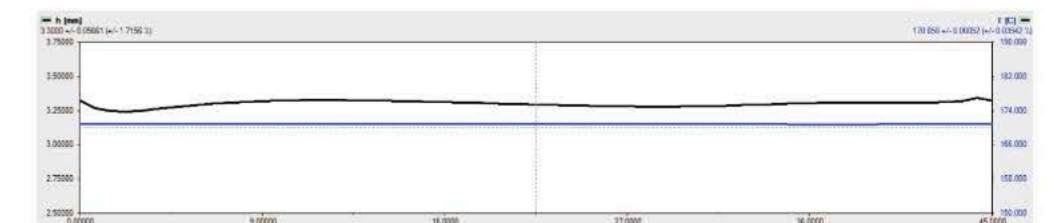
### Expanding Industry Horizons:

Hong Tair is actively advancing R&D in medical, electronic, and food packaging, as well as daily consumer goods. We are committed to transferring our deep expertise and latest technological breakthroughs directly to our clients to empower their success.

## MASTERY OF MELT CONTROL TAILORED ENGINEERING

We construct our melt flow channels by combining advanced scientific calculations with decades of proven field experience.

By stabilizing internal pressure and temperature, we ensure optimal melt overlap to achieve superior thickness uniformity and structural strength as the film exits the die gap.





## HT CUSTOMIZED EXTRUSION UNIT

*High-Efficiency Barrier Screw, Uniform Melt & Stable Pressure*

### High-Performance Extrusion Solutions

Customized Engineering for Maximum Profitability Horng Tair's R&D team specializes in customized extruders designed to maximize production efficiency and profitability. Our systems maintain constant torque across a wide speed range and utilize material-specific surface treatments to significantly reduce wear. This extends machine lifespan while substantially lowering maintenance costs.

**Advanced Barrier Screw Design:** Superior Melt and Stability Equipped with a low-shear, high-performance barrier screw, our extruders achieve

optimal melt uniformity at lower temperatures. This design effectively stabilizes pressure fluctuations, ensuring a perfect balance between high output and superior film quality. It delivers the ideal optical and mechanical properties required for high-end applications.

**Versatile Specifications and Flexible Configurations** We offer a wide range of extruder diameters, from 25 to 150 mm, to meet specific layer ratios and capacity demands. Supporting configurations from 1 to 10 layers, our systems provide the flexibility needed to excel in complex multilayer film manufacturing.

### Precise Engineering:

Quiet and Space-Efficient Designed for smooth and reliable operation, HT extruders minimize noise and vibration through precise structural engineering. Furthermore, our compact U-shaped configuration optimizes floor space, making it an ideal solution for facilities with limited area.

Horng Tair's customized extruders combine high performance, durability, and operational flexibility. They are the definitive choice for modern film manufacturers looking to boost productivity and achieve peak efficiency.



## HT CUSTOMIZED COOLING AIR RING UNIT

*High efficiency cooling for the superior film quality*

**Advanced Fluid Dynamics and Cooling Efficiency** The HT air ring system is engineered for maximum cooling capacity, precise thickness distribution, and user-friendly operation. By integrating advanced fluid dynamics with our deep expertise in blown film technology, we optimize airflow distribution to minimize pressure loss and significantly enhance cooling efficiency.

To protect cooling performance from die head heat transfer, our air rings feature a fully insulated design. This thermal isolation maximizes the efficiency of the cooled air, significantly boosting

production output. Enhanced cooling also improves the film's physical properties, resulting in superior clarity, tear strength, elongation, and exceptional puncture resistance.

### Stable Airflow Control and Precision Adjustment

Our design generates strategic negative pressure between air outlets, ensuring smooth and stable bubble formation. This precision airflow control provides a high level of adjustability, allowing operators to fine-tune parameters for optimal thickness tolerances and consistent film quality.

### Modular Design for Streamlined Maintenance

The modular structure allows for quick disassembly, simplifying flow channel cleaning and routine maintenance. This design minimizes downtime and ensures the equipment operates at peak performance, further enhancing overall production efficiency.

The HT air ring system sets industry standards for cooling efficiency, film quality, and operational convenience. It is a highly competitive solution designed to boost production capacity while guaranteeing exceptional film quality.

HT takes user experience as the foundation of its blown film extrusion equipment design, using years of accumulated experience to develop unique insights to wind special materials or specific thicknesses and widths of film. By providing customized winding solutions tailored to diverse customer needs, HT enhances production efficiency and convenience, ensuring the quality and flatness of film rolls.



The modular structure design increases equipment flexibility and product diversity. HT also adopts advanced safety standards, equipping multiple safety protection systems such as emergency stop buttons and overload protection to ensure safety of operators.

## HT CUSTOMIZED FILM WINDING UNIT

*Precision winding with automation and gap winding options*



**Human-Machine Interface (HMI):**  
A user-friendly touchscreen interface allows operators to easily monitor and adjust winding parameters in real-time, enhancing production convenience and reliability.

**Automatic Core Loading System:**  
This automation system further reduces manual operation risk and costs, so that can minimize material waste caused by operational errors.

These features are indispensable in modern blown film plant, to improve blown film quality, reduce waste of raw materials, and enhance overall production efficiency.

### GAP WINDING

The Sid Freedom Series 3-in-1 film winder is designed to meet the needs of films with various thicknesses, enhancing blown film production flexibility and product diversity to satisfy modern blown film demands for multi-functionality and high quality. This winder adopts an innovative gap

design to precisely control the distance between the film and the core, ensuring stable, high-quality winding across different film thicknesses.

### Applicable to Wide Range of Film Thickness :

For extra-thick films, the gap prevents slippage, ensuring film winding quality. On the other hand, for thinner films it avoids excessive compression, maintaining product integrity and uniformity. This feature makes the Sid Freedom Series an ideal choice in the market demanding film with the wide range of thickness.

### Precision Control for Enhanced Quality :

The Sid Freedom Series is equipped with a high-precision control system that ensures winding stability and consistent tension, preventing film misalignment or deformation. Regardless of film thickness, the system guarantees stable tension and winding quality, furthermore, improves product consistency. Thanks to these features, the Sid Freedom Series stand out from multifunctional and high-precision film winding market.

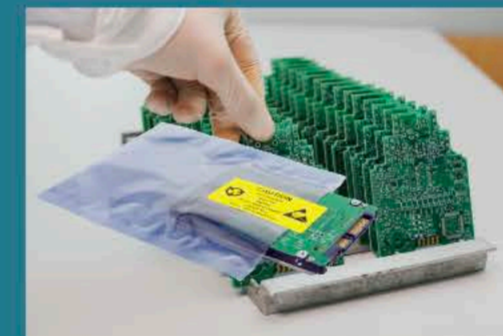
### AUTOMATION OPTIONS

**Automatic Roll Change:**  
When a roll is fully wound, the automatic roll changing system will switch to a new core for winding. Additionally, an optional mechanism of automatic releasing of completed film roll also can be added, reducing dependency on operators and increasing production efficiency.

**Automatic Tension Control:**  
This feature automatically adjusts the tension based on film thickness and line speed, ensuring stable tension during winding to prevent film over-stretching or loosening due to tension fluctuations.

# YOUR ONE-STOP PARTNER FOR FILM MANUFACTURING

*Deep Market Insight. Total Industry Support*



### Suitable for a Wide Range of Applications

Barrier Film	Lamination Film	Medical Film
Agricultural & Membrane Film	Consumable Packaging	Industrial Films & Bags
Shrink Film	Stretch Films	Food Packaging
Industrial Films & Bags	Eco-friendly Film	Electric Products