FEEC
FAR EAST EQUIPMENT
MEMBER OF JINMING

Global Leading Manufacturer

Food and Industrial Packaging Machinery

Extrusion Coating & Lamination Lines
BOPP/BOPET Film Production Lines

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Global Leading Coating & Lamination Solution

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Content

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"Consolidated under the FEEC brand, the historical name of Far East Equipment (Shantou) Co., Ltd. Coating & Lamination, Extrusion Coating & Lamination, Flexo Printing and Bag folding Line and BOPP/BOPET line can reach FEEC illustrious milestones to their credit."

Jinming's head office and morden production site in Shantou city, total floor space 110,000m2

Who is FEEC

FEEC founded in 1985, our company has possessed floor space of 100,000m2 and located in the Xinxi Town, Shantou, Guangdong, China.At present, our company having large precision instrument equipments and over 200 sets of CNC machine center of modern processing equipment, with more than 200 employees and over 15% R&D engineers. The company has been selected as “Guangdong High Credit Enterprise” and “Bank Credit Grade AAA Enterprise” for twenty-six years.

In July 2013, FEEC became a member of Jinming Machinery (Guangdong) Co., Ltd. (A Stock Code: 300281). With Jinming's financial support, and the good management team work and brand effect, the quality of our products, technical ability and service level is highly enhanced.

FEEC supplies a wide range of products in five categories:

Coating & laminating Lines,
Extrusion coating & lamination lines,
Complete machinery for plastic woven packaging industry,
Environmental protection & energy saving recycling systems
BOPP / BOPET production lines

Our Technology

FEEC is a high-tech company who is specializing in R&D, manufacturing and sales of the Coating & Laminating lines.

The main products of FEEC are: Coating & Laminating Line, Extrusion Liminating Lines, Regenerative Thermal Oxidation (RTO) System, Flexo Printing Machine and BOPP/BOPET Line etc.

Each of these lines can help the packaging industry to be high efficient, energy saving, convenient and environment protection. These RTO system give energy saving and protect environment.

FEEC company, with its professional technical support and full range service, is creating the new, energy saving, high quality, high precision and high reliability machines with the help of the customers. FEEC has provided the coating & laminating solution to the packaging, electronics and other industries.

"You need our know-how. With our decades of experience in the packaging and film industry, FEEC has developed a deep technical understanding of needs of today's film & package producers"

Our strong customer-oriented and technology-driven approach has enabled our technology to secure and maintain a leading position in the market.

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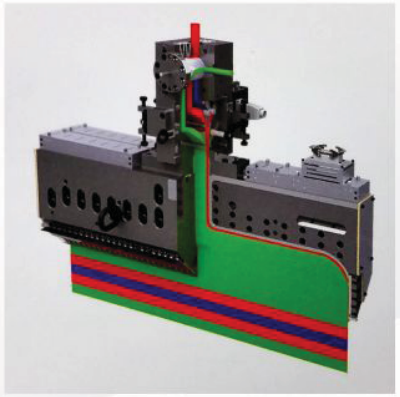
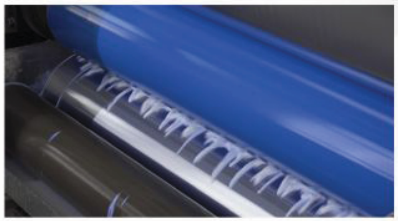
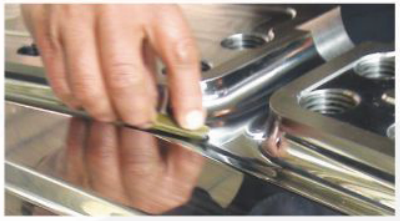
FEEC commitment to innovation and project-oriented philosophy
help our customers achieve their processing goals through ;

"Installations, process developement collaboration for new-
to market productions, Improving operational efficiency and reducing downtime"
Our company can provide with complete technical consulting, design, planning,
installation, commissioning, process technique, and training service etc.
according to customer's requirement.







Market We Serve

"FEEC work closely with customers to design systems that are tailored to exact specifications. We provide the right mix of engineering and project management to projecct effectively execute complete installations from start to finish - getting our customer's lines up and running faster."

Spout Pouch

Milk, Juice Paper Board

Retort Pouch Bag

Food & Household Chemical Liquid Standing-up Pouch

Instant Noodles Packaging

Woven Packaging

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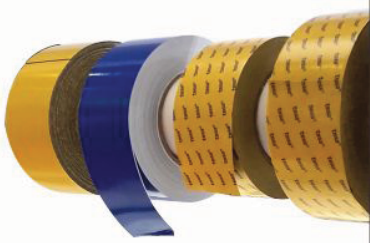
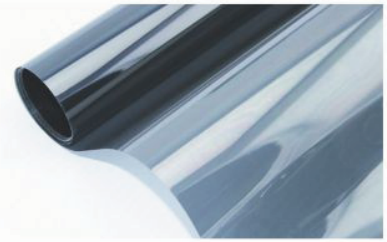
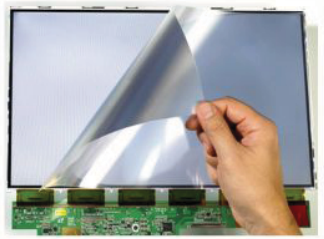
FEEC supplies advanced coating & lamination lines for special applications including : high barrier film for food and medical applications; reinforced sheeting for industrial uses; and special lamination products.



Adhesive Tapes





Electronic Applications

Tabacco Packaging

Building, Construction

Tarpaulin

Cosmetics Packaging

Pharmaceufical Packaging

Coating & Laminator

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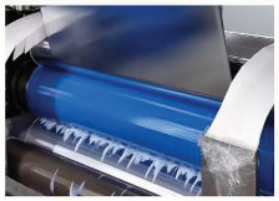
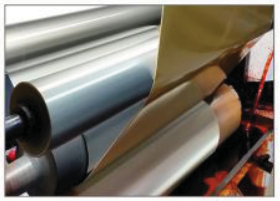
Wet & Dry Laminator

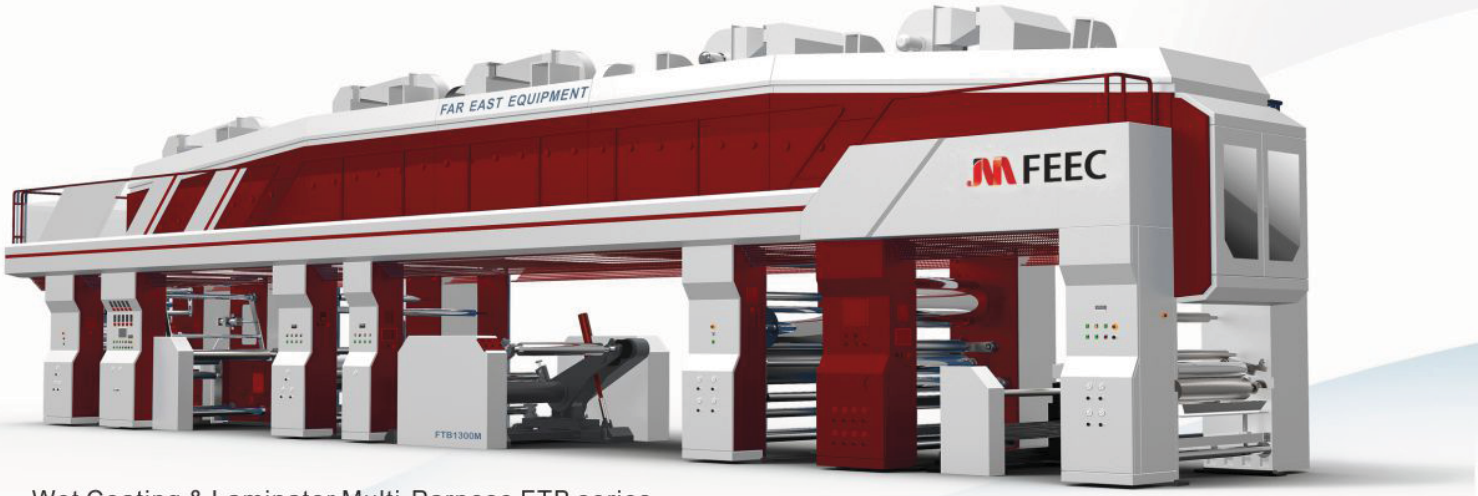
FTB Serise Coating & Laminator
STBZ Seris Dual-Coater Coating & Laminator
TBZ Serise Muilti-Purpose Coator
BLJ Serise Delaminating & Slitting Machine

FEEC Coating Systems

Roll Coatings Gravure coater, Roll transfer coater
Slot Die Coatings Die on roll, Die on substrate
Knife Coatings Knife coater, Air Knife coater
Hot Melt Coatings Slot Die coater, Roll transfer coater

Its solutions also include tapes and labels, silicone and specialty coating, and drying systems; flexible packaging, paper coating and laminating, board coating and laminating, fabric scrim and non-woven, custom coating, winding and unwinding, and control systems; and process controls and integration, drives, and coating configurations and accessories.

Wet Coating & Laminator Multi-Parpose FTB series

High-Speed Dual Coating & Lamination Machine (STBZ Series)

Wet Lamination Process

Structure : A/C/B

A: Paper

B: Aluminum foil

C: Adhesive

Main key units

A. Unwinder (Paper)

B. Unwinder (Al-foil)

C. Adhesive Coating

D. Color Coating

E. Dry Oven

F. Rewinder

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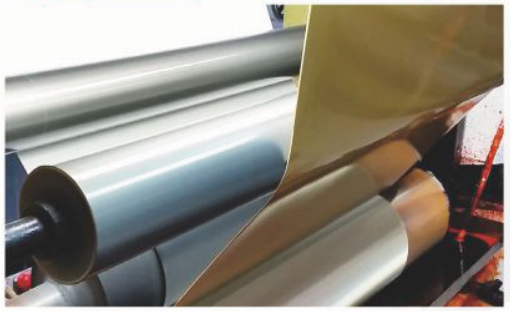
In the industry of cigarette packaging, FEEC coating and lamination machines had obtained over 60% of the market share in China, which had generated over 600 million RMB in the last 10 years.

FTB Coating & Laminating series is applicable for production aluminized transfer golden and laser card, aluminized-film golden card and Al-foil laminated paper,.

FTB Series can achieve many functions such as back coating, color coating, wet-laminating and delaminating.



Technical Data of FTB Series

Model		Unit	FTB-1100	FTB-1300	FTB-1800
Roller Width		mm	1200	1300	1800
Web Width		mm	650~1100	750~1200	1200~1650
Material Thickness	BOPET	um	12~30		
	BOPP	um	20~40		
	Paper	g/m2	70~350		
Max. Unwinding Diameter	Film	mm	800		
	Paper	mm	1600		
Max. Rewinding Diameter		mm	1650/Paper		
Max. Mechanical Speed		m/min	180		
Production speed		m/min	15~150		
Line Size (L x W x H)		m	18 x 4 x 5	18 x 5 x 5	18 x 5 x 5

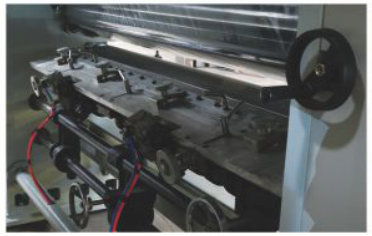
Digital Control Dual Coating Line

STBZ Serise Automatic Dual Coating Line

STBZ automatic computerized coating line is designed for the peeling, color layer and secondary coating such as electrochemical aluminum, aluminized transfer film.

Unwinding, rewinding and driven adopt servo motors, advanced digit control and tension floating roller which realized automatic control on the whole line dynamic tension, which greatly improve the precision and stability on the tension control.

The blade and press roll mechanism makes the adjustment easy and it is attached with buffer, stable pressure.
Web winders are adopted automatic reel change and connection.



Technical Data of STBZ Series

Model		Unit	STBZ-1300	STBZ-1800	STBZ-2100
Roller Width		mm	1300	1800	2100
Web Width		mm	650~1200	750~1700	1200~2000
Material Thickness	BOPET	um	12~20		
	BOPP	um	20~40		
	Paper	g/m2	40~100		
Max. Unwinding Diameter	Film	mm	600		
	Paper	mm	1200		
Max. Rewinding Diameter		mm	1200/Paper		
Max. Mechanical Speed		m/min	180		
Production speed		m/min	15~150		
Total Power		kW	240		
Line Size (L x W x H)		m	21 x 3.2 x 4.4	21 x 3.8 x 4.7	21 x 4 x 5

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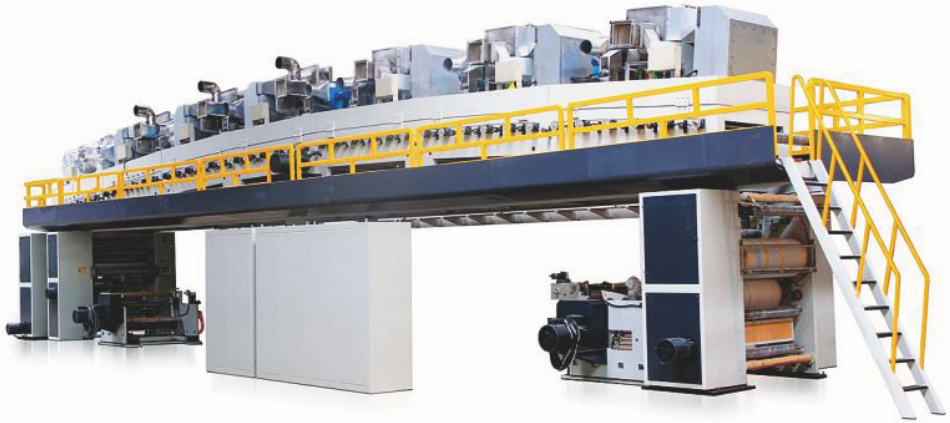
TBZ Series Muilti - Purpose Coating Line

TBZ Multi-purpose coating machine is used for different applications, such as coating colayer, peeling layer, glue layer and molding layer of electro chemical aluminum film and laser hologram film etd.

BLJ-1300 Delaminating & Slitting Machine



Technical Data of TBZ Series

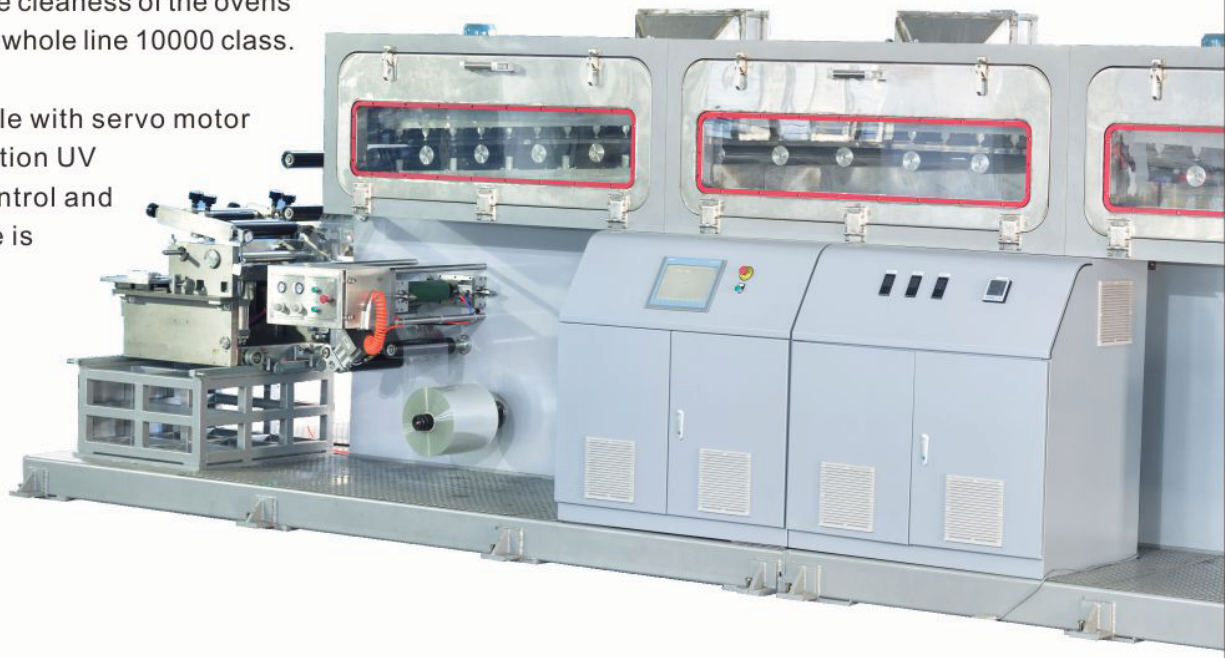
Model		Unit	TBZ-1300	TBZ-1800	TBZ-2100
Coating Width		mm	1300	1800	2100
Material Thickness	BOPET	um	12~50	12~50	12~50
	BOPP	um	20~40	20~40	20~40
	Paper	g/m2	40~110	40~110	40~118
Coating Speed		mm	15~150		
Unwinder, Rewinder Diameter		mm	Min. 800~Max.1600		
Max. Mechanical Speed		m/min	180		
Line Size (L x W x H)		m	21 x 3.2 x 4.4	21 x 3.2 x 4.4	21 x 3.2 x 4.4

Optical Grade Coating & Laminating Experiment Machine

Model TBFH-300

Model TBFH-300 coating & laminating experiment machine is a high precision coating & laminating experiment machine for optical film. The coating head can be changeable at any time according to different technical processes , i.e. micro gravure, comma doctor blade, slot die, or 3-roll coating etc. The machine features even coating thickness. There was no strip or scratch etc. defect on the surface of finished products. The cleaness of the ovens meets the requirements of 1000 class and the whole line 10000 class. Tension control is stable.

This whole line is designed in cantilever style with servo motor driving. Equipped with Nitrogen gas protection UV curing device, adopting Siemens PLC to control and operate, the tensile control of the whole line is stable, guaranteeing uniform coating and laminating effect.



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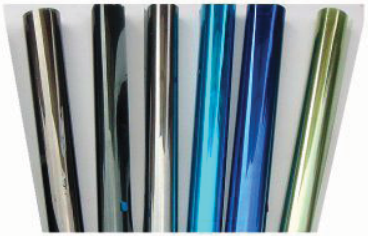
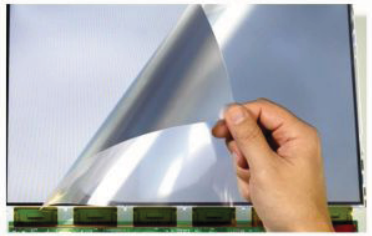



Main Technical Data: (Model TBFH-300)

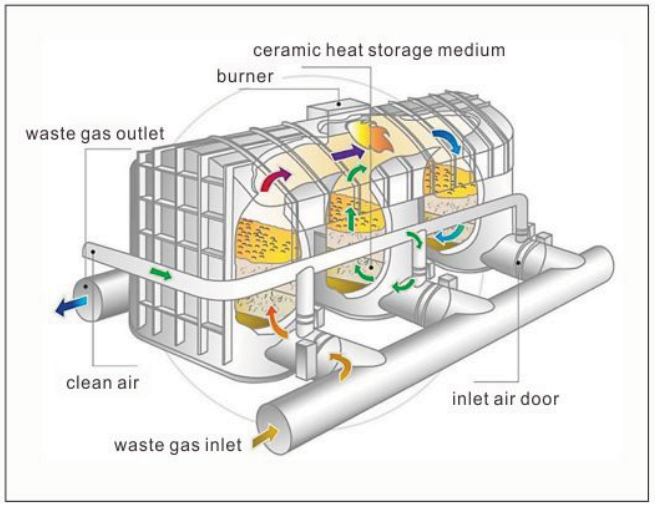
Model		Unit	TBFH–300
Available Coating Width		mm	300-350
Applicable Substrate	BOPET	um	12-250
	laminated substrate, PE, fluorine film, aluminum foil	um	15-100
Coating Method			micro gravure coating, comma doctor blade coating, slot die coating, 3-roll coating etc.
Coating material			water base or solvent base
Machine speed (max)		m/min	20
Coating speed		m/min	1-15
Winding / Unwinding Diameter (max)		mm	400
Winding/Unwinding Core Diameter (max)		Inch	3”
Heating Method		kw	electricity heating
Drying Oven			total 3 sections, 2m/section
Oven Max Temperature		℃	200
Out Dimension (L x W x H)		m	9x2x3.2

VOC (Volatile Organic Compound) Treatment Equipments

Electrical heating for the ovens is replaced by RTO system for heat exchange of the VOC waste gas

▶ RTO heat accumulating burning

RTO (Regenerative Thermal Oxidation) system has been widely used in coating, printing and other industries for recovery of waste gas emitted from the coating process. RTO System can save the energy and environmental protection.



Technical Data

Model	TOHR-25000	TOHR-40000	TOHR-60000	TOHR-100000
Disposal of Waste Gas	25,000m³/hr	40,000m³/hr	60,000m³/hr	100,000m³/hr
Thermal Efficiency	≥ 95%			
VOC Purification	≥ 97%			
Chamber Temperature	800°C			
Operation Mode	Continuous operation			
Safety System	Automatic safety alarm & Explosion-proof			
Size	Min. 22m x 5m x 16m (L x W x H)			

Energy Cost Saving Data

Time	Electricity	Saving Cost
1hr	1,200 kW	Save the cost appr, 3 to 6 million RMB per year
24hr / 1 day	28,800 kW	
300 days / year	8,640,000 kW	
1 Year cost	~ 7,000,000 RMB	

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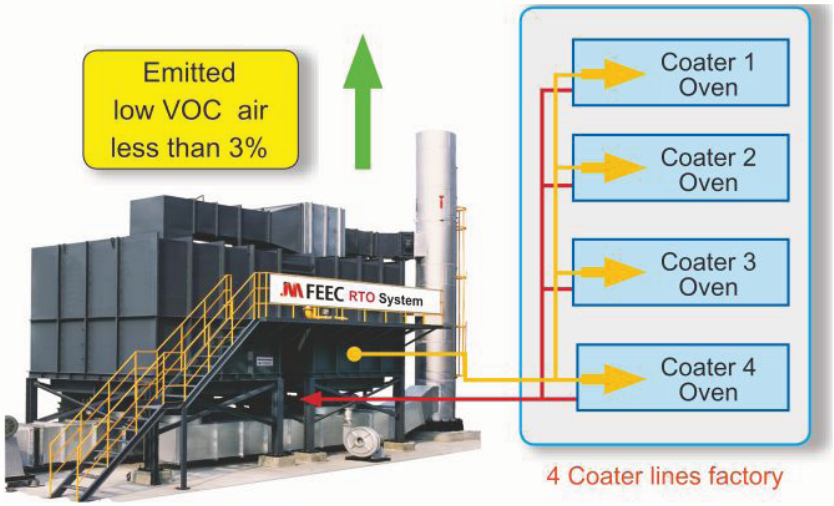
RTO System

The system is to burn the exhaust gas by using thermal oxidation oven and to absorb heat by hot-oil exchanger, which is used to heat up oven of the other equipments, like coating machine, printing machine. FEEC RTO Equipment meets national emission standard, which aim to the efficient utilization of resource an energy, is welcomed by many customers.

VOC Gas (Organic solvents: acetone, butanone, ethyl acetate, methanol, cyclohexanone & xylene etc...

800℃ of heating energy for generating of oxidation reaction for make low VOC at RTO unit



RTO heating up 800°C for solvent to low VOCs air

Extrusion Coating & Lamination Line

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The FEEC extrusion coating & laminating lines are usually custom-built. Configured for flexible packaging or paper and board processing, they produce composite structures for a variety of applications.

FEEC supplies advanced extrusion coating and lamination line for special applications including: High barrier film for food and medical applications; reinforced sheeting for industrial uses; and special lamination products.

Using our extensive rheological experience and our expertise in machinery design for downstreamprocess we can offer extrusion coating and laminating Lines to meet most excellent requirements.

FEEC know-how allows us to design a wide range of systems: from narrow width lines for thin flexible films to big lines for producing wide, heavy industrial sheeting.

Tandem Co-Extrusion Coating & Lamination Line

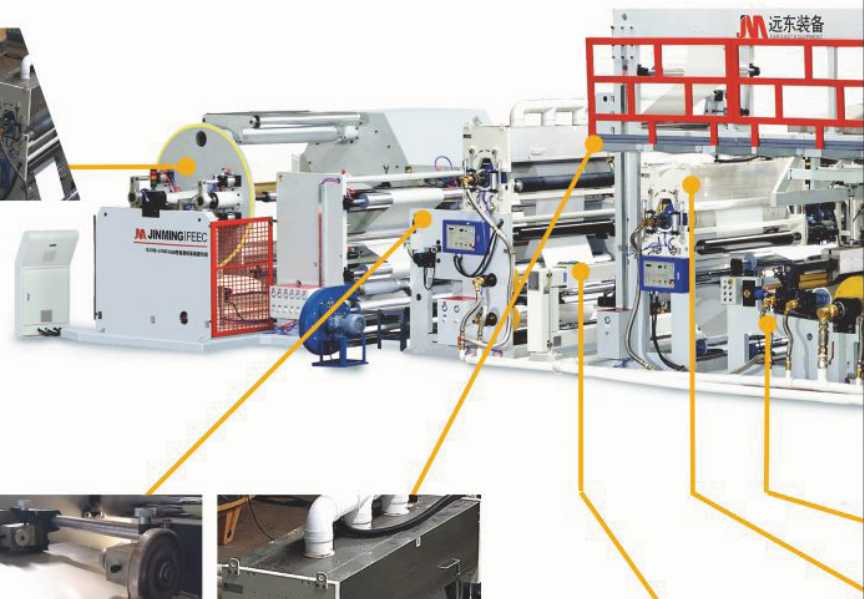
LFMS 1450 High-Speed Line

Model SJ100-FMS1450 High Speed Extrusion Coating & Lamination Line is the high performance unit that designed by FEEC, specially designed for double-side paper lamination machine. The machine adopts PE, PP, PET, EVA, EAA raw material, co-extruding and laminating with paper and aluminum foil.

It is suitable for food packaging materials like cupstock, liquid aseptic packaging paper, cake wrapping paper, instant noodles bowl paper etc. The production is widely used in the instant food aseptic packaging like paper plastic aluminum brick package, pillow pouch (such as milk, tea drinks, beverage) etc.

This line can produce multilayer packaging materials according to the product structure, adopts co-extrusion technology, equipped with two-layer, three-layer etc. extruders system. Lamination speed can reach 350m/min according to the customer's requirement.

Rewinding Unit



Edge triming unit

3rd Corona

Thickness gauge

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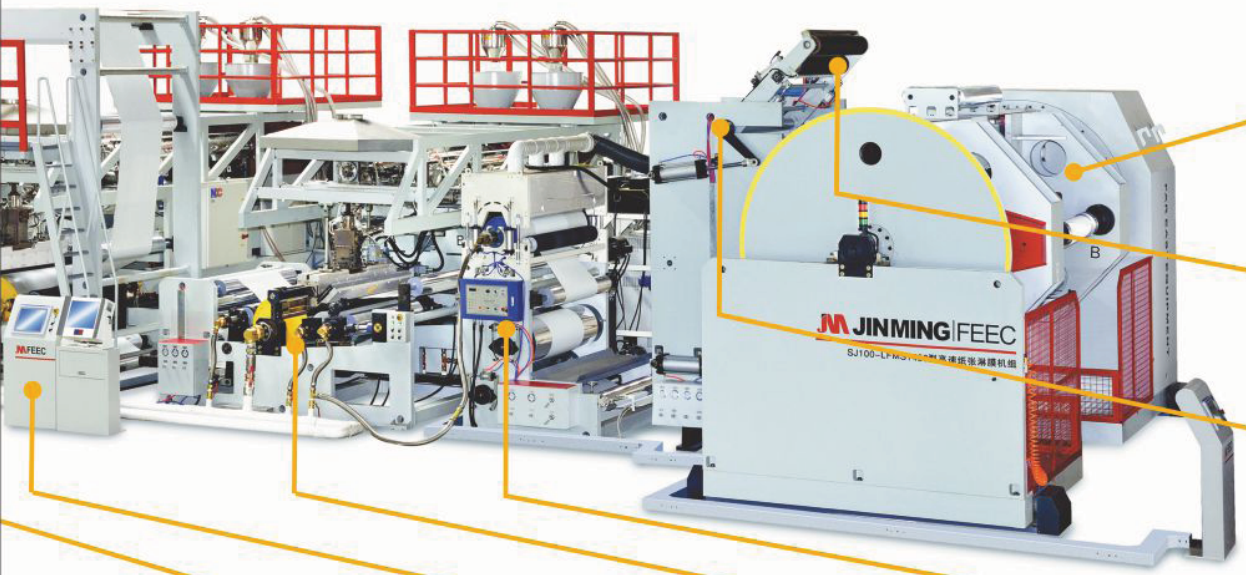


Unwinder Unit

Auto Reel Connection Unit

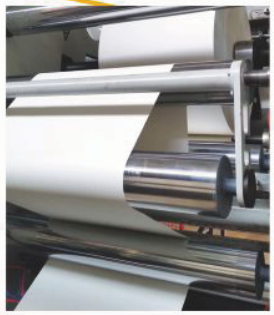
2nd Corona

2nd Laminator

Operation & Thickness Control

1st Laminator

1st Corona



Unwinder

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Triple Extrusion Coating & Lamination Line

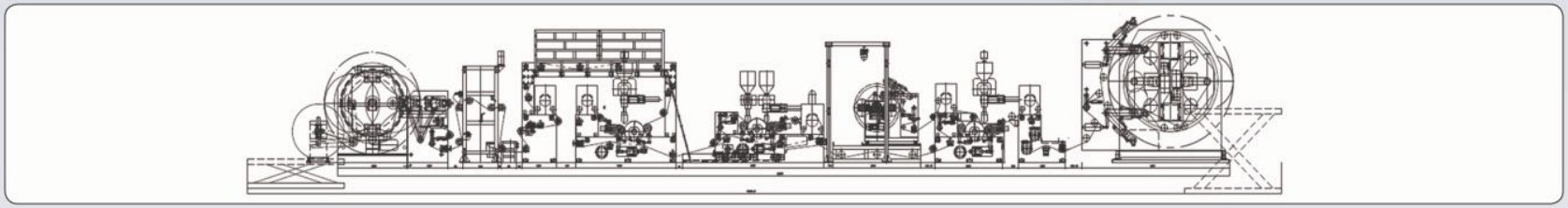
FMS 1400T High-Speed Line

Model SJ120-GFMS1400 high speed triple extrusion lamination production line adopts PE, PP or EVA raw materials, laminating with tubing substrate and aluminum foil or aluminiumized film, suitable for casting or co-extruding made liquid aseptic packing paper, cup stock, bowl of instant noodles, adhesive paper etc. multilayer composite material.

The machine was automatically controlled by computer from substrate unwinding, laminating to winding, equipped with PLC and color touch monitor, integrated our human-machine interface to operate and control.

The extruders adopt automatic temperature control, pneumatic feeding, stepless speed control and column type strainer changers.

The dies adopt high precision flat dies with bidirectional adjustable hand wheels. The lamination chill rolls adopt high precision forced water cooled structure.



Unwinder

Corona & Laminator

Extruder & T-die unit

Triple Extrusion & Laminator

Technical Data of STBZ Series

Model		Unit	SJ100-LFMS1450	SJ120-LFMS1400
Lamination Width		mm	700~1350	700~1300
Lamination Thickness		um	8~50	8~50
Material Thickness	Paper	g/m²	100~400	100~400
	BOPET	um	12~50	12~50
Mechanical Line Speed		m/min	40~350	40~350
Screw Diameter, L/D		mm	Ø100 x 33	Ø120 x 33
Roller Length		mm	1500	1400
T-Die Lip Length		mm	1550	1450
Diameter of	Unwinder	mm	1600	1600
	Rewinder	mm	1700	1700
Total Power		kW	1100	1100
Air Consumptiom		m³/min	1.2	1.2
Total Water Supply		m³/min	2.5	2.5
Total Weight		Ton	Appr. 100	Appr. 100
Line Size (L x W x H)		m	29 x 15 x 4.8	27 x 13 x 3.8

Woven Tandem Extrusion Coating & Lamination Line

SJ-FMS Series for Woven Tube

SJ-FMS Series extrusion coating & lamination line adopted Tandem extrusion and lamination unit. It uses PP, PE as raw material, through the flow-casting method and film lamination technology.

This line can laminate double side with substrates as woven fabric and paper etc. in one production process.

After laminating highly improve tensil strength, air-tightness and moisture-proof of packaging material which is widely used for packaging , storage and transportation of product. It is also used for cement, metallurgy, fertilizer and mining industry.

SJ75-FMS 800E Series
Automatically sincronize
for the printed films

SJ65-FMS 800B Series
Manually adjusting
for synchronize printed films

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High Speed SJ75-FMS 800E Series

Automatic synchronize for the printed films
SJ-FME Series equipped color-mark photo cell detector for automatic synchronize for both sides printed films during lamination process. laser hologram film etc.

Technical Data of STBZ Series

Model	Unit	SJ65/FM800B	SJ75/FM800E
Lamination Width	mm	450~650	450~650
Lamination Thickness	um	15~600	15~600
Mechanical Line Speed	m/min	20~200	20~200
Screw Diameter, L/D	mm	Ø65 x 33	Ø75 x 33
Roller Length	mm	800	800
Screw r.p.m	mm	105	105
Max. Extrusion Capacity	kg	160 (80 x 2)	240 (120 x 2)
T-Die Lip Length	mm	850	850
Max. Unwinder Diameter	mm	1200	1200
Max. Winder Diameter	mm	1200	1200
Total Power	kW	120	120
Air Consumptiom	m^3/min	0.6	0.6
Cooling water (15~22)	m^3/min	0.5	0.5
Total Weight	Ton	20	20
Line Size (L x W x H)	m	9.5 x 5.5 x 2.5	9.5 x 5.5 x 2.5

Plastic Extrusion Coating&Lamination Line

Model SJ-FM

Model SJ-FM Extrusion Coating&Lamination Line uses PP、PE as raw material, adopts flow-casting technology to single-side/double-side laminate film with substrate (plastic fabric cloth) or paper plastic as two-in-one or three-in-one product.

With +20 years FEEC production practice, this line gets constant improvement and innovation, and has lots of excellent characteristics such as advanced technology, stable quality, easy operation, high automation, etc. Its widely used for different packaging, storage, transportation materials in chemical, petrification, cement, metallurgy, mining industries, etc.

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SJ-FM Series Technical Data

Model	Unit	SJ90-FM1300B	SJ90-FM1600BT	SJ100-FM2200B
Lamination Width	mm	600-1200	900-1500 fabric roll dia400-650	1500-2100
Lamination Thickness	mm	0.010-0.08	0.010-0.08	0.010-0.08
Mechanical Line Speed	m/min	30-200	30-200	30-200
Screw Diameter(mm), L/D	mm	Φ90×33	Φ90×33	Φ100×33
Total Power	kw	around100	around110	around150
Air Consumption	m^3/min	0.6	0.6	0.6
Total Water Supply	m^3/min	0.5	0.5	0.5
Total Weight	Ton	around20	around25	around28
Line Size(L x W x H)	m	10×9.5×2.5	11.7×10.6×2.8	11×13×3.4

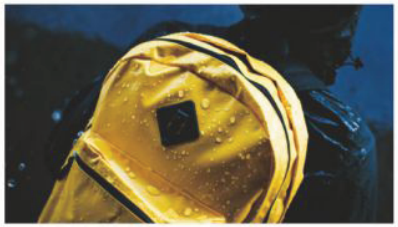
Woven Extra-width Extrusion Coating & Lamination Lines

Extra-Width SJ-FM Series

Extra-width Extrusion Coating and Laminating Machine is designed and developed by FEEC, as the first machine maker in China.

The Machine uses PE/PP materials, to be coating or laminating on the plastic woven fabric. It is widely used for producing extra-width product, such as sun cloths, product as tarpaulin canvases, waterproof cloths geotextiles, heavy-duty packaging cloth etc.

A tarpaulin is a large sheet of strong, flexible, water-resistant or water material. Inexpensive modern tarpaulins are made from woven polyethylene.



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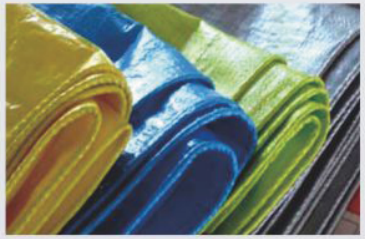


The machine adopts an overhead-type extruder. According to the product requirements, it gets, different configurations and devices;

- Tandem extruder units can coat double side in one process.
- Double -side squeezer and dryer is suitable for producing the products from fabrics made by a water-jet room.
- Corona & Printing unit is suitable for printing trademark or patten on the coated products.
- The lamination section can be equipted with three roller calender, it is suitable for producing wide sheets max. thickness up to 3mm.

Technical Data of SJ-FM series

Model	Unit	SJ120/FM3200B	SJ120/FM4200B	J120/FM6200B
Lamination Width	mm	2500~3100	3600~4100	5000~6100
Lamination Thickness	mm	0.01~0.10		
Mechanical Line Speed	m/min	20~200		
Screw Diameter, L/D	mm	Ø120 x 33	Ø150 x 33	Ø200 x 33
Roller Length	mm	3200	4200	6200
T-Die Lip Length	mm	3250	4250	6250
Max. Unwinder Diameter	mm	1200		
Max. Winder Diameter	mm	1200		
Total Power	kW	210	350	420
Air Consumptiom	m^3/min	0.8	1	1.2
Cooling water (15~22℃)	m^3/min	0.8	1	1.2
Total Weight	Ton	34	46	65
Line Size (L x W x H)	m	12 x 18 x 4.5	14 x 20 x 4.7	15 x 23 x 5

Flexo Printing & Tubing Lines

CTD-1300 Series

CTD flexo printing and bag making machine is a specialized for printing the substrates such as single-side coated woven fabric or laminated woven fabric and paper, perforating and converting in to bag, and then cutting and stacking automatically.

It is suitable for producing single-layer or multi-layer laminated packaging sack etc.

It is suitable for producing single-layer or multi-layer laminated packaging sack such as gusseted sacks, non-gusseted sacks, plain sacks, and valve sacks.

It is widely used for packaging, storage and transportation of many kinds of materials. Chemical, mineral, cement and medicine and foodstuff etc.

CI Flexo Printing Machine CTD-1300

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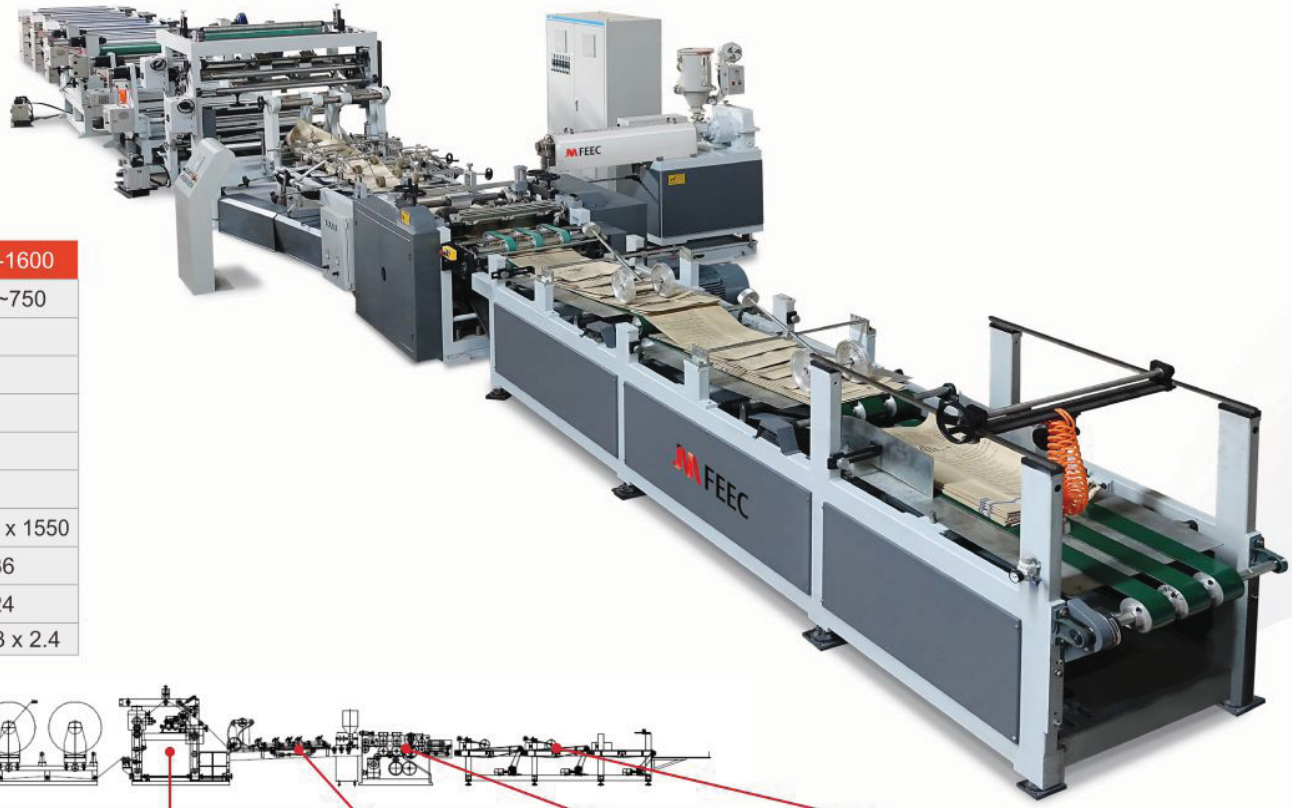
High Speed Flexo Printing & Tubing Line CTD Series



Technical Data of CTD Series

Model	Unit	CTD-1300	CTD-1600
Bag Width	mm	380~600	480~750
Bag Length	mm	517~1117	
Bag Output	pcs/min	30~150	
Gusseted Width	mm	70~150	
Valve Width	mm	65	
Valve Height	mm	38	
Max. Roll Diameter, Width	mm	Ø1200 x 1250	Ø1200 x 1550
Total Power	kW	32	36
Total Weight	Ton	20	24
Line Size (L x W x H)	m	21 x 3 x 2.4	21 x 3 x 2.4

Printing Unit | Unwinder unit | Laminating Unit | Tubing Unit | Center Sealing, Cutting | Stacking Unit