

1 secondary unwinding
2 laminating device
3 rewinding unit



4 Primary unwinding
5 coating unit

ZGF-850 High-Speed Dry Type Laminating Machine



General Description:

This machine suitable for the double layers or multi layers lamination of such roll film materials as BOPP, PET, Nylon, CPP, CPE, aluminum foil. The film laminated by this machine can be used for package materials with high requirements on strength, fresh-keep and cooking bag.

This machine adopt eight vector motors closed loop auto tension control system, equipped with auto flying splicing system for both unwinding and rewinding section.

Main Technical data:

Model	ZGF-850(standard version with 5 vector FC motors)
Effective Laminating Width	850mm
Max. Width of Base Material	850mm
Max. Laminating Speed	180m/min
Max. Mechanical Speed	150m/min
Max. Diameter of primary unwinding	Φ800mm
Max. Diameter of secondary unwinding	Φ800mm
Max. Diameter of rewinding	Φ800mm
Inside Diameter of Roll Core of Base Material	Φ76mm
Layer Quantity of Laminating	Two Layer (for one pass)
Control Range of Tension	0~25 kg (Preset)
Precise of Tension Control	±0.5KG
Heating Power of Oven	100Kw
Total Power for Whole Machine	220KW
Weight of Machine	10000Kg
Overall Dimension	L14300×W4500×H4200mm

Drying Section (Oven section)

*Structure

- Entirely sealing up and down double body drying oven
- 4 temperature section with automatic temperature controlling, independent heat origin for each temperature section,.
- Independent design for pre-positive suction air cap, equipped with sight window.
- Oven with hot air recycling system
- Flat long hot air nozzle
- Electric heating generator
- Pneumatic ascend open, easy for film go through, Oven covers to be fixed with Pneumatic Cylinders for opening and closing
- Big arc layout for guide roller
- Oven Rollers to be driven by a motor
- Temperature controller with digital indicator on each drying oven.

*Specification:

Max. oven temperature	100℃
(Maximum drying temperature in an oven can reach 120 ⁰ C)	
Material length in drying section	10000MM
Rate of recycled hot air (utilization factor of recycled hot air)	0-30%
Precision of temperature control	±2℃
Max. hot air volume	4000M/ (×4)
Power of fans	3KW×4

*Features

- Utilization of recycled hot air for energy saving
- Negative pressure design for the whole drying section ensures no hot air leakage from the oven section.
- Four temperature sections, automatic constant temperature control ensures the volatilization of solvent.
- Prepositional air suction cap will exhaust the preliminary solvent volatilization, the waster air will not take part in the recycling of the hot air, ensure the safety.

Laminating section

*structure

- Double rollers structure, counter pressure type
- Thermal Type Nip Roller
- Independent drive and transmission system
- Hot oil heat the laminating roller
- Closed loop tension control system
- Pneumatic pressure adding with clutch utility
- Independent heat generating system with heat recycling utility for hot oil



- Press roller: shaft through type with quick replacement utility.
- Doctor Blade: Pneumatic pressure, clutch, three-position adjustment utility.
- Independent drive motor for coating roller, two class shift gear.
- Single side adjust material feeding adjust roller.
- Special industrial glue pump.

***Specification:**

Length of coating roller	900MM
Diameter of coating roller	Φ196MM
Mesh number of coating roller	150 line
Press roller	Φ120MM rigidity: 65-70(Shore A)
Doctor Blade dancing range	±5MM
Drive motor	AC control system

***Features**

- Ration glue transfer, anilox glue coating.
- Pneumatic press roller, adjustable pressure, smooth glue transfer.
- Three position scraper knife, ensure the best Doctor Blade angle.
- Independent drive control, high tension control precision.
- Integer rigid design for glue coating roller, has the function of quick replacement.
- Oscillating arm drive press roller, quick separating and touching.
- Transportable glue tank can ascend and descend, for the sake of operating convenience.

. Glue distribution utility

***Structure**

- Glue distribution roller driven by independent drive motor.
- The speed of glue distribution roller can be adjusted in both forward direction and reverse.
- Glue distribution roller in-line touch with coating glue film design.

***Specification:**

Diameter of glue distribution roller	Φ30MM
Max. speed	150m/MIN (forward direction and reverse)
Motor	AC control system

***Features**

- Independent drive system can select continuously most suitable speed.
- Surface line touches glue distribution, will not change the amount of original glue layer.
- After distributing, the spot layout glue layer is plane glue layer.
- Big speed difference glue coating can increase transparency of the glue layer.

***Viscosity control unit** suitable for glue to be installed

(Viscosity range between 20 Sec to 35 Sec – From Zhan 2 cup for dry lamination)

(Note: 35 Sec to 75 Sec from Zhan 2 cup for heat seal coating, I can not understand, please give us some explain due our viscosity control unit viscosity range shall not over 35 sec.)



***Specification:**

Diameter of Laminating roller (Thermal Nip Roller)	Φ260MM		
Diameter of Press Rubber Roller	Φ200MM	Hardness	75Shore A
Impression Rollers	: 4 No's with the machine		
Max. temperature of laminating roller(Thermal Nip Roller)	120°C		
Drive motor	AC Frequency Converter Control system		

***Features**

- Uniform pressure laminating
- Independent drive and closed loop tension control ensure the same tension of different base material hence ensure the final product rolls' laminating quality.
- Adjustable pneumatic clutch system, quick engages and disengages
- Installed with Pneumatic Jacks with pressure regulators and indicators
- Because introduce independent drive system for laminating section, the tension of material in drying section can keep in low level hence the material shall not be elongated.
- The temperature of heating roller is controlled by heating recycling system for precise and reliable temperature control.

Cooling Section***structure**

- Initiative running cooling roller keep the pace of main machine.
- Water cooling system
- Cooling water recycled in the whole cooling roller, compel type recycle
- Chiller roller with same diameter of the thermal heating roller. Driven as the same speed of the thermal heating roller and provision for rotary union assembly for chilled water at approximately 15°C.

***Specification:**

Diameter of cooling roller	Φ160MM
Operating Water Pressure	>3KG/CM

***Features**

- Initiative running, keep the same pace with the laminating film, avoid tension variety
- Compel cooling water recycle, excellent cooling performance.

Rewinding Section***structure**

- Double arm double station turret, equipped with speed regulation system
- Introduce dancing roller control system
- Closed loop tension control system
- Rewinding rolls loaded on air shaft, the inflatable loaded on ball bearing support
- Automatic and independent drive system, keep same pace with main machine, automatic cutting.
- Pneumatic press shaft for rewinding



***Specification:**

Diameter of rewinding roll on double arm	800MM
Driven by two motors equipped with speed regulation system	
Precision of tension control	±0.5KG
Adjust range for rewinding rolls in landscape orientation	±20MM
Attenuation rate of tension	0-100%

***Features**

- Air shaft for rewinding rolls loading, easy and quick rewinding rolls replacement, uniform support force, precise centre location.
- No speed difference when replace rewinding rolls, low waster rate.
- Initial diameter of attenuation rate and attenuation rate itself can be set freely
- Pneumatic press shaft for rewinding rolls ensures the trimness of the rewinding roll's edge.

Tension control system

- Tension of the whole machine controlled, dancing roller tension detective, PLC control system
- High precision tension control ensures stability of tension even when speed changed during operating.

Static remove system

Automatic static eliminator

Main Electronic Components List

Tension control system:	PLC	SIEMENS/GERMANY
Man-machine interface:		SIEMENS/GERMANY
Main Motor	ABB	8 set
Frequency converter :	YASKAWA/JAPAN	8 set
Length Counter:	Integrated in software installed in control system	
Touch control screen		
Low friction cylinder: Five		France
Pneumatic Components:		AIRTAC/TAIWAN
Ball Bearing:		NSK

Technical Documentary

- Machine dimensions to be given to prepare the machine foundation and the floor area.
- Comprehensive manuals to be supplied

Operational Manual Trouble Shooting Manual

Preventative Maintenance Manual Electrical / Electronic and Pneumatic Circuit diagrams

Safety Guards / Shields : Exposed moving parts where necessary to be fixed with safety guards shields

Monitors / Controls : To be in English

Safety Electrical interlocks to be installed on electrical Heaters / Blowers.