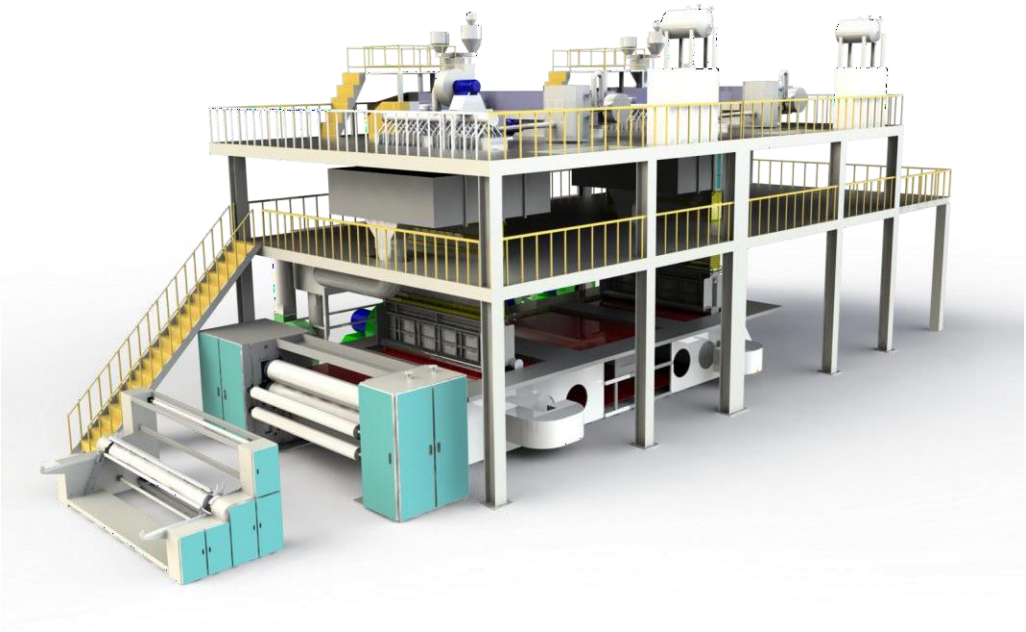
YYL-TF 160 Double-Beam PP Spun-bonded Nonwoven Production Line



I. Production line characteristics

Product net width: 1600mm

Production capacity: 3700ton/year(For more than 70g/㎡, 7800h per year)

Main raw material: PP chips

Product basis weight: 10～150g/m^2

Production speed: Speed: 10～250m/min(250m/min is the max mechanical speed of machine, the practical speed is max 200m/min with fabric production)

Below calculation of capacity for reference only:

Product weight	Production speed	Capacity of the line (before trimming)	Capacity of the line (after trimming)
g/m2	m/min	kg/h	kg/h
10	200	192	180
70	70	470	450
100	50	480	460

Ⅱ.Technological process of the production line

Raw material→Chips feeding→Melting and Extruding→Filtration→

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Metering→Spinning→Air drawing

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Unwinder→Slitter

Ⅲ. Raw material specifications

The main raw material of PP spun-bonded nonwoven production line is PP chips, and the quality requirements are as follows:

Item	Unit	Technical index
Melting index	g/10min	27～35
Melting point	℃	162～165
Density	g/cm3	0.90～0.91
Molecular weightdistribution	Mw/Mn	≤4
Content of grey	PPm	≤200
No equal normality	%	≤3.5

Content of water	%	＜0. 05
Stretch strength	Mpa	⩾31

IV. The main equipment and capacities

1. Spinning

①Material Auto-feeder 2 sets for PP chips

a) Feeding by negative pressure, Auto-control for the position of material storehouse.

b) Material feeding capacity: 250kg/h/set

c) Delivering distance: 12m

d) Application: this unit mainly used in mixing main materials PP chips and some agents such as the mater batch and hydrophilic, anti-oxidation, anti-pilling, anti- UV, softness and flame retardant agents as per a certain ratio to product different color, different weight and characteristics PP spun-bonded nonwoven fabrics for various applications.

e) Equipment component and instruction.

One set of dosing, consisting of a main material tank, three auxiliary tanks, a suction device, a metal detector, complete with an alarm unit for low and high chip levels, automatic control of feeding, an inverter-controlled dosing screw extruder.

②Screw extruder 2sets

a) Screw diameter: ϕ135mm

b) Length/Diameter: 30：1

c) Sleeve heating zones: six zones/set

d) Heating power: 75kw/set

e) Driving power: 90kw motor/set (AC)

f) Equipment component and instruction.

Including chip inlet, automatic temperature controls, cooling system, alarm system for all the heating zones with temperature meter, solid relay and Pt100 platinum resistance.

③Melt filter 2sets

a) Melt filter precision: 45μm

b) Filtration area: $2.5m^2 \times 2 = 5m^2$

c) Heat source: Heat-transfer oil circulation heating

④Metering pump 2sets

a) Supply volume: 200CC

b) Rotate speed: 0～35r/min

⑤Spinneret(high quality made in China) 4 pieces (2 pieces for spare)

a) Orifice number: 9165

b) Orifice diameter: Φ0.4mm

c) Among of two suits, One suit of spinneret for spare use

⑥Monomer suction system 2sets

Driving power: 5.5kw inverter/set controlled by inverter

⑦Recycling screw extruder 2sets

a) Screw diameter: ϕ105mm

b) Length: Diameter: 15:1

c) Sleeve heating section: Four sections/set

d) Heating power: 36kw/set

e) Driving power: 36.5kw/set

⑧Spinning box

It adopts the circulated heat-conducting oil for heating and it is heated very even.

2. Web-forming machine 1set

1) Blow volume distributing: landscape orientation is even, and the portrait is digressive gradually from spray nozzle to the exit of web-forming machine;

2) Delivering web: Polyester web apron with deflection Auto-adjusting device (it adopts the red infrared ray photo electric to check and uses the cylinder to reach tension anti-deflection. It also sets up the device to stop automatically when it has over deflection problems)

3) Max mechanical Speed: 250m/min

4) Please reduce the tension of the lattice when produce low weight product and increase the tension when produce heavy product weight.

3. Thermal calender 1set

1) Used for bonding formed webs by pressure and heating.

2) DC electromotor with excellent stability is used for driving and holes drilled around the calender for uniform temperature the calender surface.

3) Working width: 2000mm （efficient width for design）

4) Type of calender rollers: The up-roller is embossed and the bottom roller is smooth

5) Roller diameter：ϕ450mm

6) Roller pressure：≤150kg/cm

7) Calendar material：42CrMo

8) Max mechanical Speed: 250m/min

9) Lubricating method of calender's bearings: circulating oil for lubrication by oil pump to prolong the life of them.

4. Automatic winder & cutter 1set

1) When one roll is finished, next automatically is started, without any intervention from worker side.

2) Diameter of the maximum rolling：ϕ1000mm

3) Max mechanical Speed: 250m/min

5. Slitter machine 1set

1) Function

Used for slitting rolls as per the lengths, widths required.

2) Main technical data

a) Mechanical speed: up to 350m/min

b) Working width for unwinder:2000mm

c) Max. finished roll diameter: 800mm

6. Air-conditioning system 1suit

1) Drawing blower fan 2sets

Power: 45kw/set

2) Web-forming blower fan 2sets

Power: 37kw/set

3) Air-conditioner 1 sets

200000 Kcal*2 (refrigerating capacity)

7. Assist equipment

1) Ultrasonic cleaning machine 1set

To clean the filtration rod of the filter and the spinneret

2) Vacuum calciner 1set

To heat and melt the impurity material of the filtration rod of the filter and the spinneret

3) Cooling tower 1set

4) Crane for filter rod changing (manual) 1set

5) Crane for spinneret cleaning(manual) 1set

6) Crane for changing roll and slitting(motor-driven) 1set

7) Air compressor 1 set

8. Controlling system:

9. Others

1) Steel platform 1set

2) Piping 1set

Wind pipe and oil pipe is provided by the supplier and water pipe will be constructed on site (prepared by customer).

3) Insulation materials (Construct on the site) 1suit

4) Field wiring from the machines to the operation panel to the electrical cabinets (Prepared by customer)

V. Power and consumption

1. Production line power supply capacity is about 1097 and approx. 400kw is practically used.

2. The equipped power for the whole line are as followings:

No.	Items	Power	Amount
1	Material feeding fan	5. 5kw	2
2	Material metering	0. 75kw	6
3	Material metering	1. 5kw	2
4	Material mixer	4kw	2
5	Screw extruder	180kw	2
6	Metering pump	5. 5kw	2
7	Recycling screw extruder	36. 5kw	2
8	Web-forming machine	15kw	1

9	Finalizing roller	30kw	2
10	Monomer suction blower fan	4kw	2
11	Drawing blower fan	45kw	2
12	Web-forming fan	37kw	2
13	Air-conditioner	30kw	1
14	Thermal calender	30kw	1
15	Winder & cutter	5. 5kw	1
16	Slitting machine	15kw	1
17	Calcinations furnace	24kw	1
18	Spinning oil furnace	60kw	2
19	Calender oil furnace	48kw	2
20	Water pump	11kw	4
21	Air compressor	7. 5kw	1
22	Cooling tower	7. 5kw	1

Remarks: Above data is for reference, exact data will be confirmed before order.

VI. Quotation

Summation: RMB 7,500,000 FOB SHANGHAI for 4months production time

Validity: 2months from the date of this offer.

Remarks:

1. Above quoted machines are Ying Yang standard.

2. All electrics, motors and inverter are Ying Yang standard. Customer with special

requirements must specify in advance.

3. Color of machine: to be specified by the customer

Payment Term

Take 50% of the total price as advance payment by T/T, and the balance 50% of total price should be paid off before loading after pre-test and receipt confirmation in the seller's factory.

Pre-Delivery Inspection Trial

1. The seller will supervise for assembling the whole production line and make the pre-delivery inspection trail for the buyer in the seller's factory.

2. The Seller shall inform the Buyer about the date when the pre-delivery inspection test will start three weeks in advance.

3. Performance Guarantee Test Criteria:

   a. In order to check the mechanical performance of the machine a function and performance guarantee test of the machine will take place at the Seller's factory prior to shipment with either Seller's standard product or Buyer's provided sample

   b. Testing materials---provided by seller

   c. Testing specifications---provided by the buyer and confirmed by two sides

d. Criteria include checking all transmission functions and qualified samples. If longer testing is required (over 2-hour), Seller is entitled of charging corresponding fee.

e. If the test runs smoothly and is fit to the acceptance criteria, Buyer shall sign document of acceptance and arrange the balance payment and delivery.

Packaging, Labelling & Documentation:

1. Partial (around 85%) wooden case package and the wood materials need to be fumigated.

2. The standard of packing meets the standard sea-freight regulation. Loading: containers

3. Electrical diagrams for the whole line.

4. All necessary documents:

   a. Bill of Loading

   b. Commercial Invoice

   c. Packing List

   d. Others (informed in advance and available for seller)

Delivery and Unloading:

Approximately 11*40HQ to deliver all the equipment; **will be confirmed before delivery.**

1. The buyer should prepare 1 set of 5Ton forklift and 1 set of 16-20ton Hoist crane to unload and position machinery.

2. Access doorway to be a minimum of 3M wide x 3M high;

3. The seller will load the machines properly and easy for unloading.

Equipment Installation, Commissioning & Training for 1.6m SS:

The installation services should be scheduled and confirmed by two sides according to Pandemic situation worldwide.

The Seller would send 2 engineers (1 electrician and 1 mechanics) to the Buyer's factory for supervision of installation, commissioning and training in period of 90 days. In this 90days, the installation cost is USD300 per day per person. Train the designated personnel of the buyer including in this period.

The main service provided by the engineers, which would be scheduled and confirmed by two sides:

Installation Supervision: attend and guide/supervise all the mechanical and electrical installation provided by the buyer.

Commissioning: make the whole production line running smoothly in mechanical and electrical parts; commissioning the production line and supervise customer to

make products, which are based on the machines quality and ability defined in this technical report and confirmed by both sides.

Training: Train the designated personnel of the buyer1) the operation, 2) daily cleaning and maintenance, 3) spare parts replacement, 4) adjustment and restoration for emergency.

The buyer shall be responsible for the followed preparations and cooperation:

1. Provide qualified 6-8 mechanist, helpers and qualified electrician for installation, and designate competent personnel for machines operation and maintenance daily, who should attend the whole installation, commissioning and training.

   And the buyer shall also appoint **1qualified interpreter** to assist in the whole project if possible.

2. Provide round air ticket of engineers and accommodation (Self-contained place includes beds, hot water, air conditioning, network), daily meals, transportation, safety of engineers and interpreter, medical insurance and other similar items.

3. Production Personnel requirement：

   For machine start-up:4 workers

   For normal production： One shift: 3-4 skilled workers for machine operation (2workers for winder&cutter, and 1 worker for material feeding &for recycling fabric), and 1 person as mechanical/electronic technician. Offline slitting operation not included.

4. Workshop and foundation of workshop are ready and suitable to seller's machines; the seller will provide the detailed drawing for installation and foundations. One set of Installation tools, the seller will provide a list.

5. A water pool and Water pipe equipped

6. Workshop should equipped with one set of switchboard， cables from transformer to switchboard；

7. Power supply;

8. Lubricant and Oil(the seller will supply the model and drawing);

9. Assisted Installation tool: 1 set of 5Ton forklift and 1 set of 16-20ton Hoist crane;

10. Other fittings and civil facilities.

11. Raw material and packing bags

12. All above list items should be prepared well in advance before the engineers set off for installation.

Warranty:

1. The seller is responsible for changing the parts which have the quality problem of the machines in one year(3 years guarantee for inverter and Calender roller), but except from the wearing parts and the quality problem were leaded by wrong operation and other man-made factors, and the quality problem should be confirmed by two sides.

2. The period of warranty is 12 months after the completion of installation and commissioning at Buyer's site. Buyer shall sign off the Acceptance after the successful installation and commissioning. Training period shall NOT delay Buyer to sign off this equipment in the Contract.

3. The period of warranty for purchased parts started from the date of production.

After Service

1. Any technical issue could be discussed by email and telephone to see if a solution can be offered. One option is **Remote Monitoring** and modification which can provide technical support about the PLC program provided the customer provides internet access for this function.

2. If any problems could not be solved based on above methods, the seller will dispatch professional engineer for **Site-inspection** for free of service cost during warranty period, but the buyer would be responsible for the related charge such as round-trip air ticket, local transportation, accommodation, etc.