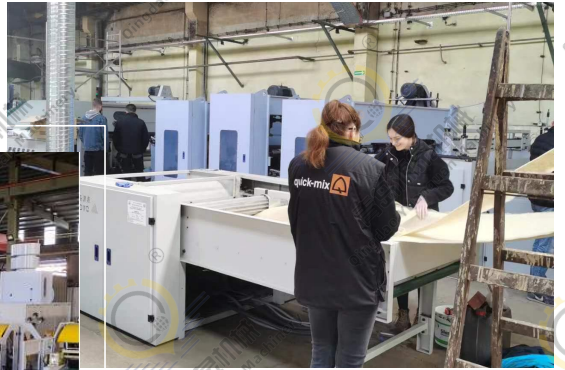


Solution for Geotextile Non-Woven Needle Punching Production Line



青 岛 源 泉 机 械 有 限 公 司
Qingdao Yuanquan Machinery Co.,Ltd

August / 2024



青岛源泉机械有限公司

Qingdao Yuanquan Machinery Co.,Ltd

一、 Production Line General Description

1. Input Material: PE, PET or other chemical fiber, 3--15D, 38--100mm

2. Processing:

Line Speed: 1--10 m/min

Gsm: 80g--800g/m²

Thickness of the finished product: 5--70mm or customize according to requirements

Max Working Width: 5000mm

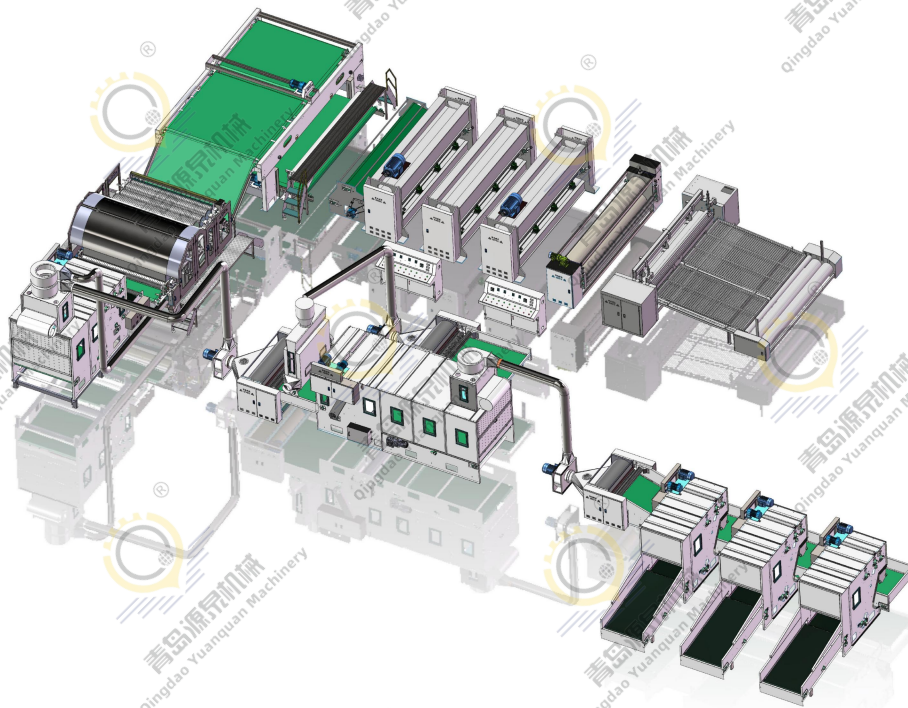
Max width of finished product after cutting: 4500mm

3. Voltage: 380 V(3-phases) 50 HZ

4. Capacity: About 350--500 kg/h (It depends on the fiber type and the required gsm of final product)

5. Qty of required containers: 7 units of 40HQ containers

3D Drawing for Needle Punching Production Line for your reference (In your production line, there is only one carding machine)



The largest and most professional manufacturer for all ranges of non woven machines in Qingdao, Shandong Province.



青岛源泉机械有限公司

Qingdao Yuanquan Machinery Co.,Ltd

二、 Price List:

26th/August/2024

Needle Punching Production Line with Single Cylinder Carding Machine

No.	Product Name	Working Width	QTY
1	YQ-1200-KB Bale Opener	1200mm	3 SETS
2	YQ-1600-YKS Pre-Opening Machine With a Long Feeding Curtain	1600mm	ONE SET
3	YQ-1800-DC Large Chamber Fiber Storage Machine	1800mm	ONE SET
4	YQ-1600-ZKS Fine Opener	1600mm	ONE SET
5	YQ-2300-WL Vibrating Feeding Machine	2300mm	ONE SET
6	YQ-2500-SSL Double Cylinder Double Doffer Carding Machine	2500mm	ONE SET
7	YQ-2750-PW Cross Lapping Machine	2700*5200	ONE SET
8	YQ-5000-JCW Clamping Feeding Machine	5200mm	ONE SET
9	YQ-5100-ZYC Pre-Needle Loom (Middle Speed)	5100mm	ONE SET
10	YQ-5000-GSC Upward Needle Loom (High Speed)	5000mm	ONE SET
11	YQ-5000-GXC Downward Needle Loom (High Speed)	5000mm	ONE SET
12	YQ-5000-ZTG Calender	5000mm	ONE SET
13	YQ-5000-JQ Cutting and Winding Machine	5000mm	ONE SET
14	YQ-1000-BKS Opening Machine for Waste Fabric	1000mm	ONE SET
15	Spare Needle Board	5100/5000	3 Units
16	Needle (Chinese Brand with High Quality)	N/M	160000 PCS
Total			



青岛源泉机械有限公司

Qingdao Yuanquan Machinery Co.,Ltd

Remarks:

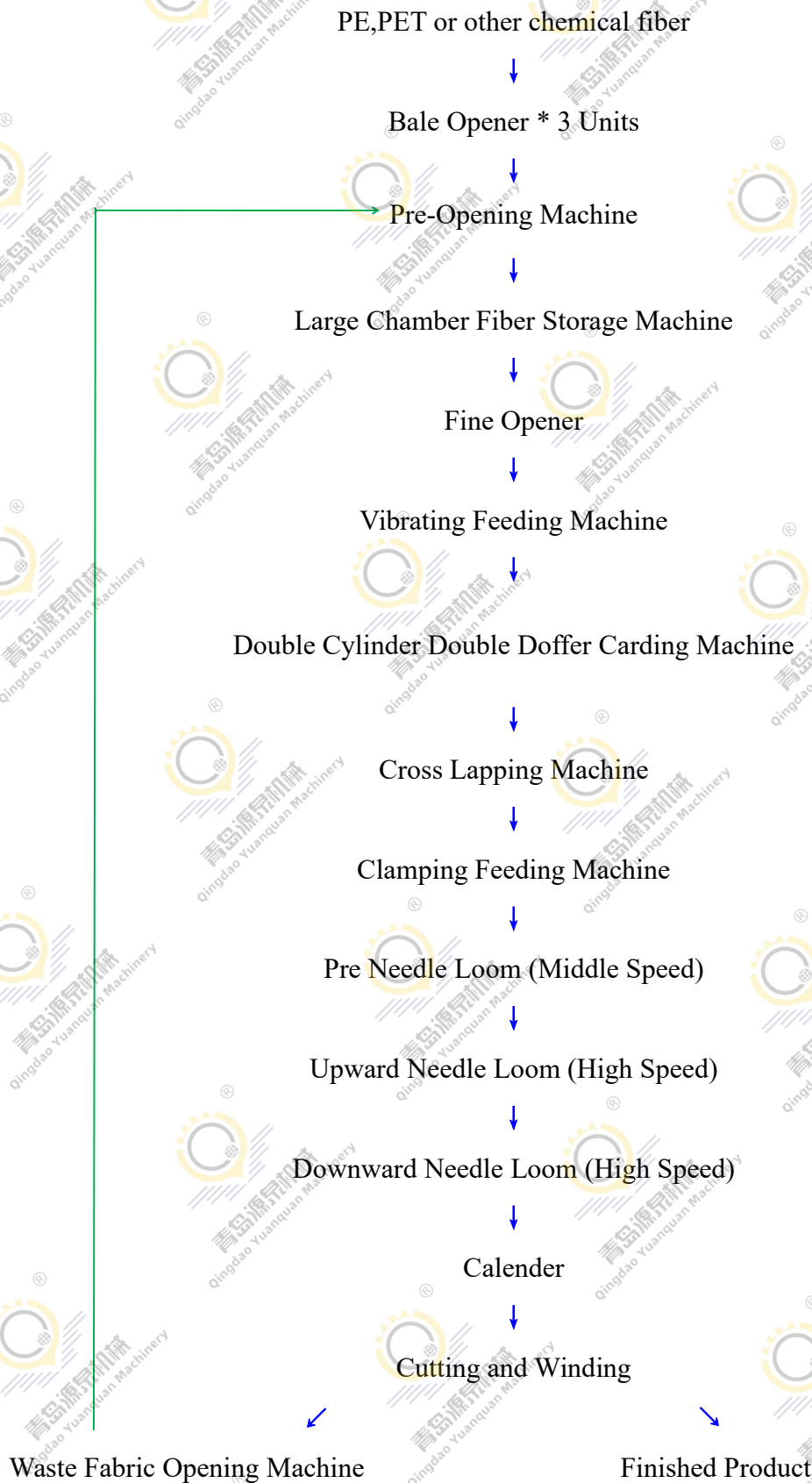
- (1) Trade Terms: FOB Qingdao
- (2) Terms of Payment: 30% T/T in advance, 70% before shipment. And the buyer should transfer the deposit within 3 days after sign the contract.
- (3) Warranty: One year, from the date of completion of installation, except for damage caused by improper operation or other factors of the user, and vulnerable parts are also not included in the scope of warranty.
- (4) Term of Validity: 20 DAYS
- (5) Shipment: Within 50--60 days after receiving the deposit.
- (6) The seller will arrange the technical personnel to install and debug the machine in the place where the buyer's factory is located. The installation days (from the date our technicians leave Qingdao to the date when he/they back to Qingdao) is about 25—30 days. And this price has included the installation cost (visa cost, round-trip air tickets from Qingdao to Istanbul, technician's salary).
- (7) During installation, the buyer shall cover general medical and accident insurance for our technicians. Meanwhile, the buyers should try to provide our technicians with good accommodation and working environment as much as possible and provide necessary medical insurance.
- (8) All inverters used for this production line are INVT.
- (9) The motor brand is Seimens-Beide.
- (10) Low Voltage Apparatus: CHINT.
- (11) The buyer should self-provide the wires for the machines.



青岛源泉机械有限公司

Qingdao Yuanquan Machinery Co.,Ltd

三、Technological Process





青岛源泉机械有限公司

Qingdao Yuanquan Machinery Co.,Ltd



Here are photos of needle-punched fabric for your reference.

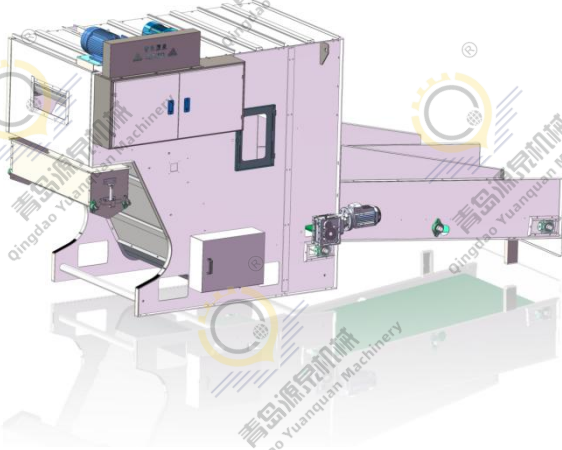


青岛源泉机械有限公司

Qingdao Yuanquan Machinery Co.,Ltd

四、 Detail of Unit Machine

4.1 YQ-1200 Bale Opener With Weighing Ststem



The machine is one of the parts of the complete Non woven Process. A variety of raw materials are placed on the transfer lattice of the bale opener. The whole bundle of raw materials is fed together, saving labor. And the raw material is sent to the lower row of the upper hand by the epithelial curtain. The raw materials are mixed and opened by the beater; the raw materials are dropped on the curtain, and then sent to the beater to mix, and then discharge onto conveyor evenly.

Technical parameters:

Working Width: 1200mm

Production Capacity: 150--250 kg / h

Type of Stripper roller & Uniform roller: three rows of sawtooth beaters

Fiber Uniform Roller: D=350mm / 240r/min

Beater Roller: D=350mm / 300r/min

Weighing Form: Electronic weighing

Control Mode: Photoelectric control

Installed Power: 5.05 kw

Main Features

- (1) The frame is made of Q235 steel plate by CNC laser cutting, CNC bending and modular assembly;
- (2) Photoelectric automatic control of fiber feeding, frequency control of spiked lattice, control of fiber feeding quantity;

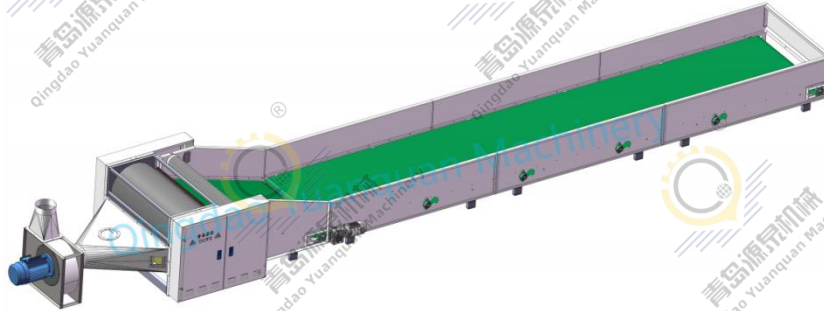
The weighing bucket adopts sensitive gravity sensor with weighing function, according to the program control, the fibers are spread on the opening conveyor curtain.



青岛源泉机械有限公司

Qingdao Yuanquan Machinery Co.,Ltd

4.2 YQ-1600-KS Pre-Opening Machine / Fine Opener



(1) The fibers and raw materials are conveyed to the feeding roller through the feeding flat curtain, and then opened at high speed by the opening roller. The fibers and raw materials are transported by the conveying fan with an appropriate amount of air flow for later delivery and use. After being opened by this machine, the fiber and raw materials have good effect, uniform and meticulous.

(2) Working Width: 1600mm

(3) This machine adopts comb needle and nail plate type

(4) The feeding roller is 96mm groove type

(5) Opener roller balancing adjustment

(6) The motor adopts Hongqi brand (special motor for textile machinery), and the reducer adopts CPG brand (Taiwan,China).

(7) All transmission parts are treated with phosphating and rust prevention. The phosphating color is uniform and black, with strong adhesion and no fading.

(8) Power:Feeding morot is 1.5KW, inverter control, Opening roller is 7.5KW, Fan is 5.5 KW, inverter control, Total 14.5KW

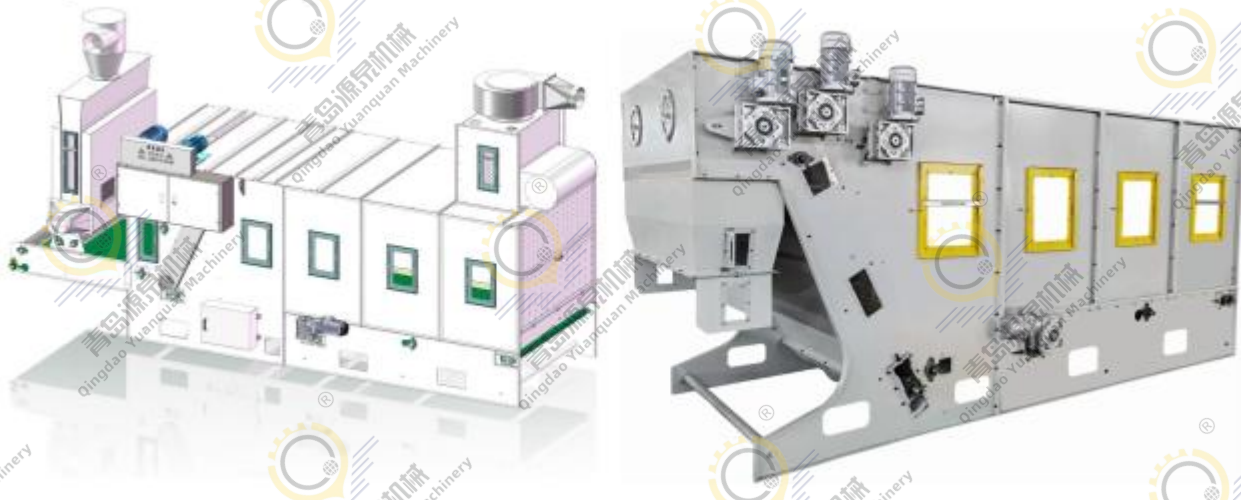




青岛源泉机械有限公司

Qingdao Yuanquan Machinery Co.,Ltd

4.3 Large Chamber Fiber Storage Machine



After preliminary loosening of raw materials, the fiber will be transported to the hopper blender. The raw materials are evenly spread on the flat curtain, while the spiked lattice grasps the raw materials vertically, so that the raw materials can be fully mixed and loosened, and can play the role of the middle vibrating feeding hopper, which is one of the important equipment in non-woven production lines.

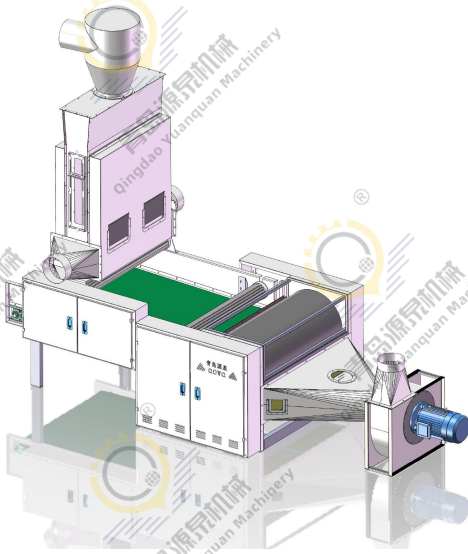
Model	YQ-1600-DC	
Working Width	1600mm	
The Length of Feeding Curtain	2000mm	
Fiber Uniform Roller	D=350mm / 240r/min	
Beater Roller	350mm	
Dimension	4500*2400*2200mm	
Capacity	About 150-400 kg/h	
Machine Weight	About 1600kg	
Power	Inclined curtain motor	1.5kw (Frequency conversion control)
	Motor for Drums	2.2 kw
	Blowing Motor	0.25kw
	Feeding Motor	1.1kw (Frequency conversion control)

The wallboard is made of high-quality steel plate folded plate, the inner wall is smooth without burr, hanging cotton or rust;

The machine is equipped with photoelectric sensors in many places to control the storage quantity and make the raw materials mix evenly;

The fiber inlet is equipped with a condenser to absorb dust;

4.4 Fine Opener



(9) The fibers and raw materials are conveyed to the feeding roller through the feeding flat curtain, and then opened at high speed by the opening roller. The fibers and raw materials are transported by the conveying fan with an appropriate amount of air flow for later delivery and use. After being opened by this machine, the fiber and raw materials have good effect, uniform and meticulous.

(10) Working Width: 1600mm

(11) This machine adopts comb needle and nail plate type

(12) The feeding roller is 96mm groove type

(13) Opener roller balancing adjustment

(14) The motor adopts Hongqi brand (special motor for textile machinery), and the reducer adopts CPG brand (Taiwan,China).

(15) All transmission parts are treated with phosphating and rust prevention. The phosphating color is uniform and black, with strong adhesion and no fading.

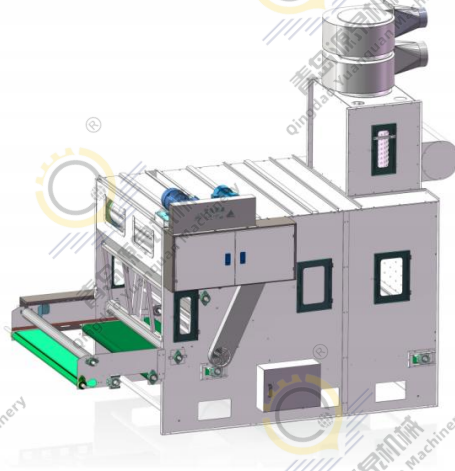
(16) Power:Feeding motor is 1.5KW, inverter control, Opening roller is 7.5KW, Fan is 5.5 KW, inverter control, Total 14.5KW



青岛源泉机械有限公司

Qingdao Yuanquan Machinery Co.,Ltd

4.5 Vibrating Feeding Machine



- (1) This machine further opens and mixes the opened fiber, and processes it into a uniform fiber layer for the next process.
- (2) Working Width: 2300mm
- (3) Dia/speed of uniform fiber roller: $D=350\text{mm} / 240\text{r/min}$, dia of beater roller is 350mm
- (4) The frame wallboard is made of Q235A steel plate by NC laser cutting; And the whole machine has been sprayed with plastic
- (5) Three beater nail rows are installed on the uniform roller and stripping roller body; the nail board is formed by laser cutting of 3mm thick steel plate in tooth shape; Anti fiber wrapping devices are set at both ends of the roller;
- (6) The press roller is aluminum alloy toothed , all motors adopt shaft connected motor transmission, which is beautiful and stable.
- (7) Volumetric quantitative vibration feeding, photoelectric control, photoelectric linkage with main opening machine, to ensure the feeding amount is uniform and accurate.
- (8) All transmission parts are treated with phosphating and rust prevention. The phosphating color is uniform and black, with strong adhesion and no fading.
- (9) Power: Inclined curtain motor 1.5KW, Inverter Control; Uniform fiber roller is reactive controlled, Drum Motor 2.2 KW, Blowing Motor 0.25KW

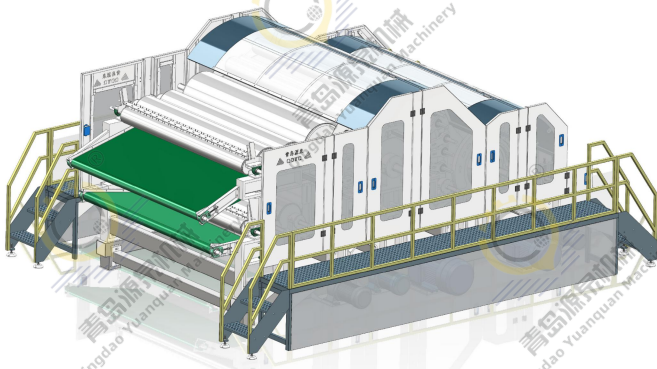




青岛源泉机械有限公司

Qingdao Yuanquan Machinery Co.,Ltd

4.6 Double Cylinder Double Doffer Carding Machine



(1) The structure of this machine is four feeding rollers, single cylinder and double doffer, which is suitable for polyester, polypropylene and other chemical fibers, also good for carding and netting some natural fibers (sheep wool, alpaca fiber and others);

(2) The machine body is made from cast iron with stable structure, sheet metal cover is processed by laser cutting and NC bending which is beautiful and generous. The cover can be lifted and lowered through the air cylinder, which is convenient and safe;

(3) All transmission parts are treated with phosphating and rust prevention. The phosphating color is uniform and black, with strong adhesion and no fading.

(4) The roller shaft head is finely turned and polished, and a computer balancing machine is used for static/dynamic balancing, with control adjustment within 0.03-0.05 mm.

(5) The operation is stable and reliable, and the height of base is 600mm, which is convenient for daily maintenance.

(6) Equipped with suction fan and metal detection device.

(7) The working rollers are controlled by a separate motor, and the speed of the working rollers is adjusted according to cylinder and different raw materials, so as to get the best carding effect.

(8) Working Width: 2500mm

(12) Feeding Roller Dia: $\Phi 86\text{mm}$

(9) Main Cylinder Dia: $\Phi 1230\text{mm}$

(13) Working Roller Dia: $\Phi 165\text{mm}$

(10) Chest Cylinder Dia: 850mm

(15) Licker-in Roller Dia: $\Phi 295\text{mm}$

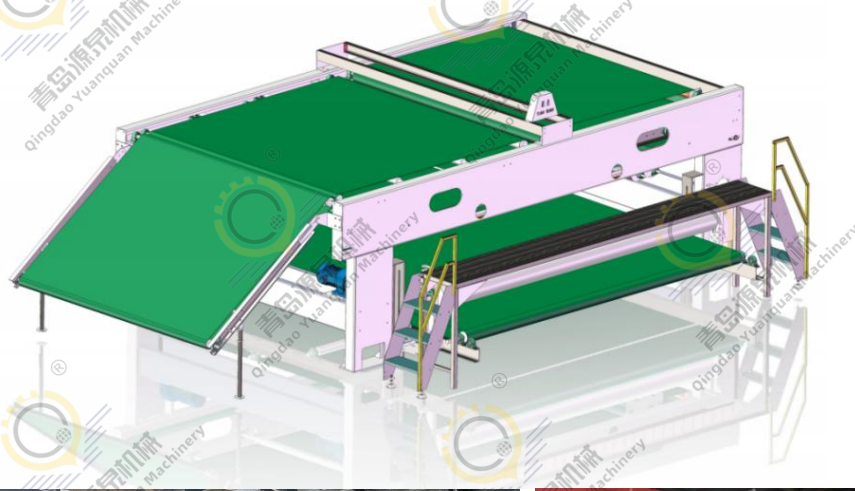
(11) Doffer Dia: $\Phi 635\text{mm}$

(16) Random Roller Dia: $\Phi 295\text{mm}$

(1) The steel wire brand is Geron, with high quality, long service life and perfect carding effect;

(2) Power: Feeding 2.2KW, inverter control; Working roller 2.2KW, inverter control; Doffer 3.7KW, inverter control; Fan 4KW; Main Cylinder 22KW, inverter control, Chest Cylinder 15KW

4.7 Cross Lapping Machine

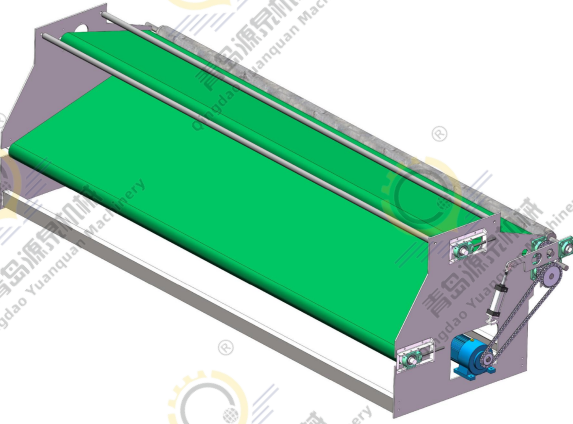


- (1) The fiber layer laid by this machine has a uniform texture.
- (2) By changing the direction of the fiber layer, its width and layer thickness are evenly laid, and then transported to the next process after being pressurized.
- (3) The differential speed compensation between each layer laying curtain can be adjusted to reduce the fiber layer stretch. The reciprocating steering can adjust the buffering force and rotation.
- (4) It is stable and easy to adjust the bottom curtain up and down. The inclined curtain, ring curtain and bottom curtain have variable frequency speed adjustment and reciprocating frequency multi-stage speed adjustment to make the fiber layer laying more uniform.
- (5) Input Width: 2700mm
- (6) Output Width: 5200mm
- (7) Delivery Speed: Max 40m/min
- (8) Power:
 - Inclined Curtain: 2.2kw, inverter control
 - Ring Curtain 2.2kw, inverter control
 - Reciprocating 3.7kw, inverter control
 - Bottom curtain (Driving) 2.2kw, inverter control
 - Bottom curtain (Lifting) 1.1kw*2=2.2kw



青岛源泉机械有限公司 Qingdao Yuanquan Machinery Co.,Ltd

4.8 Clamping Feeding Device



Function:

Mainly used in pre-needle punching machine web feeding, compressing fiber web thickness and excessive use in pre-needle punching machines or other equipment

Main Technical Parameters and Specifications:

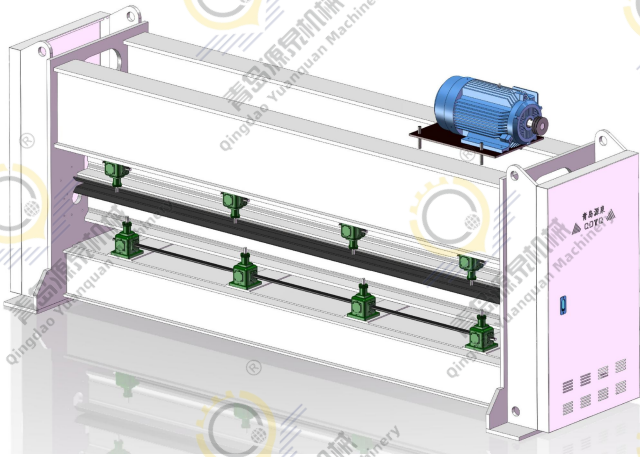
Machine width: 5200mm

Quantity: $\leq 3000\text{g/m}^2$

Speed: 0.6-10m/min

Power: 3kw.

4.9 Pre Needle Loom (Middle Speed)



The machine is connected with the cross lapping machine. The fiber layer conveyed by the cross lapping machine is very fluffy and easy to loose when entering the needle punching machine; After needling by the needle punching machine, the fluffy degree and thickness of the fiber web can meet the quality requirements of non-woven felt.

All transmission parts are treated with phosphating and rust prevention. The phosphating color is uniform and black, with strong adhesion and no fading.

The frame wallboard is made of Q235A steel plate by NC laser cutting; And the whole machine has been sprayed with plastic

The main technical parameters

Working Width	Pre-Needle Loom:5100mm
Needle Density	Pre-Needle Loom: 4500 PCS/Meters
Power	23 KW
Output Speed	≤10m/min
Design Frequency	About 100--700 times/min
Designed Stroke (One Side)	40-70 mm(According to the thickness of finished product)

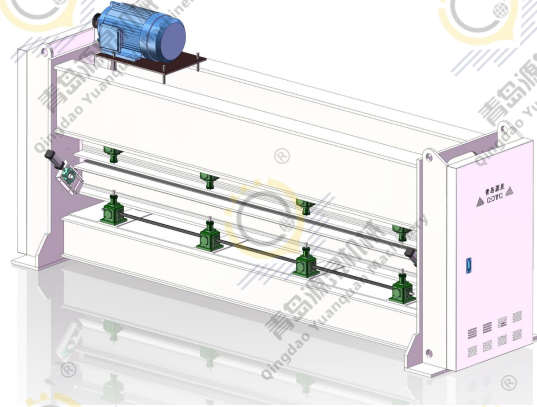
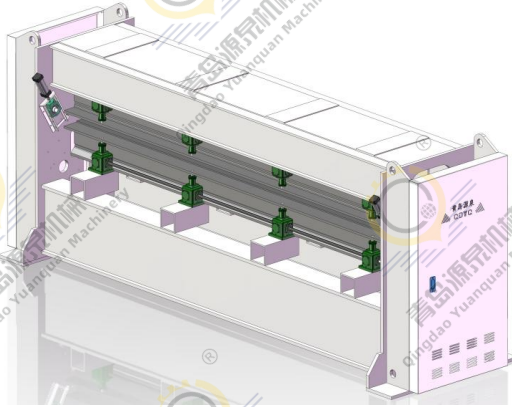


青岛源泉机械有限公司

Qingdao Yuanquan Machinery Co.,Ltd

4.10 Upward Needle Loom (High Speed)

4.11 Downward Needle Loom (High Speed)



Our high speed needle loom is mainly used for the reinforcing and surface finishing of high density needle-pinched fabric.

Single main shaft and single-needle board.

Balance dynamic apparatus in mutual opposite direction.

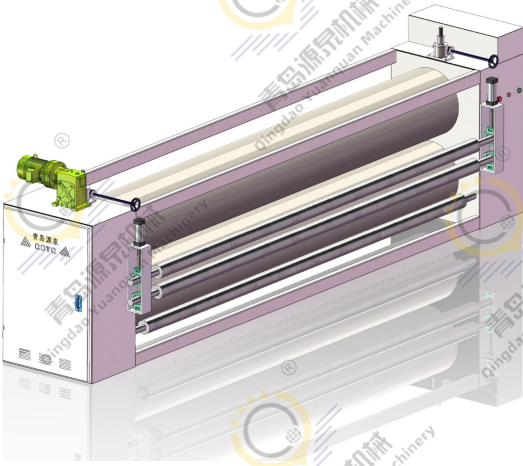
Centralized oil supply, multi-point injection lubrication.

Oil-shortage alarming protection.

Structure with automatic lubrication and cooling system.

Working Width	Upward Needle Loom (High Speed) : 5000mm
	Downward Needle Loom (High Speed): 5000mm
Needle Density	Upward Needle Loom (High Speed) : 6500 PCS/meter
	Downward Needle Loom (High Speed): 6500 PCS/meter
Power	36 KW
Output Speed	≤10m/min
Design Frequency	≤1200 RPM
Designed Stroke (One Side)	30-50 mm(According to the thickness of finished product)

4.12 Calender



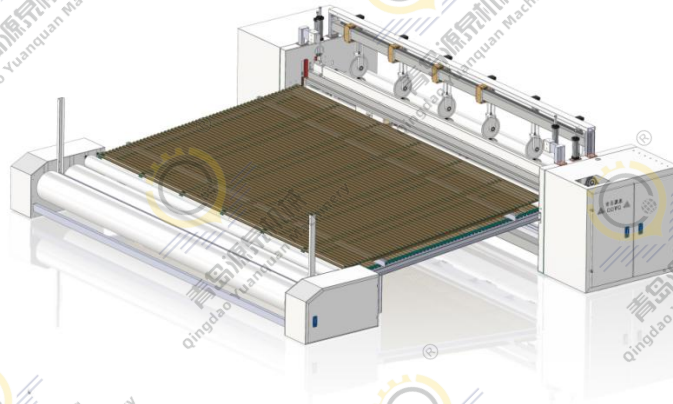
- (1) This ironing machine/calender is suitable for surface ironing of products such as spray bonded wadding, non glue bonded wadding, needle punched felt, geotextile, and felt base fabric.
- (2) This machine is a double-sided ironing machine that achieves the specified thickness of the product through high-temperature treatment.
- (3) High input and low output "S" type threading of wadding, with each heating roller controlled by a separate motor.
- (4) Two ironing rollers on top and bottom, controlled by sampling thyristor, with a through hole conductive ring.
- (5) Working Width: 5000mm
- (6) Working Speed: 2--15m/min
- (7) Heating Mode: Electric heating tube/thermal oil (controllable silicon controlled temperature)
- (8) Surface Temperature: $C_{max}=220^{\circ}C$
- (9) Spray a black anti stick layer on the surface of the ironing roller to avoid cotton sticking.
- (10) Power: Lifting Motor 0.75kw
Feeding Roller Motor 0.75kw
Output Roller Motor 0.75kw
Electric Heating Tube 3.5kw * 9 PCS * 2 Tube=63kw



青岛源泉机械有限公司

Qingdao Yuanquan Machinery Co.,Ltd

4.13 Cutting and Winding Machine



- (1) Purpose: It is used to cut the side of gule spraying wadding, soft wadding or other non woven fabric and winding to wadding roll. Meanwhile, this machine can also cut the gule spraying wadding into different sizes according to the requirements of customers.
- (2) This machine has the function of counting and tracking crosscutting.
- (3) Working Width: 5000mm
- (4) Working Speed: 3--15m/min
- (5) Cutting Mode: by fly-cutter or electric heating wire method cross cutting and equipped with 6-7 pcs longitudinal cutting cutters
- (6) Lifting Mode: Cylinder lifting
- (7) Power 6KW

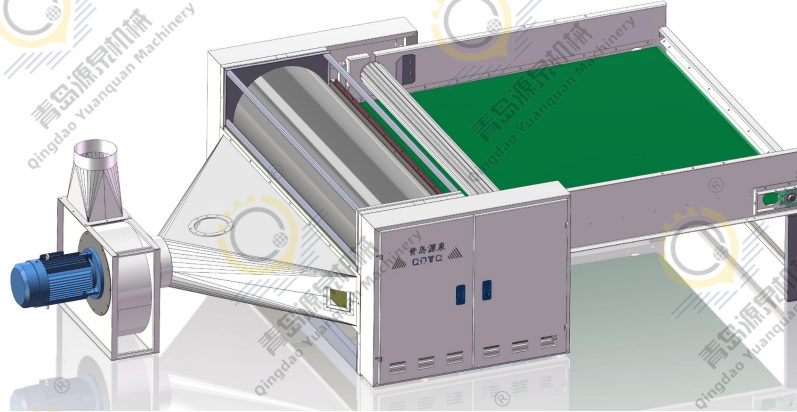




青岛源泉机械有限公司

Qingdao Yuanquan Machinery Co.,Ltd

4.14 Opening Machine for Waste Fabric Function:



The different kinds of fibers are conveyed to the feeding roller through the feeding flat curtain, and then released at high speed by the release roller. After that, the fiber and raw materials are conveyed by the cotton conveying fan with an appropriate amount of air volume for the subsequent work. The fiber and raw materials loosened by this machine have good effect, even and meticulous.

Model	YQ-1000-KS	
Working Width	1000mm	
Capacity	50-300kg/h	
Dia of Feeding Roller	86mm / Groove Type	
Type of Opening Roller	Needle Plate	
Dia of Opening Roller	400=600mm	
Main Machine Wallboard	8mm thickness of Q235A steel plate by NC laser cutting	
Fan Impeller	Aluminium	
Power	Feeding	1.5kw (Frequency conversion control)
	Opening Roller	5.5kw
	Fan	4 kw (Frequency conversion control)



青岛源泉机械有限公司

Qingdao Yuanquan Machinery Co.,Ltd

4.15 Electrical Control System

4.15.1 The main electrical control cabinet adopts a standard vertical cabinet, which is placed separately from the operation cabinet to effectively prevent dust intrusion.to protect electrical appliances.

4.15.2 The control system of whole line can be single-action or linkage, which is convenient for operation.

4.15.3 The whole line is fully frequency - converted , which can adjust the speed individually and in general