

Zhejiang Meibao Industrial Technology Co., Ltd.

Customer's packing requirements & packing system recommendation:

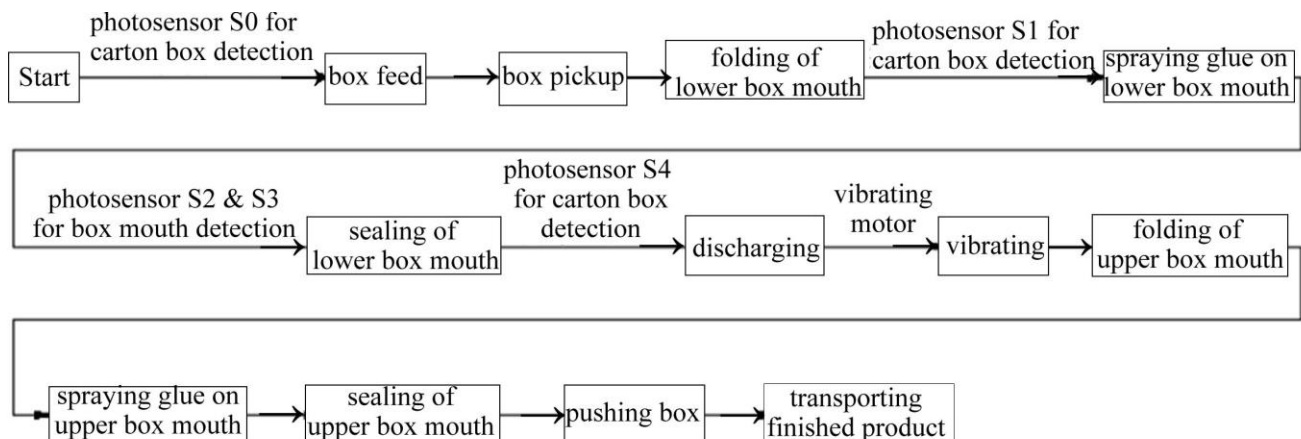
1	Packing product	Detergent powder
2	Box size :	Packing size: 45mm×145mm×190mm
3	Packing weight	500g
4	Capacity	60-65 boxes/min for one set of machine.
5	Accuracy	≤±0.2%-0.5%
6.	Total capacity	6 ton /hour (three machines total capacity is 5.4-5.85 ton/hour)

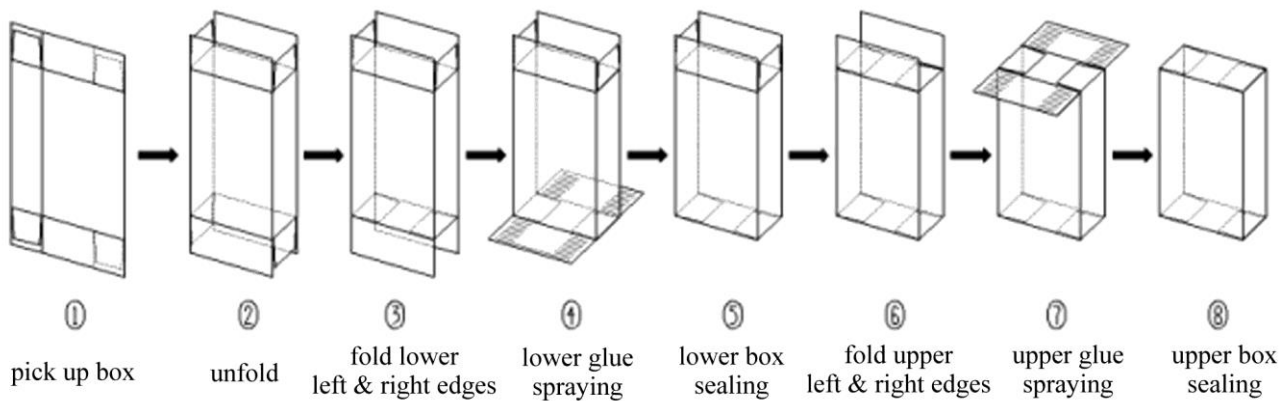
Technical Specification:

Speed	50-70 boxes with (equipped with two units weighting machine)
Box size range min	min. 30×30×50mm(L×W×H)
Box size range max	Max 200×150×400mm (L×W×H)
External dimensions of the machine	5500×3000×2100mm(L×W×H)
Unit weight	≈3500 kg
Noise	<85dB(A)
Voltage	≈13 kW

Paper Box Packaging Machine

Working process flow chart:





I. Application and characteristics

It can load various kinds of materials like granules, powder, etc. and some packaging bags, etc. into the special carton boxes reliably and seal and send out the carton boxes. It is suitable for packaging of various kinds of foodstuff, chemical products, animal foods and agricultural products, has a wide range of use, meanwhile, the product to be packaged can be changed periodically according to different use requirements, yet the die set change interval is short and its adjustment is simple and convenient. It is not only suitable for mass production of a single variety, but also can satisfy user's small-batch production of different varieties.

The equipment has the following features:

Electronic adjustment system for packaging speed;

The packaging size can be adjusted;

With dust removal pipe and vibration as well as special mechanism specially designed for some materials to be packaged;

Electronic control glue spraying system;

Reliable fault protection system.

II. Use of package

Because the quality of the packaging box directly affects the final packaging quality, this machine has higher requirements for the quality of the packaging box. Ordinary carton box is made of $800\text{g}/\text{m}^2$ - $900\text{g}/\text{m}^2$ and $800\text{g}/\text{m}^2$ - $850\text{g}/\text{m}^2$ imported white board, and has certain requirements for the manufacturing process of the packaging box.

III. Main technical parameters

Max. design production capacity:	55-65 boxes/min
External dimensions of the machine:	5500×3000×2100mm(L×W×H)
Unit weight:	≈3500 kg

Zhejiang Meibao Industrial Technology Co., Ltd.

Range of carton box size:

Min. 30×30×50mm(L×W×H)
Max. 200×150×400mm (L×W×H)

Noise:
Rated power

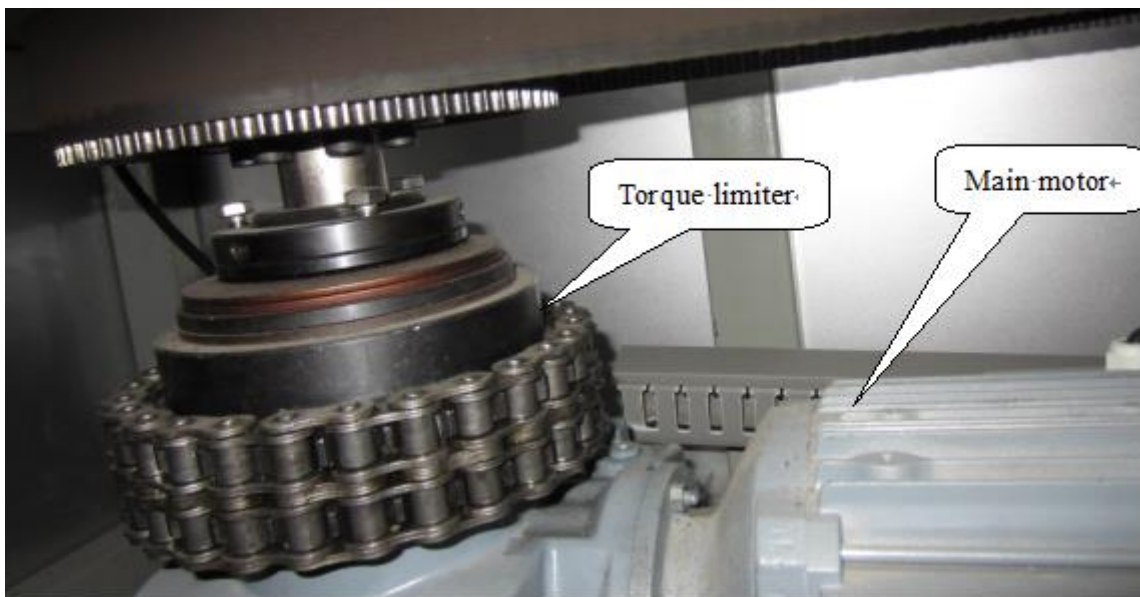
<85dB(A)
≈13 kW

Main structure and operating principle:

(1) Transmission system

The machine frame and baseplate have sufficient strength and stiffness, and within the machine frame there are equipped main drive motor of this machine and torque limiter (see Fig. 3). On the machine frame there are installed the transmission system for each section, the torque limiter can realize disengagement of main drive motor from each transmission part under overload in order to protect machine parts from being damaged. The load adjustment of torque limiter can be made by turning the adjusting round nut, screwing down is to increase the bearing load, unscrewing is to decrease the bearing load.

Tighten the three fastening bolts after finishing the adjustment.

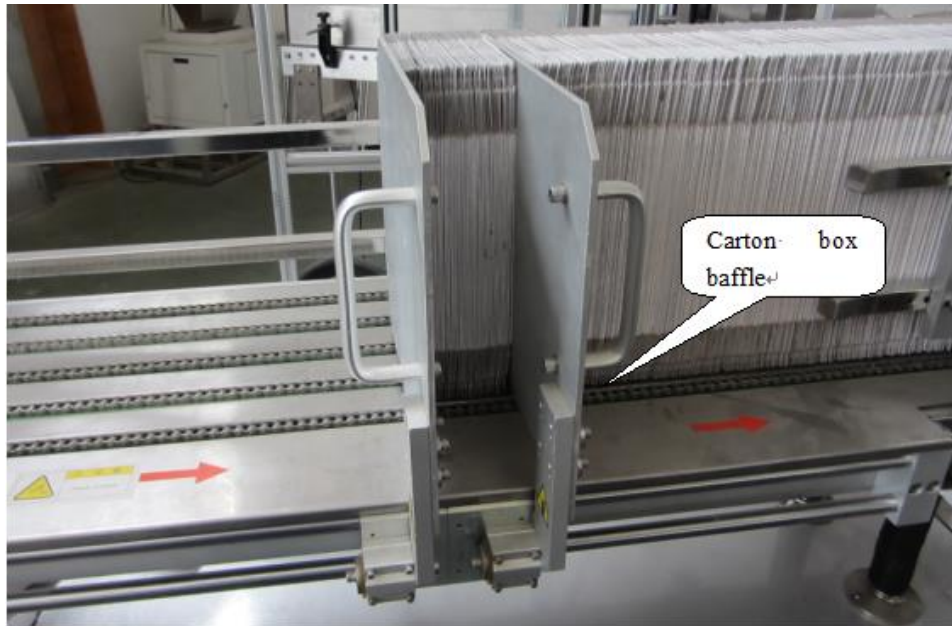


(Fig. 3)

(2) Box feed mechanism

The box feed mechanism consists of box magazine (see Fig. 4) and box feed cylinder.

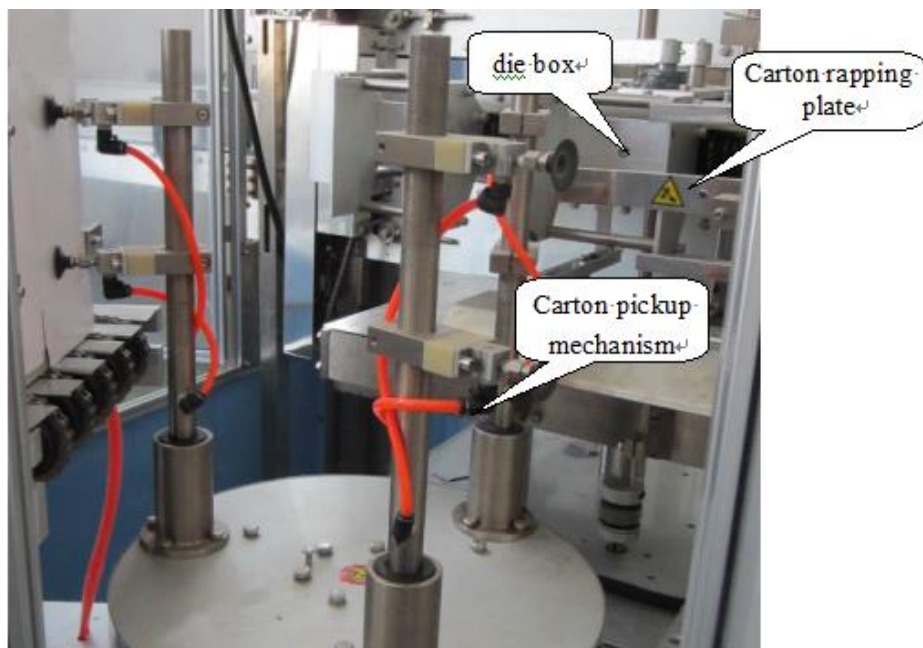
It is used for storing carton boxes and can be adjusted according to the size of carton box, the cylinder drive chain feeds carton boxes. The spacing of carton box magazine guardrails can be adjusted, all the guardrails are connected through the kidney holes and can be moved left and right so that they can be adjusted according to different specification of carton box.



(Fig. 4)

(3) Box pickup mechanism (see Fig. 5)

When the sucker sucks off the carton box and place it in the die box within specific time under the action of vacuum, and the box rapping plate knocks the carton box into the carton box completely. The vacuum is generated by the vacuum pump, and three rotary shafts of the sucker pick up the carton boxes in turn under the drive of the power system. The upper and lower position and angle of the sucker can be adjusted by unscrewing the bolts, it is needed to pay attention to the balance of upper and lower position of the sucker during the adjustment, the positions shall not interfere with box rapping plate. The adjustment of box rapping plate needs to coordinate with the position of sucker.



(Fig. 5)

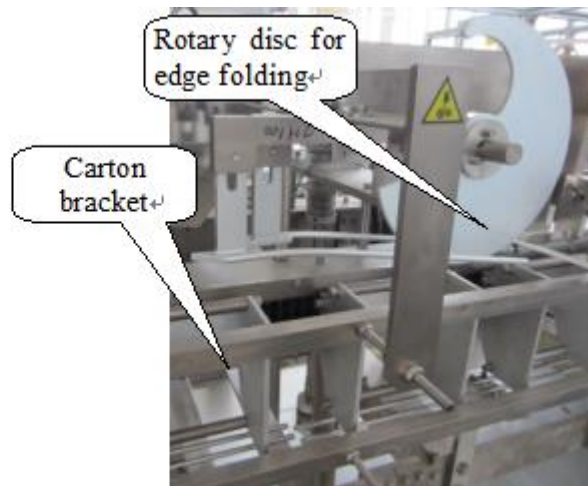
(4) Forming mechanism

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The forming mechanism (see Fig6, Fig7) is the mechanism for completing such processes as sequentially unfolding the carton box, folding lower mouth, spraying glue on lower part, sealing the box, folding upper mouth, spraying glue on upper part, sealing the box, etc. Its series of actions are realized through the action of die box, guide mechanism, edge-folding turntable, hot melt glue gun, roller and carton box bracket, etc. Generally, this mechanism does not need further adjustment as it has been adjusted before leaving the factory.



(Fig. 6)

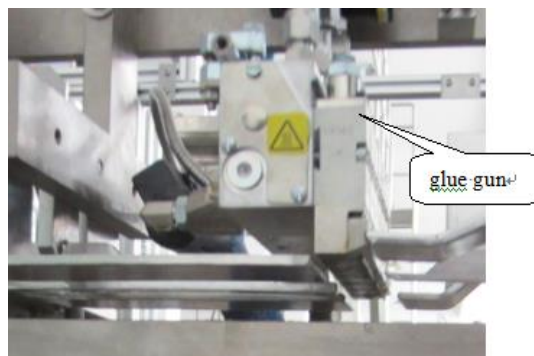


(Fig. 7)

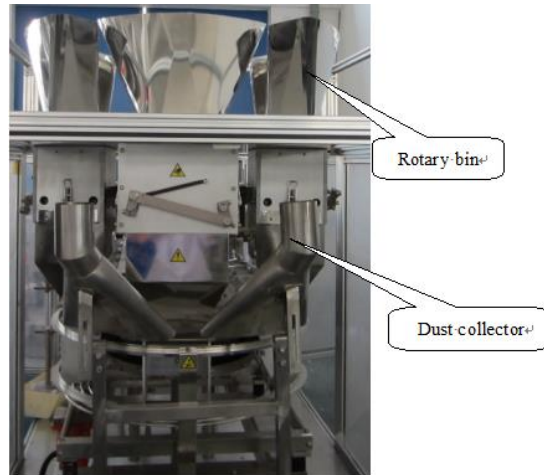
(5) Box sealing mechanism

The box sealing mechanism is the mechanism used for sealing the carton box (see Fig. 8), the main constituent components are hot melt glue machine and support bracket, etc. When the working temperature is reached, the hot melt glue is sprayed out from glue gun through control of electromagnetic valve and is adhered to the carton box to seal the carton box. For the description of spray gun, see Part 2 “Use instructions of glue spray system”.

When the user finds the glue spray position is advanced or postponed, just modifies the system parameter, see Part 3 “Use instructions of electrical section”. When the glue spray position is close to outer or inner side, unscrew the bolt of the spray gun support rod and adjust the position of the spray gun, then tighten and fix the bolt.



(Fig. 8)

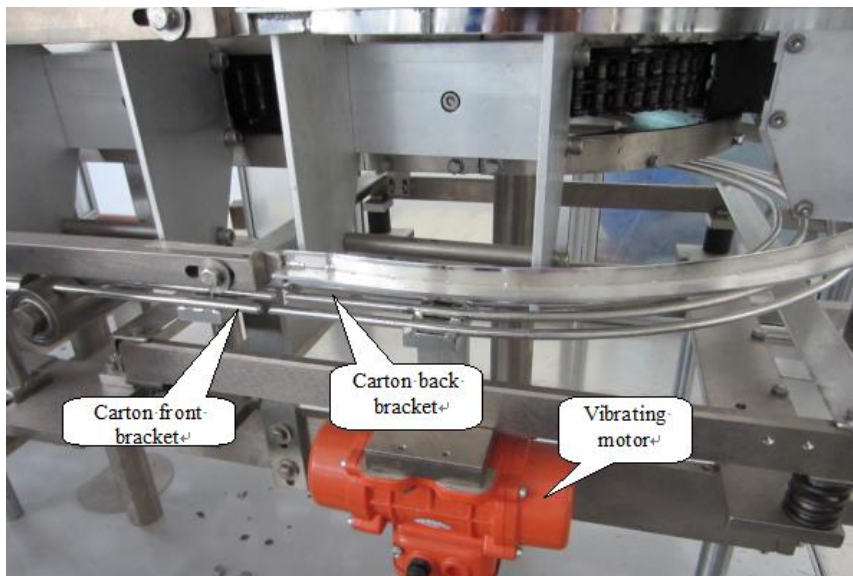


(6) Filling mechanism

The function of the filling mechanism (see Fig. 9) is to use the storage bin with valve plate as temporary bin, when it moves to the designated position through the rails, the valve plate is opened to drop the already measured material into the carton box. The filling mechanism also has the interface for dust collector, which is connected with dust removal pipe to reach the dust removal system.

(7) Vibrating mechanism

The vibrating mechanism (see in Fig. 10) is used to ensure that the powdery material can be fully filled in the carton box through vibration, it consists of such main mechanisms as the vibrating bracket, vibrating motor, etc.

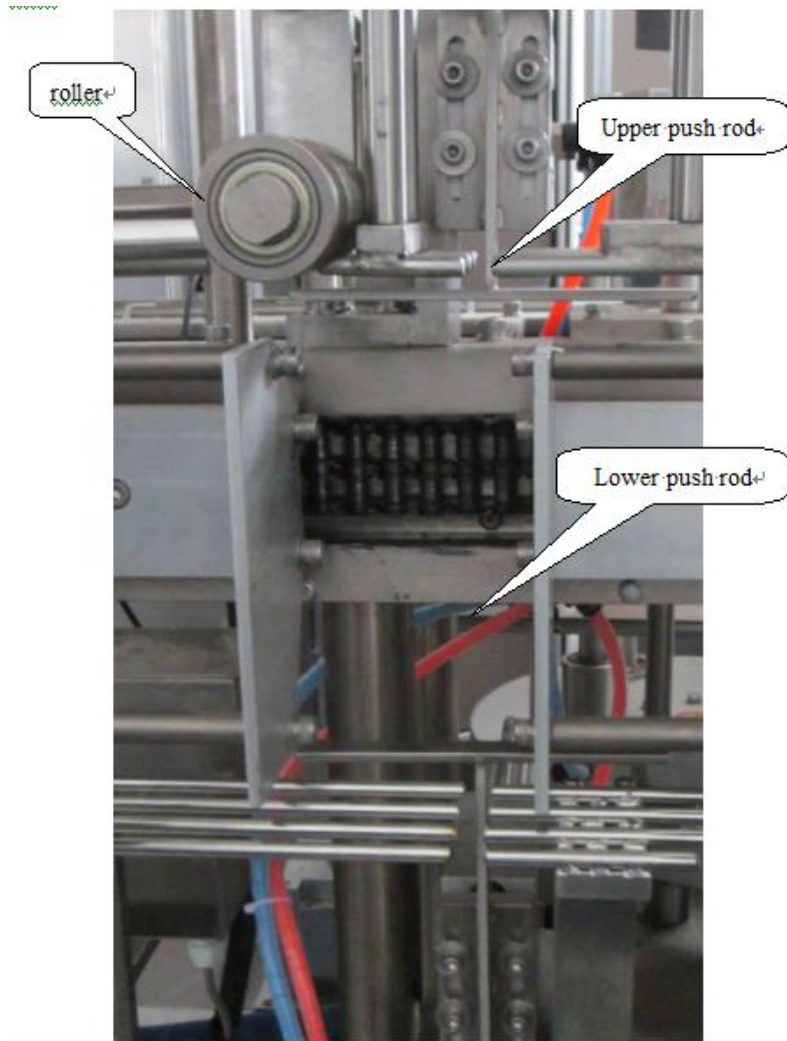


(Fig. 10)

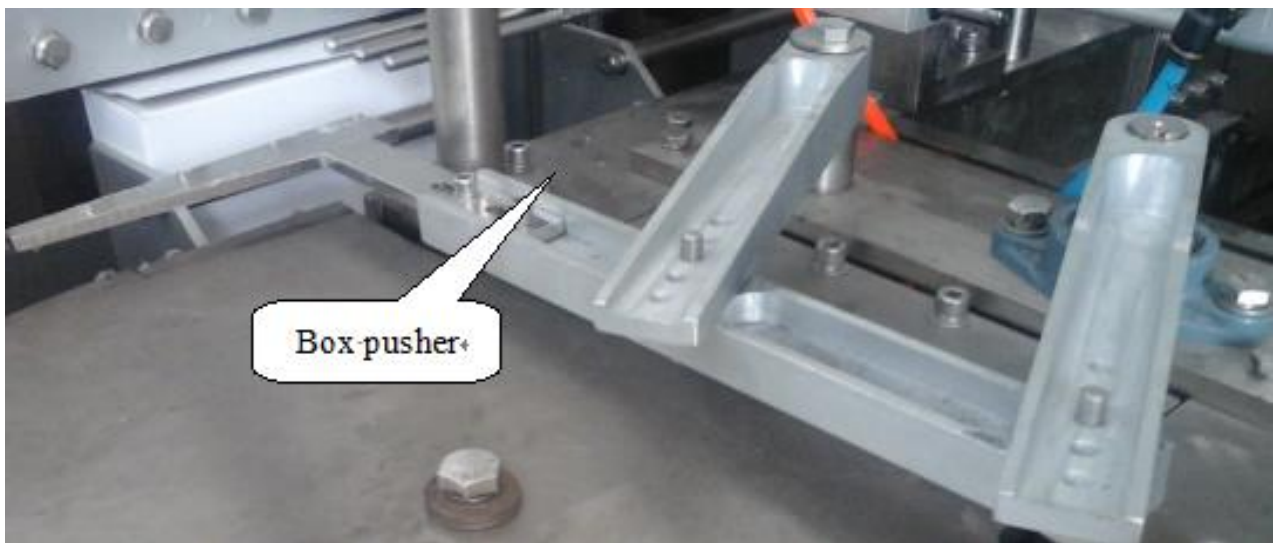
(8) Rejection mechanism

The rejection mechanism is composed of two cylinders, guide component, cylinder bracket, upper push rod and lower push rod, and is the device used to reject unqualified products (see Fig. 11). Vertical positions of upper push rod and lower push rod can be adjusted through kidney holes,

and the position of the cylinder can also be adjusted through kidney hole so as to reach the best working position.



(Fig. 11)



(Fig. 12)

(9) Box push mechanism

The box push mechanism is composed of upper, lower push rod and swing rod, and it do

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reciprocating swing motion under the power drive of the system to push the finished carton box from carton box bracket to the conveyor belt (see Fig. 12). There are kidney holes on the upper and lower push rods, which can be used to adjust horizontal position of the push rods.

(10) Finished product conveying

The finished product conveying is divided to two parts: upper conveyer and lower conveyers.



Main Components list:

Item	Brand	Place of origin
PLC	Siemens	Germany
Touch screen	Siemens	Germany
Main Board	MB	China
servo motor	Siemens	Germany
Frequency Convert	Taida	Taiwan
Pneumatic component	AIRTAC	Taiwan
Electromagnetism	AIRTAC	Taiwan
Contractor	Schneider	France
Electric breaker protector	Schneider	France
Swift	Schneider	France