

# Automatic Case Maker

CM550



zhengrun  
Since 1997

品质铸造 正润品牌

## Introduction:

Zhejiang Zhengrun Machinery Co., Ltd., established in 1997, is the first domestic brand to start the business of packaging equipment. The company is mainly engaged in the R&D, design, production and sales of the case maker and rigid box machinery.

The company has the modern standard factory buildings covering 66,000m<sup>2</sup>, as well as a highly professional R&D and production team and the world's leading super-large production and processing center. Zhengrun's packaging equipment can be applied to the rigid box packaging of many brands in multiple fields, such as electronics, cosmetics, jewelry, wine, garment and shoes, moon cake and tea, desk calendars, notebooks. The company has the right to import and export, and has gained the certificate of ISO9001 quality management system with all products gained the European CE. The products and services now cover more than 80 countries and regions.

Since its inception, the company always adheres to the business development concept of considering that **"Quality builds Zhengrun brand"**. The company passes on the artisan spirit, pursues higher quality and aims to establish a stronger brand, so as to become the world's representative "Made in China" brand in printing and packaging industry.



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## I . About the Automatic Case Maker

To enable to meet the new requirements of packaging market, Zhengrun designs CM550 NEW case maker. It employs the mechanical paper feeder, hot melt gluing system, HD Camera positioning device, edges folding system which improves the accuracy and the speed and offers the various shapes solutions. It could be used to make hardcover book cover, kids book covers (round corner), package case of special shapes, arch lever file, calendar, game boards, etc.

## II . System Compositions

Product name: Automatic Case Maker(alias: Book Cover Machine/Hardcover Machine)

Model: **CM550**



### 1. Main Accessories

- ◆ Control system: Japanese Yaskawa
- ◆ Transmission System: Taiwan Yintai
- ◆ Electric Components: French Schneider
- ◆ Pneumatic Components: Japanese SMC
- ◆ Ultrasonic double paper checker: Japanese Pepperl+Fuchs
- ◆ Conveyer Belt: Swiss Habasit
- ◆ Servo Motor: Japanese Yaskawa
- ◆ Synchronous belt: Germany Continental
- ◆ Reducing Motor: Taiwan Chengbang
- ◆ Bearing: Japanese NSK
- ◆ Touch screen: Japanese Pro-face
- ◆ Terminal: Germany Phoenix
- ◆ Button: Germany Eaton
- ◆ Gluing system: chromed Stainless steel roller, copper gear pump
- ◆ Vacuum pump: Japanese ORION

### 2. Basic Functions:

- (1)Automatically delivery and gluing for paper
- (2)Automatically delivering, positioning and spotting for cardboards.

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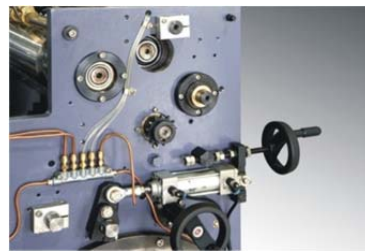
- (3) Four-side folding and forming in one time (Available to make Irregular shape cases)
- (4) With friendly HMI, all troubles will be displayed on the computer.
- (5) Integrated cover is designed according to the European CE Standards, featuring in safety and humanity.

### 3. Functions and Characteristics

The new automatic case maker is composed of paper gluing unit, cardboard conveying unit, positioning-spotting unit and four-edge folding unit.

#### (1) Paper Gluing Unit:

- ◆ Mechanical feeder, driven by the servo motor. Max. height of paper stacker 50mm



- ◆ The concentrated oil system fully ensures each parts lubricating and the steady running.
- ◆ Micro adjustment of glue thickness.



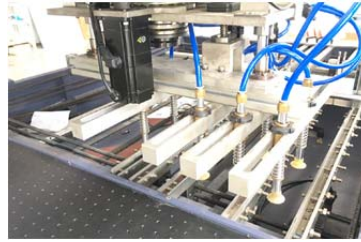
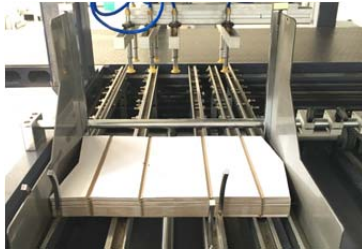
- ◆ The glue tank is of consistent temperature, automatically mixing, filtering and gluing in a circulation. It has fast shift valves which can help user to clean the gluing rollers quickly in 3-5 minutes.
- ◆ Chromatic-plated stainless steel cylinder, the latest technology, is applicable to different gels, featuring in durability.



- ◆ **Optional device: glue viscosity meter, timely control the glue viscosity.**

#### (2) Cardboard Conveying Unit

- ◆ It adopts per-stacking non-stop bottom-drawn cardboard feeder, which improves the production speed.



- ◆ Cardboard auto detector: the machine will stop and alarm while lacking one or several pieces of cardboards in conveying.
- ◆ It can feed Max. 6 pcs of board at same time. Min. gap size 1mm.

### (3) Positioning-spotting unit

- ◆ The vacuum suction fan keeps the glued paper from deviating.
- ◆ HD camera positioning device is faster response and more accurate.



- ◆ The computer will calculate the paper deviating. The board gripper will lay the cardboards on the right position of paper.



- ◆ All icons control panel is easy to understand and operate.
- ◆ The machine employs 16 sets of servo motors, most of adjustment is automatic.

### (4) Four-edge folding unit

- ◆ Computerized case gripper moves the case from the conveyor belt to the Wrapper automatically.
- ◆ The gripper device can lift the case by the servo motor which is efficiently avoiding the scratches of the paper.

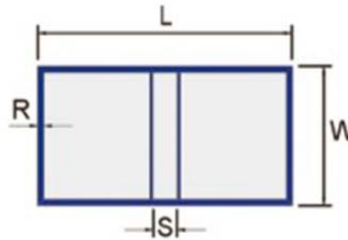
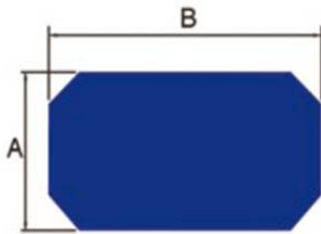


- ◆ Adopt new design of mechanical structure to wrap the four edges, fast digital adjustment of sizes.
- ◆ It can finish the front/back edges by mold, special shape could be customized.



- ◆ Safety covers with nice appearance.
- ◆ Automatic counter and stacker.

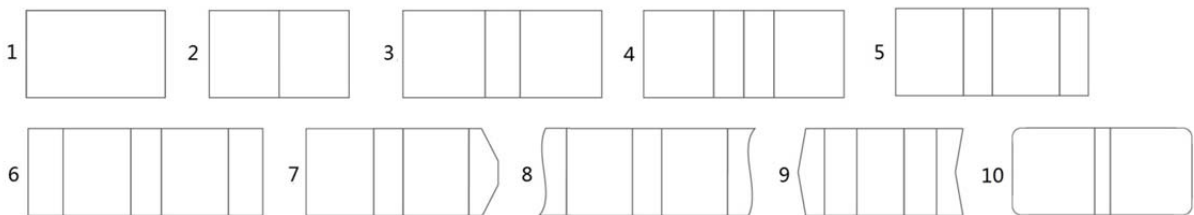
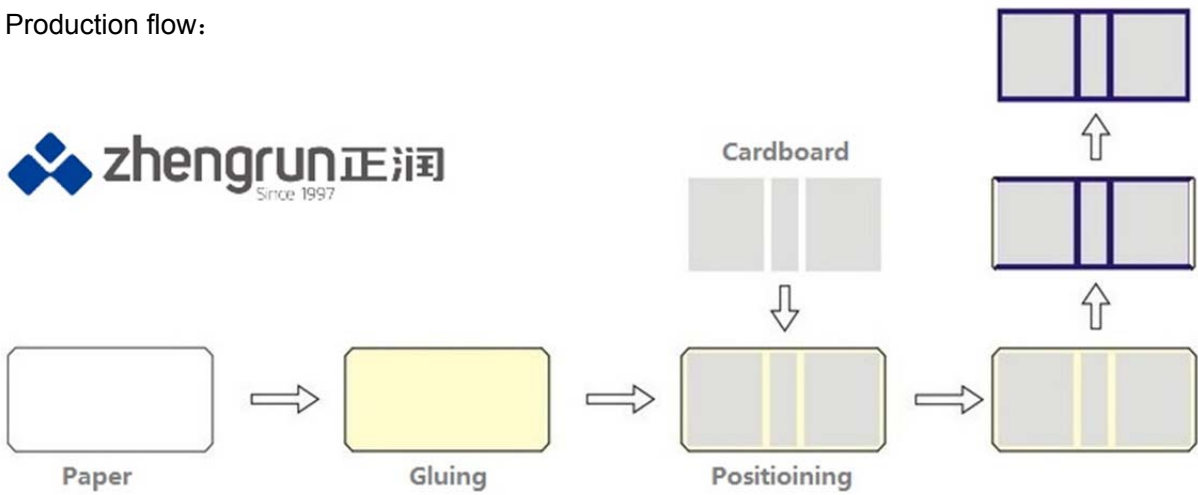
### III. Technical Parameter:



The corresponding relation between the specifications:

$$A(\text{Min}) \leq W + 2T + 2R \leq A(\text{Max}) \quad B(\text{Min}) \leq L + 2T + 2R \leq B(\text{Max})$$

Production flow:



	Automatic case maker	<b>CM550</b>
1	Paper size(A×B)	MIN: 130×230mm MAX: 580×1030mm
2	Paper thickness	100~200g/m <sup>2</sup>
3	Cardboard thickness(T)	1~3mm
4	Finished product size(W×L)	MIN: 100×200mm MAX: 550×1000mm
5	Spine(S)	10mm
6	Folded paper size®	10~18mm
7	Max quantity of cardboard	6pieces
8	Precision	±0.50mm
9	Production speed	≅ 35sheets/min
10	Machine weight	4400kg
11	Machine Dimension	L6450×W3300×H1900mm

**Note:**

- ◆ The box Max.&Min. sizes are subjected to paper size and quality.
- ◆ The speed of the machine depends on the sizes
- ◆ Cardboard stacking height: 220mm
- ◆ Paper stacking height: 500mm
- ◆ Glue tank volume: 60L

**Samples:**



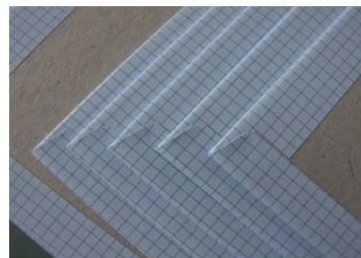
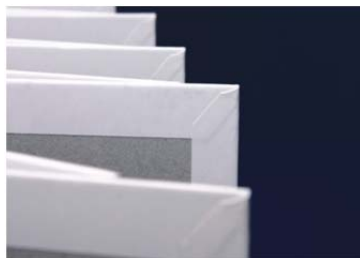
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#### IV. Important Observations for purchasing

##### 1. Requirements for Ground

The machine should be mounted on the flat and firm ground which can ensure it has enough capacity of load (about 300kg/m<sup>2</sup>). Around the machine should keep enough space for operation and maintenance.

##### 2. Machine dimension: L6450×W3300×H1900mm

##### 3. Ambient Conditions

- ◆ Temperature: The ambient temperature should be kept around 18-24°C(The air-conditioner should be equipped in summer)
- ◆ Humidity: the humidity should be controlled around 50-60%
- ◆ Lighting: About 300LUX that can ensure the photoelectric components can work regularly.
- ◆ To be away from oil gas, chemicals, acidic, alkali, explosive and inflammable substances.
- ◆ To keep the machine from vibrating and shaking and being nest to the electric apparatus with high-frequency electromagnetic field.
- ◆ To keep it from being directly exposed to the sun.
- ◆ To keep it from being blown directly by the fan

##### 4. Requirements for Materials

- ◆ Paper and cardboards should be kept flat all the time.
- ◆ The laminated paper should be electro-statically processed in double-side.
- ◆ The cardboard cutting precision should be controlled under ±0.30mm (Recommendation: using cardboard cutter KL1300 and shine cutter ZX450 )



**Cardboard cutter**



**Spine cutter**

##### 5. The color of the glued paper is similar to or same to that of the conveyor belt(black), and

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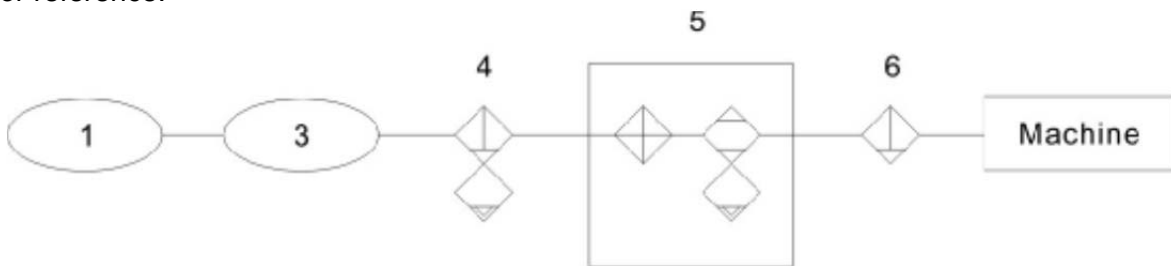
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another color of glued tape should be stuck on the conveyor belt.(Generally, attach the 10mm width tape beneath the sensor, suggest tape color: white)

6. The power supply: 3 phase, 380V/50Hz, sometimes, it can be 220V/50Hz 415V/Hz according to the actual conditions in different countries.

7. The air supply: 5-8 atmospheres (atmosphere pressure), 30L/min. The poor quality of air will mainly resulted in troubles for the machines. It will seriously reduce the reliability and life of the pneumatic system, which will result in lager loss or damage that may terribly exceed the costs and maintenance of such system. Therefore it must be technically allocated with a good quality air supply system and their elements. The followings are the air purifying methods only for reference:



1	Air compressor		
3	Air tank	4	Major pipeline filter
5	Coolant style drier	6	Oil mist separator

- ◆ The air compressor is a non-standard component for this machine. This machine is not provided with an air compressor. It is bought by the customers independently (Air compressor power: 11kw, air flow rate: 1.5m<sup>3</sup>/minute).
- ◆ The function of the air tank (volume 1m<sup>3</sup>, pressure: 0.8MPa):
  - a. To partly cool the air with higher temperature coming out from the air compressor through the air tank.
  - b. To stabilize the pressure that the actuator elements in the back uses for the pneumatic elements.
- ◆ The major pipeline filter is to remove the oil distain, water and dust, etc. in the compressed air in order to improve the work efficiency of the drier in the next process and to prolong the life of the precision filter and drier in the back.
- ◆ Coolant style drier is to filter and separate the water or moisture in the compressed air processed by the cooler, the oil-water separator, air tank and major pipe filter after the compressed air has been removed.
- ◆ The oil mist separator is to filter and separate the water or moisture in the compressed air processed by the drier.

8. Persons: for the sake of the safety of the operator and the machine, and fully taking

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advantage of the performance of the machine and reducing troubles and prolonging its life, 2-3 skillful technicians capable of operating and maintaining machines should be assigned to operate the machine.

#### 9. Auxiliary materials

Glue: animal glue (jelly gel, Shili gel), specification: high Speed fast dry style.