JianShe® 方邦机械

Specifications and Configurations of ZD-QFP14/18/20 Fully Auto Sheet-fed Square Bottom Paper Bag Machine

Figure 1. ZD-QFP14/18/20 Fully Auto Sheet-fed Square Bottom Paper Bag Machine.

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1. Company Introduction

1.1. Profile

Jiangsu Fangbang Machinery Co., Ltd. is a high-tech enterprise including research and development, production, sales and service, located in Suzhou, China, covering an area of 26600 square meters. Our company is specialized in the production of paper bag making machines (sheet paper feeding, roll paper feeding, full-automatic, and semi-automatic) and flexographic printing machines and so on, with more than one hundred sets of processing and testing equipment in the workshops. Our company has passed through ISO9001:2008 quality system authentication and all of our products have obtained CE certifications.

Figure 2. The Appearance of Our Company

We are on the basis of main industry, focusing scale effect and fulfilling quick development to create the first ranking group company. With the trade mark of "JianShe" brand, our company has the rights to import and export. Our products are popular all over the world due to customers like their excellent performance. We understand the clients' requirements very well so that we can supply not only the first ranking printing & packaging machinery but also have more than 30 offices in China and abroad, which brings a perfect after-sales service system to ensure that we can provide strong technical support and attentive, efficient service for customers.

"Be dependable friend of customers" is our purpose, "Create value for customers" is our goal. "JianShe" brand products are your best choice; we sincerely welcome old and new customers to cooperate with Fangbang and make progress together.

1.2. Inside Views of Plant

Figure 3. Assemble Workshop (1)

Figure 4. Assemble Workshop (2)

1.3. Certificates

Figure 5. Honors and Certificates

2. Product Specification

2.1. Product Introduction

This machine is designed to manufacture square bottom paper bags with handles from sheet paper in blank or printed. Combined with a handle making machine, handle making, handle application, bag mouth folding, side gluing, tube forming, bottom impressing, bottom gluing, bottom forming and final product collection can be completed within a fully automatic process. It is an ideal equipment for making paper bags for foodstuff bags, shopping bags and so on, and can produce paper bags of different sizes. Within the suitable paper range, production capacity can reach 60pics/min, even higher. Increased the unit production capacity and higher profit. Whole housing design, ensure the safety of operator.

Figure 6. Side View of ZD-QFP14/18/20

2.2. Main Technical Parameter

Model	ZD-QFP14B	ZD-QFP14C	ZD-QFP18	ZD-QFP20
Paper Width	630~1050mm	550~1050mm	630~1250mm	710~1320mm
Paper Length	340~630mm	340~630mm	340~630mm	360~630mm
Paper Thickness	100~220g/m^2	100~220g/m^2	100~220g/m^2	100~220g/m^2
Bag Body Width	220~350mm	180~350mm	220~450mm	240~500mm
Bag Body Length	240~480mm	240~480mm	240~480mm	250~480mm
Bag Bottom Size	80~170mm	80~170mm	80~170mm	100~170mm
Bag Mouth Fold Width	40~60mm	40~60mm	40~60mm	40~60mm
Handle Rope Height	170~185mm	170~185mm	170~185mm	170~185mm
Handle Rope Diameter	Φ4~6mm	Φ4~6mm	Φ4~6mm	Φ4~6mm
Handle Patch Length	188.5mm	152.4mm	188.5mm	228.6mm
Handle Patch Width	40~50mm	40~50mm	40~50mm	40~50mm
Paper Patch Roll Diameter	ϕ1200mm	ϕ1200mm	Φ1200mm	Φ1200mm
Paper Patch Roll Width	80~100mm	80~100mm	80~100mm	80~100mm
Paper Patch Thickness	100~250g/m^2	100~250g/m^2	100~250g/m^2	100~250g/m^2
Max. Production Speed	70bags/min	70bags/min	70bags/min	70bags/min
Total Power	20kw	20kw	22kw	22kw
Total Weight	Approx. 22000kg	Approx. 22000kg	Approx. 24000kg	Approx. 25000kg
Overall Dimension	L16000mm×W4300mm ×H2600mm	L16000mm×W4300mm× H2600mm	L16000mm×W4500mm× H2600mm	L16000mm×W4600mm× H2600mm

Note: the parameters above are not absolute; operator's skills, temperature, moisture, material and size of paper, categories and quality of glue can affect production speed, rejection rate, and applicable range of machine.

2.3. Advantages

- This machine can make 3 different kinds of paper bags according to customers' various requirements. The first kind is the common paper handbag with paper handle as the first bag shown below, and the second kind is the top-folded paper handbag with paper handle as the second bag shown below, and the last kind is the top-folded and top-punched paper bag as the last bag shown below, which is very convenient for users to insert plastic ropes into the finished paper bag to make it be another kind of handbag.

Figure 7. Advantage

- The machine can process various kinds of paper, including kraft paper, coated paper and laminated paper, etc.

Figure 8. Advantage

2.4. Finished Product Samples

Figure 9. Finished Product Samples

3. Technology Analysis

3.1. Full Forming Process of Top-folded Paper Handbag

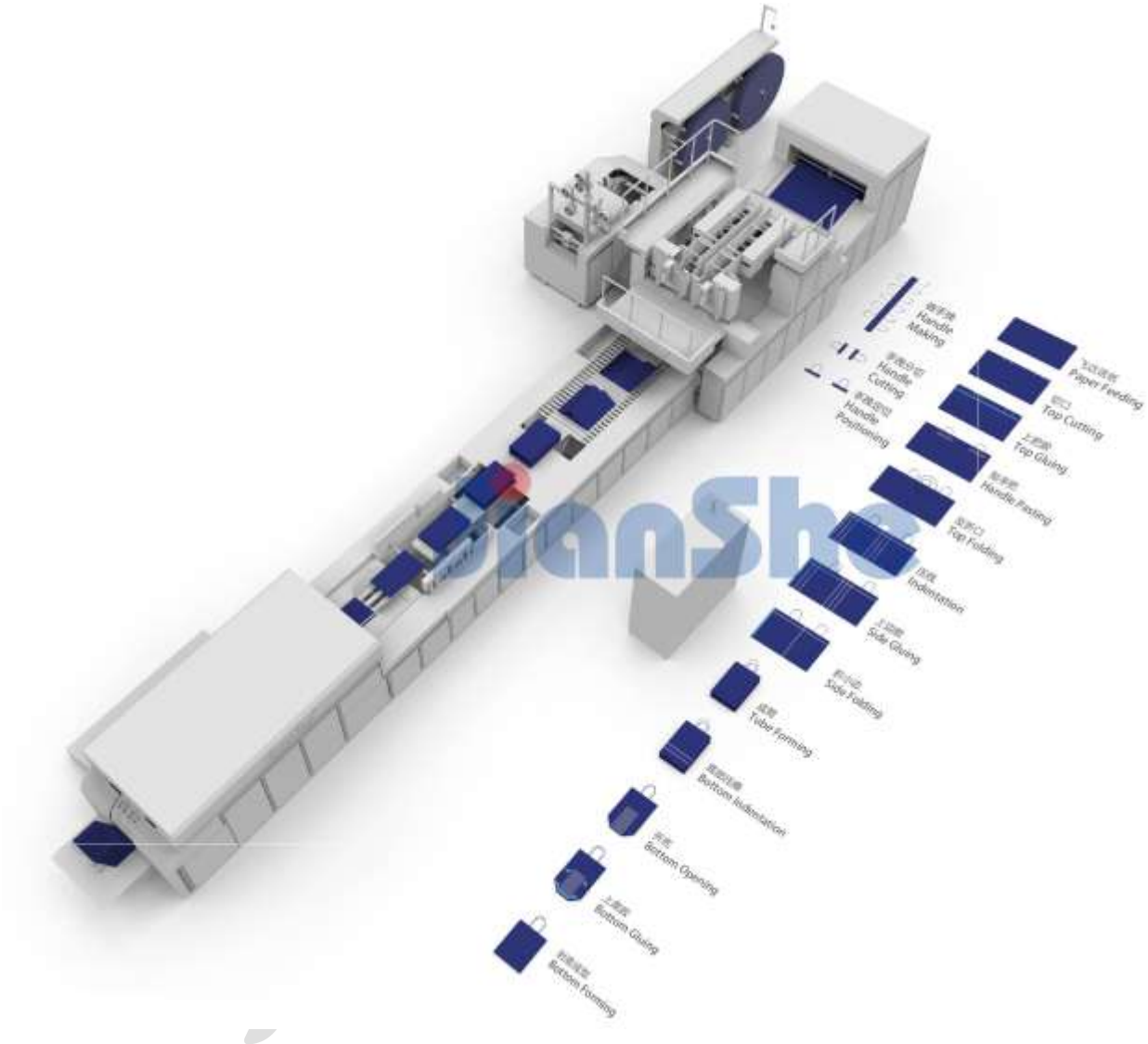
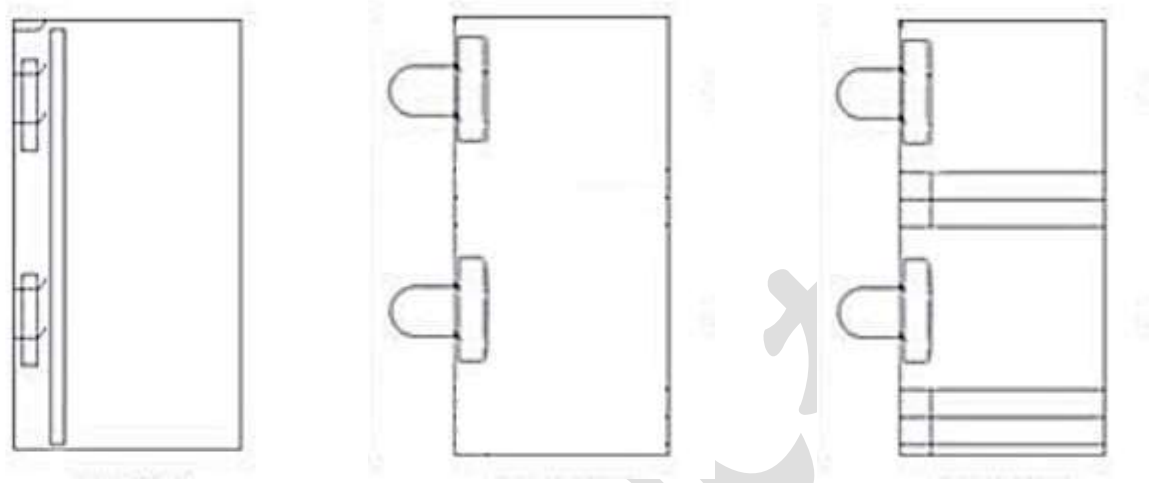


Figure 10. Top-folded Paper Handbag Forming Process

3.2. Full Forming Process of Common Paper Handbag

① Top Gluing ② Handle Application ③ Side Creasing & Gluing



④ Tube Forming ⑤ Bottom Opening ⑥ Bottom Gluing ⑦ Bottom Sealing

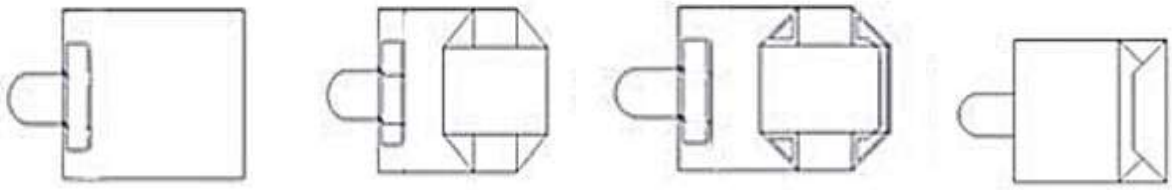


Figure 11. Common Paper Handbag Forming Process

3.3. Full Forming Process of Top-folded and Top-punched Paper Handbag

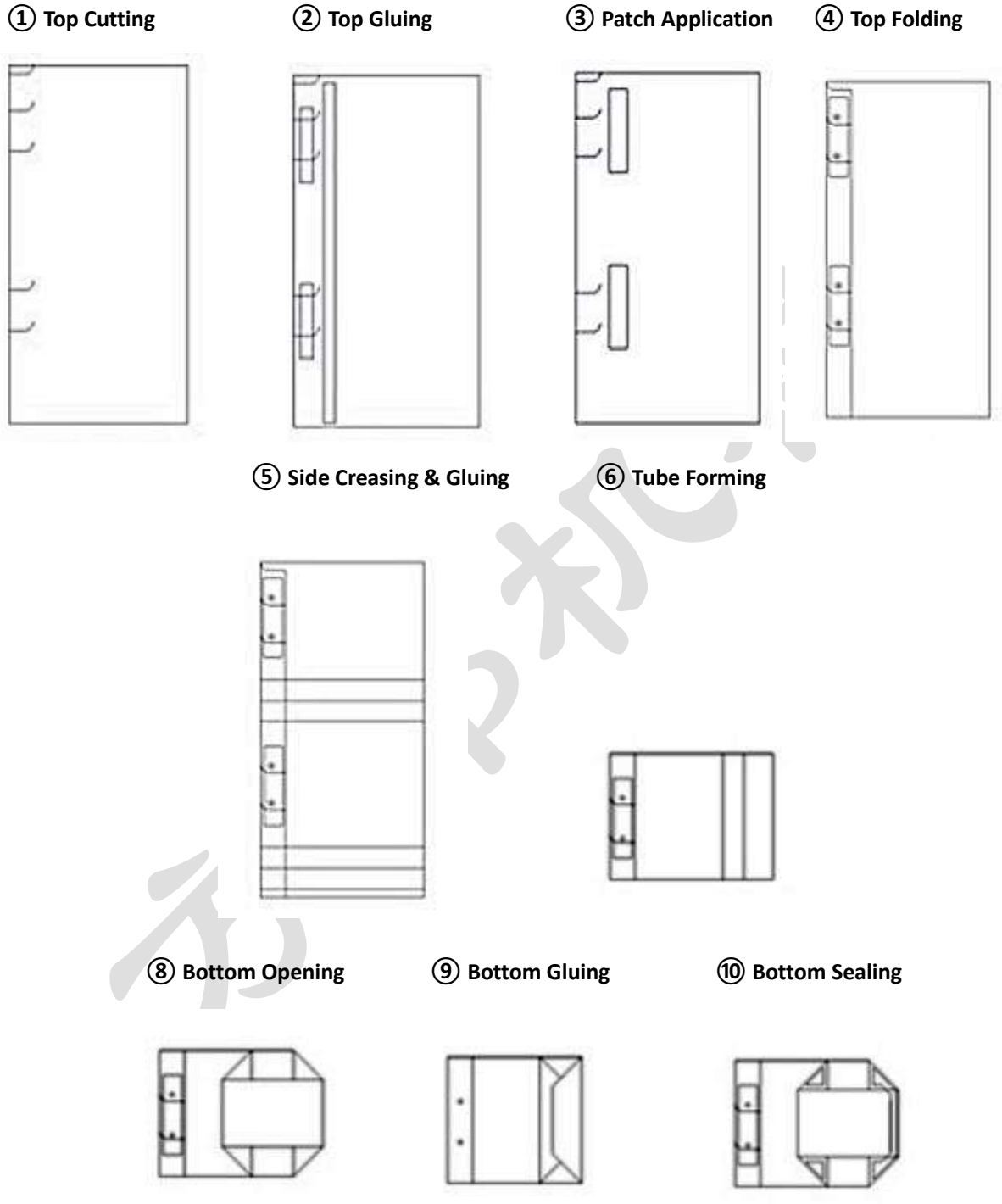
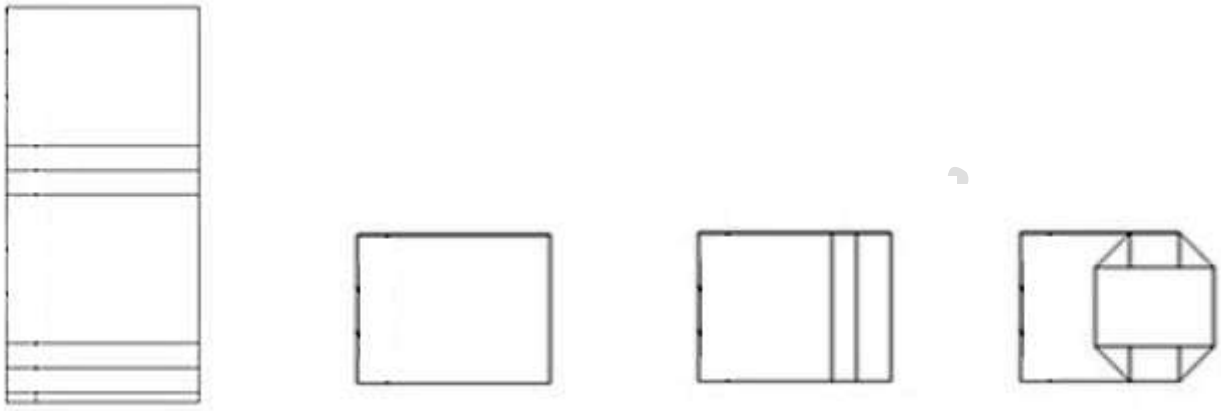


Figure 12. Top-folded and Top-punched Paper Handbag Forming Process

3.4. Forming Process of Paper Bag without Handles

① Side Creasing & Gluing ② Tube Forming ③ Bottom Creasing ④Bottom Opening



⑤ Bottom Gluing ⑥ Bottom Sealing

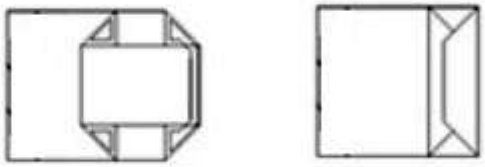


Figure 13. Paper Bag Forming Process

3.5. Forming Process of Paper Handle

① Handle Forming ② Handle Cutting ③ Handle Application

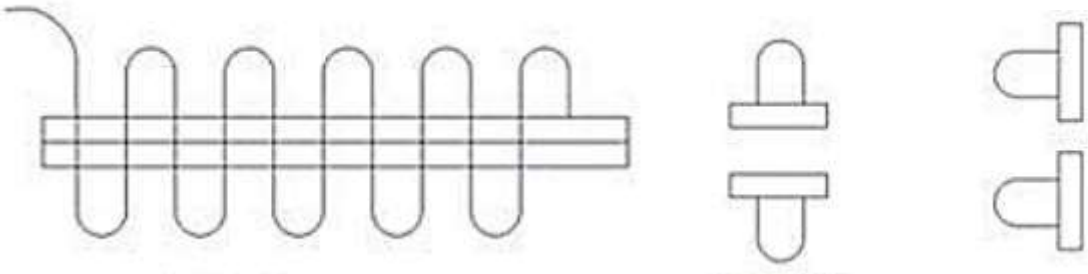


Figure 14. Paper Handle Forming Process

3.6. Forming Process of Paper Patch

① Raw Paper Feeding ②Patch Cutting ③ Patch Application

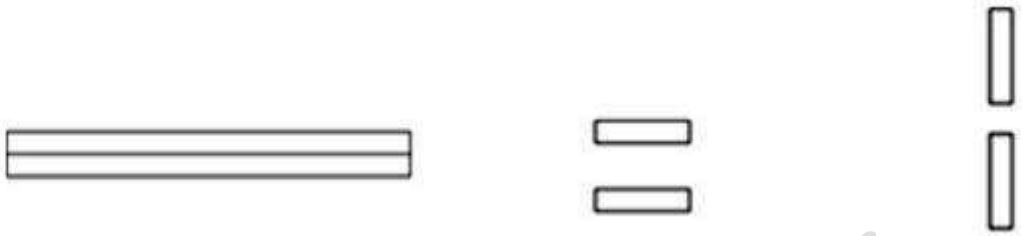


Figure 15. Paper Patch Forming Process

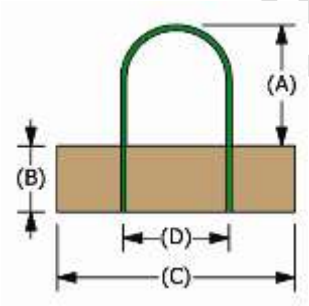
4. Specification

4.1. Infeed Section

1) Separate sheet paper feeder is adopted for feeding sheet paper automatically.
2) The sheet paper alignment can be adjusted manually in the lateral pattern.

4.2. Handle Making Section

1) Two unwinding rollstands for up/down paper strips are controlled separately by EPC control systems.
2) Hot melt glue device for pasting paper strings onto up/down paper strips.
3) Pneumatic-controlled impressing rollers, ensure the pasting strength between paper strings and paper strips.
4) Perforating paper strip after pasting, ensures the accuracy of conveying and cutting bag handles.
5) Handle length is adjustable according to bag size.
6) This section can be introduced as a separate handle making machine if disengaged from main machine (equipped with separate motor for driving).
7) Handle size:



Paper Handle Size Range	
A： Handle Length	120~135 mm
B： Patch Width	40 mm
C： Patch Length	188.5 mm
D： Handle Width	95 mm

4.3. Handle Application Section

1) This section is driven by main motor, to precisely ensure the synchronization between it and other sections.

2) Adopt floating compensation device for conveying handles, to avoid accumulated errors of paper handle length.
3) Positioning wheels are used for handle positioning, so as to ensure the same cutting position of paper handles.
4) Pasting the handles onto paper is driven by main motor with automatic glue stirring function when machine stops.
5) Positions of U-shape cutting and side cutting of bag mouth can be adjusted left-right and forward-backward.
6) Bag mouth folding function, makes bags solid and artistic.
7) Claw-shape paper carrying method is adopted for paper feeding and handle conveying.
8) Waste handles conveying and collection device, which ensures easy operation.

4.4. Creasing Section

1) Separate material in-feed and creasing frame is adopted in this section.
2) Two sets of in-feed nip rollers, each one consists of one steel roller and one rubber roller in a roll-to-toll pattern, and can adjust its impressing force by spring.
3) Disk-type creasing device (both of the up and down parts are adjustable) can be adjusted for making various bags with different widths.
4) Side glue application adopts hot melt glue spray pattern.

4.5. Tube Forming Section

1) The process of making sheet paper into tube is supported by groups of rollers and conveyer belts, whose speed can be adjusted separately.
2) The paper tube is transferred for side creasing by vacuum belt conveying system and impressing wheels.
3) Forming mould and groups of adjustable multi-discs are used for side tucking; the width of the forming mould is consistent with that of the paper tube.
4) During side creasing the transmission is made by groups of rollers and conveyer belts, whose driving force is provided by main motor.

5) Finally the paper tube after side creasing is transferred through a track with width adjustable in chain-pulling pattern, so that it can be positioned precisely and suitable for bottom forming.

4.6. Bottom Forming Section

1) The whole machine is mainly controlled by inverter-fed motor.
2) Adjustable bottom creasing device is used to adjust the bag bottom size.
3) Only one creasing line on bag bottom; no creasing line on the bag surface.
4) Drum grippers, center grippers and sucker work simultaneously for bottom opening; copper guide plate used to drive the bottom to be flat.
5) Multi-layers bottom forming drum, center grippers, second tuck clamps, and drum grippers are adjustable for ease of changeover.
6) Automatic Disengaging Function: bottom gluing is prevented for empty feeding to avoid contamination to the surface of the drum.
7) The clutch function in bottom gluing part is managed by pneumatic control.

4.7. Bag Collection Section

1) Finished Paper bags are collected at workbench, which is easy for operations.
2) Bag collection adopts vertical structure and is driven by main motor.
3) Automatic counting.

4.8. Control Section

1) Separate sheet paper feeder is adopted for feeding sheet paper automatically. The sheet paper alignment can be made manually in the lateral pattern.
2) Introduce in-touch screen human-machine interface, easy for correction and fine adjustment. Alarm and working status can be displayed on scree in realtime, easy for operation and maintenance.
3) Original German SIEMENS electric system, ensure better stability and reliability; perfect after-sale service for customer.

Figure 16. Components Related To Control Section

4.9. Other Specifications

1) Ball bearings from NSK.
2) Pneumatic components from Airtag.
3) Low voltage electrical components from CHINT.
4) Tool Kit (1 set).

5. Others

5.1. Working Condition

Parameters	
Power	3 phases, 380V±10%, 50 Hz
Compressed Air	pressure: 0.6 MPa volume: approx. 0.5 m^3/h oil and humidity: ≯8 mg/m^3
Installation Height	Max. altitude: 1500 m
Ambient Requirement	relative moisture: Max. 65% when 40 ℃ temperature range: 10~40 ℃

Note: due to the availability of imported components and special requirements of customized machines, with the precondition that the machine performance is not influenced, the machine specification may be changed without notice in advance.