

The working principle and classification of automatic self-adhesive labeling machine

Detail Introduction :

The automatic self-adhesive labeling machine is a device that sticks rolls of self-adhesive paper labels or other suitable materials on PCBs, products or specified packaging.

An automatic self-adhesive labeler is widely used in the labeling of product packaging containers and boxes in various industries such as electronics, furniture, beverages, daily chemicals, food, medicine, and petrochemicals.

With the development of all walks of life, more and more enterprises tend to be automated, intelligent equipment, reduce labor costs, improve efficiency and other needs, and the types of automatic labeling machines are also increasing.

Manual and semi-automatic labeling is gradually replaced by automatic high-speed labeling machines, occupying the market.

1. Components of the automatic labeling machine

In addition to the barcode printing equipment, the self-adhesive labeling machine is responsible for providing labels and recycling backing paper to complete the labeling action, which is the core component of the labeling machine.

The automatic self-adhesive labeling machine is mainly composed of 1. Unwinding disc 4. Driving roller 2. Unwinding buffer 5. Pressing roller 3. Peeling plate 6. Backing paper recovery buffer.

The picture below is a top surface real-time printing and labeling machine.



2. Working principle of the labeling machine

The work process begins with the case feeding the fully automatic labeling machine on a conveyor belt at a constant speed. The mechanical fixing device separates the boxes by a fixed distance and pushes the boxes forward in the direction of the conveyor. The mechanical system of the labeling machine includes a drive wheel, a labeling wheel, and a reel. The drive wheel intermittently drags the label tape to move, the label tape is pulled out from the reel, and at the same time passes the labeling wheel. The labeling wheel will press the label tape on the box. An open-loop displacement control is

used on the reel to maintain the tension of the label tape. Because the labels are closely connected to each other on the label tape, the label tape must be constantly started and stopped.

The label is applied to the case with the applicator wheel moving at the same speed as the case.

When the conveyor belt reaches a certain position, the label belt drive wheel will accelerate to a speed matching the conveyor belt, and after the label is attached, it will decelerate to a stop.

Since the label tape may slip, it has a registration mark on it to ensure that each label is placed correctly. The registration mark is read by a sensor, and during the tape deceleration phase, the drive wheels are repositioned to correct any mispositioning on the tape.

3. Classification of labeling machines

Due to the different types of labeling objects and the material and shape of the labels themselves, the labeling requirements are also different. Therefore, in order to meet the labeling needs under different conditions, there are different types and varieties of labeling machines.

1. According to the type of product: linear labeling machine and rotary labeling machine.

2. According to the degree of automation: fully automatic labeling machines, semi-automatic and manual labeling machines

3. According to the realization of different labeling functions: plane labeling machine, side labeling machine and circular labeling machine.

4. According to the running direction of the container: vertical labeling machine and horizontal labeling machine.

5. According to the characteristics of the labeling process: pressing labeling machine, rolling and pressing labeling machine, rubbing and rolling labeling machine, brushing type labeling machine.

6. According to different adhesive coating methods: self-adhesive labeling machine, glue labeling machine (paste labeling machine, cold glue labeling machine) and hot melt adhesive labeling machine.

7. According to the type of label: sheet label labeling machine, roll label labeling machine, thermal adhesive label labeling machine and pressure sensitive labeling machine and shrinkable cylindrical label labeling machine;

8. According to the length of the label: single-sided labeling machine, double-sided labeling machine, three-sided labeling machine and multi-sided labeling machine.

Let's talk about the scope of application of the labeling machine according to the classification of different labeling functions.

1). The plane labeling machine is to realize the labeling and filming on the upper plane and the upper curved surface of the products, such as boxes, books, plastic shells, etc. There are two methods of rolling and sucking. The selection is mainly based on efficiency, accuracy and air bubble requirements.

2). The round bottle labeling machine realizes labeling or filming on the circumferential surface of cylindrical and conical products, such as glass bottles, plastic bottles, etc. There are mainly two methods of vertical labeling and horizontal labeling.

3). The side labeling machine realizes labeling or filming on the side plane and side arc surface of the products, such as cosmetic flat bottles, square boxes, etc. It can be equipped with round bottle labeling equipment and realize round bottle labeling at the same time.