

## *GD-150A Cosmetic Tube Filling Sealing Machine*



GD-150A tube filling and sealing machine is a new filling equipment which is independently developed, designed and manufactured by our company, based on leading filling and sealing machine models and combined with practical tube production conditions. The machine is wholly closed in stainless steel and is suitable to fill and seal aluminum tubes of variable specifications. Its max. speed can reach 150 tubes per minute and actual normal speed reaches 120 to 150 tubes per minute. Its filling error is equal to more or less than 1%. The sealing type for aluminum tubes is hot air pressing, for plastic tube is heating sealing pressing.

### **Introduction**

GD-150A is a full automatic double-station tube filling and sealing machine. Adopting advanced turntable double-servo drive technology and combining actual production conditions, the main drive system is unique. The cam is a forged from steel, which assures durability; adopting the advanced synchronous belt to convey tube holder. The whole machine adopts motion control mode communication programming and touch screen operation. With new technologies such as cam and pneumatic components to control mechanical action, ensuring safe, stable and reliable operation of the machine at high speeds, and making filling more accurate.

In order to meet GMP requirements, it adopts the wearable sliding bearing above the working table, which is lubrication-free, thereby reducing pollution. In order to guarantee high-speed operation, a synchronous belt is used. The whole machine is advanced both in configuration and allocation. It is equipped with failure indication and alarm signaling system. The machine owning such characteristics eases operation, maintenance and cleanups. Moreover, it can be used alone,

or linked with fully automatic cartoning machine, fully automatic overwrapping machine to form a production line.

## Features

- 1) Host machine composition: aluminum tube feeding system, tube eye mark tracking mechanism, filling mechanism, automatic loading capacity adjusting device, lifting mechanism at filling, no tube no filling system, optional two-layer heat preservation hopper, sealing mechanism, tube discharging device, main transmission system, electric control system, and a set of mold (the underlined is the optional, and the mold specification depends on the buyers).
- 2) Filling and sealing procedure: aluminum tubes feeding into the holding cup by the turret --> stainless steel piston pump filling --> tube rolling, folding, embossing and sealing --> tube discharging.
- 3) Aluminum tube feeding system: manually feeding into the tube bin. The tube bin has a large capacity. For example, it can be loaded with more than 1500 tubes whose capacity is 20g. Driven by the servo, tubes are fed smoothly. The negative-pressure system enables the tubes to rightly drop into the tube holders. Shank switch can control whether aluminum tubes drops when the machine runs.
- 4) Filling mechanism: plunger valve structure.
- 5) Filling head: combination of blow-off and cut-off (to prevent leakage and wire drawing).
- 6) Filling range: aluminum tube, 3-250g.
- 7) Filling error:  $\pm 1\%$  (as 20g filling volume as an example).
- 8) No tube no filling: two sets of separate no-tube-no-filling devices to provide double assurance.
- 9) In order to solve the problem of air bubble and splash at filling, the filling heads can be declined to reach the proper position at bottom of aluminum tubes. The filling heads lift slowly and tubes are filled until filling finishes. Then they pause for a while. In this case, the filling nozzles are blown-off and cut-off to become clean. Finally the tubes rise and are conveyed to the next process. The filling head and nozzles are combined with a quick changeover joint to guarantee no ointment residue and easy disassembling and cleaning.
- 10) Sealing mechanism: cam connecting rod.
- 11) Main pneumatic components: adopts full set of SIEMENS electric system to ensure the stability of the whole system; and adopts AIRTAC pneumatic products and BANNER sensors.
- 12) Protective device:
  - Main motor overload protection.
  - Manual operation and automatic operation switch protection device.
  - Lower-pressure protection switch.
  - Emergency switch: manually pushed to make the machine stop in emergent case.

## Technical specifications

| Configuration Standard       | Technical Specification                               |
|------------------------------|---|
| <b>Infrastructure</b>        |   |
| Machine landing area         | About 4m <sup>2</sup>                                 |
| Working area                 | About 20m <sup>2</sup>                                |
| Chiller landing area         | About 1m <sup>2</sup>                                 |
| Coverage area                | About 4m <sup>2</sup>                                 |
| Machine dimension (L*W*H)    | 2350 (excluding 200mm of discharge port) *1300*2200mm |
| Integrated Structure         | Union mode  |
| Weight                       | 2400Kg  |
| <b>Machine case</b>          |   |
| Machine case material        | SUS304  |
| Opening type of safety guard | Handle door   |

|                                |                   |
|--------------------------------|-------------------|
| Safety guard material          | Plexiglass        |
| Frame below working table      | Stainless steel   |
| Machine case shape             | Square-shape      |
| <b>Power</b>                   |                   |
| Power supply                   | 50Hz/380V, 3P     |
| Main motor                     | 1.0KW             |
| Air heater                     | 3.0KW             |
| Jacketed hopper heating power  | 2.0KW*2           |
| Jacketed barrel stirring power | 0.18KW*2          |
| <b>Production capacity</b>     |                   |
| Operation speed                | 120-150 tubes/min |
| Filling range                  | 3-250g            |
| Suitable tube length           | 50-210mm          |
| Suitable tube diameter         | 13-50mm           |