

DG-3000E

(AIR-COOLED SYSTEM TYPE)

INDUCTION CAP SEALING MACHINE

OPERATION MANUAL

DG-3000E Automatic Induction Cap Sealer



I Summary

Compound material induction of sealing technology is world-widely regarded as an advanced way of sealing on packing. It is Increasingly adopted to seal and pack products in high quality, such as: medicines, foods, cosmetics, pesticides, chemical products and other bottled products. Continuum aluminum foil sealers of model DG-1500B are introduced updated technology of induction and heat control from Taiwan. We also adopt advanced high power mosfet module, technology of high frequency switch power supply and PLL & digital technology. We have made great progress on mini-type, high stability and high effect.

II Theory

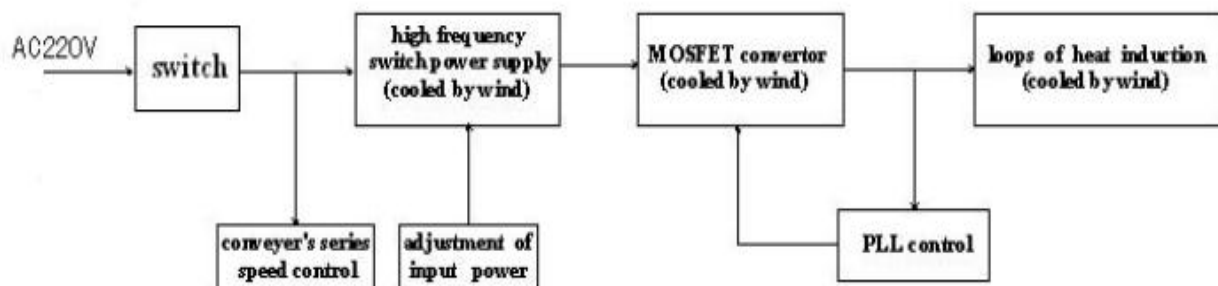


Figure 1

The working theory is based on the high frequency of magnetic field, which makes the foils engender immense whirlpool and be heated quickly. The agglutinate membranes under the foils are melted, which makes the foils conglutinated to the bottles' to achieve the goal of airproof sealing rapidly and untouchedly. The main power units are induction utensil of heating are placed above a big radiator. They are cooled forcedly by wind. The conveyer adopts stepless-speed adjustor.

III Main parameter:

1. Power supply: $\sim 220V \pm 10\%$, 50/60Hz
2. Current supply: static state $\leq 4A$, dynamic state $\leq 13.6A$
3. Output power: (adjustable), 3000Wmax
4. Output wave: sine wave, 60~80KHz
5. Rind protection grade: IP21
6. Reference Sealing speed: 150-200 bottles per minute
(Tested by polyethylene bottles. Closure dia. $\varnothing 34mm$, bottle body $\varnothing 40mm$).
7. Induction head's sealing diameters:
 - 7.1 Generation I type (Two Selecting Range)
20mm $\leq \varnothing \leq$ 80mm. (First selector: $\varnothing 20 - \varnothing 40mm$;
Second selector: $\varnothing 40 - \varnothing 80mm$) ;
 - 7.2 General II type: $\varnothing 70 mm - \varnothing 110mm$
 - 7.3 Custom Type : \varnothing mm - \varnothing mm

IV、Main Unit and Heating Sensor diagram:

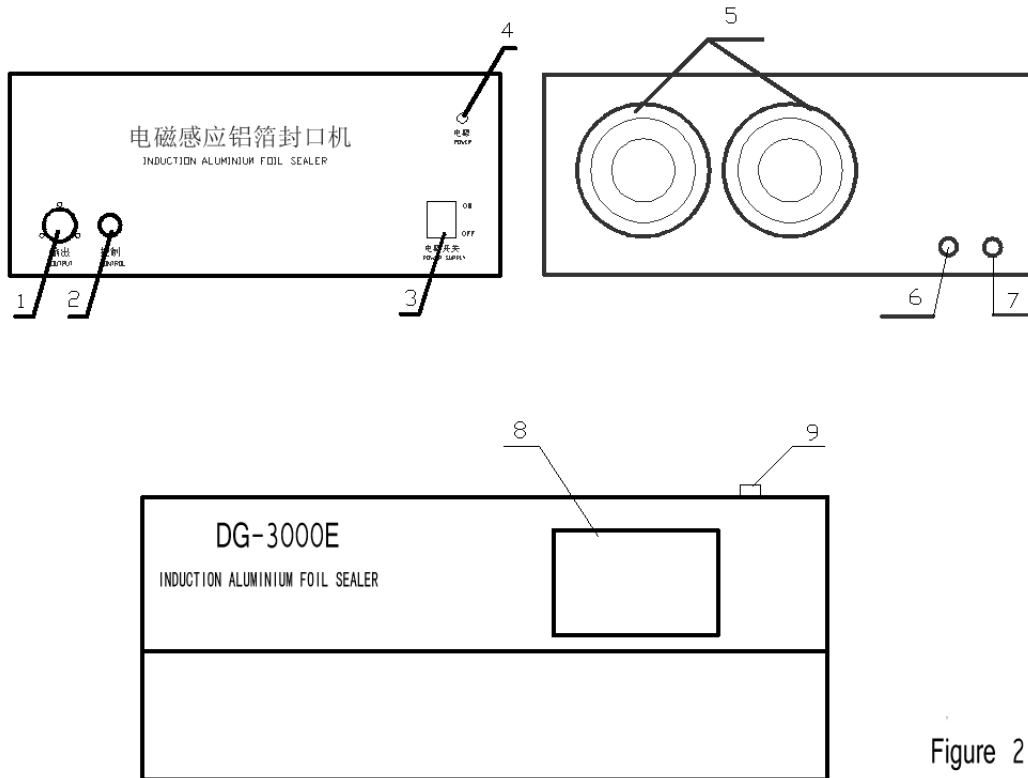


Figure 2

- 1: Power output:the connection socket of heating sensor.
- 2: Control line: the connection socket of control panel.
- 3: Power supply:Switch of power supply.
- 4:Power indicator: It's on when the power connected.
- 5: Draught fan:Host cooling fan.
- 6: Input power line:220V input power.
- 7: Fuse:Built-in power fuse 20A.
- 8: Control panel:Control equipment switch, adjust power and equipment information display.
- 9: Alarm indicator:the warning light flashes when the device is protected.

Control panel diagram

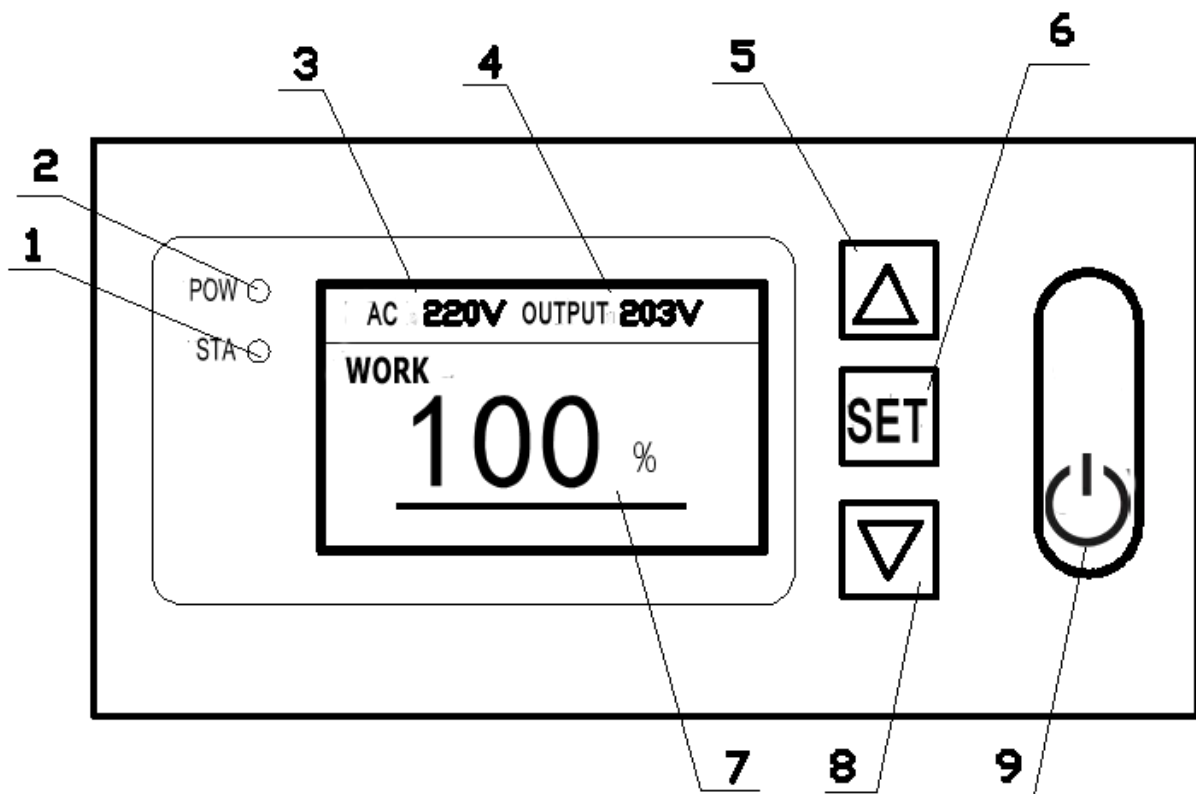


Figure 3

- 1: Status display light : yellow during standby, green during normal heating operation, Red when protection report.
- 2: Power indicator: The power indicator of the induction sealing machine. When the power is on, this indicator is on.
- 3: AC: display current input voltage.
- 4: Output: Display current output voltage.
- 5: Power increase key: increase the output power. Short press increase 1%, long press increase 5%.
- 6: Set: Used for maintenance and debugging.
- 7: Percent output power: Displays the current output power percentage.
- 8: Power reduction key: Set the power reduction. Short press to reduce 1%, long press to decrease 5%.
- 9: Heating switch key: heating switch composite key. One press once, the machine start heating, then press once again, the machine stop heating..

Protection alarms are divided into the following states:

E01:When the input voltage is less than 180V, undervoltage protection will be provided.

E03:Overheating.When the temperature of the heat sink in the host chassis is higher than 70 degrees, it will be overheated. When the device is started to heat up, the temperature of the heat sink higher than 60 degrees will also be overheated. Please wait until the temperature drops before restarting the heating.

E04:The larger the bottle diameter is, the larger the working current is. The closer the bottle aluminum foil is to the underside of the inductor, the greater the operating current. When the peak current is greater than 12A, it will be overloaded. The sensor should be raised appropriately.

E05:The sensor cable is not connected.

E06:In-host field effect transistor module over-current protection or other error.

V Heating sensor and bottle heating diagram:

When the bottles pass through (in and out) the bottom of the heating sensor, the centerline of the bottle is required to align with the center of the sensor, as shown in Figure 3

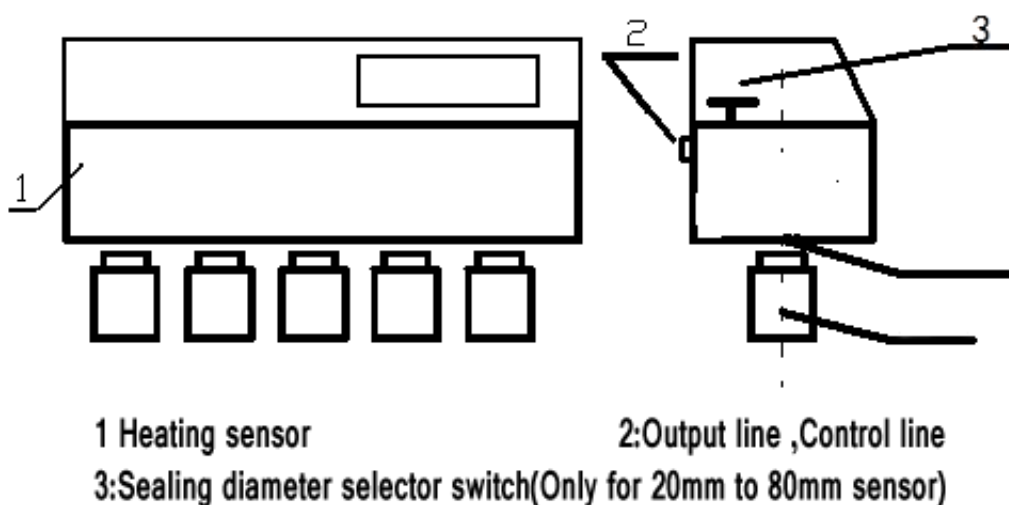
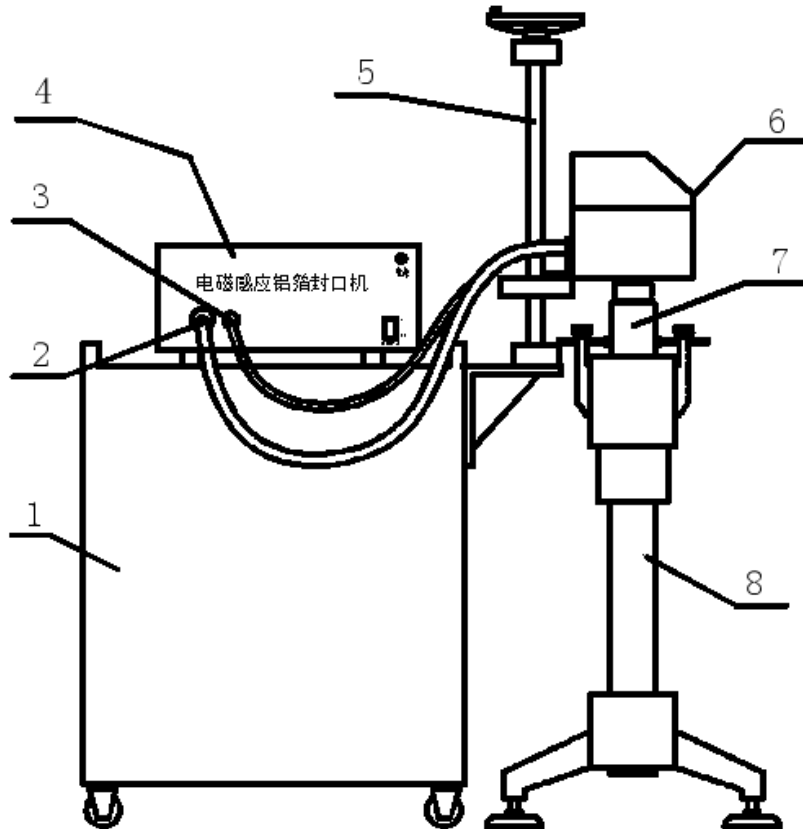


Figure 4

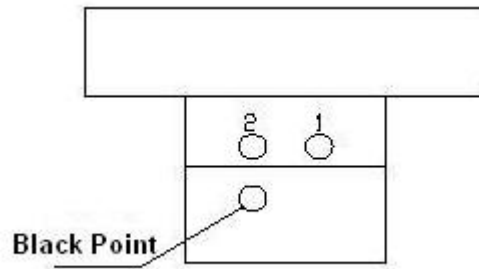
VI Notices for installation and usage:



1:Support cart 2:Output Line 3:Contral Line 4:Main Unit
5: lifting Frame 6:Heating Sensor 7:Bottles 8:Conveyor

Figure 5

1. Acreages of loops both of power supply wire and of ground connection wire are $\geq 1.5\text{mm}^2$. It must add an AC automatic manostat if the voltage power supply is unstable and affects the machine's formal working.
2. The machine must be reposefully installed in a dry, clean, no dust, nor corrosive gas, ventilation environment and far away from radiations and heat sources.



3. Tap selector switch (General I type get this function):

take a instance: If the operator would like to setup \varnothing 20- \varnothing 40mm, please twist the point "1" aim to the black point until head "Da" sound, that's ok; If setup \varnothing 40- \varnothing 80mm, please twist the point "2" aim to the black point until head "Da" sound.

4. Adjusting the induction head's height according to different containers' heights. The gap between the induction head and closure should less than 2.5mm (Sealing diameter \varnothing 20- \varnothing 40mm), in general, sealing effect is more higher following gap be shorter.

When the sealing diameter larger than 40mm, please turn to the large selector switch, and decrease the output voltage properly or distance the gap between closure and induction head to be higher (at least 4mm), in order to improve the sealing effect and equipment's load safe characteristic.

5. Operation steps in detail: The lights of work and power will be on if the switch of power supply is pointing to "on", which means the power supply and circuitry are normal; the heating switch is pointing to "on", which means the main system is on the state of heating. After setting up the voltage adjustor then adjust the speed of the conveyer according to necessity.

Screw on the closure with induction seals inside and put the bottles on the conveyer, then adjust the guide baffle to keep the bottles' center line is consistent to the heating head's. The bottles in the conveyer will be sealed automatically after they pass through the heating head. It is better to have an operation test to achieve the best working state, finding out the best operation parameter and recording it. Finished the adjustment, the machine can't be changed by layman by mistake during the normal working state.

6. The main machine and induction head will generate heat when on working, so it should remain the entrance of wind to be

clean and free flowing.

7.The dustband at the right side of main body of the sealer must be cleaned periodically (Screw off the four tapping screws, we recommendation every two months. It's also basing on the circumstances around the machine).

8.The induction head to be power output part of the induction sealer which is setup to meeting with inside circuit, accordingly, please do not disassembly by curiously, otherwise, it might affect the work power output efficiency, even burnt the electric elements inside.

9.The inductor coil will generate large amount of current on working, which is forbid the operator the separate the induction head with main machine. Otherwise, the electric elements are easily burnt to damage the sealer.

10. Do not seal the bottles with materials which easily to be fired or bombed!

PS: There may be some changes to the machine structure and parameters ,based on the standard of material object. It's prohibitive to change the machine parts without the permission of the manufacture, or you will be fully responsible for any resulting consequences.