

Automatic Seed Counter

SLY-C

www.hinotek.com

USER MANUAL

I. Introduction

Automatic Tablet Counter can automatic count many kinds of grains by setting number. In agriculture it is mainly used in grain count, exp. Rice, wheat, Sorghum, corn, vegetables seed and so on. When it reaches to the setting number, the instrument stops work. This instrument is widely used in institute of Agricultural Sciences, the agriculture universities, colleges and institutes; the seed system in the grain department inspects the seed target.

II. Work principle

The instrument is controlled by the microcomputer chip, Matches by membrane pressed key operation.

1. Electromagnetic vibration install: The seed puts on the sample plate, which its groove is in helix.
2. Sampler moves along the helix and fall into the hole, where there is a photoelectric to count each sample and.
3. The circuit of Count, display is controlled by AT89S52 with time-sharing scanning method; counting signal enters into AT89S52 through external interrupt. The AT89S52 control numerical code tube position chooses signal 74LS138 to carry on the position to the digital tube to elect, AT89S52 chang to read signal TXD put to 74LS164, then move to LED display. So we can read number on the LED display screen.
4. Pre-set stop action also controlled by AT89S52, when the counting number is the same as pre-set number, the vibration stops, AT89S52 External interrupt, and counting stops, finally LED show the pre-set number.
5. Pre-value and Electric circuit inspection: press **SET** button, by pressing “up, down, left, right” buttons (“up, down” for adding and reducing number. “left, right” for setting number the displacement in position) to set counting number needed. Press **SET** again, the digital tube show 00000. Press **Read** to check the pre-set number.

III. Instrument structure



- | | | | |
|---------------------------------|-----------------|---|-----------------|
| 1. Tight button | 2. sample plate | 3. sample chute | 4. LED display |
| 5. Up, down, left, right button | 6. Set button | 7. Read button | |
| 8. Power indicator | 9. Revise I | 10. Revise II | 11. Zero button |
| 12. Count button | 13. speed set | 14. Adjustable Screw (seed passageway can be adjusted according to seed's size) | |

IV. Operation instruction

1. **Sample plate:** Install the Sample Plate first, then according to the size of the seed, Rotated Adjustable Screw to a suitable seed passageway. At last, put the seed into the Sample Plate.
2. **SET:** Switch on the meter by open the power switch on the back of meter, LED display "00000", press **SET** button and set the counter number by press "up, down" add and reduce number; and "left, right" to shift position. And then press **Read** button for checking whether the number is same with your setting.
3. **Revise:** In order to confirm the accuracy.
 - a) Press **Revise I**, Automatic correct in low frequency;
 - b) Press **Revise II**, Automatic correct in high frequency.For example, number set as 1000, press "Revise I" or "Revise II", let the display number up to set number 1000, if meter stop automatically, it means work normally; otherwise, it means work abnormal.

4. **Zero:** when the LED displays any number, press “**ZERO**” button to clear.
5. **Count:** press “**Count**” button to start to work.
6. **Speed Set:** Speed up or down to adjust an appropriate counting speed. 1 is the slowest speed, 7 is the fastest.

Instrument whole operation: Install the instrument; put the sample into the sample plate; put a container in the exit; set the count number; press “**Count**” button, during the meter counting, user is able to speed up or down according to current situation; when count number to the set number, the instrument stop work automatically. Press “**Zero**” button for next counting.

V. Attentions

1. Count sample: before counting, please remove impurities, in case counting not accuracy.
2. Adjustable Screw to suitable seed passageway: for different size of seeds or particle, the passageway should be adjusted accordingly. The best width of passageway is all particles can be moved in a line.
3. Do not put too much sample in plate once.
4. While the work voltage changes, the speed should be adjusted accordingly.
5. If the machine does not work normally, or the pressed key does not work, please restart.

VI. Instrument maintenance

1. LED display do not bright: check the plug, the electric wire, the switch and the fuse.
2. Revise pre-set normal, but count number abnormal, please replace the light bulb besides the sampling chute.
3. Sample plate moves slowly, and loudly: Adjusts a corn below vibration and ensure the electro-magnet gap in 0.5mm
4. Sampling chute clogged and the machine do not counting: 1) particle too big or long. 2) take out the hasp inside chute.

VII. Technical specification

- ✧ Count range: Small sample: 0.7~4 mm×0.7~12mm
Big sample: 3~10×3~12 mm
 - ✧ Count accuracy: Big sample 2/1000(Depend on speed)
Small sample: 4/1000(Depend on speed)
 - ✧ Count speed: ≥1000 /3min (this Parameter is calculated in accordance to the speed of Gear 2. If you want it faster, you can change the gear to Gear 3-7)
 - ✧ Count number range: 1~99999 LED display read direct.
 - ✧ Pre-set stop:1~99999 every number,00000 not count
 - ✧ Revise frequency: f=1~2Hz, f=10~20Hz
 - ✧ Size: 196×254×150mm
 - ✧ Power: 220V, 50HZ
 - ✧ Working time: ≥5 Hours
10. Work environment: Atmospheric pressure: 750 ± 30 mm Hg
Environment temperature: 0 °C~40 °C
Relative humidity: <80% when 20 °C
11. Fuse: φ5×20, 1A /250V

VIII. Packing list

Name	Quantity
Host	1
Counting Plate	1
Power line	1
Knob	1
12V, 0.04A light bulb	1
φ5×20, 250V,1A fuse	2
Instruction	1