

**BJ-2003A Position Controller**  
(Single Stepper -EB)

**Manual**

**Wuxi bokin auto control Tech.Co.Lmt.**

**Jiangsu Province,CHINA**

<http://www.bjzdkz.com>

This product pass ISO9001:2016 quality system authentication

Summarize:

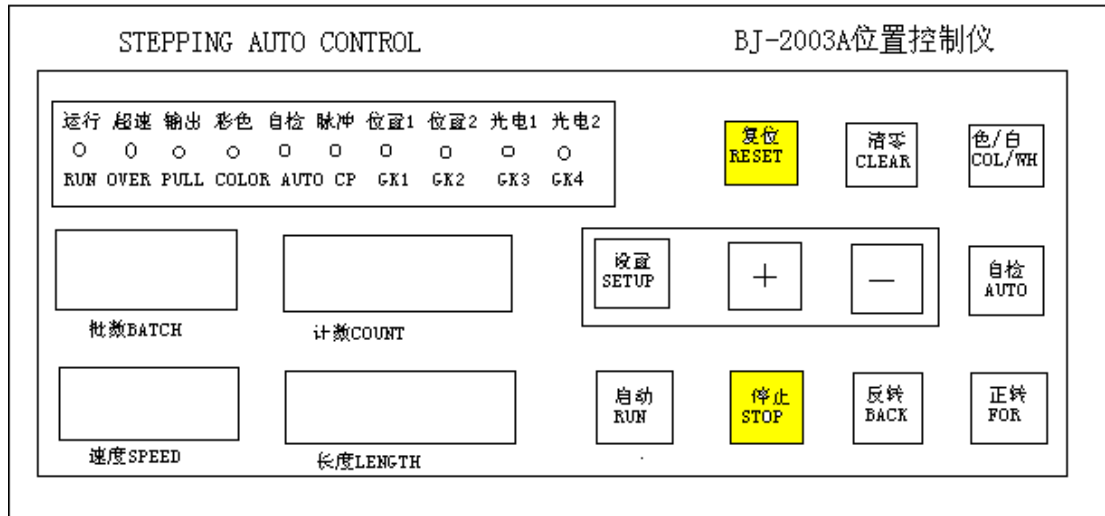
WUXI BOKIN Co. specialty be engaged in computer's technology and industry automation technology and product's research,design,make and sale. Use company engineer's advanced technique and rich experience in printing,cut bag machine,medical, etc,We provide advanced automation control system for this machine manufacture.

BJ-2003A position control system, it's main specialty is absort similar system's advantage,go by integration design,it's function is full,high performance,high reliability,easy to install and maintain, etc. Now this product is used by every manufactures, and received user's trust and good reputation.

ONE. Main technique index

- 1 Power supply:220V(AC) $\pm 10\%$ ; 50Hz/60Hz; 1A。
- 2 Suit range:single,duplicate membrane bottom seal,warm and cordial bottom seal,full-automatic(include stand,zipper bag etc.) and other fixed length positon control equipment(medical pack etc.)
- 3 Roller diameter:00.0~149.9mm
- 4 Fixed Length:0000~9999mm
- 5 Speed: 0~300 part/min.
- 6 Whole count: 000~9999
- 7 Group count: 0000~999
- 8 Ountline dimensions: 260mm(wide)\*130mm(high)  
\*150mm(deep).
- 9 weight: 3.5kg

## Two. control system panel



## Three. Operate

**System is realtime control,After parameter setting u,execute immediately, don't need press Reset key.**

- 1 Open power supply, system is power on state.
- 2 press "Setup"key, up-down loop move setting parameter,items is:
  - 2.1 L Length setting, 4 digit display,mm.
  - 2.2 n Integer preset, 4 digit display, PCS. (default:100)
  - 2.3 S High speed limit for Stepper motor, 2 digit display,0~99. (0=100%,1—99%)。
  - 2.4 H Color photoelectricity detection's valid range,when make printing products use. If track to L+H value, color code not found,system acquiesce in this end product,and alarm,continuous 3 times for this case, stop machine.
 

Handred of H=0: color code track is GK3 Led bright regard as color code.

Handred of H=1: color code track is GK3 Led black regard as color code.
  - 2.5 F password, 4 digit show. Below project is submenu,exact input password (21), these parameter will show, otherwise no show.
    - 2.5.1 d pull roller diameter, 3 digit show, 00.0~149.9mm。
    - 2.5.2 卜 whole Integer pull time preset, 0~9: 1--10s。
    - 2.5.3 b: machine type,0--13

- 2.5.3.1 when  $b=0$ , count to “n” value, pull relay (JD2) will switch on “D”-Position, at “B” position recover.
  - 2.5.3.2.1 when  $b=1$ , count to “n”, next cycle “A” position, motor back 10mm, “B” position PULL relay (JD2) on, “C” position restore(next time, motor will pull  $L+10\text{mm}$ ).
  - 2.5.3.3 when  $b=2$ , count to n, next cycle “A” position pause 1 times, “B” position stop main engine, meanwhile pull relay switch on(JD2), delay  $t+1$ second, recover, meanwhile main relay auto start work.
  - 2.5.3.4 when  $b=3$ , count to n, main relay stop, not auto start.(link roll up machine)
  - 2.5.3.5 when  $b=10—13$ , function just as  $b=0—3$ , at every turn E-position back Length (para.”A”).
  - 2.5.4 E stepper motor curve.0~8。 Setting different value, motor speed is different, slow speed high tor. E value slow to fast is: 8,7,6,5,4,3,2,1,0。
  - 2.5.5 A back length setting, 2 digit show. 0~99pulse.[when  $b=10—13$  enable] (default:0)
  - 2.5.6 0. start freq. parameter:0—10. [default:0, if setting to 10, start frequency will higher.]
- 2.6 1. punching time(unit:10ms). 0-99. (output-pin:JD6).
  - 2.7 When operator finished setting parameter, system will auto save current parameter.
  - 3 + increment modifying value, press 1 time, inc 1.
  - 4 - decrease modifying value, press 1 time, dec 1.
  - 5 Run, start main engine.
  - 6 Stop, stop main engine at high-order position.
  - 7 Color/white “color” :making printing bag, need color photo-eye trace, “white” :making blank bag, fixed Length.
  - 8 Auto (check up): At “stop” state, press “→”(for.), system auto setting roll length value.
  - 9 clear press this key, clear the count to zero, when press long than 3 second, clear the batch to zero。
  - 10 reset system recover to initial state. Due to system is realtime control, advise not use this key.
  - 11 For(→), when initial adjust, slow roll bag forward.
  - 12 Back(←), when initial adjust, slow roll bag back.

## Four. Out-of-line connect wiring

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----

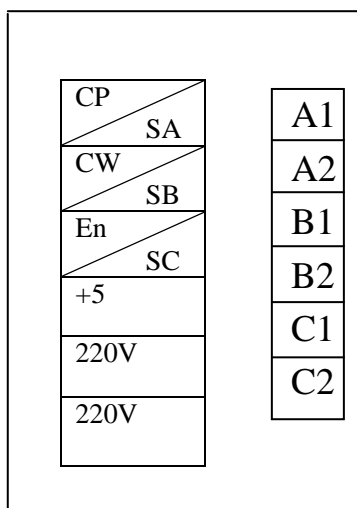
1

27

mark	function	mark	function
1、 2	Main relay open contact(JD1)	17	outer “ back ” ---open connector to 12GND
3、 4	AC220V power supply	18	outer “ for ” ---open connector to 12GND
5	+24V Groud	19	CCW driver direction signal (U/D)
6	+24V	20	Not use
7、 8	(12GND)	21	CP1 driver pulse signal (CP)
9、 10	+12V	22	KRUN outer”run” key,--open connector to “12GND”
11	FMQ alarm output (BUZZ)	23	Kstop out “stop” key,--open connector to 12GND
12	Punching output(JD6) time control	24	NOT USE
13	Punching output(JD5) pos. control	25	GK3 color code photo signal IN.
14	(JD4) up air control	26	GK2 logic sensor2(Hall-NPN)
15	(JD3) below air control	27	GK1 logic sensor1(Hall-NPN)
16	Pull output (JD2)		

### 1 Stepper motor driver linking

#### 1.1 Three phase reluctance driver BD-36N



CP/SA	CP1	A1	motorA+(pin1)
CW/SB	CCW	A2	motorA-(pin2)
En/SC	12GND	B1	motorB+(pin3)
+5	+12V	B2	motorB-(pin4)
220V	power	C1	motorC+(pin5)
220V	power	C2	motorC-(pin6)

## 1.2 Three phase compound motor driverBJ-B3C(HB-B3C)

Motor Driver	BJ-2003A PositionController Output
Pulse CP[DB9-1]-----	CP1[Pin:21]
Direction UD[DB9-3]-----	CW[pin:19]
Common sign COM[DB9-2]-----	+12V[pin:9 or 10]

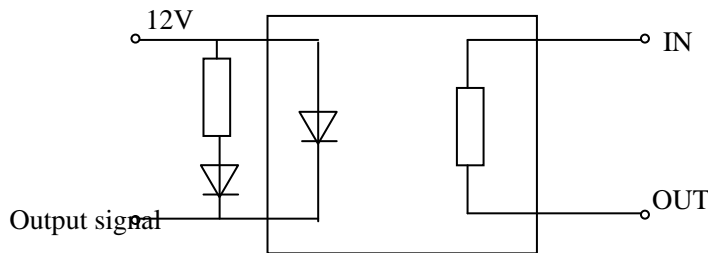
Motor A-----	pin1
B-----	3
C-----	5

[if motor's direction is not same as your demand, exchange A and B]

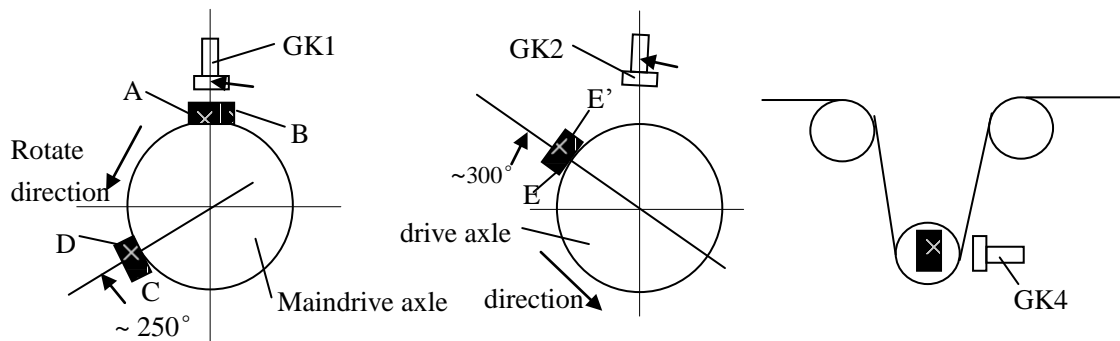
POWER AC220V AC1-----	AC220V/L
AC2-----	/N

Default setting: 600step/cycle (step angle  $0.6^\circ$ ), current 7A。(FOR 350A motor)

### SIX. Output signal wiring



### Seven. Logic Sensor(Hall Switch Sensor) relation graph.



A begin roll position (pic1)

B machine halt postion, this moment cut sword upward movement,nearby highest position,machine will halt and not damage bag by hot cut sword.(pic2)

C pull limit position,this moment cut sword downward movement,just to the bottom position of cut sword, this moment ,stepper motor will not pull bag, otherwise bag will block up or

pull break.(pic3)

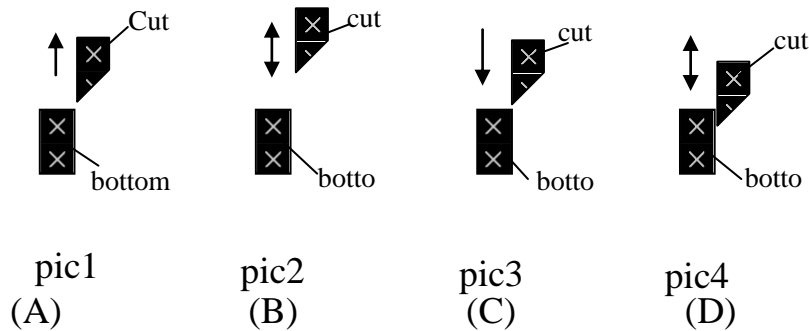
D whole integer PULL bag position,at this moment cut sword downward movement,just at lowest postion,cut machine will extract the drag needle, and push-off the whole Integer bags.(pic4)

E Logic Sensor Position, between A and D, when b=10—13, start pull back the bag for Length=Para(A) .

E' whole Integer Pull relay recover position.

Note: all position perhaps used for other function,look at various operative mode.

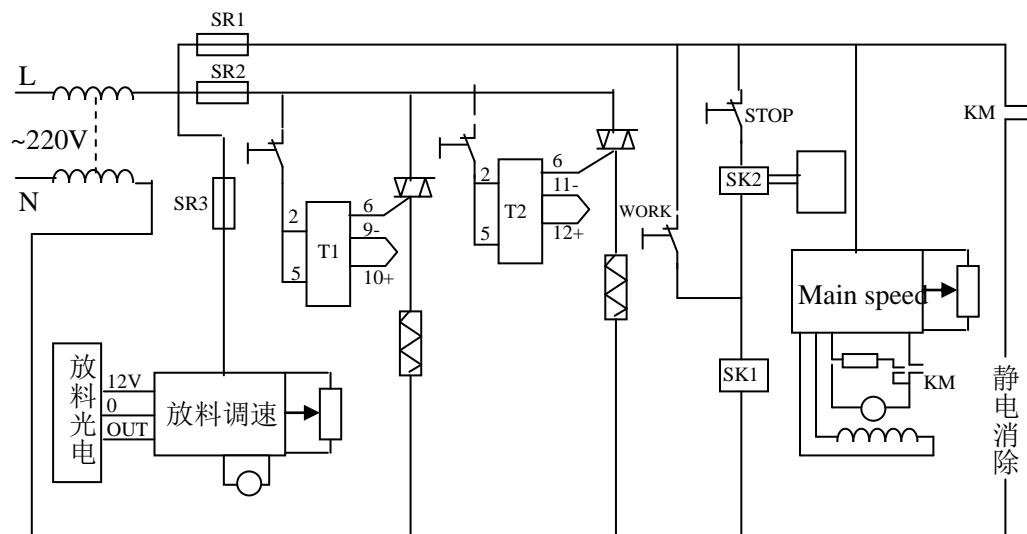
 Hall switch sensor magnetism steel have positive/reverse direction.



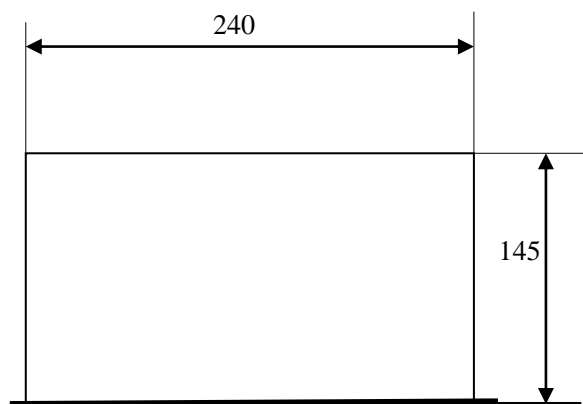
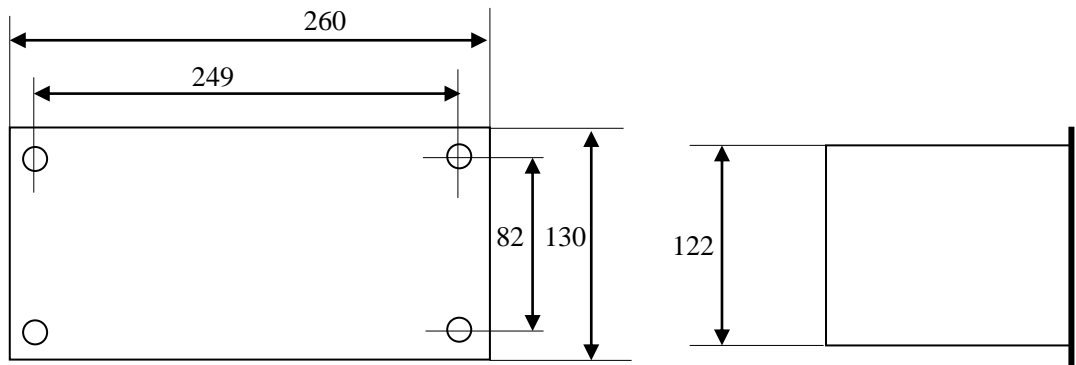
#### Eight. Outer connect enclosure

- 1 Hall switch sensor: red +12V ,black -12GND,yellow -out
- 2 Color code photo-eye:red +12V,black-12GND,white- out
- 3 SSR: CTRL input-control; LDAD--output
- 4 Buzzer(FMQ2724): red +12V,Green—buzz control

#### Nine. Powerful electricity principle picture



Ten. Outline dimentions





**Wuxi bokin auto control tech. Co. Lmt.**

Addr: A1-4F LIYUAN development zoon,wuxi city,jiangsu province,China.

Tel: (0086-510) 85169892、 13301512873

Fax: (0086-510) 83735397

P.C. 214072

<http://www.bjzdkz.com>

<http://wxbjzdkz.1688.com>

Email:wxbokin@163.com

---

Product user feedback bill

Product name		Use date	
username		Use tel.	
User suggestion:			
			User sign:
User communication address:			