

BEIJING MIAOXIANG SCIENCE AND TECHNOLOGY CO.,LTD

Fail Cans Rejecting Equipment

Operating Manual

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1 Equipment main technical parameters

1 Product: Fail Cans Rejecting Equipment

2 Model: MX-361-4, Voltage: 380V, Power: 2KW, Current is about: 5 A.

3 Function: Fail Cans Rejecting Equipment is customized according to customer's requirement, to remove the unqualified cans (bad sealing) from good cans. The system uses 4 cameras to take pictures for each can goes through the equipment conveyer, analysis the pictures by computer software, then reject the fail cans automatically.

Fail Cans Rejecting Equipment can run 24 hours a day, to achieve full inspection for all the cans. Replace manual selection by visual detection equipment, avoid the unreliability、randomness、and poor controllability of manual selection. Ensure the high quality of products.

4 Capacity: 0-300 cans per minutes.

5 Equipment list:

5.1 Can conveyor: it contains two conveyor, one of which is increasing the distance of Cans, it's length is 1.6meter, another is the detecting conveyor, it's length is 2.4meter.

5.2 Inspection system with 4 cameras and light source and all attached monitoring equipment (computer, display device...)

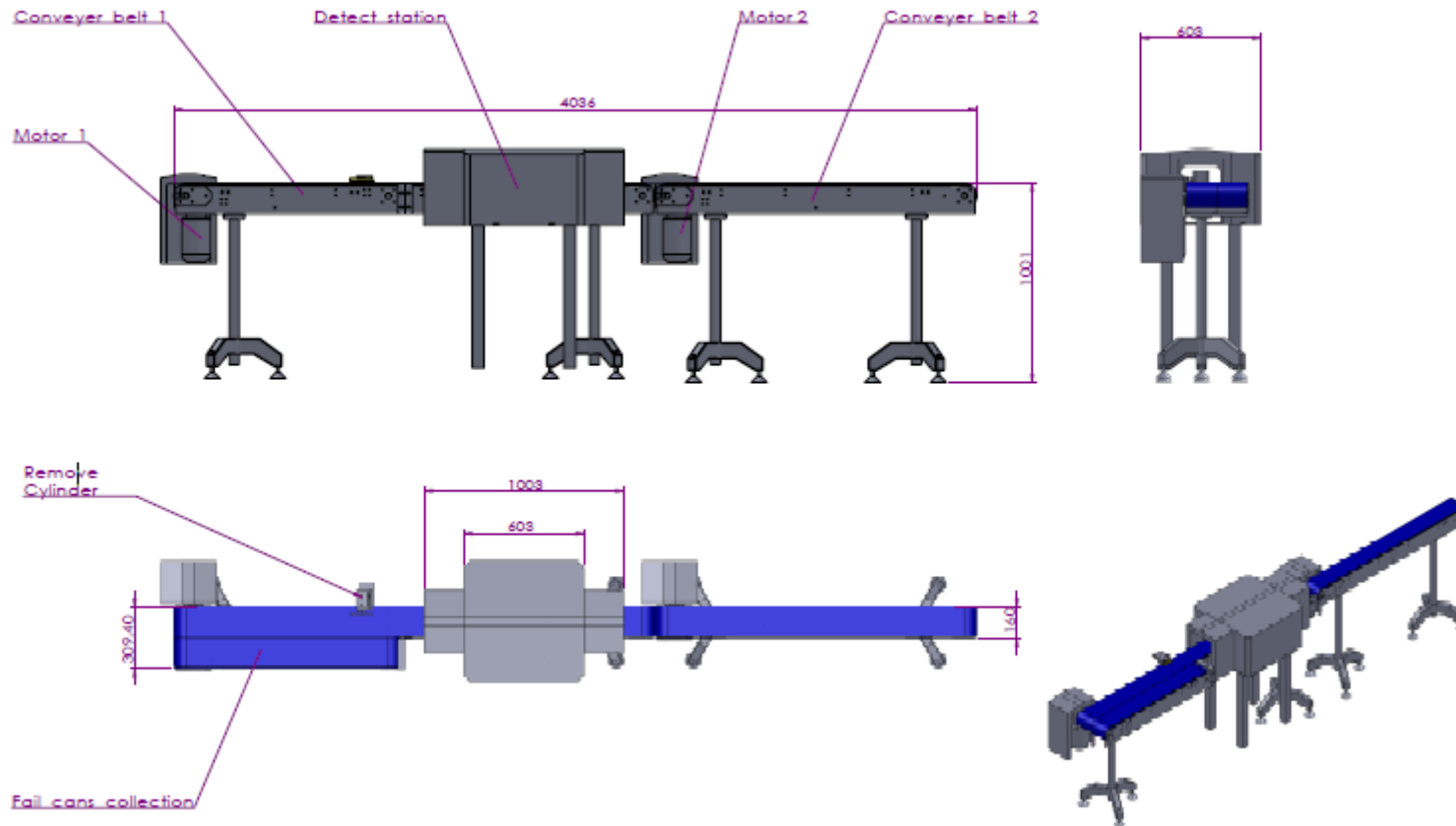
6 Package

No	Description	Quantity	Dimension (mm)	G. W(kg)	N.W(kg)
1	Fail Cans Rejecting Equipment	One pack	2760*1260*2010 =6.990CBM	500	400
2	Special spare parts: Conveyor belt and Driving wheel			50	45

2 Equipment Installation

2.1 Equipment installation location

Install the equipment according to the users' willing location. It is suggested to be installed in the location where cans running smoothly all the time. Following image is the installation size. Cabinet is separated from detect station and be put to a suitable position nearby.



2.2 Adjust the detection location of cans

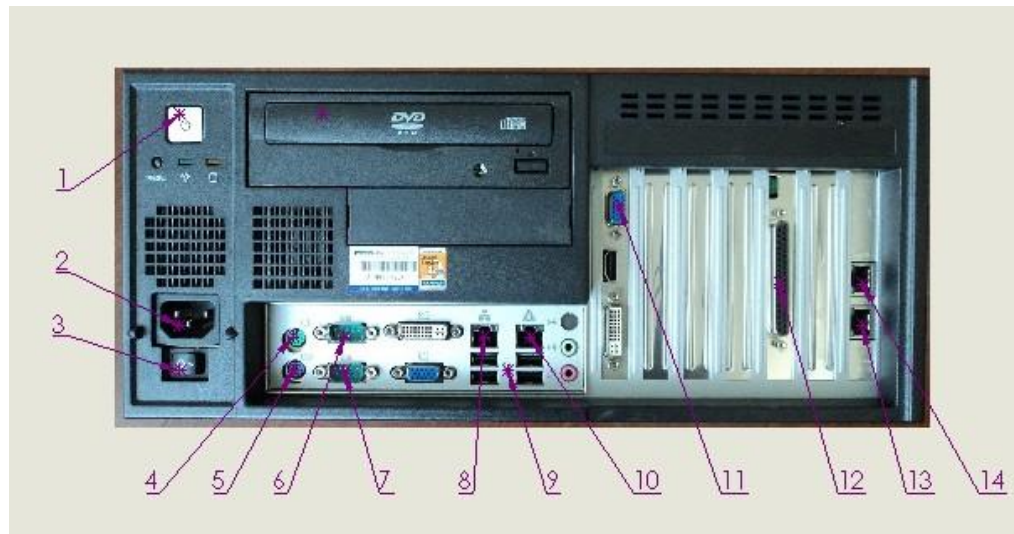
Adjust the guardrail and trigger sensors to make the detection location of cans just at the right place.

3 Hardware introduction

Detection system is mainly made up of host computer、 camera、 lens、 illuminant、 illuminant controller、 trigger sensor and removing mechanism. Introduce the function of every part as follows:

3.1 Host computer

Host computer contains multiple core image processing units and multiple core data operating units, with superior ability of processing images and operating data. Host computer is the core component of detection system, it will decode and analyze the images collected and transferred to host computer, then output the processing results, in addition, host computer conduct analysis, statistics, archive and other operations on the defect images, convenient for later inquiry and analysis.



1-Start button (Push to start the host computer, long push to shutdown the host computer forcedly)

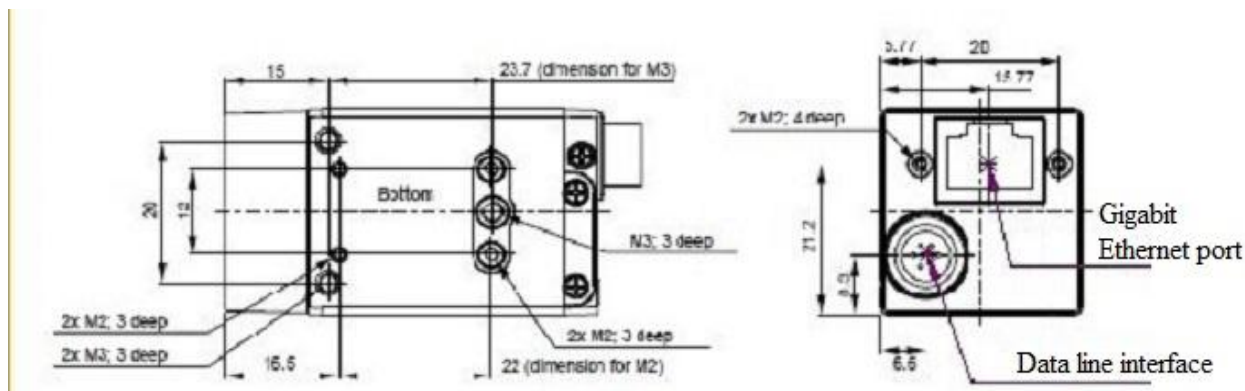
2-The power port (AC 220V 500W)

- 3-The power switch
- 4-Keyboard port
- 5-Mouse port
- 6-Serial interface 1 (connect to illuminant controller. Forbid hot swap during working, please operate after cutting off the power)
- 7- Serial interface 2 (connect to illuminant controller. Forbid hot swap during working, operate after cutting off the power)
- 8-Gigabit Ethernet port 1 (connect to camera)
- 9-USB ports (connect to printer or other devices)
- 10-Gigabit Ethernet port 2 (connect to camera)
- 11-Display port (connect to display of computer)
- 12-Output card (output reject signal)
- 13-Gigabit Ethernet port 3 (connect to camera)
- 14-Gigabit Ethernet port 4 (connect to camera)

3.2 Camera

Using the plane array CCD camera from German, CCD camera has features of clear imaging and sensitive reaction. It is competent to collect the images of pot in the high-speed motion state.





USB port: USB cable is 5 core shielded cable, supply power to the camera、 provides the trigger photograph signal and output exposure signal to illuminant controller, then control the camera illuminant lighting .

Gigabit Ethernet port: the image dates collected by camera transferred to host computer by Gigabit cable. (Attention: use shielded Gigabit cable, and far away from strong power、 magnetic field , avoid the interference of image data transmission)

3.3 Lens

Lens is assist to make image, cans go through the lens optical zoom, final image on the photosensitive chip of camera.



The aperture is used to adjust the image brightness to moderate degree. Adjust the aperture when overexposed or underexposed. Adjustment standard

is to ensure the reveal of all defects.

Focusing ring is used to adjust the clarity of image, make the image clear. Clarity standard is ensure the image boundary pixel clarity、straight and angular.

3.4 Intensity

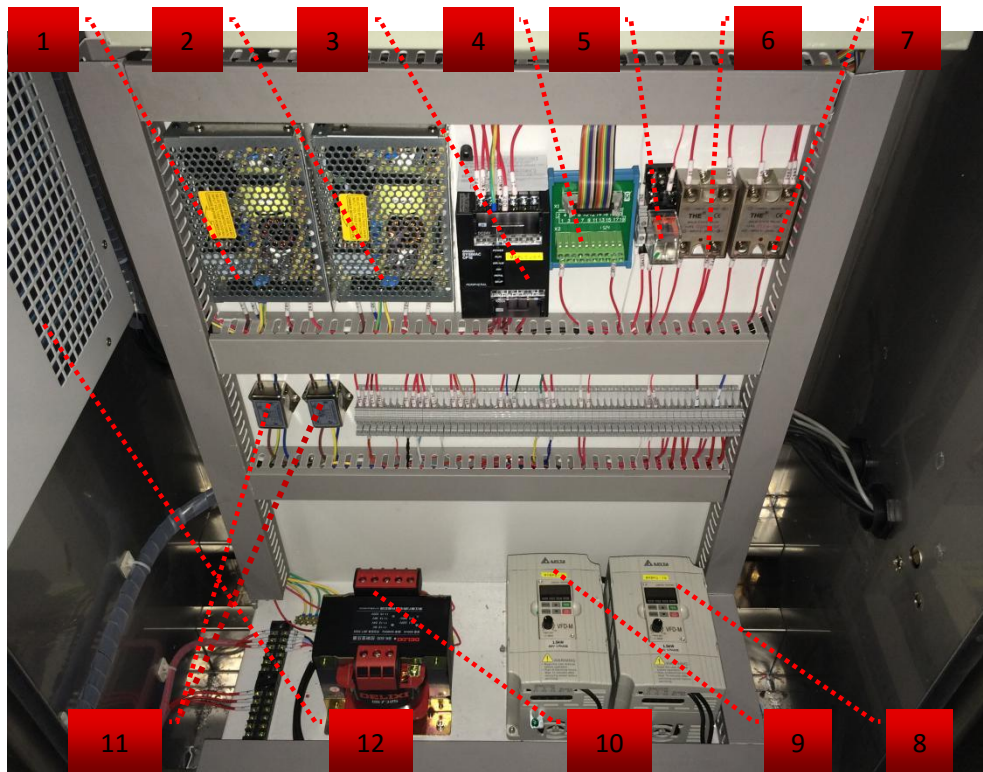
Intensity provides long-term stable lighting for visual system, ensure the consistency and uniformity of image brightness. The detection system use the customized LED intensity, which has longer service life, more stable brightness, better uniformity and consistency then other lights. The LED intensity can ensure the high quality of imaging.

3.5 Trigger sensor



Trigger sensor adopts High speed shooting sensor, provides accurate photograph opportunity for camera. Ensure the photograph position is identical for every can. Green lamp lighting on the sensor indicates that the power supply is normal. The yellow lamp on receiving terminal indicates the signal strength, the flash frequency of yellow lamp indicate the signal strength. The faster the flash frequency is, the stronger signal is. Yellow lamp is always lit indicates the signal is great, while the lamp has not been lit indicates no signal is receiving for the time. We need to pay attention to the status of signal lamp while adjusting, the standard: yellow lamp is always lit while there is no shelter.

3.6 Detection electrical box:



NO.	Object	application	NO.	Object	application
1	Switching power supply	AC 220V→DC 12V	7	Solid state relay	Strobe light
2	Switching power supply	AC 220V→DC 24V	8	Variable-frequency Drive1	Control Conveyor 1 speed
3	PLC	Program	9	Variable-frequency Drive2	Control Conveyor 2 speed
4	Output module	Bad Signal output	10	Voltage Transformer	AC 380V→AC 220V
5	Intermediate relay	Transportation control	11	Filter	Maintain steady output voltage.
6	Solid state relay	Strengthen output signal	12	Air conditioner	Cooling

3.7 The main operation panel



NO.	Describe	NO.	Describe
1	Monitor,while the pilot lamp yellow means powerful, if green means received signal of computer.	5	Power indication
2	USB port of computer	6	Idle
3	Reject cylinder stop	7	Power main switch(connecting or disconnecting 380V electric),this switch can't control the conveyor.
4	Start computer by pushing this button once		

4. Software introduction

4.1 Software connection



IP address matching tool, to set the IP address of cameras.



Remove controller software, to adjust remove program and control the removing mechanism perform the operation.



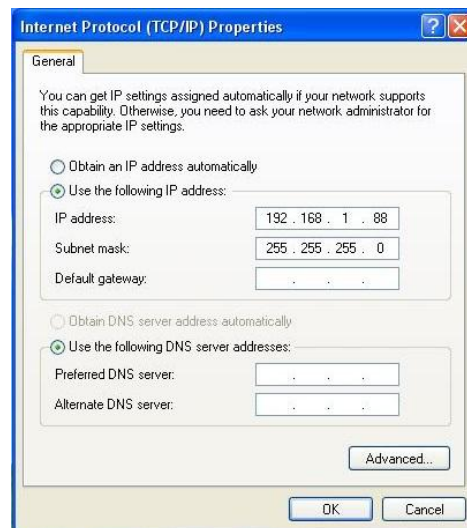
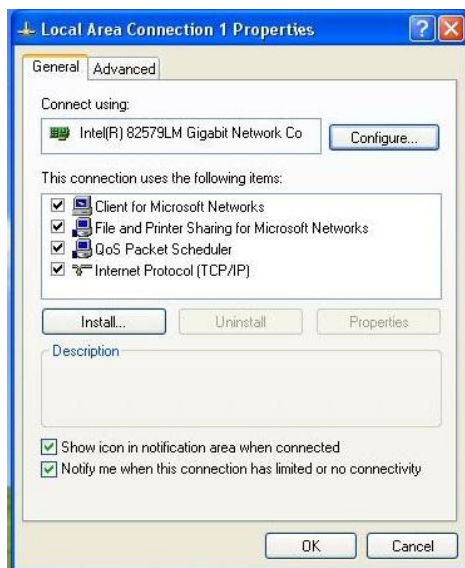
Detection software, to analyze the collected image dates and output detection result.

4.2 Camera connection

Camera collect images date and then transferred to host computer through Gigabit Ethernet cable, we need to match the IP address of every camera to computer while multiple cameras is using.

4.2.1 Setting computer's local area connection IP address

Right-click “Local Area Connection” on the Lower right corner of the computer desktop, and then click “Properties”, then appear the Network Dial-up Connections dialog box as follow:



Double-click “Internet Protocol (TCP/IP)”, interface appear as above:

Set up the IP address in the “Internet Protocol(TCP/IP)Properties” dialog box, then click “OK”, back to the Network Dial-up Connections dialog box, click “OK”.

4.2.2 Setting IP address of camera

Open the camera’s “IP Configuration tool ” dialog box according follow pictures:

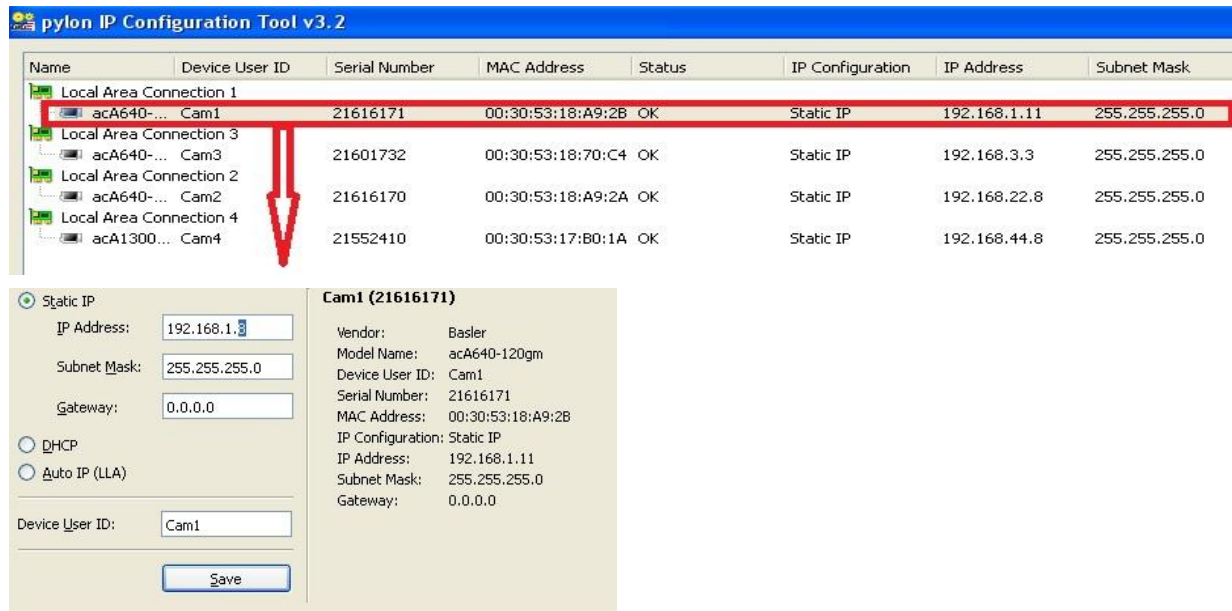


“IP Configuration tool” dialog box appear as follow:

pylon IP Configuration Tool v3.2

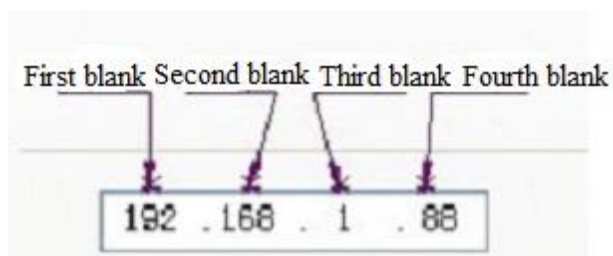
Name	Device User ID	Serial Number	MAC Address	Status	IP Configuration	IP Address	Subnet Mask
Local Area Connection 1	acA640-...	Cam1	21616171	00:30:53:18:A9:2B OK	Static IP	192.168.1.11	255.255.255.0
Local Area Connection 3	acA640-...	Cam3	21601732	00:30:53:18:70:C4 OK	Static IP	192.168.3.3	255.255.255.0
Local Area Connection 2	acA640-...	Cam2	21616170	00:30:53:18:A9:2A OK	Static IP	192.168.22.8	255.255.255.0
Local Area Connection 4	acA1300...	Cam4	21552410	00:30:53:17:B0:1A OK	Static IP	192.168.44.8	255.255.255.0

Click “acA640... Cam1”to change the address of camera1, interface will appear as follow:



For example, we set ID for Cam1 as the upside interface. Click “Save” to write the setting into camera. The IP setting for Cam1 has been completed. Set the IP address for the other cameras according to the same steps.

4.2.3 Setting IP address for detection system with multiple cameras



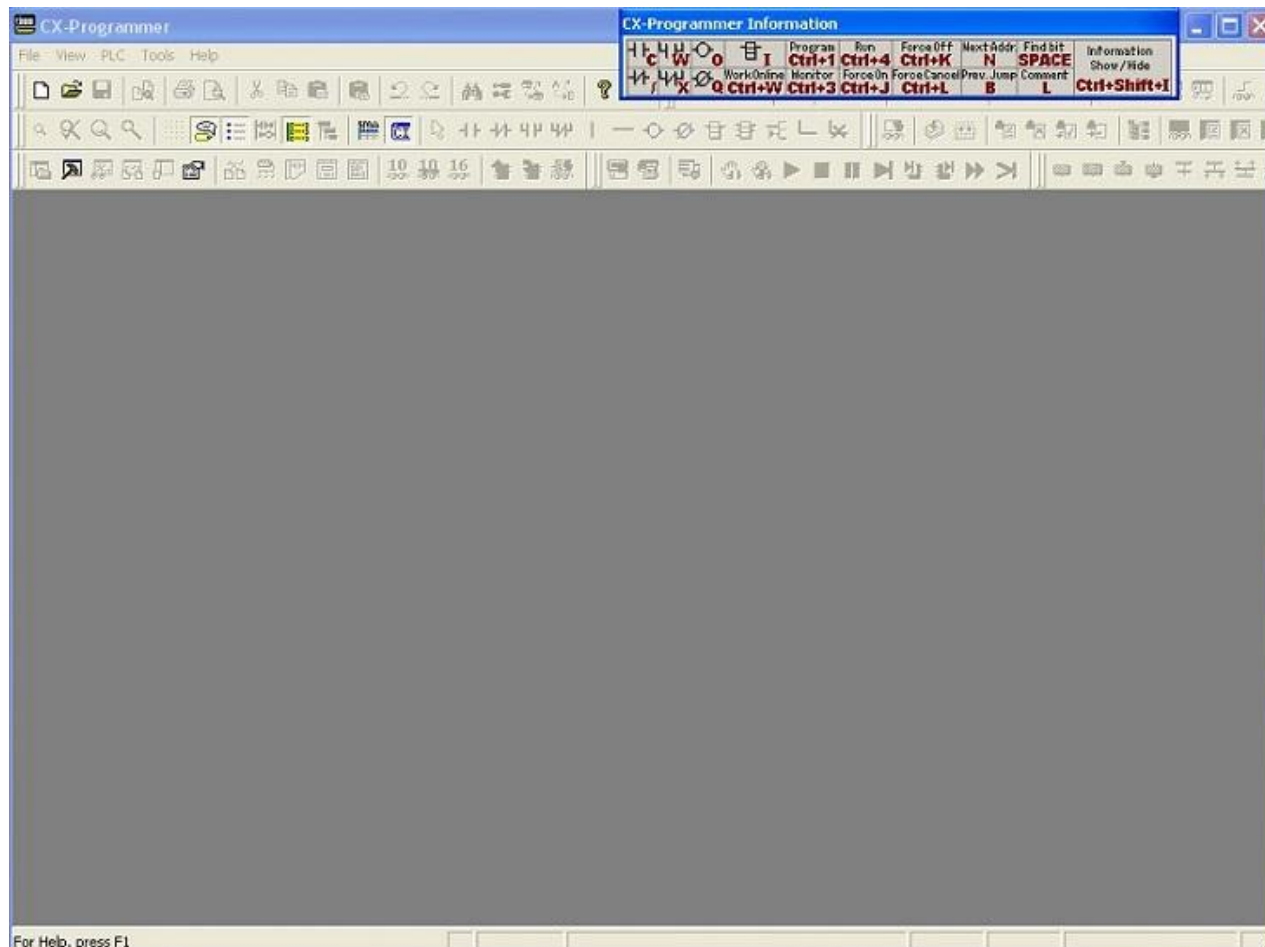
The third blank of IP address need to be set differently for different local area connection of computer. The third blank of IP address need to be set uniformly between camera’s and the corresponding local area connection’s IP address, then the fourth blank of IP address need to be set differently between camera’s and the corresponding local area connection’s IP address. Four cameras is using for this detection system, so we recommend to set the IP address as follows:

IP address for local area connection 1: 192.168.11.88 ---- Corresponding IP address for Camera 1: 192.168.11.8

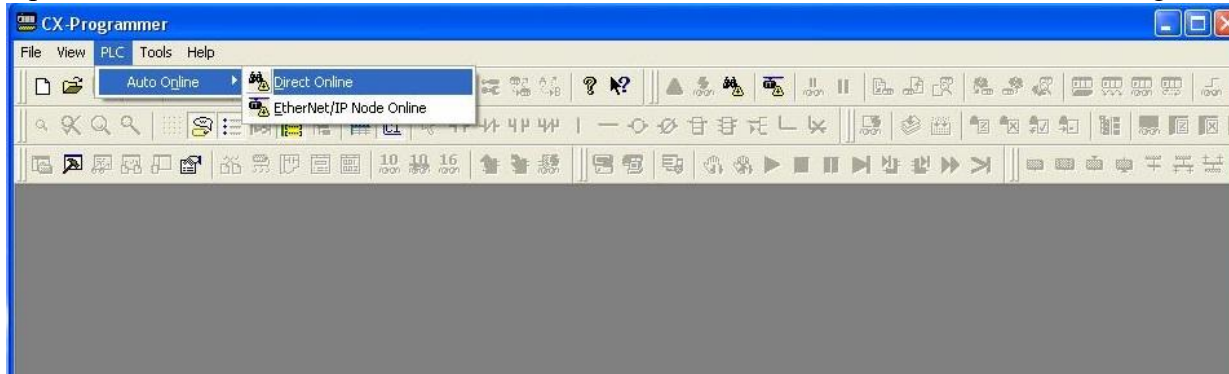
IP address for local area connection 2: 192.168.22.8 ---- Corresponding IP address for Camera 2: 192.168.22.8
 IP address for local area connection 3: 192.168.33.8 ---- Corresponding IP address for Camera 3: 192.168.33.8
 IP address for local area connection 4: 192.168.44.8 ---- Corresponding IP address for Camera 4: 192.168.44.8
 Names (Device user ID) for four cameras are “Cam1”、“Cam2”、“Cam3”、“Cam4”.

4.3 Set removing software

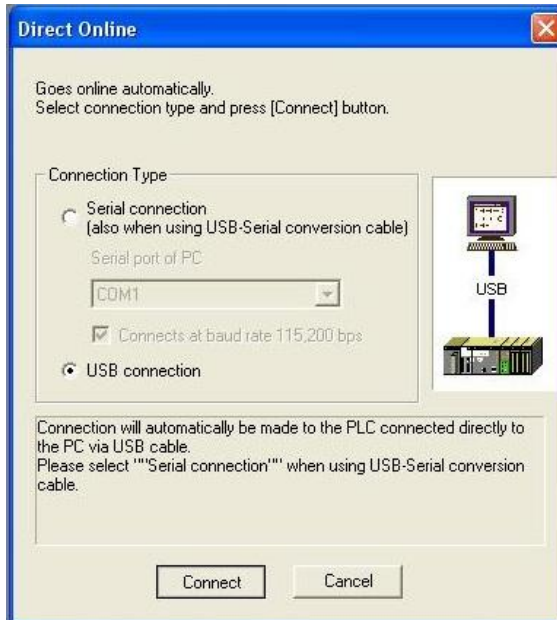
Open the software “CX-Programmer”, interface will appear as follow:



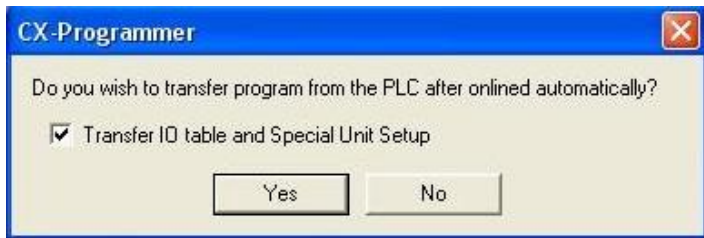
Operate as follow interface, click “Auto Online”- “Direct Online” to connect the removing software to PLC, begin to work online.



After click “Direct Online”, interface appears as follow, then choose “USB connection” and click “Connect” by mouse.



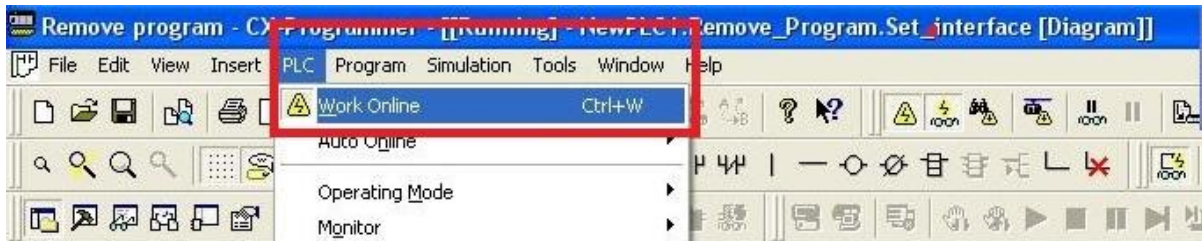
Then interface will appear as follow, and click “Yes”.



Removing controller will transfer removing program to host computer automatically (as follow interface), then click “OK”.

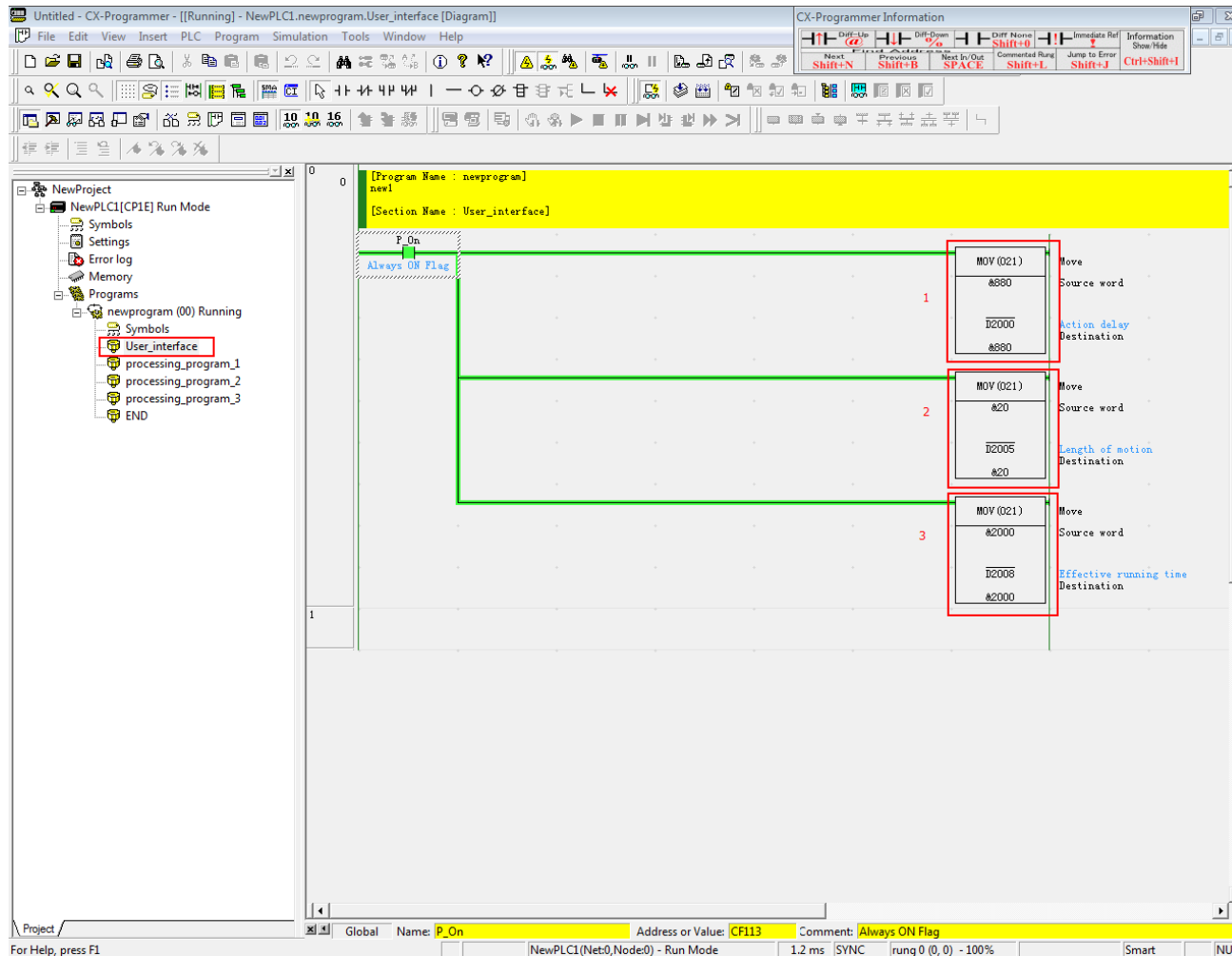


Relieve the online state to modify the setting.



Open the “User interface” in the program

Double click “User interface” to open the following image.



You will see three red rectangle at this image ,

The first: Increased or decreased to adjust the delay culling.

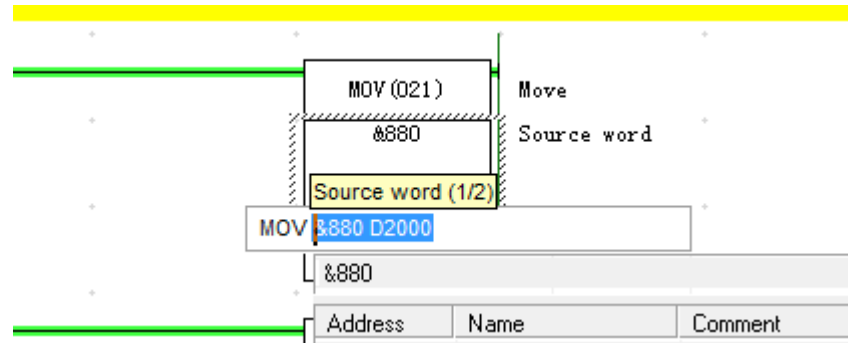
The second: Increased or decreased to adjust the reject action time.

The third: Increased or decreased to adjust how long the time you want to stop the delivery machine when no Cans go through.

Adjust it as follows:

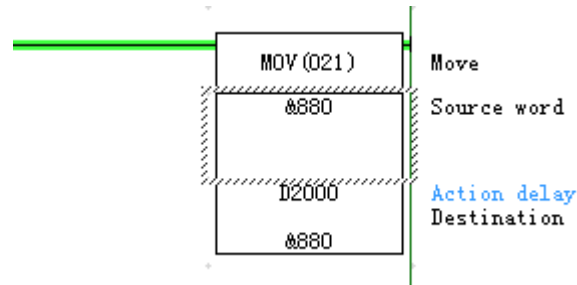
1. Click with the mouse to select which you want to adjust.
2. Press the Ctrl + E key on the keyboard.

3. Double-click where you want to adjust. the resulting interface appear as below.



4. You can change the numerical behind the & of the image above, this numerical is the excluding delay.

5. After changing the value, press the enter key on the keyboard, press three time you can get the following image.



6. Now, press the Ctrl + Shift + E key at the end.

7. Then the modification has been completed. First time to obtain proper data, we have to try several times following this steps.

4.4 Set the detection software

4.4.1 Detective plan:

Because of the cans have four angles as a rectangle. The cameras just like eyes, one camera only can see a corner completely. When it's vertical between the camera and the Cans, we will see it has a big distortion. By this way, it will be cannot detected perfectly.

So we let the camera photograph at a corner in the rectangle, the same principle as human eye, between the camera and cans, there is a Angle, this belong to tilt camera. This detection is required for getting the best detect results.

Image of a single camera as follows:



Except for a single camera can detect the corner, it also can detect the two sides around the corner, there's a problem is that a camera can't see all of the lines for the two sides. But a single camera can see more than half of each line, by this way, four cameras can see all of a can's sealing area.

Detection principle

After careful observation the seal in above image ,the position of lid and Cans combinations is smooth witch the position of the cans hasn't bad place. But if there is a bad place (position of the red arrow points), the position will be not smooth, it is raised or recessed.

To facilitate understanding, we assume the following parameters:

The total length of the curve: L

The number of segments (dividing curve): n

An angle obtained of measuring the segments: r

Point of the first start scanning: A

The length of each segment: W

Let's take a detailed interpretation:

There is a smoothly curve of this position if there have not bad place, we dividing this curve in “n” segment, measure the angle of each segment, we assume the angle of the “x+1”th segment is “r1”,we assume the angle of the “x” the segment is “r2”,we get the angle difference equation as follows:

$$r1-r2=R;$$

If there is very smoothly ,the value “R” is very small, some even tend to 0,but if there a bad place in this position ,you will see the value “R” will be too large, we can limit the value “R” to check the bad place .

For more accurate detection, reduce false results, we resigned the following measures:

1--We give the user interface to set “n”, because of the total length of the curve was “L”, we tentatively it was “A” that the Point of the first start scanning.

By this way, in the first scanning, the start point was “A”, we can get the length of each segment with the following equation: $L / n = W$;

It’s default canning four times in our program.

In the second scanning, the first point is : $A + W/4 = A2$;

In the third scanning ,the first point is: $A + (W/4) * 2 = A3$;

In the fourth scanning ,the first point is: $A + (W/4) * 3 = A4$;

By this way, we get a group value of “r” and “R”, compare each scanned value “R”, we will get reliable results in final.

2--As shown in the above image, there’s a black wire at the left of the image, this wire will disturb our check, so we extract the wire line using automatic methods at the beginning of the detection.

We final finish the obtained data, getting if there is a bad place in this camera.

We finish the four cameras’ data to determine if there is a bad place in this Can.

4.4.2 Detection system introduction:

You will see the following icon at the desktop of the computer:



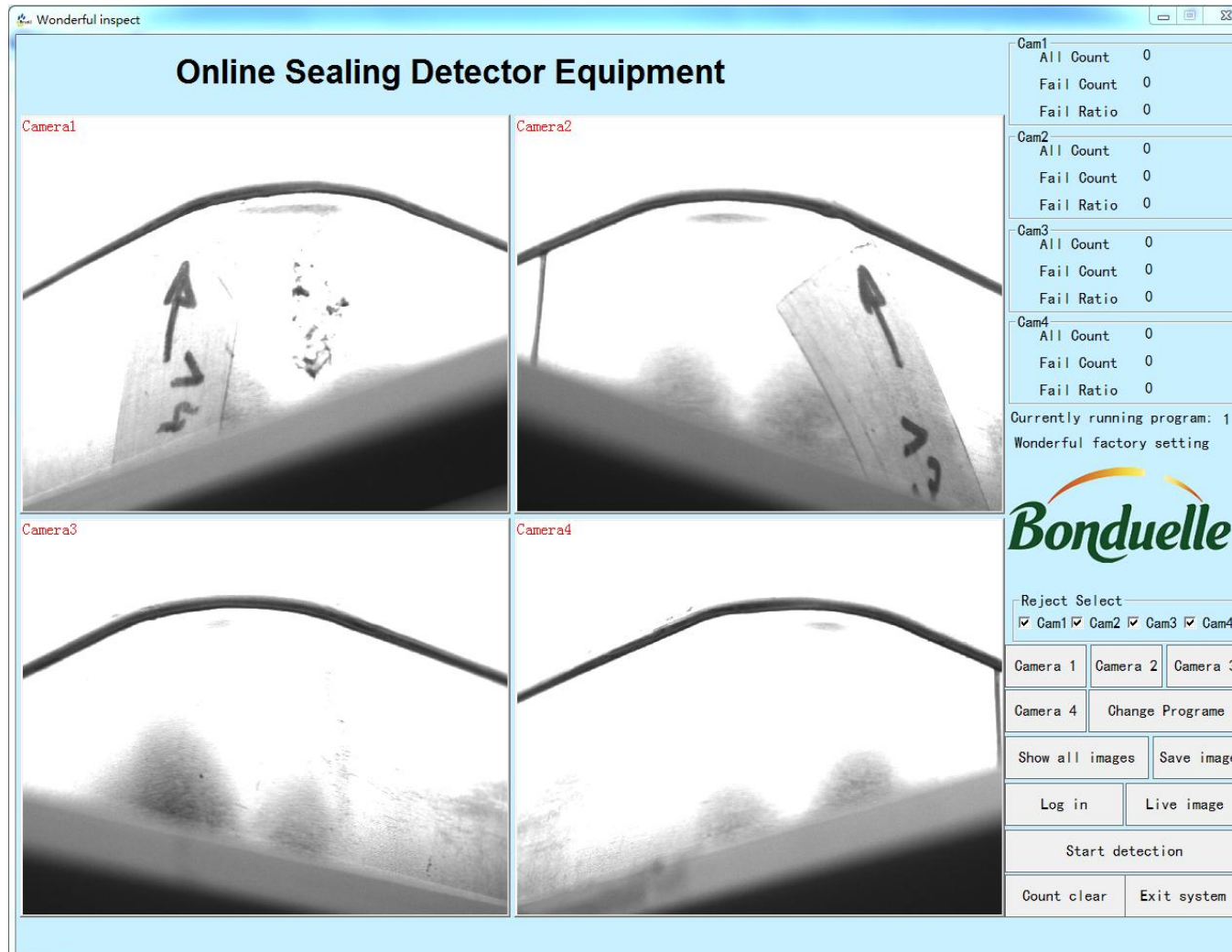
You will open detection system with double click this icon.

You will see there has a folder at “my computer / local disk D / image save/cam1&Cam2&cam3&cam4”. Such as, cam1 saved the image of camera 1 you got when you clicked the “save image” at the main screen of the detection system. The maximum capacity is 200. (if>200,the system will update the image at the folder .)

There is a folder at “my computer / local disk D / Fail image/cam1 &Cam2 & cam 3 & cam4”. The folder saves the fail image of four cameras, the maximum capacity is 200.(if>200,the system will update the images at the folder .)

4.4.3 Main screen

After opening the test software, The desktop displays the following images:



The upper row option ,Has the following functions :

Main screen-----display home page, You can see the status of all cameras;

Four image windows on the main interface, four cameras images , on the the right part , you can see four combo box. The function is:

Cam1-----It contains camera 1 Statistical data ;

Cam2-----It contains camera 2 Statistical data;

Cam3-----It contains camera 3 Statistical data;

Cam4-----It contains camera 4 Statistical data;

Currently running program-----

“1”-----Currently running program number;

“Wonderful factory setting”-----The name of the currently running program;

Reject select -----Each camera reject switch, user can turn off or turn on the camera rejecting;

Camera 1-----Camera 1 parameter setting;

Camera 2-----Camera 2 parameter setting;

Camera 3-----Camera 3 parameter setting;

Camera 4-----Camera 4 parameter setting;

Change program----Switch program when change product;

Show all image-----this button designed for users selection witch image can be show on main screen, our default setting is “show all image ”, this mode let all images that camera shooting display on main screen, when you pressed this button once, this button title changed to “Show defective images”, then the system changed to display the last fail images on main screen only;

Save image-----When and when the image window has a image, press this button, you can save the current image of the four cameras to computer, you can find it by the following way: My computer//Local disk D//Image save//cam1 or cam2 or cam3 or cam4//;

Live image-----When you need to adjust the camera, press this button, camera will be converted to video mode, When getting better images, exit this mode by press this button again;

Log in----- Input password to log in, then we can operate the software. when pressed once, the button becomes “Log out”.

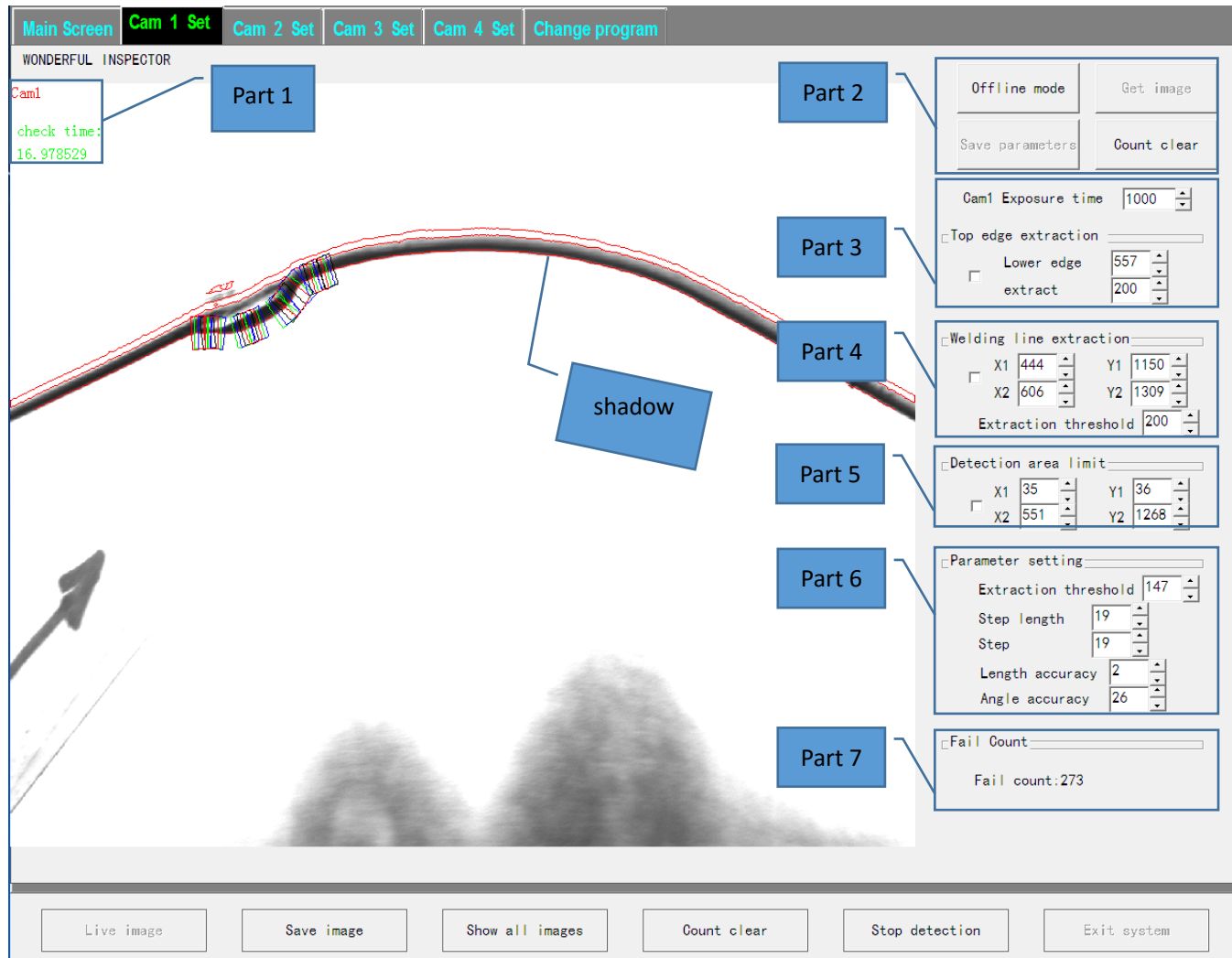
Start Detection-----After pressing the system enters the detection state, button becomes Stop Detection; when pressed again, system stop detection.

Count clear-----Clear all statistical data in this system, except for parameters;

Exit system-----After press exit system, when “Start Detection” or “Live image” is pressed, this button will be disabled ;

When you changed the program, you will see the “currently running program” changed. When you choose “start detection”, the “exit system” and “Live image” will be invalid. In subsequent chapters, we are going to have a detailed introduction for Adjustment of parameters

4.4.4 Camera parameter adjustment.



We will introduce in seven parts.

Part 1:In this part, you can see “cam1”/ “cam2”/ “cam3”/ “cam4”,it’s totally four cameras. below this text, there is “check time”, it’s means the detection time used for each Cans.

Part 2: There are four button in this part. The function is:

Offline mode: In order to make the customer more convenient to adjust the camera parameters, we add this mode in the program. This mode Allow us to see changes in real time,before push this button ,you can see this two button “Get image”& “Save parameters” were invalid, you can’t push any one .After you pushed the “offline mode” down, you will see that “Get image”& “Save parameters” allow operation.

the difference between “online mode”& “offline mode” is:

Online mode: You can change the camera parameters in this mode ,but you will not see the change in real time ,you will see the change wait for a Cans passed, so it’s consuming. But in this mode, every parameter you changed will be written to the test program. Our machine will run by your new parameter at the Same time.

Offline mode: In this mode ,you can change the parameters .what Is the difference between “online mode” is this mode can see the Change in real time ,and it don’t need a Cans go through the machine.We can see if the parameters we changed is effective or not.

Get image:when you push this button down, you can get the currently Cans image, and display it on this window.

Count clear:only clear the fail count in part 7.

Part3:this part contain three items:

Camera exposure time:enlarge this value ,the color of Cans image that displayed on the window will be brighter, if you reduce this value, it will be darker, so you can change the image bright and dark by adjustment this value. But it should be limit at (200,1000).Top edge extraction :meaning to extract the top edge of the image .you can see that was be division up and down two part by the shadow(marked on above image).we use two parameters to extract the top edge:

Lower edge: you can adjust this value to change a bottom edge of a rectangle, you must let the bottom edge exceed the shadow.

Extract: when you sure that lower edge was pretty good ,you can change This value for extract the top edge ,this value limited by (0,255),Our factory setting was 200,this parameter will apply to many products.

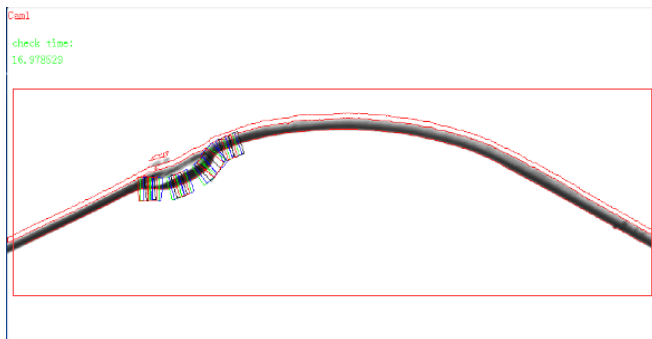
Part4: Welding line extraction: because of there is welding line on the Cans side wall. it’s disturb our detection, so we should shield this welding line ,we can use this five values.

X1&X2&Y1&Y2: x1 and y1 is a coordinate for a rectangle upper left corner point.x2 and y2 is a coordinate for a rectangle lower right Corner point.adjust this four values you can change the rectangle position and size. This rectangle will be draw as follows.

Extraction threshold:you can change this value to extract the welding line in the rectangle you just draw. This value limited in (0,255).Our factory setting is 200.this parameter will apply to many products. By setting the parameters, you will see the image as follows.



Part5: This part have four values, as the above part ,you can draw a rectangle by this four values,x1 and y1 is a corner point,x2 and y2 is another one . this rectangle should be draw contain all the shadow, as follows red rectangle:



Part6: we have five parameters in this part .you will adjust this five values to set accuracy for detection.

Extraction threshold: this value limit in (0,255), by setting this parameter, we can extract the shadow. Our factory setting is 147, this parameter will apply to many products.

Step length: this value is the parameter “W” which we talk about in the first chapter.

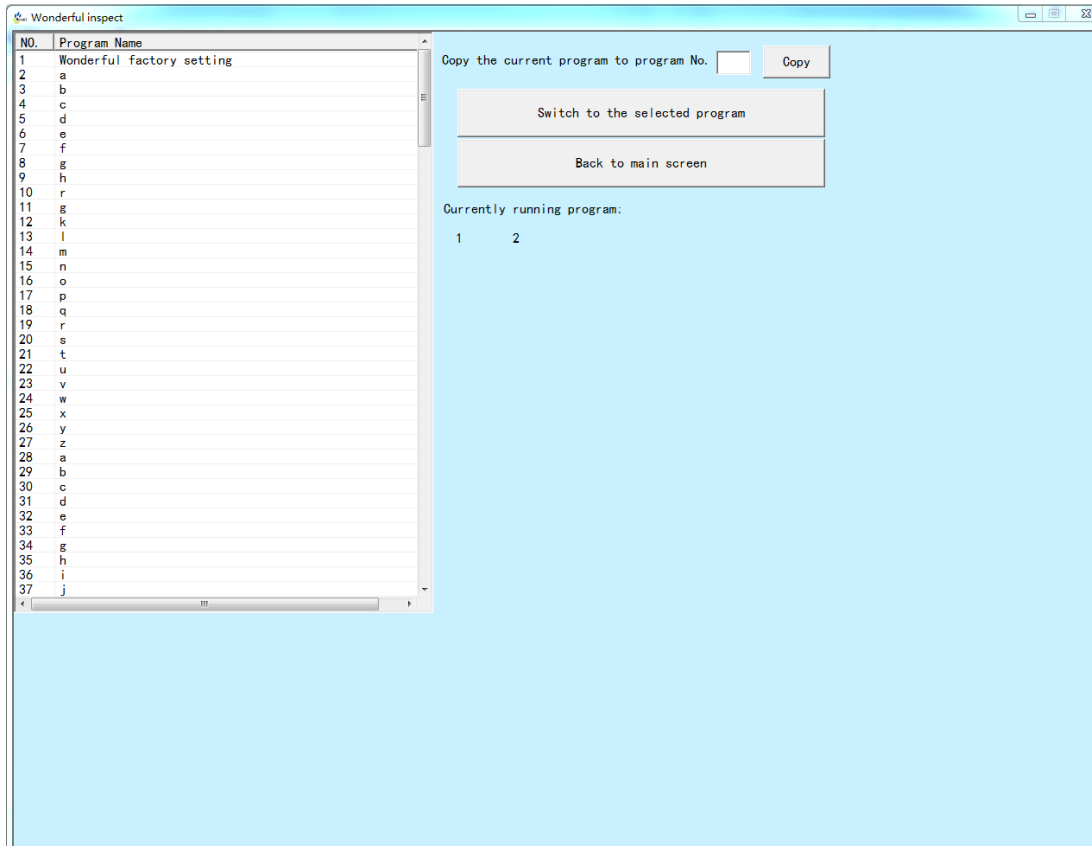
Step: this value well be set as same as “step length”, this two values limit in (0, 50). Our factory setting is 20, this parameter will apply to many products.

Length accuracy: this value was importantly for our machine, it’s limit in (0,5),our factory setting was 2,this parameter will apply to many products.

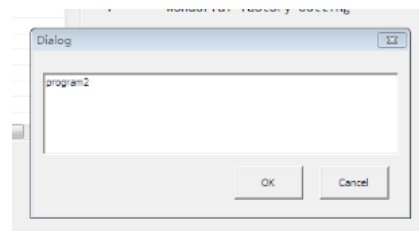
Angle accuracy: same as upper parameter, this value also importantly, our consumer will adjust this two values usually. And this value limit in (0, 50), our factory setting was 25, this parameter will apply to many products.

Part7: This part display the count of fail products in this camera. and this fail count will be clear by push the “count clear” button in “main screen” or “camera set”.

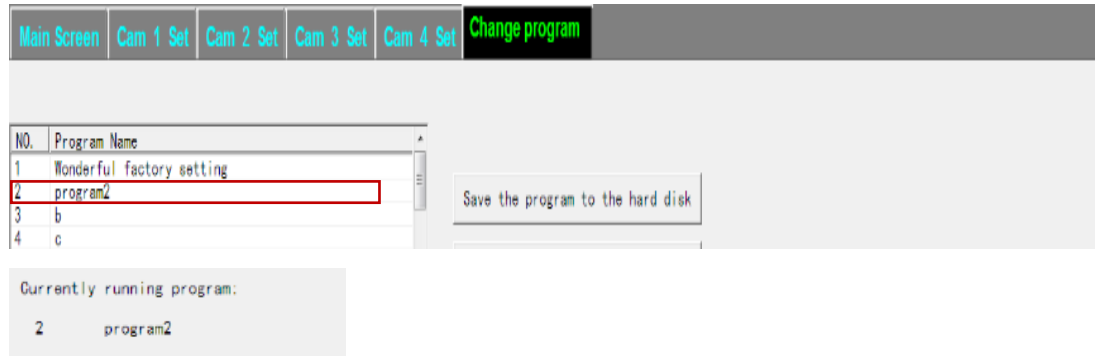
4.4.5 Change program description



When you choose the “change program”, you will see the above image .There is a form at the left, here you can see all the program, you also can change the program name which you selected, just like this step, select the 2th program, now it’s named “a”, double click this “a” when you want to change the name, you will see:



Write the name you wanted in this dialog, click the “OK”. You will see the 2th program changed its name like this.



4.4.6 Log in

There is a “log in” option in our main screen, after you push the “log in ” button down ,you can log in the system & change password .You will see it’s changed to be “log off ” when you push once. If you don’t log in our system, you can’t adjust the camera parameters. Every time you open the machine, you should enter the password, then you can adjust camera parameters or change program. When you finished modifying the parameters , you should push the “log off ”button down .

5. Maintenance

5.1 Check every day:

the pictures be taken is good or not (clean the water on the lens with soft cloth)

Position of cans taking picture not move (sensor) 、 guardrails are fixed or loose、 conveyor is good or not, is there abnormal sound?

wipe the conveyor surface with a damp cloth;

5.2 Check every week: the screws are fixed or not, ventilation fans are working well?

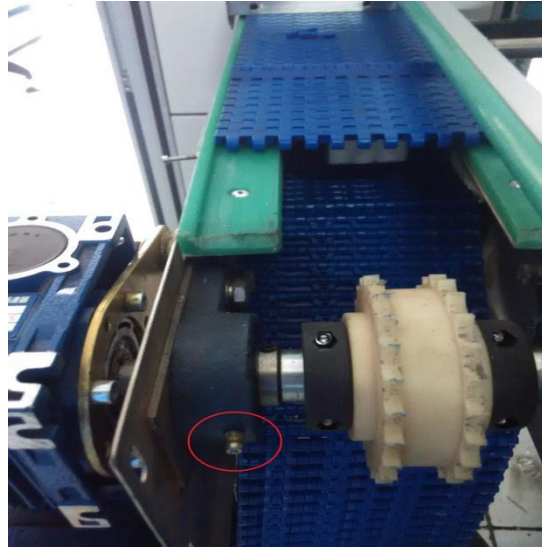
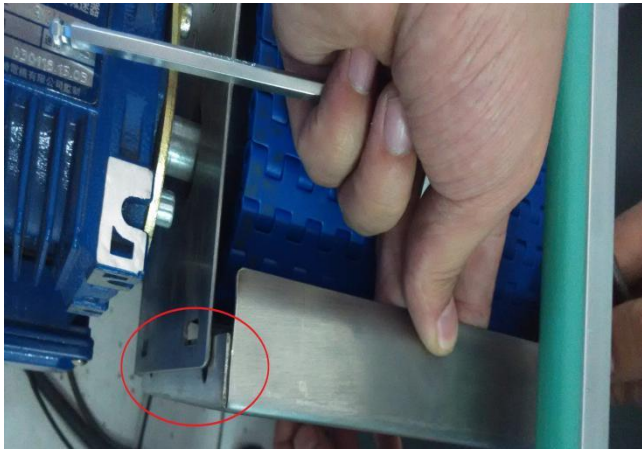
5.3 Check every month:

5.3.1 Clean the internal of cabinet with vacuum cleaner or damp cloth (forbid moving the cameras and lens, forbid wiping the lens with the damp cloth, forbid blowing in the cabinet, watch out electric shock),

5.3.2 Abrasion situation of tank chain and driving wheels,

5.3.3 Inject lubricating oil for the 4 bearings of conveyor(disassemble the tank chain refer to the following picture)

5.4 Check every year: The computer is working well?

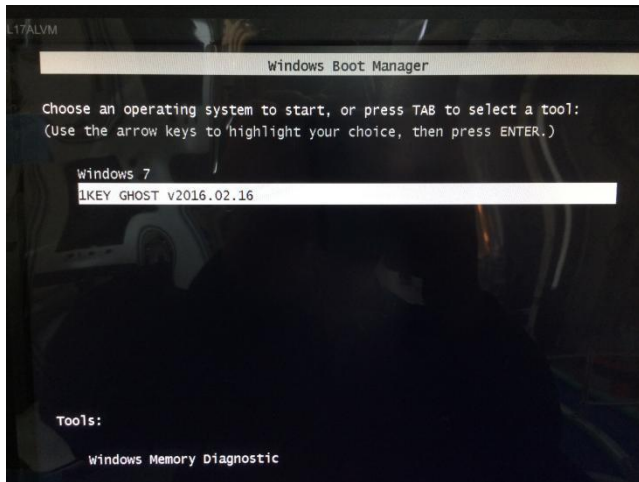


6. Repairing operating system failure

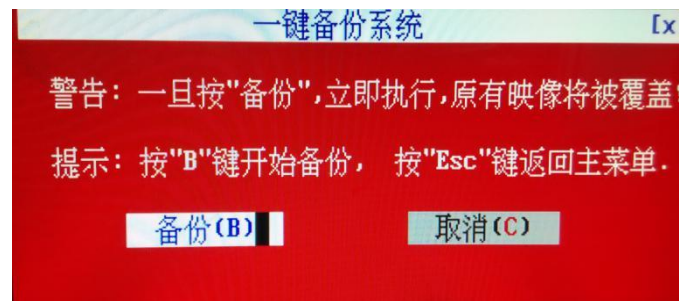
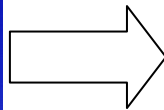
6.1 Backup the system

First, restart the computer,

Second, choose “1 KEY GHOST v2016.02.16 ”as following picture



Third, choose “1. 一键备份系统” “备份(B)” by mouse as the following picture, then the system will backup automatically.



6.2 Repairing operating system failure by software

Usb standby operating system recovery steps

This spare system disk can be used when the computer system is damaged or a computer cannot start up. By using a flash disk, it can recover the system in following operational process:

1 Start the computer and press the "Delete" key ,then entry the following interface:

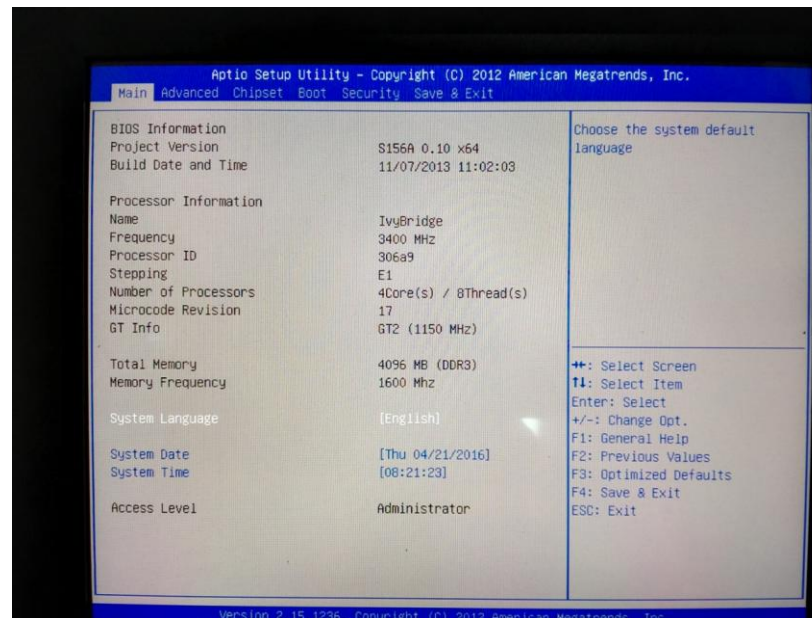


Figure 1.1

2 Through the delete key on the keyboard, switch to the "Boot" interface and it is shown in figure:

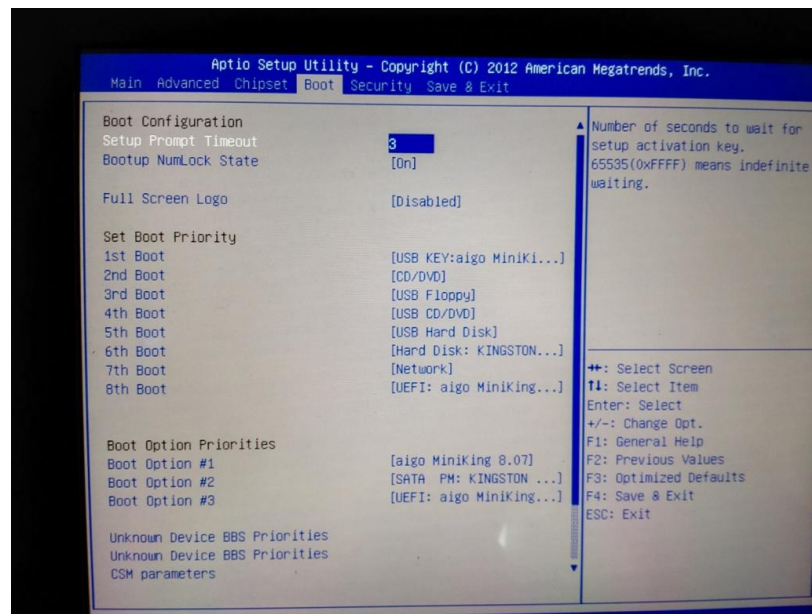


Figure 1.2

3 Through the down key on the keyboard ,and move the cursor to the position where the following arrow is indicating, then press the "Enter" key:

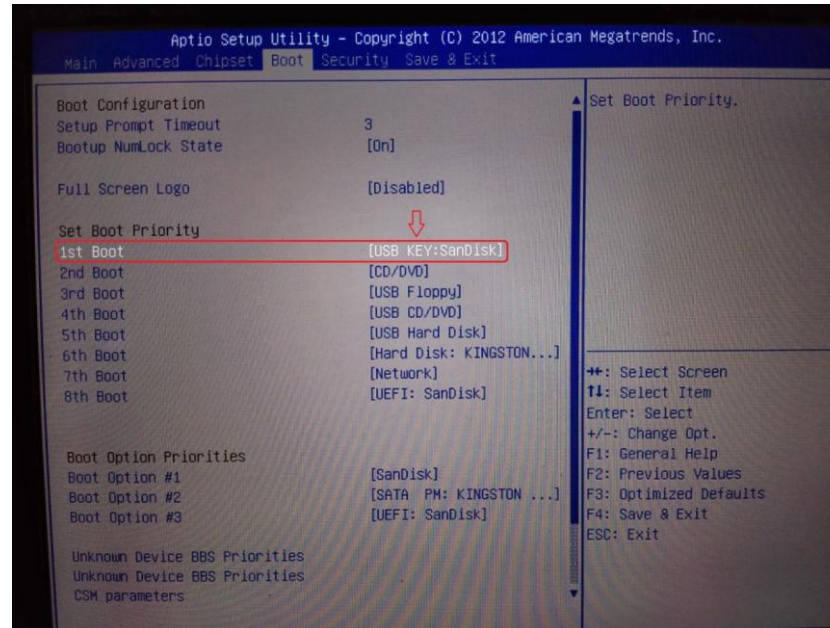


Figure 1.3

4 Pop up the following dialog and choose the "aigo MiniKing 8.07" option, then press the "Enter" key. Set the USB flash drive as the first boot option for us to start the computer:

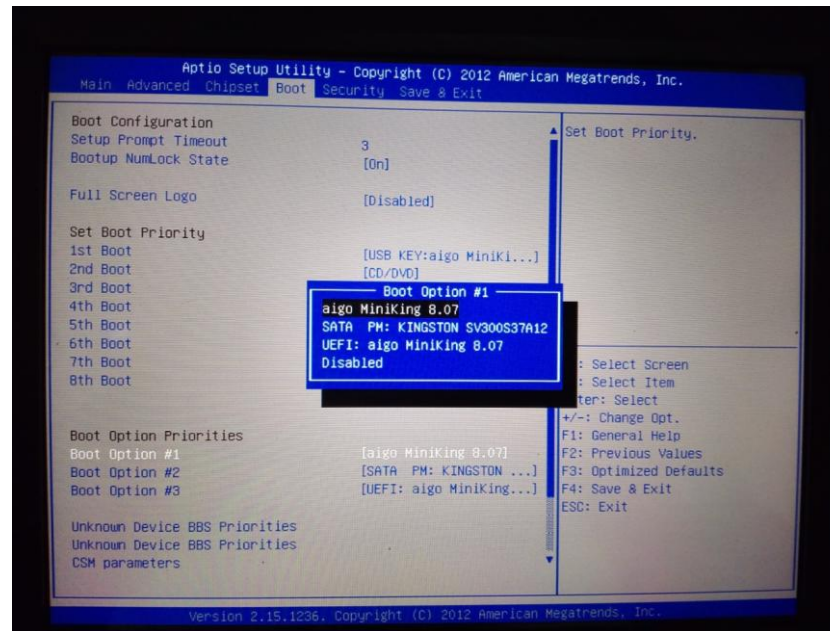


Figure 1.4

5 At this point the interface back to the "Boot" interface, again through the keyboard direction key to switch the interface to the "Save & Exit" interface. As shown in Figure:

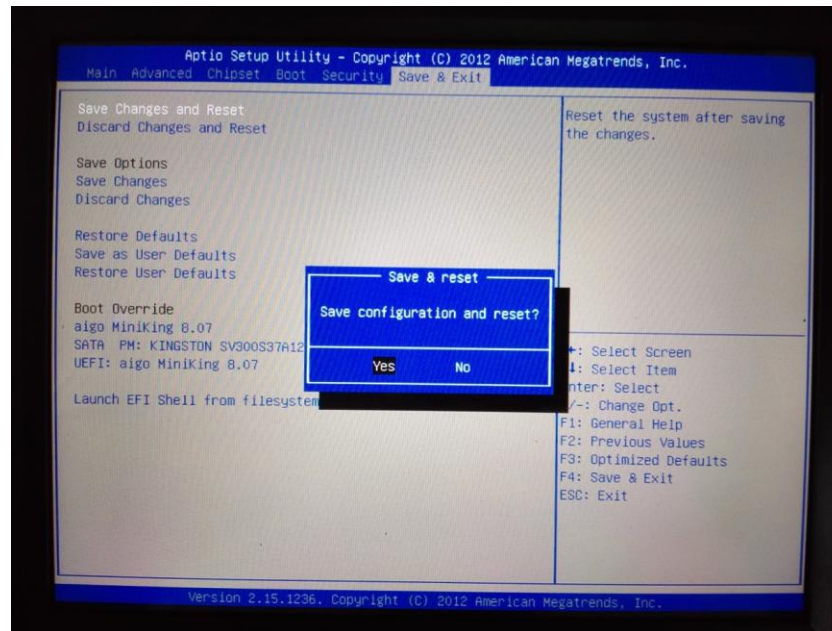


Figure 1.5

6 When Entry the “Save & Exit” interface, press the "Enter" key directly .Appearing the above interface as shown as the Figure 1.5, and continuing to press the "Enter" key. retreat to the interface to restart the computer.A moment later into the following interface, select the second and press "Enter" to Enter PE interface:

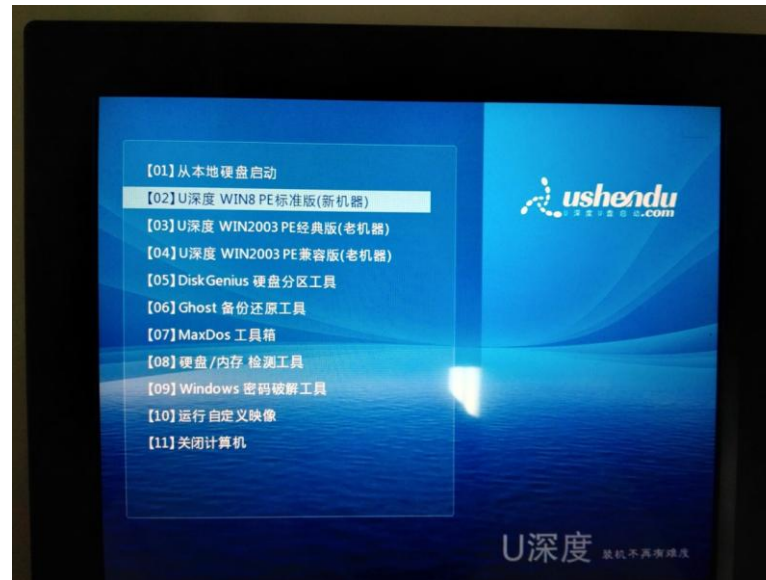


Figure 1.6

6 After a few seconds, it will enter the PE interface, and the interface shown below:



Figure 1.7

7 Choose "确定 (Y)" directly, the following interface appear:

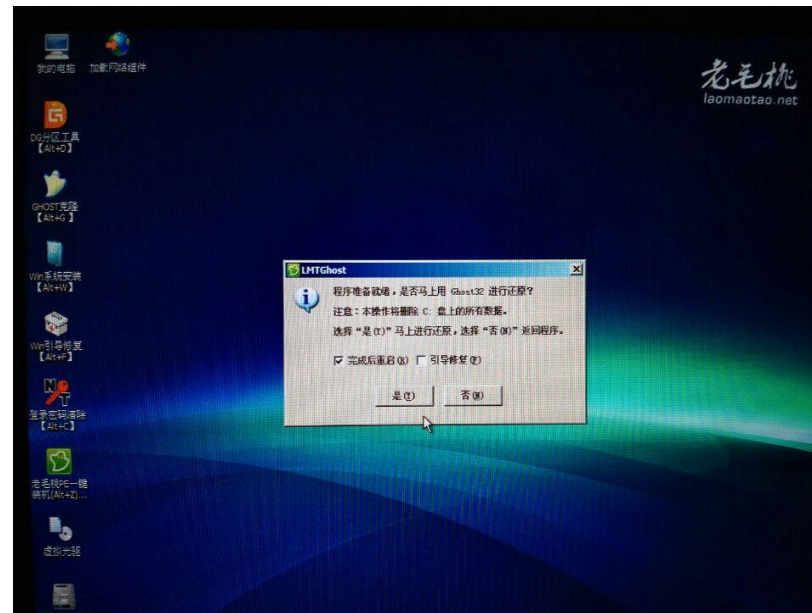


Figure 1.8

8 Click ”是 (Y) "option, then the system starts to recover, and appears the following interface:

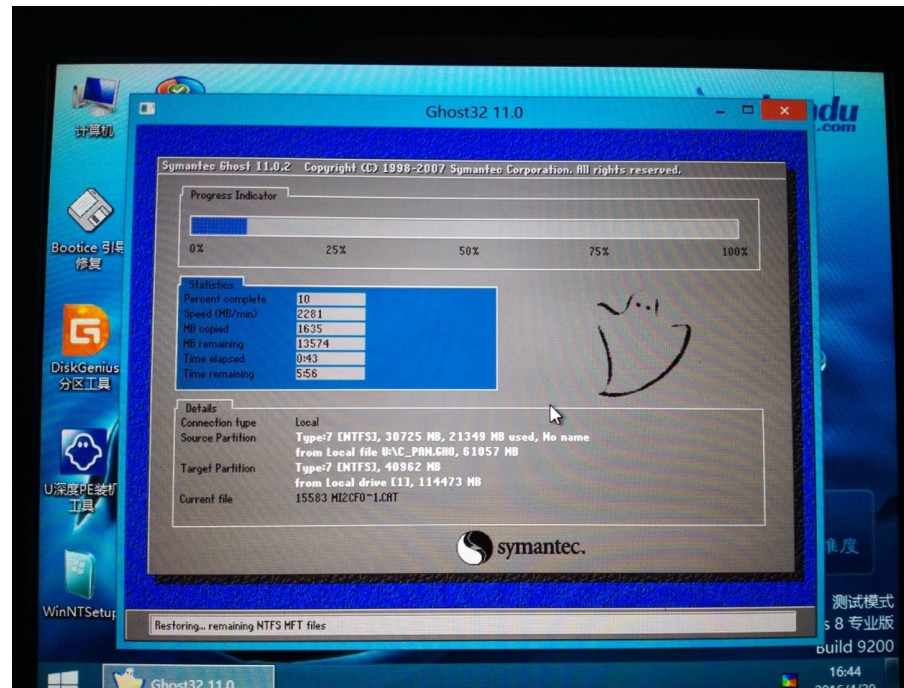


Figure 1.9

9 Until the process is completed, the system is restored. And then will enter the computer interface.

10 So far, we have the option to open computer USB boot priority. Each time you start the computer will from USB boot system, it takes long time to start. We should do according to the above steps to restart the computer, until the interface is shown in Figure 1.4, at this time we should choose the "PM:KINGSTON SV300S37A12 SATA" option, the computer boot enter to the hard disk boot. Then switch to the "Save&Exit" interface, save and exit, now the computer will normally start, the operation is complete.

7. CE Certificate

Vojenský technický ústav, s.p.

odštěpný závod VTÚPV

Vita Nejedlého 691, 682 01 Vyškov, Czech Republic

CERTIFICATE

N° VTÚPV - 118 / 2016 / ZAHK

Applicant: Beijing Miaoxiang Science and Technology CO., LTD/
北京妙想科技有限公司
Liyuan South Road, Tongzhou District, Beijing, P.R. China

Product: Fail Cans Rejecting Equipment

Tested Model: MX-360-4
Derived Models: MX-350-3, MX-360-4, MX-360-2, MX-360-3, MX-360-5, MX-360-6, MX-361-1, MX-361-2, MX-361-3, MX-361-4, MX-361-5, MX-361-6

Manufacturer: Beijing Miaoxiang Science and Technology CO., LTD/
北京妙想科技有限公司
Liyuan South Road, Tongzhou District, Beijing, P.R. China

Rating and principal characteristics:
Input Voltage: 380 V AC/50 Hz; Input Current: 5 A;
Input Power: 2000W

Test results are described in the Test Reports No.:
BST1503407320001ER-1 (tests made by Shenzhen BST Technology Co., Ltd.)
BST1503407320001SR-2 (tests made by Shenzhen BST Technology Co., Ltd.)

The sample of tested product conforms with the requirements of the following standards harmonized with the EMC Directive No. 2014/30/EU and LVD Directive No. 2014/35/EU

- EN 61010-1: 2010
- EN 61326: 2013

This certificate is valid until: **21. 06. 2021**

After preparation of the necessary technical documentation as well as the conformity declaration, the required CE marking can be affixed on the product. Other relevant directives have to be observed.
The CE mark shall appear according to this sample:



Vyškov 21. 06. 2016

Tel./Fax: +420 910 105 517
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<http://www.vtusp.cz>


Milan Bezdek
Certification Head



8 Parts list

Parts list				
Product: Fail Cans Rejecting Equipment Model: MX-361-4 Quantity: 1				
No.	Description	Quantity	Model	Manufacture
1	Advantech Computer	1	ADVANTECH IPC-7120	Taiwan, China
2	BASLER camera	4	Aca1300-30gm (ID 104845-18)	Germany
3	Lens	4	COMPUTAR HO514-MP2	Japan
4	Voltage Transformer	1	XAD BK-1000VA	China
5	EMI Filter	2	BA-6A	China
6	PLC	1	OMRON CP1E-N14DT-D	Japan
7	Rotary Encoder	1	NOC3-SP5000-2MC8-200-00E	Japan
8	Banner sensor (70252)	1	QS186LE (70252)	America
9	Banner sensor (61642)	1	QS18VP6R (61642)	America
10	Solid State Relay	2	GTJ19-10A	China
11	Solenoid Valve	1	AIRTAC 4V110-06	Taiwan, China
	Power supply changeover	1	LRS-100-24 AC220 to DC24	China
	power supply changeover	1	LRS-100-12 AC220 to DC12	China
12	Intensity	1	OPT-RID240-W	China
	Digital Intensity Controller	1	OPT-DP1024	
13	Driving Motor	2	REXMAC RRA71B4	Taiwan, China
14	Variable-frequency Drive	2	DELTA VFD015M43B	Taiwan, China
14	Air conditioner	1	A600LT AC220V/50HZ	China
15	Conveyor	2	Total length 4.036 Meter	Beijing Miaoxiang
16	Cabinet	1		Beijing Miaoxiang
17	Software	1		Beijing Miaoxiang

9 Special spare parts

Special spare parts list				
Product: Fail Cans Rejecting Equipment Model: MX-361-4 Quantity: 1				
No.	Description	Quantity	Model	Manufacture
1	Conveyor belt	5set		China
2	Driving wheel	5set		China