AH Series
AH-400 User's Manual

Contents- (A) Machine

Contents- (A) Machine

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Chapter 1 Product Specifications

1-1 Appearance

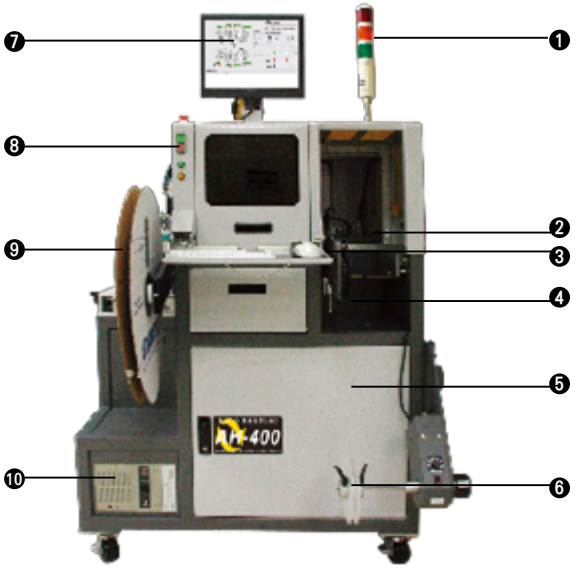
1-2 Basic Specifications

Transmission System	Throughput	UPH 1.5k
	Repeatability	X axis ± 0.02mm Y axis ±0.05mm Z axis ± 0.02mm R axis 0.01°
	Max. stroke	X axis 200mm Y axis 550mm Z axis 50mm R axis 330°
	Pick & Place method	Multi vacuum nozzles
	Component detection	Vacuum sensor
	Dimensions	1400(H) x 1160(L) x 950(W) mm
	Dimensions(including ATM)	1400(H) x 1160(L) x 1400(W) mm
	Net Weight	~300kg

Positioning System	Positioning	Precissor
	Precissor Dimensions	max 30 x 30 mm
Programming System	Resident programmer	SU-6000 GANG-4 Programmer
	Socket site	2~16
	Pin driver	40 universal pin drivers per set
	Devices supported	EPROM, EEPROM, FLASH, MCU
	Applicable packages	SOP, SSOP, SON, TSSOP, MLP, QFN,SNT, LQFP64
	File formats supported	INTEL HEX, MOTOROLA HEX, TEK MEX, ASCII HEX, BINARY...
	Communication	USB 2.0
	Safety	CE compliant
Loader/unloader System	Tube-in	150mil, 207mil, 300mil, 330mil
	Tube-out	150mil, 207mil, 300mil, 330mil
	Tape-in	Available for tape with 12~32mm tape width
	Tape-out	Press-sealing mode. Accept tape with 12~32mm
Control System	Operating system	PC-based control with Windows XP
	Display	17" TFT LCD monitor
	Data entry	keyboard/mouse
Operating Requirements	Input voltage	AC200~245V, Single-phase, 3-wires
	Input line frequency	50/60Hz
	Power consumption	1.5 KVA
	Air pressure	0.6MPa(~6.0kg/ cm 2)
	Air flow	32 liter/min.

Chapter 2 Illustration of AH-400 Configuration

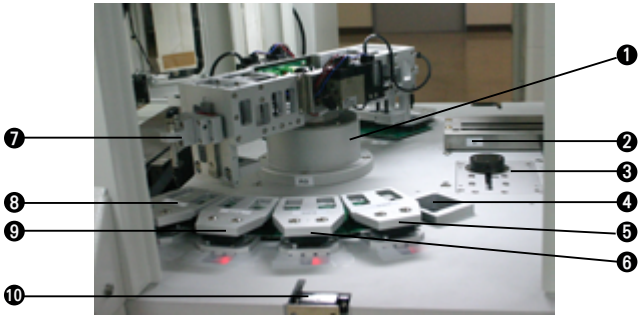
2-1 Illustration of the Equipment



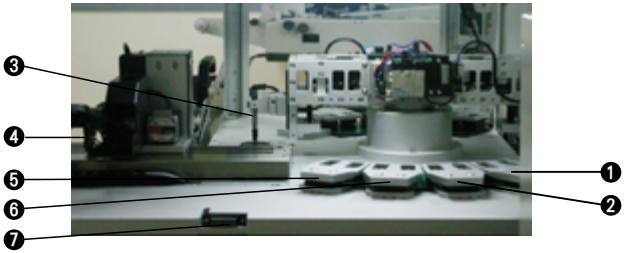
1. Three-color indicator (Alarm)
2. Feeding area
3. Keyboard and mouse
4. Front door
5. Electric appliance front door
6. Carrier recycling area
7. Monitor
8. Control buttons
9. Unloading area (with optional maker)
10. Computer

2-2 Illustration of the Programming Area

- Front View



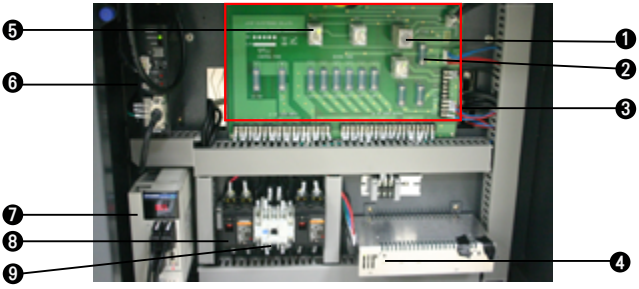
1. R0 axis
2. X axis
3. R1 axis
4. IC programming failure recycling box
5. SOCKET site 7-8
6. SOCKET site 5-6
7. Z0 axis
8. SOCKET site 1-2
9. SOCKET site 3-4
10. Safety sensor of front door



1. SOCKET site 15-16
2. SOCKET site 13-14
3. Z1 axis
4. Z2 axis
5. SOCKET site 9-10
6. SOCKET site 11-12
7. Safety sensor of back door

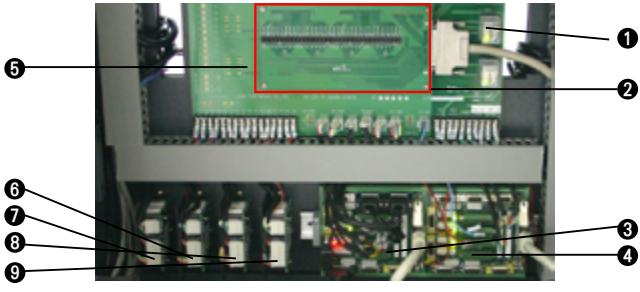
2-3 Illustration of Circuit Distributors

- Main Circuit Distributor



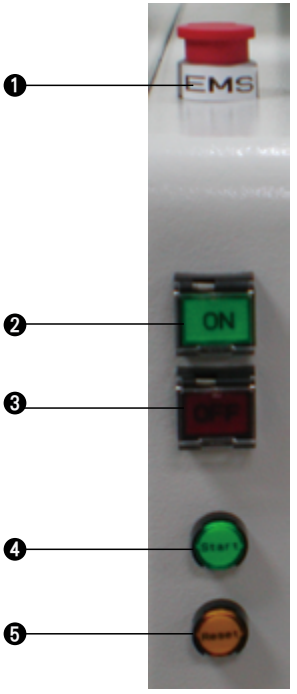
1. Timer
2. Fuse
3. AC control circuit board
4. Power supply
5. Relay
6. R0 axis driver
7. X axis driver
8. Breaker
9. Magnetic switch

- Control Circuit Distributor



1. Relay
2. DC control circuit board
3. 814M0 terminal board
4. 814M1 terminal board
5. I/O board
6. Z2 axis driver
7. R1 axis driver
8. Z0 axis driver
9. Z1 axis driver

2-4 Illustration of Control Buttons

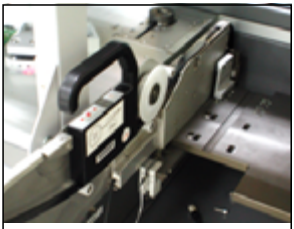


1. Emergency stop button
2. Power on button
3. Power off button
4. Start button
5. Pause/Resume button

2-5 Loader and Unloader Systems

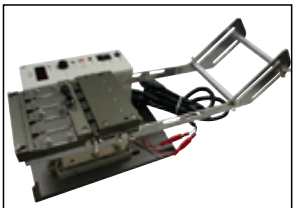
● Loader System

(1) Automatic tape loader module (FEEDER)



ATF-1

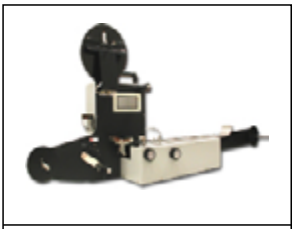
(2) Semiautomatic tube loader module



STI-4-XXXkit

● Loader System

(1) Automatic tape unloader module



ATM-100

2. Semiautomatic tube unloader module

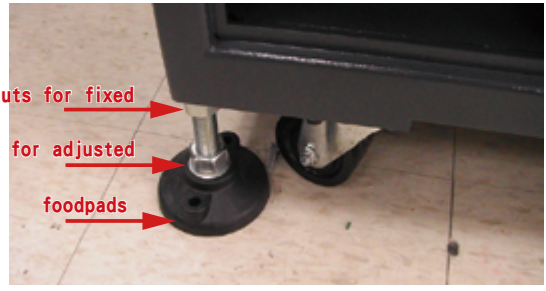
STO-4-XXXkit

Chapter 3 Installation & Replacement on The Programmer Area

3.1 Programmer

Before using the equipment, it should be fixed well and connected to the air source and power. After inspecting all the accessories have been installed successfully, then the power can be turned on to start the operation.
*.NOTE: Please make sure you have indeed followed the installation procedure and have inspected each installation step carefully.

3-1-1 Equipment Fixation



After determining the location of the equipment, use a wrench to rotate the footpads and to fix the associate nuts. If there is a need to adjust the height of the equipment, release the fixed nuts first and then adjust the footpads.

3-1-2 Power Installation

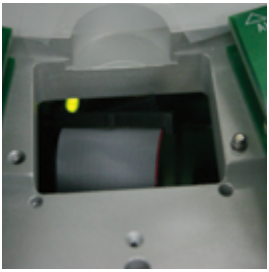
While installing the power, use a 3-hole socket that supplies single-phase 220V 50/60Hz voltage and contains a ground line.
*.NOTE: In the absence of the same type of sockets, please contact us to assist in the installation of power.

3-1-3 Air Source Installation

Use moisture-free and impurities-free gas as the air source. Since the air pressure requirement of the equipment is 5-6 kg/cm², a stable pressure of 6 kg/cm² is recommended.

3-1-4 Programming Area Installation

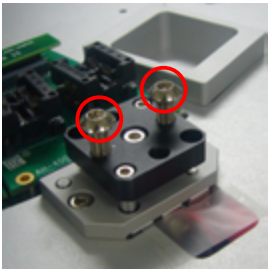
A. Programming Socket Sites



After connecting the flat cable of a programmer to a driver board, install it on the equipment to match with the locating pins, and then lock it with the screws.

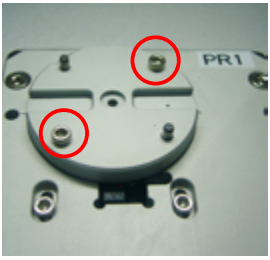
*.NOTE: The driver board should be indeed placed through the locating pins. Before installing the socket, make sure whether the model is correct.

B. Press Modules



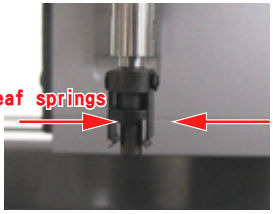
Remove the two screws of the left picture. Put on a press bar, and finally lock the screws back.
*.NOTE: Before installation, make sure whether the press bar model matches with the socket model.

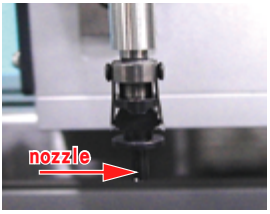
C. Precissors



Remove the two screws of the left picture. Put on a precissor, and finally screw them back.
✱.NOTE: Before installation, make sure whether the precissor model matches with the socket model.

D. Vacuum Nozzles

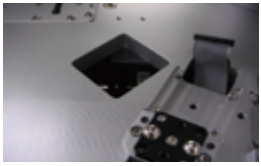




Install the nozzle from the bottom of the nozzle shaft to the top. Then, clip the nozzle with the leaf springs on the both sides of the nozzle.

*.NOTE: Make sure to rotate the inclined planes of the nozzle such that they match with the leaf springs to fix.

E. IC Programming Failure Box

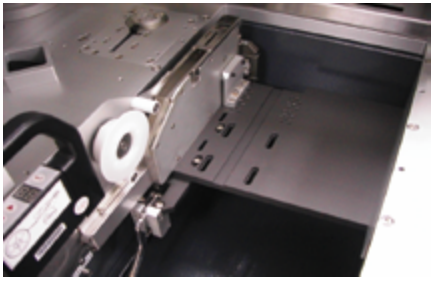


Put the IC programming failure box into its installation position.

*.NOTE: The IC programming failure box should be completely put on the desktop flatly. Otherwise, the nozzle or shaft will be damaged if it collides with the IC programming failure box while the equipment is running

3-1-5 Loader/Unloader Module Installation

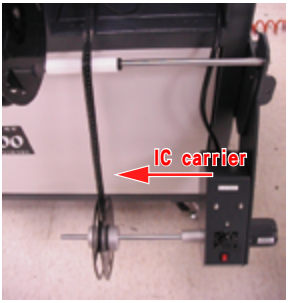
A. ATF-1 Automatic Tape Loader Module (FEEDER)



Put the IC tape on the FEEDER, and then install the FEEDER into the feeding area.

Plug the FEEDER's connector into the "Feeder 1" socket location to complete the installation.

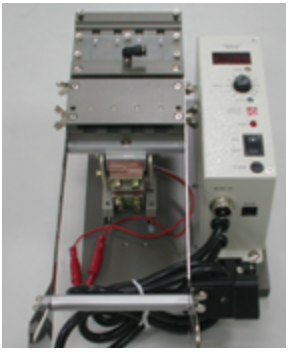
B. RTF Automatic Carrier Recycling Module

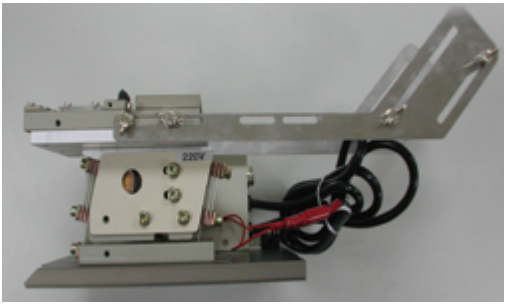


For recycling the IC carrier, insert it into the recycling reel. After turning on the power, the RTF module will automatically recycle the IC carrier.

✱.NOTE: Adjust the speed of the RTF module to the position of 55. If the tape is too tight, it will affect the stability of loading of FEEDER.

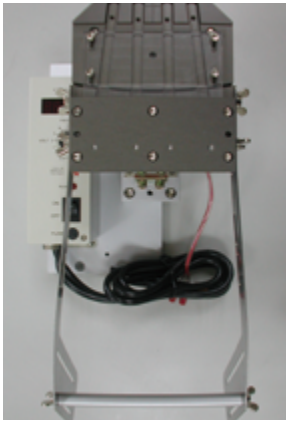
C. STI-4 Semiautomatic Tube Loader Module

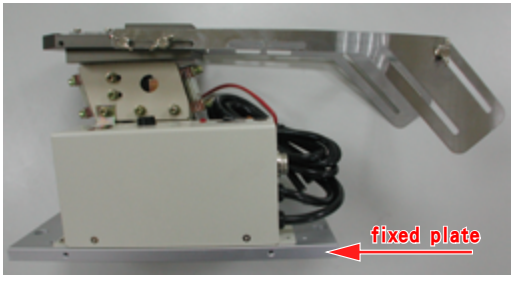




Remove FEEDER module, and install the STI-4 onto the machine. Connect the power line, the air pressure tube, and the COM1 cable to the machine to start the operation.

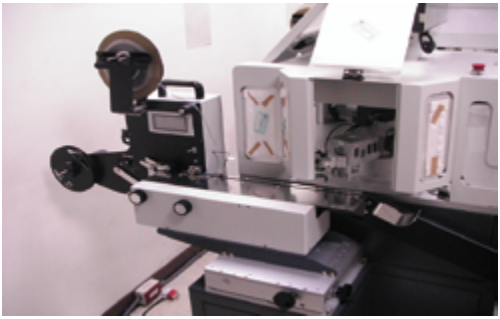
D. STO-4 Semiautomatic Tube Unloader Module





Fix the floor plate of the unloader module STO-4 to the machine. Adjust the IC unloader to the proper place where the machine can correctly put ICs into the tubes. Follow the direction to connect the power and air source. Then, adjust the controller so that ICs will vibrate smoothly into the unloader tubes.

E. ATM-100 Automatic Tape Unloader Module



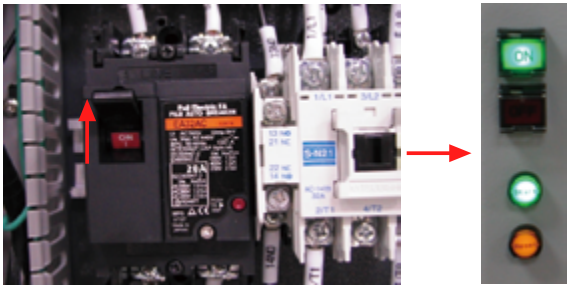
Install the tape unloader module ATM-100 to the machine and adjust it to the proper place such that the machine can correctly put ICs into the tape. Then, turn on power.

3-1-6 Marker Position Adjustment

Adjust the location and depth of the marker.

3-2 Boot Procedure

Step 1:After connecting the power, switch the breaker to the "ON" position. Then, the control buttons ON (green), Start (green), and Reset (yellow) will light on, as shown in the following picture.



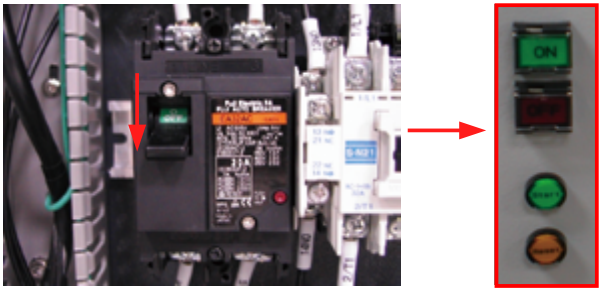
Step 2:Lift the protection cover of the ON button, and press it. Then, the light of the ON button will turn off, and the light of OFF (red) button will turn on, as shown in the following picture. This means that the main power is turned on.

Step 3:Connect the air source and push the manually actuated valve (blue slip ring) to open air. Then, turn on the computer to complete the boot procedure.

3-3 Shutdown Procedure

Step 1:After the system has finished all its operations, power off the computer. Lift the protection cover of the OFF button, and press it to turn off the main power.

Step 2:Switch the breaker to the "OFF" position to completely turn off the power. Then, all the control buttons (ON, OFF, Start, and Reset) will light out.



Step 3:Close the air by pulling the manually actuated valve (blue slip ring) to complete the shutdown procedure.

Chapter 4 Installation & Replacement on The Programmer Area

4.1 Programmer

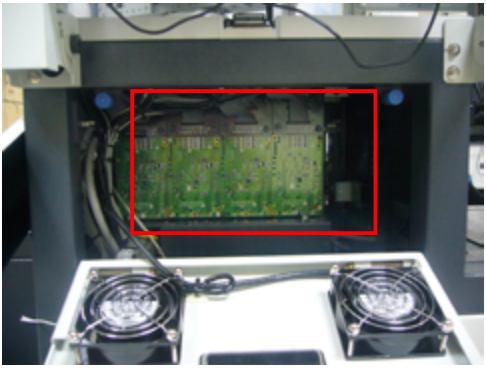


Fig 4-1: Programmer

4.2 Adapter Replacement

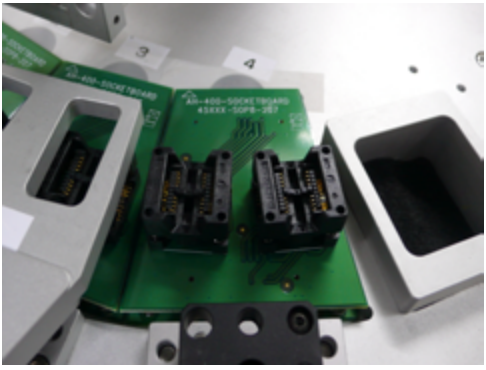


Fig 4-4: Adaptor

Dismantle the pressbar and take off the adapter. Please insert the adapter carefully.

4.3 Precissor Replacement

Fig 4-5: Precissor

We can change the precissor after remove the screw. Please take it in parallel way carefully.

4.4 Pressbar Replacement

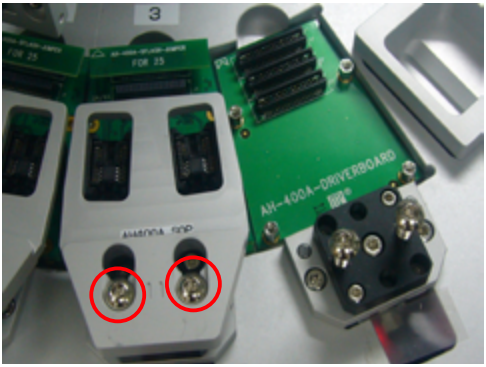


Fig 4-6: Pressbar

You can change the the pressbar after remove the screws. Please check if the pressbar meet with the adapter and install it carefully.

4.5 Vacuum Nozzle Replacement

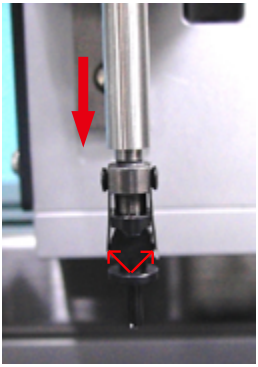


Fig 4-7: Vacuum Nozzle

After pull down and push the both side shrapnel, we can start the replacement.

Chapter 5 Installation & Replacement For The Parts of Electrical Box

5.1 The Main Circuit Distribution Panel.

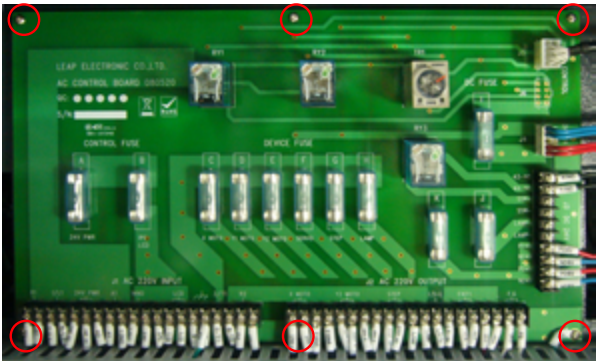


Fig 5-1: Main Circuit

If you would like to change the the AC distribution panel, please detach all of the cables & parts, and loosen the 6 fixed screws.

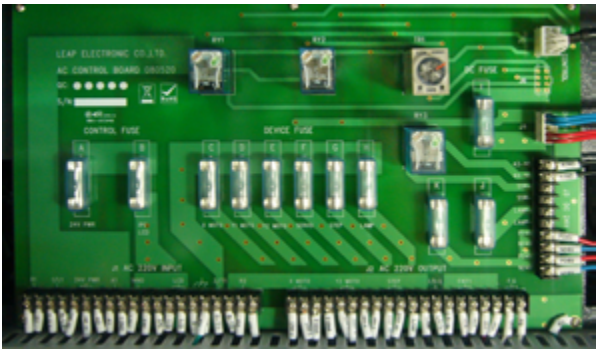


Fig 5-2: distribution Panel

If the relay need change, please uproot. Please select the compliance of model of DC24V.
Please note the direction.

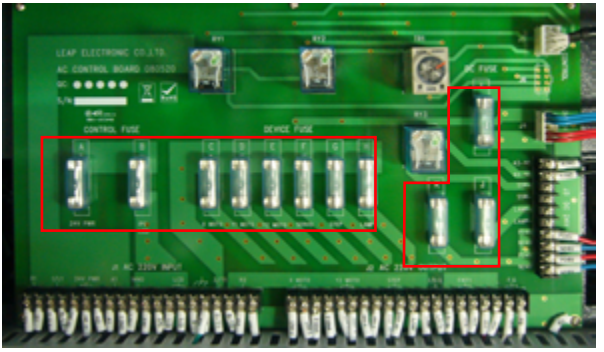


Fig 5-3: Fuse

If the fuse burned, please remove the blue cover and do the exchange. Please select the same specs fuse to avoid damage other parts

5.2 The Control Loop Distribution Panel

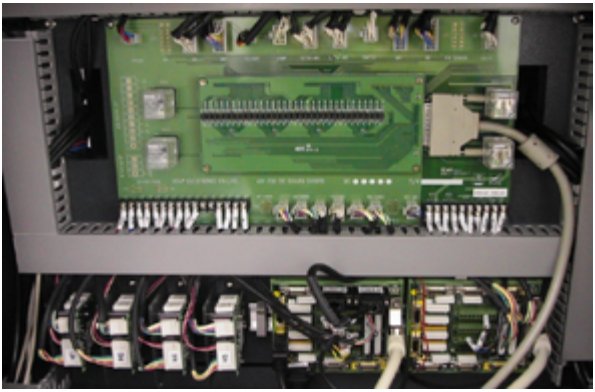


Fig 5-4: Motor Control Distribution panel

If the relay failure need to exchange, please uproot. And selection the same model for exchange.

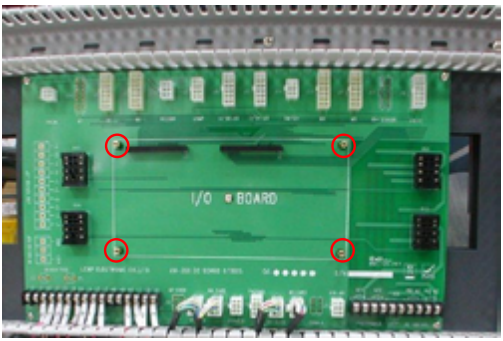


Fig 5-5: Relay

If the IO card failure, please loosen the 4 screws and detach. When you do the exchange, please make sure that the IO card fixed holes are in conjunction with the screw holes. Otherwise the IO card will be burned.

5.3 The Vacuum Electromagnetic Valve Replacement

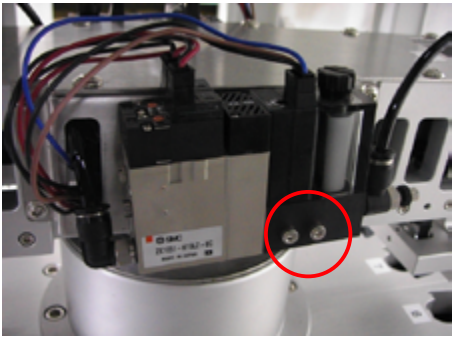


Fig 5-6: Vacuum Electromagnetic Valve

Please detach the cable and loosen the 2 screws for replacement.

5.4 Electromagnetic Valve Replacement

Fig 5-7: Electromagnetic Valve set

Please detach the cable and loosen the 2 screws for replacement.

Chapter 6 Feeder Installation & Replacement

6.1 ATF Installation & Replacement

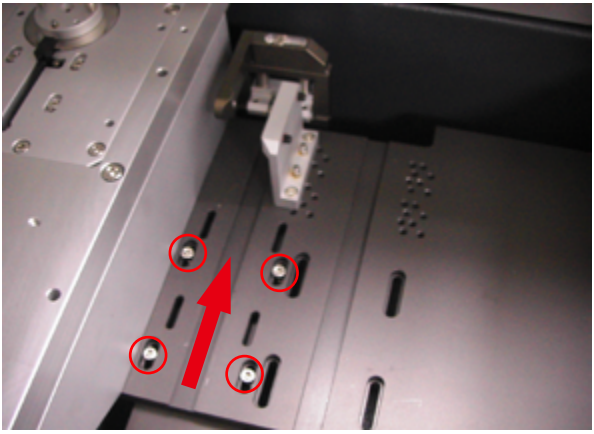


Fig 6-1: Feeder Holder

Please adjust the holders for matching the feeder of 12, 16, 24, 32mm bandwidth.

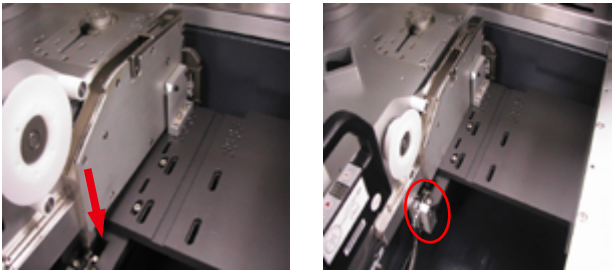
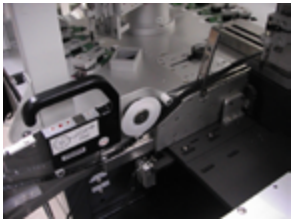


Fig 6-2: Installation Feeder

Please lift upward the handle (the red circle), move the front edge to the right place and push down to fix it.

Fig 6-3: Feeder

Put the IC reel on the feeder. Put down the plate to fix.



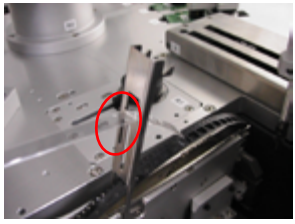


Fig 6-4: Install the IC reel.

After IC reel go through the feeder, take the cover tape through the plate hole.

Fig 6-5: Fix IC reel

Install the IC reel on the drive gear and put the cover on.

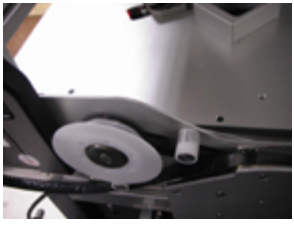


Fig 6-6: Cover Tape

Put the cover tape on the recycle wheel. Connect the Feeder 1.
If you would like adjust the feeder position, please adjust the screws position as the fig 6.1.

6.2 ATR Installation

Fig 6-7: ATR

Please install the ATR on the right side of the machine as the left fig 6-7.

Fig 6-8: Installation

Tighten the screws, then, open the door and connect the power.

Fig 6-9: Installation

Install the carrier tape to the reel, power on for start recycle. Please adjust the speed on 55. If too tight will influence to feeder Stability.

Chapter 7 Taping Machine Replacement

7.1 ATM-100 Use & Installation

Fig 7-1: Back Fixed Screws

Please remove the back fixed 3 screws for replacement.

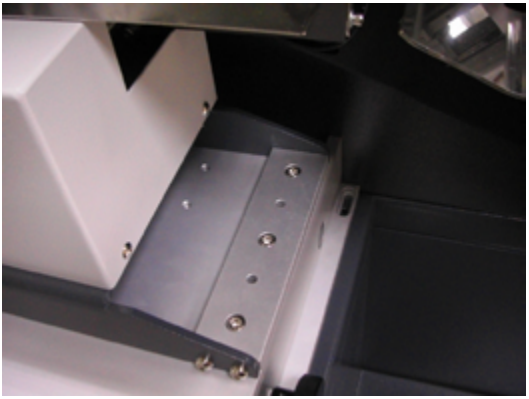


Fig 7-2: Front Fixed Screws

After removing the front fixed 3 screws, you can start replacement.

Fig 7-3: Instal Carrier

Instal the carrier on the ATM-100 through the track. You can adjust the bandwidth.

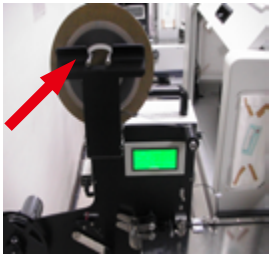


Fig 7-4: Install Cover Tape

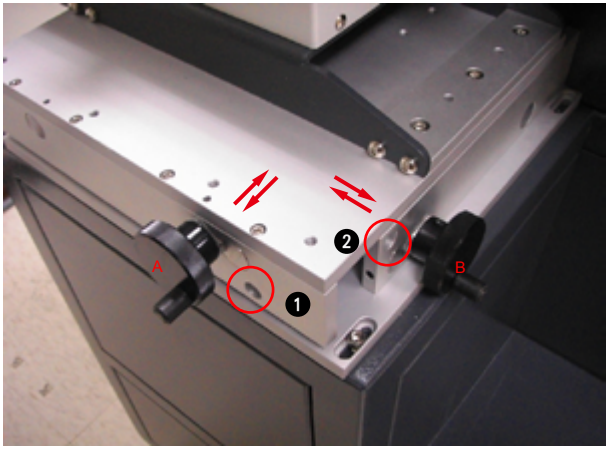
Stick the cover tape on the carrier, go through the press-handler to fixed the cover tape and carrier.

Fig 7-5: Finish Installation

Install the carrier tape on the recycle wheel, power on to start the recycle.

Fig 7-6: Power on

After connecting the power cable and control cable, power on to start the movement.



If the position is not correct, please adjust the direction by the handler. After than, please fix the the handler A by screw 1, handler B by screw 2.

7.2 MK-1 Adjustment

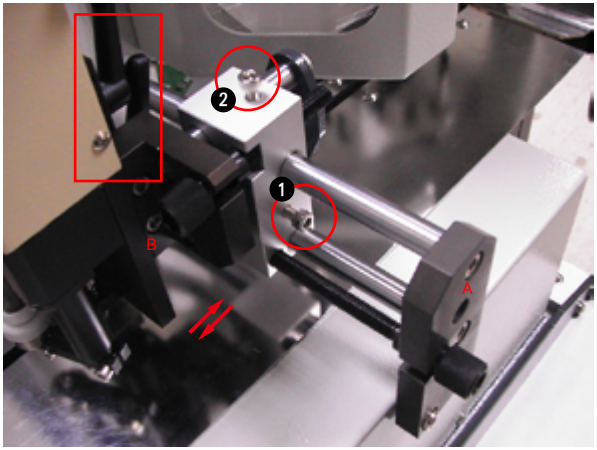


Fig 7-7: Adjust Position

If you would like to adjust the marking position. Please adjust the handler A&B. You can screw the 1&2 for the handler A&B. You can connect the the pressure source and control cable for start the movement.

Chapter 8 Simple Trouble Shooting

5-1 Power

1. After connecting the power, the power ON button does not turn on.
   (1) Check whether the breaker of the main circuit distributor (Section 3-3) is on.
   (2) Check whether the fuse of the main circuit distributor (Section 3-3) is burned out.
2. The equipment cannot be turned off.
   (1) Check whether the timer of the main circuit distributor (Section 3-3) is set too long.
3. There are no responses to the keyboard or the mouse.
   (1) Check whether the cables are connected to the computer properly.
4. There are no responses to the I/O points.
   (1) Check whether the cable of the I/O board of the main circuit distributor
   (Section 3-3) is connected to the main circuit distributor computer properly.

5-2 Air Press

1. There are no responses to the cylinder or the vacuum nozzle.
   (1) Check whether the manually actuated valve is opened (Section 4-2).
   (2) Check whether the barometer of air source (Section 4-1-3) is in the correct range (5-6kg/cm2).

5-3 Programmer

1. There are no responses to programmers
   (1) Check whether the power is turned on.
   (2) Check whether the power of programmers is connected properly.
   (3) Check whether the USB cable is connected properly (including the computer site).
2. The failure rate of programming is too high.
   (1) Check whether the cable is connected with the programming SOCKET (Section 4-1-4) properly.
   (2) Check whether the press module has fully opened the programming SOCKET (Section 4-1-4).
   (3) Check whether the SOCKET is out of usable period.

Chapter 1 Getting Stared

1.1 Software Installation

This software is for the models of AH-200A, AH-400, AH-400A, AH-400B, AH-401. When you need to install the software, please contact Leap to got the right versions. They should be included:

1. Electronic control software, ah-400b_vX.XXX.zip, X.XXX is for the version.
2. Programmer conrol software, XXXXXXXX_SU-6000.exe, XXXXXXXX is for the publish date.

Install the electronic control software:

1. 1. Double click the file. Start the install procedure.

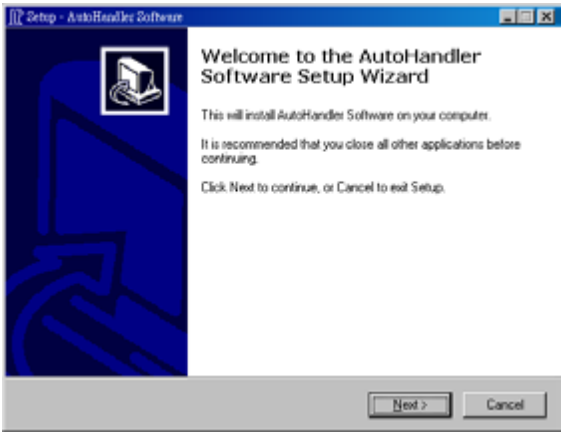


Fig 1-1 Start the electronic control software

2. Click the model no.

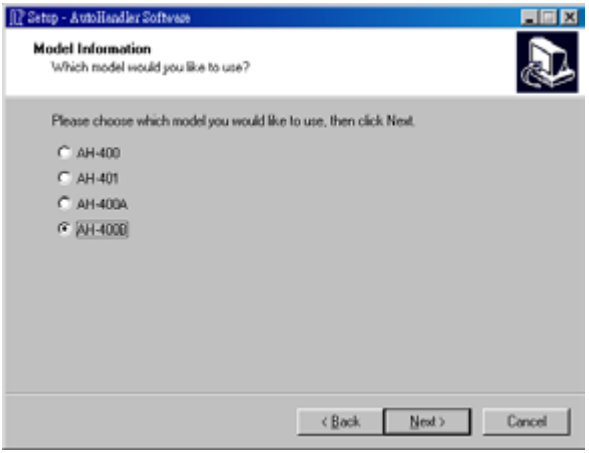


Fig 1-2 Select the model

3. Key in the AH serial no..

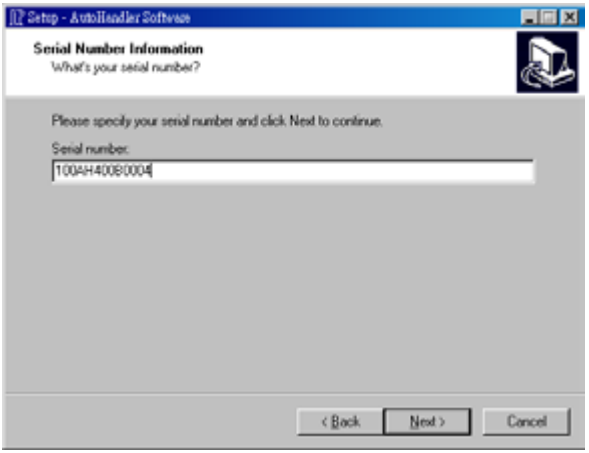


Fig 1-3 Key in the serial no.

4. Select the destination location. Please use the default.

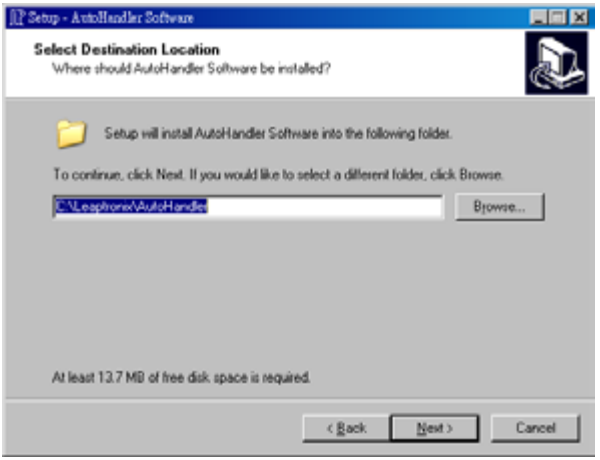


Fig 1-4 Select destination location

5. Confirm the Model no. and serial no..

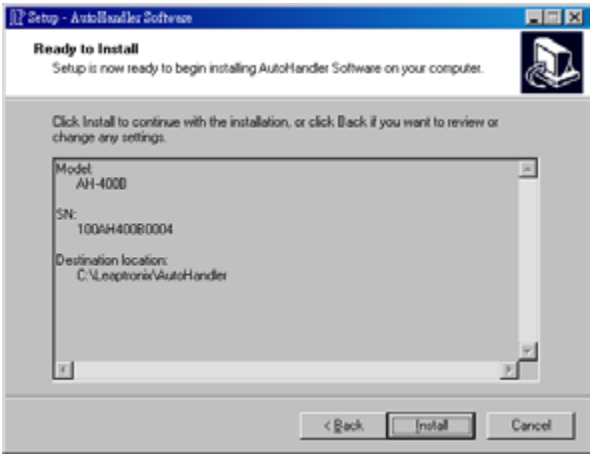


Fig 1-5 Confirm the model no. and serial no..

6. Installing, please wait.

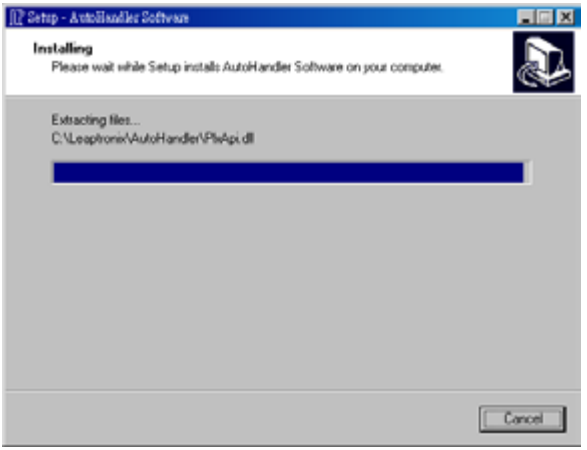


Fig 1-6 Installing

7. Click finish to complete.

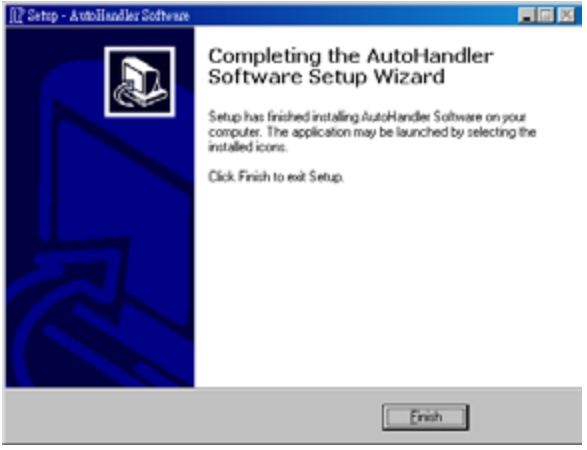


Fig 1-7 Completing.

Then, instal the programmer control software. Click XXXXXX_SU-6000.exe The below will show. Please select Yes. After completing, the window will close automatically.

Fig 1-8 Programmer location

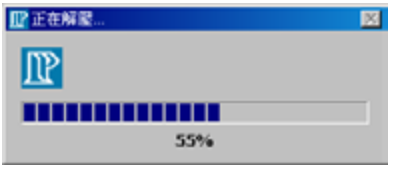


Fig 1-9 Programmer installing.

1.2 Software Start

Power on the system. Power on the IPC. Enter the operation system, the below will show.

Fig 1-10 : Software start

If can not start the software and show the below. Please contact Leap or the distributors.

Fig 1-11 : Error message

The axis control card and I/O card quantity for each model are as below.

Model	AH200A	AH400	AH401	AH400A	AH400B
Axis control card	2	2	2	2	2
I/O card	1	1	1	1	2

Chapter 2 Operation Procedure

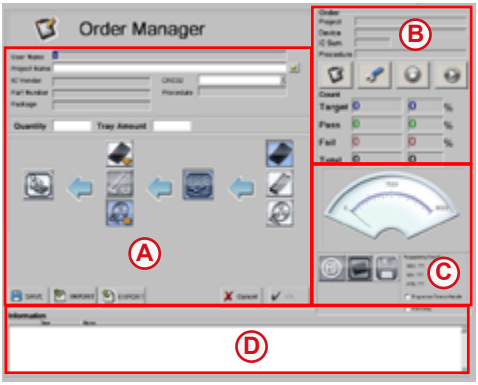
2.1 User Login

After starting the software, please enter your account and password. If account and password are correct, the will light. Press it to login to project management software. When you first login to the system, please use default account-Leaptronix or (Administrator) and password-Leaptronix or (Administrator). After doing that please set your personal account/password. And every character is case sensitive.

2.2 Order Manager Description

2.2.1 Column Description

After user login, the software will get in to Order Manager Screen. It is divided into four regions. Each region will be explained as below.



pic2-1 : four regions

Major function of four regions:

A. Project loading, action program of machine, save, import, export and control panel

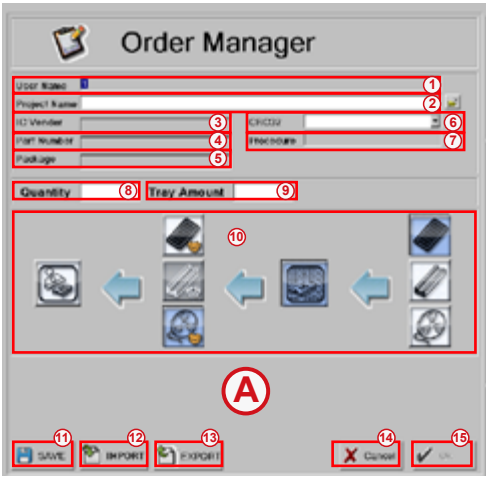
B. Project information and advanced setting, production volume, action process selection, options.

C. Current production capacity (Unit Per Hour), production options.

D. The history of the current project's operation.

The 4 regions will be described as following :

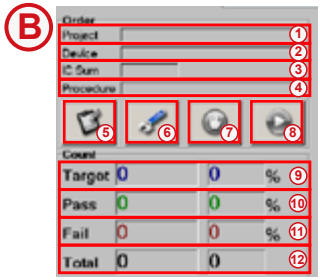
Region A introduction



pic2-2 : Region A introduction

Column	Column name	Description
1	**User Name**	User account name
2	**Project Name**	Show the project file path and file name.
3	**IC Vender**	Selected IC manufacturers of project file.
4	**Part Number**	Selected IC part number of project file.
5	**Package**	Selected IC package of project file.
6	**CRC32**	CRC32 Checksum of to be programmed data. Due to NAND's lager capacity, it will be split according to the data size. It may appear that more than two CRC32 Checksum.
7	**procedure**	Action procedure of the programmer in project file.
8	**Quantity**	Expected production volume
9	**Tray Amount**	When user uses the tray mode, it will automatically calculate the production volume from tray.
10	**Produce**	Production mode: This part will be described later.
11	**Save**	Save parameters of each axle and production mode in the project file.
12	**IMPORT**	According to the appointed location to load parameter file.
13	**EXPORT**	Save the current parameter file to user's appointed location.
14	**Cancel**	Leave the order manager screen back to the user login screen.
15	**OK**	After the user finish the parameter setting, and the programmer is also normal. It will begin production project.

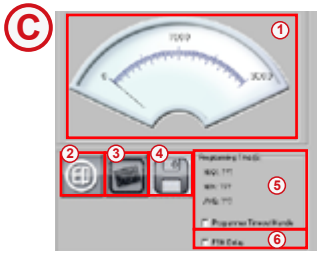
Region B introduction



pic2-3 : region B introduction

Column	Column name	Description
1	Project	Display currently loaded project file name.
2	Device	Shows selected IC brand and model in project file.
3	IC Sum	Shows IC SUM value in project file.
4	Procedure	Shows the action procedure of the programmer in project file.
5	Save & Back	Leave the system settings page and return to current work page.
6	Setting	Switch from the current page to the system settings page.
7	Stop	To suspend production process while production. The function is the same as "Reset" button in front of the machine.
8	Start	Begin to produce in production process. The function is the same as "start" button in front of the machine.
9	Target	Shows the target number of production and completed percentage. The number of production is based on the feed quantity.
10	Pass	The passed number and percentage from the completed quantity.
11	Fail	The failed number and percentage from the completed quantity.
12	Total	Shows the current number which has been completely fed.

Region C Introduction



pic2-4 : Region Cintroductionintroduction

Column	Column name	Description
1	**UPH Pointer**	Shows the current capacity in the production process. Divided into: feeding zone capacity, discharging zone capacity and overall production capacity. The overall production figure will show below the pointer.
2	**Printing**	Customer can close or open print function when system shows print function during processing.
3	**Productivity calculation**	Re-calculate the machine current capacity.
4	**Storage Status**	Save current on or off state of adapters.
5	**Programming time**	Show the time during production process.
6	**Programmer timeout handle**	When check this option, the system will be suspended 1 second for each action. In order to adjust machine operation.

Region D Introduction

pic 2-5 : region D instruction

This region will record any malfunction of the software and any adjustment.

2.2.2 Production mode selection

In Production mode selection, every button has its unique setting function as pic2-6.We will explain the various functions as following.

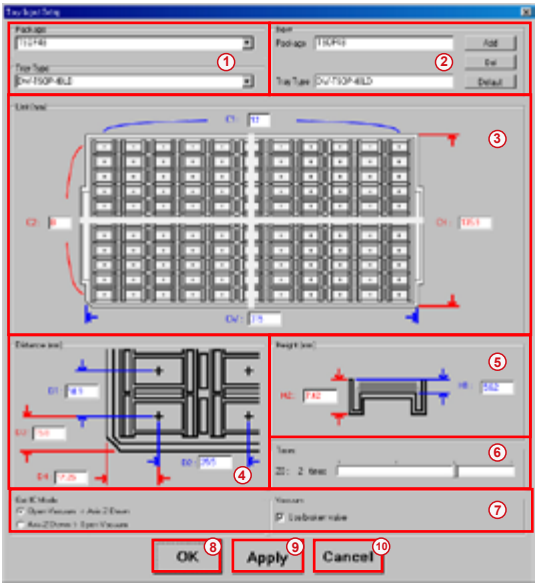
pic2-6 : Production mode selection

Button	Button name	Button function
1	**Tray Input Setup**	Tray's related settings. The setting screen is the same as Tray Output setup. (AH200, AH200A, AH400 are without this feature.)
2	**Tray Output Setup**	Tray's related settings. The setting screen is the same as Tray input setup. (AH200, AH200A, AH400 are without this feature.)
3	**Programming Setup**	Programming-related settings, such as IC placement angle and Delay time.
4	**Tape Input Setup**	Set the interval of the IC feeding time and retry numbers.
5	**Tape Output Setup**	Set the interval of the IC discharging time and Pulse Width.
6	**Print Setup**	Set the interval of the printing time and Pulse Width.

The following will explain each button's function.

2.2.2.1 Tray Input Setup & Tray Output Setup

Tray input and output are the same function window.

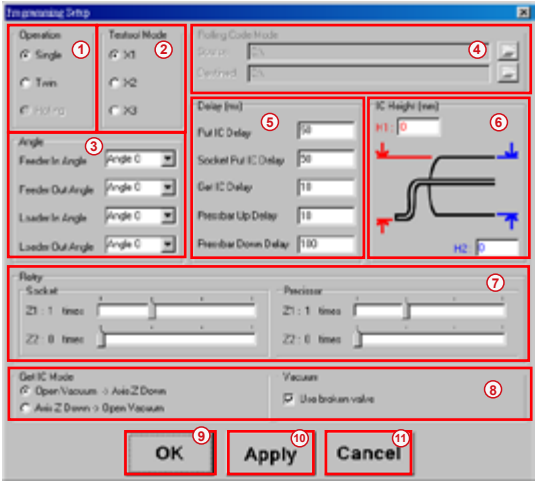


pic2-7 : Tray Input Setup & Tray Output Setup

Code	Option name	Function
1	**Package & Tray Type**	Select Package, it will reset all the parameters. Select Tray Type , it will reset all the parameters except package.
2	**NEW**	Add different type of tray by users.
3	**Unit**	**Set the parameters of IC trays:** **C1 :** IC number of Tray Row direction. **C2 :** IC number of Tray Column direction. **CW :** The length of Tray Row direction (unit: mm). **CH :** The width of Tray Column direction (unit: mm).
4	**Distance (mm)**	Set the IC and IC position in Tray, or IC and the edge of Tray position. **D1 :** The center distance between IC and IC in Column direction. (Unit: mm) **D2 :** The center distance between IC and IC in Row direction. (Unit: mm) **D3 :** The distance between first IC center and the edge of Tray in Column direction. (Unit: mm) **D4 :** The distance between first IC center and the edge of Tray in Row direction. (Unit: mm)
5	**Height (mm)**	Set the height of IC placement in Tray. **H1 :** The depth of the IC placement in Tray. **H2 :** The total depth of the tray.
6	**Times**	The amount of re-taking times when Z0 axis takes failure,
7	**Vacuum**	Whether use vacuum function when release IC (Default is recommended) Select the timing to switch on vacuum generator, when absorb IC. (Default is recommended)
8	**OK**	Write current settings into parameter file and leave this page to last one.
9	**Apply**	Write current settings into parameter file and stay at this page
10	**Cancel**	Cancel current settings and leave this page to last one.

2.2.2.2 Programming Setup

Programming related parameter setting



pic2-8 : Programming Setup window

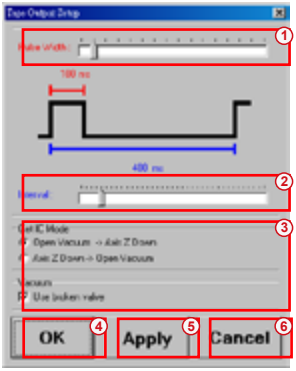
Code	Option name	Function
1	Operation	Select operation mode of automatic programmer. Include: "Single", "Twin", "Rolling". However, Twin and Rolling are special modes and locked.
2	Textool Mode	Select adapter mode. Include: "X1", "X2", and "X3". However, X3 is special mode and locked.
3	Angle	Feeder In is the tank incline angle when Z0 axis is feeding in to tank Feeder Out is the tank incline angle when Z1 axis is feeding out the tank. Loader In is the tank incline angle when Z1 axis is discharging in the tank. Loader Out is the tank incline angle when Zo axis is discharging out the tank.
4	Rolling Code Mode	Setting about Rolling, But the function is locked now.
5	Delay (ms)	**Put IC Delay :** The time from Z-axis are vacuumed to Z-axis rising. **Socket Put IC Delay :** The time from Z-axis are vacuumed to Z-axis rising. **Get IC :** The time from IC is vacuumed by Z-axis to Z-axis rising. (Unit: ms) **PressBar Up Delay :** The delay time of checking sensor when Press Bar rises up. **PressBar Down Delay :** The delay time of checking sensor when Press Bar is down.
6	IC Height (mm)	**H1 :** Height of the IC, including the pins **H2 :** Thickness of the IC
7	Retry	The retry time of Z-axis, when Z-axis fails in vacuuming IC on the socket and Precissor.
8	Vacuum	Whether use vacuum function when release IC (Default is recommended) Select the timing to switch on vacuum generator, when absorb IC. (Default is recommended)
9	OK	Write current settings into parameter file and leave this page to last one.
10	Apply	Write current settings into parameter file and stay at this page
11	Cancel	Cancel current settings and leave this page to last one.

2.2.2.3 Tape Input Setup

pic2-9：Tape Input Setup Window

Code	Option name	Function
1	Tape	The quantity of operated Feeder. Click to turn on or off. Need to turn on at least one Feeder when operating the machine.
2	Pulse	Feeder gun control signal, and the impulse width.
3	Times	The re-taking times if Z0 counters failure when absorb materials.
4	Vacuum	Whether use vacuum function when release IC (Default is recommended) Select the timing to switch on vacuum generator, when absorb IC. (Default is recommended)
5	OK	Write current settings into parameter file and leave this page to last one.
6	Apply	Write current settings into parameter file and stay at this page.
7	Cancel	Cancel current settings and leave this page to last one.

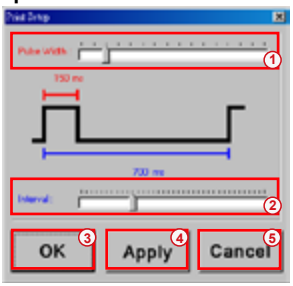
2.2.2.4 Tape Output Setup



pic2-10 : Tape Output Setup window

Code	Option name	Function
1	**Pulse Width**	Setting the pulse width of the discharge end.
2	**Interval**	Setting the interval time of the discharge end.
3	**Vacuum**	Whether use vacuum function when release IC (Default is recommended) Select the timing to switch on vacuum generator, when absorb IC. (Default is recommended)
4	**OK**	Write current settings into parameter file and leave this page to last one.
5	**Apply**	Write current settings into parameter file and stay at this page.
6	**Cancel**	Cancel current settings and leave this page to last one.

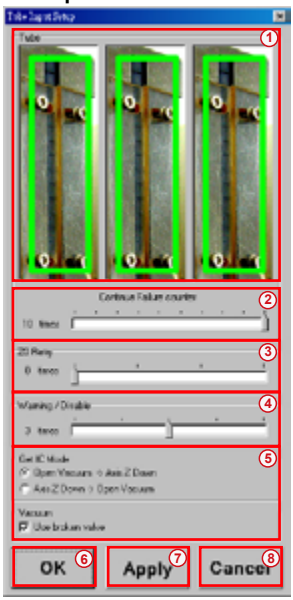
2.2.2.5 Print Setup



pic2-11 : Print Setup window

Code	Option name	Function
1	**Pulse Width**	Setting the pulse width of the printing impulse.
2	**Interval**	Setting the interval time of printing.
3	**OK**	Write current settings into parameter file and leave this page to last one.
4	**Apply**	Write current settings into parameter file and stay at this page.
5	**Cancel**	Cancel current settings and leave this page to last one.

2.2.2.6 Tube Input Setup



pic2-12 : Tube Input Setup window

Code	Option name	Function
1	**Tube**	The quantity of operated Tube. Click to turn on or off. Need to turn on at least one Tube when operating the machine.
2	**Continue Fail Counter**	When machine can not take the IC in one tube, it will turn to next one and next till the original tube. This process is called a cycle. Continue Failure counter value means the cycle times.
3	**Times**	The re-taking times if Z0 counters failure when absorb materials.
4	**Warning / Disable**	When one of the tube's warning time reaches the setting value, it will close the tube. After that, it will no longer take IC from this tube. If this tube is the last one, it won't close.
5	**Vacuum**	Whether use vacuum function when release IC (Default is recommended) Select the timing to switch on vacuum generator, when absorb IC. (Default is recommended)
6	**OK**	Write current settings into parameter file and leave this page to last one.
7	**Apply**	Write current settings into parameter file and stay at this page.
8	**Cancel**	Cancel current settings and leave this page to last one.

2.3 Production execution

1.Select project file (extension file name-prj), like pic 2-13.

pic2-13 : Select project file

2. After selecting, the software will load the project file and show the file information. Like pic 2-14.

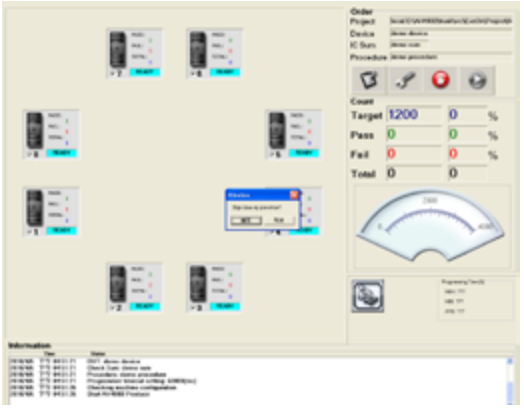
pic2-14 : Show the project file information

3. If the project file is loaded successfully, it will show Order information. The button OK will also appear. Like pic2-15.

Note: The file loading time depends on the file size. Please be patient. If the file is 264MB, it will take 1 minute on 3GHz CPU, 1GB RAM computer.

pic2-15 : confirm loading

4. At this time, user can adjust any setting and key in production quantity. After that, press OK to get in program screen. User can decide whether clearing the IC, please double check there's no IC left. Like pic2-16.



pic2-16 : program screen

5. Programming status as shown in pic2-17.

pic2-17 : programming status

* Move the cursor to icon . It will show each fail details.

Code	Icon	Function
1	PASS	The successful IC number for programming.
2	FAIL	The failure IC number for programming.
3	TOTAL	The total programming IC number.
4		Whether the programmer is started and its serial number.
5		Activated programmer.
6		The activated programmer. But it has just been shut down by the user, and will stop the action in next round.
7		The turned off programmer.
8	READY	The programmer is waiting for IC.
9	WORKING	The programmer is programming IC.
10	PASS	The success of programmed IC.
11	FAIL	The failure of programmed IC.

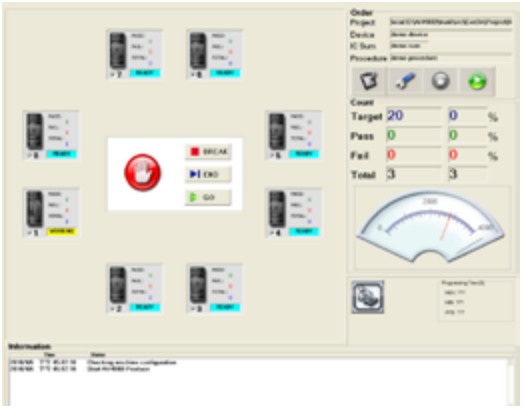
6. If the error occurs during production, it will jump to troubleshooting screen, shown in pic2-18.

pic2-18 : troubleshooting

Code	Name	Function
1	**Front View**	Front view of the fault location.
2	**Top View**	Top view of the fault location.
3	**Focus**	Photograph of the fault location.

Please follow the trouble reason to do troubleshooting.

7. User can press the yellow button on machine or button on the screen to pause the machine during production process. The screen will be shown as pic2-19.



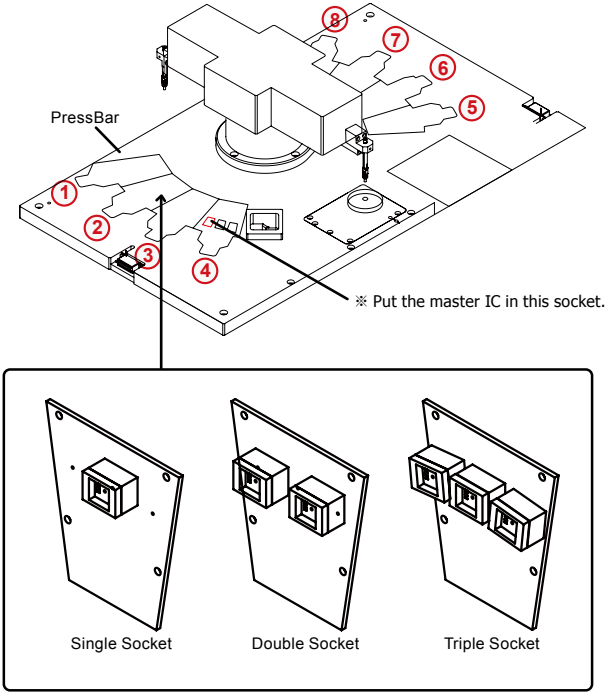
pic2-19 : pause

Code	Button	Function
1	BREAK	Ignore the current state machine, return to the project management screen directly.
2	END	Finish programming the remaining IC, and return to the project management screen.
3	GO or	To continue production.

2.4 Project Saving

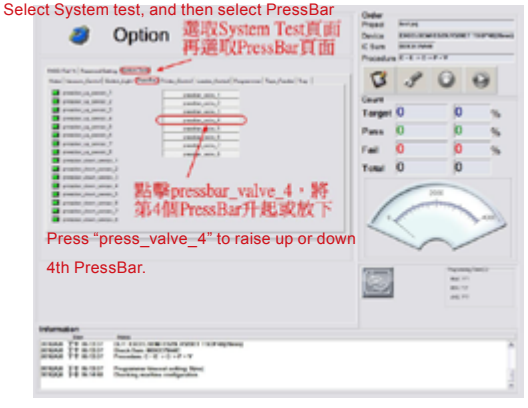
2.4.1 Control PressBar Procedure

For the first, please put the 4th PressBar down.(The PressBar near the far right side of the operator is the 4th PressBar). If it is the Single Socket, then put the master tape in Slot4(The 4th PressBar's corresponding slot is the Slot4). If it is the Double Socket, then put the IC master tape in Slot7(The 4th PressBar's corresponding 2 slots, the left one is Slot7). And raise the 4th PressBar. Pic2-20 ~ 2-21 indicates how to control the PressBar. 2-20 ~ 2-21 indicates how to control the PressBar.



The way of control pressbar is as below.

pic2-20 : control PressBar - step1

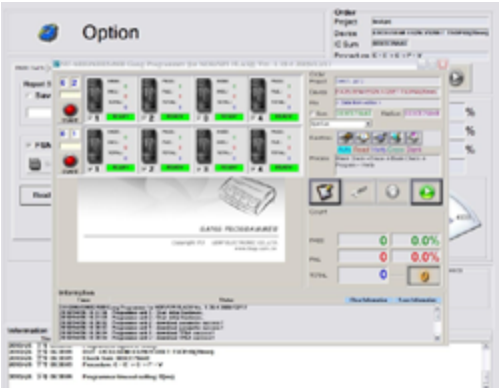


pic2-21 : control PressBar – step2

2.4.2 Read IC Master Tape Program.

Pic2-22 ~ 2-23 will indicate how start to read IC master tape program.

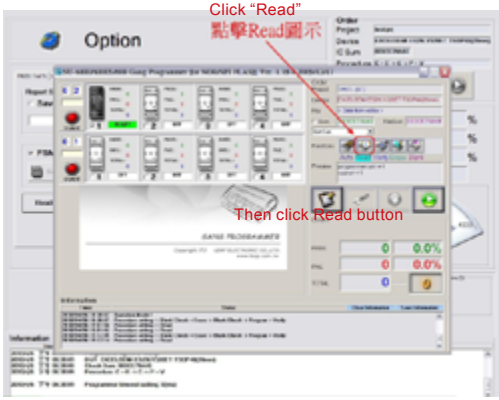
pic 2-22 : start to read IC master tape program - step1



pic 2-23 : start to read IC master tape program – step2

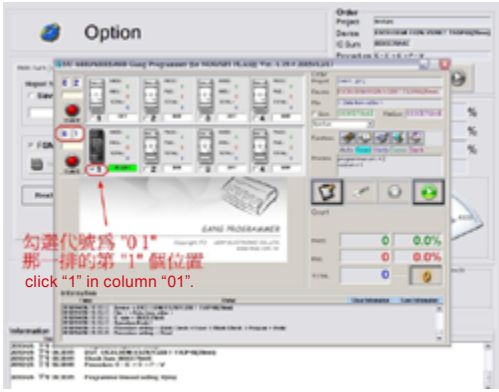
2.4.3 NOR Flash Project File Saving Procedure

If the IC type is NOR FLASH, click Read icon first. The screen will show as pic2-24. (The process of reading IC master tape(NOR Flash) as pic2-24 ~ 2-27.)



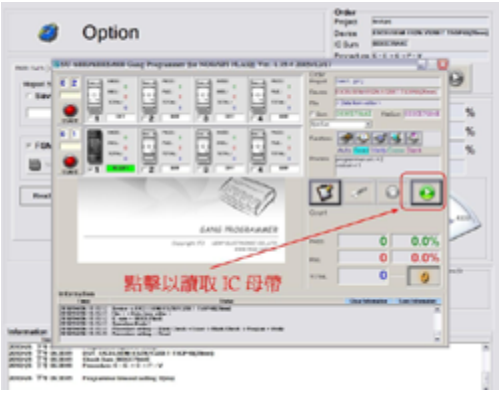
pic 2-24 : reading IC mater tape(NOR) - step1

Then just click “1” in column “01”.Which shown as pic2-25



pic 2-25 : reading IC mater tape(NOR) – step2

Then Reading the IC master tape. Which shown as pic2-26.



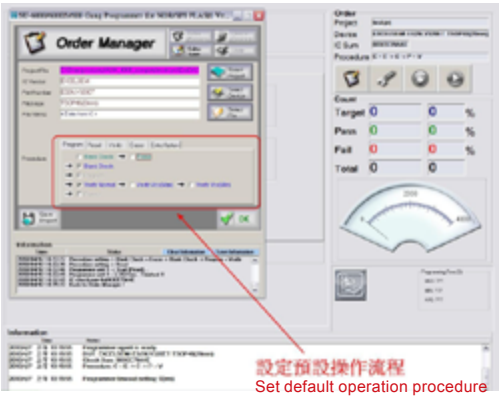
pic 2-26 : reading IC mater tape(NOR) – step3

If software reads master tape successfully, it will show PASS and CheckSum(Byte Sum) information(pic2-27).Then press OK to return Order Manager, the screen image shown as Figure 2-28.

Show PASS and CheckSum(Byte Sum) information, press ok to return Order Manager

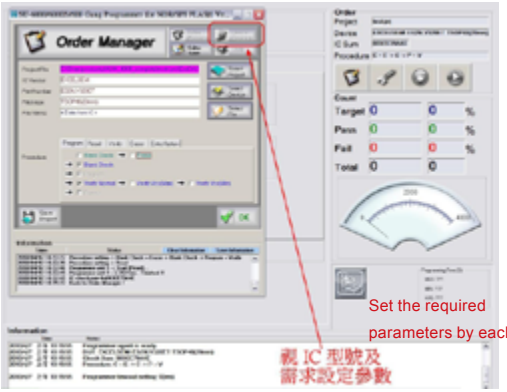
pic 2-27 : reading IC mater tape(NOR) – step4

Then set the NOR project file. For the first, set the default operating process. Note: the NOR default operation can not be selected "Read". For example, the default operation is programming. The process only checks whether the empty IC, and programs the IC. Finally do the basic authentication. Then check the blue Blank Check(not blue-green Blank Check), Program(the default is checked)and Verify Normal. Screen shown as pic2-28.



pic2-28 : setting project file (NOR) - step1

Then setting the required parameters by each IC (But not every IC can be set the parameter).The screen shown as pic2-29.



pic2-29 : setting project file (NOR) – step2

Then save the NOR project file. First click Save Project and set the storage paith (C: \ Leaptronix \ AutoHandler \ Project). As pic2-26 shows. Save the project file(NOR) as shown in pic2-30 ~ 2-32.

pic2-30 : saving project file (NOR) - step1

Then change the project file name as you need and click save. It will jump out the Project information, just click you want to do. Note: the NOR default operation can not be selected "Read". For example, the default operation is clicking icon "Auto" for programming. Which shown as pic2-31.

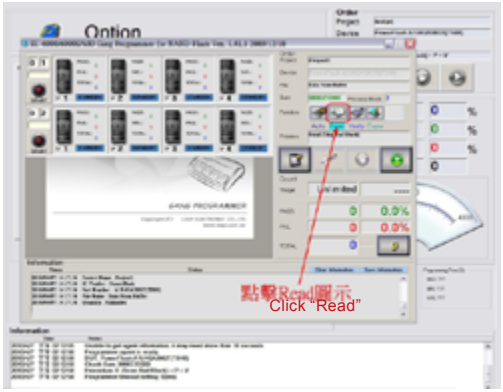
pic2-31 : saving project file (NOR) – step2

Next, fill the Author and comment information as you need and press "OK" in Project Information dialogue box. It will start to save the project file. Waiting for "OK" of Order Manager turns gray to green, it means saving completely. Which shown as pic2-32.

pic 2-32 : saving project file (NOR) – step3

2.4.4 NAND Flash Project File Saving Procedure

If the IC type is NAND FLASH, click “Read” icon first. The screen will show as pic2-33. (The procedure of reading IC Master-tape as shown like pic2-33 ~ 2-36)



pic 2-33 : reading IC mater-tape(NAND) – step1

Then just click the "1" in column "01". Which shown as pic2-34.

pic 2-34 : reading IC mater-tape(NAND) – step2

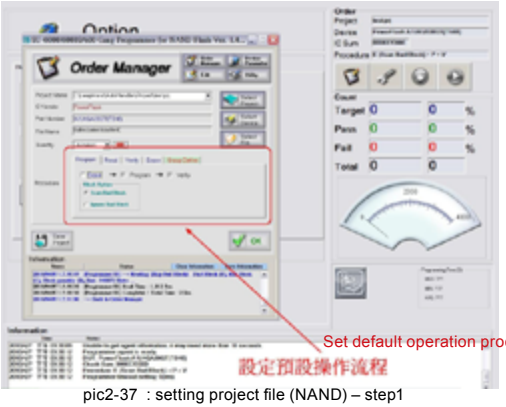
Then, reading the IC master tape. Which shown as pic2-35.

pic 2-35 : reading IC mater-tape(NAND) – step3

If software reads master tape successfully, it will show PASS and CheckSum(Byte Sum) information(pic2-36).Then press OK to return Order Manager, the screen image shown as Figure 2-37.

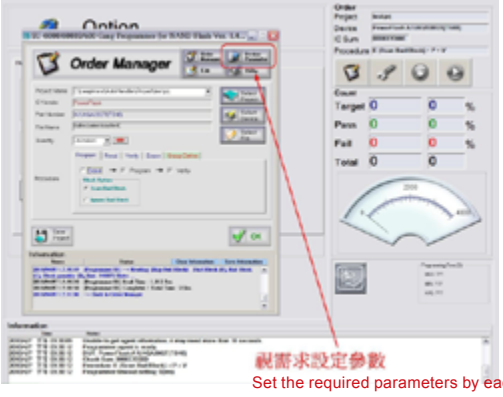
pic 2-36 : reading IC mater-tape(NAND) – step4

Then set the NAND project file. For the first, set the default operating process. Note: the NAND default operation can not be selected "Read". For example, the default operation is programming. The process only checks whether the Bad Block IC, and programs the IC. Finally do the basic authentication. Then check the "Program", "Verify" and click "Scan Bad Block". Just like pic2-37 shows. Besides, if customer want to load Group Define, then switch to the Group define page for setting. (Setting project file (NAND) shows as pic2-37 ~ 2-38)



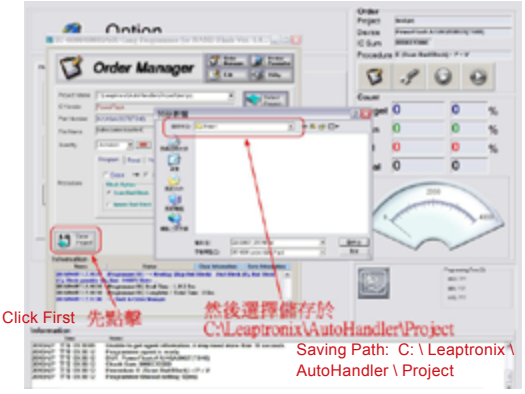
pic2-37 : setting project file (NAND) – step1

Then setting the required parameters by each IC .The screen shown as pic2-38.



Pic2-38 : setting project file (NAND)- step2

Then save the NAND project file. First click Save Project and set the storage paith (C: \ Leaptronix \ AutoHandler \ Project). As pic2-39 shows. And save the project file(NAND) as shown in pic2-39 ~ 2-41.



pic 2-39 : saving project file (NOR) – step1

Then change the project file name as you need and click save. It will jump out the Project information, just click you want to do. Note: The NAND default operation can not be selected "Read". For example, the default operation is clicking icon "Auto" for programming. Which shown as pic2-40.

pic 2-40 : saving project file (NOR) – step2

Next, fill the Author and comment information as you need and press "OK" in Project Information dialogue box. It will start to save the project file. Waiting for "OK" of Order Manager turns gray to green, it means saving completely. Which shown as pic2-41.

Note: The storage time depends on file size, please kindly wait. For example: The 264MB size file will take 5 minute to program on 3GHz CPU, 1GB RAM PC.

pic 2-41 : saving project file (NOR) – step3

Chapter 3 System Setup

3.1 System Setup Introduction

System setup is for adjusting motor position for each axis. And the partial software setting. Please refer the below Fig 3-1. The details will be introduced following.

Fig 3-1 : System setup icon

3.2 User's ID setting

The Fig 3-2 is ID setting for administration and operator. The Administrator can set all of the parameter. The supervisor only can follow the default parameter for production.

Fig 3-2 : User's ID setting

Click View All, you can see all of the ID. Fig 3-3 is for viewing all of the administration ID, Fig 3-4 is for all of the operator.

If you would like to delete an ID, please click it to highlight, and click the Delete will be OK. Please note that the Leaptronix ID on the Administrator list can not be deleted or amended.

Fig 3-3 Administrator ID

Fig 3-4 Operator ID

When you would like to add user's ID, please key in the below information.

1. Please input a user name : key in the user's name.
2. Please input a new password : key in the password.
3. Please input a new password again : confirm the password.

Click the Add for adding. When the user name is exist, the system will show a dialog box, confirm if override the original setting.

3.3 Other Settings

The Fig 3-5 is for production report location and open the GUI option.

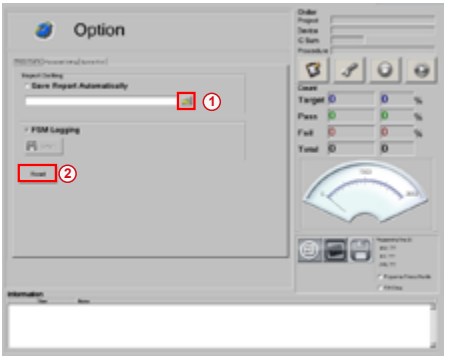


Fig 3-5 Option setting

You can set the report location on 1. The 2 Read is for opening the NAND FLASH or NOR FLASH GUI.

3.4 System Settings

The chapter is for adjusting motor parameter and position. The I/O control point function and operation fig show as below.

Fig 3-6 System setting

Different models have different motor axes and functions. They are as below.

Model	AH-400	AH-401	AH-400A	AH-400B
R0	v	v	v	v
X1	v	v	v	v
PR1	v	v	v	v
Z0	v	v	v	v
Z1	v	v	v	v
Z2	v	v	v	v
Y1	□	□	v	v
TZ1	□	□	□	v

There are two kind of motors, rotation and linear.
Rotation motor axis: R0.PR1
Linear motor axis: X1.Z0.Z1.Z2.Y1.TZ1

The I/O controls are included:

a.Vacuum Control
b.Switch & Light Control
c.PressBar Control
d.Printer Control
e.Loader Control
f.Programmer Control
g.Tape Feeder Control
h.Tray Control

3.4.1 Motor Control Page

Each axis motor has different function and position. The introduction chapters are as below.		
3.4.1.1	Axis R0:	rotation spindle, for programing area IC in & out.
3.4.1.2	Axis PR1:	the IC rotation angle on the feed-in side.
3.4.1.3	Axis X1 :	linear movement, for the movement of IC from feed zone to position groove. This is only for tray mode.
3.4.1.4	Axis Z0 :	linear movement device for the feed zone.
3.4.1.5	Axis Z1 :	linear movement device for the R0 axis pick and place.
3.4.1.6	Axis Z2 :	inear movement device for R0 axis pick and place.
3.4.1.7	Axis Y1 :	for the tray movement device
3.4.1.8	Axis TZ1 :	for the tray change device.

3.4.1.1 R0 Axis control

This chapter is for RO to each work position and function introduce.

There are included 4 areas:

A. Sensor
B. Movement control
C. Adjust control
D. Movement parameter

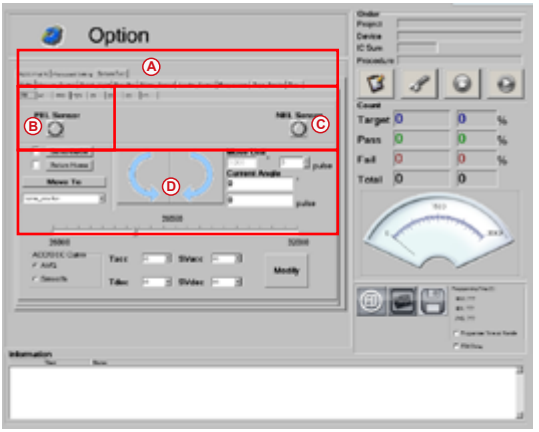


Fig 3-7 R0 axis control

Sensor:

It's Included PEL and NEL limit sensor. When the motor position reach the limit sensor position, the sensor will show red. At the meantime, the software will control the motor can not go further.

Fig 3-7-1 R0 axis sensor display

Movement control:

Before the RO axis motor move to a new working position, need to excite and return to the origin.

A. If the control motor excited
B. The control motor return to the origin.
C. The control motor move to the specified location
D. Select the motor target location
E. Show if the motor excitation. Yes is red, no is white.
F. Show if the motor return to the origin. Yes is red, no is white.

Fig 3-7-2 R0 axis operation

R0 axis title and the definition.

Item	Title	Definition
1	**home_position**	Z1 is the positioning axis, go to the 90 degrees position.
2	**r_home_position**	Z2 is the positioning axis, go to the 90 degrees position.
3	**in_precissor**	Z1 is the positioning axis, go to the precissor -in position.
4	**out_precissor**	Z1 is the positioning axis, go to the precissor-out position.
5	**fail_zone**	Z2 is the positioning axis, go to the fail zone position.
6	**r_fail_zone**	Z1 is the positioning axis, go to the fail zone position.
7	**z1_positive_limit**	Z1 axis is in the feed-in precissor positive limit area.
8	**z1_negative_limit**	Z1 axis is in the feed-in precissor negative limit area.
9	**near_p_in_precissor**	Z1 axis near the precissor positive position.
10	**near_n_in_precissor**	Z1 axis near the precissor negative position.

R0 axis title and the definition.

Item	Title	Definition
1	**home_position**	Z1 is the positioning axis, go to the 90 degrees position.
2	**r_home_position**	Z2 is the positioning axis, go to the 90 degrees position.
3	**in_precissor**	Z1 is the positioning axis, go to the precissor -in position.
4	**out_precissor**	Z1 is the positioning axis, go to the precissor-out position.
5	**fail_zone**	Z2 is the positioning axis, go to the fail zone position.
6	**r_fail_zone**	Z1 is the positioning axis, go to the fail zone position.
7	**z1_positive_limit**	Z1 axis is in the feed-in precissor positive limit area.
8	**z1_negative_limit**	Z1 axis is in the feed-in precissor negative limit area.
9	**near_p_in_precissor**	Z1 axis near the precissor positive position.
10	**near_n_in_precissor**	Z1 axis near the precissor negative position.

Adjustment control:

fter R0 axis motor move to the working position, we can do the necessary adjustment.

[This adjustment may cause permanent damage, please pay attention.]

A. The control motor move by anti-clockwise angle
B. The control motor move by clockwise angle
C. Show the angle of the motor movement
D. Adjust the pulse of the motor movement
E. Current angle of the motor
F. Current pulse of the motor

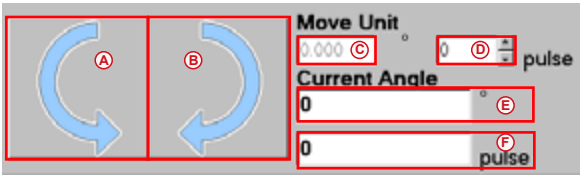


Fig 3-7-3 R0 axis adjust control

Operation parameter:

Show the Motor operation parameter.

[This adjustment may cause permanent damage, please pay attention.]

A. Show the motor operation speed. The unit is pps.
B. Motor acceleration and deceleration mode.
C. Acceleration curve parameter.
D. Deceleration curve parameter.
E. The second parameter of acceleration curve
F. The second parameter of deceleration curve
G. Confirm the adjustment

Fig 3-7-4 R0 axis operation parameter

3.4.1.2 PR1 Axis Control

This chapter is for introducing RP1 movement and function. It's included 4 subject.

A. Sensor
B. Movement control
C. Adjustment control
D. Operation parameter

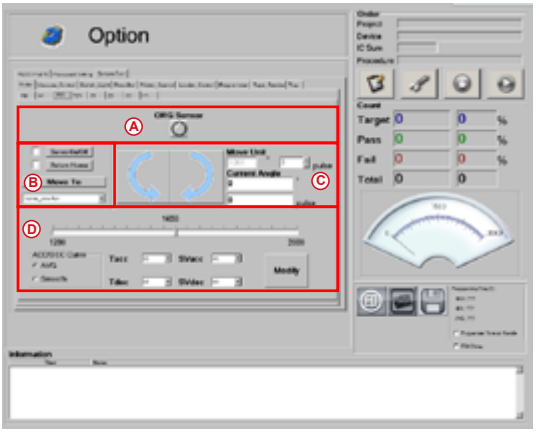


Fig 3-8 PR1 axis control

Sensor:

PR1 has the origin sensor. When the motor reach to the origin sensor position, the sensor will show green.

Fig 3-8-1 PR1 axis sensor

Movement control:

Before the PR1 axis motor move to a new working position, need to excite and return to the origin.

A. If the control motor excited
B. The control motor return to the origin.
C. The control motor move to the specified location
D. Select the motor target location
E. Show if the motor excitation. Yes is red, no is white.
F. Show if the motor return to the origin. Yes is red, no is white.

RP1 axis motor

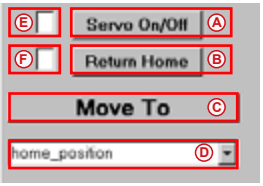


Fig 3-8-2 PR1 axis operation

PR1 axis title and the definition.

Item	Title	Definition
1	**home_position**	Precissor rotate to 45 degrees position
2	**0_Angle**	Precissor rotate to 0 degree position
3	**90_Angle**	Precissor rotate to 90 degree position
4	**180_Angle**	Precissor rotate to 180 degree position
5	**270_Angle**	Precissor rotate to 270 degree position
6	**feeder_in_angle**	Precissor rotate to feed-in angle
7	**feeder_out_angle**	Precissor rotate to feed-out angle
8	**loader_in_angle**	Precissor rotate to loader-in angle (Tray Mode)
9	**loader_out_angle**	Precissor rotate to loader-out angle (Tray Mode)

Adjustment control:

After PR1 axis motor move to the working position, we can do the necessary adjustment.

[This adjustment may cause permanent damage, please pay attention.]

A. The control motor move by anti-clockwise angle
B. The control motor move by clockwise angle
C. Show the angle of the motor movement
D. Adjust the pulse of the motor movement
E. Current angle of the motor
F. Current pulse of the motor

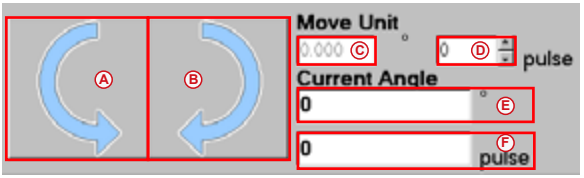


Fig 3-8-3 PR1 axis adjustment control

Operation parameter:

Show the Motor operation parameter.

[This adjustment may cause permanent damage, please pay attention.]

A. Show the motor operation speed. The unit is pps.
B. Motor acceleration and deceleration mode.
C. Acceleration curve parameter.
D. Deceleration curve parameter.
E. The second parameter of acceleration curve
F. The second parameter of deceleration curve
G. Confirm the adjustment

Fig 3-8-4 PR1 axis operation parameter

3.4.1.3 X1 Axis Control

This chapter is for introducing X1 movement and function. It's included 4 subject.

A. Sensor
B. Movement control
C. Adjustment control
D. Operation parameter

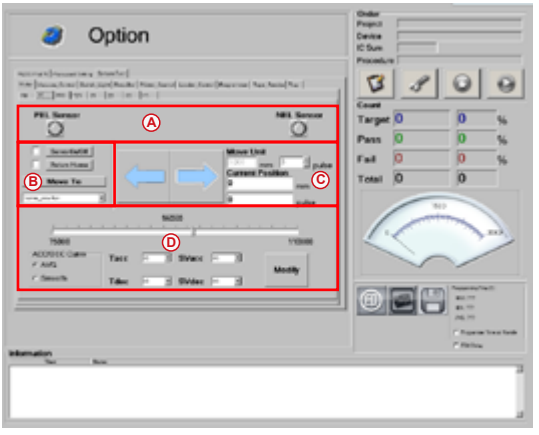


Fig 3-9 X1 axis control

Sensor:

X1 is Included PEL and NEL limit sensor on the X1 axis. When the motor position reach the limit sensor position, the sensor will show red. At the meantime, the software will control the motor can not go further.

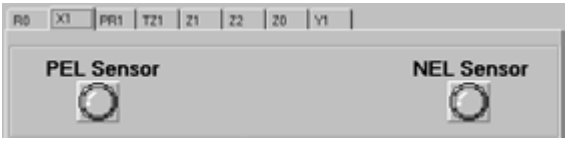


Fig 3-9-1 X1 axis sensor

Movement control:

Before the X1 axis motor move to a new working position, need to excite and return to the origin.

A. If the control motor excited

B. The control motor return to the origin.

C. The control motor move to the specified location

D. Select the motor target location

E. Show if the motor excitation. Yes is red, no is white.

F. Show if the motor return to the origin. Yes is red, no is white.

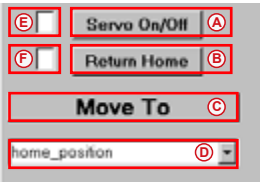


Fig 3-9-2 X1 axis operation

The X1 axis title and definition.

Item	Title	Definition
1	**home_position**	Move X axis to home.
2	**precissor_position**	Move X axis to precissor.
3	**near_precissor_position**	Move X axis to near precissor position, but will not contact R0.
4	**x_positive_limit**	X axis positive limit.
5	**x_negative_limit**	X axis negative limit.
6	**tape_feeder_1_position**	X axis at the tape feeder 1 position.
7	**tape_feeder_2_position**	X axis at the tape feeder 2 position.
8	**tube_feeder_1_position**	X axis at the tube feeder 1 position.
9	**tube_feeder_2_position**	X axis at the tube feeder 2 position.
10	**tube_feeder_3_position**	X axis at the tube feeder 3 position.
11	**tube_feeder_4_position**	X axis at the tube feeder 4 position.
12	**tray_base**	X axis anchor under tray base.
13	**column : n**	X axis each column position under tray base.

Adjustment control:

After X1 axis motor move to the working position, we can do the necessary adjustment.

[This adjustment may cause permanent damage, please pay attention.]

A. The control motor move to left by unit.
B. The control motor move to right by unit.
C. Show the move unit of the motor movement.
D. Adjust the pulse of the motor movement.
E. Current position of the motor.
F. Current pulse of the motor

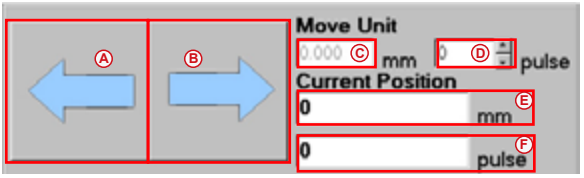


Fig 3-9-3 X1 axis adjustment control

Operation parameter:

Show the Motor operation parameter.

[This adjustment may cause permanent damage, please pay attention.]

A. Show the motor operation speed. The unit is pps.
B. Motor acceleration and deceleration mode.
CI. Acceleration curve parameter.
D. Deceleration curve parameter.
E. The second parameter of acceleration curve
F. The second parameter of deceleration curve
G. Confirm the adjustment

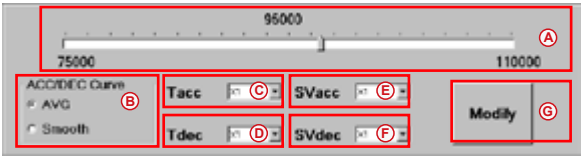


Fig 3-9-4 X1 axis operation parameter

3.4.1.4 Z0 Axis Control

This chapter is for introducing Z0 movement and function.
It'sincluded 4 subject.

A. Sensor
B. Movement control
C. Adjustment control
D. Operation parameter

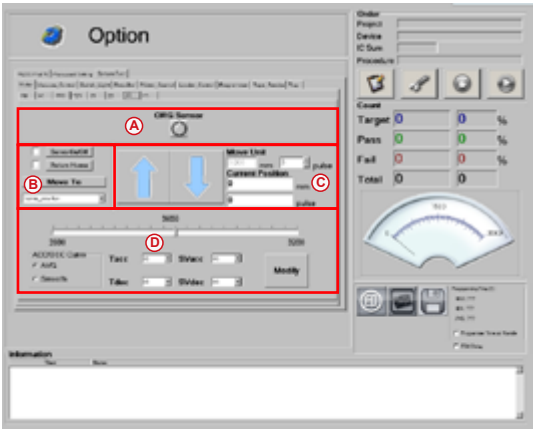


Fig 3-10 Z0 axis control

Sensor:

Z0 has the origin sensor. When the motor reach to the origin sensor position, the sensor will show green.

Fig 3-10-1 Z0 axis sendor

Movement control:

Before the Z0 axis motor move to a new working position, need to excite and return to the origin.

A. If the control motor excited
B. The control motor return to the origin.
C. The control motor move to the specified location
D. Select the motor target location
E. Show if the motor excitation. Yes is red, no is white.
F. Show if the motor return to the origin. Yes is red, no is white.

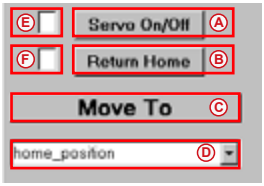


Fig 3-10-2 Z0 axis operation

The Z0 axis title and definition.

Item	Title	Definition
1	**home_position**	Z axis move to the HOME position.
2	**operation_position**	Z axis move to the Operation position.
3	**socket_get_ic**	Z axis move to socket for getting IC.
4	**socket_put_ic**	Z0 axis move to socket for putting IC.
5	**precissor_in_get_ic**	Z0 axis move to the position for getting IC from precissor-in.
6	**precissor_in_put_ic**	Z0 axis move to the position for putting IC from precissor-in.
7	**precissor_out_get_ic**	Z0 axis move to the position for getting IC from precissor-out.
8	**precissor_out_put_ic**	Z0 axis move to the position for putting IC from precissor-out.
9	**tape_feeder_get_ic**	Z0 axis move to the position for getting IC from tape-feeder.
10	**tube_feeder_get_ic**	Z0 axis move to the position for getting IC from tube-feeder.
11	**tray_feeder_get_ic**	Z0 axis move to the position for getting IC from tray-feeder.
12	**tape_loader_put_ic**	Z0 axis move to the position for putting IC from tape-loader.
13	**tube_loader_put_ic**	Z0 axis move to the position for putting IC from tube-loader.
14	**tray_loader_put_ic**	Z0 axis move to the position for putting IC from tray-loader.
15	**fail_zone_put_ic**	Z0 axis move to fail zone for putting IC.

Adjustment control:

After Z0 axis motor move to the working position, we can do the necessary adjustment.

[This adjustment may cause permanent damage, please pay attention.]

A. The control motor move to up by unit.
B. The control motor move to down by unit.
C. Show the move degree unit of the motor movement.
D. Adjust the pulse of the motor movement.
E. Current position of the motor.
F. Current pulse of the motor

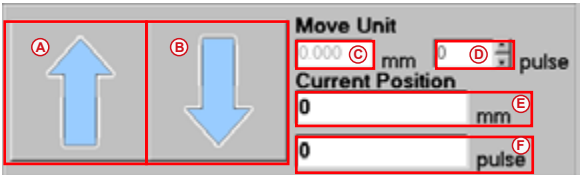


Fig 3-10-3 Z0 axis adjustment control

Operation parameter:

Show the Motor operation parameter.

[This adjustment may cause permanent damage, please pay attention.]

A. Show the motor operation speed. The unit is pps.
B. Motor acceleration and deceleration mode.
C. Acceleration curve parameter.
D. Deceleration curve parameter.
E. The second parameter of acceleration curve
F. The second parameter of deceleration curve
G. Confirm the adjustment

Fig 3-10-4 Z0 axis operation parameter

3.4.1.5 Z1 Axis Control

This chapter is for introducing Z1 movement and function. It's included 4 subject.

A. Sensor
B. Movement control
C. Adjustment control
D. Operation parameter

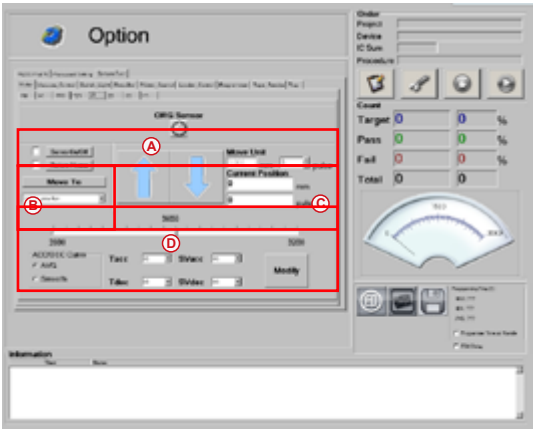


Fig 3-11 Z1 axis control

Sensor:

Z1 has the origin sensor. When the motor reach to the origin sensor position, the sensor will show green.

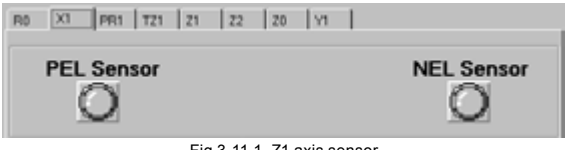


Fig 3-11-1 Z1 axis sensor

Movement control:

Before the Z1 axis motor move to a new working position, need to excite and return to the origin.

A. If the control motor excited
B. The control motor return to the origin.
C. The control motor move to the specified location
D. Select the motor target location
E. Show if the motor excitation. Yes is red, no is white.
F. Show if the motor return to the origin. Yes is red, no is white.

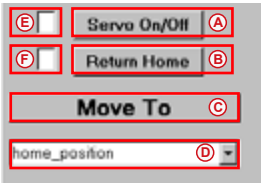


Fig 3-11-2 Z1 axis operation

The Z1 axis title and definition.

Item	Title	Definition
1	**home_position**	Z1 axis move to the HOME position.
2	**operation_position**	Z1 axis move to the Operation position.
3	**socket_get_ic**	Z1 axis move to socket for getting IC.
4	**socket_put_ic**	Z1 axis move to socket for putting IC.
5	**precissor_in_get_ic**	Z1 axis move to the position for getting IC from precissor-in.
6	**precissor_in_put_ic**	Z1 axis move to the position for putting IC from precissor-in.
7	**precissor_out_get_ic**	Z1 axis move to the position for getting IC from precissor-out.
8	**precissor_out_put_ic**	Z1 axis move to the position for putting IC from precissor-out.
9	**tape_feeder_get_ic**	Z1 axis move to the position for getting IC from tape-feeder.
10	**tube_feeder_get_ic**	Z1 axis move to the position for getting IC from tube-feeder.
11	**tray_feeder_get_ic**	Z1 axis move to the position for getting IC from tray-feeder.
12	**tape_loader_put_ic**	Z1 axis move to the position for putting IC from tape-loader.
13	**tube_loader_put_ic**	Z1 axis move to the position for putting IC from tube-loader.
14	**tray_loader_put_ic**	Z1 axis move to the position for putting IC from tray-loader.
15	**fail_zone_put_ic**	Z1 axis move to fail zone for putting IC.

Adjustment control:

After Z1 axis motor move to the working position, we can do the necessary adjustment.

[This adjustment may cause permanent damage, please pay attention.]

A. The control motor move to up by unit.
B. The control motor move to down by unit.
C. Show the move degree unit of the motor movement.
D. Adjust the pulse of the motor movement.
E. Current position of the motor absolute distance.
F. Current pulse of the motor absolute step.

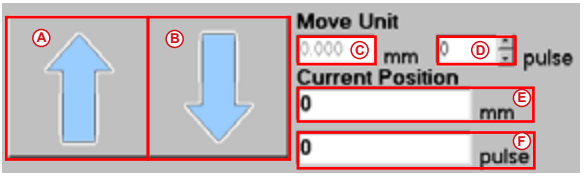


Fig 3-11-3 Z1 axis adjustment control

Operation parameter:

Show the Motor operation parameter.

[This adjustment may cause permanent damage, please pay attention.]

A. Show the motor operation speed. The unit is pps.
B. Motor acceleration and deceleration mode.
C. Acceleration curve parameter.
D. Deceleration curve parameter.
E. The second parameter of acceleration curve
F. The second parameter of deceleration curve
G. Confirm the adjustment

Fig 3-11-4 Z1 axis operation parameter

3.4.1.6 Z2 Axis Control

This chapter is for introducing Z2 movement and function. It's included 4 subject.

A. Sensor
B. Movement control
C. Adjustment control
D. Operation parameter

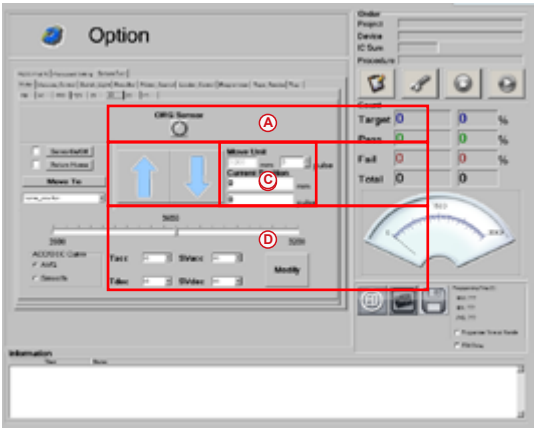


Fig 3-12 Z2 axis control

Sensor:

Z2 has the origin sensor. When the motor reach to the origin sensor position, the sensor will show green.

Fig 3-12-1 Z2 axis sensor

Movement control:

Before the Z2 axis motor move to a new working position, need to excite and return to the origin.

A. If the control motor excited
B. The control motor return to the origin.
C. The control motor move to the specified location
D. Select the motor target location
E. Show if the motor excitation. Yes is red, no is white.
F. Show if the motor return to the origin. Yes is red, no is white.

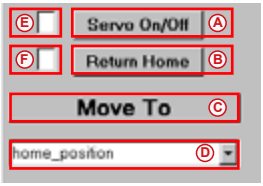


Fig 3-12-2 Z2 axis operation

The Z2 title and definition.

Item	Title	Definition
1	**home_position**	Move Z2 axis to the HOME position.
2	**operation_position**	Move Z2 axis to the Operation position.
3	**socket_get_ic**	Move Z2 axis to socket for getting IC.
4	**socket_put_ic**	Move Z2 axis to socket for putting IC.
5	**precissor_in_get_ic**	Move Z2 axis to the position for getting IC from precissor-in.
6	**precissor_in_put_ic**	Move Z2 axis to the position for putting IC from precissor-in.
7	**precissor_out_get_ic**	Move Z2 axis to the position for getting IC from precissor-out.
8	**precissor_out_put_ic**	Move Z2 axis to the position for putting IC from precissor-out.
9	**tape_feeder_get_ic**	Move Z2 axis to the position for getting IC from tape-feeder.
10	**tube_feeder_get_ic**	Move Z2 axis to the position for getting IC from tube-feeder.
11	**tray_feeder_get_ic**	Move Z2 axis to the position for getting IC from tray-feeder.
12	**tape_loader_put_ic**	Move axis to the position for putting IC from tape-loader.
13	**tube_loader_put_ic**	Move Z2 axis to the position for putting IC from tube-loader.
14	**tray_loader_put_ic**	Move Z2 axis to the position for putting IC from tray-loader.
15	**fail_zone_put_ic**	Move Z2 axis to fail zone for putting IC.

Adjustment control:

After Z2 axis motor move to the working position, we can do the necessary adjustment.

[This adjustment may cause permanent damage, please pay attention.]

A. The control motor move to up by unit.
B. The control motor move to down by unit.
C. Show the move distance of the motor unit movement.
D. Adjust the pulse of the motor movement.
E. Current position of the motor absolute distance.
F. Current pulse of the motor absolute step.

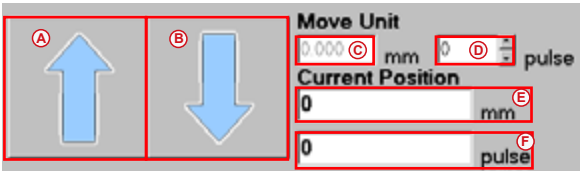


Fig 3-12-3 Z2 axis adjustment control

Operation parameter:

Show the Motor operation parameter.

[This adjustment may cause permanent damage, please pay attention.]

A. Show the motor operation speed. The unit is pps.
B. Motor acceleration and deceleration mode.
C. Acceleration curve parameter.
D. Deceleration curve parameter.
E. The second parameter of acceleration curve
F. The second parameter of deceleration curve
G. Confirm the adjustment

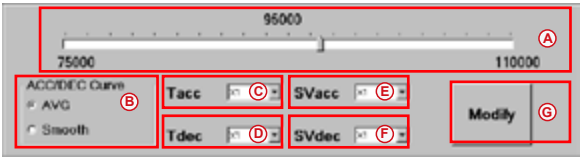


Fig 3-12-4 Z2 axis operation parameter

3.4.1.7 Y1 Axis Control

This chapter is for introducing Y1 movement and function. It's included 4 subject.

A. Sensor
B. Movement control
C. Adjustment control
D. Operation parameter

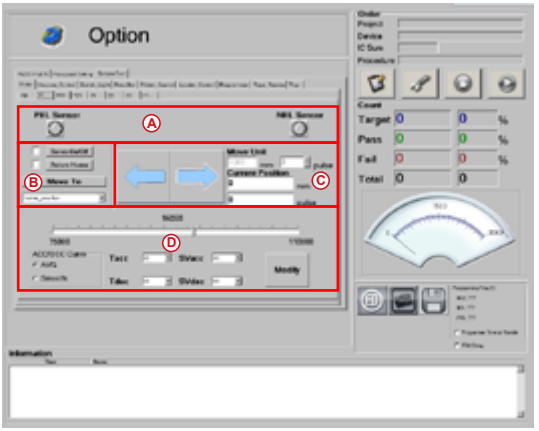


Fig 3-13 Y1 axis control

Sensor:

Y1 is Included PEL and NEL limit sensor on the X1 axis. When the motor position reach the limit sensor position, the sensor will show red. At the meantime, the software will control the motor can not go further.

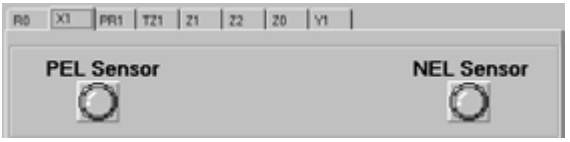


Fig 3-13-1 Y1 axis sensor

Movement control:

Before the Y1 axis motor move to a new working position, need to excite and return to the origin.

A. If the control motor excited
B. The control motor return to the origin.
C. The control motor move to the specified location
D. Select the motor target location
E. Show if the motor excitation. Yes is red, no is white.
F. Show if the motor return to the origin. Yes is red, no is white.

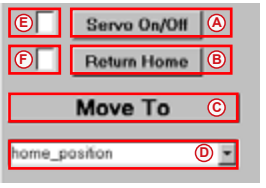


Fig 3-13-2 Y1 axis operation

The Y1 axis title and definition.

Item	Title	Definition
1	**home_position**	Move Y1 to HOME position
2	**tray_input_position**	Move Y1 to tray input position
3	**tray_output_position**	Move Y1 to tray output position
4	**tray_operation_position**	Move Y1 to tray default operation position
	tray_base	Anchor of Y1 under tray base
	row : n	Row position of Y1 under tray base

Adjustment control:

After Y1 axis motor move to the working position, we can do the necessary adjustment.

[This adjustment may cause permanent damage, please pay attention.]

A. The control motor move to the back of the AH.
B. The control motor move to the front of the AH.
C. Show the move unit of the motor movement
D. Adjust the pulse of the motor movement
E. Current position of the motor
F. Current pulse of the motor

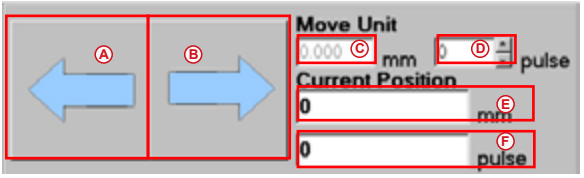


Fig 3-13-3 Y1 axis adjust control area

Operation parameter:

Show the Motor operation parameter.

[This adjustment may cause permanent damage, please pay attention.]

A. Show the motor operation speed. The unit is pps.
B. Motor acceleration and deceleration mode.
C. Acceleration curve parameter.
D. Deceleration curve parameter.
E. The second parameter of acceleration curve
F. The second parameter of deceleration curve
G. Confirm the adjustment

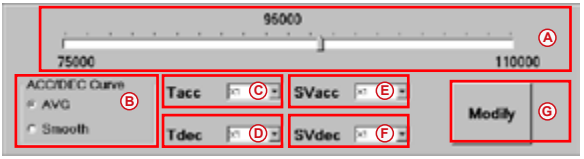


Fig 3-13-4 Y1 operation parameter

3.4.1.8 TZ1 Axis Control

This chapter is for introducing TZ1 movement and function.
It's included 4 subject.

A. Sensor
B. Movement control
C. Adjustment control
D. Operation parameter

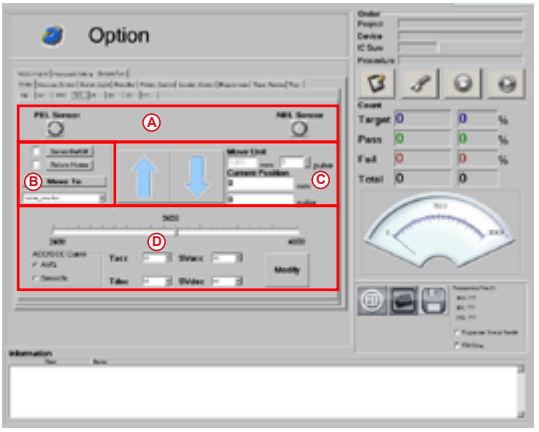


Fig 3-14 TZ1 axis control

Sensor:

TZ1 is Included PEL and NEL limit sensor on the X1 axis. When the motor position reach the limit sensor position, the sensor will show red. At the meantime, the software will control the motor can not go further.

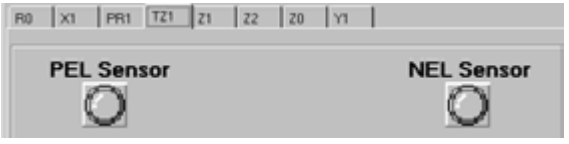


Fig 3-14-1 TZ1 axis sensor

Movement control:

Before the TZ1 axis motor move to a new working position, need to excite and return to the origin.

A. If the control motor excited
B. The control motor return to the origin.
C. The control motor move to the specified location
D. Select the motor target location
E. Show if the motor excitation. Yes is red, no is white.
F. Show if the motor return to the origin. Yes is red, no is white.

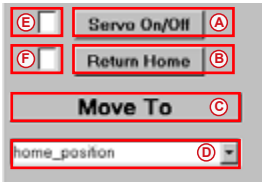


Fig 3-14-2 TZ1 axis operation

The TZ1 axis title and definition.

Item	Title	Definition
1	**home_position**	Move TZ1 to HOME position
2	**operation_position**	Move TZ1 to Operation position
3	**tray_out_split_up**	Split up TZ1 to tray-out position
4	**tray_in_split_up**	Split up TZ1 to tray-in position
5	**tray_in_split_tray**	Split to TZ1 to tray-in position

Adjustment control:

After TZ1 axis motor move to the working position, we can do the necessary adjustment.
[This adjustment may cause permanent damage, please pay attention.]

A. The control motor move to up by unit.
B. The control motor move to down by unit.
C. Show the move distance unit of the motor movement.
D. Adjust the pulse of the motor movement.
E. Current position of the motor absolute distance.
F. Current pulse of the motor absolute step.

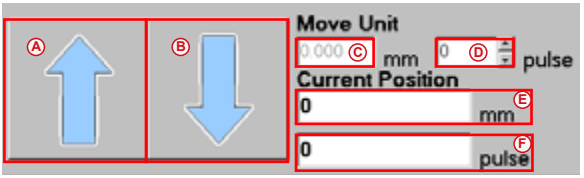


Fig 3-14-3 TZ1 axis adjustment control

Operation parameter:

Show the Motor operation parameter.
[This adjustment may cause permanent damage, please pay attention.]

A. Show the motor operation speed. The unit is pps.
B. Motor acceleration and deceleration mode.
C. Acceleration curve parameter.
D. Deceleration curve parameter.
E. The second parameter of acceleration curve
F. The second parameter of deceleration curve
G. Confirm the adjustment

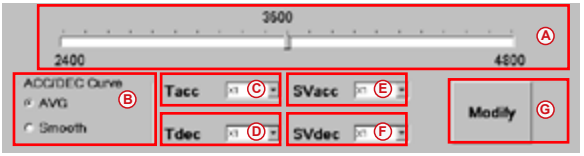


Fig 3-14-4 TZ1 axis operation parameer

3.4.2 Test & Adjustment for each IO

According to the function of the IO, we can devide to the follow types.

Type	AH400	AH401	AH400A	AH400B	Function
Vacuum	√	√	√	√	Suction & blow control, and sensor detet of vacuum
Switch & Light	√	√	√	√	Switch on/off display & light control
PressBar	√	√	√	√	PrerssBar control & condition sensing
Printer	√	√	√	√	MK1 printer control & condition sensing
Loader	√	√	√	√	ATM-100 control & condition sensing
Programmer	√	√	√	√	Programmer power control
Tape Feeder	√	√	√	√	Tape Feeder control
Tray	x	x	x	√	Auto change tray cylinder control & condition sensing.

3.4.2.1 Vacuum Introduction

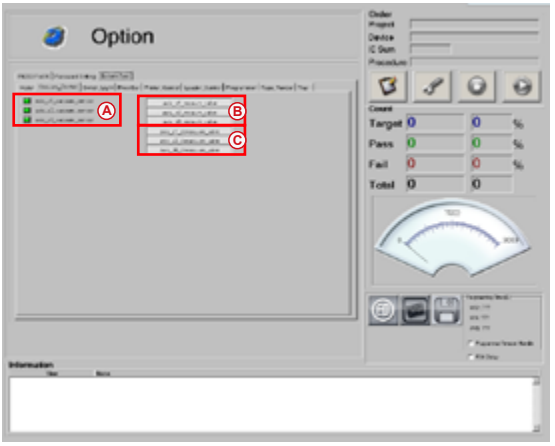


Fig 3-15 Vacuum Control

A. Show the vacuum sensor status, If has IC, show green, no show green.
B. Only for control vacuum valve, suction, click for opening.
C. Only for control devacuum valve, blow, click for opening.

[Please do not open suction & blow and the same time.]

3.4.2.2 Switch & Light Introduction

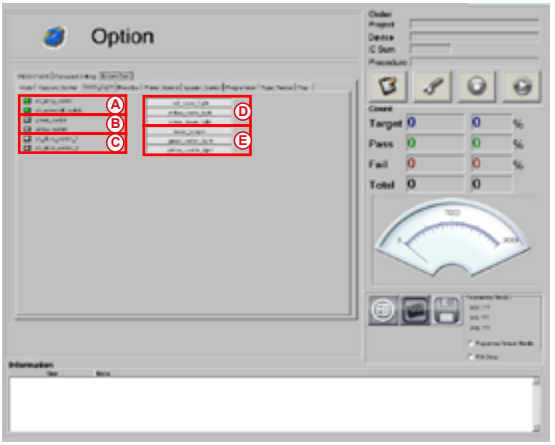


Fig 3-16 Switch & Light Control

A. Show the emergency stop switch signal. Normal is green. If click, it will show gray.

B. Show the front of AH START & RESET button condition. If press the button, it will show green. No, it will show gray.

C. The door sensor. If the door open, it will show green. Close will show gray. Please do not open the door during the production.

D. The 3-color tower light and buzzer control icon. The user can use those icons to control the 3-color tower light and buzzer. Please do not open 3-color tower and buzzer at the same time to avoid the damage.

E. To control on/off for the START and RESET light on the front of AH.

3.4.2.3 PressBar Introduction

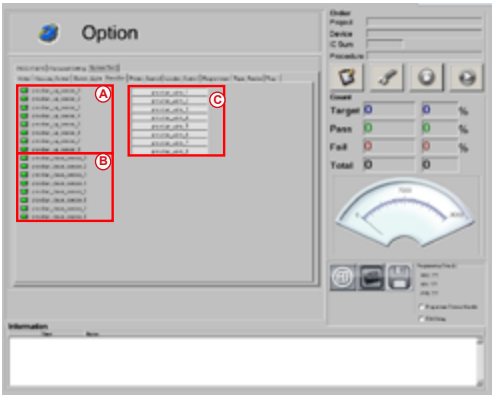


Fig 3-17 PressBar Control

A. Show the up-sensor of the pressbar OK or not. Green is OK, otherwise gray.
B. Show the down-sensor of the pressbar OK or not. Green is OK, otherwise gray.
C. The pressbars up and down status.

3.4.2.4 Printer Introduction

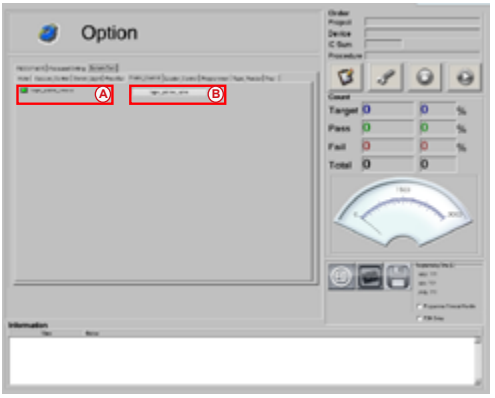


Fig 3-18 PressBar Control

A. Show the MK1 printer sensor condition. Green is for sensing.
B. Control MK1 up or down condition.

3.4.2.5 Loader Introduction

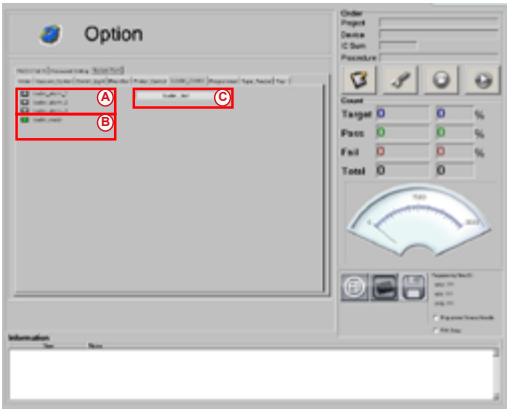


Fig 3-19 Loader Control

A. Show the ATM-100 taping machine alarm or not. If on alarm condition, it will show green, otherwise is gray.

B. Show the ATM-100 taping machine ready or not. If ready, will show green, otherwise is gray.

C. Control the ATM-100 to start.

3.4.2.6 Programer Introduction

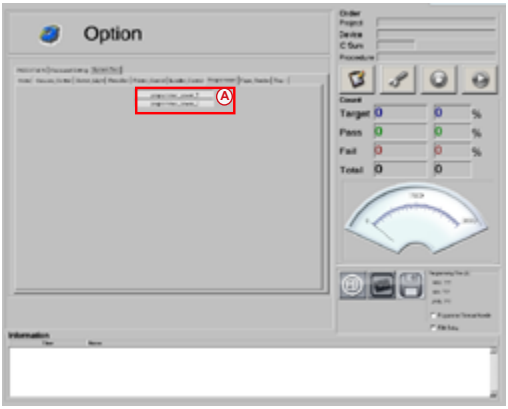


Fig 3-20 Programmer Control

A. For controlling the programmer power on/off. Press is power on, otherwise if off.

3.4.2.7 Tape Feeder Introduction

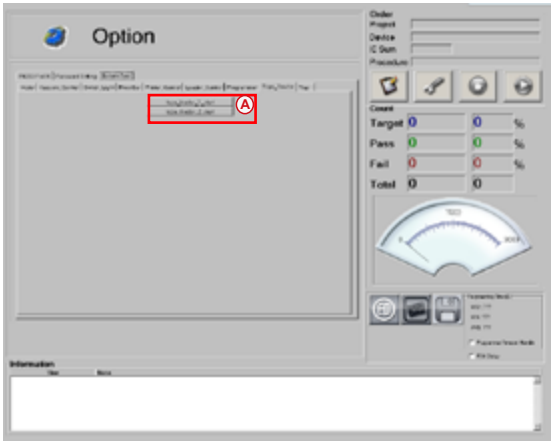


Fig 3-21 Tape Feeder Control

A. For controlling the feeder to start.

3.4.2.8 Tray Introduction

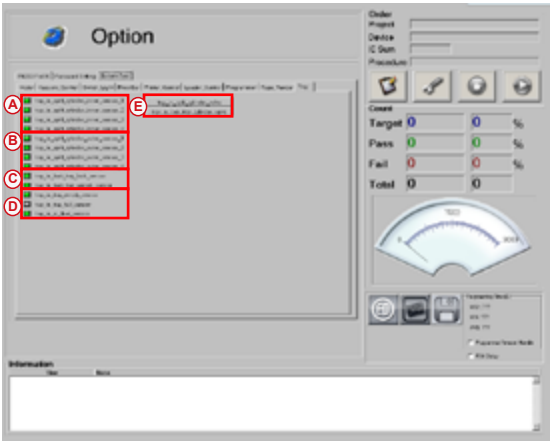


Fig 3-22 Tray Control

A. Show the tray split cylinder on the inner condition or not. Green is for yes. Gray is for no.

B. Show the try split cylinder on the outer condition or not. Green is for yes. Gray is for no.

C. Show the tray lock or not. Lock sensor show green, it means lock. Unlock sensor show green, it means unlock.

D. Show the tray condition, empty, full or float.

Empty: no tray is green, has tray is gray.

Full: Over 10 trays will show green, vice versa.

Float: If float will show green, vice versa.

E. There are 2 control points.

1. Tray split cylinder: for control split cylinder expansion condition.
2. Tray lock cylinder: for control split cylinder lock or loose condition.

3.5 Leave System Setting Page

After finishing the system setting and adjustment, please click the icon to leave the page.

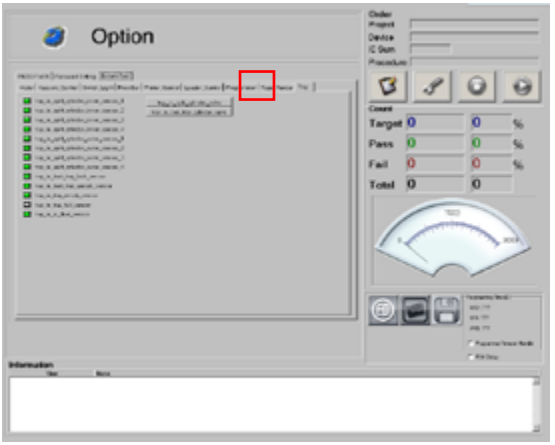


Fig 3-23 Leave system

Chapter 4 Message & Troubleshooting

4.1 Messages & Troubleshooting

There are 4 type of messages.

Item	Type	Machine Action
1	Normal	Normal message, only display
2	Warning	Warning message, only display
3	Alarm	Alarm message, display and stop the machine.
4	Error	Error message, display and stop the machine

The 3-color indicator and buzzer actions are as below.

Item	Type	3-color indicator & buzzer action
1	Normal operation	Green indicator light
2	Suspended operation	Yellow indicator light
3	Warning message	Yellow indicator flicker
4	Alarm message	Red indicator flicker, buzzer alarm 3 times
5	Error message	Red indicator flicker, buzzer alarm continually

The software will show the message in the red box as the fig 4-1.

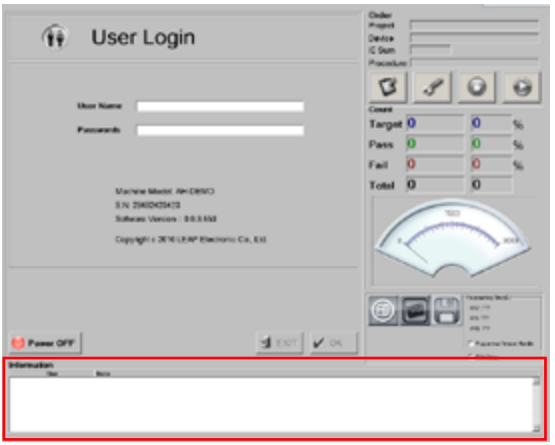


fig 4-1 : Message area

4.1.1 Normal Message

The follow message will show.

A. The user load the program project, electronic control and programmer software.
B. The user set the system, adjust for each axis.
C. The time of Start or end project.

Those messages will be only shown on the Information box as Fig 4-2.

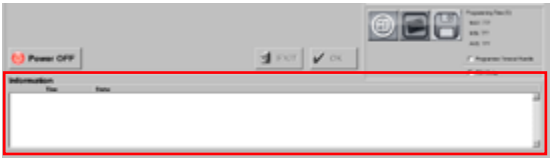


Fig 4-2 : Normal Message box

Those messages will not effect the AH. So, there is no compulsory action. The contents are as below.

Item	Message	Content
1	**Bring up agent process ...**	Ready for starting the programmer.
2	**Lauching agent ... please wait.**	Communicating with the programmer.
3	**Agent: server_demo.exe**	Show the programmer program.
4	**Loading project file:**	Show the loading project file.
5	**Programmer agent is ready.**	Finished the programmer control program and the electronic control program connection.
6	**Start AH400B Produce**	Start the project production.
7	**Project is finished, saving report.**	Finished the project, save the report automaticly.

4.1.2 Warning Message

These messages will not effect the AH movement, only for warning.

A. When Z0 axis can not pick the IC on the picking area. If re-pick function has been set, the system will not stop, and do the pick action again.

B. When Z1 axis can not pick the IC on the picking area. If re-pick function has been set, the system will not stop, and do the pick action again.

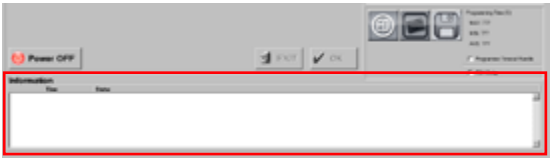


Fig 4-3 : Warning message

The message and content are as below.

Message	Content	Procedure
W010011	When tape-in, Z0 pick IC fail, need to re-pick IC. The user can set the re-pick times.	Handle by the AH procedure automatically.
W010013	When tray-in, Z0 pick IC fail, need to re-pick IC. The user can set the re-pick times.	Handle by the AH procedure automatically.
W010014	When tray-in, Z0 pick IC fail, need to re-pick IC. The user can set the re-pick times.	Handle by the AH procedure automatically.
W010015	When tube-in, Z0 pick IC fail, need to re-pick IC. The user can set the re-pick times.	Handle by the AH procedure automatically.
W020001	Z1 axis precissor can not pick IC, need to re-pick IC. The user can set the re-pick times.	Handle by the AH procedure automatically.
W020002	Z2 axis precissor can not pick IC, need to re-pick IC. The user can set the re-pick times.	Handle by the AH procedure automatically.
W020003	Z2 axis socket can not pick IC, need to re-pick IC. The user can set the re-pick times.	Handle by the AH procedure automatically.
W020004	Z1 axis socket can not pick IC, need to re-pick IC. The user can set the re-pick times.	Handle by the AH procedure automatically.
W020005	Z2 axis place the fail IC on the fail tank and detect no IC. The IC may be misplace on socket.	Handle by the AH procedure automatically.
W020006	Z1 axis place the fail IC on the fail tank and detect no IC. The IC may be misplace on socket.	Handle by the AH procedure automatically.

4.1.3 Alarm Message

When these messages occur, AH will stop all of the action and start alarming. It means that need operator to get in to handle the problem. The situations are as below.

A. When Z axis pick the IC, can not get the IC. The IC position maybe deviate or loss. It will need the operator to handle it.

B. When Z axis place the IC, can not get the IC placed message. The IC can not be released by nozzle. It will need the operator to handle it.

C. When the pressbar up or down, can not be detected by the sensor. It will need operator to check if there is external object to interfere the sensor.

D. On the tray condition, there is no tray on the tray-in area, or too many trays on the tray-out area, or float IC on the tray. Those situations will need the operate to put in the new tray, or take away the programmed IC trays, or check if there is float IC on the tray.

E. There is something wrong on the tape-out. It will need operator to get rid of it.

F. Mark machine has problem, need the operator to handle it.

These type messages will stop the AH compulsorily. At the same time, The GUI will change to another page. It will show the alarm situation and how to do the trouble shooting as the fig 4-4.

Fig 4-4 : Alarm messages

A. Show the alarm place.

B. Show the problem and how to handle it.

The messages and contents.

Message	Content	Reason & approach
W010011	When tape-in,the Z0 axis pick the IC fail, need to re-pick the IC. The operator can set the re-picked times. However, still can not pick the IC after re-picking.	1. The operator check if there is a IC on the pick point. 2. Check if there is stacked or stuck IC on the pick point. Remove the abnormal IC. 3. Check if the nozzle OK or not. 4. Check the sensor value OK or not. If not OK, please adjust it. 5. The hardware connection is abnormal. Please check the repair technical person. 6. The I/O card is abnormal. Please check the repair technical person.
W010013	When tray-out,the Z0 axis pick the IC fail, need to re-pick the IC. The operator can set the re-picked times. However, still can not pick the IC after re-picking.	
W010014	When tray-in,the Z0 axis pick the IC fail, need to re-pick the IC. The operator can set the re-picked times. However, still can not pick the IC after re-picking.	
W010015	When tube-in,the Z0 axis pick the IC fail, need to re-pick the IC. The operator can set the re-picked times. However, still can not pick the IC after re-picking.	
W020001	The Z1 axis precissor pick the IC fail, need to re-pick the IC. The operator can set the re-picked times. However, still can not pick the IC after re-picking.	
W020002	The Z2 axis precissor pick the IC fail, need to re-pick the IC. The operator can set the re-picked times. However, still can not pick the IC after re-picking.	
W020003	The Z2 axis socket pick the IC fail, need to re-pick the IC. The operator can set the re-picked times. However, still can not pick the IC after re-picking.	
W020004	The Z1 axis socket pick the IC fail, need to re-pick the IC. The operator can set the re-picked times. However, still can not pick the IC after re-picking.	
W020005	Z2 axis place the fail IC on the fail tank and detect no IC. The IC may be misplace or stack on socket.	1. Sense fail, please adjust the sensor value. 2. Hardware connection problem. Please contact the repair person. 3. I/O problem, please contact the repair person.
W020006	Z1 axis place the fail IC on the fail tank and detect no IC. The IC may be misplace or stack on socket.	
A000001	Prompt the user to set ATM-100 taping machine.	1. Please follow the instruction to set the ATM-100 taping machine.

A000002	Prompt the user to set MK-1 mark machine.	1. Please follow the instruction to set the MK-1 taping machine.
A000010	Door-0 open.	1. Please check if the door is open. 2. If no, the sensor is broken, please check the repair person. 3. Hardware connection problem. Please contact the repair person. 4. I/O problem, please contact the repair person.
A000011	Door-1 open.	
A010001	There is no more tray on the tray-in area. Prompt the user to put the new tray.	1. Please place the new IC tray for the tray-in. 2. The sensor maybe broken, please check the repair person. 3. Hardware connection problem. Please contact the repair person. 4. I/O problem, please contact the repair person.
A010002	The tray is full on the tray-out area. Prompt the user to take away the finished tray.	1. Please take away the finished IC tray. The tray quantity is over on the finished area. 2. The sensor maybe broken, please check the repair person. 3. Hardware connection problem. Please contact the repair person. 4. I/O problem, please contact the repair person.
A010003	There is stack IC on the tray-loader. Prompt user to take away the IC.	1. Please take the stack IC on the tray. 2. The sensor maybe broken, please check the repair person. 3. Hardware connection problem. Please contact the repair person. 4. I/O problem, please contact the repair person.

A010005	Z0 axis can not release the IC. Prompt the user to take away the IC.	1. Please check if there is any problem on the Z asix height. 2. Check the nozzle. 3. The sensor maybe broken, please check the repair person. 4. Hardware connection problem. Please contact the repair person. 5. I/O problem, please contact the repair person.
A010007	Seize IC from the precissor failed on the tray-loader.	
A020001	Z1 axis can not release the IC. Prompt the user to take away the IC.	
A020002	Z2 axis can not release the IC. Prompt the user to take away the IC.	
A020042	Z1 axis can not release the IC on the bad zone. Prompt the user to take away the IC.	
A020043	Z1 axis can not release the IC from the precissor. Prompt the user to take away the IC.	
A020045	Z1 axis can not release the IC on the bad zone. Prompt the user to take away the IC.	
A010008	Z0 axis IC is missing during the movement on the tray-out. (PR->TrayLoader)	11. The IC is missing or flaying during the X axis or R0 axis movement. Please take the IC out from the area to avoid the mixing situation. 2. Check the nozzle. 3. The sensor maybe broken, please check the repair person. 4. Hardware connection problem. Please contact the repair person. 5. I/O problem, please contact the repair person.
A010009	Z0 axis IC is missing during the movement on the tray-in.	
A020006	Z1 axis IC is flying during the movement.(PR->TX)	
A020008	Z2 axis IC is flying during the movement.(TX->PR)	
A020044	Z1 axis IC is flying during the R0 movement.(TX->PR)	
A020010 ~ A02001F	PressBar go-down limit detect error.	1. The PressBar go-down sensor can not sense the go-down position signal. 2. During the pressBar go down, there is an external object interfere the movement. 3. The sensor position is abnormal. Please adjust the position. 4. Hardware connection problem. Please contact the repair person. 5. I/O problem, please contact the repair person.

A020020 ~ **A02002F**	PressBar go-up limit detect error.	1. The PressBar go-up sensor can not sense the go-up position signal. 2. During the pressBar go up, there is an external object interfere the movement. 3. The sensor position is abnormal. Please adjust the position. 4. Hardware connection problem. Please contact the repair person. 5. I/O problem, please contact the repair person.
A030001	There is no tray on the tray-unloader area.	1. Please place the new tray. 2. Check the sensor of tray detection OK or not. 5. he sensor position is abnormal. Please adjust the position. 6. Hardware connection problem. Please contact the repair person. 7. I/O problem, please contact the repair person.
A030002	There is too many tray on the tray-loader area.	1. Please take away the tray. 2. Check the sensor of tray detection OK or not. 3. The sensor position is abnormal. Please adjust the position. 4. Hardware connection problem. Please contact the repair person. 5. I/O problem, please contact the repair person.

A030003	There is stack IC on the loader tray.	1. There is stack IC situation during the tray movement. Please take the stack IC away. 2. Check the sensor of tray detection OK or not. 3. The sensor position is abnormal. Please adjust the position. 4. ardware connection problem. Please contact the repair person. 5. I/O problem, please contact the repair person.
A030004	Taping machine is abnormal 1.	1. The ATM-100 taping machine is abnormal. Please follow the ATM-100 instruction for trouble shooting 2. Check the sensor of ATM-100 OK or not. 3. The sensor position is abnormal. Please adjust the position. 4. The hardware connection is abnormal. Please contact the technical person. 5. I/O card is abnormal. Please contact the technical person.
A030005	Taping machine is abnormal 2.	
A030006	Taping machine is abnormal 3.	
A030007	Taping machine is abnormal 4.	
A030008	Taping machine is abnormal 5.	
A030009	Taping machine is abnormal 6.	
A030010	Taping machine is abnormal 7.	
A030011	No start the ATM-100 taping machine.	
A040001	The mark machine is not positioned.	1. The positioned sensor of the mark machine is abnormal. Please adjust to the right position 2. Check if the sensor of the mark machine OK or not. 3. The hardware cable connection is abnormal. Please check the technical person. 4. The I/O card is abnormal. Please check the technical person.

4.1.4 Error Message

When these messages occur, AH will stop all of the action and start alarming. It means that need operator to get in to handle the problem. The situations are as below.

A. Motor operation problem.
B. Cylinder movement time over the max time.
C. Unexpected situation happen.

hese type messages will stop the AH compulsorily. At the same time, The GUI will change to another page. It will show the error situation and how to do the trouble shooting as the fig 4-5.

Fig 4-5 : Error message

A. Show the error place.

B. Show the problem and how to handle it.

The message, content and reason & approach are as below.

Message	Content	Approach
E000001	EMG button action	1. Check if EMG button has been pressed. 2. Check if EMG button has been damaged. 3. The hardware cable connection problem. Please contact the technical person. 4. I/O card has problem. Please contact the technical person.
E000002	run time error, fsm.enter() sending back false	1. The system software has problem. Please send to Leap the files of fsm.log & fsm.log.bak which on under the install content for analysis.
E000003	run time error, fsm.running() sending back false	
E000004	run time error, fsm.exit() sending back false	
E010001	Tray in cylinder lock position overtime.	1. Check if the positioned LOCK/UNLOCK devices were interfered by external object. 2. Check if LOCK/UNLOCK sensor was damaged. 3. The hardware cable connection problem, Please contact the technical person. 4. The I/O card has problem, Please check the technical person.
E010002	Tray in cylinder lock position overtime.	

Message	Content	Approach
E010020	Z0 AXIS back HOME failed.	1. Check if there is interfere object on the motor movement route which made the motor can not back home. 2. Motor connected cable loose which make the motor can not be excited. Please check the cable assignment. 3. The home sensor is abnormal or position wrong. 4. The hardware cable connection problem. Please check the technical person. 5. I/O card has problem, Please check the technical person.
E010021	X1 AXIS back HOME failed.	
E010022	Y1 AXIS back HOME failed.	
E010023	PR1 AXIS back HOME failed.	
E010024	TZ1 AXIS back HOME failed.	
E020020	Z1 AXIS back HOME failed.	
E020021	Z2 AXIS back HOME failed	
E020022	R0 AXIS back HOME failed.	

Appendix ATM-100 Taping Machine

Appendix ATM-100

A1.1 Specifications

- ☐ Dimension: package size L1100*W350*H700(mm)
- ☐ Power: 1Φ 220vac 50/60HZ
- ☐ Compressed: 5kg/cm²
- ☐ Adjustable tape:8~72mm
- ☐ Carrier tape movement: multiple of 4mm

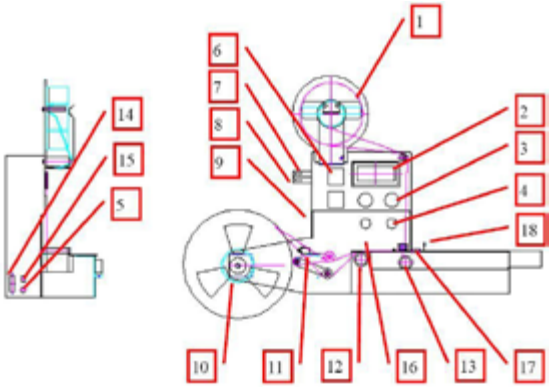


fig A1-1 : configuration

1 . Carrier	10 . Carrier for taping-in
2 . Operation display	11 . Carrier taping-in on/off detector.
3 . Pressure Gauge	12 . Hand-rolled wheel for tape-out
4 . Air force adjustment knob	13 . Hand-rolled wheel for adjust the bandwidth
5 . Power connector	14 . Input/output communicate interface.
6 . Thermometer	15 . Power on/off
7 . Floating detector	16 . Heat sealing knife
8. Empty detector	17 . Floating optical tube
9. Taping motor switch	18 . Empty optical tube

A1.2 Operation

1. Power on the button.
2. Wait for a while.
3. Enter the operation page.

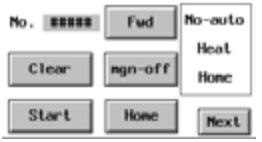


Fig A1-2 : Operation page

Title	Contents	Note
No.	show the amount of tape which has displayed.	
Clear	Press 2 second, the amount will be zero.	
Start	Press to start, ATM-100 will wait for the outside signal for movement.	
Fwd	Press for the motor forward by inch. If you stop, the motor will stop.	
Mgn-off	press for motor magnet-on / off. When magnet-off,you can use hand to forward and backward.	
Home	Motor go home.	
No-auto	message for manual / auto mode.	
Heat	message show heat / no-heat mode.	
Next	enter the next selection.	

5. Parameter Setting

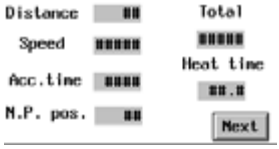


fig A1-3 : Parameter Setting

Title	Content	Note
Distance	key in the 1pc distance for motor.(mm).	
Total	set the package amount.	
Speed	set the biggest speed for motor movement.	
Heat time	set the heat press time on the tape.	
Acc. Time	Set time of increasing and decreasing for motor.	
Heat time	set the heat press time on the tape.	

6. Manual Operation

fig A1-5 : Manual operation

Title	Content	Note
No Heat	for selection no heat or with heat.	
Heat btn	press for heat on.	
Auto	selection for auto or manual	
Multi-pitch	multi-pitch movement for each time.	
Single-pitch	single-pitch movement for each time.	

7. Offset setting

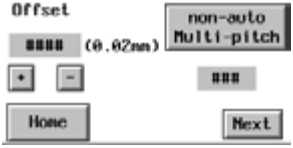


fig A1-6 : Offset Setting位移設定

Title	Content	Note
+	press one for forward 1 pulse.	
-	press one for backward 1 pulse.	
Home	Motor go home and offset.	
Non-auto	f select auto, when reach the quantity, will auto multi-pitch movement. If select non-auto, you have to go to the above 6 for press multi-pitch. The quantity can set on the space which below the button.	

A1.3 Maintenance

☐ Optical fiber sensor: use air spear to air out the dust and use soft cloth with alcohol to wipe the dust out.

☐ Tape track: use air spear to air out the dust every operation.

☐ Track Adjust screw and shaft: use lubricant every month.

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