Content

Chapter One   Introduction

Thank you for using the computer-controlled hosiery machine control system designed and manufactured by Zhejiang Mind Automation Equipment Co., Ltd.

Please read this manual carefully to operate the equipment correctly. Please keep the manual property for the convenience of consulting at any time.

1.1 Precautions

Please abide by the following safety precautions and precautions to guarantee the safe operation and avoid casualties in the process of using this product:

1. This machine is only applied to power type marked on the nameplate, and power regulator must be equipped when the voltage fluctuation is over 10%.

2. The power line shall be fixed for safety protection, and it cannot bear forces.

3. The equipment must be grounded. If grounded improperly, it may lead to electric shock and impact the safety operation of the product.

4. The repair and debugging of electrical component shall not be conducted by non-professionals, for it may reduce the safety performance, increase faults and even lead to casualties and property loss.

5. Cut off the power of the machine before opening the computer case cover. When contacting the internal parts, it must wait for a minute after the power is cut off. When contacting the servo amplifier, it shall wait for 10 minutes after the power is cut off.

6. The machine is forbidden to operate when the shield of moving parts is defected.

7. The machine is forbidden to operate in damp and dusty places, or with corrosive gas and inflammable and explosive gas, or it may give rise to electric shock or fire.

8. Insulation test of the input and output circuit of the controller is forbidden, or it may damage the electric equipment.

9. Please change the fuse according to the specification indicated by the product.

10. The atmospheric pressure of the machine shall be above 6 kg/cm^2, or it may lead to the wrong operation of the air valve.

11. During the operation, any moving parts of the machine shall not be touched, or it may damage people.

12. Please use the spare parts and wearing parts provided by the factory;

13. Please use quality-ensured USB disk.

14. The product shall be placed in a clean and ventilating environment. There should not be piles of debris around the control cabinet, for the convenience of heat dissipation. Besides, dust shall be cleaned regularly.

15. Alterations of the manual will be added in the attachment. If the newly added contents are in conflict with the original contents, the newly added contents shall prevail.

16. The company will not undertake any responsibility for consequences of unauthorized alterations of products.

1.2 Introduction to functions

The computer-controlled hosiery machine has more powerful functions than similar imported products, besides the high reliability and low cost. Its functions and characteristics are introduced briefly as below:

1. The yarn path and triangle is in electronic-pneumatic control.

2. It adopts the sensing device automatic protection.

3. Adjustable automatic oil filling.

4. It can realize the multi-language display and free switch. Large LCD (800*480 lattice) can provide an explicit display effect.

5. The computer operation employs the graph menu and supports the touch functions, which is convenient in operation, with friendly man-machine interface.

6. With high-capacity memory, the pattern disk size of each system is as high as 1G, which can store 300 patterns.

7. It supports the display of folder and long file name.

8. The computer control box can drive 1-path and 12-blade actuator at maximum, extend the piezoelectric ceramic actuator, and be applied to any napping machine; basic computer 64-path valve。

9. The pattern and parameters can be imported into the machine through USB disk or export to USB disk for storage.

10. The machine can save the original weaving position in sudden blackout.

11. With servo control technology, it can guarantee the stable operation of machines.

12. With automatic detection functions of actuator, valve, etc. it can locate the fault point rapidly.

Chapter Two Operating instructions of system

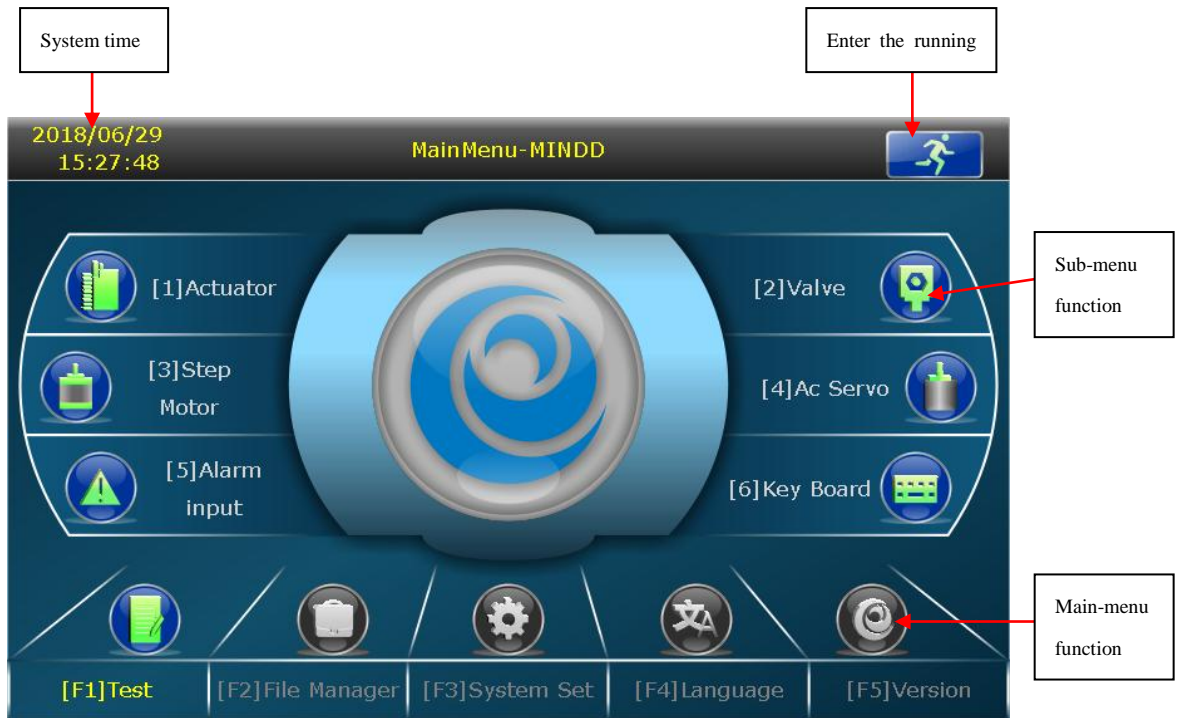Enter the main menu interface after turning on the power .

Chart 2-1

The bottom is the switch function keys of the main menu, while the two sides are the corresponding function keys of the sub-menu.

2.1 Running interface

The left of the running interface contains three information pages, including the "current chain", "file

information" and "status", which can be switched by clicking the button on the page. On the right, it is the related real-time information of the machine state.
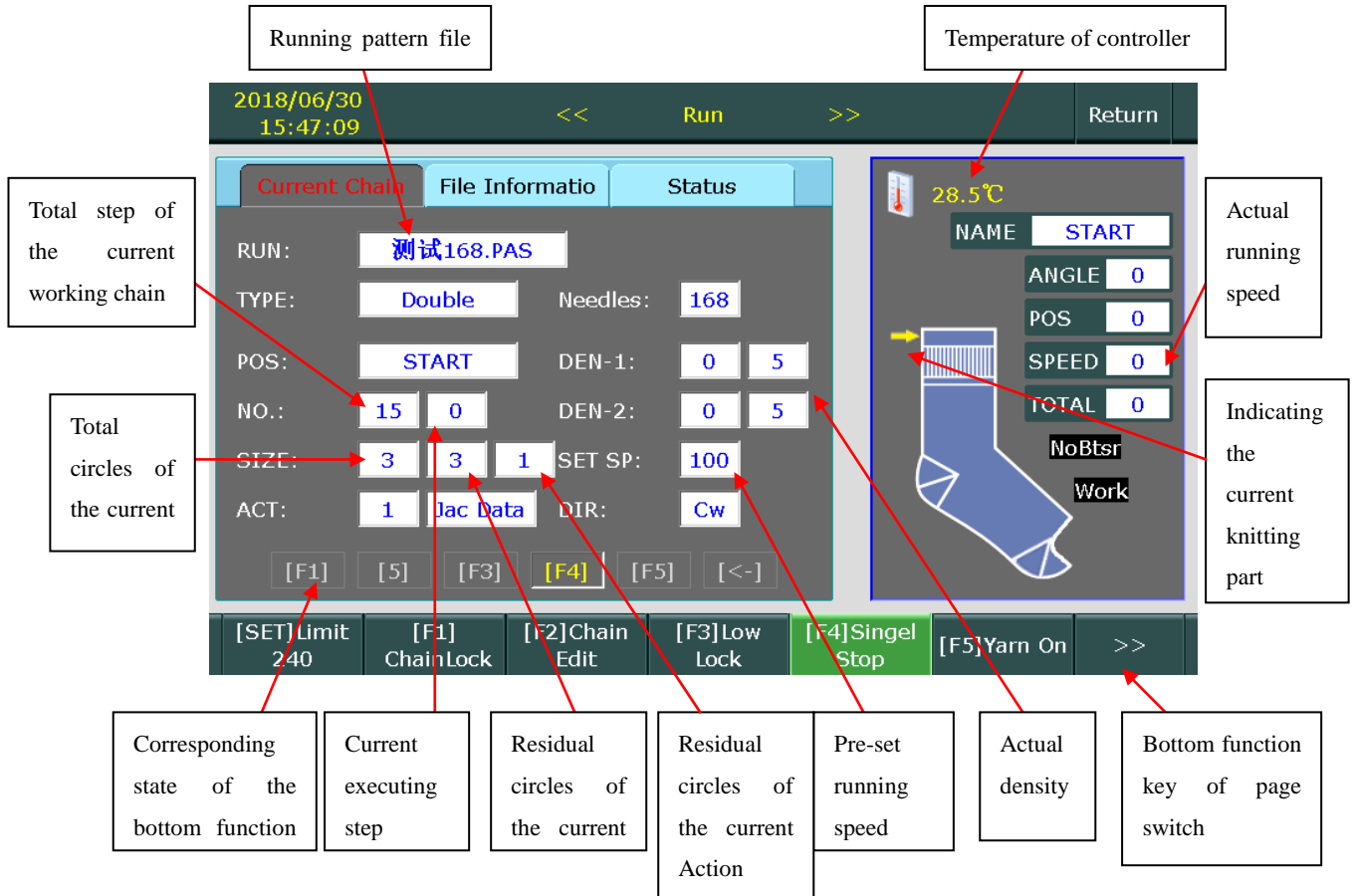
Running pattern file

Temperature of controller

Total step of the current working chain

Actual running speed

Total circles of the current

Indicating the current knitting part

Corresponding state of the bottom function

Current executing step

Residual circles of the current

Residual circles of the current Action

Pre-set running speed

Actual density

Bottom function key of page switch

Chart 2-2

Information of working pattern, and the red box stands for the currently running file

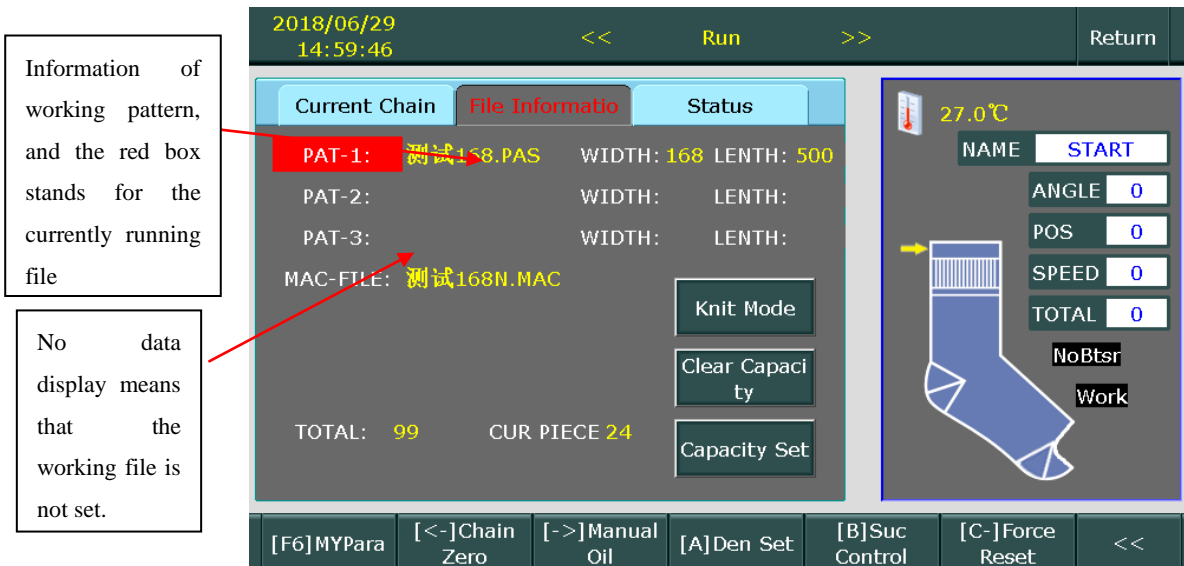No data display means that the working file is not set.

Chart 2-3

State control　The interface indicates related information of the current status of the machine, for professionals to judge the fault points.
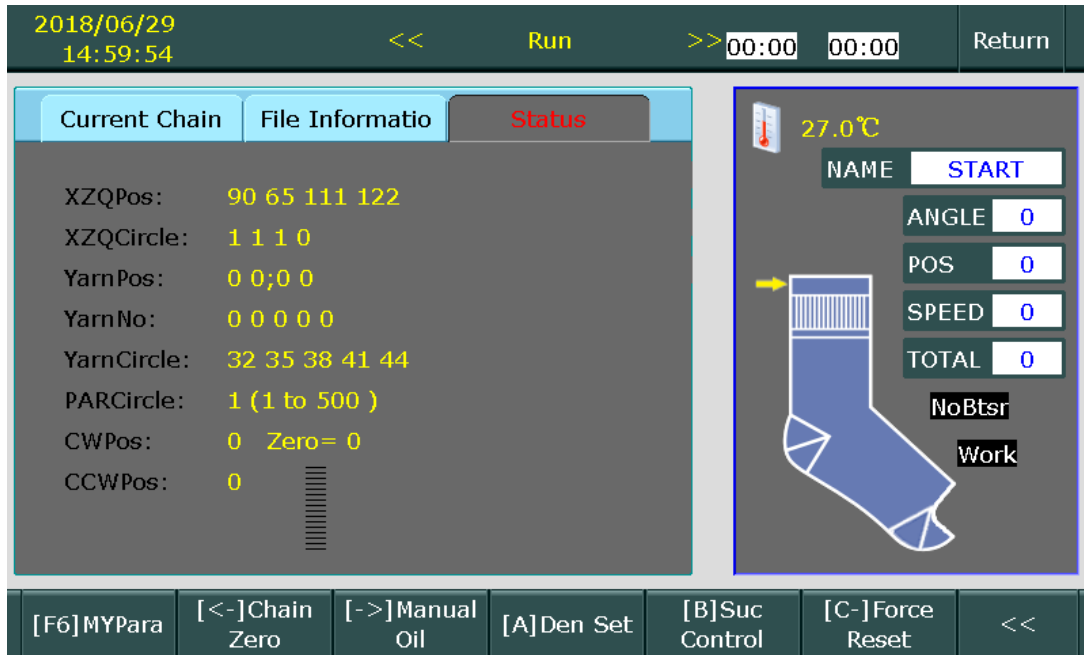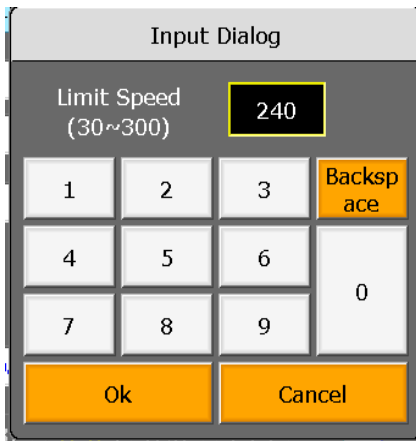
Chart 2-4

2.1.1 Introduction to shortcut keys of the running interface

Speed limit: Press it, the running speed limit input dialog will pop up, and the running speed of the machine will not exceed the amount input, ranging between 30 and 300.

Chain lock: Press it, the chain will be locked, and press it again, the lock will be released;

Pattern lock: Press it, the pattern will be locked, and press it again, it will be released;

Chain edit: Press it, it will jump to a password box, and input the correct code, you will enter the chain edit interface;

Low-speed lock: Press it, the maximum limit of the operating speed is 80, and press it again, the limit will be cancelled;

F4 **Automatic stop:** Press it, it will stop automatically after finishing a sock, and press it again, the stop will be released;

F5 **Shuttle lifting:** press it, the Rubber yarn will exit, and all adding, yarn and rubber yarn will uplift, and press it again, it will gain the previous state

F6 **Yarn Parameter**

No.	Yarn No.	Move IN	Move OUT	ScissorON	ScissoOFF	mode
1	Yarn1IN		16	12	26	
2	Yarn1OUT			1	38	
3	Yarn2IN		16	9	16	
4	Yarn2OUT			1	29	
5	Yarn3IN		16	11	26	
6	Yarn3OUT			1	38	
7	Yarn4IN		16	9	26	
8	Yarn4OUT			1	26	
9	Yarn5IN		16	9	16	
10	Yarn5OUT			1	26	

Main Yarn CFG

[PU]Page Up　[PD]Page Down　[F1]Yarn CFG　[F2]ModeSet　[F3]Blowing set　[ENT]OK　[ESC]Cancel

Chart 2-5

No.	mode	CHG POS	OverNum	BlowSet		
1	1	13	19	1234	0	0
2	2	1	6	123	0	0
3	3	132	144	123	0	0
4	4	156	162	123	0	0
5	5	1	10	1	0	0
6					0	0
7					0	0
8					0	0
9					0	0
10					0	0

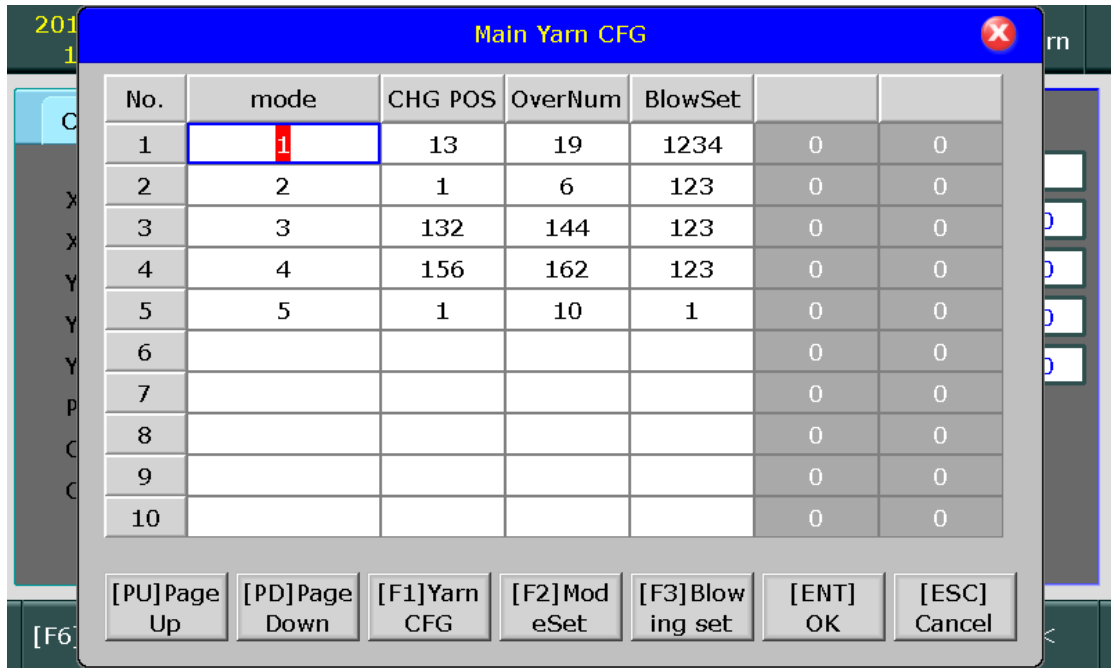[PU]Page Up　[PD]Page Down　[F1]Yarn CFG　[F2]Mod eSet　[F3]Blow ing set　[ENT] OK　[ESC] Cancel

Chart 2-6

NOTE:CHG POS= yarn change postion,　OverNum= Overlapping needle number.BlowSet: Blowing

configuration,which blowing valve work .

No.	Mode	Blow No.	Blow open	Blow off		
1	0	1	1	28	0	0
2		2	8	28	0	0
3		3	60	80	0	0
4		4	95	658	0	0
5					0	0
6					0	0
7					0	0
8					0	0
9					0	0
10					0	0

[PU]Page Up　[PD]Page Down　[F1]Yarn CFG　[F2]Mod eSet　[F3]Blow ing set　[ENT] OK　[ESC] Cancel
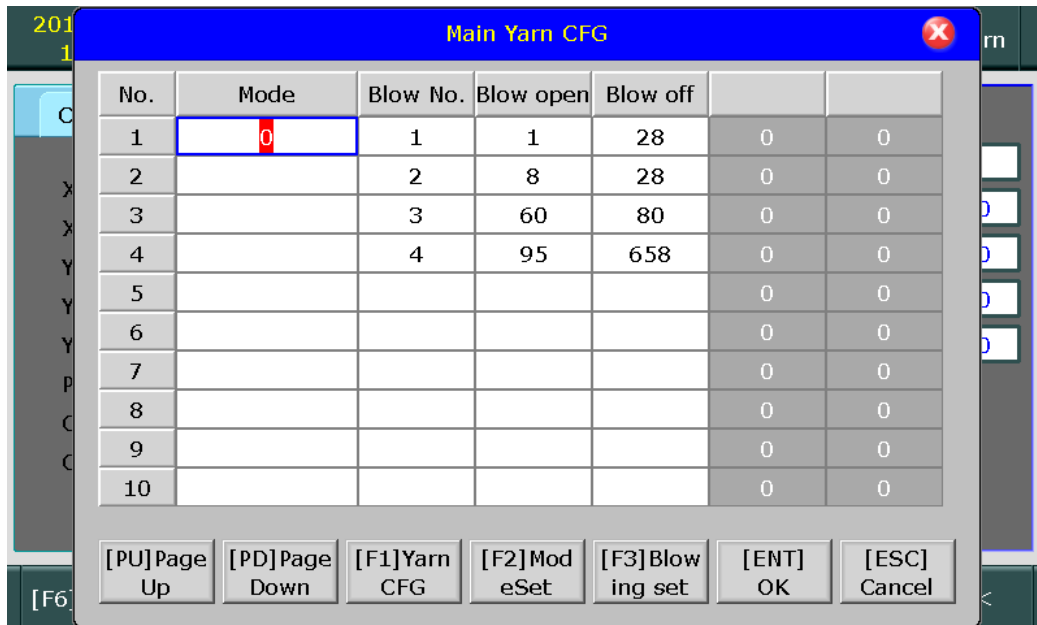
Chart 2-7

In this interface, we mainly set the parameters such as the shuttle's in and out positions, the shuttle's horizontal movement position, the scissors's in and out positions, the blowing in and out positions, and the line changing method.

The shuttle in and out with the horizontal movement in and out, the scissors in and out, the incoming line, the outgoing line, and the blowing in and out are mutually coordinated actions. The specific setting method is as follows:

（**1**）When there is a pattern in the chain, when the machine changes the shuttle according to

the control bar, the shuttle, the Horizontal movement and the scissors are all processed by the line changing method 0 by default.

☺ The shuttle IN:

The general process is as follows: After the shuttle IN, horizontal movement immediately goes in. After the yarn is eaten, the scissors can be opened, waiting for a few stitches to move out again, and then closing the scissors.

The specific IN and OUT positions are calculated as follows:

the shuttle is IN Position = change position (corresponding to the line change method in the chain) chart2-6.

the Horizontal movement IN Position = the shuttle is IN Position + Move IN(chart2-5　blank indicates 0);

the Horizontal movement OUT Position = the shuttle is IN Position +Move OUT（chart2-5）;

the scissors open Position = the shuttle is IN Position + scissorsON（chart2-5）

the scissors closed Position = the shuttle is IN Position + scissorsOFF（chart2-5）

When the shuttle is hit, it must cooperate with the blowing action. The specific blowing is determined according to the matching of the nozzles of the corresponding changing method. Which kind of blowing should cooperate with the action, as shown in Method 2 in Figure 2-6, it means 1, 2, 3 The blowing nozzle should be blown, and the specific blowing position is shown in Figure 2-7.

The position at which to start blowing: the position where the shuttle is hit + the position where the air is blown in;

The position where the blowing is finished: the position where the shuttle is hit + the position where the air is blown out.

☺ The shuttle hits:

When the shuttle is lifted, it is generally not necessary to do the translational movement.

Whether the scissors should be operated depends on the situation; if the shuttle is raised in the state of being pushed, the scissors are generally opened immediately, and then according to the distance of the scissors of the needle, the scissors are equiaxed. Closed after being clamped in; no need to cooperate with the blowing action

The position where the shuttle is lifted = the position of the change line + the number of overlapping stitches (corresponding to the method of changing the line of the chain) as shown in Figure 2-6;

Corresponding to the position where the scissors are opened = the position where the shuttle is lifted + the position corresponding to the opening of the scissors (the data of the row from the shuttle) (Fig. 2-5);

Corresponding to the position of the scissors off = the position where the shuttle is lifted + the position corresponding to the scissors off (the data of the row from the shuttle) (Fig. 2-5);

For example, in the current chain, the method 2 is changed, the No. 3 shuttle in the control bar is entered, and the No. 4 shuttle is exited.

Then the No. 3 shuttle is scored at 1 stitch.

The 3rd translation is in 1 stitch, and the 17 (1+16) needle exits.

The 3rd scissors is turned on at 12 (1+11) and the 27 (1+26) needle is closed.
According to the method of changing the line 2, the blowing nozzles are blown by the blowing nozzles 1, 2, and 3:
No. 1 blows the blow on the 2nd (1+1) needle, and the 29th (1+28) needle ends the blow;
Blowing No. 2 starts blowing on the 9th (1+8) needle, and the 29th (1+28) needle ends blowing;
The No. 3 blow starts to blow on the 61st (1+60) needle, and the 81st (1+80) needle ends the blow.
In brackets, 1 is the line position (corresponding to the line change method of the chain)

The 4th shuttle exits at 7 (1+6).
No. 4 panning exits at 7 stitches,
The 4th scissors is turned on at 7 (7+1) and closed at 32 (7+26);
The shuttle exits without a blow fit;

（**2**）How to set the position in and out of the instruction in the chain:
☺　The shuttle in the chain scores:
　　The position where the shuttle is hit = the position set in the chain;
　　Position corresponding to the translation direction = position set in the chain + position corresponding to the translation;
　　Corresponding to the position of the translation = the position set in the chain + the position corresponding to the translation;
　　Corresponding to the position where the scissors are opened = the position set in the chain + the position corresponding to the opening of the scissors;
　　Corresponding to the position of the scissors off = the position set in the chain + the position corresponding to the scissors off;
　　When the shuttle is pushed in, the translation scissors is preferentially operated according to the setting in the corresponding line changing method. If there is no corresponding line changing method, the position is set according to the method set in the method 0; the shuttle is engaged with the blowing action, and the specific blowing is based on Corresponding to the nozzle matching method, it is determined which air blows to cooperate.
　　Position where blowing starts = position set in the chain + position where the air is blown in;
　　Position where the air is blown = position set in the chain + position of the blow out

☺　The shuttle in the chain is played:
The position where the shuttle is lifted = the position where the shuttle is set in the chain;
Corresponding to the position where the scissors are opened = the position where the shuttle
　　is set in the chain + the position corresponding to the opening of the scissors (the data of the row from the shuttle);
Corresponding to the position of the scissors off = the position where the shuttle is set in the chain + the position corresponding to the scissors off (the data of the row from the shuttle);

4　The needle selector is retracted: the needle selector is fully withdrawn, and the next chain selector
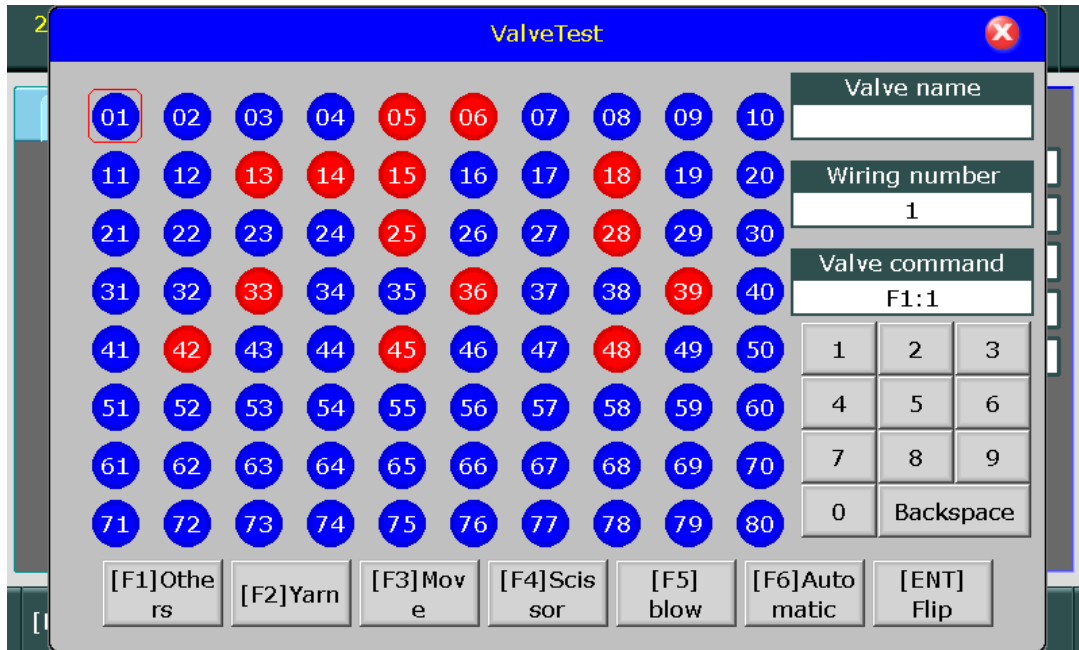
is still working normally.

6 BTSR learning: When the BTSR function is turned on, the first sock is automatically learned to record the working state of the BTSR.

7 **Valve test**

In order to facilitate the commissioning of a certain or a group of valves, the function keys and numbers can be used together.

F1+number (1~52)+ENTER: test the specified valve in and out separately;

F2+ number (1~6)+ENTER: separately test the main shuttle two air valves in and out;

F3+ number (1~6)+ENTER: test the translating air valve in and out separately;

F4+ number (1~6)+ENTER: test the scissors valve in and out separately;

F5+number (1~4)+ENTER: separately test the blow valve to blow (the blow valve should be tested in the chain without working);

8 **Showing the time of knitting socks**

The chain is normalized. After pressing, the current chain becomes 1 circle directly.

The chain is reduced by 2 laps. After the press, the current chain lap is automatically reduced by 2 laps.

**Manual refueling,** automatically refill for 2 seconds after pressing

Clear the output. When pressed, the current working output clear dialog will pop up.

Forced reset

Press the pop-up forced reset confirmation box to quickly click ✔ 是 button enters reset state (if current is processing followed heels, the current circle will be executed first, and other parts will be reset immediately, and the main shuttle will not exit.

To perform a reset immediately, tap and hold the button ✔ 是 on the screen for about 1 second, at which point all valves are reset. After the reset, the machine will enter the quick reset chain after 3 turns, and the needle will be transferred to the start state.
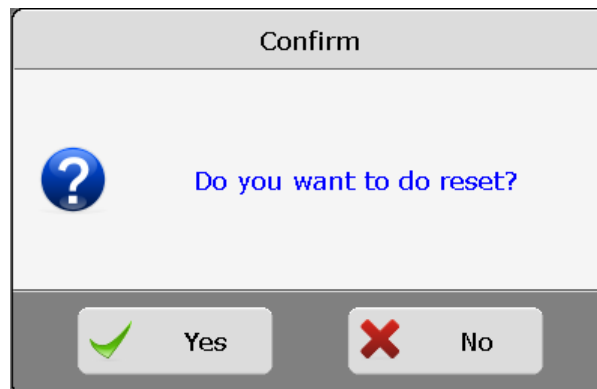
Quick reset Press and hold the "**quick reset**" button for about 1 second to enter the fast reset state.

Weaving switch Press the pop-up mode setting interface (the gray part indicates that the work pattern-3 is not set), and select the corresponding work. For the pattern, press the OK button to enter the corresponding working mode. If the work pattern-1 and the work pattern-2 are all selected, indicating two patterns are cyclically woven in sequence, provided that two work patterns are set in the pattern management.
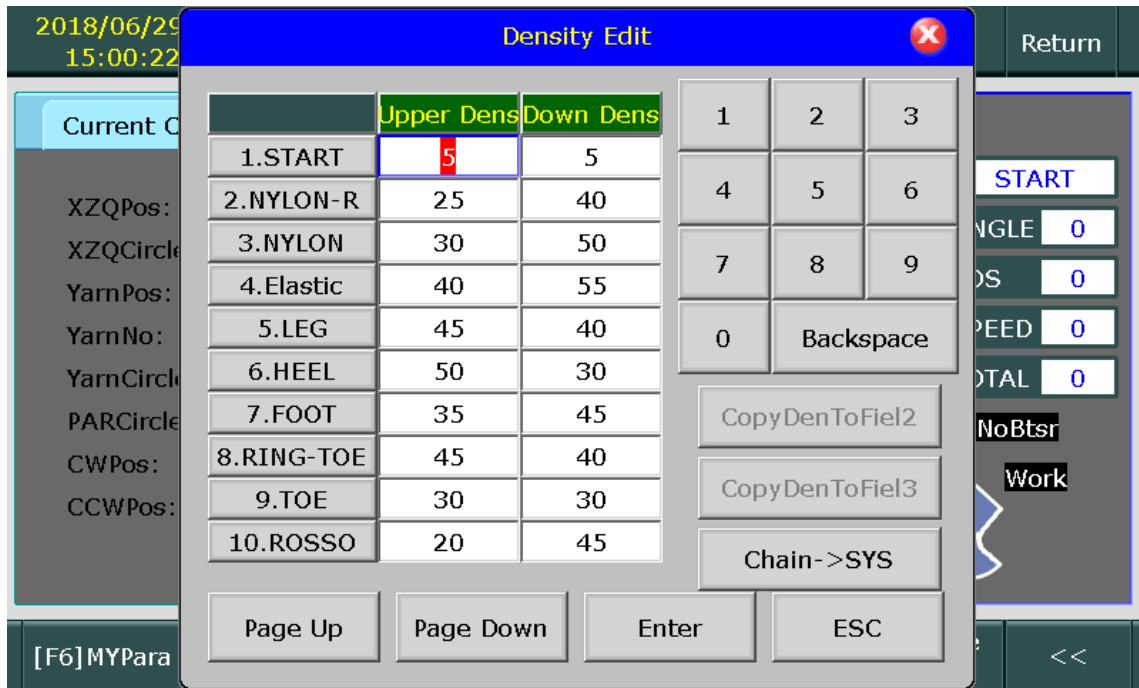
Indicates using only pattern-1
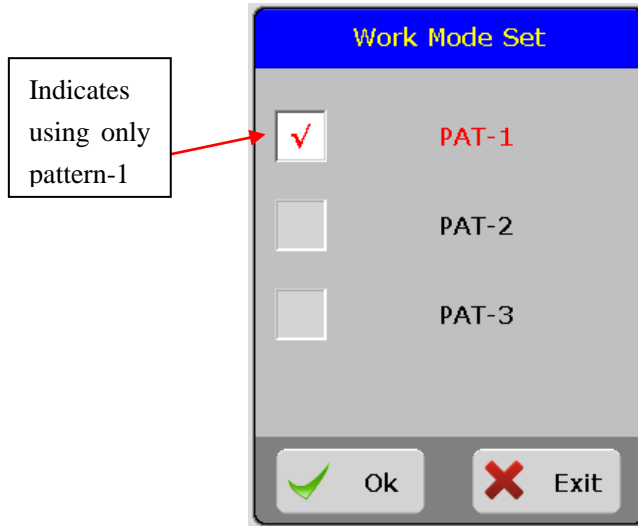
Total output setting

Press the pop-up total output setting interface. When set to 0, it means continuous weaving.
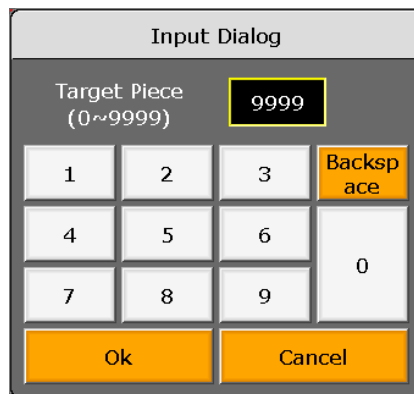
Density setting: Press the pop-up density setting interface, a total of 20 files, switch by page key

When the "**density value following chain**" value in the machine parameter is "on", the current display is the density on the machine. It can only be used by the current machine and cannot be input and output with the file. When the value is "off", the above picture is displayed. Shows the density that comes with the chain, which can be output to other machines along with the chain file, depending on the customer's needs.
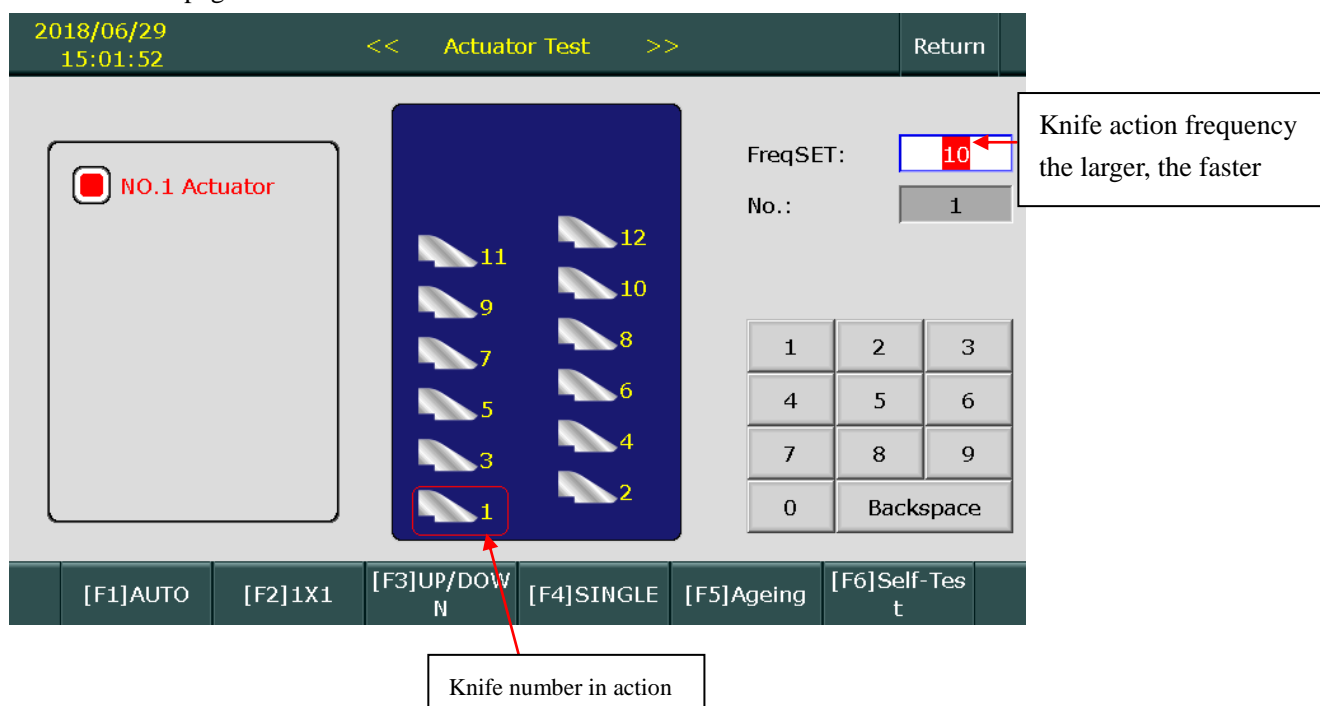
B **Suction control :** Switching suction motor on, off, automatic control

2.2 Test menu

Press the key [F1] in the main menu to switch to the test

2.2.1 Actuator test

Press [1] in the test page of the main menu to enter the actuator test.

[F1]AUTO   The selected actuator is automatically tested up and down.

[F2] 1X1 press once to do actuator 1X1, press again to reverse 1X1

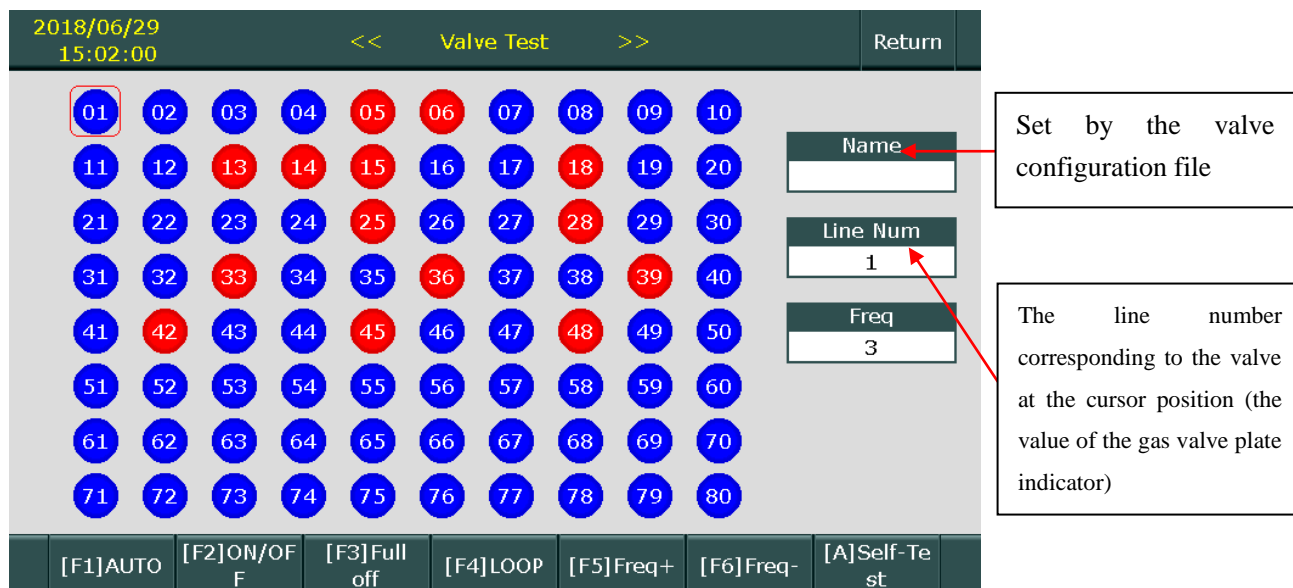**[F3]UP/DOWN**   press once to do actuator full up, press again to full down

[F4]SINGLE   click the knife position to select it, then press [F4] to test

[F5]AGEING   All the actuators automatic fully up/down, press the number keys to adjust the output frequency.

[F6]Self-Test   invalid

2.2.2 Valve test

Press in the test page of the main menu to enter the valve test.

Set by the valve configuration file

The line number corresponding to the valve at the cursor position (the value of the gas valve plate indicator)

[F1]AUTO The selected valve automatically on and off

[F2]ON/OFF The selected valve switched between on and off

[F3]Full Off all valves off

[F4]LOOP Automatically output from the 1st to the 80th air valves

[F5]Freq+ The output interval frequency of the valve is increased by 1 step. The larger the value, the shorter the interval time.

[F6]Freq- The output interval frequency of the valve is reduced by 1 step. The smaller the value, the longer the interval.
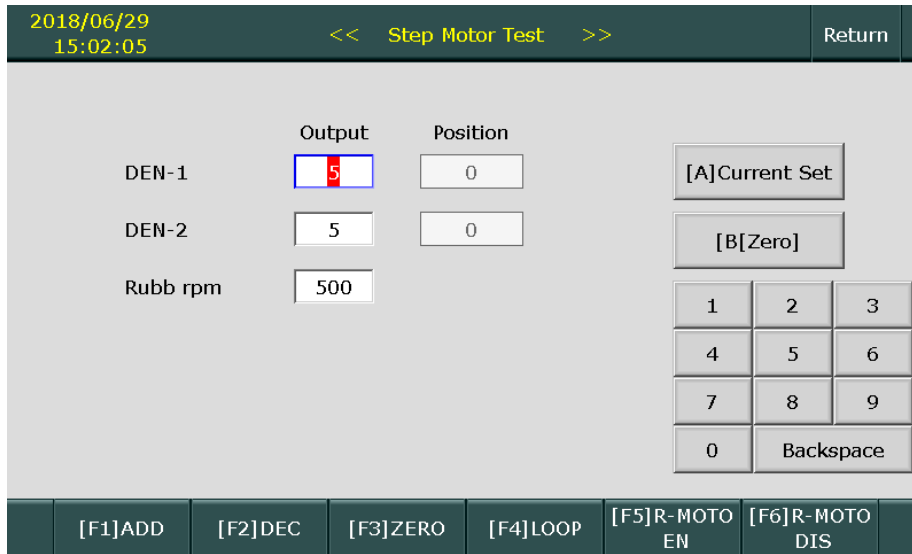
[A]Self-Test invalid

2.3.3 Step motor test

Press in the test page of the main menu to enter the step motor test

Please move the cursor to the corresponding motor before test

| 2018/06/29 15:02:05 | << Step Motor Test >> | Return |

Output　Position

DEN-1　5　0　[A]Current Set

DEN-2　5　0　[B[Zero]

Rubb rpm　500

1　2　3
4　5　6
7　8　9
0　Backspace

[F1]ADD　[F2]DEC　[F3]ZERO　[F4]LOOP　[F5]R-MOTO EN　[F6]R-MOTO DIS

[F1]ADD　Step motor forward rotate value

[F2]DEC　Step motor reverse rotate value (Stop automatically after encountering the corresponding zero probe)

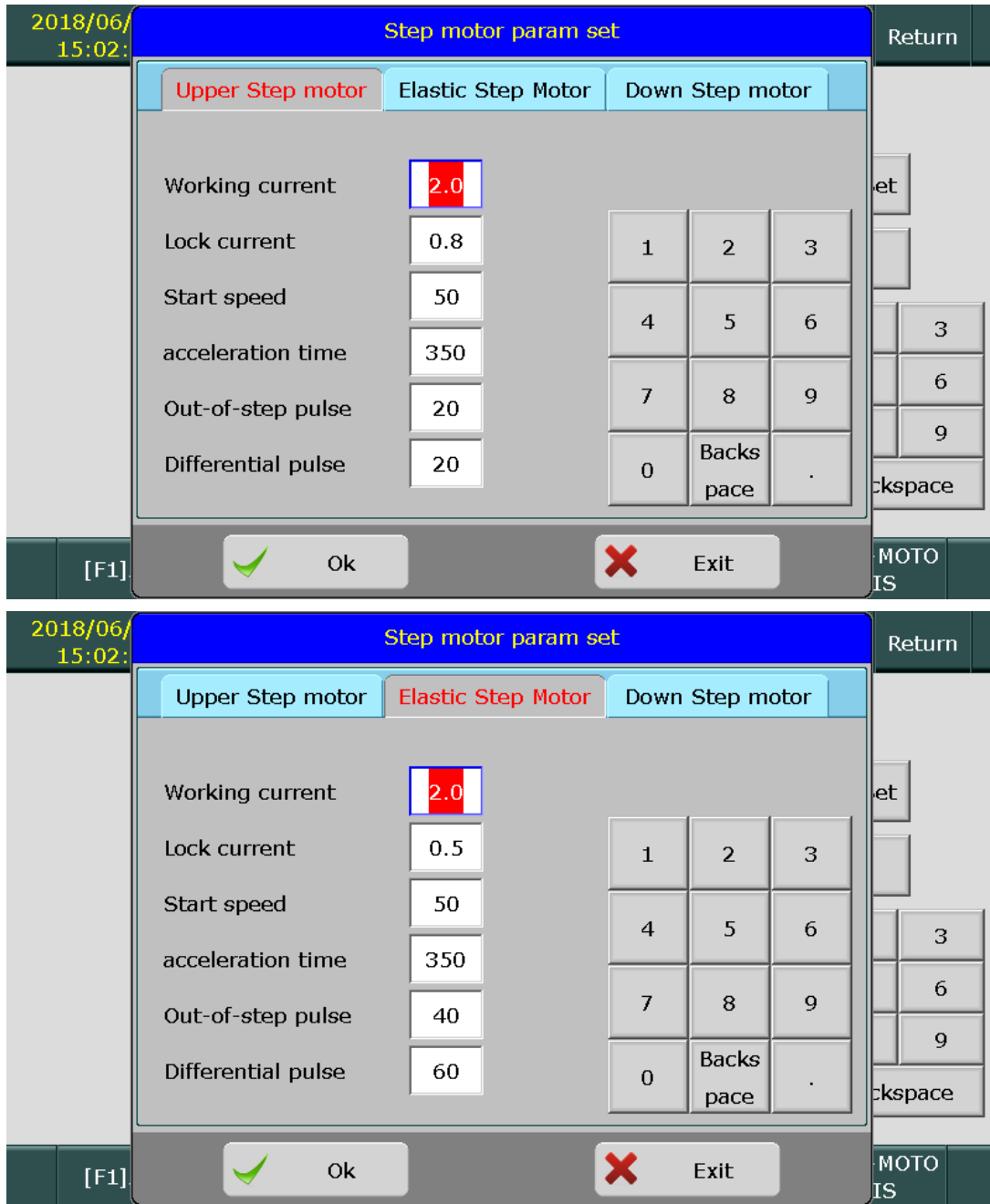**[F3]ZERO** Step motor automatically turns to the zero probe position

[F4]LOOP　Step motor automatically rotates value in the forward and reverse directions.

[F5]R-MOTO EN　Rubber motor runs at the set speed (rev/min)

**[F6]R-MOTO DIS**　Rubber motor stops

[A]Current set The operating current can be properly adjusted if the motor is not strong enough. The upper cylinder density and the lower cylinder density work in the same current, the adjustment range is 1.8~2.2A, and the lock current is 0.3~1A, as shown in Figure 1 below; The working current adjustment range of the elastic motor is 1.5~2.5A, as shown in Figure 2 below.

The general parameters can be set as shown below.

Step motor param set

Upper Step motor	Elastic Step Motor	Down Step motor

Working current	2.0
Lock current	0.8
Start speed	50
acceleration time	350
Out-of-step pulse	20
Differential pulse	20

Keypad: 1 2 3 / 4 5 6 / 7 8 9 / 0 Backspace .

Ok   Exit

Step motor param set

Upper Step motor	Elastic Step Motor	Down Step motor

Working current	2.0
Lock current	0.5
Start speed	50
acceleration time	350
Out-of-step pulse	40
Differential pulse	60

Keypad: 1 2 3 / 4 5 6 / 7 8 9 / 0 Backspace .

Ok   Exit

[B]ZERO: This double-cylinder computer density motor has its own encoder detection, no zero-position probe, so you need to set the zero position.

Set the zero method: first, rotate the density motor to the appropriate position, then press the button to set the zero position.
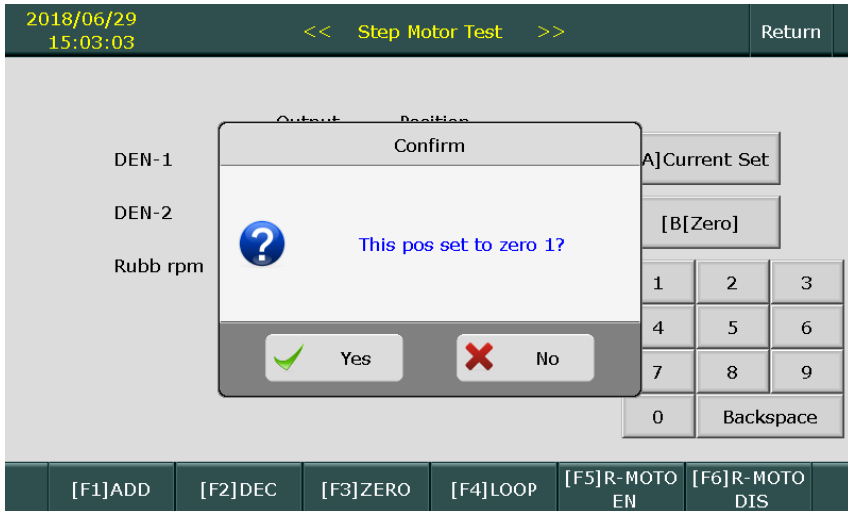
2.2.4 Ac servo test

Press in the test page of the main menu to enter the ac servo test
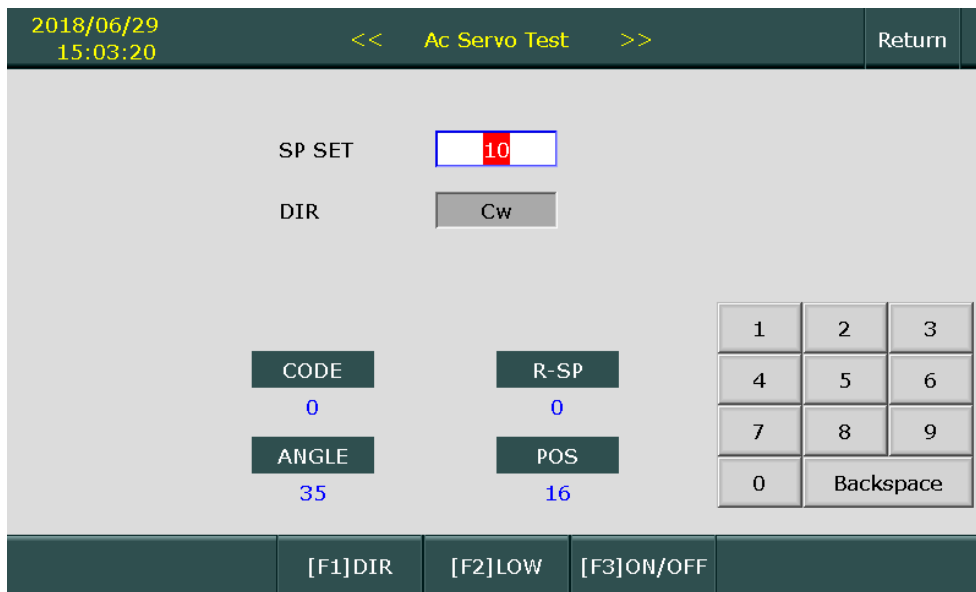
* for professionals, normal users are not recommended

* check the direction before test, generally forward, if reverse will break needles

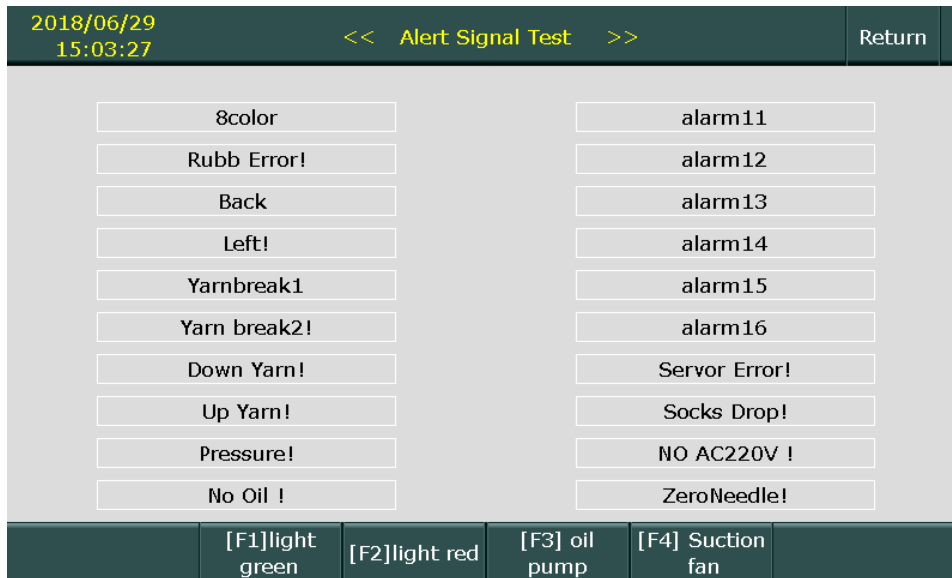* First enter the servo speed, recommended start with the low speed.

 [F1]DIR　Switch the direction of the servo motor (restart to effective)

 [F2]LOW　the speed is limited to 60.

 [F3]ON/OFF　servo motor on or off

2.2.5 Alert signal test

Press [5] in the test page of the main menu to enter the alert signal test

2018/06/29 15:03:27	<< Alert Signal Test >>	Return
8color	alarm11	
Rubb Error!	alarm12	
Back	alarm13	
Left!	alarm14	
Yarnbreak1	alarm15	
Yarn break2!	alarm16	
Down Yarn!	Servor Error!	
Up Yarn!	Socks Drop!	
Pressure!	NO AC220V !	
No Oil !	ZeroNeedle!	
[F1]light green	[F2]light red	[F3] oil pump	[F4] Suction fan

When the alert signal is active, the corresponding text background turns red

2.2.6 Key board test

Press [6] in the test page of the main menu to enter the key board test

When the switch or button is active, the color of the corresponding picture will change. This is to check whether all the buttons and switches on the test window are functional, and the R.STAR button cannot be tested on this interface.

2.3 File management

Press in the main menu to enter the file management


2.3.1 Pattern file management

Press in the file management window to enter pattern file management

* maximum 300 files (the file extension is .PAS）；

* Support folder and long file name (recommended long file name does not exceed 20 ASC characters);

* &1, &2, and &3 respectively correspond to the working files 1~3, and one working file can be set separately;

* Compatible with the .PAT pattern file of MIND 3rd generation color screen machine, which is automatically converted into PAS file;
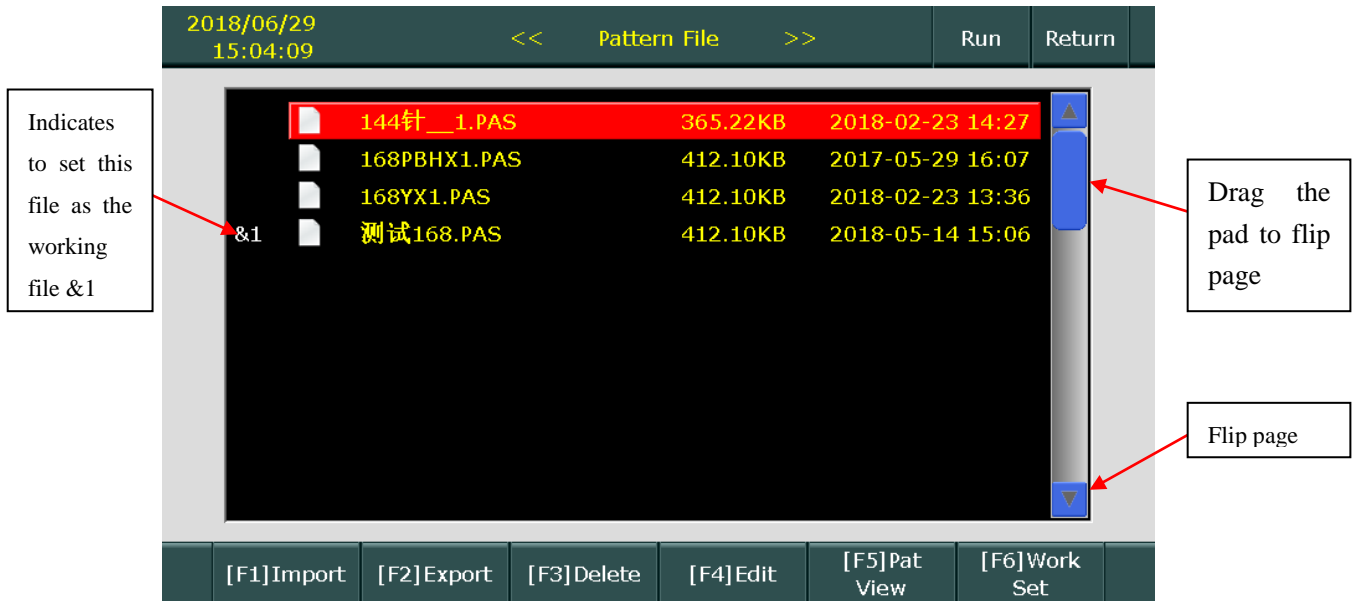
[F1]Import USB file　　Import the pattern file from the USB flash drive into the system.

The .PAT file of the 3rd generation machine will be automatically converted into .PAS file.
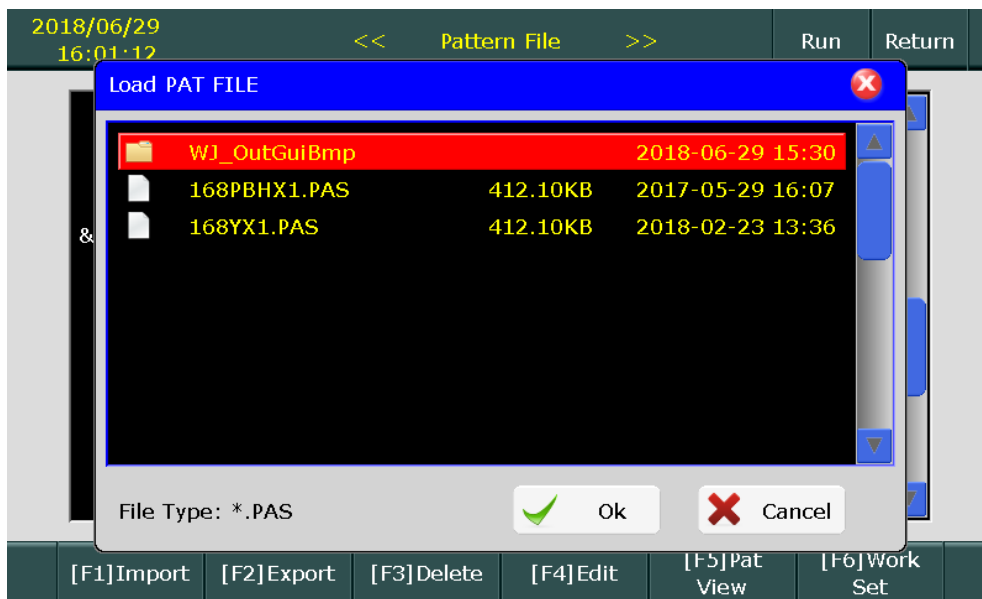
[F2]Export file

Export the pattern file in the system to the USB flash drive. Enter the file name and press the [ENTER] key to export. The file format is fixed to .PAS.
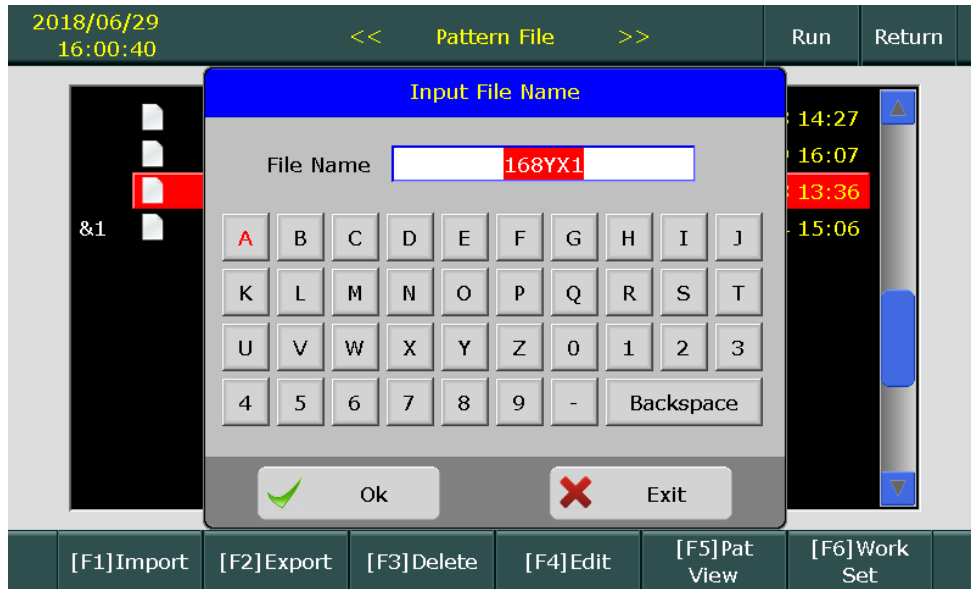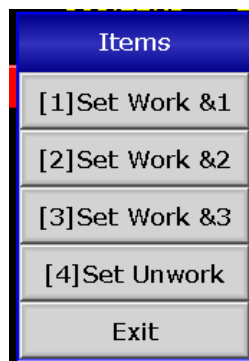
[F3]Delete　delete the selected file (cannot delete the folder)

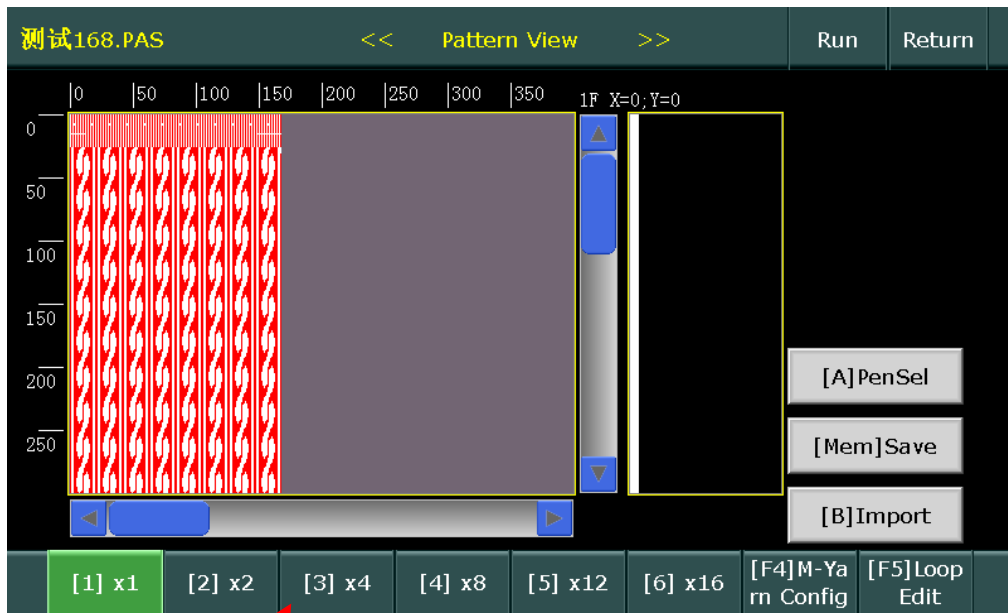**[F4]Edit**　enter the chain edit page of the selected file

[F5]Pat View　edit the pattern file data
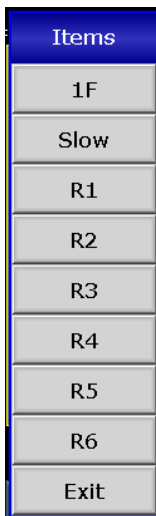
[F6]Work set　set working pattern file

2.3.1.1 Pattern view

In the pattern file management window, select the file and press to view pattern.

enlarge

Press [A]画笔选择 to select a pen

Pattern edit note:

1. Select the pen, 1C refers to pattern data, others are control bar data.

2. Press UP/DOWN/LEFT/RIGHT button or click the screen to select pixle, press "ENTER" to draw and press again to cancel

Note: When the control bar is drawn, the cursor will not move to the corresponding position, just look at its corresponding vertical coordinate.

[F4]M-Yarn config   invalid

[F5]Loop edit   invalid

2.3.1.2 Chain edit

Select a file in the pattern file management and press [F4] to enter the chain edit.

[POS] Chain position name, click the name to modify.

[SIZE] set the position circle number

[SPEED] set the speed

[RUBB] set rubber motor speed. The larger, the faster, range 0~127.

When the latter mode is "progressive", the second data indicates the rubber speed at the end of this part.

[DEN1] set the gear value of the knitting density in this part.

When the latter mode is set to "progressive", the second data indicates the density value of the syringe at the end of the part.

The first data represents the initial density and the second data represents the end density. Suppose the two values are 4, 8, respectively. The density motor automatically calculates the position that each motor needs to be rotated according to the actual density value corresponding to the two gear values and the current chain size. That is, the density value is uniformly changed from 4 to a density value corresponding to 8.

[DEN2] ditto

[CHNo.] Set the line number, select the main shuttle, pan, blow, scissors corresponding entry and exit position, select the appropriate change position;

[PAT]

pattern: the needle selector works according to the pattern,

jacquard: the needle selector works according to the jacquard data;

The latter two spaces indicate the pattern start and end circles:

Setting (1 0) means knitting from top to bottom according to the pattern;

Setting (10 20) means knitting from 10 lap to 20 lap of the pattern. If the size of the part is greater than 10, continue to loop;

[Heel] The first data represents the center offset of the heel. The second data indicates the starting needle of the sock with the needle in the stocking, the starting needle indicating the range of the pattern when the other part has the pattern, and the inactive when the pattern is not used; the third data indicates the heel in the stocking When the needle is over, the needle at the other part has a pattern, and the end of the pattern is invalid. For example, the bottom position of the socks (41 126) means that the needles work from the 41st to the 126th needles, and the needle selectors do not work in other areas; if the socks are set, the range of the socks is 41 to 126. needle.

Circle

There can be up to 8 actions CY-1...CY-8 in each chain module.

Each CY has a corresponding action number, the setting range is 1~50;

The number of laps corresponding to the current CY, the setting range is 1~999;

The characteristic values corresponding to the current CY are 0, 1, 2, 3, 7.

➢ 0, 1: normal,

➢ 2: the current action is forced to slow;

➢ 3: the current action is post, generally not used;

➢ 7: the heels are continuous, generally used for boat socks (invisible socks) .

　　　continuous socks, more than 8, can not fit in one chain, the last action characteristic value of the current chain should be set to 7;

Each CY has a corresponding configuration instruction set, and up to 16 instructions can be inserted. The instruction set is as follows;

Each CY has a corresponding configuration instruction set, and up to 16 instructions can be inserted. The instruction set is as follows;

Configuration instruction set

The values in the following instructions related to the in-out position are the number of stitches, not the angle;

R-1⋯⋯R-6: The main shuttle instruction, in-out position of main shuttle;

NC1- NC6: not used;

DEN-1: When the action in the chain requires different density, the density command can be inserted, the

　　　　　insertion is invalid in CY1;

DEN-2: same as above;

MYarn-E: not used;

WindDoor: air door valve in-out position;

Low SP: set the current speed of action;

ChNO.: Same as the change line id function in the chain. You can insert this if the actions in the same chain require different line id., but this instruction is invalid in CY1.

HeelQuick: not used;

RestDis: It is forbidden to enter the fast reset chain state at the current part.

NC 7: not used;

RubbSp: adjust the rubber speed, this instruction is invalid in CY1;

GUM1: Rubber shuttle in and out position;

Pat_Stop: suspend pattern circle counting until the next action;

PosAdd: the maximum value of the position is 40; the state can be left, right or both.

rotate more angle when knitting heel, and only for that one circle; automatically restored to the original position in next circle;

HeelColor: invalid

HeelLoop: Provocative loop setting, often used when doing small heels. For example, when picking needles, set left pick to 2 and left press to 1; when pressing needles, set pick needle to 1 and press needle to 2. If the double pressing needles, set both sides; if it is asymmetry, you can set only one side;

HeelFA: the turning position is forced to increase or decrease, and it remains valid once the change;

2.3.1.3 Chain Action edit

In the chain edit window, click the "Enter Action" button to edit action.
An action can be filled with up to 44 air valve states.
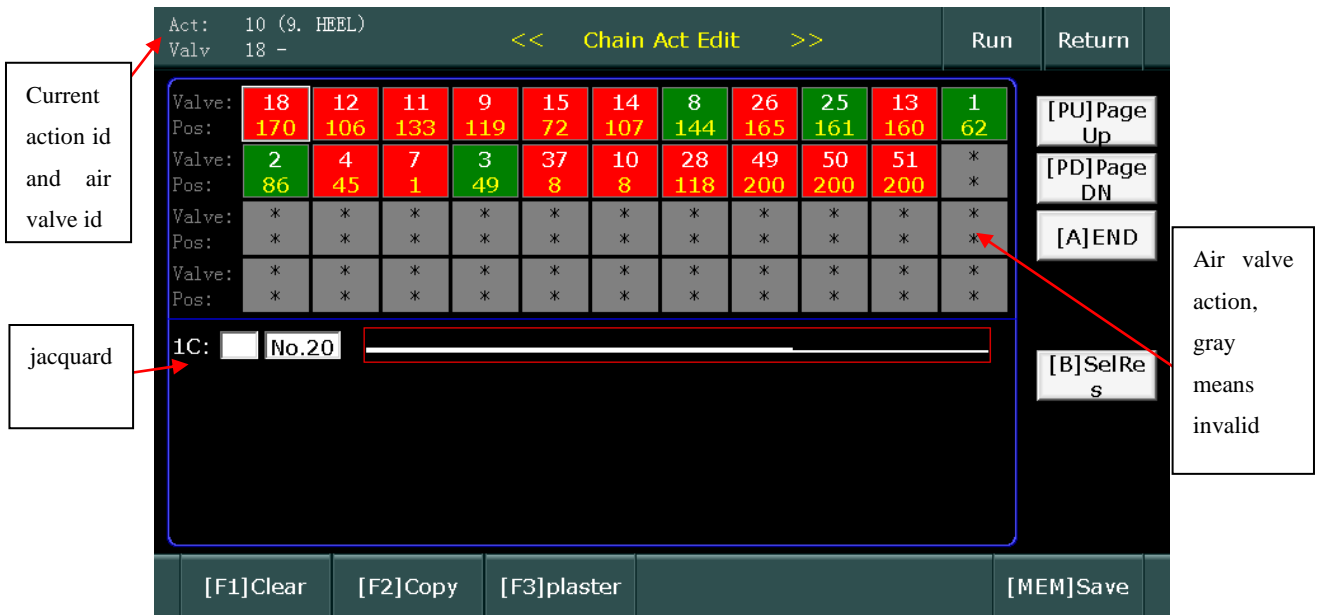
[PU]Page Up　show last action

[PU]Page DN　show next action

[A]END　　end position of action, The current and subsequent valve action units become inactive.
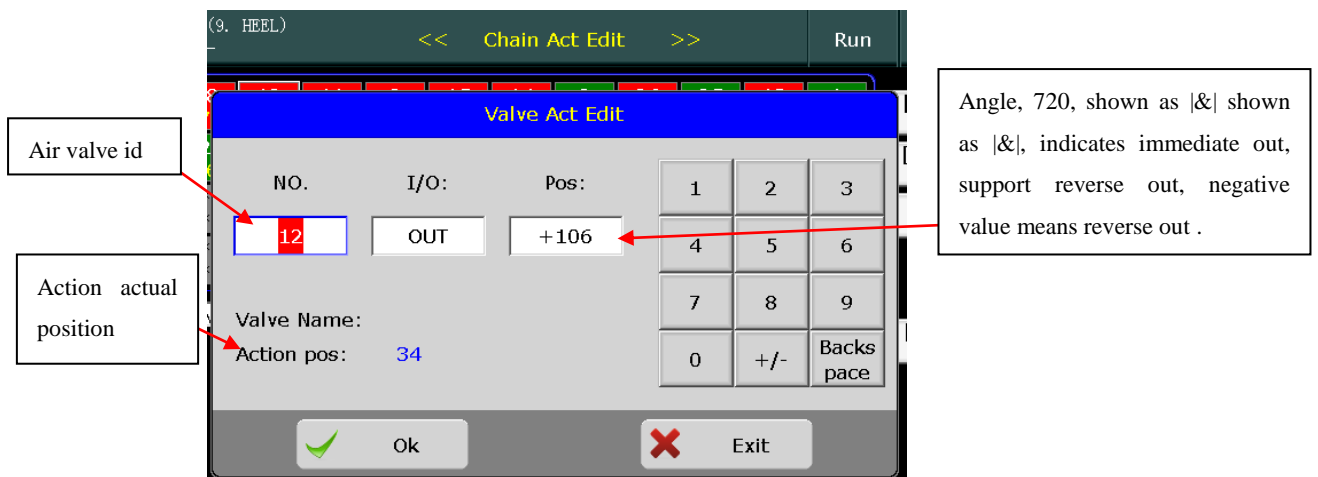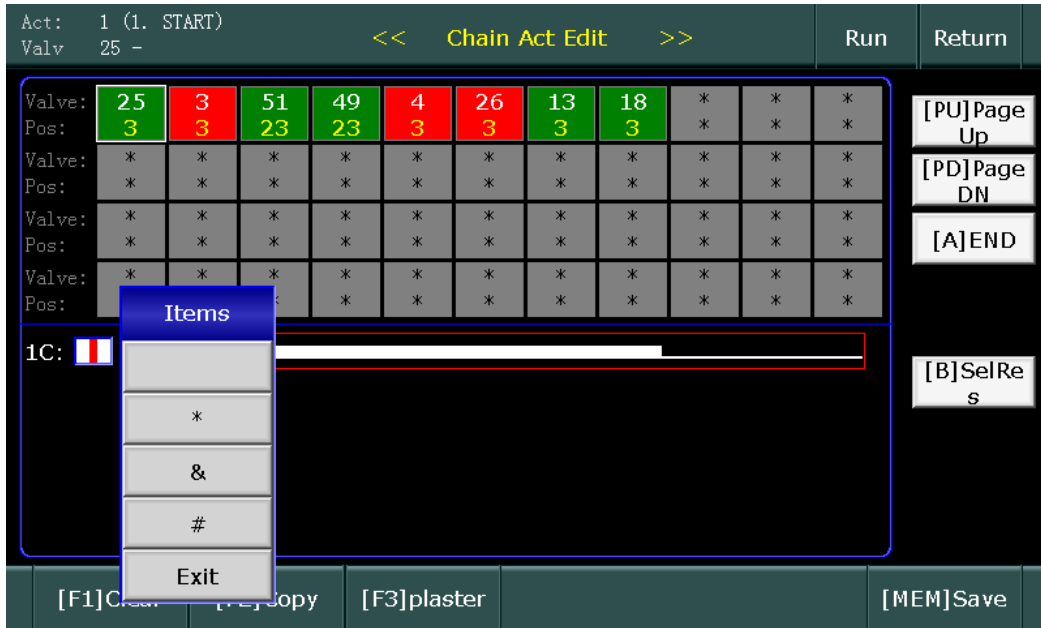
[B]SelRes　edit jacquard

[F1]Clear　clear all air valve state settings and actuator settings

[F2]Copy　copy current action data

[F3]Paste　replace current action data with the copied data;

　Click once air valve unit, the name will be shown on the left top corner, click again to edit air valve settings.
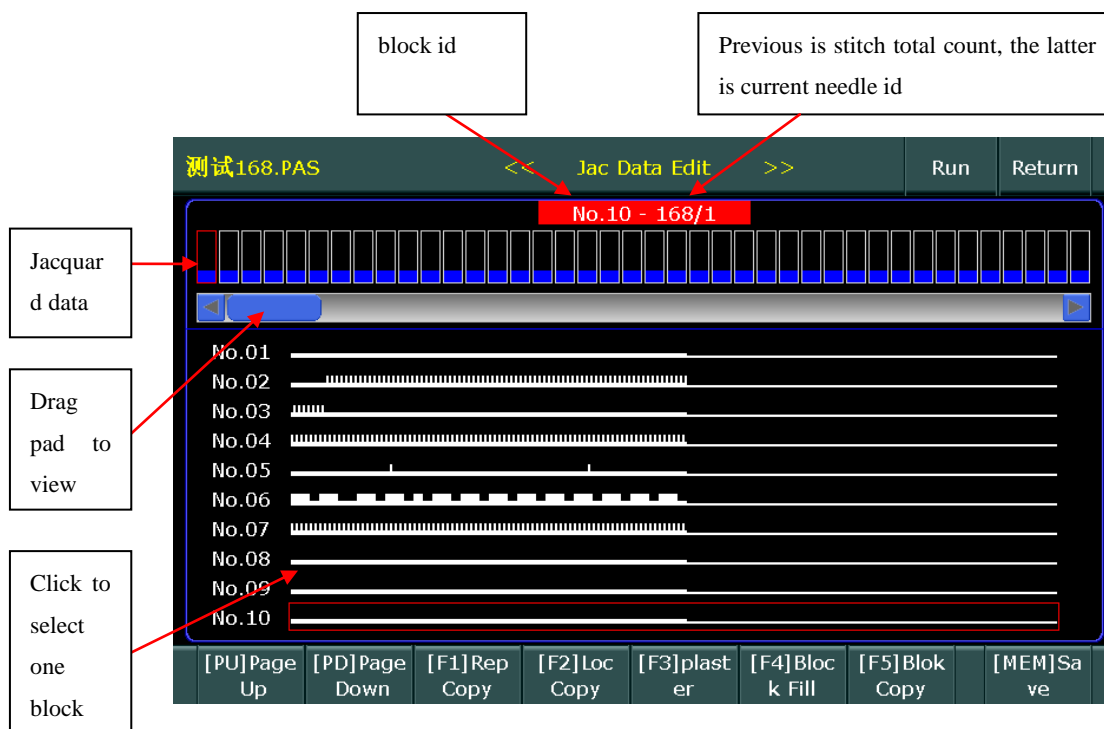
&: When pattern is used, knitting according pattern view if the jacquard is out, knitting according the jacquard if the jacquard is in.

#: When pattern is used, knitting according pattern view if the jacquard is in, knitting according the jacquard if the jacquard is out.

2.3.1.4 Jacquard edit

In the action edit window, press [A] to edit jacquard data.
A total of 20 groups can be edited.

block id

Previous is stitch total count, the latter is current needle id

Jacquard data

Drag pad to view

Click to select one block

[F1]RepCopy　set the state of all the needles in the current part as out

[F2]LocCopy　copy the current part jacquard data

[F3]Paste　paste the copied jacquard data to the current part.

[F4]Block Fill　set the state of all the needles in the current part as in

[F5]Block Copy　set the block copy, as shown below:

Copy range

Paste range: if the 2nd value is 0, paste until the last needle
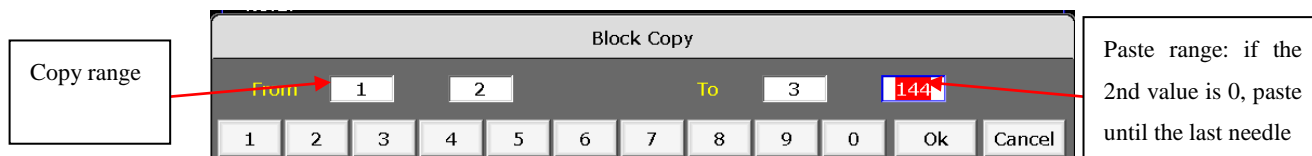
Indicates copy needle 1~2 to needle 3~144.

2.3.2 Machine file management

Press [2] in the file management window to enter machine file (MAC) management window
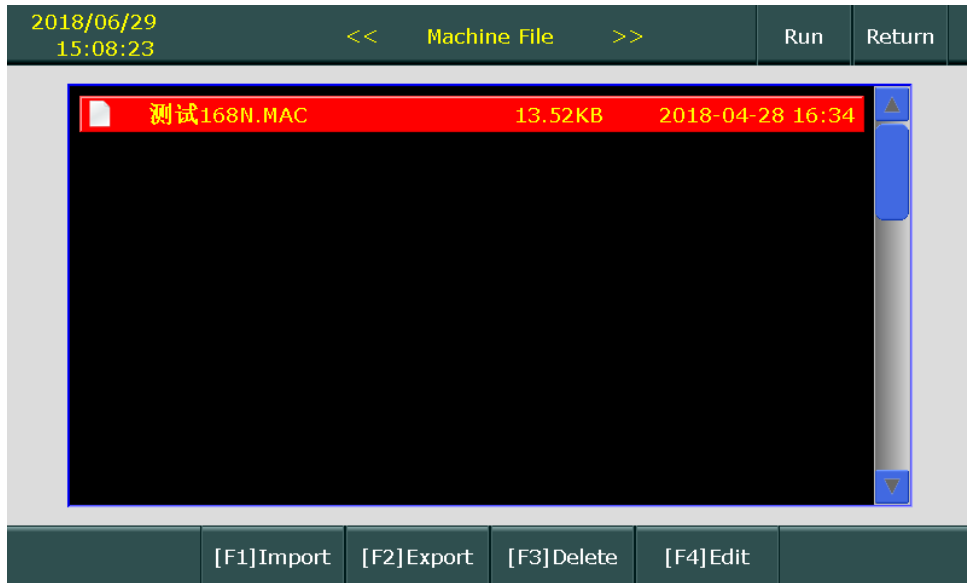
If there is no machine parameter , the system cannot be operated.

[F1]Import Enter a machine parameter file from the USB flash drive and press to pop up the load window.
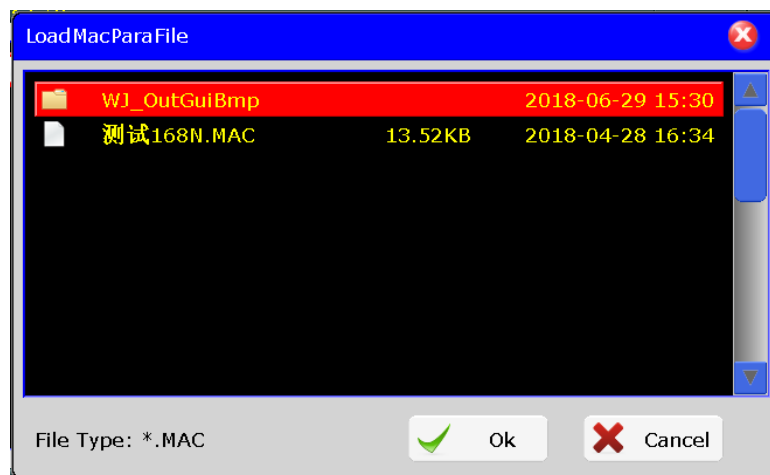
There can only be one machine file. When you re-enter a machine parameter file, the previous machine parameter file will be automatically overwritten.

[F2]Export　Export the machine parameter file in the memory to the USB flash drive

[F3]Delete　Delete the machine parameter file in memory

[F4]Edit　Enter the machine parameter file editing window

2.3.2.1 Machine parameter setting

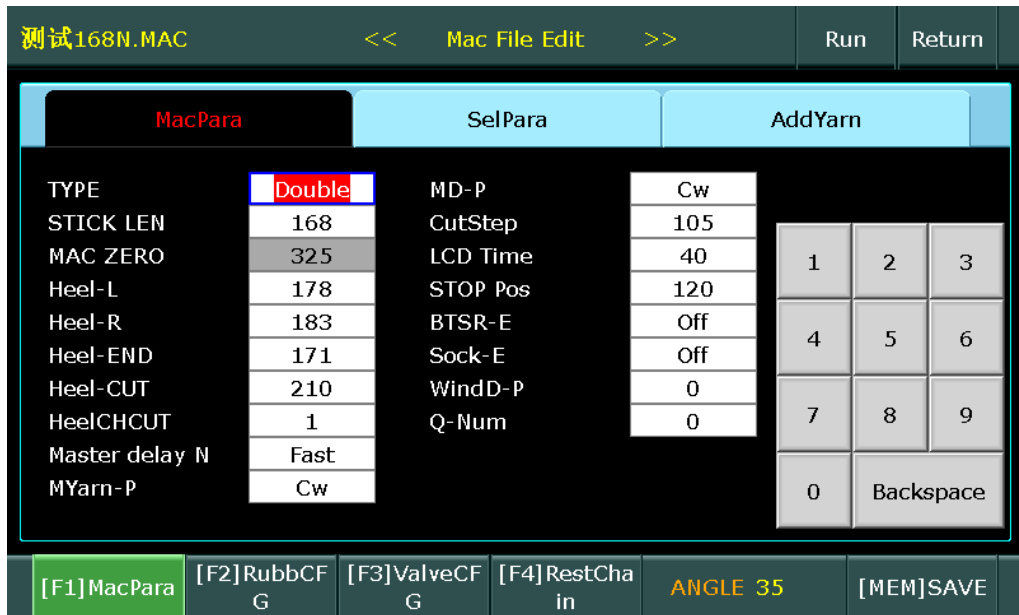[01.TYPE] Machine type. Make sure that this parameter matches the actual machine configuration, otherwise some features will not function properly.

[02.STICK LEN] The total number of needles in the syringe, if the set value does not match the actual, will affect the calculation of the current position.

[03.MAC ZERO] The reference point used to determine the position of the syringe, if set incorrectly will affect the action position of the needle selection, gas valve and other equipment.

Click the input item to pop up the password box. After entering the correct password, the zero position setting interface will be displayed.
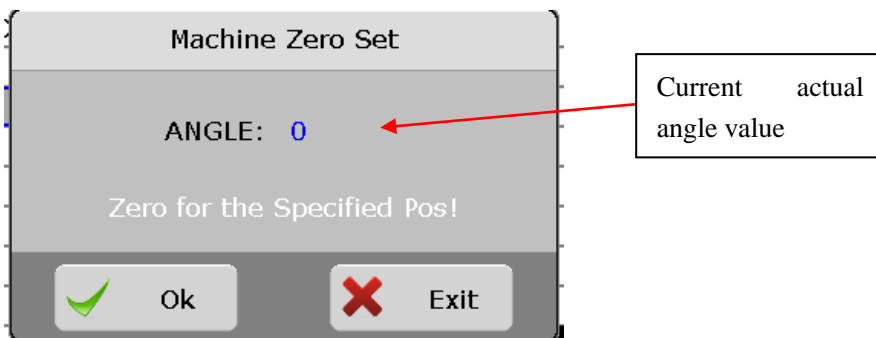
[04.HEEL-L] The position of the stocking with the left side of the stocking, this parameter determines the picking position.

[05.HEEL-R] The position of the stockings with the right side of the head, this parameter determines the picking position of the needle.

[06.HEEL-END] At the end of the sock, the angle of return of the reverse rotation is positive.

[07.HEEL-CUT] The heel is ready to change the angle of reversal when preparing.

[08.HEELCHCUT]invalid.

[09.Master delay N]invalid.

[10.MYarn-P] invalid.

[11.MD-P] Used to set the output status of the scissors.

[12.reserved]

[13.LCD TIME] When set to 0, the screen saver is invalid and the brightness is always displayed.

Others indicate that the screen brightness is automatically dimmed after a specified time.

(The value unit is 10 seconds, that is, when set to 10, it means that it will automatically

darken after 100 seconds).

[14.Stop pos] It is used to adjust the stop position when the position is specified. The

numerical unit is angle.

[15.BTSR EN] Used to set whether the BTSR part is open.

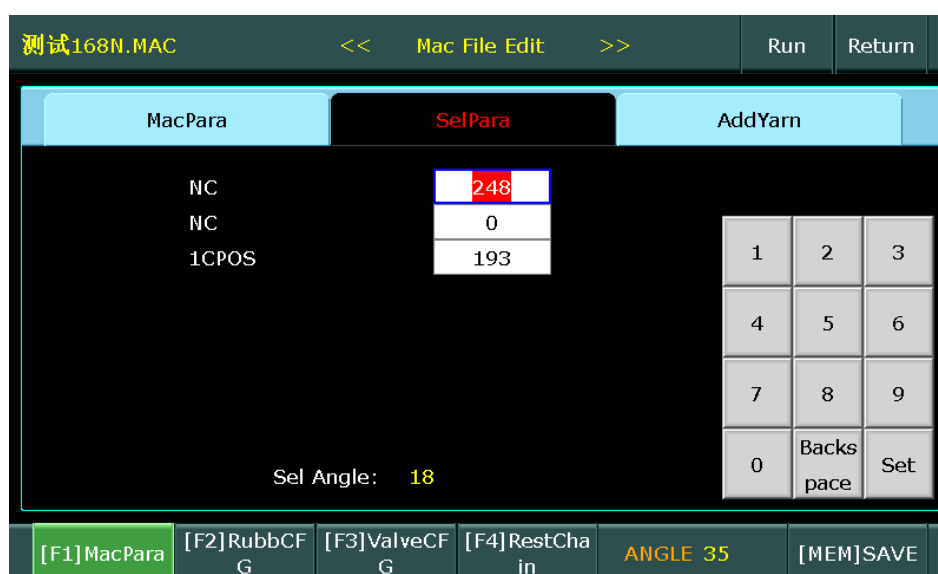[16.Sock EN] used to set whether the socks warning function is turned on.

[17.WindDoor-P] invalid.

[18.Q-num] invalid

Click "actuator parameter", switch to actuator related parameter setting interface

Please set the peripheral position of each actuator correctly before running, otherwise the actuator will not

work as expected.

[21.拉毛位置正] 拉毛 actuator 的正转外设位置，考虑到 actuator 的提前量，如果是 6 刀的拉毛

actuator,零位针前的第 5 针对准 actuator，然后将角度值填入，一般值为 350 左右，以实际校准值为准。

［**22.拉毛位置反**］　拉毛 actuator 的反转外设位置，考虑到 actuator 的提前量，如果是 6 刀的拉毛 actuator,第 5 针对准 actuator，然后将角度值填入，一般值为 10 左右，以实际校准值为准。

［**23.1C 位置**］　1Cactuator 外设位置

确认 actuator 外设位置的

　　方法 1:点动或手摇机器，将零位针对准该 actuator 刀头，然后将"1F 位置"下方的 **actuator 角度值**填入对应的 actuator 外设位置。

　　方法 2:点动或手摇机器，使零位针的前一组针刚过 actuator 刀头，然后将右下角的**角度值**（"保存"键左侧）填入对应的 actuator 外设位置。

注:方法 1 中 actuator 角度值程序中已经包括提前量，方法 2 中的角度值是要自己计算提前量。

点击"添纱设置"，切换到添纱相关参数设置界面

测试168N.MAC	<<	Mac File Edit	>>	Run	Return

MacPara	SelPara	AddYarn

Advance	10
ChangeSP1	50
ChangeSP2	45

1	2	3
4	5	6
7	8	9
0	Backspace	

[F1]MacPara	[F2]RubbCFG	[F3]ValveCFG	[F4]RestChain	ANGLE 35	[MEM]SAVE
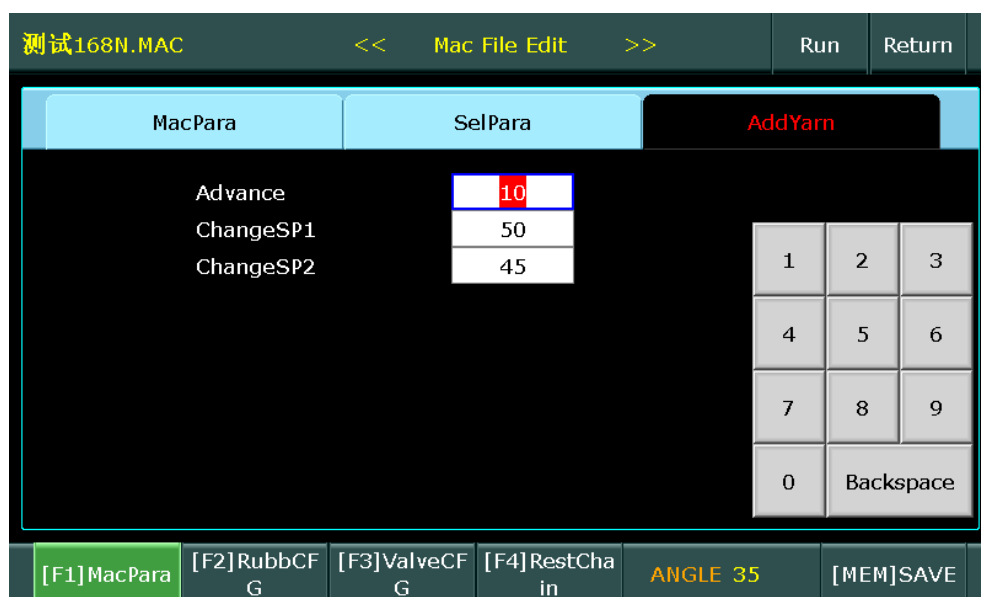
［**29.添纱提前量**］角度值，添纱提前下的位置，考虑到添纱梭的反应时间，一般设置为 100；

［**30.换线减速 1**］控制条慢速控制画红色时对应的速度；

［**31.换线减速 2**］控制条慢速控制画绿色时对应的速度；

2.3.2.2 Rubber setting

Two spaces below the rubber motor are valid, others are invalid.

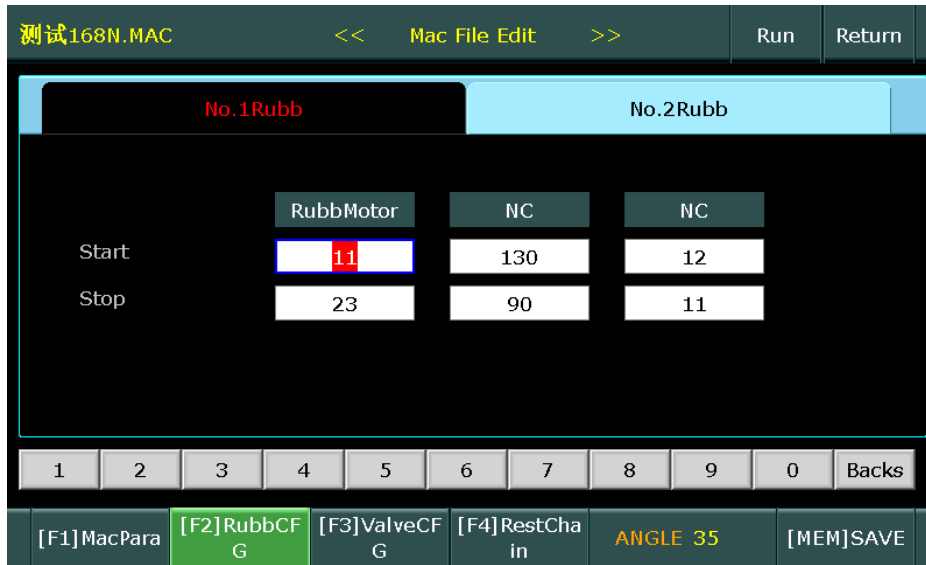Rubber motor starting work position = rubber shuttle 1 in position + rubber motor working angle;

Rubber motor stop working position = rubber shuttle 1 out position + rubber motor exit angle;

2.3.2.3 Air valve setting

Main shuttle valve configuration, these parameters are temporarily invalid;

Click "lift valve" to switch to the parameter setting interface of the lift valve, which is the setting of the shuttle valve number for the knitting interface;
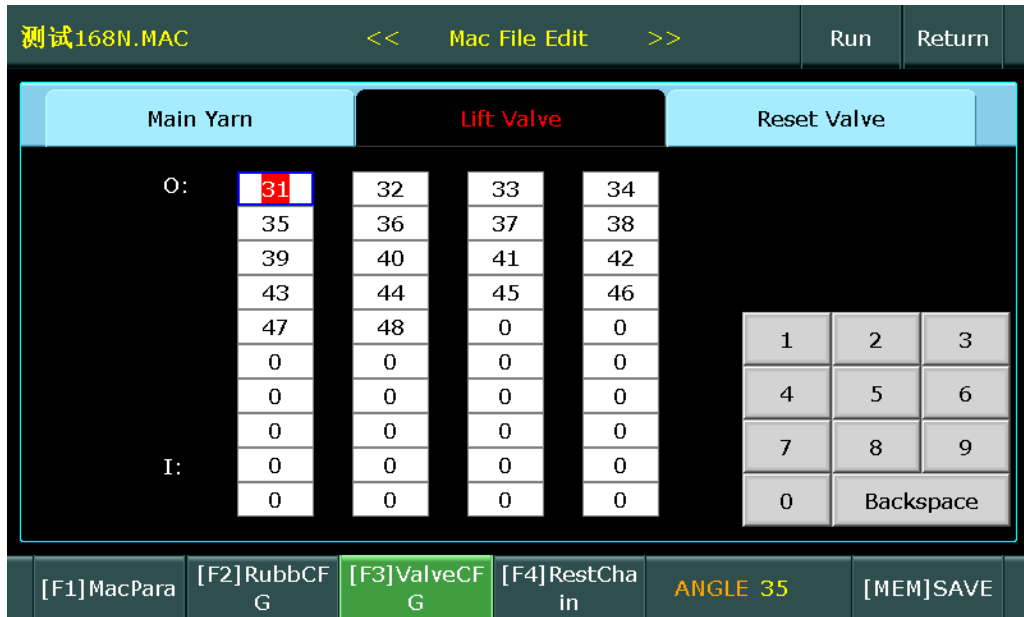
Click "Reset Valve" to switch to the parameter setting interface of the reset air valve. The air valve set here is the valve number that is forced to enter when the operation interface is forced reset.
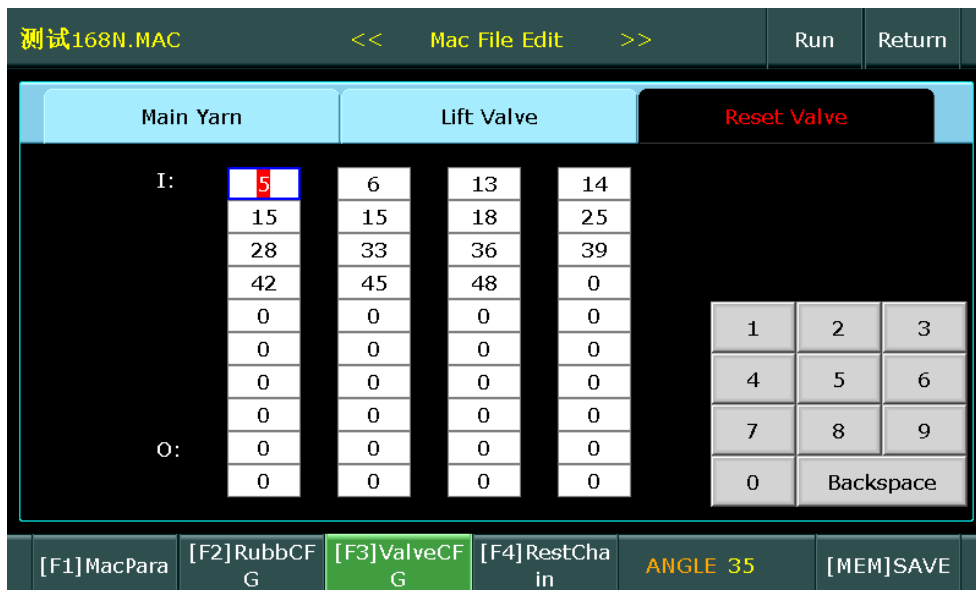
2.3.2.4 Quick reset

In the "machine parameter edit" window, press [F4] to enter the quick reset chain editing window. For the setting method, refer to the chain editing of 3.4.1.
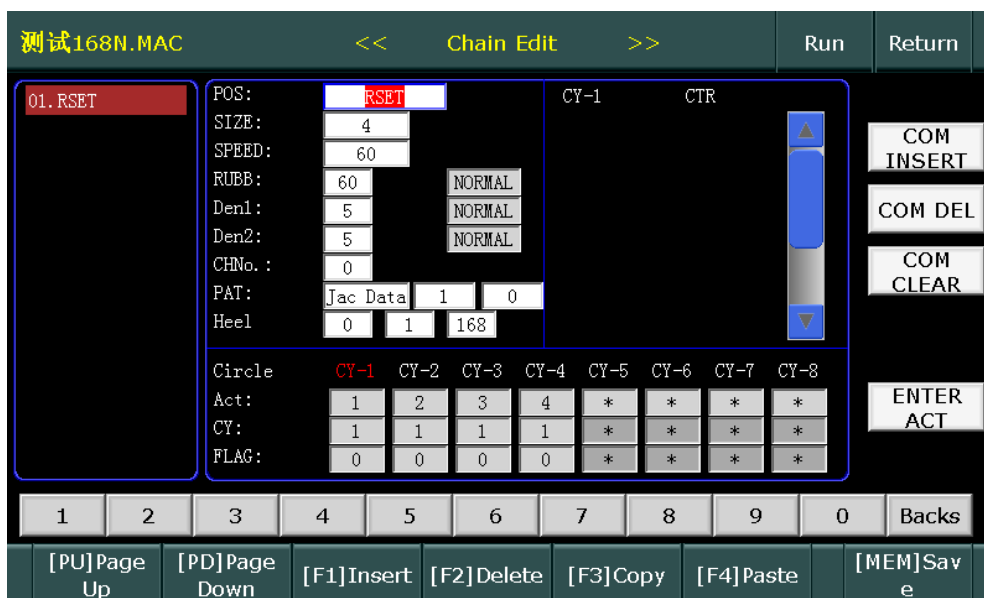
2.3.3 Encrypted file management

*This function is guided by the manufacturer's professional

2.3.4 System profile management

*This function is guided by the manufacturer's professional

*The machine will not enter the running state when the system configuration file is missing.

* When the system configuration file information does not match the manufacturer, it will affect the encryption function.

2.3.5 Load valve configure file

Press [5] in the file management window to load the valve configure file. The file extension is .MTR
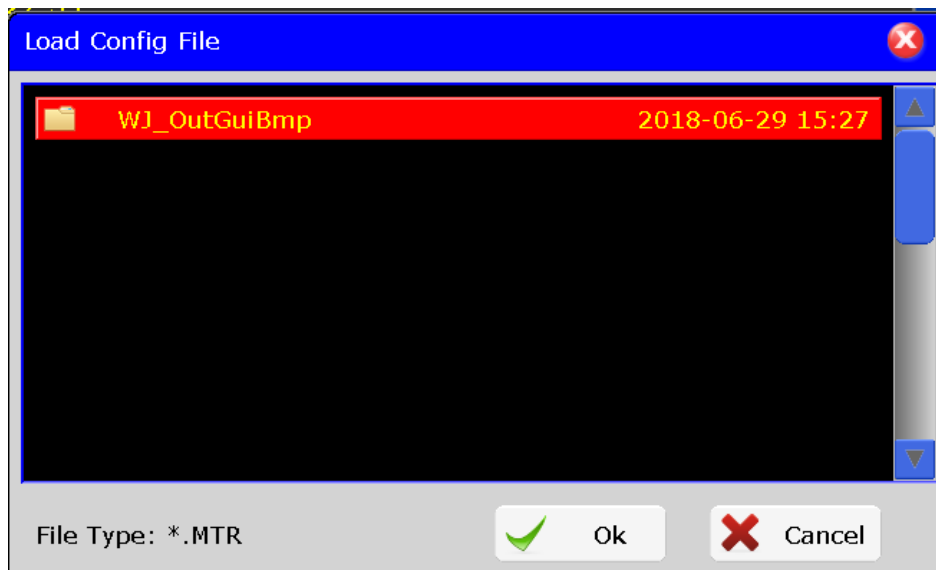
Select the right configure file and press the OK button to load.

Please confirm that the file is consistent with this machine before loading, otherwise it will affect the normal function of this machine.

2.4 System settings menu

Press in the main menu to switch to the system settings window.

2.4.1 Clock set

In the system settings window of the main menu, press to pop up password box, enter the correct password and enter the clock setting window.

After modifying the correct time, press to pop up the confirmation box, and press to save the modified system time.

2.4.2 Touch screen proofreading

In the system setting page of the main menu, press ![2] to pop up password box, enter the correct password and enter the touch screen proofreading window.

Press the touch pen to click the cross cursor that appears, and there are 3 points.

* In use, if the touch position is found to be offset, please check the touch screen in time.

2.4.3 System parameters

Press ![3] on the system settings window of the main menu to enter System Parameter Settings window.
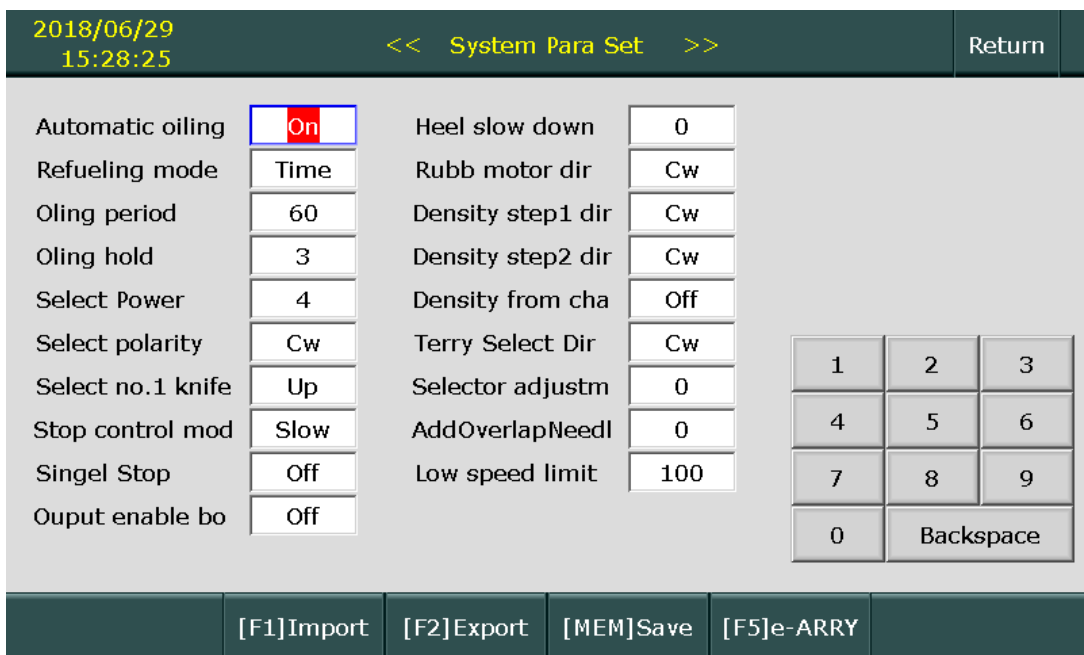
[Automatic oiling] set whether automatic oiling is enable.

[Refueling mode] Click to pop up the fueling mode selection box, this mode and [oiling period]. [oiling hold] together determine the action of refueling

The oiling period indicates the number of minutes, and the oiling hold indicates the number of refueling seconds.

The oiling period indicates the number of pieces, and the oiling hold indicates the number of refueling seconds.

The oiling period indicates the number of circles, and the oiling hold indicates the number of refueling seconds.
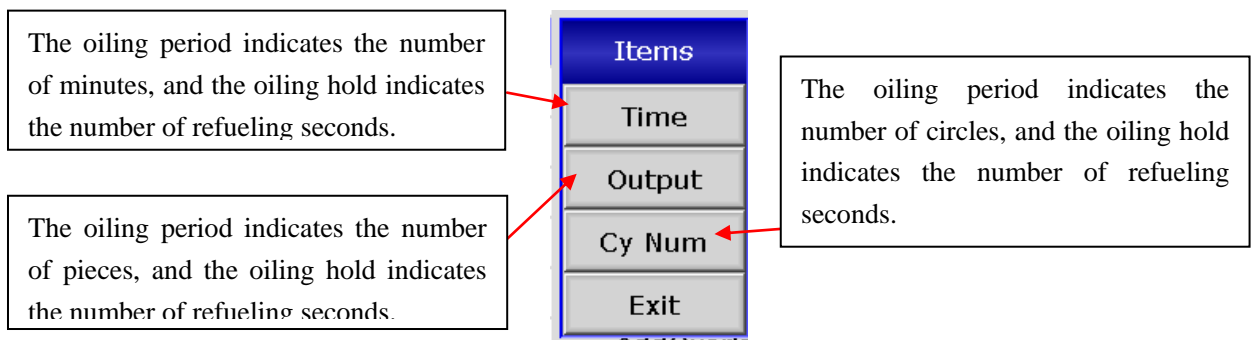
[Selector power] It is used to adjust the strength of the actuator. The setting range is 0~10. The default is 0.

If the setting is too large, it may cause overheating of the actuator during operation, which may result in burning the actuator coil. It is recommended not to be greater than 6.

［Selector polarity］ Used to adjust the direction in which the actuator moves.

［Selector no.1 knife］ Used to adjust the up and down position of the actuator #1 knife.

［Stop control mode］ It is used to adjust the braking force when stopping during operation, and choose fast or slow depending on the stop effect.

［Single stop］ Automatically stop for each sock.

［Output enable boot］ Used to set whether the actuator will automatically age every time it is turned on.

［Heel slow down］ invalid

［Rubber motor direction］　Used to adjust the direction of rotation of the rubber motor.

［Density step1 direction］　Used to adjust the direction of rotation of the cylinder motor.

［Density step2 direction］ Used to adjust the direction of rotation of the CAM motor.

［Density from chain］

Off: The density gear value is saved on the machine, and can not be input and output along with the file;

Open: density gear value is stored in the chain file, and can be input and output along with the chain file.

If the consistency of the machine density plate is better, you can set it open, as long as the density value of one machine is adjusted, the chain file can be directly used on other machines without having to adjust the density value.

[Terry selector direction]: invalid

[Selector adjustment]: invalid

[AddOverlapNeedle]: invalid

[LowSpeed Limit]: The maximum speed limit in the chain action which has no speed limit;

[F1]Import　Load the machine parameter file from the USB flash drive and click to pop up the file box. File extension is .MAC

[F2]Export　The system parameter file is exported to the USB flash drive, and the filename prefix is fixed to SYM;

[F5]e-ARRY

　　The arrangement of the jacquard needles is displayed. When installing the machine, the jacquard pieces must be installed in order according to the displayed quantity.
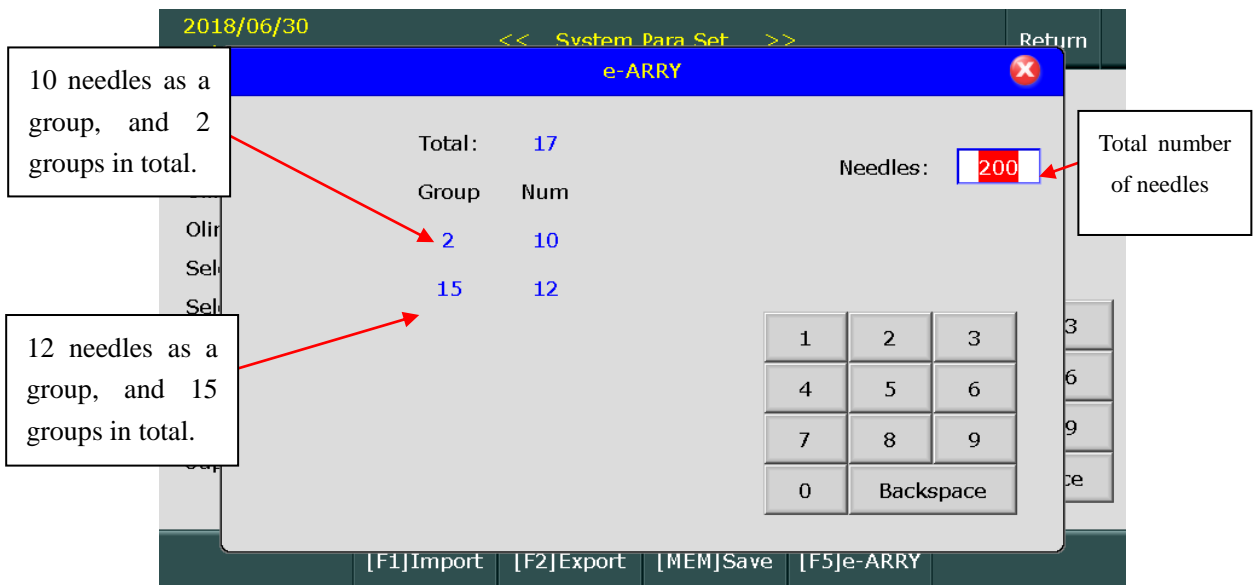
2.4.4 BTSR

　　Press 4 on the system setting window of the main menu to enter the BTSR parameter setting

window.
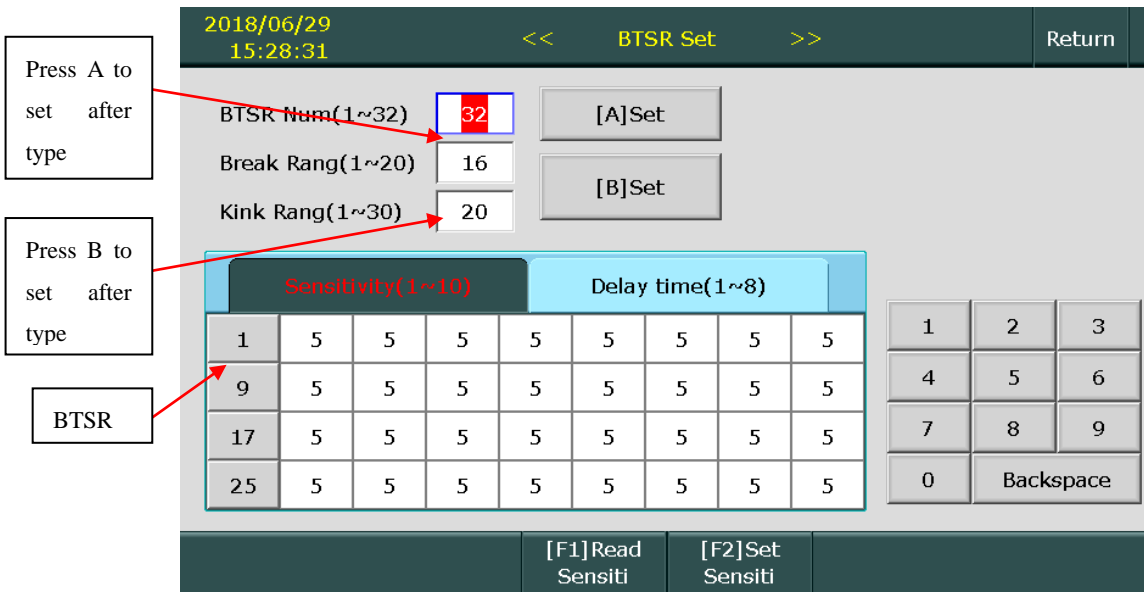
After setting the number of BTSRs, press to enter the addressing state, and the BTSR indicator flashes. According to the BTSR serial number, the BTSR sensing surface is blocked in turn, and the indicator light stops flashing. After the setting is successful, the system will give a setting completion prompt box. If the setting fails, repeat the operation again.

"Disconnection Fault Tolerance Point" indicates the number of consecutive errors that the BTSR with yarn operation during operation allows continuous error. If the BTSR error alarm occurs frequently during operation, please increase the value appropriately.

"Twisted line fault tolerance" means that the yarn does not work during normal operation, but the yarn is moving, allowing the number of consecutive errors. If the BTSR error alarm occurs frequently during operation, please increase the value appropriately.

2.4.5 Device management

Equipment registration is required to install new machines or replace equipment; the equipment includes air valve circuit plate, Hub board (communication adapter board), three type 57 Step motor (upper cylinder density motor, lower syringe density motor, rubber density motor).

Note: After the registration is completed, be sure to check whether it works normally on the air valve and step motor test. If it is not normal, please log out and re-register.

The device registration is in ([F3] System Settings -> [5] Device Management), as shown below:

2018/06/29 15:28:47	<< Device Manage >>		Return	
	No.	Device Type	Device name	▲
[1] can registered	01	HUB board	?	
	02	Valve	?	
[2] AlreadyRegister	03	Type 57 stepp motor	?	
[3] Offline				
[4] Device Config				▼
	[F1] Device refresh	[F2] Device Regist	[F3] Device Logout	[F4] All logout

A. New machine registration steps:

1. all equipment are cancelled: [2] Already Registered -> [F4] all logout

2018/06/29 15:28:59	<< Device Manage >>		Return

	No.	Device Type	Device name	
[1] can registered	01	HUB board	HUB board	▲
	02	Valve	Valve1	
[2] AlreadyRegister	03	Type 57 stepp motor	Upper Step motor	
[3] Offline				
[4] Device Config				▼

| [F1] Device refresh | [F2] Device Regist | [F3] Device Logout | [F4] All logout | |

2. Device registration: [1] can registered -> [F4] all logout; after all the logout is completed, all connected devices will be displayed on the registrable interface, as shown below:

2018/06/29 15:28:47	<< Device Manage >>		Return

	No.	Device Type	Device name	
[1] can registered	01	HUB board	?	▲
	02	Valve	?	
[2] AlreadyRegister	03	Type 57 stepp motor	?	
[3] Offline				
[4] Device Config				▼

| [F1] Device refresh | [F2] Device Regist | [F3] Device Logout | [F4] All logout | |

Select a device type, then press [F2] Device Registration, HUB board and air valve to complete registration.

When selecting three Type 57 Step motor registrations, a selection box will pop up, as shown in the figure below. At this time, the three Step motors have a positive and negative reversal operation. If the upper cylinder density motor is working, the upper cylinder density motor is

selected to register; the other two stepper motors are registered in the same way:
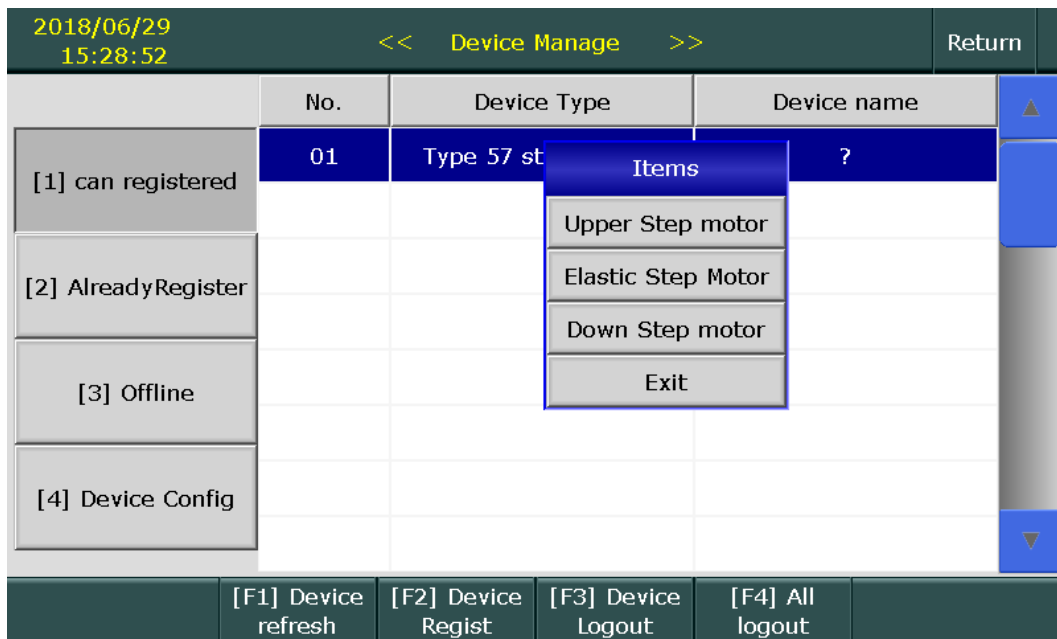
After registering an upper cylinder density motor, there are only two options left in the registration option, as shown below:

2.5 Language setting

Press to pop up the language setting menu in the main menu window, select the item and press [OK] to set language.

2.6 System version

Press in the version page to enter the program update page

2.6.1 Program update

*Package file's extension is .OUT

* When the upgrade bar is grayed out, it means that the version in the upgrade package file does not match the current version. In this case, the corresponding program will not be upgraded.

When upgrading, first insert the USB flash drive with the upgrade package file, press the [F1] key to pop up the password box, enter the normal password and display the dialog, click the upgrade package file (.OUT) and press the [ENTER] key to load the upgrade package. After the loading is completed, the upgradeable version bar will display the corresponding upgrade program information in the upgrade package. If the upgrade file version is higher than the current version of the system, the upgrade selection box of the corresponding program will be automatically selected (also manually selected). Press the [F2] key again, the system will perform the corresponding upgrade process after entering the correct password, and display the corresponding prompt information. After the upgrade is completed, the version and the upgradeable version have the same information.

Press the [F3] key, the system will switch to the Mind color screen system after entering the correct password. Robert model displays 主菜单-L, Mind model displays "Main Menu-Mind C".

2.6.2 Import resources

Press [2] in the version window and enter password to import resources.

* Please try to import resource files when the system display has an error.

2018/06/30 14:54:03	<< Import Res >>		Return

/WjR-Mind

1_16.FNT	1.72MB	2017-08-09 09:09
1_20.FNT	2.09MB	2017-08-09 09:08
Ext_Str.res	6.34KB	2016-01-27 10:47
Logo_Pic.PIC	1.46MB	2015-01-20 10:18

[F1]Load Res

Press [F1] to import the valid resource files.
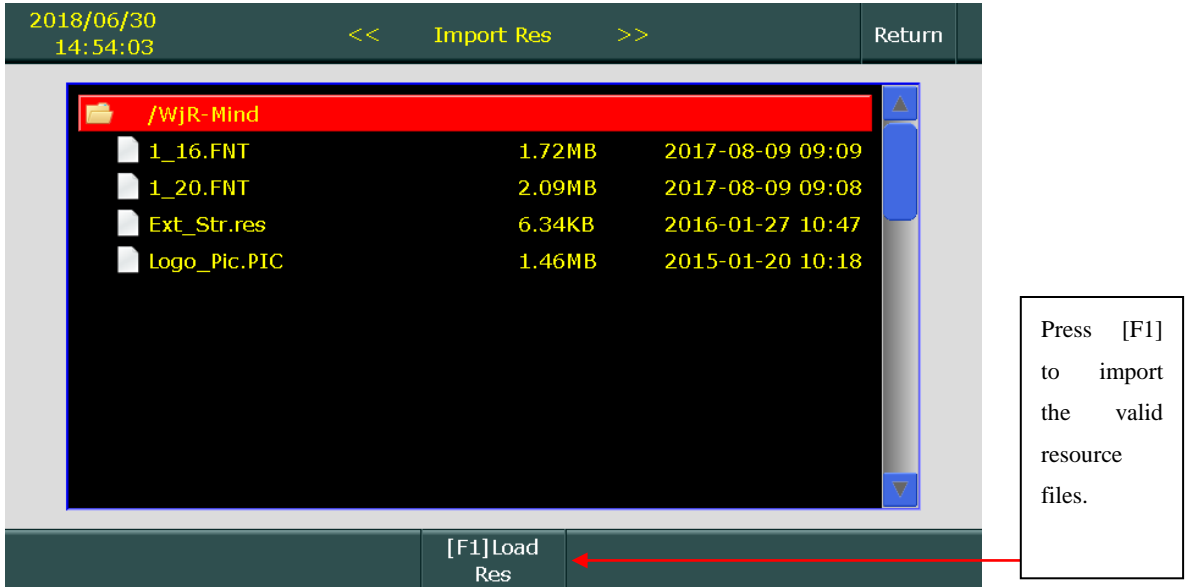
2.6.3 Disk information

Press **3** in the version window to view disk information.

2018/06/29 15:30:19	<< Disk Information >>	Return

Disk C, store the system resources

Type: System Disk C:
Info: Store Sys Res

Type: User Disk D:
Info: Store User Pattern

Disk D, store pattern files

Used: 5.30MB
Free: 122.61MB
Total: 127.91MB

Used: 1.62MB
Free: 1022.28MB
Total: 1023.90MB

[F1]Format C   [F2]Format D
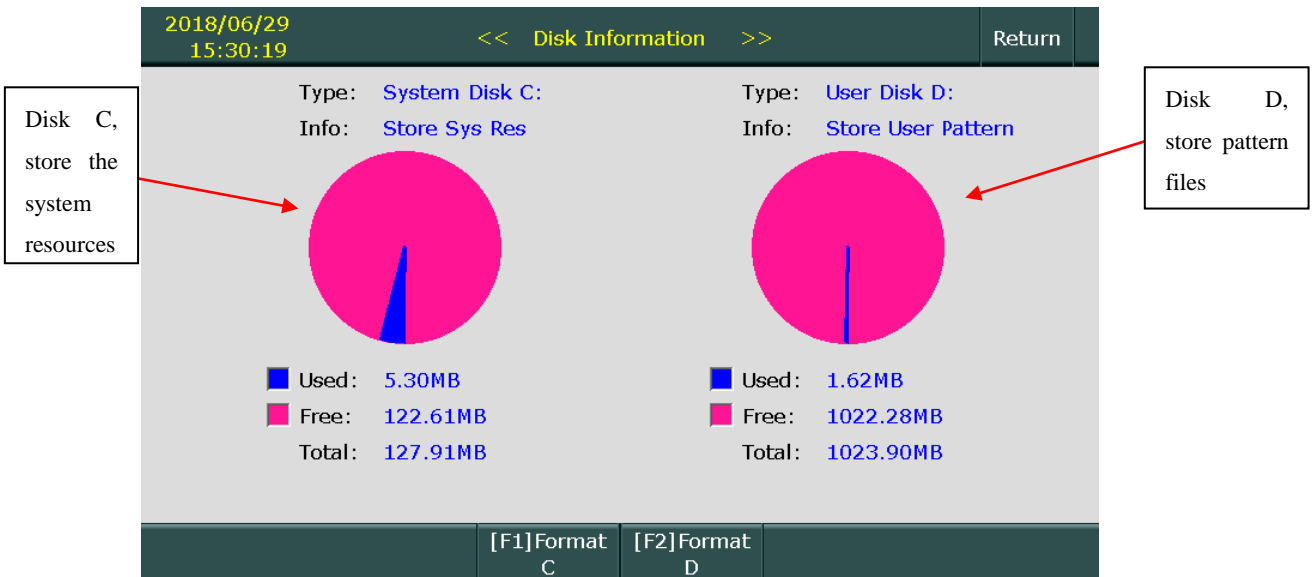
When the disk capacity is 0, try to perform the corresponding formatting operation.

When one file is copied from the USB flash drive to the system, an error is occurred. Try to perform the corresponding formatting operation.

*Note : When formatting a disk, all corresponding files on the disk will be lost !

50

2.6.4 Error record

Press ![4] in the version window to view error record details.

Up to 320 records can be stored. When the record is full, the subsequent records will overwrite the oldest ones.

| Error date		Record count
Error information		Select date, ignore 0 item
Touch screen to flip page		Error type
		Select certain information

ErrorRecord ✕

No.	Time	Message
001	2018/06/29 14:47:27	Density Step1Inductor!
002	2018/06/29 14:44:59	Servor Error!
003	2018/06/29 14:42:38	Servor Error!
004	2018/06/28 09:52:05	Servor Error!
005	2018/06/28 09:49:58	Servor Error!
006	2018/06/22 14:46:45	Servor Error!
007	2018/06/22 14:35:53	Servor Error!
008	2018/06/22 14:32:55	Servor Error!
009	2018/06/22 13:48:20	Servor Error!
010	2018/06/22 13:41:29	Servor Error!
011	2018/06/22 13:39:27	Servor Error!
012	2018/06/22 13:36:16	Servor Error!

Total: 126
Fr 2018/06/00
To 2018/06/00
√ Alarm
☐ System Call
☐ Message
[F1]Research
[F2]Clear

ErrorRecord ✕

No.	Time	Message
001	2018/06/29 15:29:47	Usb BABBLE error!
002	2018/06/29 14:59:20	Raise Limit Sp
003	2018/06/29 14:58:31	Machine Turn On
004	2018/06/29 14:53:30	Machine Turn On
005	2018/06/29 14:48:23	Machine Turn On
006	2018/06/29 14:47:47	Machine Turn On
007	2018/06/29 14:44:48	Machine Turn On
008	2018/06/29 14:40:55	Machine Turn On
009	2018/06/28 10:02:20	Machine Turn On
010	2018/06/28 10:02:14	System version update!
011	2018/06/28 09:29:13	Driver version update!
012	2018/06/28 09:28:57	Machine Turn On

Total: 194
Fr 2018/06/00
To 2018/06/00
☐ Alarm
√ System Call
☐ Message
[F1]Research
[F2]Clear

After clicking the date, the filter date setting window will pop up. When any of the dates is 0, it means ignore.
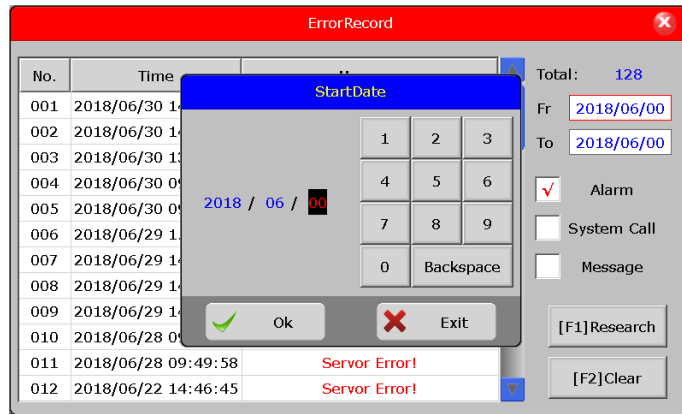
Press [Message] to pop up error record filter window,.

Select an alarm type then press [ENTER] to show certain records, press [ESC] to skip it.
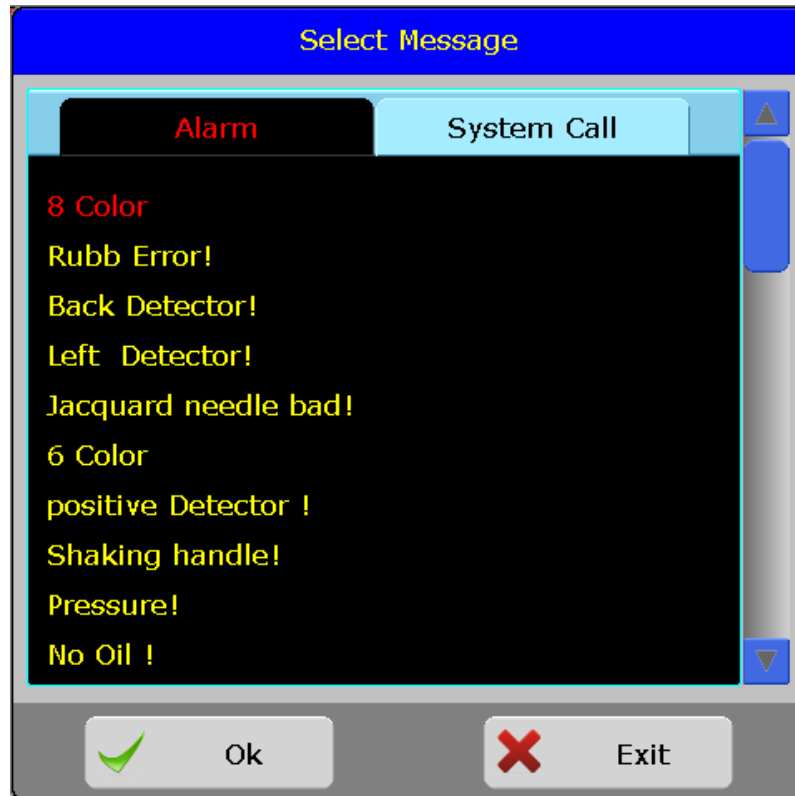
2.6.5 Alarm note

Alarm 1-16 are for regular alerts，alarms after 16 are for special needs and special protections.

If there is none alarm around 1-16 types at all, please check:

➢ Earth line connection

➢ Air valve circuit board alarm module

Alarm id	Alarm name	Alarm detail	Possible solution
1	8color		
2	Rubb Error!		
3	Back Detector		
4	Left Detector		
5	Jacquard needle bad		
6	6 color		
7	positive Detector		
8	Shaking handle		
9	Pressure!	Air pressure abnormal	No air supply, or a problem with the air pressure detecting device;
10	No Oil !	Lack of oil	Check for oil shortage in the oil can
11	alarm11		
12	alarm12		
13	alarm13		
14	alarm14		
15	alarm15		
16	alarm16		
17	Servor Error!	Abnormal alarm on the servo drive	1.The drive or motor is abnormal; 2.Check the control line of the drive 3.Check display motherboard
18	Socks Drop	The following two situations will trigger alarm: No socks were detected	

		when socks are dropped, Or detecting falling when no socks are dropped;	
19	NO AC220V		Whether the connector (J16) in the lower right corner of the Hub board in the chassis is connected; The 220V coming out of the transformer is abnormal; A problem with the Hub board
20	ZeroNeedle!	When the coil is synchronized, the number of detected needles is different from normal. Generally because, the encoder signal of the servo feedback is not 50,000 pulses (the encoder value can be viewed on the servo test interface).	a. Check the servo drive and motor, the motor encoder is more likely to be bad; b. Check the servo and the machine connected belt; c. Probe signal interference; d. the display motherboard has a problem;
21	CountNeedles!	There is a problem with the encoder signal of the servo feedback, or the encoder becomes smaller when the motor rotates forward, and the encoder signal of the servo feedback is not 50000;	

22	No Inductor！	Loop sync probe not detected for 2 consecutive turns	Check if the circle sync probe is connected
23	BTSR(YarnBroken)!	BTSR detection function，the yarn is broken during knitting	
24	BTSR(YarnEnlace)!	BTSR detection function，unused yarn is moving during knitting	
25	BTSR Memory!	When the BTSR detection is on, the data of the BTSR learning cannot be saved normally.	
26	Density Step1PosError!	The upper cylinder density motor cannot be rotated to the specified position.	a. Check if the machine is too heavy and the density motor cannot rotate normally. If it occurs frequently, you can adjust the working current in the density motor test, adjust to 2A, the maximum 2.2A, the greater the current, the greater the force; the locking current is generally 0.5A, you can adjust it to 0.8A, too large, the motor will be too hot, and easy to damage;
27	Density Step2PosError!	Same as above	Same as above
28	RubbStepMotorErr!		Wrong heel turn position

29	NO BTSR!	NO BTSR when the detection is on	
30	Action Err!	The action id in the chain is greater than 50	Modify the action id
31	StopKey!	The emergency stop button is pressed	Release the emergency button
32	Temperature too high!	The computer control box temperature in the chassis exceeds 75 ℃	a. temperature is too high; b. the temperature detection chip on the Hub board has a problem
33	RollbackPos!	The forward or reverse position is too large, the machine overrushed	If this alarm often appears, try to update a set of servo drives.
34	Total Needles!	The total number of needles in the chain file and machine parameters is inconsistent	
35	HubCommunication error!	A communication problem with the display board and the hub board in the chassis control box.	a. Check whether the connection between the motherboard and the Hub board is connected; b. Replace the Hub board; c. Replace the display board;
36	Servo not run!	The encoder has no signal or the machine is stuck	the machine suddenly gets stuck, but the servo does not alarm for 3 seconds, the computer will alarm. In this case, it is best to check

			the machine and servo motor: Go to the servo test window, turn the motor to see if the encoder value changes. If there is no change, the servo drive may be broken or the display board may have a problem. better to update a set of servo drives (including control lines and motors) to test and determine which part is damaged;
37	Heel Change color Error!	Wrong heel main shuttle change parameters	The main shuttle or the change circle is not set
38	Action Undo!	Air valve action does not operate	Generally, it will only appear in the heel part, indicating that the corresponding valve action angle is set incorrectly. The corresponding valve number is in the brackets, and the position of the non-heel actions must be smaller than the total number of needles.
39	No density motor 1!	No upper cylinder density motor detected in the sock leg	
40	No density motor 2!	Same as above	
41	Expansion motor	The computer does not	

	except	detect the extended motor board	
42	KTF	KTF rubber conveyor alarm	
43	Btsr Comuc Err!	The BTSR is note detected. The number in the bracket indicates the corresponding BTSR id.	
44	220Vfuse	The 220V fuse on the Hub board is broken. If the fuse is broken, the oil pump and the chassis fan will not work properly.	

Note:

d.　yarn-change deceleration:

　　System 2 yarn-change deceleration is controlled by the control bar.

　　The 1st column: the yarn-change deceleration 1 in the machine parameters;

　　The 2nd column: the yarn-change deceleration 2 in the machine parameters;

　　2 columns at the same time: the current speed is reduced by 100;