AS58 Operation Panel（HMI）Instruction

1 Operation Panel Instruction

Operation Panel（See Fig1-1）is divided into two area：LCD display area and keys operation area.
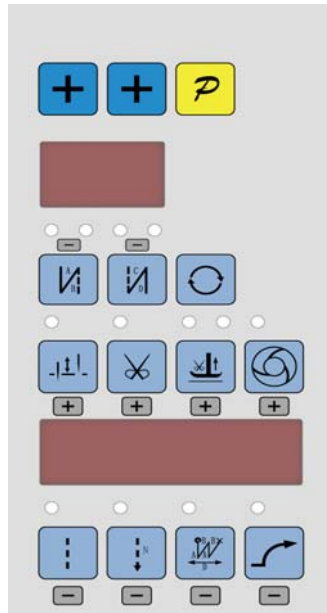

Fig.1-1

Digital display area is composed of 6 digital tubes, used to each parameter setting. There are 14 keys that used to display the key function open or not. Parts of keys have LED light. Table 1 shows function of each key.

Table 1: Following form is the instruction of each key：

No	Appearance	Description
1		**Function key**：Confirm working, or work with other key.
2		**Cycle key**：Switch parameter position when change parameter；
3		**Plus key:** Corresponds to the parameter addition 1
4		**start back tacking key**：Round with single start back tacking; double start back tacking; quad start back and close start back tacking. The 2 LED on the top of the key show current status.
5		**end back tacking key**：Round with single end back tacking; double end back tacking; quad end back tacking and close end back tacking. The 2 LED on the top of the key show current status.

6		**Stop position key**：Select up/down stop position/Increase thousand bit. The LED at top left corner of the key is lit if select up stop position.
7		**Trimming key**：Select/non-select automatic trimming/Increase hundred bit. The LED at top left corner of the key is lit if select automatic trimming.
8		**Press foot lifting key:** Set up automatic press foot lifting/Increase ten bit. Select press foot lifting and mid-press foot lifting. The 2 LED on the top of the key show current status.；
9		**One-Shot-Sewing key**：Select/non-select one-Shot-Sewing/ Increase Entries bit. The LED is lit at top left corner of the key when select one-Shot-Sewing.
10		**Free sewing mode key**：Select free sewing mode/ Decrease thousand bit. The LED is lit at top left corner of the key when working.
11		**Multi-segment sewing mode key:** Select multi-segment sewing mode/Decrease hundred bit. The LED is lit at top left corner of the key if working.
12		**W sewing mode key**：Select W sewing mode/Decrease ten bit. The LED is lit at top left corner of the key if working.
13		**Soft start key:** Select soft start function/Decrease Entries bit. The LED is lit at top left corner of the key if working.

2   Optional User Mode

2.1 Operator Mode

This mode is default mode of operation panel, operation panel enter this mode after it starts. Under this mode, the two connection decimal points will be lit from left to right in orderly during running, （LED show as ） that means HMI is idle state.

Before performing any operation, if the long time does not press the key words, HMI will automatically switch to the idle state; the previous operations will not be executed.

2.1.1 Sewing Mode Setup：

Free sewing mode: Press10 key, LED show as , if press key，confirm the operation, digital tube display returned to the idle state, and the LED on the top left of the key is lit .

Multi-segment sewing mode: Pres11 key, digital tube display is

multi-segment sewing status。 With (9、13、8、12)four keys to set Multi-segment sewing

mode （The highest 24 segment）, then press2 key to entry multi-segment sewing stitch number of each

segment setup status and digital tube display 。

With （3、4、6、10）four keys to modify segment index, with (9、

13、8、12)four keys to modify multi-segment sewing stitch number of each segment. If press key to

confirm working, the digital tube is lit and display idle state. The LED at top left corner of the key is

lit if open multi-segment sewing mode.

W sewing mode ： Press12 key, 8-segment LED will display W sewing status,

。 Press (6、10）key can be used to choose A B D segment, and

use (9、13、8、12)to modify stitches of each segment. After confirmation, press key,

8-segment LED display will come back to idle, and LED on the top left side of key will be lit.

2.1.2 start/end back tacking setup：

If press 4 key or 5 key, 8-segment LED will display start back tacking status or end back tacking

status.

If press 4 key, it actives single start back tacking, double start back

tacking , quad start back , close start back

tacking .

If press 5 key , it actives single end back tacking, double end back tacking, quad end back, close

end back tacking（Fig omit）.Press key to choice A、B or C、D segment，and use to choice stitches of each segment. After confirmation, press ![P] key, LCD display will come back to idle, and two Lends on start back tacking key and end back tacking key will light to show the status accordingly.

- ◆ When two LED on ![key] key switch off, it means no back tacking;

- ◆ When LED on top left of ![key] key is on, and on top right off, it means single back tacking;

- ◆ When LED on top left of ![key] key is off, and on top right light, it means double back tacking;

- ◆ When the two LED on ![key] key are all lit, it means quad back tacking;

Note: We supply only start back tacking, same with end back tacking key

2.1.3 Soft start setup：

Press soft 13 ![key] key, entry into soft start status, the ![key] key of LED on top left will be lit active. Press this key again to exit soft start status, the ![key] key of LED on top left will be off。

2.1.4 Press foot lifting key：

Use 8 ![key] key : select foot lifting status, there are four different status, no automatic foot lifting, as ![key] ; automatic foot lifting after trimming, as ![key] ; automatic foot lifting if stop during sewing, as ![key] ; automatic foot lifting if trimming and stop during sewing, as ![key]. Use ![key] key to choice and LED on the top will show the status accordingly.

2.1.5 Trimming key：

Use ![key] key: select/non-select automatic trimming. LED on top left side of the trimming key will be lit if automatic trimming is selected, as ![key], otherwise, LED off, as ![key].

2.1.6 One-Shot-Sewing key

Use ⎙ key: select/non-select one-shot-sewing. LED on top left side of the one-shot-sewing key will be

lit if one-shot-sewing is selected during enable multi-segment, as ⎙; otherwise, LED off, as ⎙.

2.1.7 Stop position key

Use ⎗ key: select up/down stop position. LED on top left side of this key will be lit if select down

needle position, as ⎗; LED off if select up needle position, as ⎗.

2.2 Technician Mode

In this mode, technical parameters corresponding to various functions can be adjusted or reset according to practical needs so that the system may run in the best condition. Parameters setting under technician mode:

Step 1: Under operator mode, press 𝑃 key and ⎗ key, the LCD will display Pd - 0000, and then set

the password by technician. The default password is 0000, and LCD display

as 0. 1.0.2.0.0.

Step 2: Use ⎗ ✂ ⎗ ⎙ ⦂ ⦂ ⎘ ⟋ （6-13）keys to input the password, and then

press 𝑃 key. If the password is correct then enter technician mode, otherwise, it will return to operator mode.
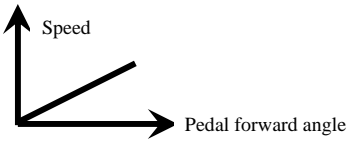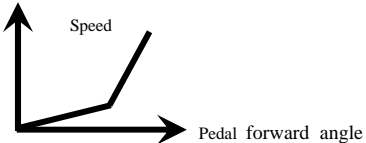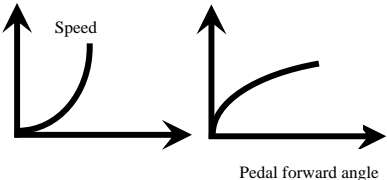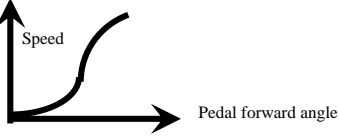
Step 3: Change technician parameters by 𝑉 𝑉 （4、5）keys and ＋ key. The parameters are shown

in table 2.
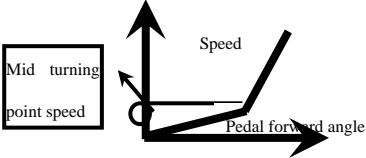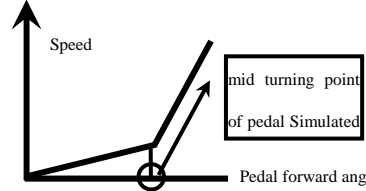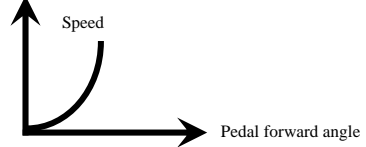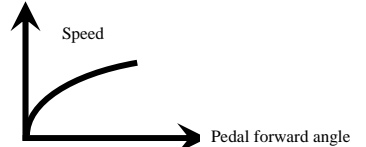
Step 4: Parameters values can be changed by ⎗ ✂ ⎗ ⎙ ⦂ ⦂ ⎘ ⟋ （6-13）keys.

Step 5: Under technician mode, press 𝑃 key, the panel will return to operator mode.

Table 2: Technician mode parameter：

	Parameter High byte	Parameter Low byte	Default	Rang	Comment
speed	0	0	200	100~800	Minimum sewing speed
		1	3500	200~5000	Maximum sewing speed
		2	3000	200~5000	Maximum constant sewing speed
		3	3000	200~5000	Maximum manual back tacking speed
		4	200	100~800	Stitch compensation speed
		5	250	100~500	Trimming speed
		6	0	0 / 1	Soft start Mode setup: 0：Soft start only after trimming 1：Soft start after both trimming and stop
		7	2	1~9	Soft start stitch number
		8	200	100~800	Soft start speed
		9	13	1~20	System accelerate sensitivity （Direct drive transmission can be set up to a large value；belt transmission don't set large value or too much noise and vibration. This parameter do not affect the electrical）
		A	13	1~20	System decelerate sensitivity （Direct drive transmission can be set up to a large value；belt transmission don't set large value or too much noise and vibration. This parameter do not affect the electrical ）
Back tacking setup	1	0	1800	200~3000	Start back tacking speed
		1	1800	200~3000	End back tacking speed
		2	1800	200~3000	Continuous back tacking speed
		3	26	0~70	Start back tacking stitch compensation 1
		4	20	0~70	Start back tacking stitch compensation 2
		5	26	0~70	End back tracking stitch compensation 1
		6	20	0~70	End back tracking stitch compensation 2

	Parameter High byte	Parameter Low byte	Default	Rang	Comment
Pedal	∃	◻	◻	◻/1/2/∃	Pedal Curve mode setup: 0：Auto Calculated liner Curve（According to the highest speed automatic computation） 1：Two segment liner Curve. (You shall be free to set slow start after fast or fast start after slow, the parameters "31" and "32" cooperate with use ） 2：Arithmetic Curve （ the parameters [33] cooperate with use） 3：S curve（the operate control is very well, slow start after fast ）

	Parameter High byte	Parameter Low byte	Default	Rang	Comment
		1	3000	200~4000	Two segment controls the speed slope：mid turning point speed RPM(two segment of turning point speed], the parameter[30] set to 1 effective。 Mid turning point speed / Speed / Pedal forward angle
		2	800	0~1024	Two segment controls the speed slope：mid turning point of pedal Simulated value，the parameter[30] set to 1 effective, the value is between[38]and[39]. Speed / mid turning point of pedal Simulated / Pedal forward angle
		3	1	1~2	Arithmetic Curve supplementary parameter：the parameter[30] set to 2 effective, 1：Square（the low speed control is very well, slow start after fast）； Speed / Pedal forward angle 2：Square root（Responding speed is fast, fast start after slow）； Speed / Pedal forward angle

	Parameter High byte	Parameter Low byte	Default	Rang	Comment
		4	90	0 ~ 1024	Pedal trimming position set, See 2-1. (the value is not higher than the parameter [30])
		5	300	0 ~ 1024	Press foot lifting, See 2-1. (the value is between[34]and[36].)
		6	460	0 ~ 1024	Pedal back mid position，see 2-1. (the value is between[35]and[37].)
		7	480	0 ~ 1024	Pedal step upon running position，see 2-1. (the value is between[36]and[38])
		8	680	0 ~ 1024	Pedal low speed running position（upper),see 2-1 (the value is between[37]and[39])
		9	960	0 ~ 1024	Pedal simulation the largest of value, see 2-1 (the value is not lower than the parameter [38])
		A	100	0 ~800	Pedal press foot lifting confirm time
custom setup	4	0	1	0／1	Run to up needle position after Power on： 0: no action 1: action
		1	1	0／1	Automatically reinforcing functions chose ： （the machine head is not automatically reinforcing functions, the best way is prohibit） 0：prohibit 1：allow
		2	0	0／1	Back to sewing by hand when the function mode selection: 0：Juki mode. In sewing or in the end of the action 1：Brother mode. It acts only in sewing.
		3	0	0／1／2／3	Special Running Mode setup： 0：operator select 1：simple sewing mode 2：calculate initial angle of motor (do not uninstall strap) 3：calculate motor/machine head run rate mode (synchronizer, do not uninstall strap)

|	Parameter High byte	Parameter Low byte	Default	Rang	Comment
		4	0	0—31	Torque boost up at low speed : 0：no action 1~31：31 levels Torque boost up
		5	1	0／1	Stop pin mode： 0：Constant speed tackle mode (in the belt transmission， Parking is not precision) 1：back pull mode（PMX）
		6	150	0~800	Command button to fill half-needle time
		7	180	0~800	Command button to fill a needle time
Operation	6	1	0	0／1／2	Translating Parameter 0：no action 1：Download parameters(the panel will parameter from panel to controller) 2：Upload parameters (the panel will parameter from controller to panel)
		2	0	1, 2, XXXX	Restore storage parameter(Only restore parameters to operators, and vendors and maintenance) Belt flat 1000/ Direct drive flat 2000
		3	0	1, 2	Backup current parameter as user parameter for restore (restore)
		Note: Above such "6x "parameter to operate is not saved.			

36踏板回中位置
37前踩运行位置
38低速运行位置
39踏板模拟量最大值
脚踏板
36踏板回中位置
35抬压脚位置
34剪线位置
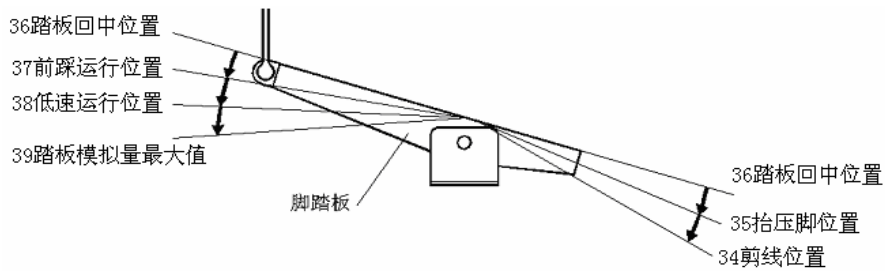
Fig2-1 Pedal action parameter the position of the diagram

2.3 Administrator Mode

In this mode, various solenoid parameters set can be regulated according to the practical need so that the servo system can normally run on every sewing machine. Parameters setting under technician mode:

Step 1: Under operator mode, press and keys to enter administrator mode in LCD Pd-0000,

The default password is 0000, and LCD display as 3. 1.0. 1.8.8.

Step 2: The password is entered using (6-13) keys, then press key. If the password is correct, enter into the technician mode, or return to the operator mode.

Step 3: Change administrator parameters index by (4、5) keys and keys under administrator mode. The details of technician parameters are shown in table3.

Step 4: Parameters values can be changed by (6-13) keys.

Step 5: Under administrator mode, press key, the panel will return to operator mode.

Table 3: Administrator mode parameter：

	Parameter High byte	Parameter Low byte	Default	Rang	Comment
Trimming mode	0	2	1	0/1/2/3	Mode selection for trimming sequence. 0：According to the parameters 【03】 set angles is trimming, until up position delayed 【06】 time off. 1：According to the parameters 【03】 set angles is trimming, until 【04】 set angles off. 2：According to the parameters 【03】 set angles is trimming, it delayed 【06】 off. 3：Down position signal delayed the parameter【05】 set angles is trimming, it delayed 【06】 off.
		3	10	5-359	The start angles of trimming (relative down position of angle)

	Parameter High byte	Parameter Low byte	Default	Rang	Comment
		4	180	10-359	The end angles of trimming (relative down position of angle, Need to greater than the system of parameters 【03】)
		5	10	1-999	Trimming start delay time T1（ms）
		6	60	1-999	Trimming end delay time T2（ms）
Tension release 、 Wiper and Clamp mode	1	0	0	0／1／2／3／4	Mode selection for tension-release sequence: 0:According to the parameters [11] set angles is tension release, until up position delayed [14] time off. 1：According to the parameters 【11】 set angles is tension release, until 【12】 set angles off. 2：According to the parameters 【11】 set angles is tension release, it delayed 【14】 off. 3：Down position signal delayed the parameter【13】 set angles is trimming, it delayed 【14】 off. 4: Up position signal delayed the parameter 【13】 set angles is trimming, it delayed 【14】 off.
		1	25	5-359	The start angles of tension release(relative down position of angle)
		2	300	10-359	The end angles of tension release（relative down position of angle, Need to greater than the system of parameters 【11】）
		3	1	1-999	Tension release solenoid start delay timeT1（ms）
		4	10	1-999	Tension release solenoid up position delay time T2（ms）
		5	1	0／1	selection for Wiper function 0：off 1：on
		6	10	1-999	Clamp /Wiper delay time ms
		7	30	1-9999	Clamp /Wiper holding time ms

	Parameter High byte	Parameter Low byte	Default	Rang	Comment
		8	50	1 - 999	Clamp /Wiper revert time ms
		9	0	0 / 1	Thread Clamp function： 0：off 1：on
		A	100	0 - 359	Clamp start angle
		b	210	0 - 359	Clamp end angle
Stop mode	3	1	0	0 / 1	The automatic test mode selection ： 0: order stitches 1: order time
		2	300	0 ~ 1000	The safety SW alarm confirm time ms(the same way does not distinguish between direct-drive safety SW and flat lock trim of protection SW)
		3	50	0 ~ 1000	The safety SW restore confirm time ms
		4	0	0 / 1	Motor rotation direction setup： 1：Forward 0：Reverse
Machine head parameter	4	0	1000	0 - 9999	motor/machine head run rate: 0.001 (if automatic calculation of motor/machine head run rate has done, the Parameter value in control box maybe different with that in HMI)
		2	0	0 - 359	Up needle position adjusted angle（compare to up position sensor position excursion）
		3	175	0 - 359	Down needle position mechanical angle
		4	1	1- 800	Press down delay time(ms)

2.4 HMI version number and its parameter modified mode

During HMI idle, Press $\mathcal{P}$ key, then press ⋮ key, HMI entry display version number interface, such

as see picture $0. - . H. 0. 0. 0.$. HMI return to idle if press $\mathcal{P}$ or no press the key after

regulate time.

After HMI entry display version number interface, if press $\mathcal{P}$ key, then press ⋮ key, HMI can entry

itself parameter modification interface, and show as ⬚. ⬚.⬚.⬚.⬚.⬚. It can be used to modify the parameter index and the setting value, through the number corresponding to the up and down keys. In determining the parameters according to press $\mathcal{P}$ key to determining modification. HMI back to idle if no press the key after regulate time.

Table 2: HMI parameter

Parameter index number	NOTE
01	retain
02	retain
03	retain
04	retain
05	retain
06	In any condition, if the custom is not to press the button in a specified period of time , it will automatically exit to the HMI idle state, parameter index 06 regulation of waiting time. Adjustment range 2 ~ 10.
07	retain

2.5 Monitor mode

During HMI idle, Press $\mathcal{P}$ key, then press ✂ key, entry monitor mode. Use 〣 〣 （4、5）keys and

➕ keys to switch to watch the parameters. About the monitor parameter, please refer the sheet 5, HMI will back to idle if no operation after regulates time.

Table 5: monitor mode parameter

	Parameter High byte	Parameter Low byte	unit	comment
Monitor status	1	0		Counter stitches
		1		Counter trimming
	2	0	V	DC Bus Voltage
		1	RPM	Motor speed
		2	0.01A	One phase current
		3	degree	Initial angle

		५	degree	Mechanical angle
		5	——	Sampling value of pedal voltage
		6	0.001	motor/machine head run ratio
		٦	hour	Motor total run time
		8	——	Sampling value of potentiometer at machine head
	Ǝ	0 - ٦	——	History Error Code Recorder 8

2.6 Wrong warning mode

If the HMI detects something wrong from controller, it will jump automatically to warning mode, and

show error code see E.г.г.-.0.0. During wrong warning mode, the user can set

technician parameter change, administrator parameter and HMI parameter self-change or monitor mode.

Exit these modes not back to idle but back to wrong warning mode. It will return normal status after fixing

error and resetting power.

2.7 The external panel insert mode

When the external HMI is inserted, this HMI will stop work and the digital tube and all LED are lit.

When the external panel is pulled out, after about 2 seconds, the panel restores to work.

3   Control system restores storage parameter

3.1   Restore storage parameter for factory of control

Step 1: Under operator mode, press [P] and [⏬] keys, LCD Pd-0000; user require to type the

passport.

Step 2: The password is entered using [icons] （6-13）keys, then

press [P] key. If the password is correct, enter into the technician mode, or return to the

operator mode.

Step 3: Change administrator parameters index to【62】by [Ич][Ич] （4、5）keys and [+] keys under

technician mode. Restore storage parameter for factory of control can be changed by

[icons] （6-13）keys, usually there are four valid bit.

Step 4: the parameter confirms correct, press [P] key until the LED start flashing, release [P] key, HMI

and the whole system restore storage parameter.

3.2 Restore default user's own parameter

The parameter 【63】 of HMI can be used to set the customer's own parameters, following methods of operation ：

Step 1: Under operator mode, press and keys, LCD Pd-0000; user require to type the passport.

Step 2: The password is entered using （6-13）keys, then press key. If the password is correct, enter into the technician mode, or return to the operator mode.

Step 3: Change administrator parameters index to【62】by （4、5）keys and keys under technician mode. The value is changed 1or 2 by (9、13)keys.

Note: If it set 1,when you want to restore the parameter,enter into index 【62】 and set the parameter 1; when set 2, the parameter enter into index 【62, set 2.

Step 4: Press key keep 5 second, HMI and the whole system will the current parameter set restore the user to customize storage parameter.

When the parameter cause to the control system error, the user can restore the custom of the parameters, the methods of operation as "4.1 Restore storage parameter for factory of control" .The parameter 【62】 is changed 1or 2, Press key keep 5 second again, the system will restore the user to customize storage parameter.

Note：

1、 After power on, HMI only download **operator mode** parameter, but not **technician** and **administrator** parameter. If all parameter is needed, **technician** parameter 61 can used to download all current working parameter of HMI 50.

2、 If restore other parameter of HMI storage, **technician** 62 can be used to make it current working parameter, and download initiative.

3、 After single parameter modification, HMI will download the value that is different with old value of parameter.

4、 Recover default parameters, the system the best in the clear once again.