



張力控制送帶機

# 使用說明書



**MODEL : HCT-E9U-M**



中文版

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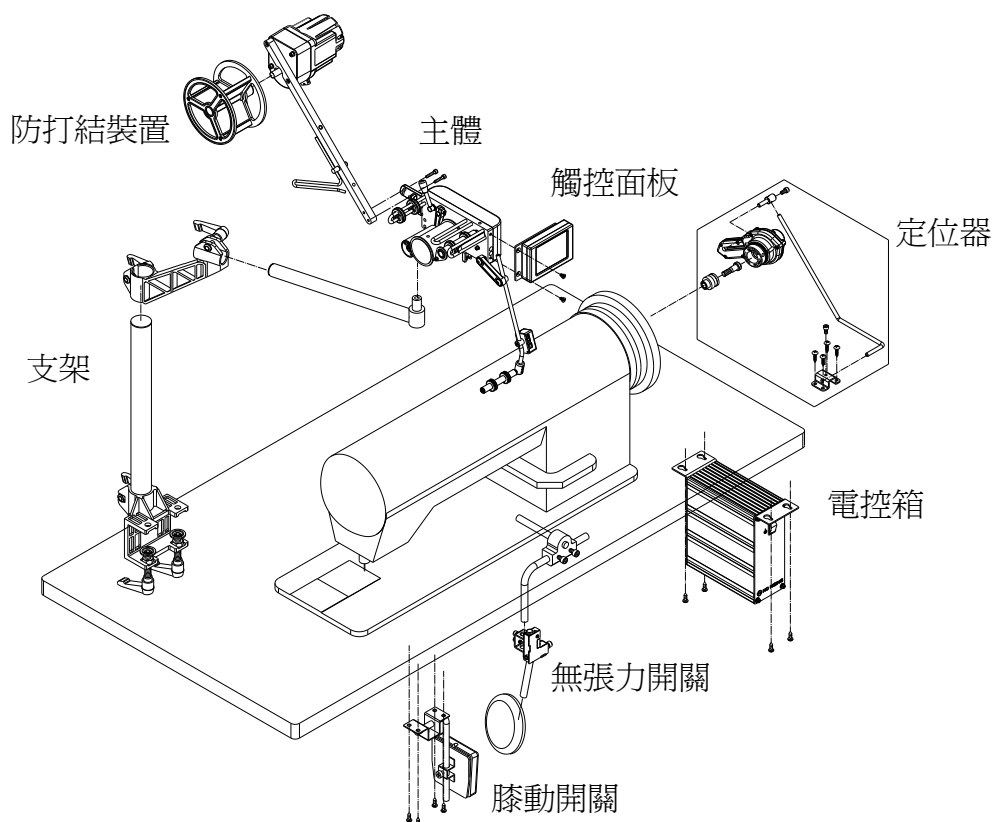
網址 / WEBSITE : <http://www.hurg.com.tw/>

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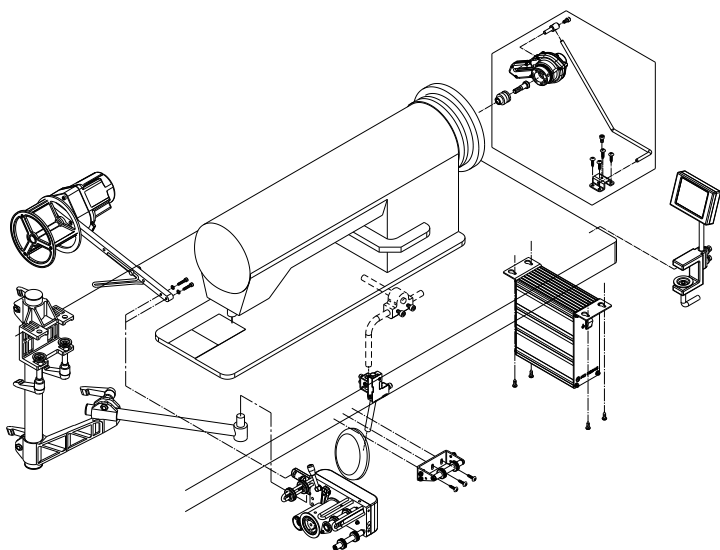
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# 1.安裝說明

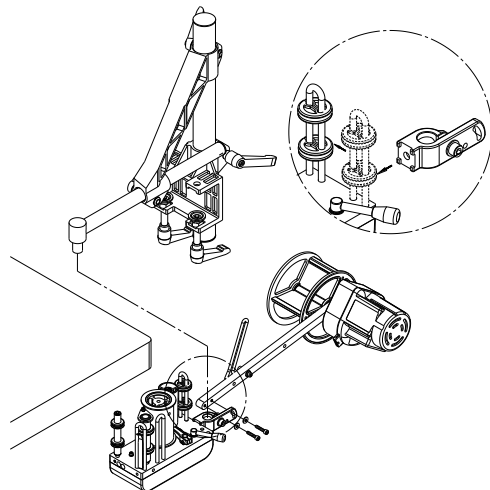
HCT-E9U-M 上送



HCT-E9B-M 下送



HCT-E9S-M 側送

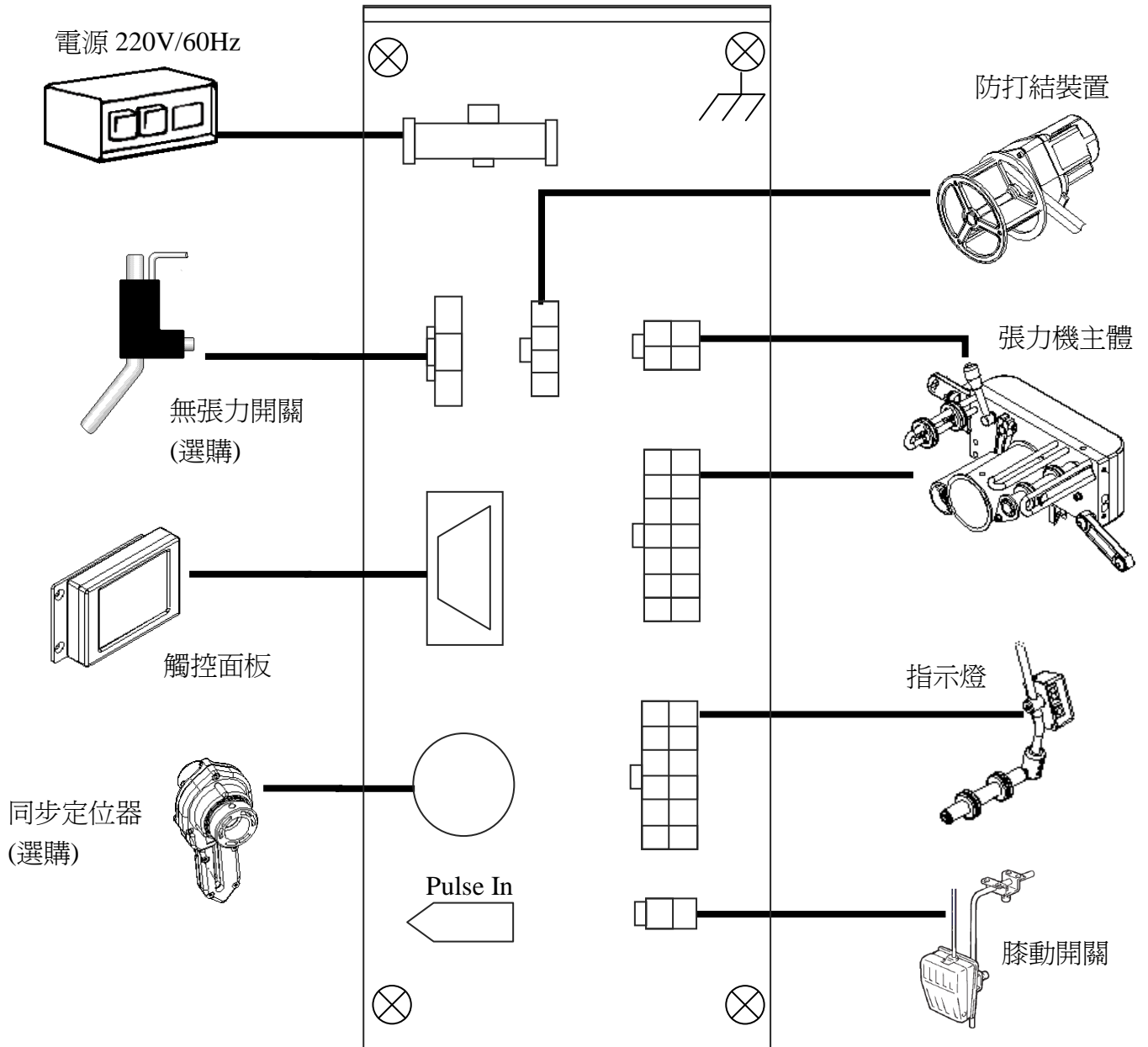


# 1-1.端子座連接圖



**警告**

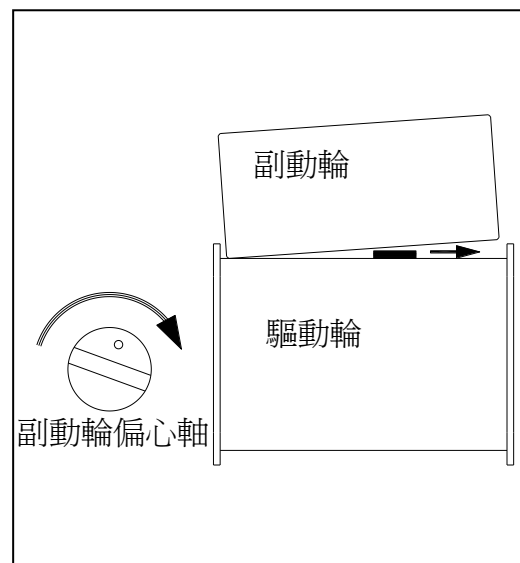
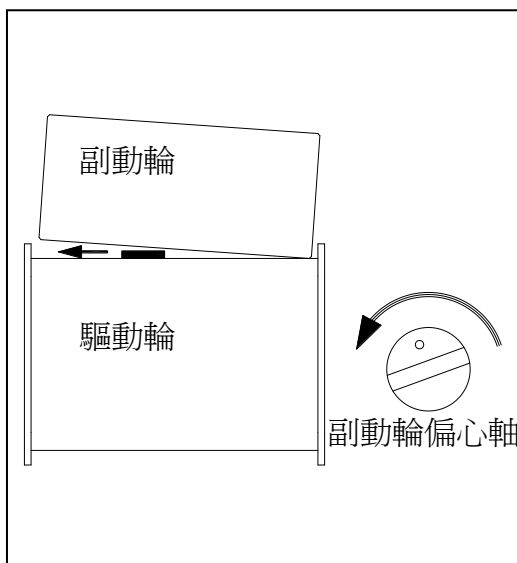
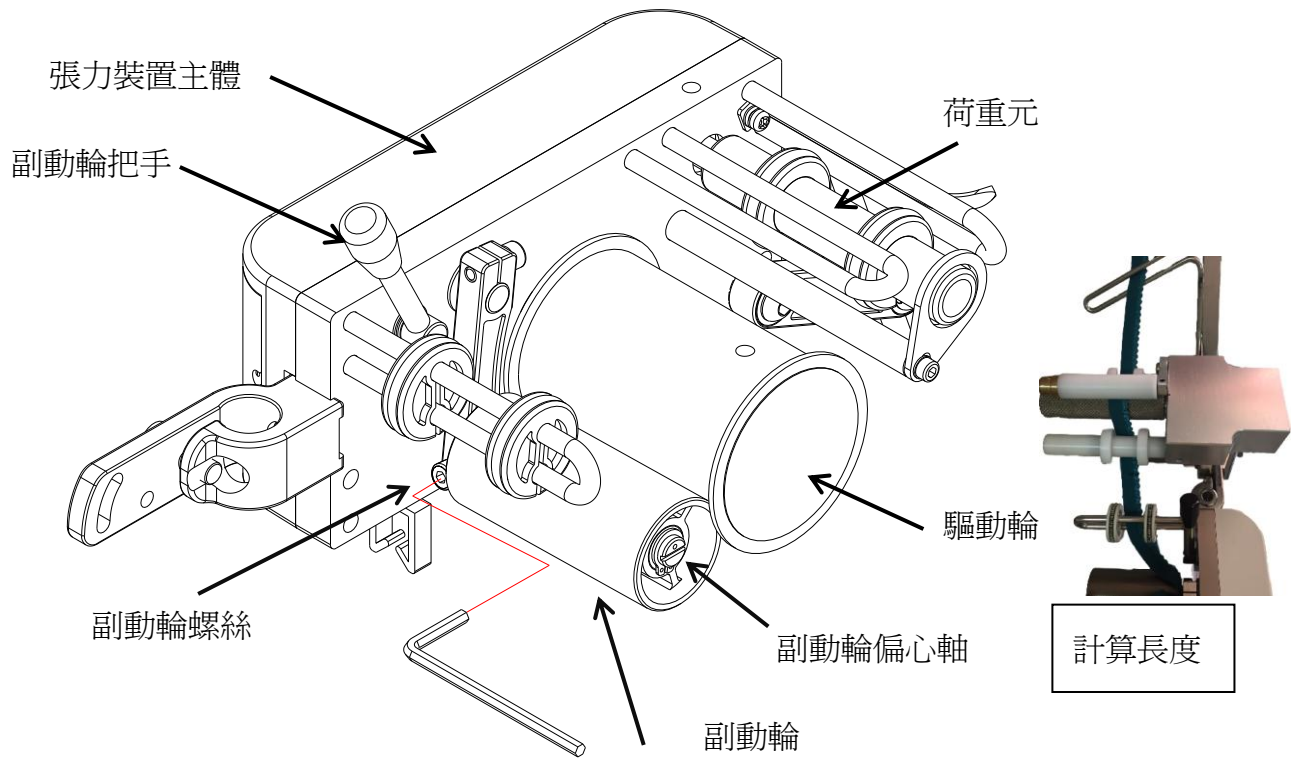
連接接線時，請務必將縫紉機的電源開關關閉，將插頭從電源上拔下來，再請專門的技術人員進行操作。



## 2.調整

### 2-1.鬆緊帶左右偏移調整

若鬆緊帶送帶產生左右偏移，是因為副動輪與驅動輪未保持平行，請鬆開副動輪螺絲，調整副動輪偏心軸可調整鬆緊帶左右偏移。



### 3.開機頁面說明

開機時，應顯示下列頁面。



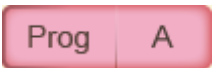



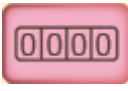









1. Main software Ver. xxx.yyy  
顯示主機板軟體版本。
2. Touch panel Ver. Xxx  
顯示觸控螢幕軟體版本。

### 4.車縫編輯頁面

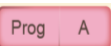
#### 4-1.車縫編輯頁面說明




圖示	圖示說明
	左清單上鎖鍵: 1.開鎖時 ，按此鍵後立即上鎖。 2.上鎖時 ，按此鍵後出現小鍵盤，必須輸入正確密碼後才能開鎖。 3.上鎖時無法開啓左清單的功能(請參照 4-3.左清單和右清單圖示說明)。
	左清單和右清單(請參照 4-3.左清單和右清單圖示說明)。
	布料檢知指示燈，亮紅燈表示有放入布料; 燈滅表示沒偵測到布料。


圖示	圖示說明
	工序編號切換鍵，可切換 A~I 共 9 組工序，按  為遞增，按  為遞減。
	針數顯示鍵： 1. 顯示針數用。 2. 按下後，可將顯示的針數複製到目前車縫的段數(Step)的針數欄(Stitch 欄)中。
	件數計數器，顯示車縫件數，長按件數計數器 3 秒可以歸零。 (件數計數器的顯示或隱藏請參照 4-3.左清單和右清單圖示說明)
	無張力切換鍵，圖示說明如右：  有張力送料，  無張力送料。
	段數(Step)切換鍵，設定步驟資料時使用。
	段數編號欄 1. 顯示段數編號。 2. 按此欄位可開啓 TK 設定頁面，可設定前切帶和後切帶的針數(操作請參照 4-2 步驟 9)。
	靈敏度設定欄 (操作請參照 4-2)。
	針數設定欄 (操作請參照 4-2)。
	張力值設定欄 (操作請參照 4-2)。
	車縫模式欄 (操作請參照 4-2)。

## 4-2.段數資料設定方法

步驟 1. 按  鍵選擇 A ~ I 任一組工序編號。

步驟 2. 此時光棒停在段數(Step)1 上，按下  欄位後，出現輸入用小鍵盤，如下圖：

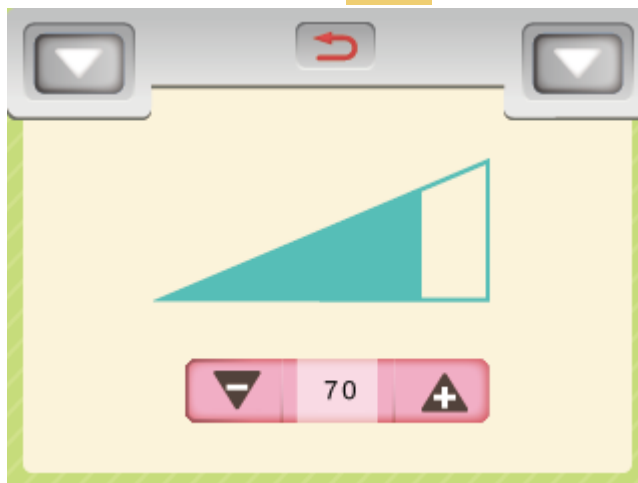



步驟 3. 利用小鍵盤輸入所需的張力值後，按  鍵回到車縫編輯頁面。

註: 1.張力值的範圍為 1~999，值愈小，張力愈大。

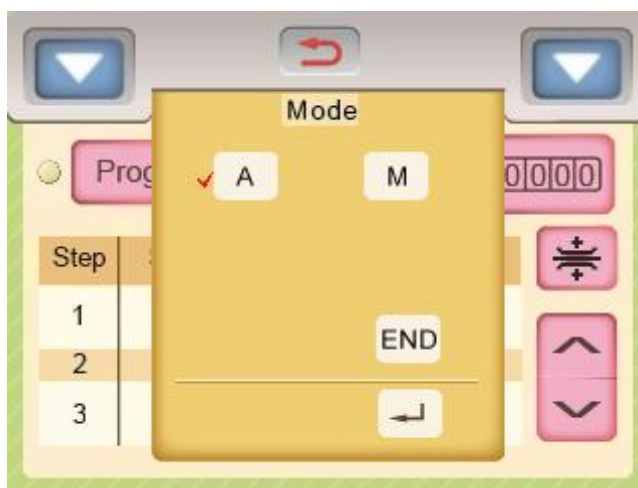
2.按 Free 鍵可快速設定無張力的張力值。

步驟 4. 如果此時鬆緊帶發生抖動現象時，請按 **Sen.** 欄位設定靈敏度，如下圖：



步驟 5. 將靈敏度值逐漸調小，直到鬆緊帶不再抖動為止，再按  鍵回到車縫編輯頁面。  
註:原則上在鬆緊帶不抖動的情況下，當靈敏度值愈大時，鬆緊帶的張力將控制得愈精準。

步驟 6. 按下 **Mode** 欄位，會出現 Mode 設定視窗，如下：



註：

6-1. 模式說明：

A(自動模式): 車縫到設定的針數後，自動跳到下一段(必須搭配同步定位器)。

M(手動模式): 在車縫過程中，必須手按跳段開關才能跳到下一段。

END(結束模式): 將該段設定為禁用狀態。

6-2. 第一段不能設定 END(結束模式)。


6-3.  : 儲存設定，並返回車縫頁面。

6-4.  : 取消設定，並返回車縫頁面。



步驟 7. 當該段數的車縫模式設定為 A 時，必須再設定車縫的針數;請按下 **Stitch** 欄位後出現輸入用小鍵盤，如下圖:



步驟 8. 利用小鍵盤輸入所需的針數。  
按  鍵回到車縫編輯頁面。

步驟 9. 重覆步驟 1~步驟 8，依序設定好所需的段數資料後，再移到下一段設為 **END** 模式，如下圖:

例. 設定第 1 段為靈敏度為 70，張力值為 800，M 模式。

第 2 段為靈敏度為 70，車縫針數為 80 針，張力值為 700，A 模式。

第 3 段為 **END** 模式。

設定方式參考如下：

Step	Sen.	Stitch	Ten.	Mode
1	70		800	M
2	70	80	700	A
3				END

步驟 10. 如果 8 個段數不敷使用，可設定第 9 段的”goto”功能串接其他工序的段數，最多可串連 72 段，範例如下：

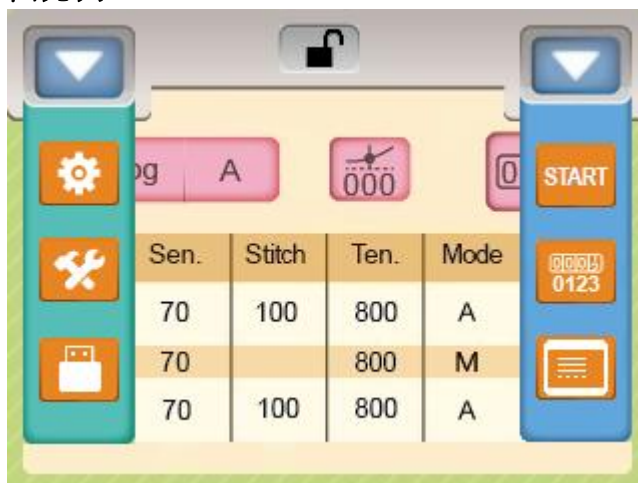
- 例. 第 1 段為靈敏度為 70，張力值為 900，M 模式。  
 第 2 段為靈敏度為 70，張力值為 850，M 模式。  
 第 3 段為靈敏度為 70，張力值為 800，M 模式。  
 第 4 段為靈敏度為 70，張力值為 750，M 模式。  
 第 5 段為靈敏度為 70，張力值為 700，M 模式。  
 第 6 段為靈敏度為 70，張力值為 650，M 模式。  
 第 7 段為靈敏度為 70，張力值為 600，M 模式。  
 第 8 段為靈敏度為 70，張力值為 550，A 模式，針數 50 針。  
 第 9 段為靈敏度為 70，張力值為 500，A 模式，針數 50 針。  
 第 10 段為靈敏度為 70，張力值為 450，A 模式，針數 100 針。  
 第 11 段為靈敏度為 70，張力值為 400，A 模式，針數 100 針。  
 第 12 段為靈敏度為 70，張力值為 350，A 模式，針數 150 針。  
 第 13 段為靈敏度為 70，張力值為 300，M 模式。  
 設定方式參考如下：

Prog=A					
Step	Sen.	Stitch	Ten.	Mode	
1	70		900	M	
2	70		850	M	
3	70		800	M	
4	70		750	M	
5	70		700	M	
6	70		650	M	
7	70		600	M	
8	70	50	550	A	
9	70	goto	B		

Prog=B					
Step	Sen.	Stitch	Ten.	Mode	
1	70	50	500	A	
2	70	100	450	A	
3	70	100	400	A	
4	70	150	350	A	
5	70		300	M	
6				END	
7				(不用設定)	
8				(不用設定)	
9	70	goto	A		

### 4-3.左清單和右清單圖示說明:



左清單	
	按此鍵開啓左邊下拉清單
	進入參數頁面(請參照 6.參數頁面說明)
	進入測試主頁面(請參照 5. 測試主頁面說明)
	保留

右清單	
	按此鍵開啓右邊下拉清單
	啓動/暫停張力機
	顯示/隱藏件數計數器
	群組選擇頁面

註: 當鎖頭爲解鎖狀態(  )時, 才能開啓左清單。

#### 4-3-1. 啓動/暫停張力機:

顯示 **START** 時, 張力機和防打結機停止運作, 方便使用者穿帶或維修。

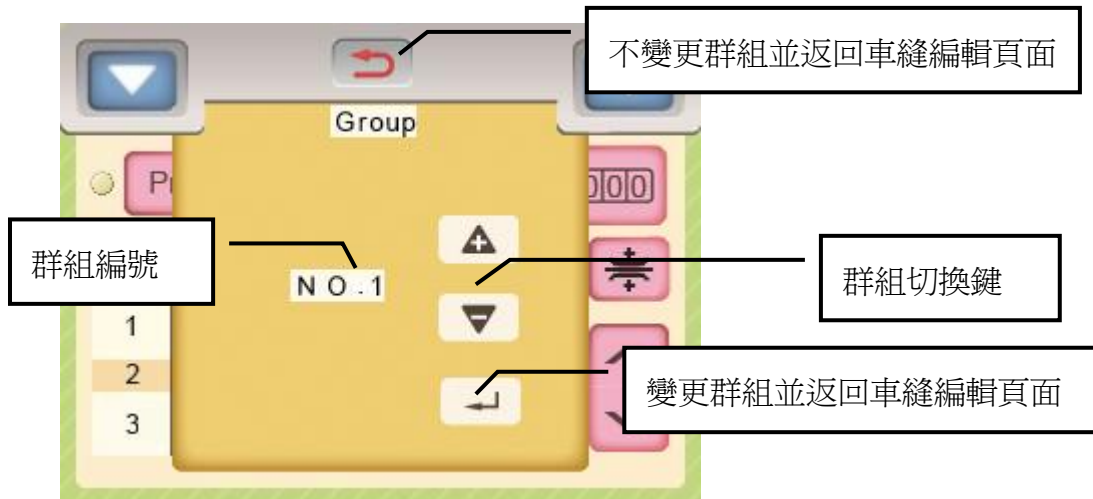
顯示 **STOP** 時, 張力機和防打結機正常運作, 可執行正常車縫動作。

#### 4-3-2. 顯示/隱藏件數計數器:

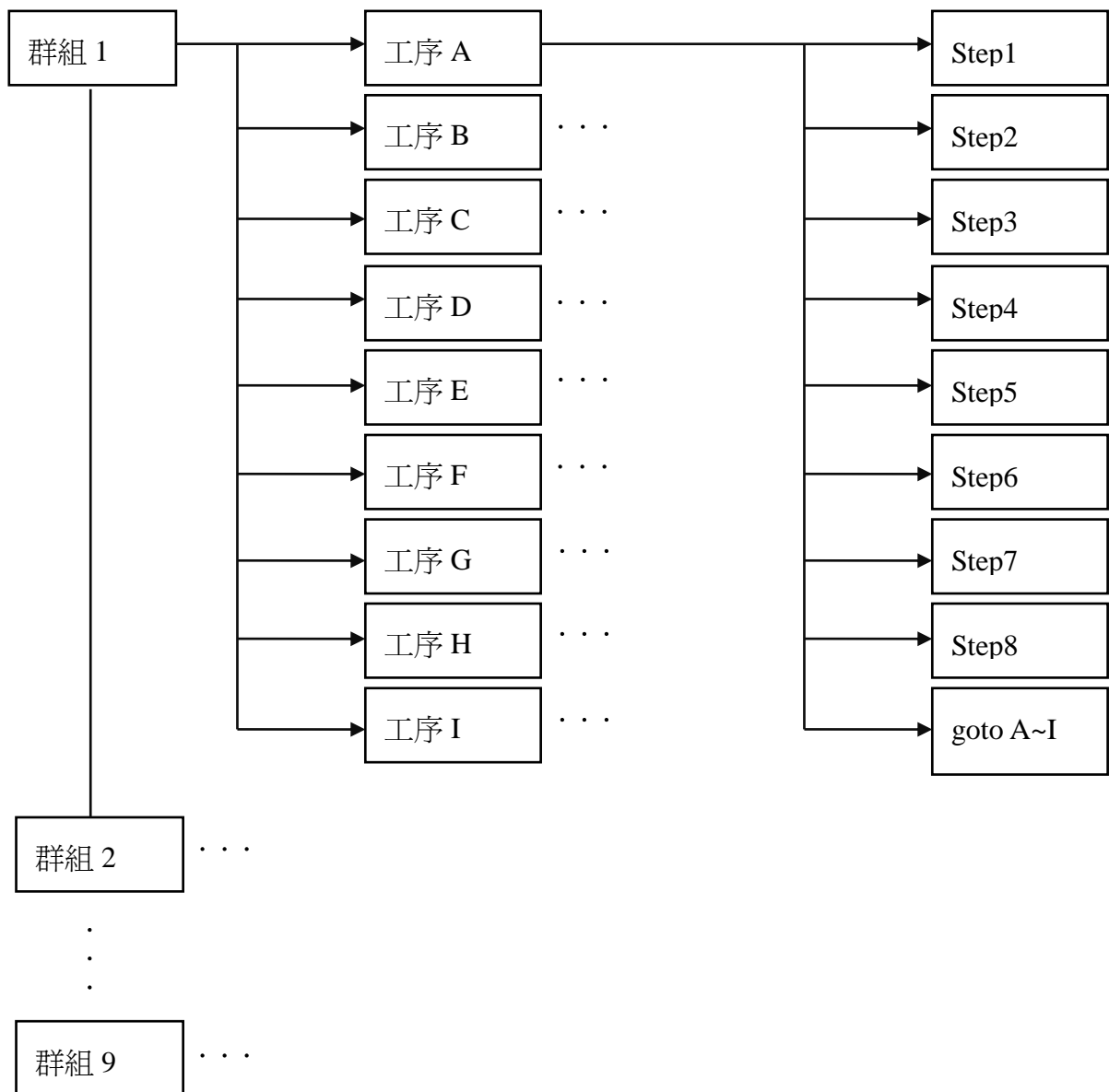
#### 4-3-3. 群組選擇頁面:

總共有 9 個群組可供選擇, 每個群組有 A~I 共 9 個工序可供使用, 每個工序有 8 個段數可供使用, 請參照圖示:

群組選擇頁面:

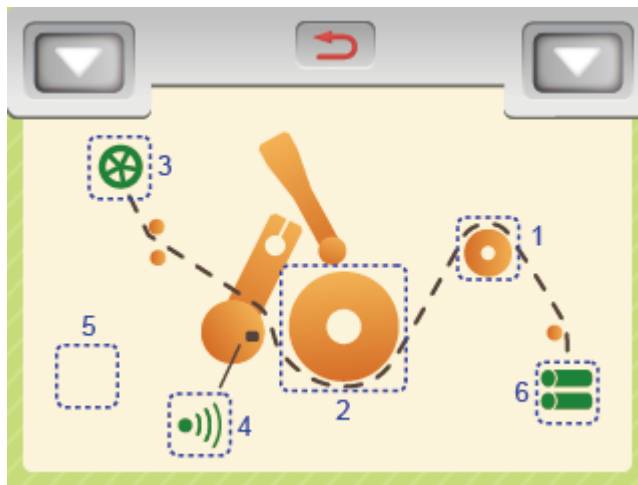





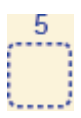


群組結構:




## 5.測試主頁面說明

按左清單的測試鍵圖示  可開啓測試主頁面，如下圖：




編號	名稱	編號	名稱
	保留		鬆緊帶厚度檢知設定頁面
	驅動輪測試頁面		保留
	防打結機設定頁面		附屬裝置測試頁面


### 5-1. 驅動輪測試頁面

按下  圖示會進入驅動輪測試頁面，如下圖：


注意：測試前，請勿穿繞鬆緊帶在驅動輪上。



步驟 1. 按下  鍵時，驅動輪會正轉 2 秒鐘。

步驟 2. 按下  鍵時，驅動輪會反轉 2 秒鐘。

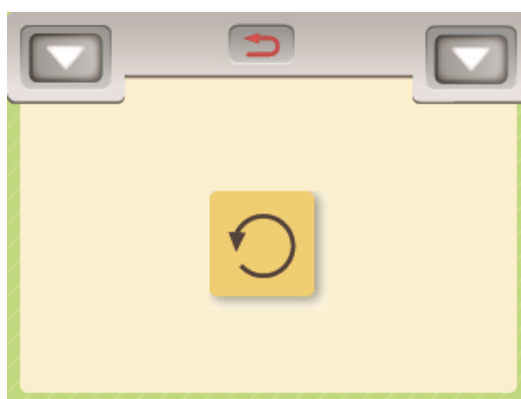
## 5-2. 防打結機設定頁面

按下  圖示會進入防打結機設定頁面，防打結機共可設定三種動作模式，說明如下：

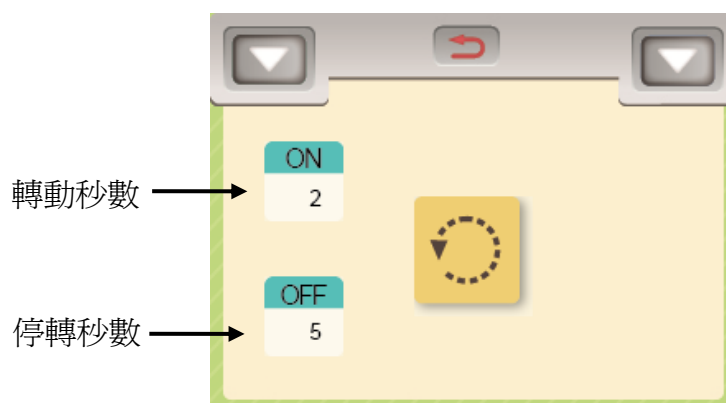
5-2-1. 停止模式：防打結機不動作。




5-2-2. 同步模式：防打結機與驅動輪同步動作。

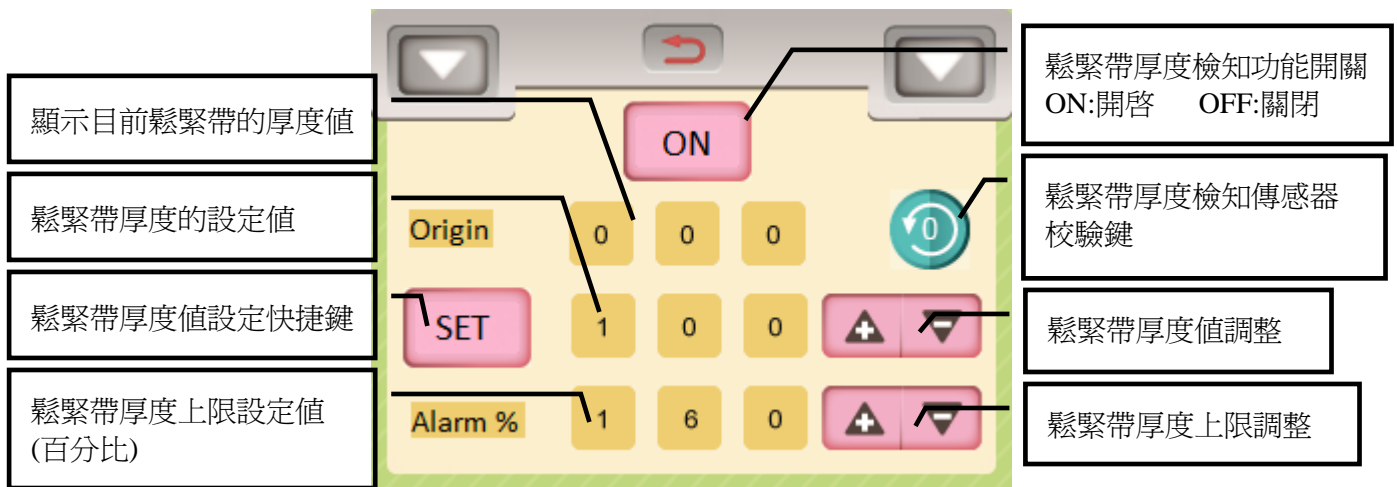


5-2-3. 防打結機間斷運轉模式：依照所設定的秒數動作：



### 5-3.鬆緊帶厚度檢知設定頁面


按下  圖示會進入鬆緊帶厚度檢知設定頁面，如下圖：



設定步驟如下：

- 步驟 1. 按”鬆緊帶厚度檢知功能開關”開啓鬆緊帶厚度檢知功能，此時該鍵顯示”ON”。
- 步驟 2. 移走穿繞在驅動輪和副動輪上的鬆緊帶，並關上副動輪把手，檢查鬆緊帶的厚度值 (Origin)應該介於-5~+5 之間，若厚度值不正確，請執行步驟 3 校驗鬆緊帶厚度檢知傳感器。
- 步驟 3. 按下”鬆緊帶厚度檢知傳感器校驗鍵”後，觸控螢幕出現提示”N074:tape thickness sensor calibration OK”後，表示校驗完成，此時鬆緊帶的厚度值(Origin)應該介於-5~+5 之間。
- 步驟 4. 將鬆緊帶穿繞過驅動輪和副動輪之間，此時 Origin 欄位會顯示該鬆緊帶的厚度值。
- 步驟 5. 按下 **SET** 鍵，可以立即將鬆緊帶的厚度值(Origin)複製到 **SET**    欄位。
- 步驟 6. 設定鬆緊帶厚度上限設定值(百分比)，最大可設定到鬆緊帶厚度的 200%(兩倍)，當車縫過程中，如果鬆緊帶厚度超過此上限值時，系統將出現警報 E075。

### 5-4.附屬裝置測試頁面

按下  進入附屬裝置測試頁面，如下圖：



操作說明:

5-4-1. 保留

5-4-2. 保留

5-4-3. 保留

5-4-4. 保留

5-4-5. 外部開關和外部按鍵狀態視窗:

外部開關被啓動或外部按鍵被按下時，狀態視窗顯示的訊息說明如下:


顯示訊息	說明
	沒有外部開關被啓動或外部按鍵被按下
	“膝動開關”被按下
	“跳段開關”被按下
	“無張力開關”被按下

5-4-6. 保留

5-4-7. 保留



## 6. 參數表

按左清單的參數圖示  可開啓參數頁面,各參數的功能說明如下:

編號	參數名稱	參數值	範圍	參數說明
5	free tension func	norm	norm / tf	norm: 一般送料機模式 tf: 模擬 TF 裝置
6	TF feed timing	160	100~2500	TF 裝置送帶時間。(ms)
7	TF speed	50	1~100	TF 裝置送帶速度; 1:最慢 100:最快
8	TF sens	70	1~99	TF 裝置的靈敏度; 1:最不靈敏 99:最靈敏
10	overload func	Off	Off / On	荷重元過載保護功能。
11	overload alarm	150%	120%~200%	荷重元負載超過此設定時,系統會出現警報。
16	buzzer on-off	On	Off / On	蜂鳴器開關。
18	restore default	nop	nop / run	回復出廠設定值。(操作請參照 6-1.回復出廠參數值)
19	lcd auto pwr off	off	off / logo / dark	off: 無功能 logo: 觸控螢幕 1 分鐘後顯示商標。 dark: 觸控螢幕 1 分鐘後休眠。
20	lcd brightness	99	0~99	觸控螢幕背光亮度。
29	free tape tension	999	1~999	定義無張力狀態時的張力設定值
30	Knee sw func	step	off/tk/step /rele/mct/toe	定義膝動開關(選購)的功能: off: 無功能 rele: 無張力開關 tk: 保留 mct: 保留 step: 跳到下一個段數編號 toe: 保留
31	Ext key func	step	off/tk/step /rele/mct/toe	外部開關功能: off: 無功能 rele: 無張力開關 tk: 保留 mct: 保留 step: 跳到下一個段數編號 toe: 保留
45	sewing counter	0	0~9999	件數計數器計數值調整。
46	synchronizer	inst	noth / inst	同步定位器(選購) noth: 無安裝 inst: 有安裝

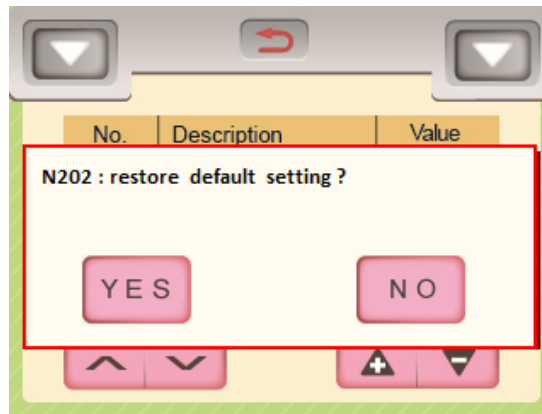
## 6-1.回復出廠參數值

要將參數頁面的所有參數值回復成出廠參數值時，請參照下列步驟：

步驟 1. 按左清單的參數圖示  進入參數頁面。

步驟 2. 移動光棒到參數 18。

步驟 3. 按”+”鍵後出現確認視窗，如下圖所示：

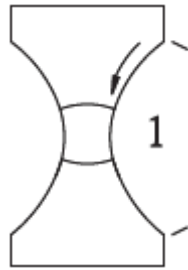


步驟 4. 按 YES 鍵後，出現提示訊息” N099:Please reboot”。

步驟 5. 重啓電源後，參數頁面的所有參數值已經回復成出廠參數值。

# 7.操作說明

例 1.單段工程，張力值=700。



張力值=700。

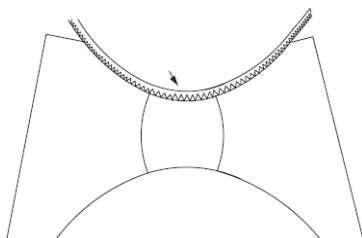
操作說明:

The sequence of screenshots illustrates the following steps:

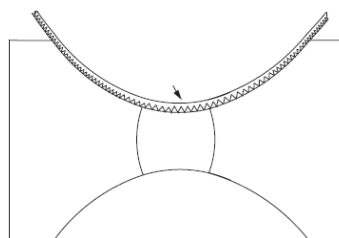
- The initial state shows a table with Step 1, Sen. 70, Stitch blank, Ten. 800, and Mode M. A hand icon points to the '800' value.
- The control panel shows the 'Ten.' display at 700. A hand icon points to the '+' button.
- The table now shows Step 1 with Ten. 700 and Mode M. A hand icon points to the '-' button.
- The table shows Step 2 highlighted with Ten. 800 and Mode M. A hand icon points to the '-' button.
- A 'Mode' selection menu is shown with 'M' selected. A hand icon points to the left arrow button.
- The final state shows Step 1 highlighted with Ten. 700 and Mode END.

張力值調整比較說明:

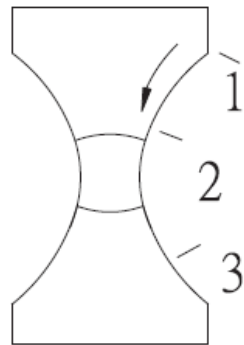
張力值小



張力值大



例 2.第 1-2 段工程為自動換段(必須搭配同步定位器使用)。



張力值=700，針數=100。

張力值=600，針數=120。

張力值=800。

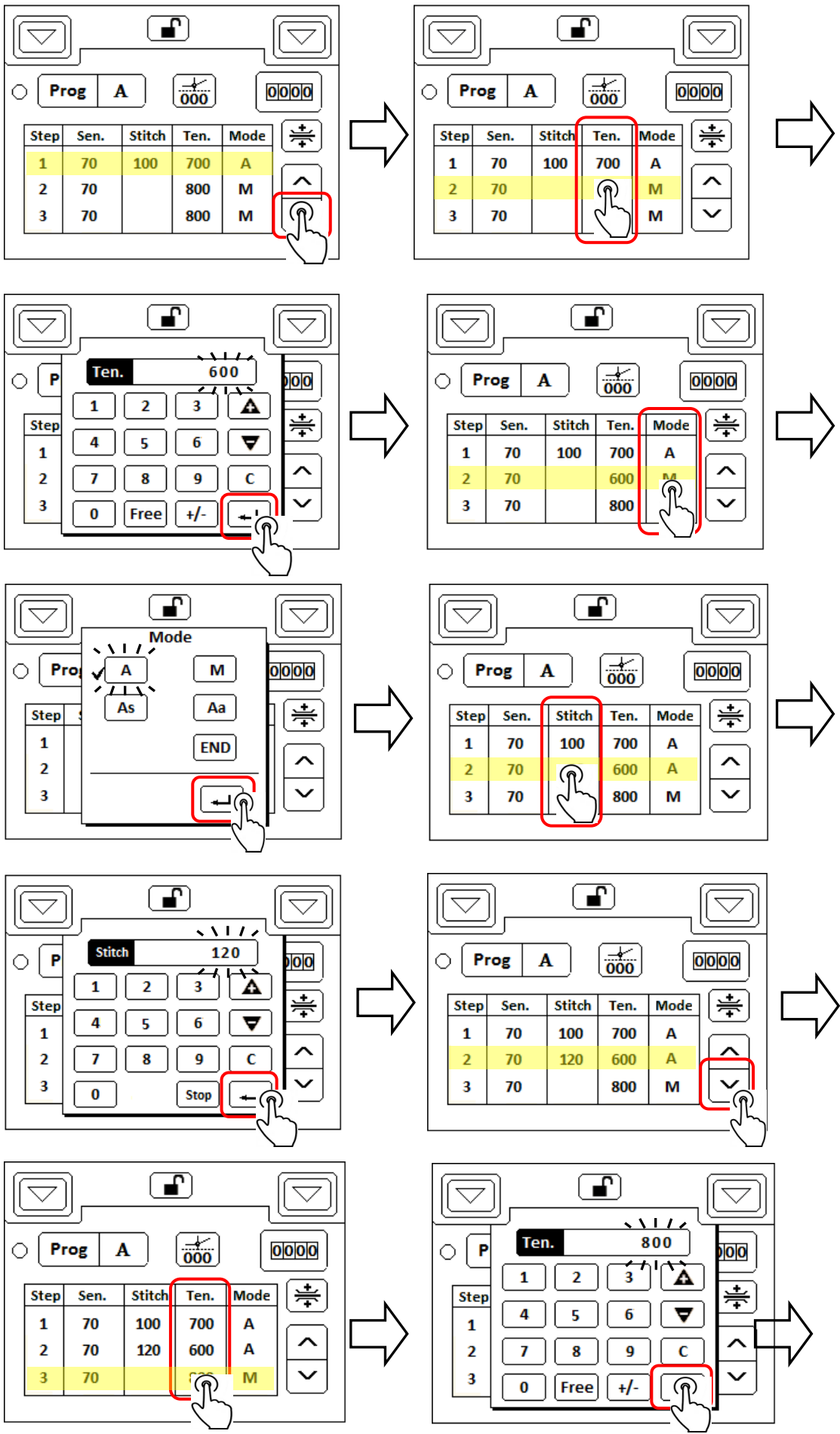
操作說明:

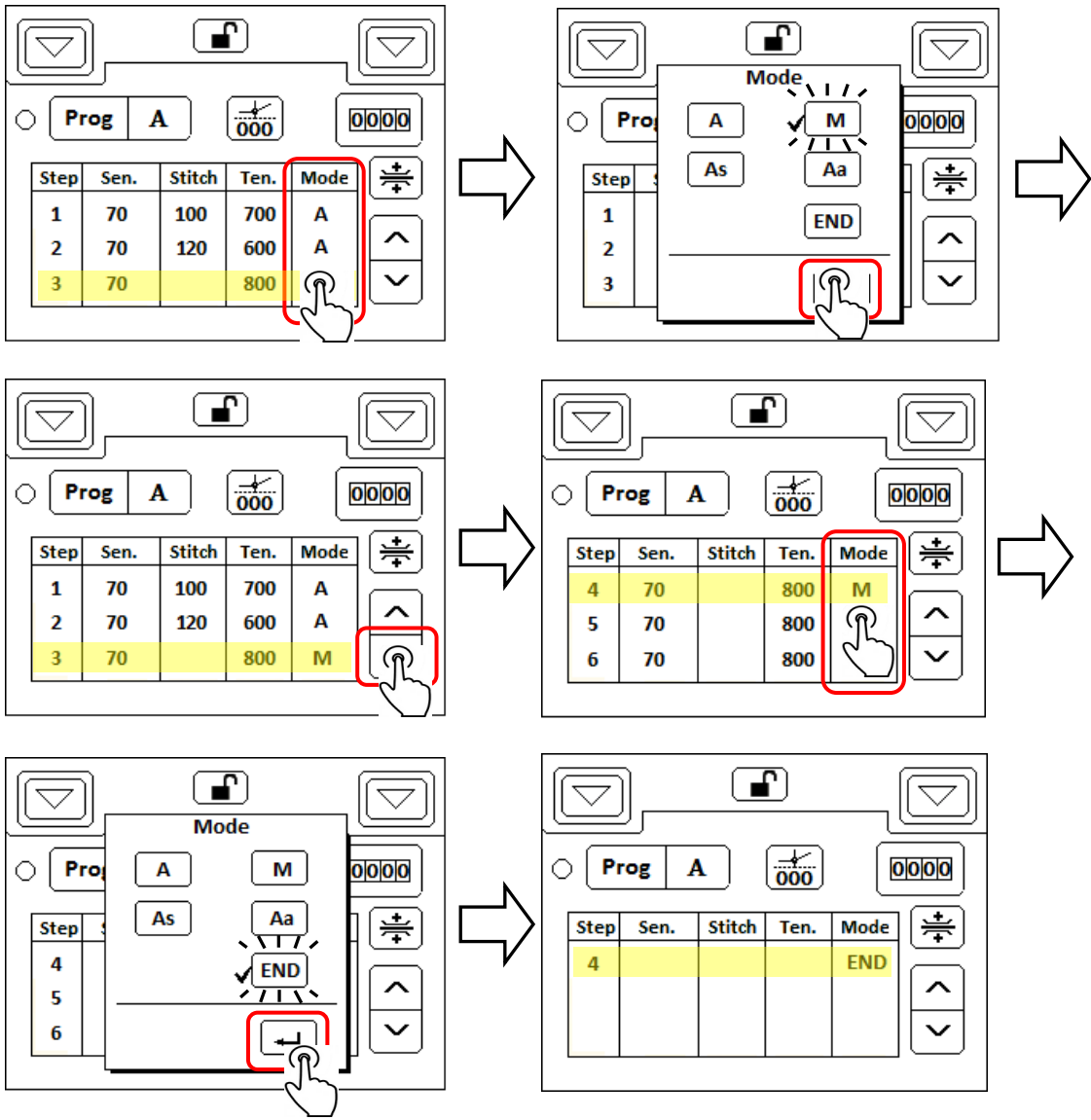
The sequence of operations is as follows:

- Initial program state: Prog A, 0000. Table:
 

Step	Sen.	Stitch	Ten.	Mode
1	70		800	M
2	70			M
3	70			M
- Tension field is highlighted and edited to 700.
- Mode menu is shown with 'M' selected.
- Stitch field is highlighted and edited to 100.
- Final program state: Prog A, 0000. Table:
 

Step	Sen.	Stitch	Ten.	Mode
1	70		700	A
2	70		800	M
3	70		800	M

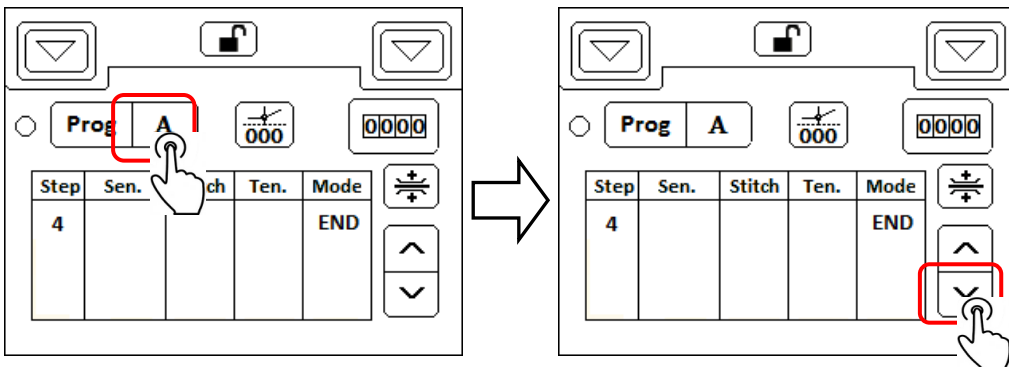




歸零:

步驟 1.

步驟 2.



## 8. 提示代碼和錯誤代碼

### 8-1.提示代碼表

N 開頭的代碼為提示代碼,主要提示使用者下一步要執行的動作,或回報執行的結果。

代碼	顯示訊息	說明
N064	Load cell calibration OK	荷重元件 0 刻度校準成功。
N065	Load cell calibration OK	荷重元件滿刻度校準成功，請取下 1.8 公斤的砝碼。
N066	Pls remove tape and weights on the load cell then press any key...	請移走 LoadCell 上的布料和砝碼。
N067	Pls hang 1.8KG of weights on the load cell then press any key...	請在荷重元上掛 1.8 公斤的砝碼。
N074	tape thickness sensor calibration OK	鬆緊帶厚度檢知傳感器校準完成。
N076	Pls remove tape on the auxiliary roller and handle bar back to original position then press any key...	請拿開副輪上的帶子和將把手復位，然後按任何鍵...
N098	Save parameters ok	存入出廠設定值完成。
N099	Please reboot	請重新開機。
N200	Reset system? all params will be lost	確認是否重置整個系統? 按” Yes” 後電控箱的參數將會全部被重置。
N201	Power Off	斷電提示。
N202	restore default setting?	確認是否回復出廠設定值? 按” Yes” 後所有參數會回復成出廠設定值。
N205	Auxiliary roller handle is opened	副動輪把手已經被打開。

## 8-2.錯誤代碼表

E 開頭的代碼為錯誤代碼，代表系統發生故障或操作錯誤，請依照表中的建議排除問題。

代碼	顯示訊息	說明
E050	memory read error	記憶體讀取失敗，請聯絡售服維修人員。
E051	memory write error	記憶體寫入失敗，請聯絡售服維修人員。
E052	Calibration value read error	校驗值讀取失敗，請檢查張力裝置主體與電控箱之間的接線是否有插緊，或接線是否接觸不良。
E053	Calibration value write error	校驗值寫入失敗，請檢查張力裝置主體與電控箱之間的接線是否有插緊，或接線是否接觸不良。
E060	Load cell calibration fail	荷重元件內部校準失敗，請檢查張力裝置主體連接到電控箱的接線是否有插緊，或接線是否接觸不良。
E061	Load cell calibration fail	荷重元件無負載校準失敗。 1. 請檢查張力裝置主體連接到電控箱的接線是否有插緊，或接線是否接觸不良。 2. 檢查鬆緊帶是否已經從荷重元圓桿上移除。
E062	Load cell calibration fail	鬆緊帶滿負載(1.8KG)校準失敗。 1. 請檢查張力裝置主體連接到電控箱的接線是否有插緊，或接線是否接觸不良。 2. 檢查荷重元圓桿上是否已掛上滿載校驗用的 1.8 公斤砝碼。 3. 檢查荷重元圓桿上是否有機構干涉。
E063	Read tension fail	讀取鬆緊帶張力值失敗，請檢查張力裝置主體連接到電控箱的接線是否有插緊，或接線是否接觸不良。
E071	tape thickness sensor calibration fail	鬆緊帶厚度檢知傳感器校準失敗。 1. 請檢查張力裝置主體連接到電控箱的接線是否有插緊，或接線是否接觸不良。 2. 檢查鬆緊帶是否已經從副動輪上移除。 3. 檢查副動輪把手是否有關上。
E073	Read tape thickness fail	讀取鬆緊帶厚度失敗，請檢查張力裝置主體連接到電控箱的接線是否有插緊，或接線是否接觸不良。
E075	Detect abnormal thickness of the tape	鬆緊帶厚度檢知異常。 1. 檢查鬆緊帶是否不正常的纏繞在主動輪或副動輪上。 2. 檢查鬆緊帶厚度檢知設定頁面的設定是否正確(請參照 5-4.鬆緊帶厚度檢知設定頁面的說明)。
E077	Load cell overload warning	荷重元過載警告。 1. 檢查鬆緊帶送帶的順暢度，排除不正常的纏繞或勾帶。 2. 將參數 11(overload alarm)的設定值調大。
E100	TP and MB link fail	觸控螢幕和電控箱無法互相通訊，請檢查觸控螢幕連接到電控箱之間的接線有插緊，或接線是否接觸不良。

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Violators will be prosecuted





## TENSION TYPE COMPUTERIZED METERING COUNTER DEVICE

### OPERATION MANUAL



**MODEL : HCT-E9U-M**



**ENGLISH**

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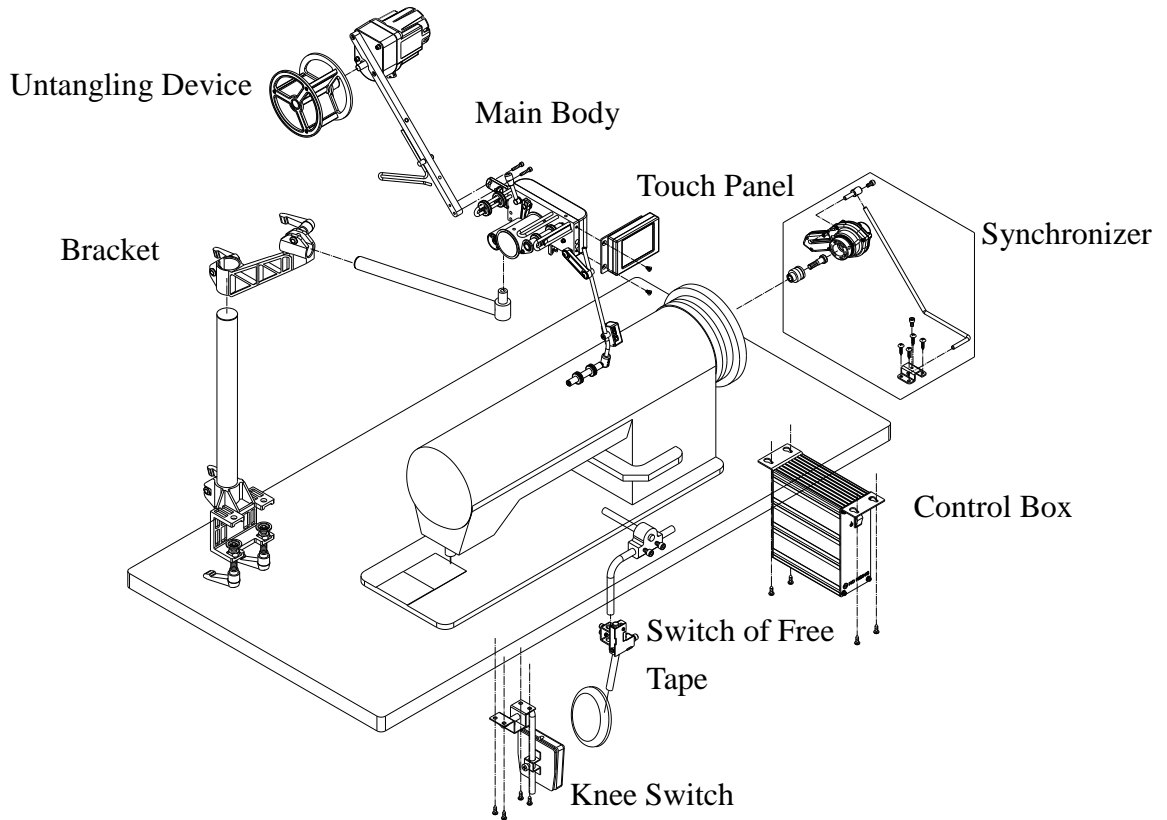
網址 / WEBSITE : <http://www.hurg.com.tw/>

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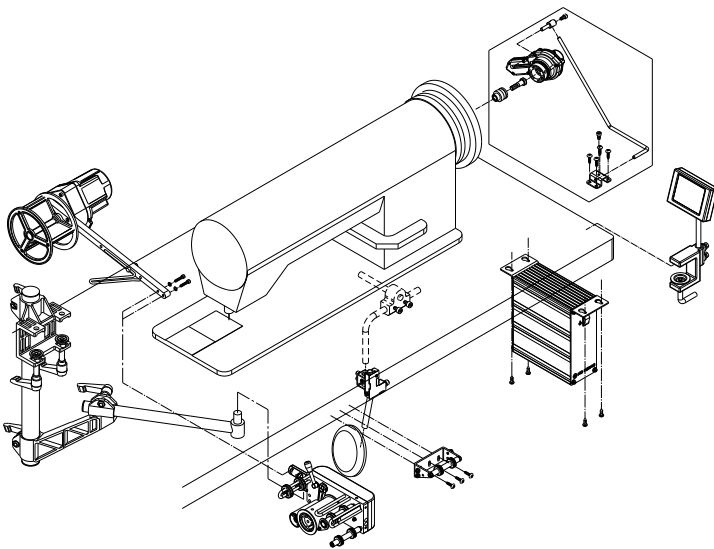
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# 1. Installation

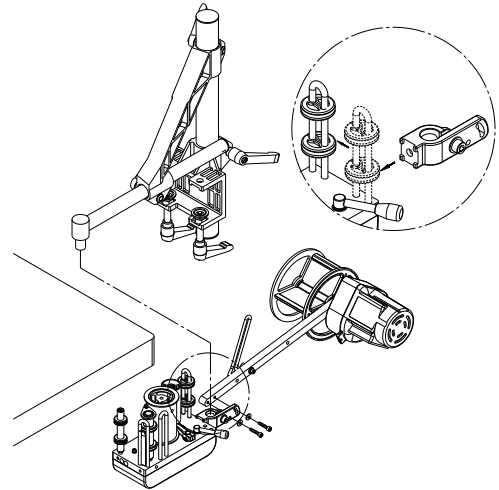
HCT-E9U-M Upper Feeder



HCT-E9B-M Down Feeder



HCT-E9S-M Side Feeder

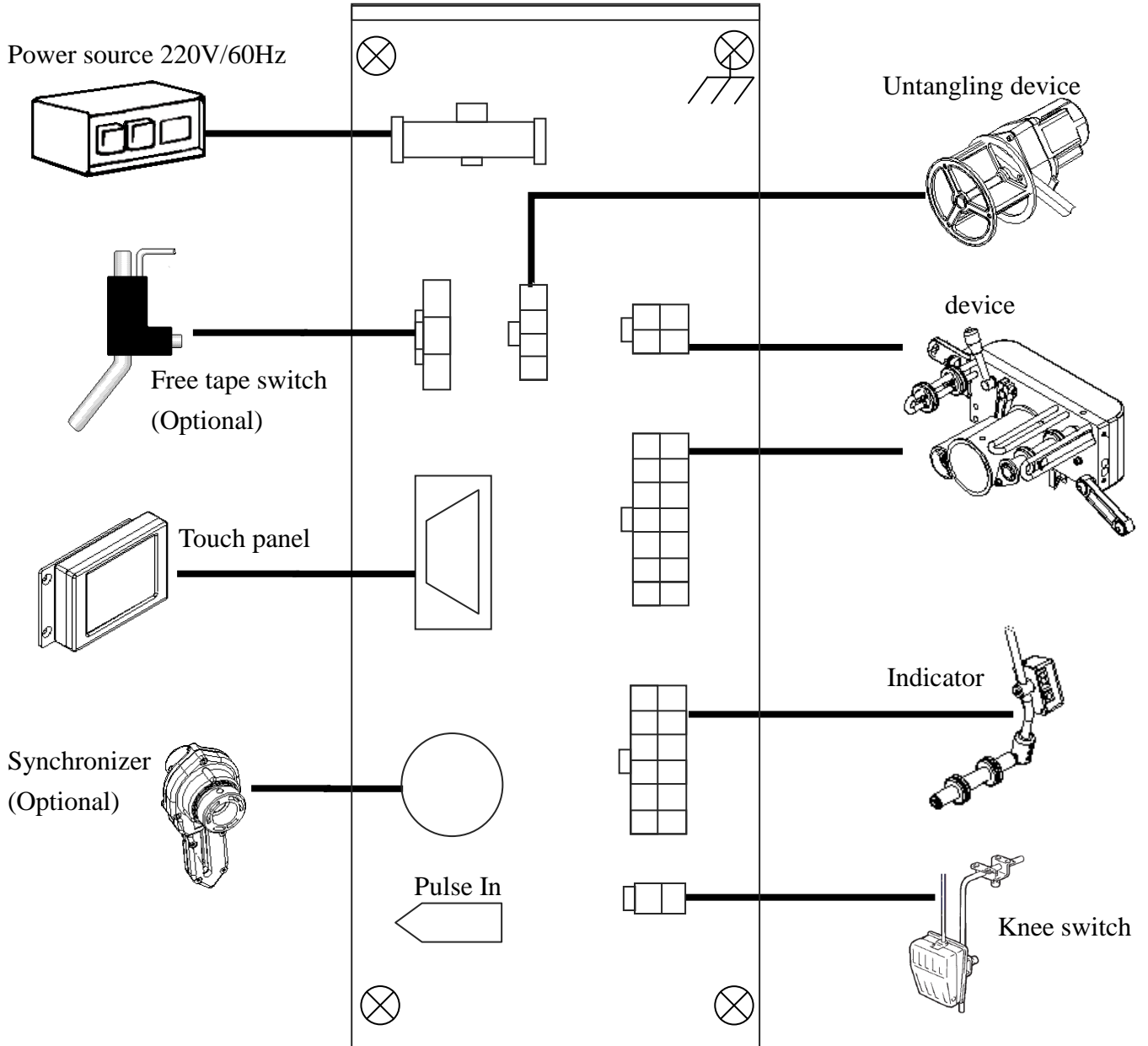


## 1-1. Connections of control box



### CAUTION

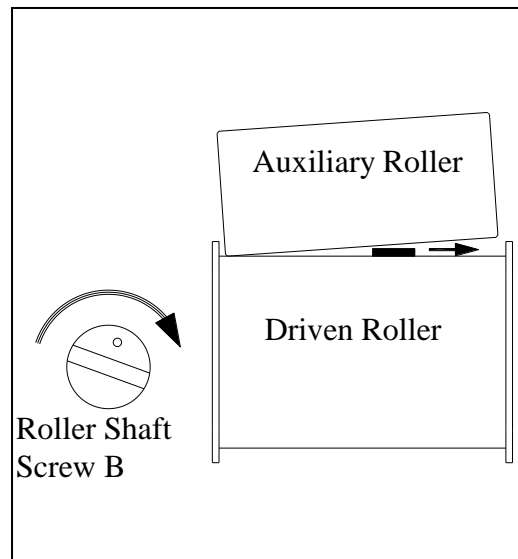
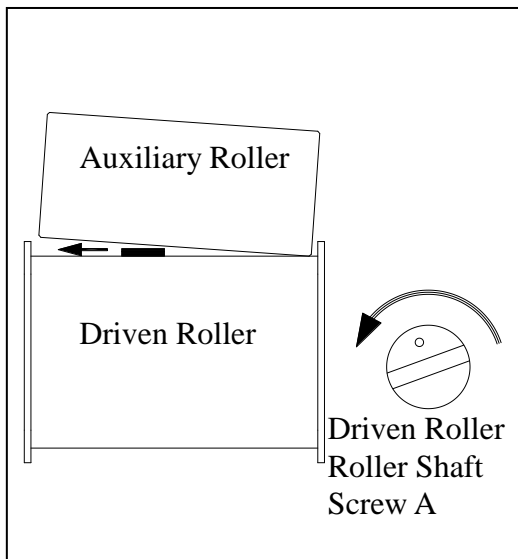
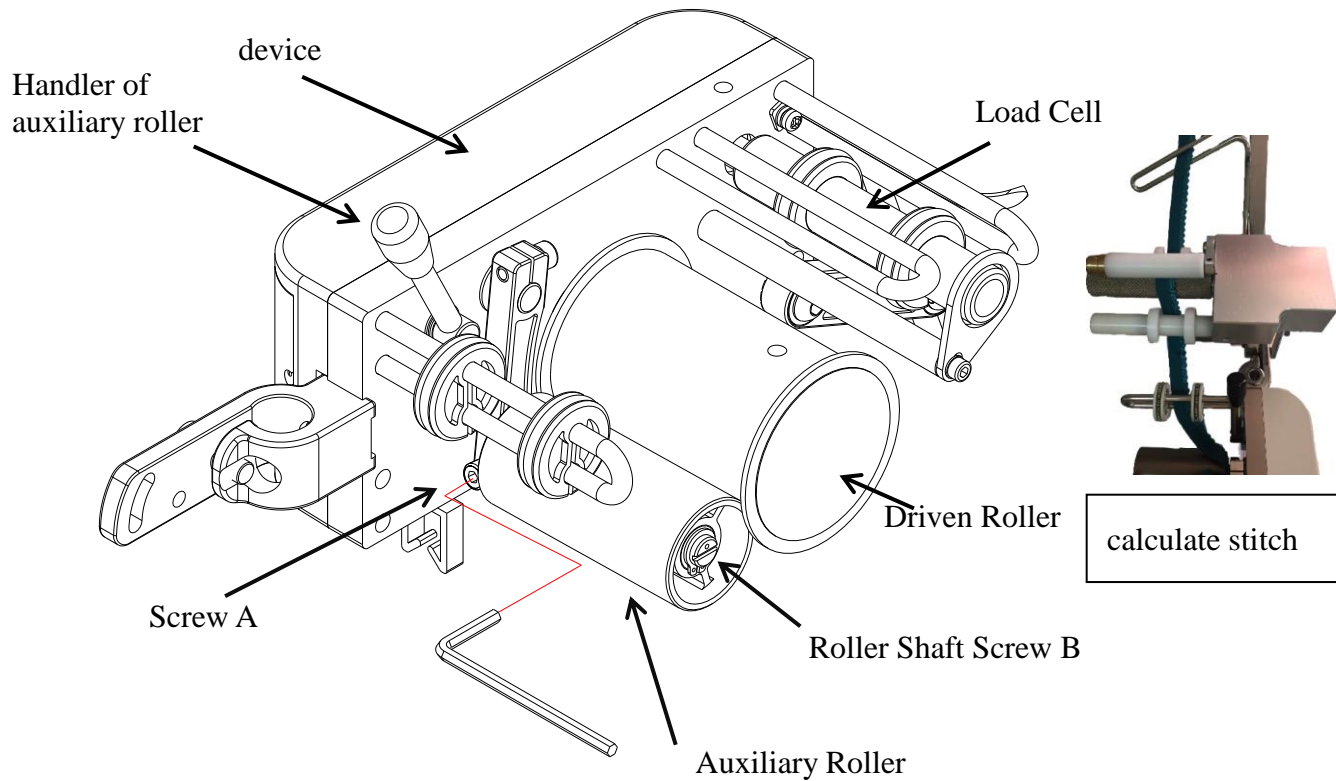
1. Only the authorized technicians are allowed to conduct the cable connections.
2. Always turn the power off and unplug the power cord before conducting or checking the connections.



## 2.Adjustments

### 2-1.Adjusting the feeding shift of tape

If the auxiliary roller is not parallel to the driven roller, the tape will be misaligned to the right or the left. To correct the misalignment, loosen screw A on the roller shaft, and turn the roller shaft screw B until the tape feeds straight and aligns perfectly.



### 3.Boot page









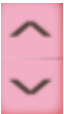





3. Main software Ver. xxx.yyy  
Displays the current operating software version.
4. Touch panel Ver. xxx  
Displays the software version of the touch panel.

### 4. Sewing operation mode

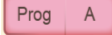
#### 4-1. Sewing mode



Icon	Description
	Lock key at left side menu: 1. Press  to lock menu. 2. Press  then key in a correct password to unlock. 3. Functions on the left side menu are prohibited when it is locked.
	Press to pull down menu on the left/right side(please refer to 4-3)
	Fabric detected indication (No function without sensor), LED on: detected, LED off: not detected.


Icon	Description
	Press to change the sewing program no. Maximum of 9 sewing programs. A ~ I.
	stitch number: Press to copy the current display stitch number to the stitch field of the working sewing step.
	Piece counter, press and hold for 3 seconds to reset the counter. (to display or hide the piece counter please refer to 4.3)
	Free to change tension control:  with tension control,  free tension control.
	Step selector, press to move the selection bar.
	Step number: 3. Displays the Step number. 4. Press to activate TK setting, to set the stitch number of tape cut at start and end (please refer to 4-2 Step9)
	Press to adjust sensitivity. (please refer to 4-2)
	Press to set the stitches of current step. (please refer to 4-2)
	Press to adjust the tension range. (please refer to 4-2)
	Press to select Sewing mode. (please refer to 4-2)

## 4-2. Step data setting

Step 1. Press  to edit the Program A~I.

Step 2. The selection bar displays on the Step 1. Press  to pop up the keyboard.

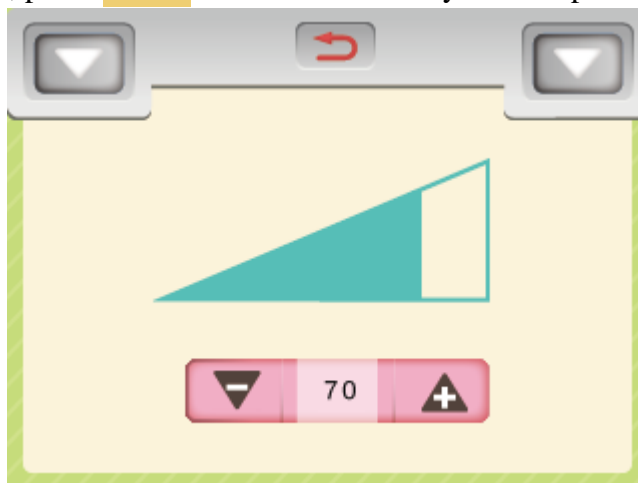



Step 3. Enter the required tension value. Then press the  to save the value and to close the keyboard.

Note: 1. Tension values range from 1 to 999. The smaller the value, the tighter the tension.

2. Press <Free> to set the free tension value.

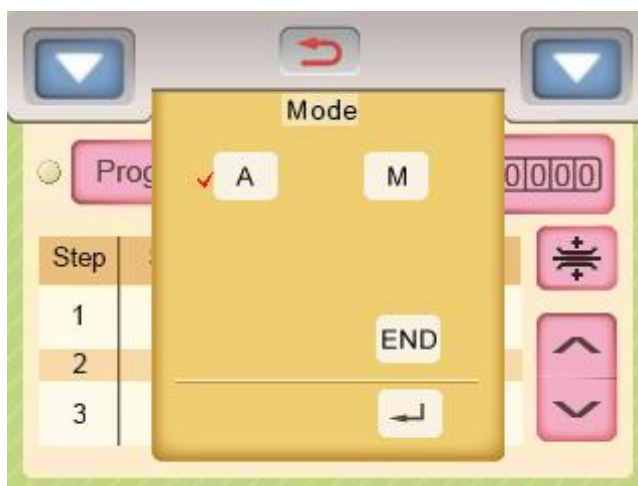
Step 4. If the tape vibrates, press **Sen.** to set the sensitivity of the tape.





Step 5. Reduce the value of the sensitivity until the vibration disappears. Then press  to return to the sewing mode.

NOTE: As long as the vibration of tape disappears, the larger the value of sensitivity, the more accurate the control of tension.

Step 6. Press **Mode** to select Sewing mode A, M or END.



NOTE:

1. Sewing mode selection:
  - A (automatic): The sewing steps of programs will run automatically and the stitches of steps will be completed sequentially as settings.
  - M (manual): The sewing steps of programs will run manually by an external Step change switch.
  - END (ending mode): Ends the current sewing program and prohibits sewing stitches in this step.
2. Setting the END mode in Step 1 is not allowed.
3. Press  to save the settings and back to the Sewing mode.
4. Press  to cancel the settings and back to the Sewing mode.



Step 7. You must enter the number stitches when the sewing mode is set to A. Please press **Stitch** to display the keyboard.



Step 8. Enter the required the number of stitches .

Press **↵** to return to the Sewing mode.

Step 9. Set all settings of Steps required for the corresponding Program (A~I) according to the instruction described in the procedure Step 1-9; finally, set the last Step as END mode.

Example:

Step 1: Sensitivity:70, Tension:800, Mode:M

Step 2: Sensitivity:70, Stitches:80, Tension:700, Mode:A

Step 3: Mode:END

Setting data as shown:

Step	Sen.	Stitch	Ten.	Mode
1	70		800	M
2	70	80	700	A
3				END

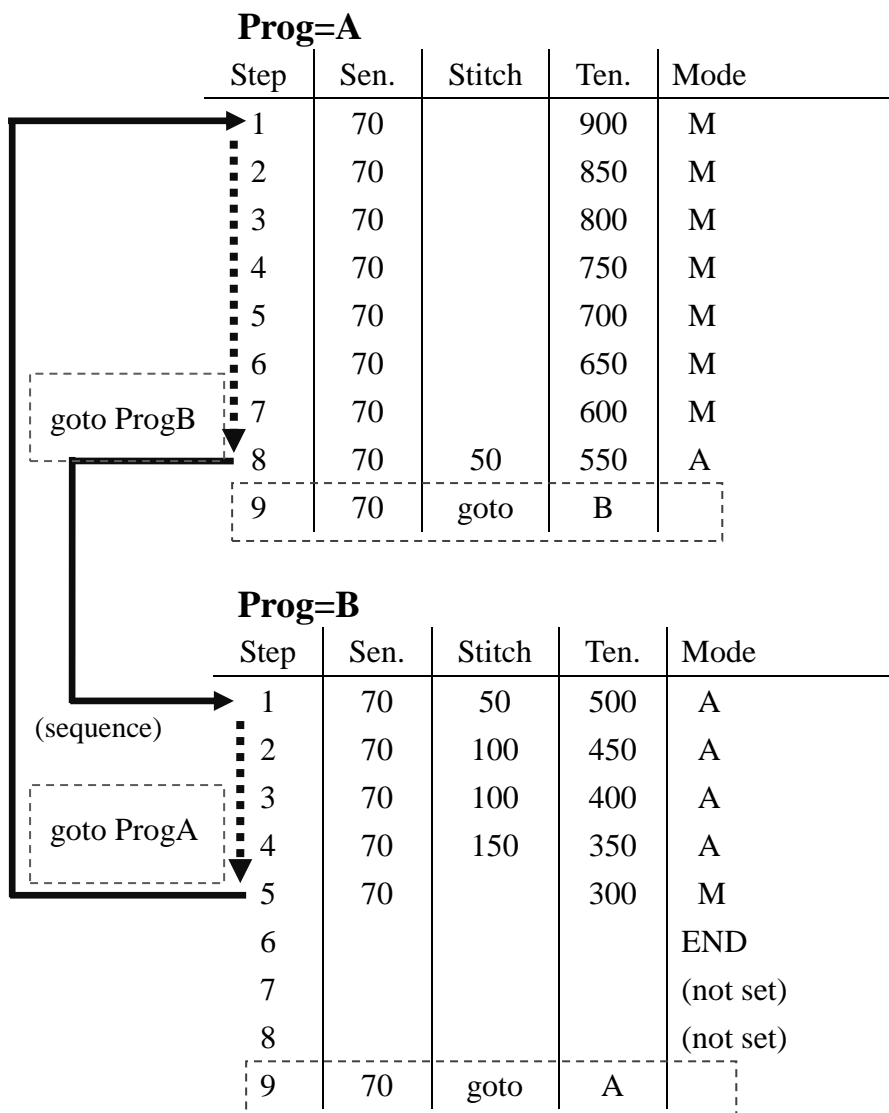
Step 10. The maximum number of Steps in one Program (A~I) is 8. In case of 13 Steps designed, the Step 9 in Program A allows you to continue the Steps to the next Program (Program B) by setting the Step 9 in Program A with the data "goto B" as shown below.

The system allows you to design a maximum number of 27 Steps in total for a specific project.

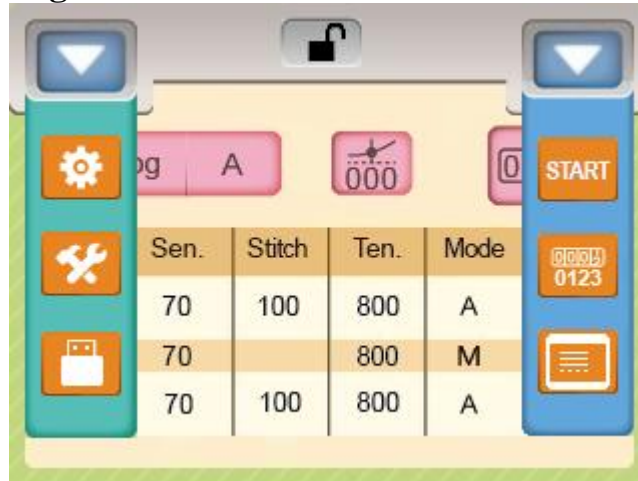
Example:





- step 1: Sensitivity:70, Tension:900, Mode:M
- step 2: Sensitivity:70, Tension:850, Mode:M
- step 3: Sensitivity:70, Tension:800, Mode:M
- step 4: Sensitivity:70, Tension:750, Mode:M
- step 5: Sensitivity:70, Tension:700, Mode:M
- step 6: Sensitivity:70, Tension:650, Mode:M
- step 7: Sensitivity:70, Tension:600, Mode:M
- step 8: Sensitivity:70, Stitches:50, Tension:550, Mode:A
- step 9: Sensitivity:70, Stitches:50, Tension:500, Mode:A
- step 10: Sensitivity:70, Stitches:100, Tension:450, Mode:A
- step 11: Sensitivity:70, Stitches:100, Tension:400, Mode:A
- step 12: Sensitivity:70, Stitches:150, Tension:350, Mode:A
- step 13: Sensitivity:70, Tension:300, Mode:M





Setting data in Program A and B as shown:




### 4-3. Left side menu and right side menu



Left side menu	
	Press to pull down the left side menu
	Press to enter the parameter setting mode
	Press to enter the testing mode
	Reserved

Right side menu	
	Press to pull down right side menu
	Start/stop the tape feeding device
	Press to display/hide the piece counter.
	Group selection

NOTE: You can use left side menu when  is shown.

4-3-1.  Start/stop the tape feeding:

Start: Stops tension control and untangling device for tape insertion or maintenance.

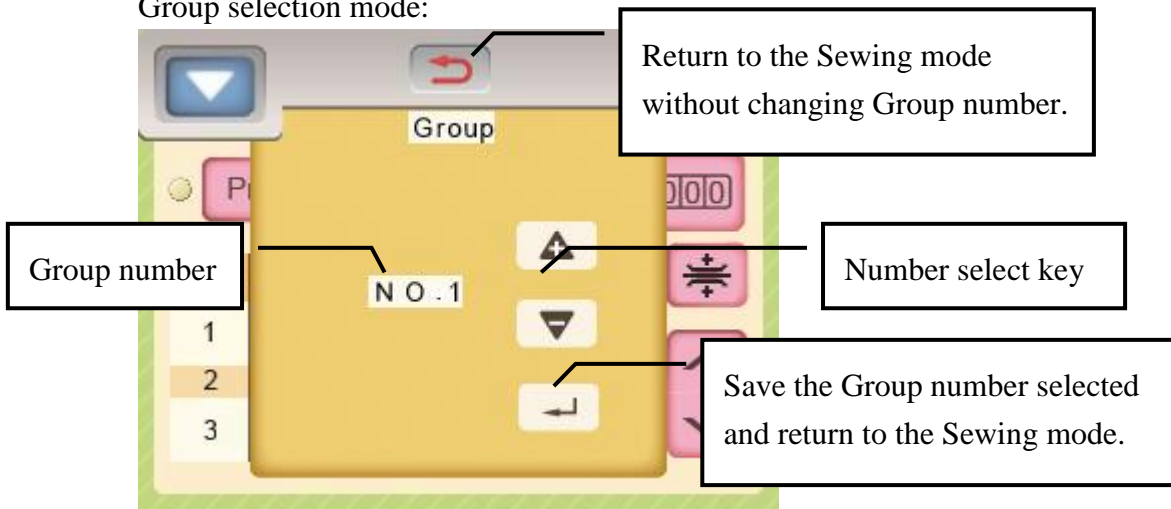
Stop: Start tension control and untangling device.

4-3-2.  Display/hide the piece counter.

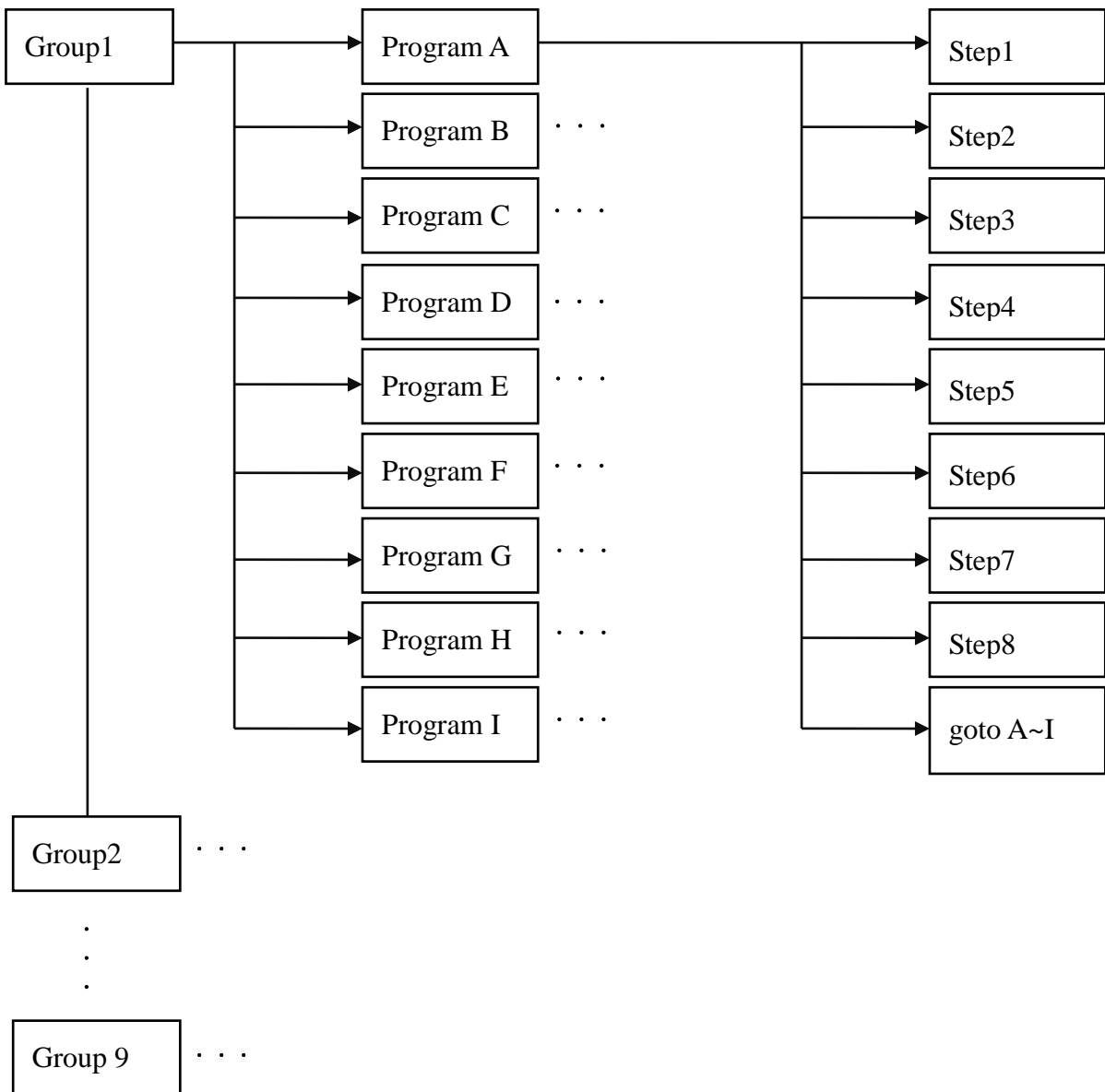
4-3-3.  Group selection:

There are 9 selectable groups. Each group consists of 9 Programs (A~I) and each Program allows you to design 8 steps. Group selection page is shown as below.

Group selection mode:

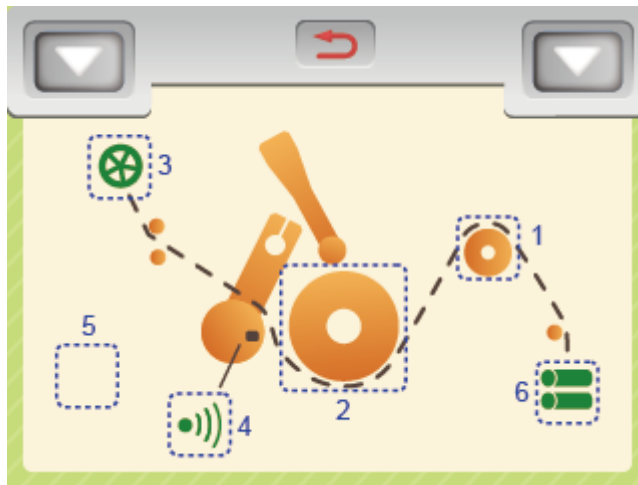








Group structure:




## 5. Testing mode

Press  at left side menu to enter the Testing mode, the following menu is shown.

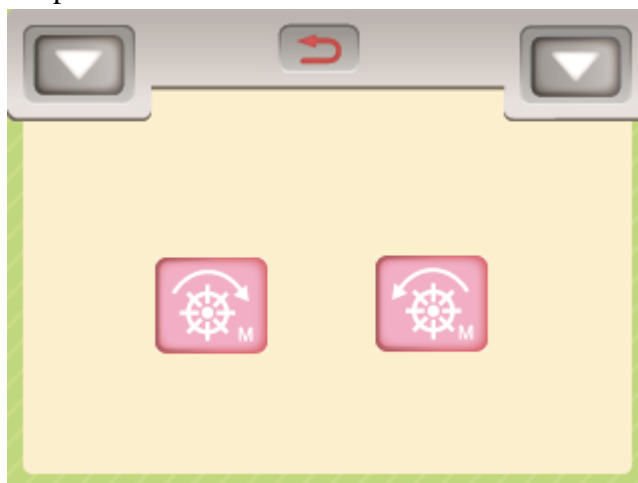


Icon	Description	Icon	Description
	Reserved.		Tape thickness detector settings.
	Driven Roller test.		Reserved.
	Untangling device settings.		Accessory test.


### 5-1. Driven roller test

Press  to enter the driven roller test menu as shown below.


Caution: Ensure that no tape is on the driven roller.



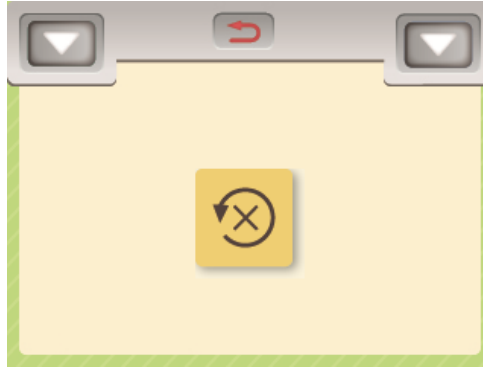
Step 1. Press  and the driven roller will run clockwise for 2 seconds.

Step 2. Press  and the driven roller will run counterclockwise for 2 seconds.

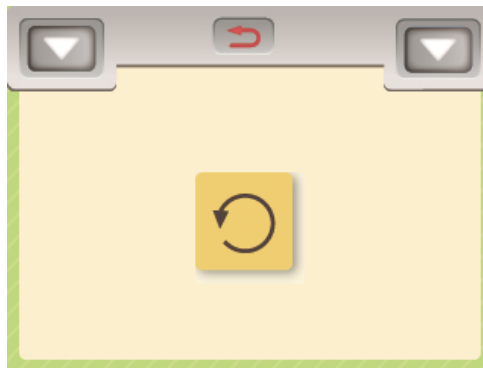
## 5-2. Untangling device setting mode

Press <sup>3</sup> to enter the untangling setting mode. There are 3 possible sub modes in this mode.

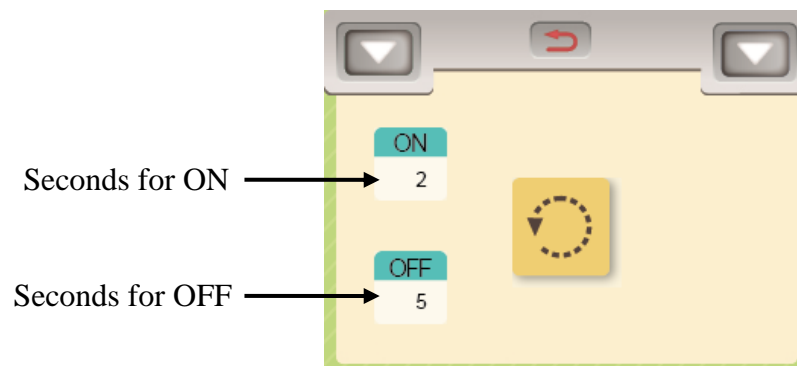
5-2-1. Off mode: Untangling device stops working.




5-2-2. Synchronous mod: The driven roller rotates synchronously with the untangling device.

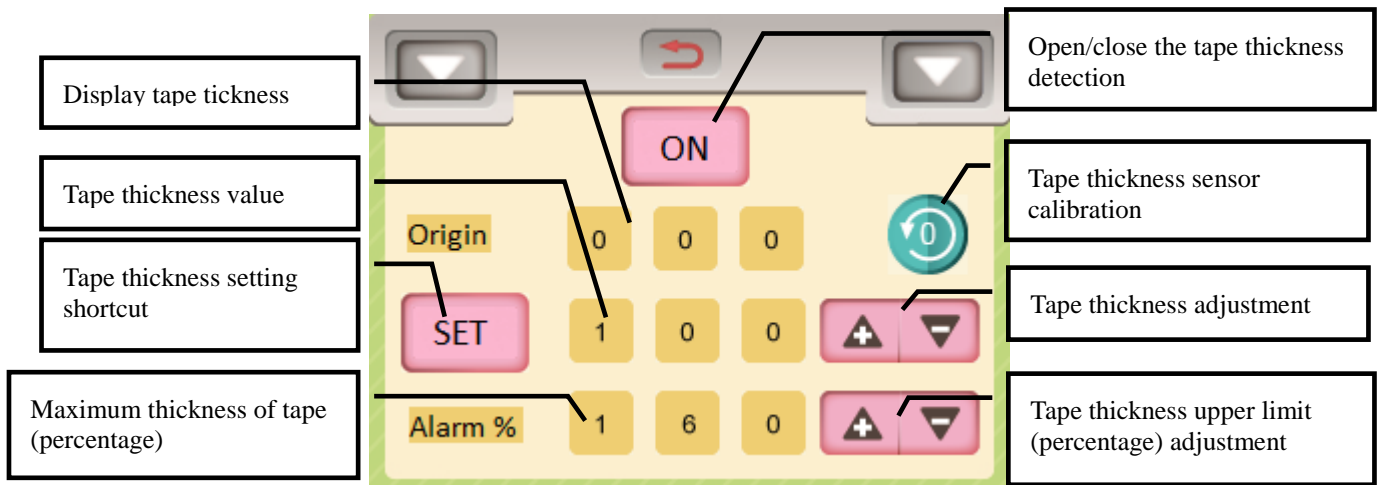


5-2-3. Intermittent mode: Press On/OFF to pop up the keyboard, then enter the seconds for ON/OFF the untangling device.



### 5-3. Thickness detecting mode

Press  to enter the Thickness detecting mode.






The setting steps are as follows:

Step 1. Press .

Step 2. Remove any tape from the driven roller and the auxiliary roller, then close the auxiliary roller handler. The value of thickness (Origin) should read between -5~+5. If the value of thickness is incorrect, refer to Step 3 for performing the calibration of thickness detecting sensor.


Step 3. Press <Tape thickness sensor calibration>, menu shows. "N074:tape thickness sensor calibration OK". The value of thickness should read between -5~+5.

Step 4. Place the tape over the driven roller and the auxiliary roller to get the value of tape thickness.

Step 5. Press  to copy the tape thickness to  .

Step 6. The alarm setting can be set to a maximum thickness of 200% and the system alarm "E075" alerts when the thickness of tape exceeds the maximum setting.

### 5-4. Accessory test

Press  to enter the Accessory test mode for the optional device.




Description of Accessory test:





5-4-1.  Reserved

5-4-2.  Reserved

5-4-3.  Reserved

5-4-4.  Reserved

5-4-5.  External switch and state display.  
Used for an external switch activation status display.

Display	Description
	No external switch in use
	Used for an external knee switch activation status display
	Used for external Step change switch activation status display
	Free tension switch activated status display.

5-4-6.  Reserved


5-4-7.  Reserved



## 6. Parameter settings mode




**CAUTION** Only authorized technicians are allowed to set the following parameters.

Press  to enter the parameter setting mode.

NO	name	preset value	range	description
5	Free Tension func	norm	norm / tf	norm: Normal mode    tf: TF device mode
6	TF feed timing	160	100~2500	TF feed time (ms)
7	TF speed	50	1~100	TF feed speed,    1:Slowest, 100:Fastest
8	TF sens	70	1~99	TF sensor sensitivity, 1:Most insensitive, 99:Most sensitive.
10	overload func	Off	Off / On	Load cell overload protection.
11	overload alarm	150%	120%~200%	Alarm is activated if overload occurs on the load cell.
16	buzzer on-off	On	Off / On	Buzzer switch.
18	restore default	nop	nop / run	Refer to 6-1 to restore default setting.
19	lcd auto pwr off	off	off / logo /dark	off: Disable logo: LCD remains on for one minute, then shuts off. dark: LCD remains on for one minute, then shows logo.
20	lcd brightness	99	0~99	To set the brightness of the LCD.
29	free tape tension	999	1~999	Tension setting when in the tension-free mode.
30	Knee sw func	step	off/tk/step /rele/mct/toe	Knee switch function(optional): off: Disable    rele: Free tension tk: Activate TK device (note.1)    mct: Reserved step: Change to next section    toe: Reserved
31	Ext key func	step	off/tk/step /rele/mct/toe	External switch function: off: Disable    rele: Free tension tk: Activate TK device (note.1)    mct: Reserved step: Change to next section    toe: Reserved
45	sewing counter	0	0~9999	Counter setting.
46	synchronizer	inst	noth / inst	Synchronizer(optional), noth: With sync., inst: Without sync.

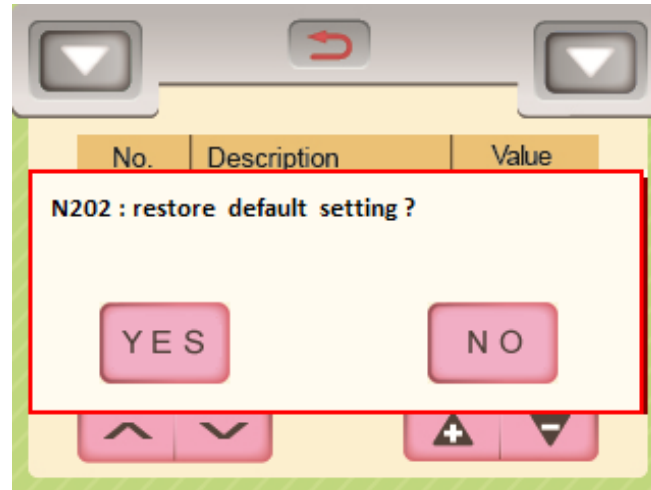
## 6-1.Restore default setting

The procedure to restore default settings is described as follows:

Step 1. Press  at left menu to enter restore default setting page.

Step 2. Shift the selection bar to 18.

Step 3. Press '+' to pop up the following dialog box menu.

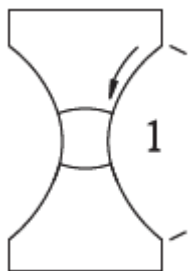


Step 4. Press “YES”, then a prompt code shows "N099:Please reboot".

Step 5. Turn the power OFF then ON, the default settings are restored.

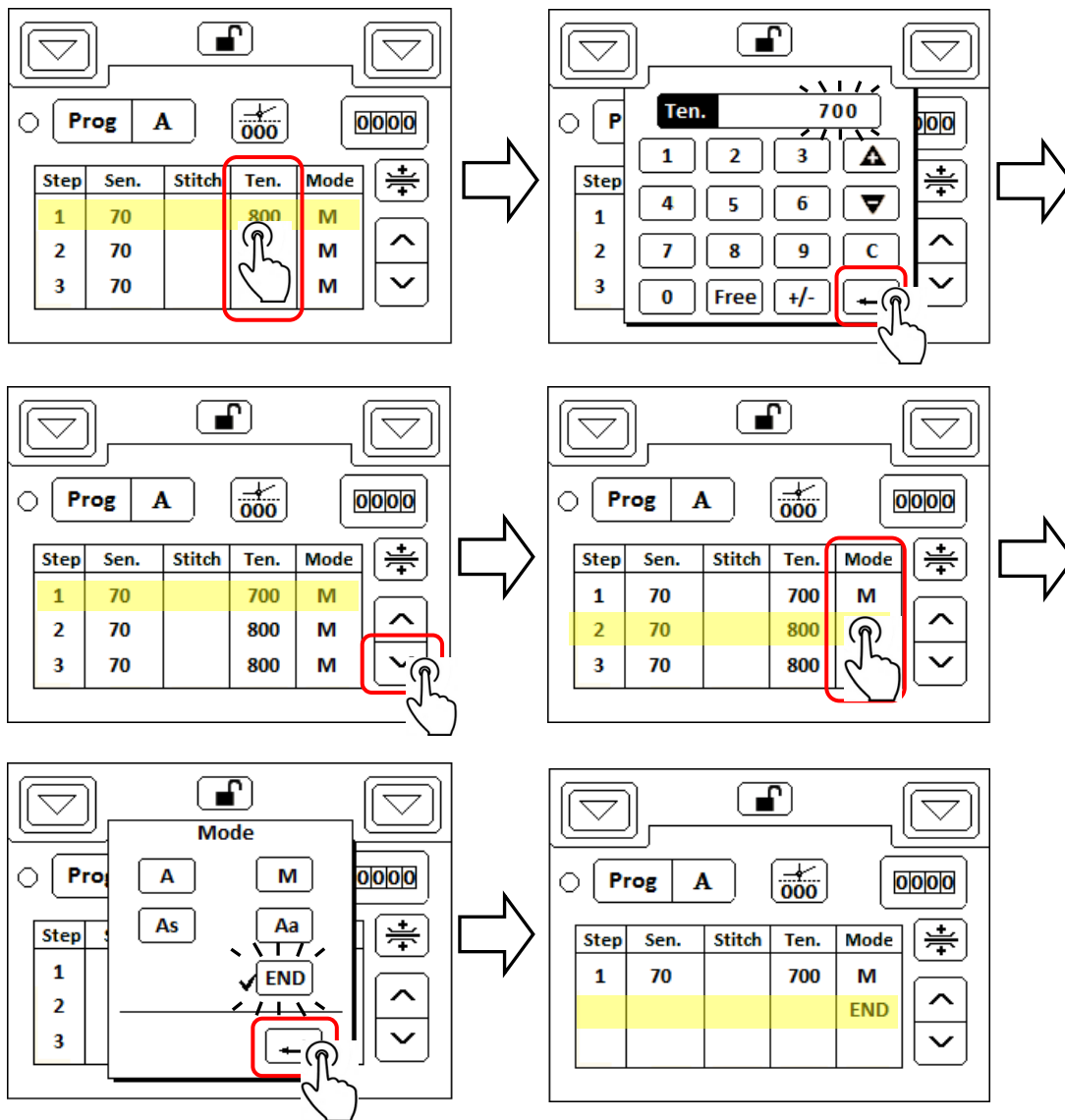
# 7.Operation instruction

Example 1: Single step program with the tension value 700.



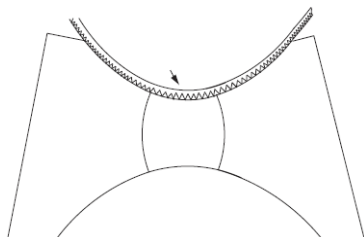
Tension value=700

The procedure is illustrated as follows:

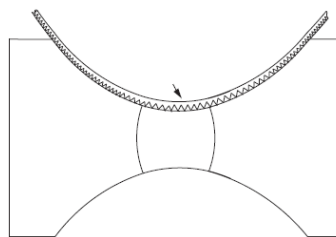


Comparison of tension values adjusted:

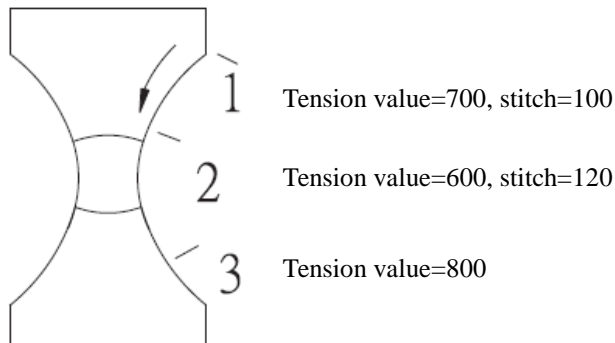
A small tension value



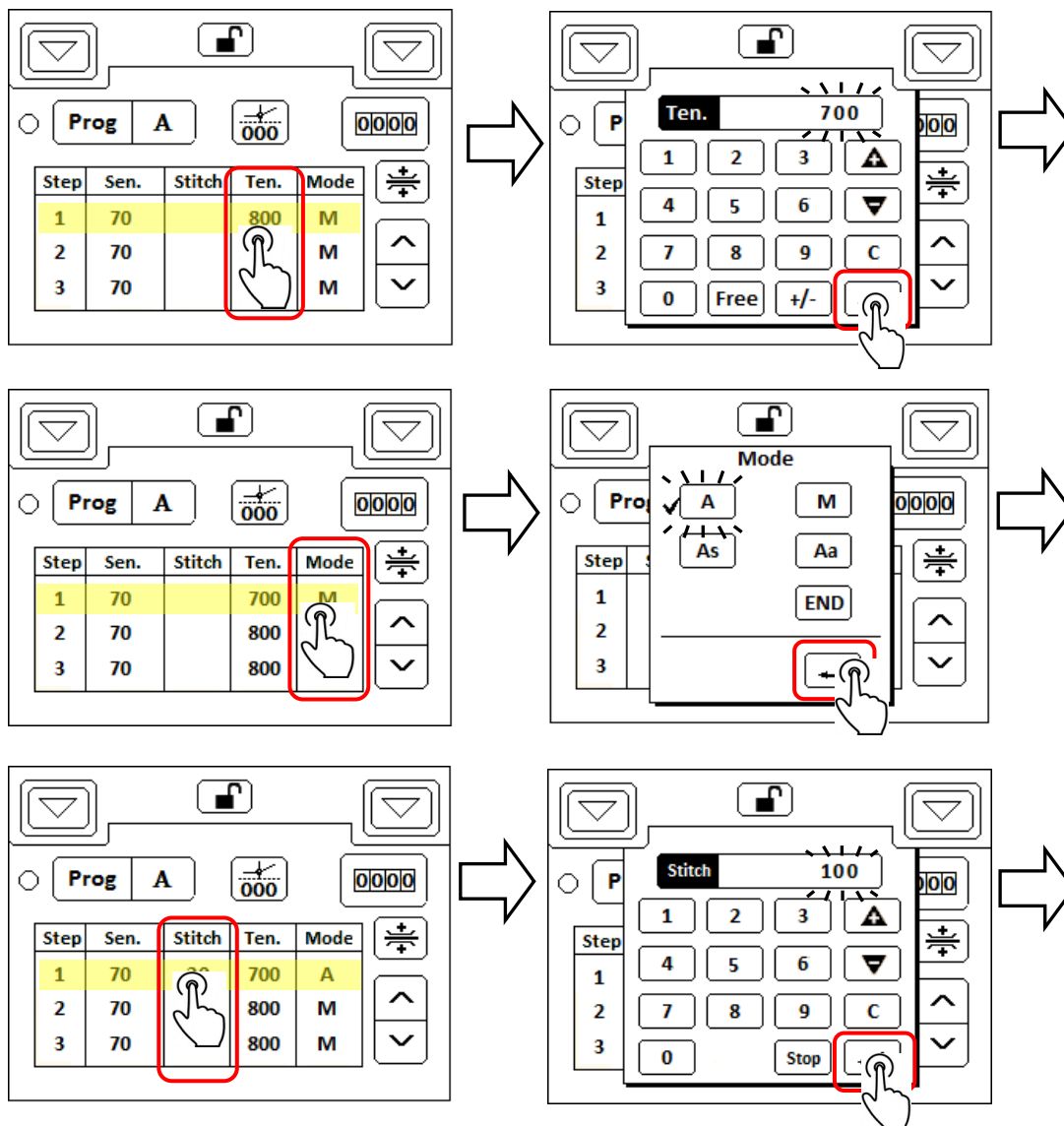
A large tension value

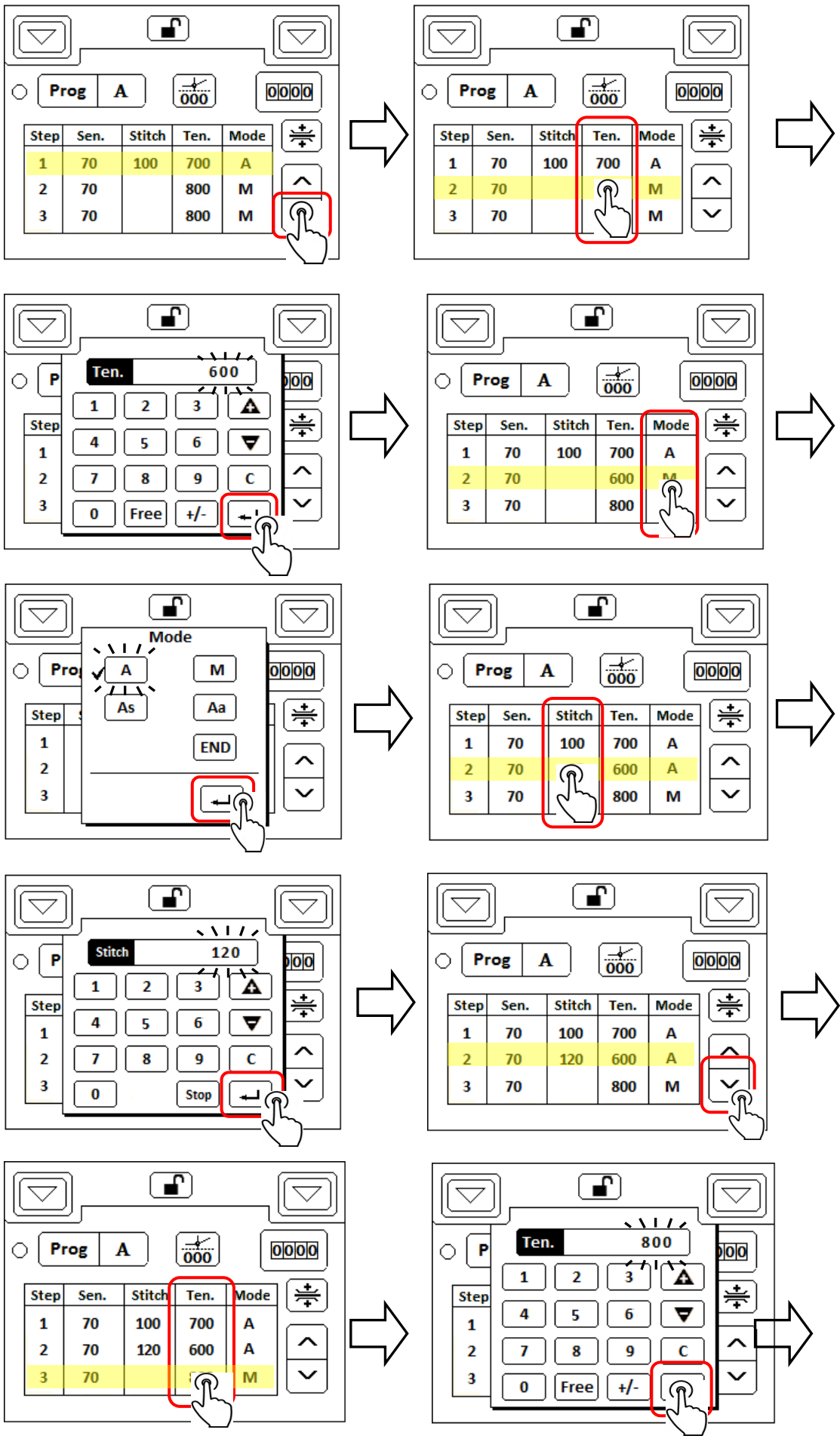


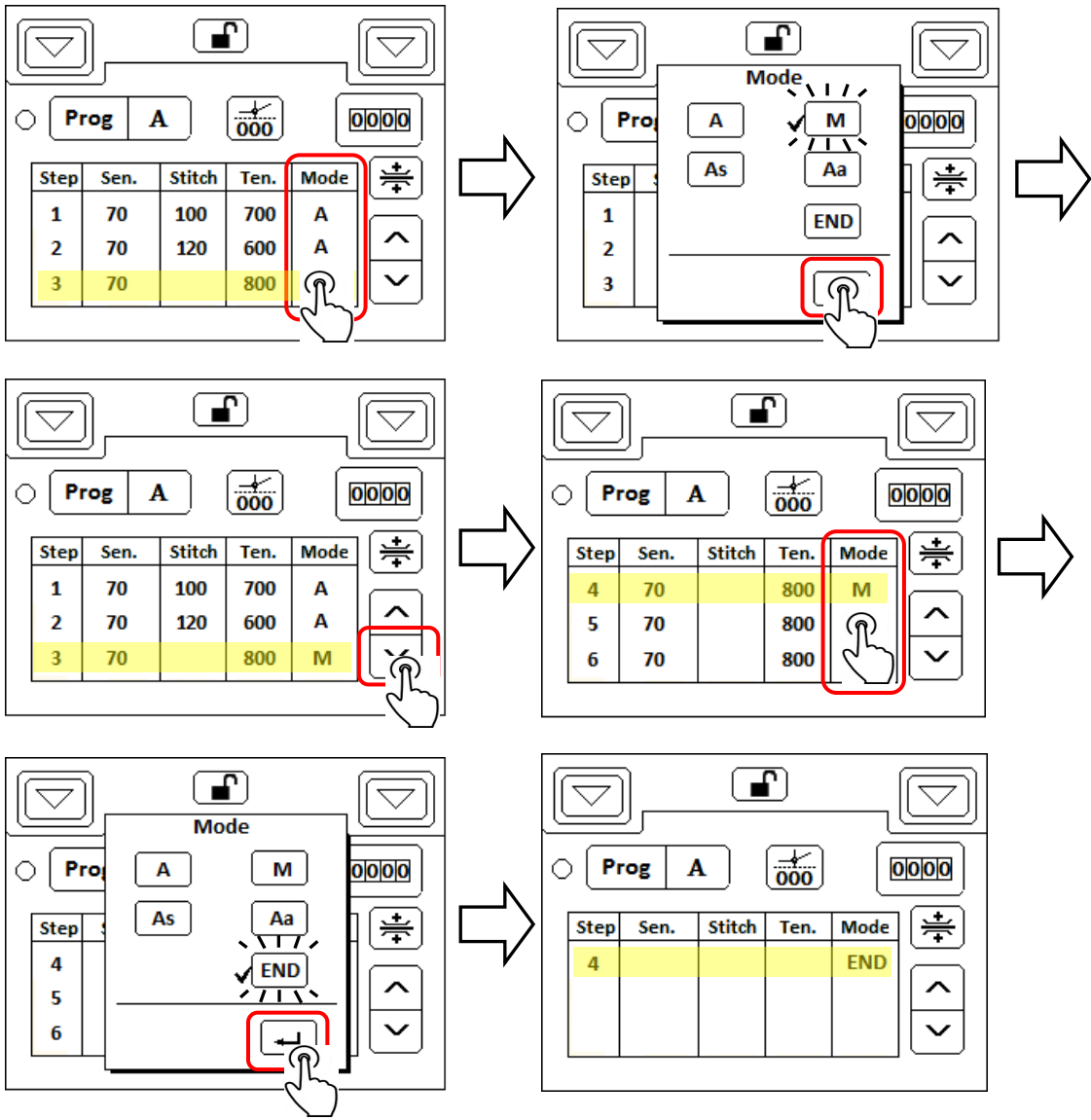
Example 2: Program of 2 steps changed automatically with the tension values and stitches set as shown.



The procedure is illustrated as follows:

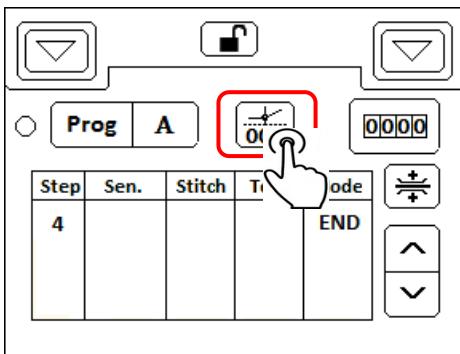




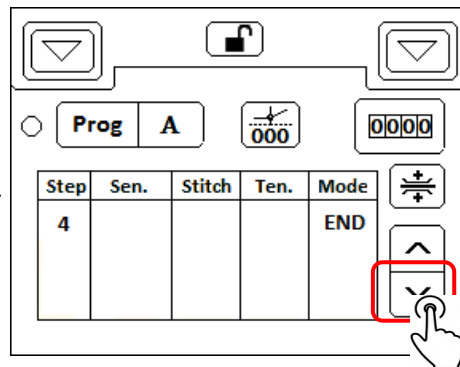


### Nulling operation

Step 1.



Step 2.



## 8. Prompt code and error code

### 8-1. Prompt code

Prompt codes are Arabic numerals with a character 'N' at the beginning. There are used to prompt user the next action to do or the feedback message from the previous action.

Code	Prompt message	Description
N064	Load cell calibration OK	Load cell 0kg calibration is successful.
N065	Load cell calibration OK	Load cell 1.8kgs calibration is successful. Please remove the 1.8kgs weight.
N066	Pls remove tape and weights on the load cell then press any key...	Please remove the fabric and weights on the load cell, then press any key.
N067	Pls hang 1.8KG of weights on the load cell then press any key...	Please hang the 1.8 kg weight onto the load cell.
N074	tape thickness sensor calibration OK	Tape thickness sensor calibration is successful.
N076	Pls remove tape on the auxiliary roller and handle bar back to original position then press any key...	Please remove any tape on the auxiliary roller and handler back to original position, and then press any key...
N098	Save parameters ok	Restoring the default setting is successful.
N099	Please reboot	Turn the power OFF, then turn it ON.
N200	Reset system? all params will be lost	Confirm message for "Reset".
N201	Power Off	Power off.
N202	restore default setting?	Confirm message for "restore". Press "YES" to restore the default value.
N205	Auxiliary roller handle is opened	Auxiliary roller handler is opened.

## 8-2. Error code

Error codes are Arabic numerals with a character 'E' at the beginning. There are used to alert user the system malfunctions occur. Further actions should be taken to conduct the troubleshooting.

Code	Error and failure	Troubleshooting
E050	memory read error	Ask a qualified technician.
E051	memory write error	Ask a qualified technician.
E052	Calibration value read error	Check the cable connection between Control box and Tension device.
E053	Calibration value write error	Check the cable connection between Control box and Tension device.
E060	Load cell calibration fail	Check the cable connection between Control box and Tension device.
E061	Load cell calibration fail	Load cell free calibration failed. 3. Check the cable connection between Control box and Tension device.. 4. Remove the tape on load cell.
E062	Load cell calibration fail	Load cell 1.8kg calibration failed. 4. Check the cable connection between Control box and Tension device.. 5. Hang the 1.8Kg weight on load cell.. 6. Ensure no mechanical obstacle of load cell movement.
E063	Read tension fail	Check the cable connection between Control box and Tension device.
E071	tape thickness sensor calibration fail	4. Check the cable connection between Control box and Tension device. 5. Remove the tape on the auxiliary roller. 6. Close the handler of untangling device.
E073	Read tape thickness fail	Check the cable connection between Control box and Tension device.
E075	Detect abnormal thickness of the tape	3. Ensure that the tape is properly winding around the Driven and Auxiliary roller. 4. Check if a correct value is set (refer to 5-4.)
E077	Load cell overload warning	1. Ensure that the tape is properly winding around the Driven and Auxiliary roller. 2. Increase the setting value of parameter 11.
E100	TP and MB link fail	Check the cable connection between Control box and Touch panel.

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