

SV-860

INSTRUCTION MANUAL

使用說明書

Rev – 02

For safe operation

重要安全事項

1. Prior the use of this product, please read the instruction Manual. Keep this Instruction Manual and the user may read it at anytime when necessary.
使用本產品前請先閱讀本說明書，同時應將此說明書妥善保管以便能隨時查閱。
2. Before turn on the power, be sure to check the power voltage and phase agreeing with the nameplate that indicated in the control box.
電源開啟前請先確認電源的電壓與相數，是否與控制箱銘牌相符。
3. Grounding the machine is always necessary for safe and normal operation.
為了正常安全運轉須安裝地線。
4. Check lubricating oil prior to operation.
操作前請先確認縫紉機潤滑油充足。
5. So as to prevent personal injuries during operation, be careful not to allow your head and hands to come close to the moving parts. Also never try to stop it with external forces.
使用中切勿將頭、手靠近皮帶輪、皮帶、旋梭和天平等移動部份；同時也不可以用外力強制停止移動部份。
6. For the following conditions, turn off the power or disconnect the power plug from receptacle.
發生下列情況時應立即關閉電源開關或者拔下電源插頭：
 - 6.1 For threading needle or replacing bobbin.
穿線和更換旋梭時。
 - 6.2 To plug or unplug any connectors from control box.
插拔控制箱上任何連接線與接頭。
 - 6.3 For maintenance and repairing.
保養與修理時。
 - 6.4 When machine is not at use, inspected or adjusted.
翻抬針車頭、取下皮帶時和機器休息不用時。
 - 6.5 When lightning and thunder occurs.
打雷閃電時。
7. Repairing, remodeling and adjusting works must only be done by appropriately trained technicians or specially skilled personnel.
本產品的修理、改造和調整應由受過專門訓練的技術人員來進行。

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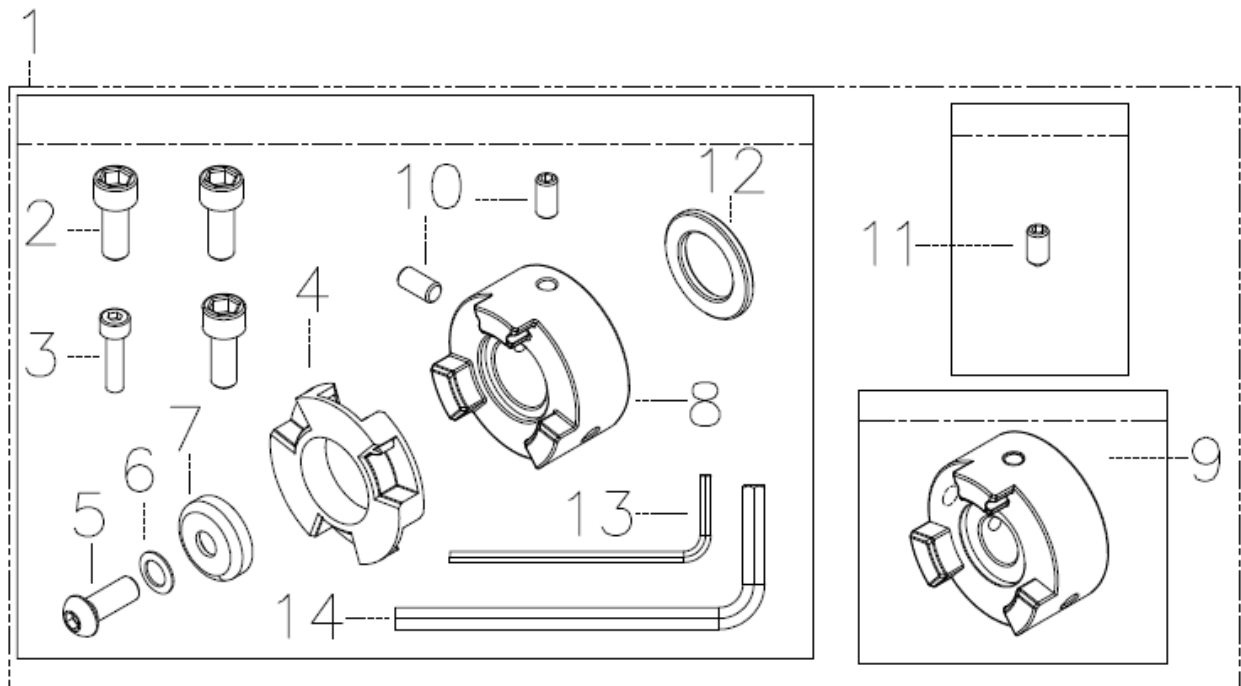
I . Installation 直驅馬達系列 拷克車(共用型)DD 馬達組裝說明

Installation Manual for direct drive motor for Overlock series

1. Procedure for motor installation 馬達之安裝步驟：

1.1 Please check whether all the below accessories are included in the packing

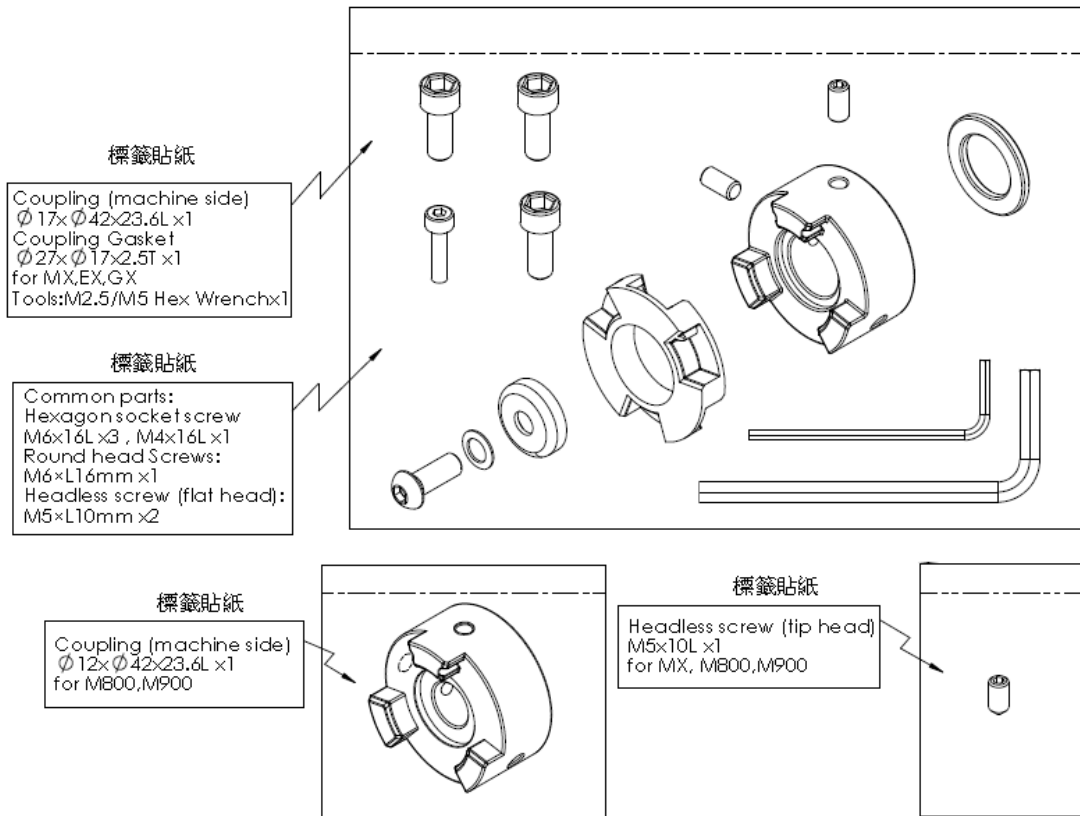
檢查附件包內是否有以下零件；



No. 序號	Parts No. 品 號	English Description 英文品名	Chinese Description 中文品名	Specification 規格	AMT 數量
1	SNSP0230	Parts kit	五金配件包		1
2	AGA0616C	Hexagon socket screw	內六角沉窩螺絲	M6x16L	3
3	AGA0416E	Hexagon socket screw	內六角沉窩螺絲	M4x16L	1
4	ACM00310	Coupling-Rubber	連軸器橡膠	φ22xφ42x8L	1
5	AGA0616J	Hexagon socket button head cap Screw	半圓頭內六角螺絲	M6x16L(尾端塗膠)	1
6	AGB06009	Belleville spring Washer	碟型彈簧華司	φ6.4xφ10.5xT0.95	1
7	ADA02090	Pressed ring for Fan	風扇迫緊環	φ6.5xφ19.9xT1.2	1
8	ABC00446	Coupling (machine side)	連軸器(針車側)	φ17xφ42x23.6L	1
9	ABC00482	Coupling (machine side)	連軸器(針車側)	φ12xφ42x23.6L	1
10	AGA0510S	Headless screw (flat head)	無頭螺絲(尾端平頭)	M5x10L(塗膠)	2
11	AGA0510U	Headless screw (tip head)	無頭螺絲(尾端尖頭)	M5x10L(塗膠)	1
12	ADB00570	Coupling Gasket	聯軸墊片(鋁)	φ27xφ17x2.5T	1
13	FA000250	Hex wrench	內六角板手	M2.5xH20xL58	1
14	FA000500	Hex wrench	內六角板手	M5xH33xL85	1

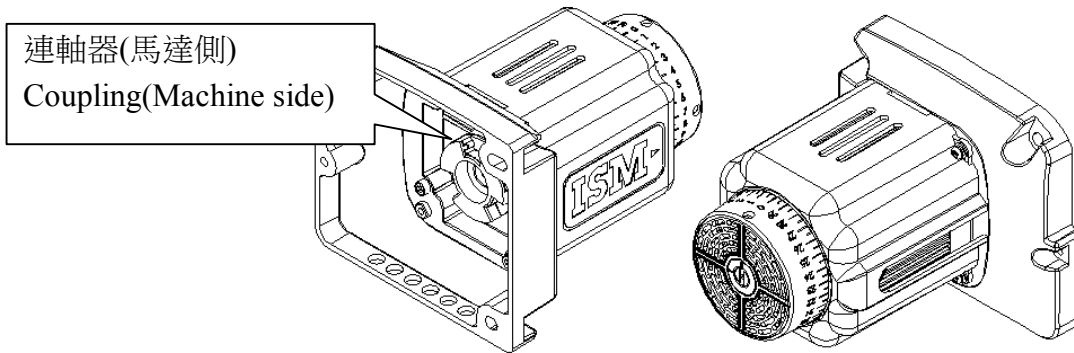
1.1.2 Check the machine model and use the right accessory according to the sticker label.

確認針車種類，依配件包標籤所指示，使用機台配件。

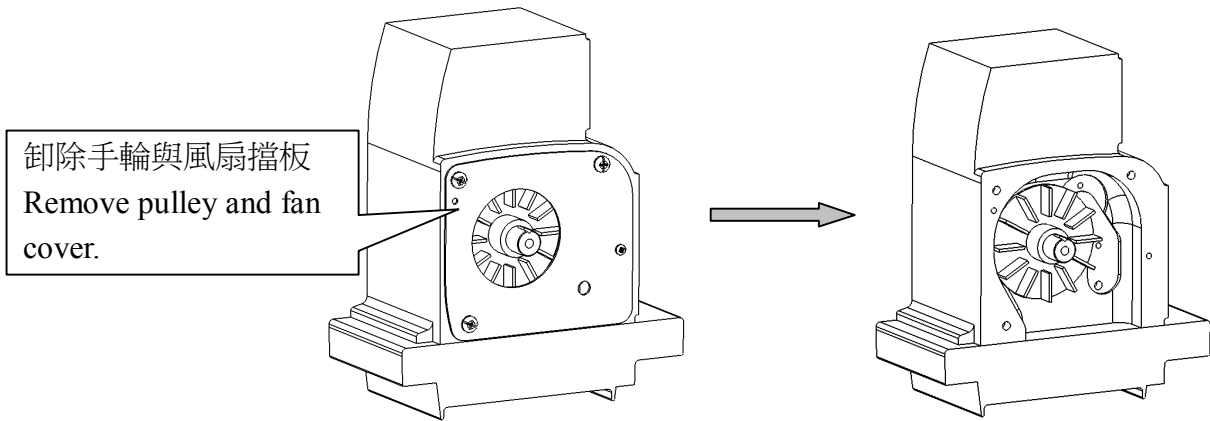


1.1.3 Check whether the motor exterior is ok and also confirm that coupling is properly installed.

確認馬達外型是否完整，馬達側連軸器是否已安裝。



1.1.4 Prior installing the motor, remove some parts from the machine as shown below and proceed for installation. 馬達安裝前，請拆除車頭部分零件，成為如下圖右之狀態，以進行後續安裝。



卸除手輪與風扇擋板
Remove pulley and fan cover.

1.2. Coupling and Motor installation 連軸器、馬達安裝說明：

- ① Insert the coupling and connecting washer to the center of the inner shaft as indicated below and tighten with the setting screw temporarily.
將”針車側連軸器”及”聯軸墊片”置入針車芯軸內，所附之止付螺絲暫時假固定鎖合。
- ② Insert the pressing fan and the spring washer using a M6 hexagon screw to tighten to the machine shaft.
將針車風扇迫緊環+碟型彈簧墊片以所附之半圓頭內六角 M6 螺絲鎖入針車芯軸內。

連軸器(針車側)上方螺絲孔位置，需對應針車軸的溝槽位置鎖合止付螺絲。

Align the machine coupling screw hole upper position to the machine shaft trench area and tighten it with a setting screw.

MX、EX、GX 針車側連軸器置入前先套入聯軸墊片。

Before installing the machine's side coupling make sure to insert the coupling washer first.

針車軸溝槽向上
Machine shaft trench facing upward

上方螺絲孔
Upper screw hole

(tip head) for M800, M900, MX

聯軸墊片
Coupling washer

止付螺絲假固定鎖合

Setting screw for temporarily fixing

(搭配 M800、M900、MX 針車時，需使用止付螺絲(尖頭))

(For M800, M900, MX machine, needs to use headless screw (tip head))

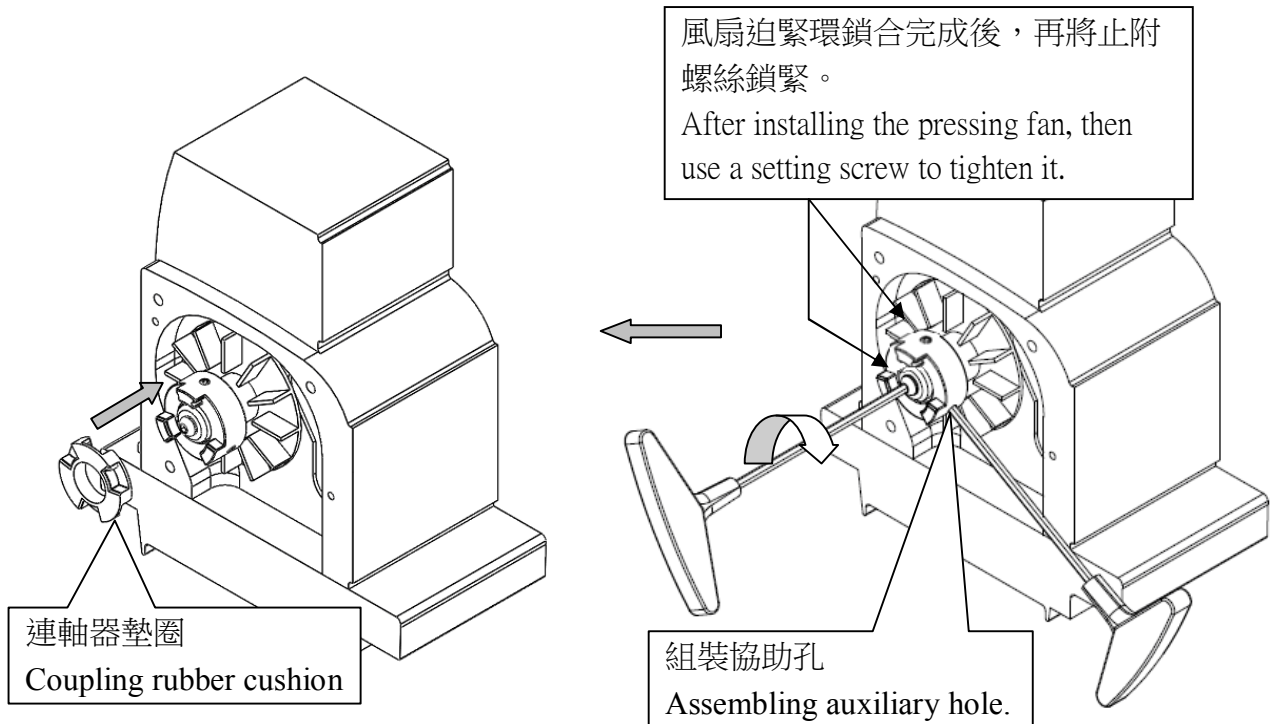
風扇迫緊環螺絲組件
Accessories to tighten the coupling

③Insert an allen key or a screw driver to the machine coupling auxiliary hole to assist installation and tighten the machine's pressing fan screw.

將六角扳手或螺絲起子插入”針車側連軸器”的組裝協助孔中，以助施力；並將針車風扇迫緊環上的螺絲鎖緊。

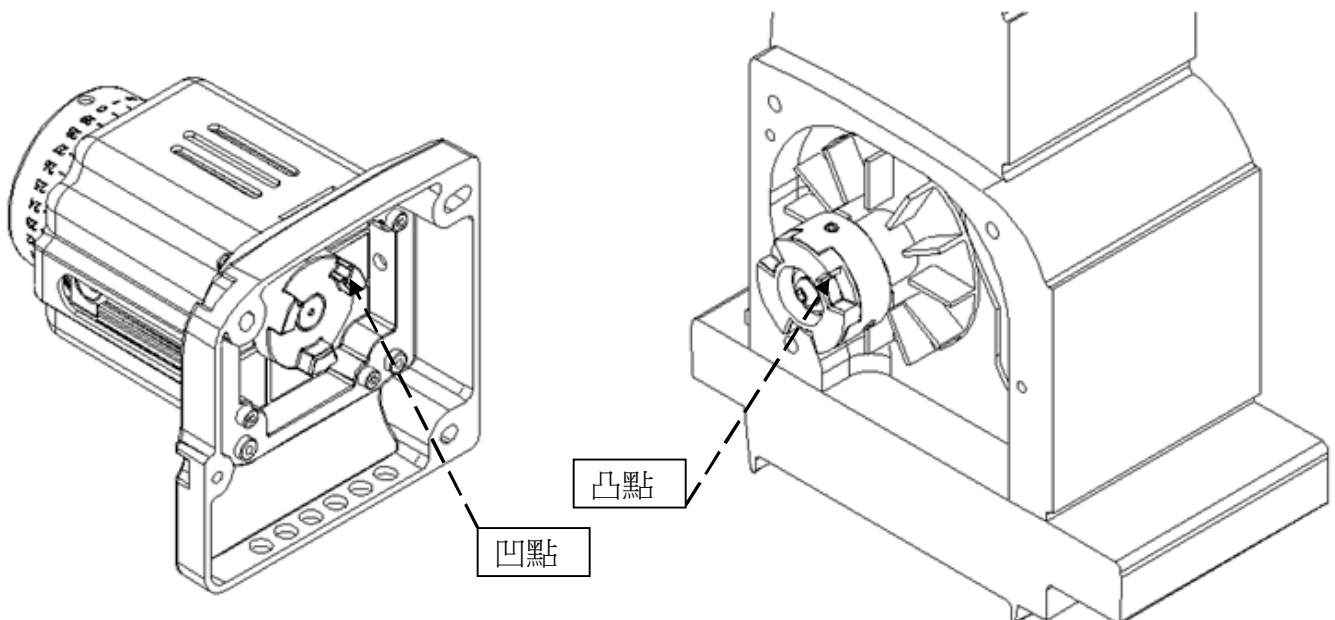
④Then using a setting screw to tighten the coupling from the machine side.

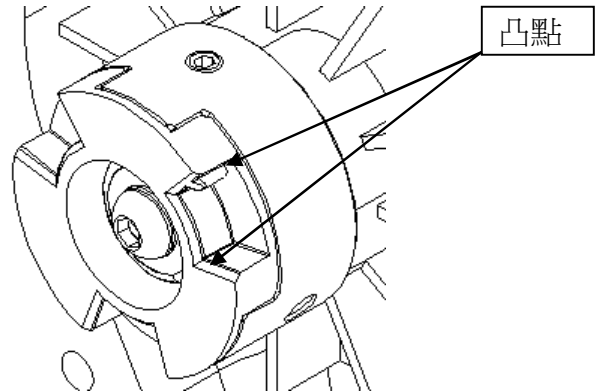
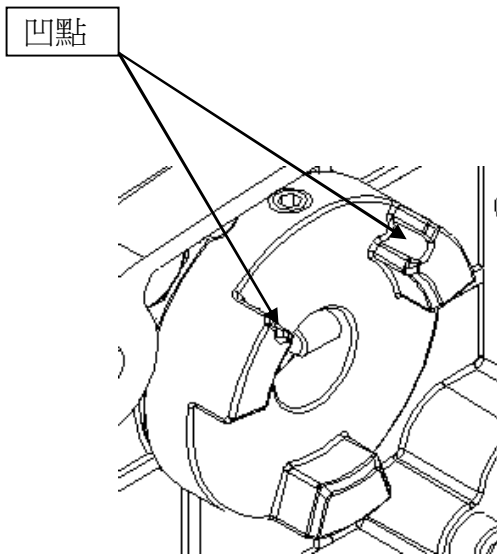
此時再將”針車側連軸器” 止付螺絲鎖緊。



⑤Align and insert the coupling packing onto the machine coupling.

對正將連軸器墊圈套入連軸器(針車側)之中。





馬達側連軸器凹點，需對準橡膠墊圈凸點。

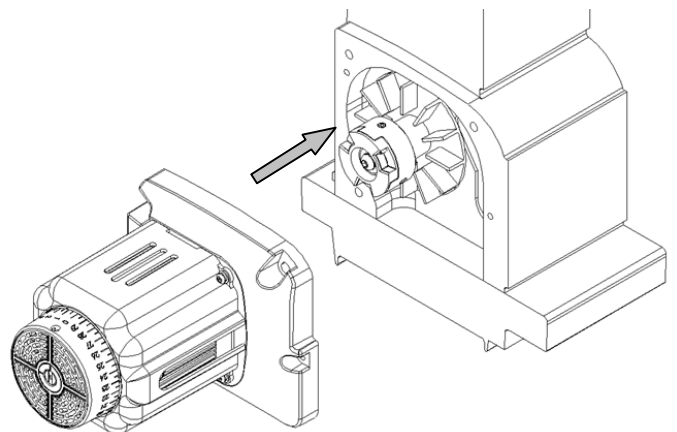
Motor coupling pit point should align with rubber cushion raise point

(凸點和凹點位置皆朝上，再組裝馬達)

(Raise point and pit point facing upward for motor installation)

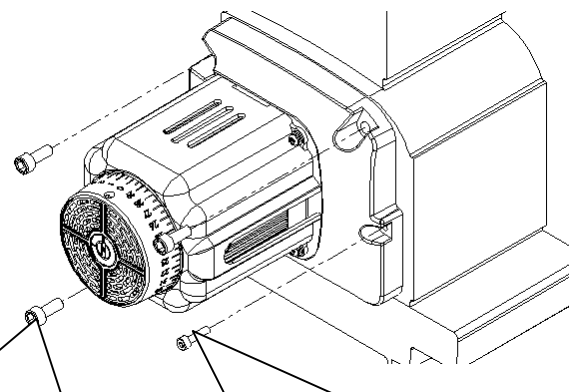
⑥ After proper alignment, install it onto the machine.

馬達對正連軸後，安裝至針車上。



⑦ 窩頭內六角螺絲(M6xL16)x3 以及窩頭內六角螺絲(M4xL16)x1，假固定鎖上馬達前蓋後，再將螺絲各別鎖緊。

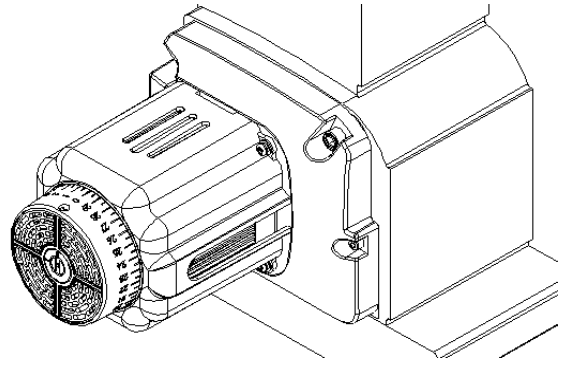
Hexagon socket screw(M6xL16)x3 and Hexagon socket screw(M4xL16)x1, hold it first tightening the screws in the front cover of the motor, then tighten the screws



窩頭內六角螺 M6x3
Hexagon socket screw M6x3

窩頭內六角螺絲 M4x1
Hexagon socket screw M4x1

⑧ Direct motor installation is completed
直驅馬達針車側組裝完成。

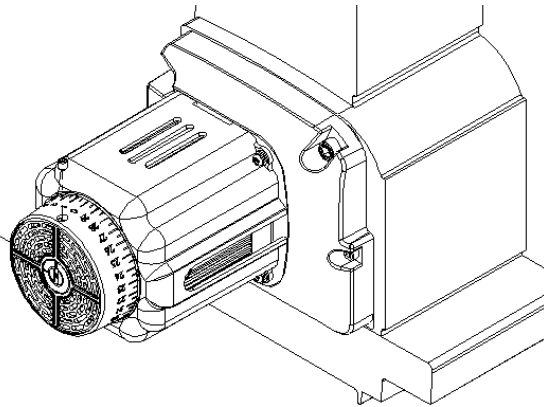


1.2.3. Needle up/down positioning adjustment 上下停位置調整：

If after installation positioning is not accurate, then remove the setting screw from the pulley and adjust it to the proper angle.

安裝完成後，上下停位置如有偏差；可鬆開固定手輪之止付螺絲，調整好角度後，再鎖緊止付螺絲。

尖頭止付螺絲 x2
headless screw (tip head) x2



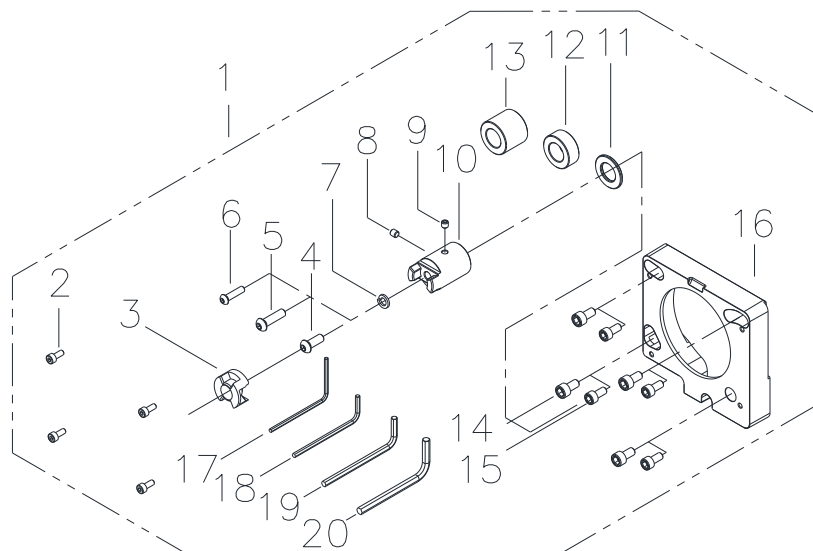
三本車(共用型)DD 馬達組裝說明

Installation Manual for direct drive motor for Interlock series

1.3. Procedure for motor installation 馬達之安裝步驟：

1.3.1 Please check whether all the below accessories are included in the packing

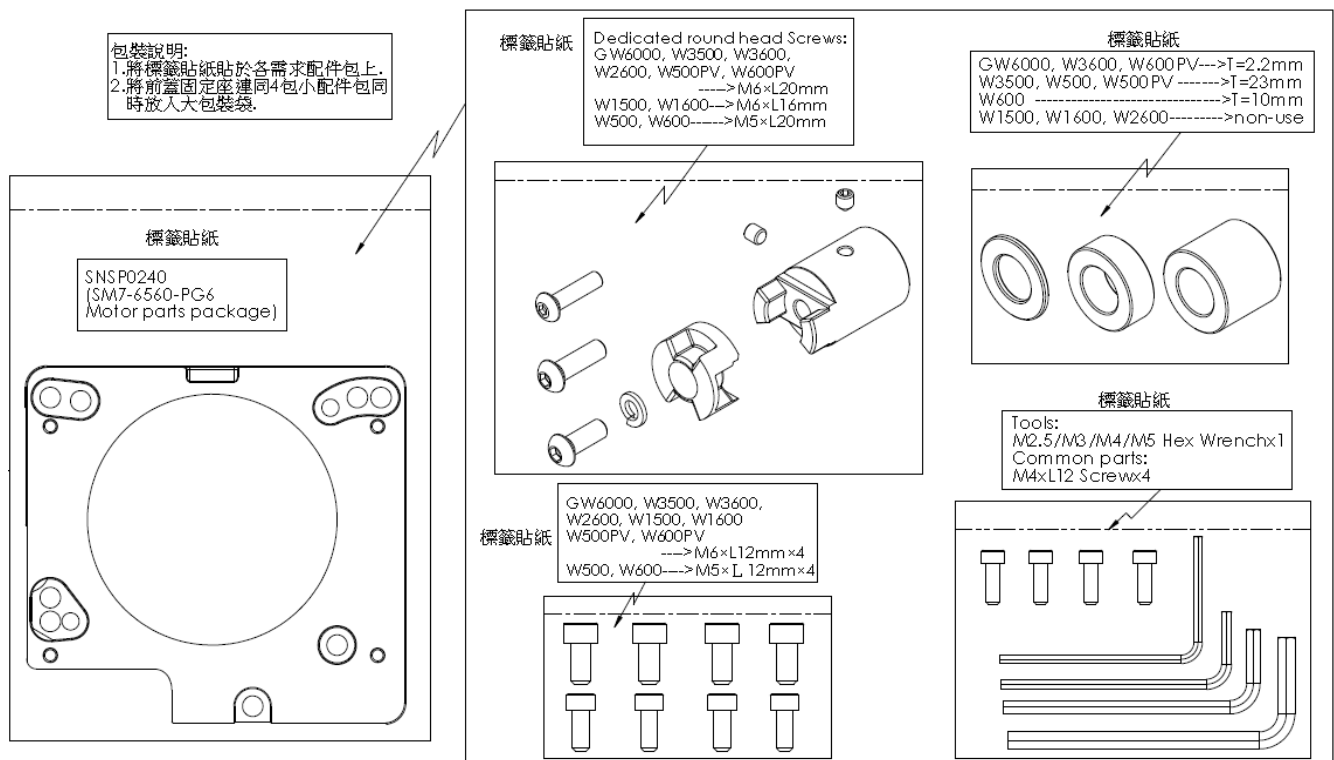
檢查附件包內是否有以下零件；



No. 序號	Parts No. 品 號	English Description 英文品名	Chinese Description 中文品名	Specification 規格	AMT 數量
1	SNSP0240	Parts kit	五金配件包		1
2	AGA0412H	Hexagon socket screw	內六角沉窩螺絲	M4x12L	4
3	ACM00340	Coupling-Rubber	連軸器橡膠	φ12xφ25.8x13L	1
4	AGA0616J	Hexagon socket button head cap Screw	半圓頭內六角螺絲	M6x16L(尾端塗膠)	1
5	AGA0620D	Hexagon socket button head cap Screw	半圓頭內六角螺絲	M6x20L(尾端塗膠)	1
6	AGA0520D	Hexagon socket button head cap Screw	半圓頭內六角螺絲	M5x20L(尾端塗膠)	1
7	AGC00060	Spring Washer	彈簧華司	S6 -φ6.2xφ10.5xT1.5	1
8	AGA0505B	Headless screw	無頭螺絲(尾端平頭)	M5x5L (塗膠)	1
9	AGA0506B	Headless screw (tip head)	無頭螺絲(尾端尖頭)	M5x6L (塗膠)	1
10	ABC00452	Coupling (machine side)	連軸器(針車側)	φ15xφ25.8x41L	1
11	ABC00640	Coupling Gasket	聯軸墊片(鋁)	φ27xφ15x2.2T	1
12	ABC00642	Coupling Gasket	聯軸墊片(鋁)	φ27xφ15x10T	1
13	ABC00644	Coupling Gasket	聯軸墊片(鋁)	φ27xφ15x23T	1
14	AGA0612E	Hexagon socket screw	內六角沉窩螺絲	M6x12L	4
15	AGA0512G	Hexagon socket screw	內六角沉窩螺絲	M5x12L	4
16	ABC00630	adapter plate (machine side)	前蓋轉接板	112.7x105.7xT21	1
17	FA00025C	Hex wrench	內六角扳手	M2.5xH38xL60	1
18	FA000300	Hex wrench	內六角扳手	M3xH23xL68	1
19	FA000400	Hex wrench	內六角扳手	M4xH26xL78	1
20	FA000500	Hex wrench	內六角扳手	M5xH33xL85	1

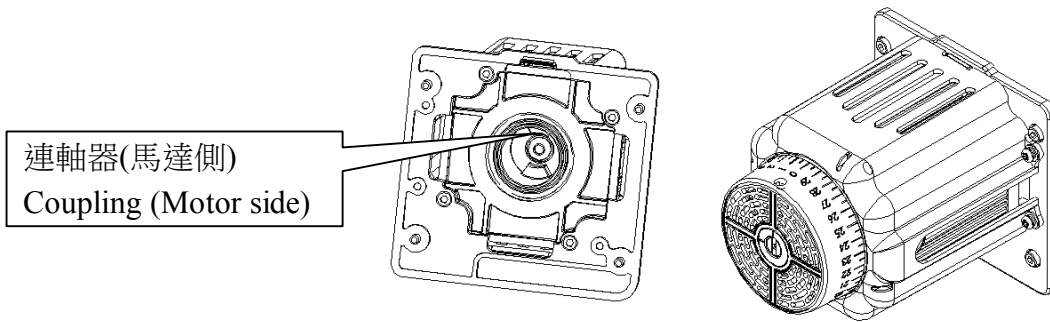
1.3.2 Check the machine model and use the right accessories according to the stick labels.

確認針車種類，依配件包標籤所指示，使用機台配件。



1.3.2.1 Check whether the motor exterior is ok and also confirm that coupling is properly installed.

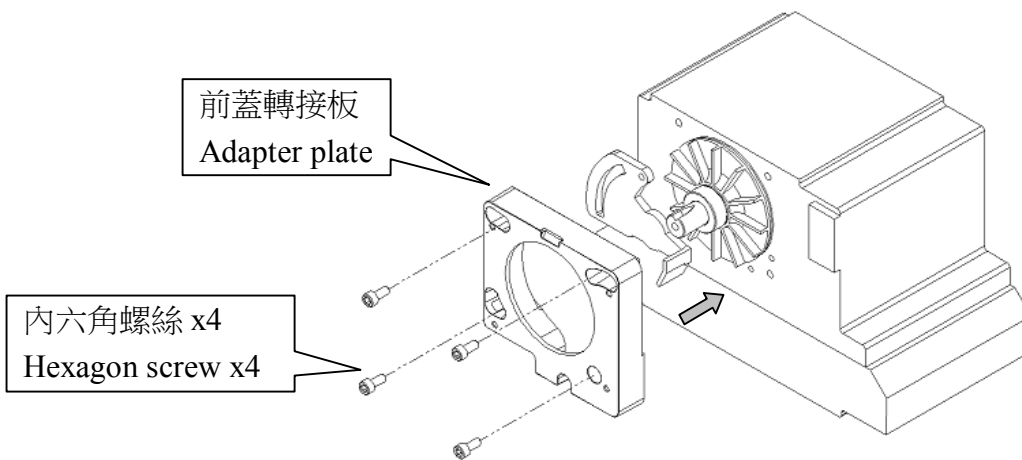
確認馬達外型是否完整，馬達側連軸器是否已安裝；



1.3.2.2 Coupling(Machine side) installation. 連軸器(針車側)安裝說明：

① Align and install the adapter plate (machine side) to the sewing machine, then tighten the hexagon screw.

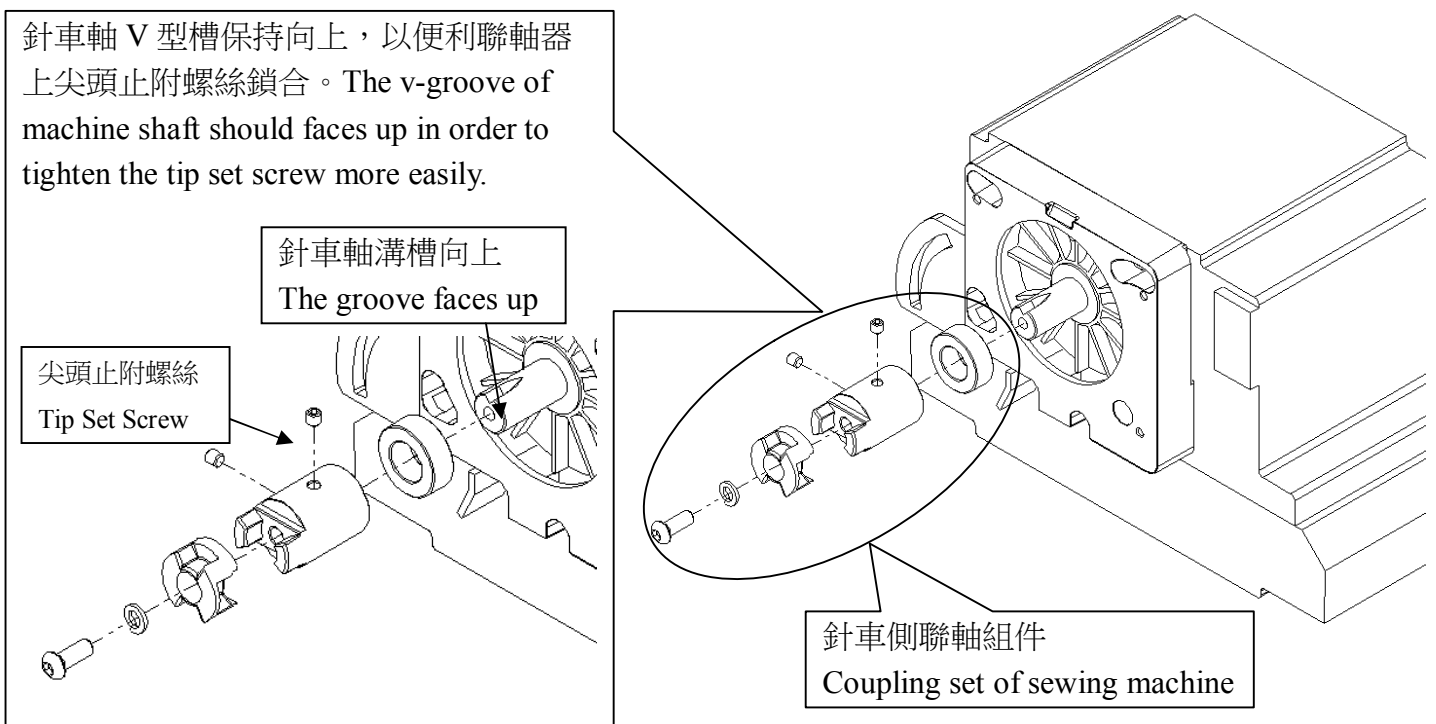
將針車側(前蓋轉接板)對正後安裝於針車上，再以內六角螺絲 x4 將(前蓋轉接板)鎖合於針車上。



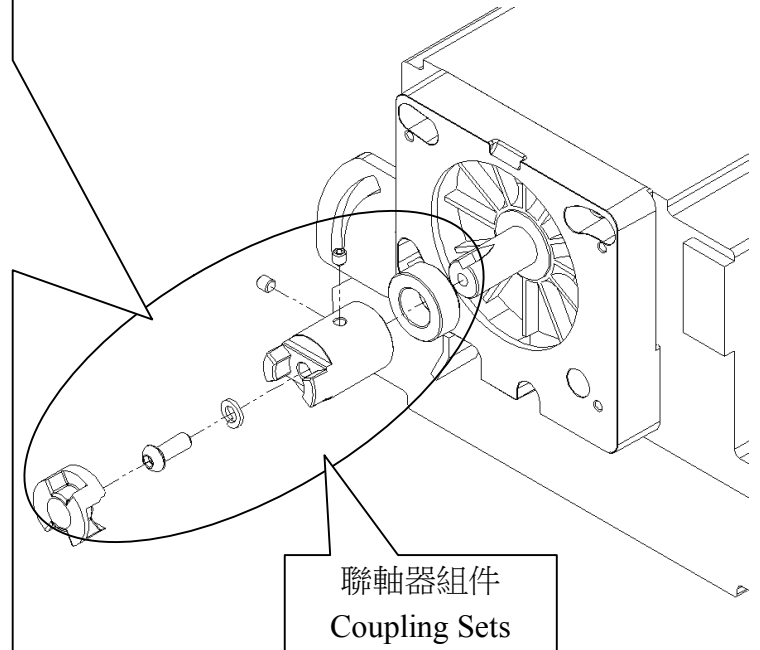
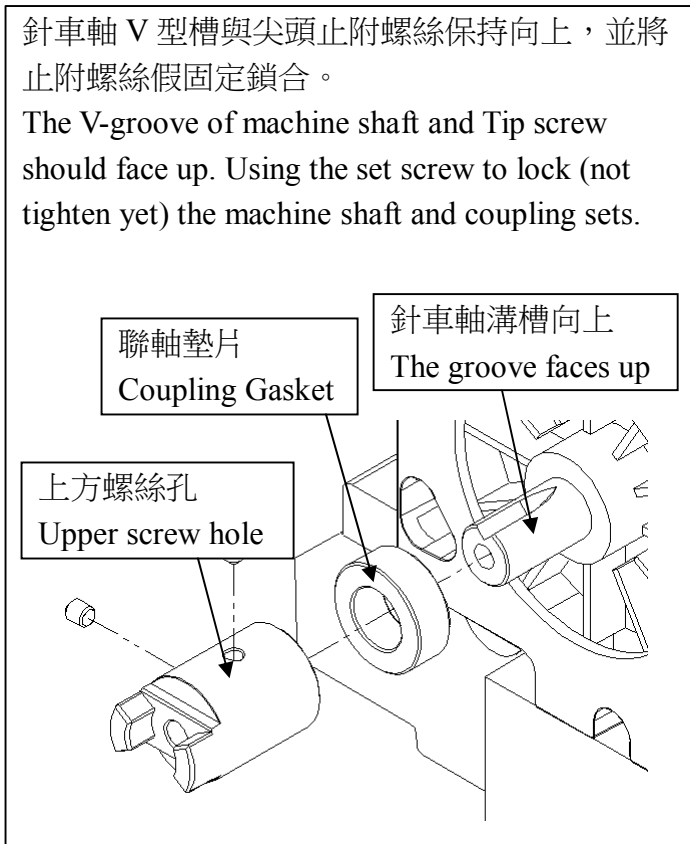
② Screw into the with sewing machine shaft with order.

將聯軸墊片、針車風扇迫緊環、彈簧墊片、半圓頭內六角螺絲依次組裝於針車芯軸內。

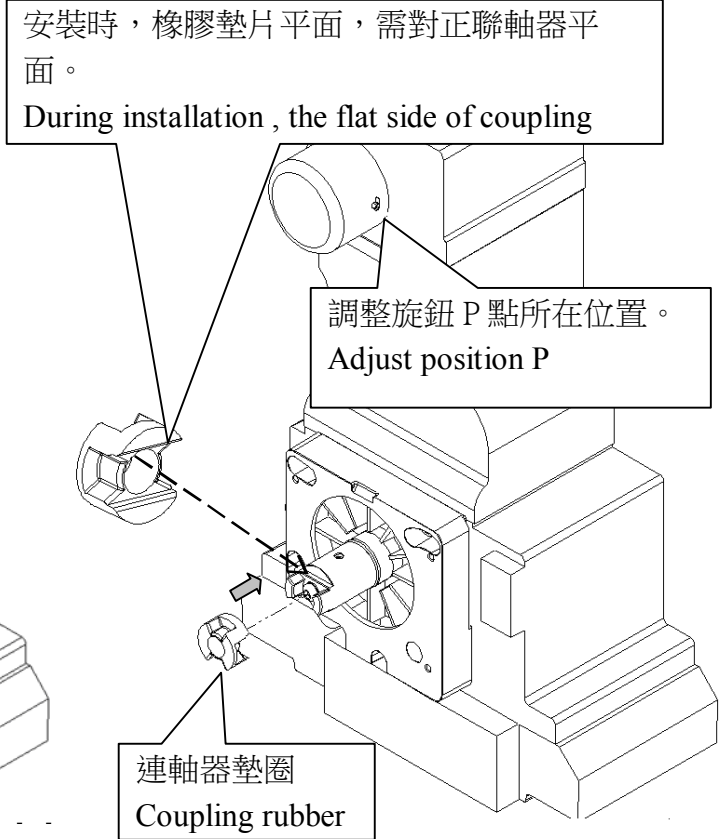
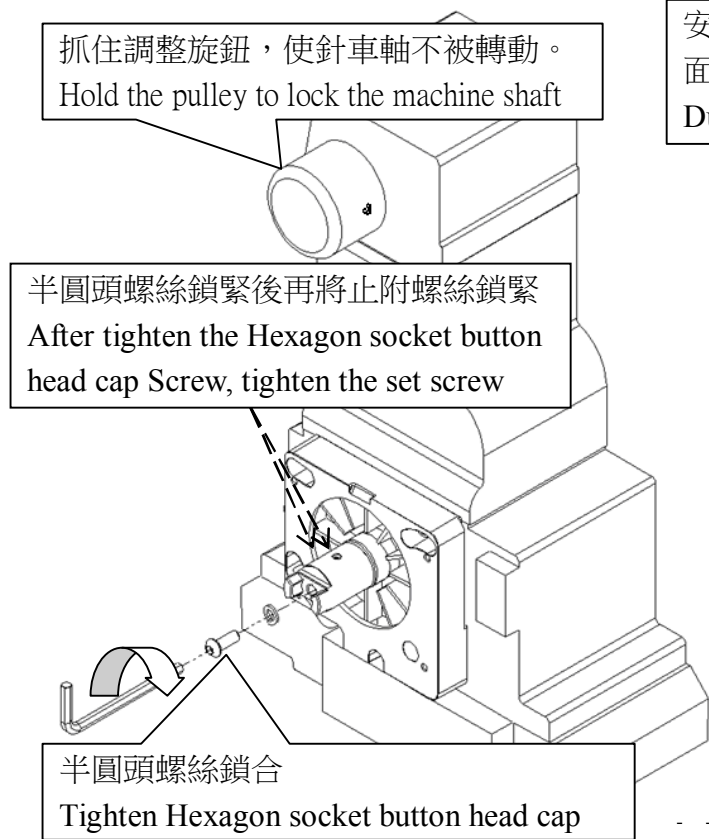
針車軸 V 型槽保持向上，以便利聯軸器上尖頭止附螺絲鎖合。The v-groove of machine shaft should faces up in order to tighten the tip set screw more easily.



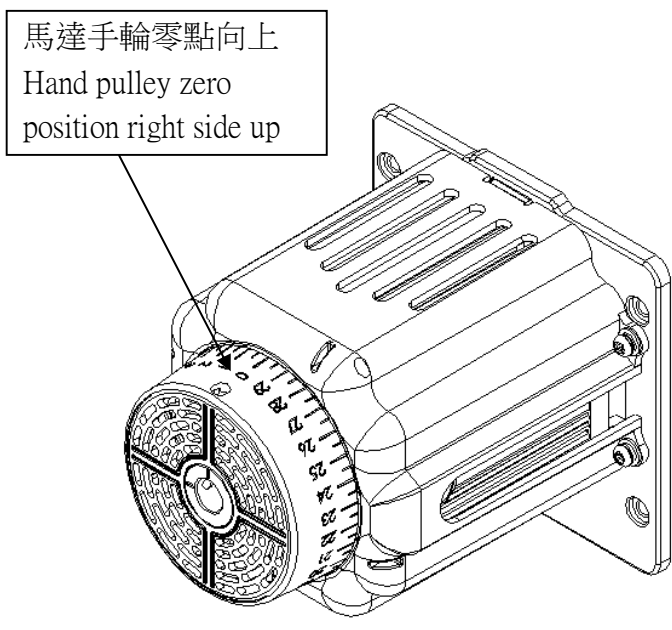
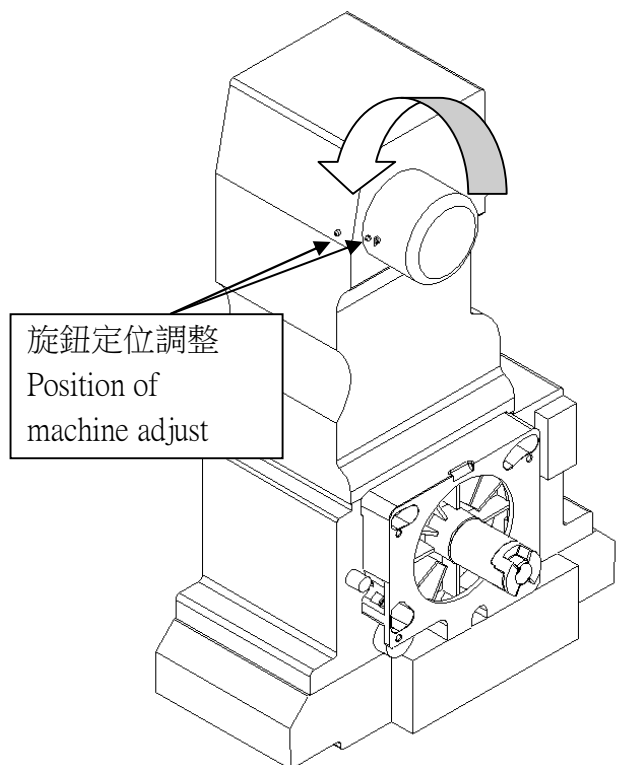
- ③ Set the coupling sets into the machine shaft.
將聯軸器(針車側)套入針車軸中。



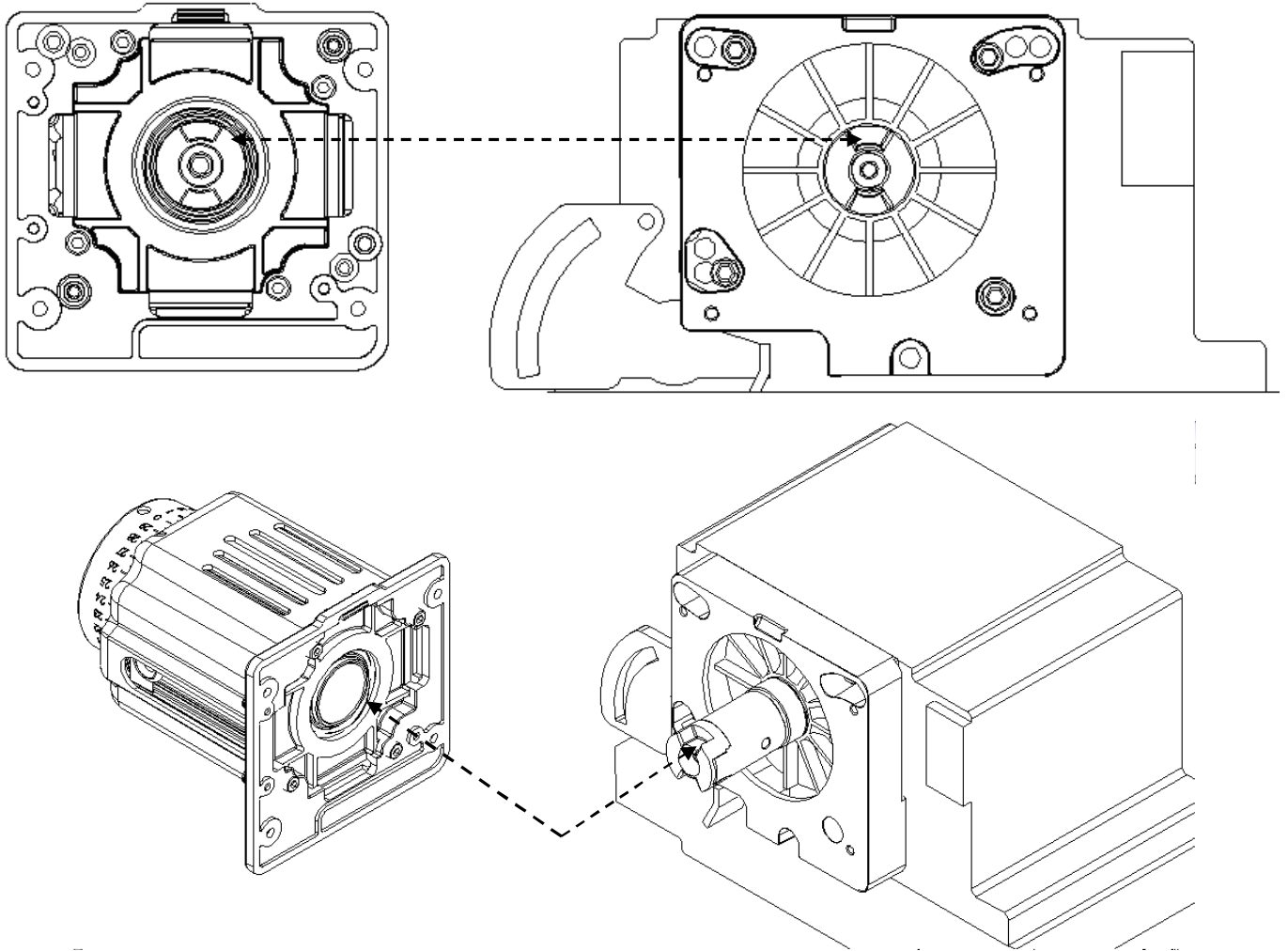
- ④ Hold the machine hand pulley so the machine shaft is locked, tighten the hexagon screw then tighten the set screws. 抓住調整旋鈕使針車心軸不會轉動的狀態下，先鎖緊內六角螺絲，後將止附螺絲鎖緊。
- ⑤ Align and inserting the coupling rubber to the coupling set of machine side.
將連軸器墊圈對正後套入連軸器(針車側)之中。



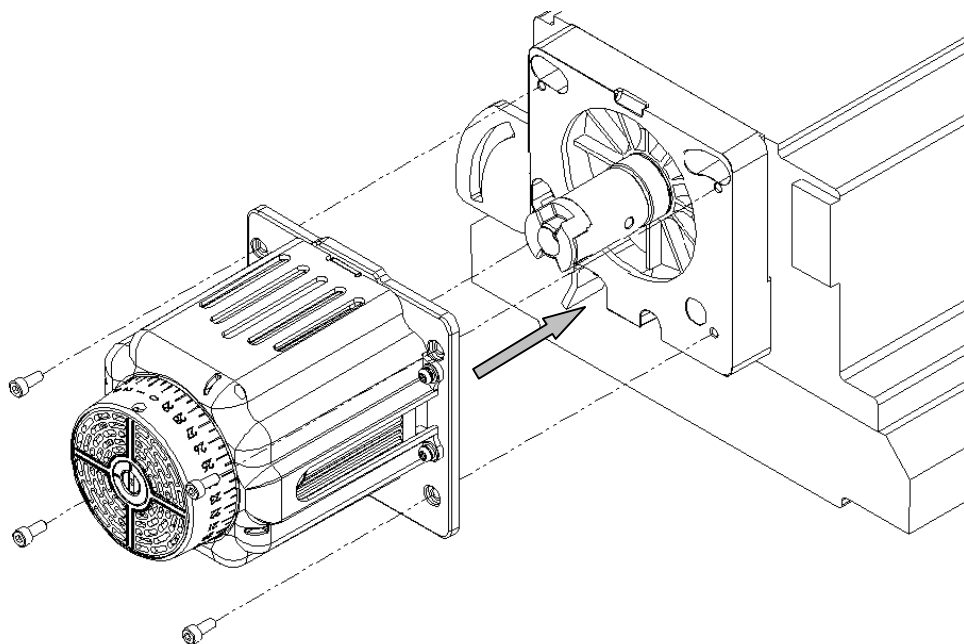
⑥ Set the right machine position and adjust hand pulley zero position right side up
對正針車定位點及調整馬達手輪零點向上。



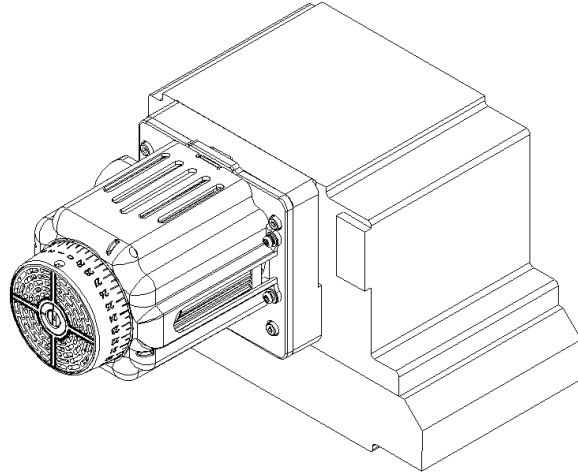
- ⑦ Prior installing the motor, motor coupling raise point should align with machine coupling pit point.
馬達安裝於針車前，將連軸器(馬達側)凸點與連軸器(針車側)凹點對正，再行安裝。



- ⑧ Installing the motor to the machine head, tighten it onto the adapter plate with Hexagon screw x 4. During the process, All screws should be tighten with balance force.
將馬達安裝至針車上，以內六角 M4 螺絲 x4 將馬達鎖合於固定板上，鎖合時需均勻出力。



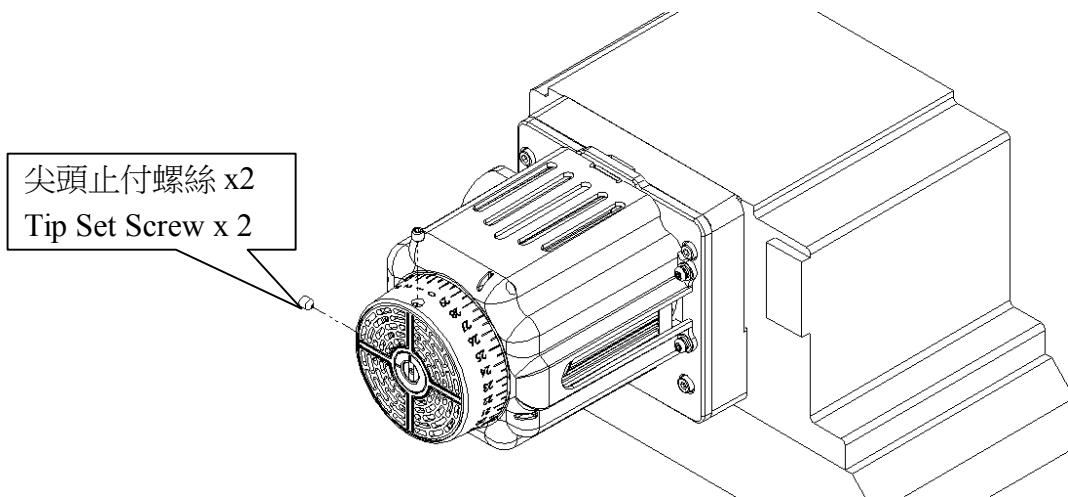
- ⑨ Direct motor installation is completed.
直驅馬達針車側組裝完成。



1.3.3. Needle up/down positioning adjustment. 上下停位置調整：

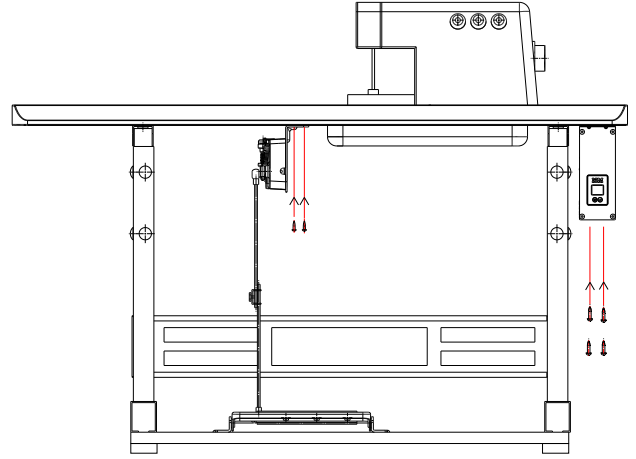
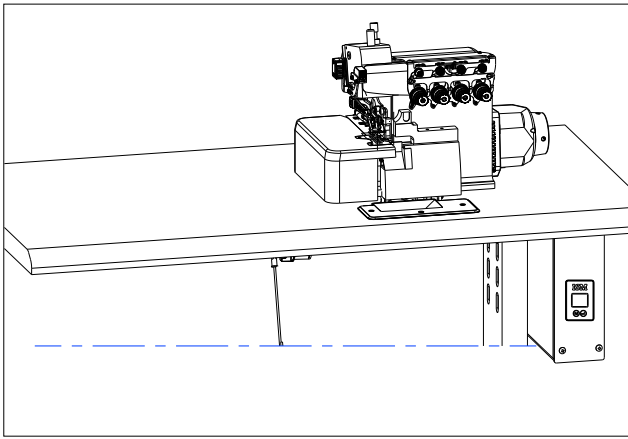
If after installation positioning is not accurate, then remove the setting screw from the pulley and adjust it to the proper angle.

安裝完成後，上下停位置如有偏差；可鬆開固定手輪之止付螺絲，調整好角度後，再鎖緊止付螺絲。



1.4.1 For control box set up

控制箱的安裝:



Dimensions of control box as shown in Fig.1

控制箱的外型尺寸如圖(一)所示:

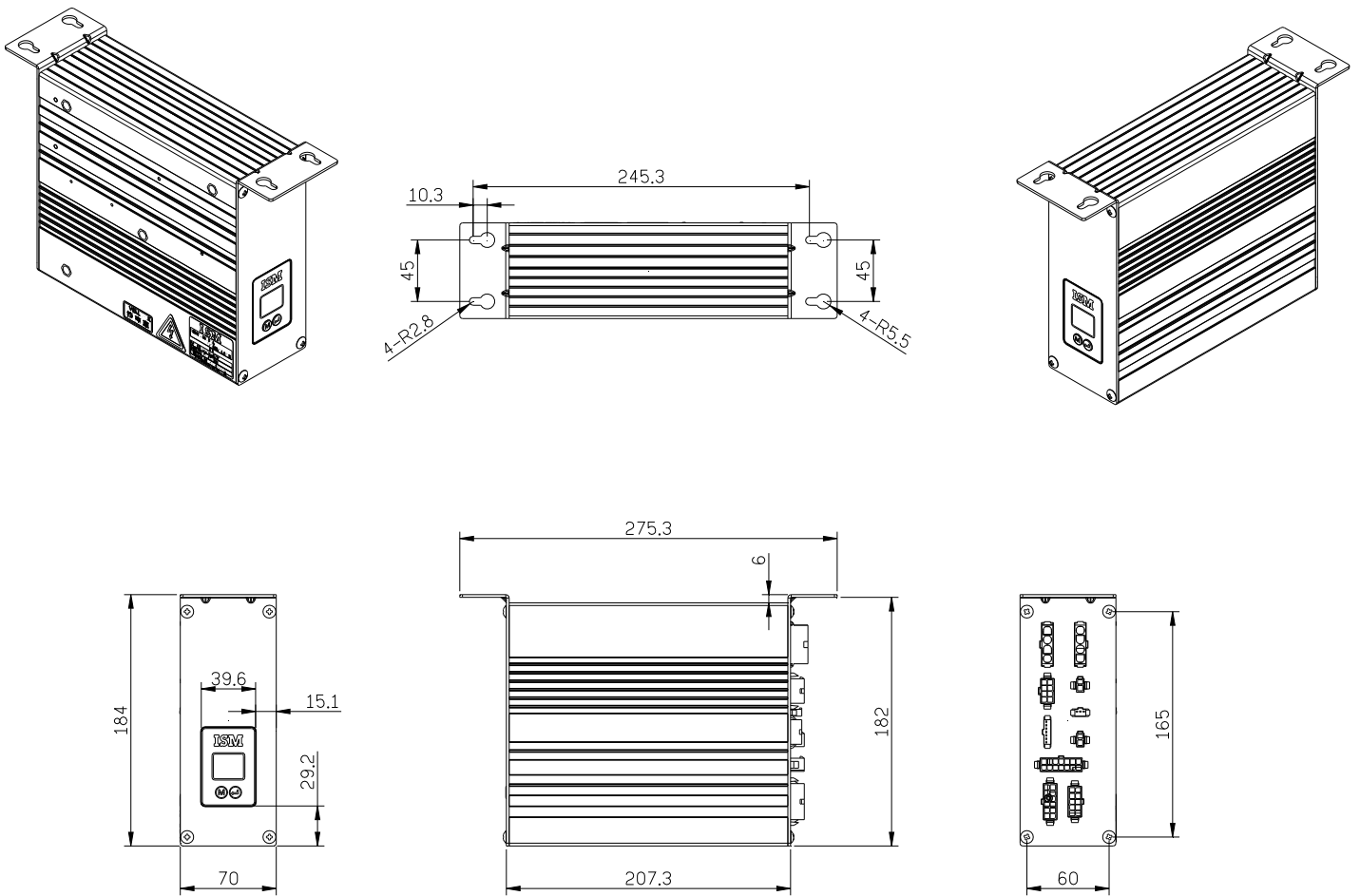


Fig.1 (圖一)

1.4.2 Connector Diagram 接頭定義圖

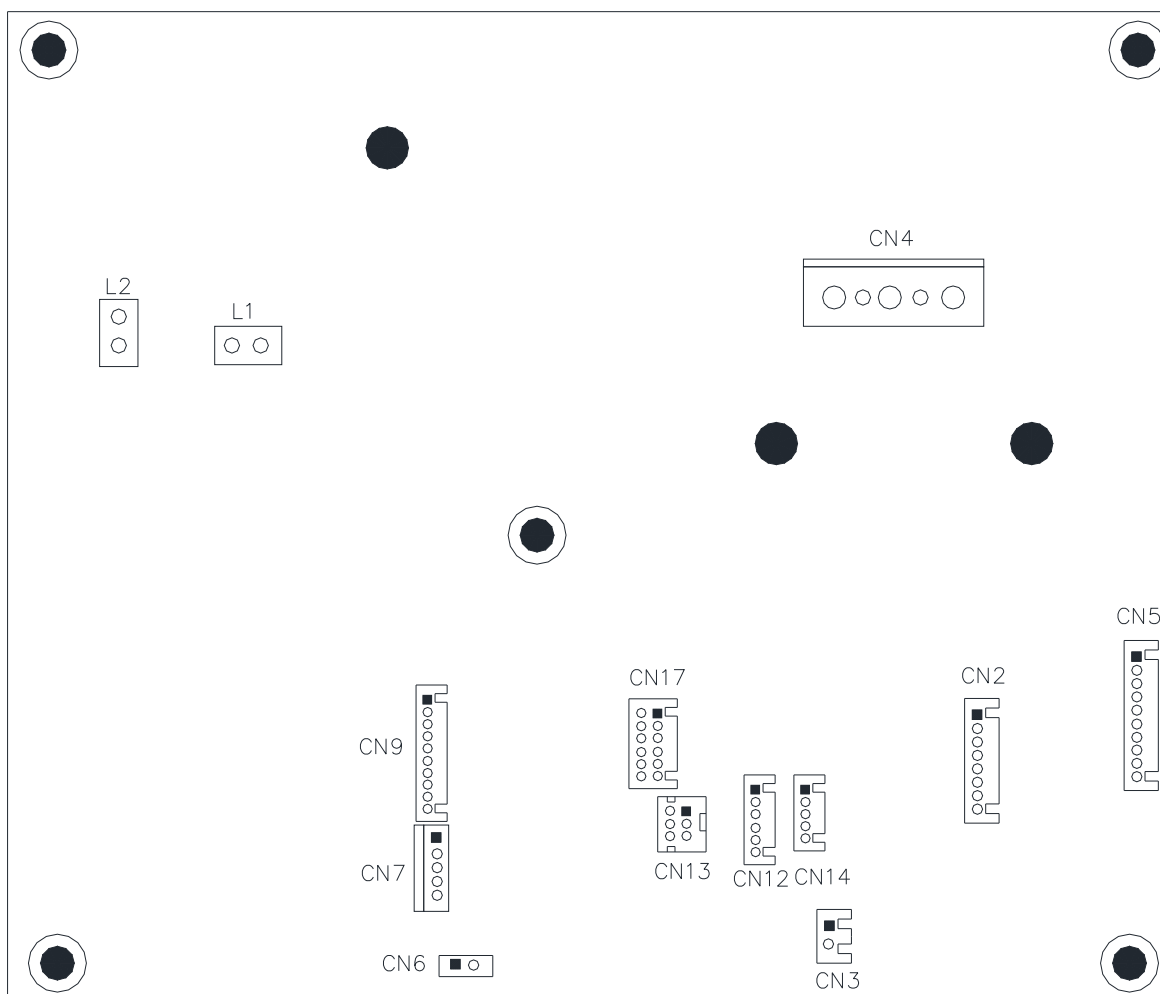


Fig.1A(圖一 A) SV-860A,M CTL BOARD Connector

Connector 接頭	Connectors' description 接頭說明	Connector 接頭	Connectors' description 接頭說明
CN2	Motor encoder connector 馬達編碼器接頭	CN12	Option IN_D,E connector Option IN_D,E 接頭
CN3	Speed unit connector 速度基座接頭	CN13	Electronic handwheel connector 電子手輪接頭
CN4	Motor power line connector 馬達動力線接頭	CN14	Standing operation pedal connector 立式踏板接頭
CN5	Machine functions' connector 車頭功能線圈接頭	CN17	Option IN_A,B,C connector Option IN_A,B,C 接頭
CN6	+12V Power output connector +12V 電源輸出接頭	L1,L2	AC power input connector 外部電源輸入端子
CN7	Operation panel connector 選針盒接頭		

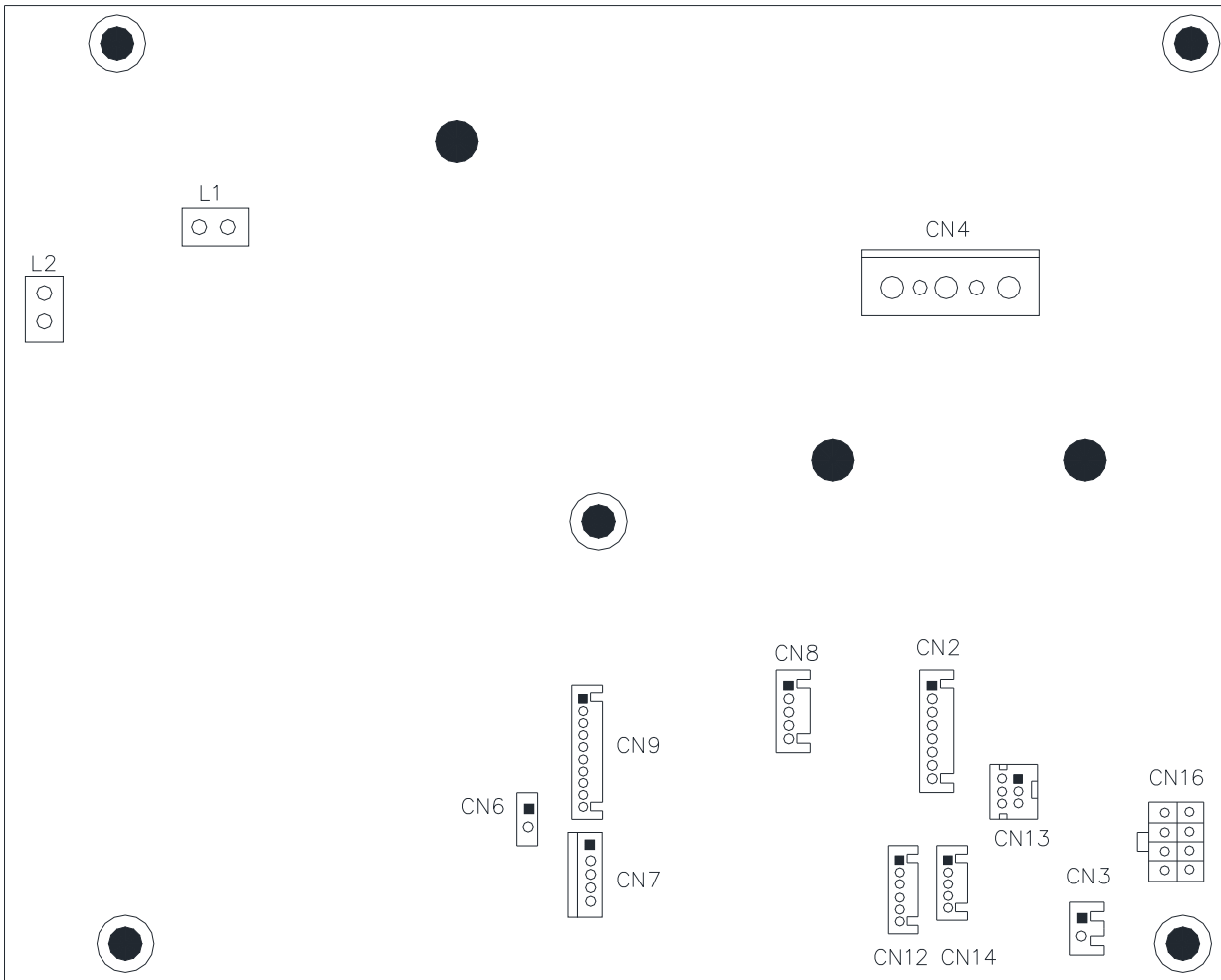


Fig.1B (圖一 B) SV-860E CTL BOARD Connector

Connector 接頭	Connectors' description 接頭說明	Connector 接頭	Connectors' description 接頭說明
CN2	Motor encoder connector 馬達編碼器接頭	CN12	Option IN_D,E connector Option IN_D,E 接頭
CN3	Speed unit connector 速度基座接頭	CN13	Electronic handwheel connector 電子手輪接頭
CN4	Motor power line connector 馬達動力線接頭	CN14	Standing operation pedal connector 立式踏板接頭
CN6	+12V Power output connector +12V 電源輸出接頭	CN16	Machine functions' connector 車頭功能線圈接頭
CN7	Operation panel connector 選針盒接頭	L1,L2	AC power input connector 外部電源輸入端子
CN8	Option IN_A,B,C connector Option IN_A,B,C 接頭		

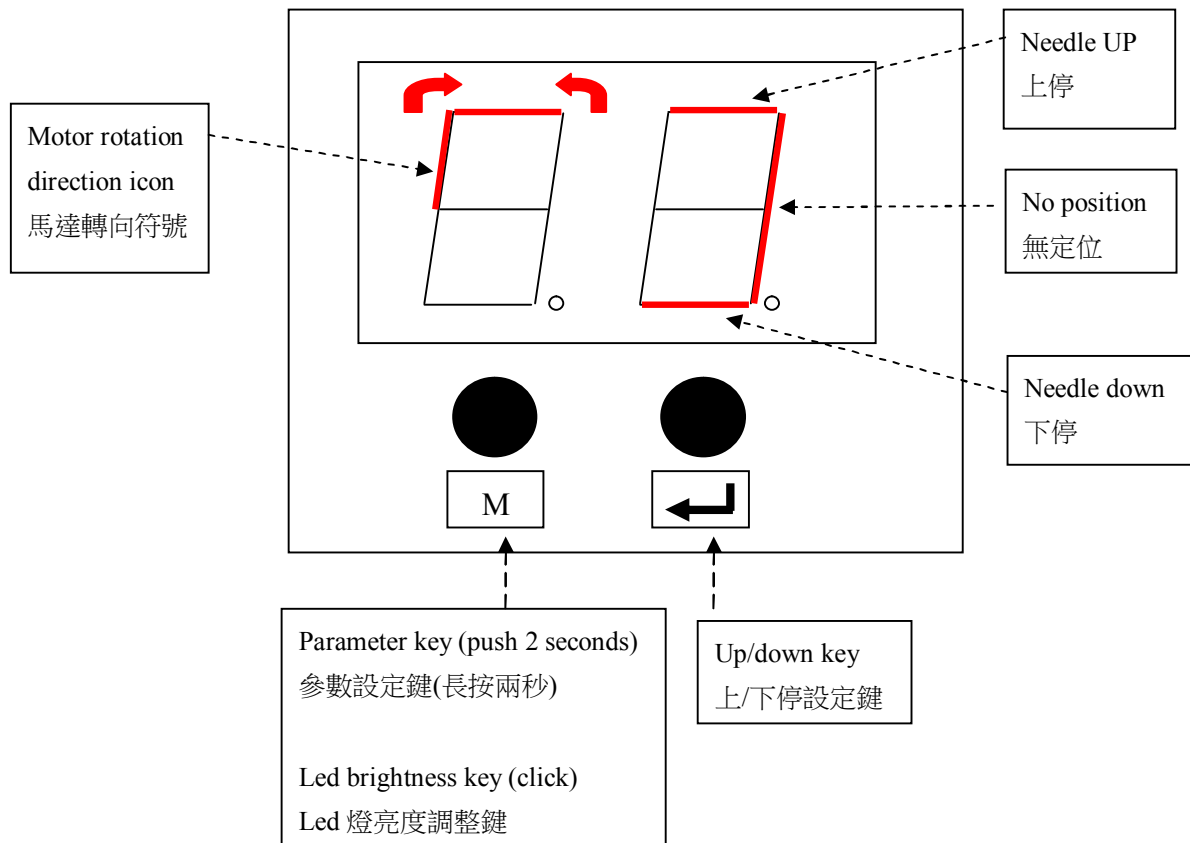
II. Product specification 產品規格

SPECIFICATION 規格	SV-860A	SV-860E	SV-860M
1.Input Power Voltage 1.輸入電壓	1 ϕ , AC 200~240V		
2.Motor Rated Output Power 2.馬達額定出力	350W ~ 650W		
3.Motor Rated Speed 3.馬達額定轉速	3500~8500 rpm		
4.External LED Output(DC12V)	v		
5.Needle Up/Down 5.上/下停針控制	v		
6.Max. Speed Setting 6.最高速設定	v		
7.Soft Start 7.慢速啟動	v		
8.Reverse After Thread Trimming 8.切線後反轉	v		
9.One Shot Positioning(Fast Positioning) 9.一發著針功能(快速定位停)	v		
10.Diagnostic Mode (Inspect I/O Condition) 10.診斷模式(檢查輸出/輸入狀態)	v		
11.ERROR History Mode(Record Previous 6 Times) 11.故障錯誤記錄(前 6 次)	v		
12.Connect Standing Operation Pedals (PK-71, PK-81) 12.連結立式踏板(PK-71, PK-81)	v		
13.Connect External Operation Panel(C18) 13.連結選針盒(C18)	v		
14.Connect Manual Pulse Generator 14.連結電子手輪	v		
15.Built-in transmissive sensor circuit 15.內建穿透式感應器電路			v
16.Input Ports No.(Accroding to requirements) 16.輸入接點數 (可依需求設定)	5	5	5
17.Output Ports No.(Accroding to requirements) 17.輸出接點數(可依需求設定)	5	4	4
1)For Cylinder, DC24V / 100mA 1)氣動用, DC24V/ 100mA	5	3	4
2)For Solenoid, DC24V / 9A / 100ms 2)電磁用, DC24V/ 9A/ 100ms	0	1	0

III. Operating way 操作方法

For regular operations (Turning the power switch on without pressing any button)

一般操作(不按任何鍵下開機)



IV Setting way

設定方式

1. Select the machine type and motor specification

選擇針車頭類型和馬達規格

STEPS

1. Press **M** and **←** simultaneously, and turn ON the power until panel display “rS” then release the key.
2. Press **M** key, thus machine type will be cycled increased.
3. Press **←** key to save and enter motor specification selection.
4. Press **M** key, thus motor specification will be cycled increased.
5. Press **←** key to save.

6. Please restart the machine.

步驟

1. 同時按住 **M** 和 **↩** 鍵，同時打開電源,直到畫面出現”rS”才將按鍵放開。
2. 按 **M** 鍵則針車模式循環遞增。
3. 選擇要設定的針車模式後，按下 **↩** 鍵進行儲存後則進入馬達規格選擇。
4. 按 **M** 鍵則馬達規格循環遞增。
5. 選擇要設定的馬達規格後，按下 **↩** 鍵進行儲存
6. 請重新開機

	Machine Type	針車型式		Motor Type	馬達型式
OL	Overlock	拷克車+集塵+抬壓腳	d8	SM7-3570 motor	SM7-3570 馬達
MO	MO	MO 拷克車+2*電眼+斬刀+集塵+抬壓腳+安全開關	db	SM7-5070 motor	SM7-5070 馬達
Y1	Y1	拷克車+電眼+集塵+抬壓腳	dA	SM7-6560 motor	SM7-6560 馬達
P1	P1	拷克車+電眼+集塵+抬壓腳	U4	SM -4550 motor	SM -4550 馬達
CS	Chainstitch	三本車+集塵+抬壓腳	d3	SM6-5550 motor	SM6-5550 馬達
YU2	YU2	三本車+撥線+切線+抬壓腳+安全開關	d2	SM6-5535 motor	SM6-5535 馬達
YU3	YU3	三本車+免剪線裝置+切線+抬壓腳+安全開關	U6	SM80-6535 motor	SM80-6535 馬達
46	4 needle flatseamer	4 針 6 線併縫機+集塵+切線+抬壓腳	U5	SM80-5535 motor	SM80-5535 馬達
Y3	Y3	拷克車+電眼+斬刀+抬壓腳	45	SM72-4550 motor	SM72-4550 馬達
SOTK	SOTK	拷克車+電眼+斬刀+吸線頭+集塵+抬壓腳	55	SM72-5535 motor	SM72-5535 馬達
SOST	SOST	拷克車+電眼+側刀+鬆線+抬壓腳	65	SM72-6535 motor	SM72-6535 馬達
S2	S2	拷克車+電眼+集塵+側刀+鬆線+抬壓腳			
DN2	DN2	三本車+撥線+切線+抬壓腳+安全開關			
SUST	SUST	拷克車搭配下掛馬達+電眼+側刀+鬆線+抬壓腳			
KT	KT	三本車+夾步設備+抬壓腳			
SLTK	SLTK	自動剪帶機			

2.Parameter setting(There are two ways can enter parameter setting.)

參數設定方式(有兩種方式可以進入參數設定)

- 2-1. Press **M** key and turn on the power until the panel display “PA. Release **M** key, the panel display parameters number. (or)


2-2. In normal mode then press **M** key until the panel display “PA”. Release **M** key, the panel display parameters number.

2-1. 按住 **M** 鍵，同時打開電源，直到面板顯示 PA，放開 **M** 鍵後面板會顯示參數號碼。(或)

2-2. 在正常操作模式，按住 **M** 鍵，直到面板顯示 PA，放開 **M** 鍵後面板會顯示參數號碼。

3. Parameter Setting Key Description

參數按鍵定義

M	
1. Press one time to increase Number. 2. Hold Press to decrease number	1. Press one time to enter Parameter or parameter value. 2. Press 2 Seconds to Save Parameter value
1. 按下一次後號碼循環遞增。 2. 長按 後號碼循環遞減。	1. 按一次進入參數或參數值 2. 長按兩秒 後將儲存參數資料。

V. Error message indicator

錯誤訊息顯示

Error Code	Problem of Error	Check Items
E.1 or E.A	Synchronizer failure	-Encoder failure.
E.2	Motor is not rotating	-Machine head is locked. -Motor is locked. -Motor power line or encoder line. is broken, or connector is loosen.
E.4	Safety switch failure	-Failure in safety switch connection -Safety switch failure -Setting error for parameter U5,J3
E.5	Speed unit output failure	-Speed unit connector is loosen -Speed unit is broken -Connecting rod installation is incorrect
E.6	CPU error	-Noise interference (Ex. High frequency machine, welding machine)
E.7	Material edge sensor function is failed.	-Parameter J.4 setting error -Material edge sensor not properly adjusted -Connector for material edge sensor is loosen - Material not properly settled through machine
E.8	Setting speed over the motor maximum speed.	-Parameter P.0setting value is too large -Motor pulley diameter is too small -Motor pulley ratio setting error
E.9	Power transistor module is failed.	-Power module overheated -Short circuit or low voltage -Current is too high.
E.0 or E.C	Braking timing error	-Increase value of parameter J.9 -motor encoder fails.

錯誤代碼	錯誤內容	確認項目
E.1 或 E.A	同步器信號異常	編碼器訊號異常
E.2	馬達不動	針車頭鎖死 馬達鎖死 馬達接頭鬆脫(動力線與編碼器線)
E.4	安全開關異常	安全開關接點異常 參數 U5,J3 設定錯誤
E.5	速度基座輸出異常	速度基座接頭鬆脫 連接桿安裝不適當 速度基座故障
E.6	當機	雜訊源干擾.(高週波 ,電焊機)
E.7	布端檢出功能異常	參數 J.4 設定錯誤 布端檢出器調整不良 布端檢出器連接線鬆脫,斷線 待車物料擺放位置不適當
E.8	最高轉速設定 超過馬達的最快速度	參數 P.0 設定值太大 馬達皮帶輪尺寸太小 馬達皮帶輪比設定錯誤
E.9	功率晶體模組故障	功率晶體模組過熱 短路低電壓 電流太大 馬達線圈阻抗太小
E.0 或 E.C	煞車時間異常	增加參數設定中 J.9 的值 編碼器訊號異常

VI. Parameter List

參數一覽表

No 項目	Item 內容	Range 範圍	Unit 單位	Over -lock 拷克車	MO 拷克車	Chain -stitch 三本車
P.0	Sewing machine maximum speed 針車最高速度	200 ~ 8000	*100 spm	60	60	60
P.1	Sewing machine positioning speed 針車定位速度	50 ~ 250	*10 spm	20	20	20
P.2	Motor's pulley dimension 馬達皮帶輪	50	*1 mm	50	50	50
P.3	Machine's pulley dimension 針車皮帶輪	50	*1 mm	50	50	50
P.4	Pulley ratio setting mode 皮帶輪比的設定	ON:From Meas: Refer motor pulley ratio measurement 參考馬達皮帶比量測的值 OFF:From Para:Refer P2&P3 參考 P.2&P 3 的設定	--	ON	ON	ON
P.5	Virtual needle down positioning function 虛擬下停功能	ON: With the function 有此功能 OFF: No such function. 無功能	--	ON	ON	ON
P.6	The angles between virtual needle down positioning point and needle up signal 虛擬下停點,由上停信號開始點起算	70 ~ 250 (note1)	*1 °	180	180	180

P.7	Soft start stitches 慢速啟動針數	0 ~ 19	*1 stitch	0	0	0
P.8	Soft start speed 慢速啟動速度	25 ~ 200 (note1)	*10 spm	40	40	40
P.9	No synchronizer operation mode 沒有同步器操作模式	OFF.With Sync: ineffective 無功能 ON.W/O Sync: effective 有此功能(不會顯示E1)	--	OFF	OFF	OFF
F.0	Motor rotating direction 馬達轉向	C: Clockwise 順時針 CC: Counter-Clockwise 逆時針	--	CC	CC	CC
F.1	Motor static brake function 馬達靜止煞車功能	0: No such function 無功能 1 ~ 20: The bigger value means the more powerful braking force. 有此功能, 設定值越大煞車力量越大	--	0	0	0
F.2	Current limit curve when acc 加速限流曲線	1~7	--	1	1	3
F.3	Current limit curve when dec 減速限流曲線	1~8	--	4	4	7
F.4	Accelerating slope 加速曲線	1 ~ 8 The bigger value means slowly accelerating. 數值越大加速越慢	--	3	3	1
F.5	Decelerating speed slope choice 減速曲線選擇	1 ~ 41 The bigger value means the longer time of decelerating. 設定值越大,減速時間越長	--	5	5	8
F.6	Motor's speed control force when rotating 馬達轉速控制力	1 ~ 7 The bigger value means the bigger speed control error. 數值越大速度控制誤差越大	--	5	5	3
F.7	Motor's braking force when positioning 馬達定位時煞車力	1 ~ 6 The bigger value means the smaller positioning force. 數值越大定位時煞車力越小	--	2	2	2

F.8	Integral control function 積分控制功能	1~5	--	Note1	Note1	Note1
F.9	Differential control function 微分控制功能	1~3	--	Note1	Note1	Note1

L.0	The function selection for Option IN_A Option IN_A 功能選擇	0.OFF : no such function 無功能	--	1	1	1
L.1	The function selection for Option IN_B Option IN_B 功能選擇	1.Cutter SW : Manual cutter input, 手動斬刀開關輸入		3	3	3
L.2	The function selection for Option IN_C Option IN_C 功能選擇	2.SW2 : Switch 2 input SW2 開關輸入				
L.2	The function selection for Option IN_C Option IN_C 功能選擇	3.ED1 : Material edge sensor1 input 布端檢出器 1 輸入		4	4	4
L.3	The function selection for Option IN_D Option IN_D 功能選擇	4.ED2 : material edge sensor2 input 使用布端檢出器 2 作為 吸線頭動作結束標準		7	7	7
L.3	The function selection for Option IN_D Option IN_D 功能選擇	5.Trim SW : Trimmer input of Standing Operation Pedal for needle up control 立式踏板切線訊號輸入 作為提針訊號用				
L.3	The function selection for Option IN_D Option IN_D 功能選擇	6.FL SW Foot lifter input of Standing Operation Pedal 立式踏板抬壓腳訊號輸入				
L.3	The function selection for Option IN_D Option IN_D 功能選擇	7.Safety SWA : Safety switch A input 安全開關 A 輸入				
L.3	The function selection for Option IN_D Option IN_D 功能選擇	8.Half inch : Half stitch inching 半針補針				
L.3	The function selection for Option IN_D Option IN_D 功能選擇	9.One inch : One stitch inching 一針補針				
L.3	The function selection for Option IN_D Option IN_D 功能選擇	10.Knee SW : Knee switch input 膝動開關輸入				
L.3	The function selection for Option IN_D Option IN_D 功能選擇	11. Motor run input_high speed 馬達開始運轉輸入訊號				
L.3	The function selection for Option IN_D Option IN_D 功能選擇	12.Safety SWB : Safety switch B input 安全開關 B 輸入				
		continued on next page 接下頁				

<p>L.0~ L.3</p>	<p>The function selection for Option IN_A~D Option IN_A~D 功能選擇</p>	<p>13.SPEED LIMIT SW Speed limited to Parameter A1 限速開關(限速參數 A1)</p> <p>14.reserved for Motor stop input(預留作馬達停止運轉 輸入訊號使用) (與 11 項一起搭配使用)</p> <p>15.PAUSE SW 暫停開關</p> <p>16. Needle position control 上/下停設定輸入 (5V:UP, 0V:DN)</p> <p>17.Needle UP input for OR 提針訊號_OR 車用</p> <p>18.Motor Lock input 馬達鎖定功能輸入</p> <p>19.Motor run input-- low speed(Parameter o.2) 馬達低速轉動-參數 o.2</p> <p>20.夾布裝置(膝動開關)</p>	<p>--</p>			
---------------------	--	--	-----------	--	--	--

L.4	The function selection for Option OUT_A Option OUT_A 功能選擇	0.OFF : no such function 無功能	--	4	4	4
L.5	The function selection for Option OUT_B Option OUT_B 功能選擇	1.Cutter : Cutter Output can work with material edge sensor. 斬刀動作輸出,可搭配 電眼。		3	3	3
L.6	The function selection for Option OUT_C Option OUT_C 功能選擇	2.SW2 OUT : Output turns on when SW2 is on SW2 開關關閉時動作 3.Thread SD : Thread suction output. Can work with edge sensor and Cutter SW. 吸線頭輸出 4.FL OUT : Foot lifter output 抬壓腳輸出 5.Waste SD : Waste suction output. 吸布屑動作根據參數 6.Knee Out : Knee switch output 膝動開關輸出 7 : Trim output 切刀輸出 8 : Wiper output 撥線輸出 9.Thread SD2 吸線頭輸出 2 10.TENSION RELEASE 鬆線輸出 11.CONDENSE STITCH 密縫輸出 12.BACK LATCH 鎖線輸出 13.TR1 FOR OL 拷克車用鬆線輸出 14~16 : 保留 17.FO Output FO 輸出 18.Folder Output 鬆緊帶輸出 20.夾布裝置		5	5	5

		21. 吹風(電眼控制)				
L.7	The Thread SD_OUT acts stitches' number after material edge sensor 1 on 吸線頭_前吸風針數 布端檢出器 1 開始動作 TS_OUT 動作針數	0 ~ 250 250 : infinite before ED1/ED2 turns OFF 在布端檢出器 1/2 結束前一直輸出	*1 stitch	20	20	20
L.8	The Thread SD_OUT acts stitches' number after material edge sensor 1 (or 2) off 吸線頭_後吸風針數 布端檢出器 1(或 2)結束動作 Thread SD_OUT 動作針數	0 ~ 249	*1 stitch	10	10	10

L.9	Thread SD_OUT ENERGY SAVING MODE 吸線頭_間隔吸風模式 Thread SD_OUT 節能模式	<p>0.FT/BK: Only Front & Rear suction with material edge sensor 前吸後吸_電眼控制</p> <p>1.FT/MD/BK: Thread SD_OUT acts depended on the setting of Parameter C.0,C.1 with material edge sensor 前吸後吸+間隔吸風_電眼控制, 根據參數 C.0,C.1 設定動作</p> <p>2.Interval Thread SD_OUT acts depended on the setting of ParameterC.0,C.1 when motor rotates 間隔吸風_馬達控制 根據參數 C.0,C.1 設定動作</p> <p>3.MO RUN: Thread SD_OUT acts when motor runs 長吸風_馬達控制</p> <p>4.MTR FT/BK: Thread SD_OUT acts depended on the setting of Parameter K.6 when motor begins to rotate and stops 前後吸_馬達控制 根據參數 K.6 動作</p> <p>5.Thread SD_OUT only acts when material is out and motor rotates 沒布料且馬達運轉時吸線頭動作</p>	--	3	0	3
C.0	Stitches number of Thread SD_OUT ON when energy saving 吸線頭_吸風針數	0~99	*1 stitch	10	10	10
C.1	Stitches number of Thread SD_OUT OFF WHEN ENERGY SAVING 吸線頭_間隔吸風針數	0~99	*10 stitch	1	1	1

C.2	The Waste SD_OUT acts stitches' number after material edge sensor 1 on 吸布屑_前吸風針數 布端檢出器 1 開始動作 Waste SD_OUT 動作針數	0 ~ 250 250 : infinite before ED1/ED2 turns OFF 在布端檢出器 1/2 結束前一直輸出	*1 stitch	10	10	10
C.3	Waste SD_OUT acts stitches' number after material edge sensor1 (or 2) off 吸布屑_後吸風針數 布端檢出器 1(或 2)結束動作 Waste SD_OUT 動作針數	0 ~ 249	*1 stitch	10	10	10
C.4	Waste SD_OUT ENERGY SAVING MODE 吸布屑_間隔吸風模式 Waste SD_OUT 節能模式	0.FT/BK: Only Front & Back suction with material edge sensor 前吸後吸_電眼控制 1.FT/MD/BK: Waste SD_OUT acts depended on the setting of Parameter C.5,C.6 with material edge sensor 前吸後吸+間隔吸風_電眼控制, 根據參數 C.5,C.6 設定動作 2.Interval: Waste SD_OUT acts depended on the setting of Parameter C.5,C.6when motor rotates 間隔吸風_馬達控制 根據參數 C.5,C.6 設定動作 3.MO RUN: Waste SD_OUT acts when motor rotates 長吸風_馬達控制 continued on next page 接下頁	--	3	2	3

C.4	Waste SD_OUT ENERGY SAVING MODE 吸布屑_間隔吸風模式 Waste SD_OUT 節能模式	4.MTR FT/BK: WSD_OUT acts depended on Parameter K.7 when motor begins to rotate and stops 前後吸_馬達控制 根據參數 K.7 動作	--			
C.5	Stitches number of Waste SD_OUT ON when energy saving 吸布屑吸風針數	0~99	*1 stitch	10	10	10
C.6	Stitches number of Waste SD_OUT OFF when energy saving 吸布屑間隔吸風針數	0~99	*10 stitch	1	4	1
C.7	Cutter output delays time after CUTTER SW is on CUTTER_SW 按鍵按下後，延遲斬刀動作時間	0~250	*10 ms	0	0	0
C.8	Thread SD_OUT acts time after CUTTER SW is on CUTTER SW 按鍵按下後(吸線頭)吸風時間	0~250	*10 ms	30	30	30
C.9	The Cutter output delays stitches after material edge sensor is on 前斬刀 Cutter 動作延遲針數	0~99	*1 stitch	0	0	0
J.0	The Cutter output delays stitches after material edge sensor is off 後斬刀 Cutter 動作延遲針數	0~99	*1 stitch	10	10	10
J.1	Cutter acts time 斬刀動作時間	0~25	*10 ms	10	8	10
J.2	Auto needle up positioning when POWER ON 開機自動上停	OFF: no such function 無功能 ON: with the function 有此功能	--	ON	ON	ON
J.3	Safety switch A type 安全開關 A 形式	N.O. 常開 N.C. 常閉	--	N.O.	N.C.	N.O.

J.4	Motor remains stopped until material edge sensor input ON 布料進入後針車才能開始車縫	OFF: no such function 無此功能 ON: with the function	--	ON	ON	ON
J.5	The stitches's number before motor stops when material edge sensor is off 布離開後幾針馬達停止	0~254 255:without the function 無此功能	*1 stitch	10	10	10
J.6	Foot lifter control mode 壓腳控制	0.Pedal: Pedal controls foot lifter 踏板控制壓腳 1.Auto-A: sensor control foot lifter 踏板+電眼 ED1 控制 2.Auto@Stop: Auto footlifting after motor stops 馬達停針自動抬壓腳 3.Pedal controls foot lifter after trimming 切完線後才可以踏板控制抬壓腳 4.Auto-B: Same as Auto-A and auto footlifting when sewing procedure is over 同 Auto-A &完成縫製後自動抬壓腳	--	0	1	0
J.7	Resonance speed 共振轉速	0~78	*1 spm	0	0	0
J.8	Resonance speed range 共振轉速範圍	0~100	*1 spm	0	0	0
J.9	ONS stop timer 定位時間	0~50	*100 ms	13	13	13
A.0	Heavy loading? 重載?	OFF. Light: light loading 輕載 ON. Heavy: heavy loading 重載	--	ON	ON	ON
A.1	Medium speed 中速	2~80	*100 spm	20	20	20

A.2	Operation Mode 運轉模式	<p>0.MANUAL: 人工模式</p> <p>1.SEMI-A: 半自動模式 A Machine auto-stop only depends on the parameter setting J.5, without check the position of pedal. 腳踏板放開針車繼續運轉直到達到設定針數 J.5 後停止</p> <p>2.SEMI-B: 半自動模式 B Same as SEMI-A but check the position of pedal. 腳踏板放開馬達停止</p> <p>3.AUTO:自動模式</p> <p>4.SEMI-P:半自動模式 P Automatic sewing when pedal is pressed forward. 踏板踏下後，自動完成車縫程序。</p>	--	2	1	2
A.3	Auto-Cutter function 自動斬刀功能	<p>0.OFF: no such function 無此功能</p> <p>1.Front: only front cutting (when edge sensor on) 前斬刀</p> <p>2.Back: only back cutting (when edge sensor off) 後斬刀</p> <p>3.FT/BK: front &back cutting 前後斬刀</p>	--	3	3	3
A.4	Needle up function when pedal is heeled. 取消後踩上停功能	<p>0.NDL UP@PH: With the needle up function when pedal is heeled 有踏板後踩提針功能</p> <p>1.XX @PH: Cancel the needle up function when pedal is heeled. And just the foot lifting function is effective 取消踏板後踩提針功能 只做舉壓腳動作</p>	--	0	0	0
A.5	Reversed revolution angles after pedal is heeled. 後踩反轉角度	0~250°	*1 °	0	0	0

A.6	Edge sensor1 type 電眼 1 動作形式	LA/Dark On HA/Light On	--	HA	LA	HA
A.7	Edge sensor2 type 電眼 2 動作形式	LA/Dark On HA/Light On	--	HA	HA	HA
A.8	Thread SD_OUT delays stitches' number after material edge sensor on (before L.7) 前吸風延遲針數(吸線頭)	0~99	*1 stitch	0	0	0
A.9	Thread SD_OUT delays stitches' number after material edge sensor off (before L.8) 後吸風延遲針數(吸線頭)	0~99	*1 stitch	0	0	0
Y.0	Edge sensor off debounce time 電眼結束防彈跳圈數	0~5	*1 stitch	3	3	3
Y.1	Cancel error saving function 取消記憶錯誤碼	0.Save 有錯誤碼記憶功能 1.Cancel 無此功能	--	0	0	0
Y.2	Lock function 參數鎖定功能	UL : no such function 無此功能 LK : with the function 有此功能	--	UL	UL	UL
Y.3~ Y.4	RESERVED 保留	--	--	--	--	--
Y.5	The stitches' number machine runs when Cutter switch is on 按下斬刀按鍵，針車轉動 圈數	0~9	*1 stitch	0	0	0
Y.6	Thread trimming delaying time 切線延遲時間	0-20	*10 ms	1	1	1
Y.7	Thread trimming acting time 切線動作時間	0-25	*10 ms	10	10	10
Y.8	Thread wiping delaying time 撥線延遲時間	0-250	*10 ms	12	12	12
Y.9	Thread wiping acting time 撥線動作時間	0-250	*10 ms	10	10	10
U.0	Footlifter delaying time 壓腳延遲時間	0-250	*10 ms	25	25	25

U.1	Thread wiping output control 撥線輸出控制	0:No output thread wiping 不輸出撥線 1:Output thread wiping 輸出撥線 2:Output thread wiping when foot lifter active 輸出撥線,切線後與壓腳 同動	--	1	1	1
U.2	Needle position 停針位置	UP: 上停點 DN: 下停點	--	UP	UP	UP
U.3	Needle position1 control func. enable when sewing 車縫時停針位置控制致能	OFF:無此功能 ON:依據 U.4 位置停針		OF	ON	OF
U.4	Needle position1 when sewing 車縫時停針位置	UP: 上停點 DOWN: 下停點	--	DN	DN	DN
U.5	Safety switch B type 安全開關 B 形式	N.O. 常開 N.C .常閉	--	N.O.	N.C.	N.O.
U.6	Edge sensor function 電眼功能控制	OFF: Disable edge sensor 取消電眼功能 ON: Enable edge sensor 啟動電眼功能	--	ON	ON	ON
U.7	Thread SD mode 吸線頭模式	0.OFF: disable Thread SD output 取消吸線頭輸出 1.FRONT: front suction Thread SD acts when edge sensor ON 前吸風(吸線頭) 2.BACK: back suction Thread SD acts when edge sensor OFF 後吸風(吸線頭) 3.FT/BK: front & back suction 前後吸風(吸線頭)	--	3	3	3
U.8	The function selection for Option IN_E Option IN_E 功能選擇	Refer L.0	--	0	12	0

U.9	The function selection for Option OUT_D Option OUT_D 功能選擇	Refer L.4	--	1	1	1
K.0	The function selection for Option OUT_E Option OUT_E 功能選擇			0	0	0
K.1~ K.5	RESERVED 保留		--	-	-	-
K.6	Thread SD_OUT acts time when motor stops 馬達停針後吸線頭動作時間	0~50	*100 ms	0	0	0
K.7	Waste SD_OUT acts time when motor stops 馬達停針後吸布屑動作時間	0~50	*100 ms	0	0	0
K.8	Tension release output delays stitches' number after material edge sensor on (SBT) 布進來後到鬆線動作開始的延遲針數	0-10	*1 stitch	2	2	2
K.9	Tension release output delays stitches' number after material edge sensor off (EBT) 沒布到鬆線動作結束的延遲針數	0-10	*1 stitch	2	2	2
B.0	Condensed stitch output delays after material edge sensor on 有布後到密縫 ON 的延遲針數	0-10	*1 stitch	2	2	2
B.1	Condensed stitch output acts stitches' number 密縫 ON 期間針數	0-10	*1 stitch	10	10	10
B.2	Condensed sewing speed 密縫速度	50-250	*10 spm	180	180	180
B.3	End condensed stitches' number after pedel heeled 後踩密縫針數	0-50	*1 stitch	10	10	10
B.4	Waiting time after End condensed stitch B.3 密縫針數 B.3 後等待時間	0-200	*10 ms	20	20	20

B.5	Machine rotates turns after waiting time B.4 等待時間 B.4 後轉動針數	0-10	*1 stitch	10	10	10
B.6	Repeated cutting times 斬刀動作次數	1-50	--	1	1	1
B.7	The interval time between B.6 斬刀動作間隔時間	0~25	*10 ms	8	8	8
B.8~ B.9	RESERVED 保留		--	--	--	--
d.0	Thread SD acts time after footlifter acts (Fully heeled) 後踩第二段抬壓腳後吸線頭動作時間	0~250	*10ms	0	0	0
d.1	Waste SD acts time after footlifter acts (Fully heeled) 後踩第二段抬壓腳後吸布屑動作時間	0~250	*10ms	0	0	0
d.2	Backtack switch max. on time 回針按鍵最長動作時間	0~30	*1 s	12	12	12
d.3	Backtack power off time 回針保護禁動時間	0~30	*1 s	6	6	6
d.4	Safety switch A delay time 安全開關 A 保護延遲時間	1~25	*10 ms	20	20	20
d.5	Safety switch B delay time 安全開關 B 保護延遲時間	1~25	*10 ms	20	20	20
d.6	Decrease speed before Front cut 前斬前降速功能	OF : no such function 無此功能 ON : with the function 有此功能	--	OF	OF	OF
d.7	Decrease speed before Back cut 後斬前降速功能	OF : no such function 無此功能 ON : with the function 有此功能	--	OF	OF	OF
d.8	UTL delay time UTL 輸出延遲時間	0~20	*10 ms	2	2	2
d.9	UTL acting time UTL 動作時間	0~200	*10 ms	10	10	10
E.0	Delay time between UTL OFF and start sewing UTL 結束到轉動前延遲時間	0~20	*10 ms	10	10	10
E.1	Sewing speed after UTL UTL 後轉動速度	50-250	*10 spm	180	180	180

E.2	Stitches' number after UTL UTL 後轉動針數	0-9	*1 stitch	2	2	2
E.3	Confirming time for foot lifter acting level 壓腳動作準位確認時間	1-100	*10 ms	7	7	7
E.4	Waste SD_OUT delays stitches' number after material edge sensor on (before C.2) 前吸風延遲針數(吸布屑)	0~99	*1 stitch	0	0	0
E.5	Waste SD_OUT delays stitches' number after material edge sensor off (before C.3) 後吸風延遲針數(吸布屑)	0~99	*1 stitch	0	0	0
E.6	In auto test mode, motor running time adjustment 自動測試模式下，馬達運 轉時間調整	1-200	*100 ms	50	50	20
E.7	In auto test mode, motor stopping time adjustment 自動測試模式下，馬達停 止時間調整	1-200	*100 ms	20	20	20
E.8	Front TR1 delay stitches' 前鬆線 1 延遲針數	0-99	*1 stitch	0	0	0
E.9	Front TR1 acting stitches' 前鬆線 1 動作針數	0-99	*1 stitch	0	0	0
G.0	Rear TR1 delay stitches' 後鬆線 1 延遲針數	0-99	*1 stitch	0	0	0
G.1	Rear TR1 acting stitches' 後鬆線 1 動作針數	0-99	*1 stitch	0	0	0
G.2~ n.1	Reserved 保留	--	--	--	--	--
n.2	Trimming forward angle after passing the UP singal (for OR special machine) 切線上停後，往前移動角 度(特殊機)	0~250	*1 °	100	100	100
n.3	The angle which motor rotates backwards and stops at after parameter n.2 參數 n.2 動作後，逆轉到定 位角度	0~250	*1 °	40	40	40

n.4	Pedal type 踏板類型	0:Normal type 一般式踏板 1:Analog type for OR OR 類比輸入式踏板 2:PK70	--	0	0	0
n.5	Motor static brake function for OR 馬達靜止煞車功能_ OR 車頭用	0~5: The bigger value means the more powerful braking force. 有此功能, 設定值 越大煞車力量越大	--	0	0	0
n.6	Decelerating speed slope choice for fixed stitches sewing 定寸縫減速曲線選擇	0~4	--	0	0	0
n.7	Back switch type 回針輸入動作形式	0:LA/Dark On/N.O. 1:HA/Light On/N.C.	--	N.O.	N.O.	N.O.
n.8	AUTO sewing delay time 自動車縫開始延遲時間	1~50	*100 ms	20	20	20
n.9	Interval stitches' of cont. cuttingfor special machine 連續斬刀間隔針數	1~100	*1 stitch	1	1	1
o.0	CC cycle for special machine 連續斬刀動作周期	20~200	*10	20	20	20
o.1	Waste SD mode 吸布屑模式	0.OFF: disable Waste SD output 取消吸線頭輸出 1.FRONT: front suction Waste SD acts when edge sensor ON 前吸風(吸布屑) 2.BACK: back suction Waste SD acts when edge sensor OFF 後吸風(吸布屑) 3.FT/BK: front & back suction 前後吸風(吸布屑)				
o.2	CL1 test speed 切邊機測速速度	10~25	*10 spm	15	15	15
o.3	The stitches' of CL1 continue running afer pedal releases 切邊機放開踏板後持續運 轉針數	0~10	*1 stitch	0	0	0
o.4	CL1 cutter air valve type 切邊機平台上下控制類型	0:H.A. 1:L.A.	--	0	0	0

o.5	delay time of releasing AUTO FL after material edge sensor is on 感應布進來後自動壓腳釋 放時間	1~250	*100 ms	8	8	8
o.6	CUT LSPD 斬刀降速速度	2~85	*100 sspm	8	8	8
o.7	Footlifter auto-on function at FL control mode :AUTO-B when power on 在壓腳模式 AUTO-B 下， 開機自動抬壓腳致能	OFF ON	--	OF	OF	OF
o.8	Function setting when Pedal is at 2nd position 後踩第二段時斬刀控制	0:Only FL 只抬壓腳 1:FL&Cutting 與壓腳同動 2:Only Cutting 只切線不抬壓腳	--	0	0	0
o.9	CUT TYPE 斬刀模式	0:NORMAL 1:TAPE CUTTER	--	0	0	0
H.0	Software version 軟體版本	1.0	--	1.0	1.0	1.0
H.1	Historical Error Code 歷史錯誤碼	1.x 2.x 3.x 4.x 5.x 6.x	--	ER-0	ER-0	ER-0

Note1. This value depends on motor specification. 根據馬達規格會有不同的值

Note2. Reserved 預留功能