

電控參數說明書
ELECTRONIC CONTROL
PARAMETER MANUAL

C007LD
C007K
S007K
C007JP
F007K



SIRUBA ELECTRIC SYSTEM
KAULIN MFG. CO., LTD.

EC 指令自我宣告書：

本公司在此宣告以下產品系列：
AC 伺服馬達—HD62 系列

皆符合以下 EC 指令的規定：
-EC 低電壓指令 (2014/35/EU)
-EC 電磁兼容指令(2014/30/EU)
-EC 機械指令 (2006/42/EC)

及配合相關安全標準如下：
EN 60204-31：機械之電機設備之安全。
EN 12100：機械安全— 基本概念，設計的一般原則。

有毒物質限量指令自我宣告書：

本公司在此宣告以下產品系列：
AC 伺服馬達—HD62 系列

皆符合以下指令的規定：
1. 歐盟 RoHS 指令(2011/65/EU & (EU) 2015/863)
2. 中華人民共和國電子行業標準：電子信息產品
中有毒有害物質的限量要求 (SJ/T 11363-2006)

本公司產品本身(馬達,控制箱)或其包裝材料及附件(紙箱,螺絲配件包,說明書,貼紙,標籤,印刷品...等等)或其元件與原材料供應商皆依照歐盟 RoHS 指令及中華人民共和國電子行業標準的限量規定而符合以下所列之十種有害物質的限量要求：

有毒物質	含量限值 (PPM)
鉛 (Pb)	1000
汞 (Hg)	1000
鎘 (Cd)	100
六價鉻 (Cr VI)	1000
多溴聯苯 (PBB)	1000
多溴二苯醚 (PBDE)	1000
鄰苯二甲酸二酯(DEHP)	1000
鄰苯二甲酸丁酯苯甲酯(BBP)	1000
鄰苯二甲酸二丁酯(DBP)	1000
鄰苯二甲酸二異丁酯(DIBP)	1000

* 基板的無鉛製程：總鉛含有濃度基準量 800 ppm 以下。
* 包裝材料：Pb+Hg+Cd+Cr VI 含有濃度基準總共合計 80 ppm 以下。

1. 安全注意事項：

使用前請詳閱本手冊與所搭配的縫紉機說明書，並請注意下列事項

- 安裝及操作須由受過正確訓練的人員來執行，拆卸安裝動作前請先關閉電源拔掉插頭並等待 5 分鐘。
- 本驅動裝置僅適用於指定範圍的縫製機械，請勿移做其他用途。
- 電源電壓請遵照馬達與控制箱銘牌所標示之規格 $\pm 10\%$ 範圍內操作。

※注意：控制箱電源規格如為 AC 220V 時，請勿插接到 AC 380V 的電源插座上，否則將出現異常且馬達將無法動作。此時請立即關閉電源開關，重新檢查電源。持續供應 380V 超過五分鐘以上，將可能燒損電源人力的保險絲及電解電容而危及人身安全。

- 請遠離高週磁波機器或電波發射器等，以免所產生的電磁波干擾本驅動裝置因而發生誤動作。
- 請不要在日光直接照射的場所、室外及室溫 45°C 以上或 5°C 以下的場所操作。
- 請不要在暖氣(電熱器)旁、有露水的場所及在相對濕度 30% 以下或 95% 以上的場所操作。
- 請不要在灰塵多的場所、具有腐蝕性物質的場所及有揮發性氣體的場所操作。
- 請注意不要被外物壓住或過度扭曲電源線。
- 為防止雜訊干擾或漏電事故，請做好接地工程。
- 在第一次開電後，請先以低速操作縫紉機並檢查轉動方向是否正確。
- 縫紉機運轉時，請不要去觸摸皮帶輪、天枰、針等會動作的部位。
- 所有可動作的部份，必須以所提供的防護裝置加以隔離，防止身體接觸並請勿在裝置內塞入其他物品。
- 修理及保養須由經過訓練的技術人員執行，而所有維修用的零件須由本公司提供或認可，方可使用。
- 請不要以不適當物體來敲擊或撞擊本產品裝置。

危險標示、注意標示

這個標示符號表示機器安裝時，如有錯誤恐會傷害到人體或機器會受到損壞，所以機器方面有危險性的地方會有此標示。

這個標示符號表示有高壓電，電氣方面有危險性的地方會有此標示。

保固期限

本產品保固期限為購買日期起一年內或出廠月份起 18 個月內。

保固內容

本產品在正常情況且無人為失誤的操作下，於保固期間無償的為客戶維修使能正常操作。

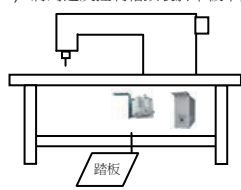
但以下情況於保固期間將得以收取維修費用：

- 1.不當使用包括連接高壓電源、將產品移做其它用途、自行拆卸、維修、更改、或不依規格範圍使用、進水進油及插入異物於本產品。
- 2.火災、地震、閃電、風災、水災、鹽蝕、潮濕、異常電壓及其它天災或不當場所造成之損害。
- 3.客戶購買後摔落本產品，或客戶自行運輸(或託付之運輸公司)所造成之損害。

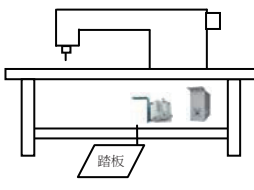
*本產品於生產及測試上皆盡最大努力和嚴格控管使其達到高品質及高穩定的標準，但外部之電磁或靜電干擾或不穩定的供應電源，仍可能對本產品造成影響或損害，因此操作場所的接地系統一定要確實做好，並建議客戶安裝故障安全防護裝置(如漏電電驛)。

2. 安裝說明：

a). 將馬達及控制箱鎖裝於車板下方。



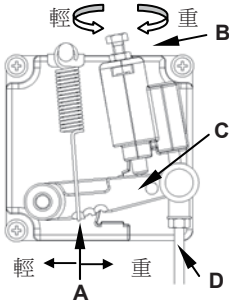
b). 接著將踏板跟控速器安裝好。



注意：
安裝及調整前請確定已關掉電源開關及拔掉插頭以利人身安全。

控速器的調整

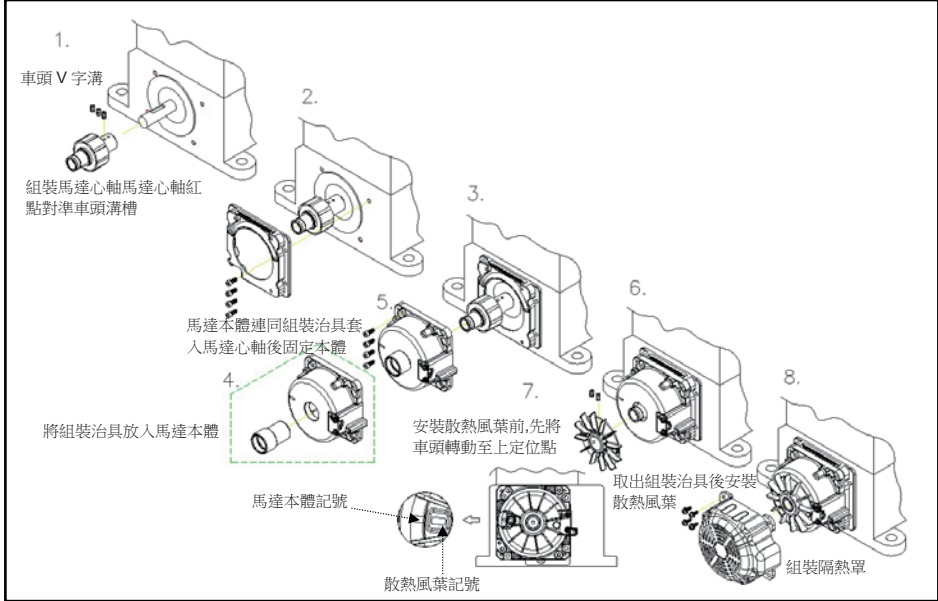
	調整需求	調整結果
1	踏板前踏 力量的調整	當彈簧 A 愈向右側勾時，表示力量的愈重。 當彈簧 A 愈向左側勾時，表示力量的愈輕。
2	踏板後踏 力量的調整	當螺栓 B 愈向上時，則後踏力量愈輕。 當螺栓 B 愈向下時，則後踏力量愈重。
3	踏板行程 長短的調整	當吊桿 D 向右側孔鎖裝時，表示行程較長。 當吊桿 D 向左側孔鎖裝時，表示行程較短。



注意：
調整前請確定已關掉電源開關及拔掉插頭以利人身安全。
控速器各部位名稱：
如圖示
A：前踏力量彈簧。
B：後踏力量的調整螺栓。
C：踏板旋臂。
D：腳踏板吊桿。

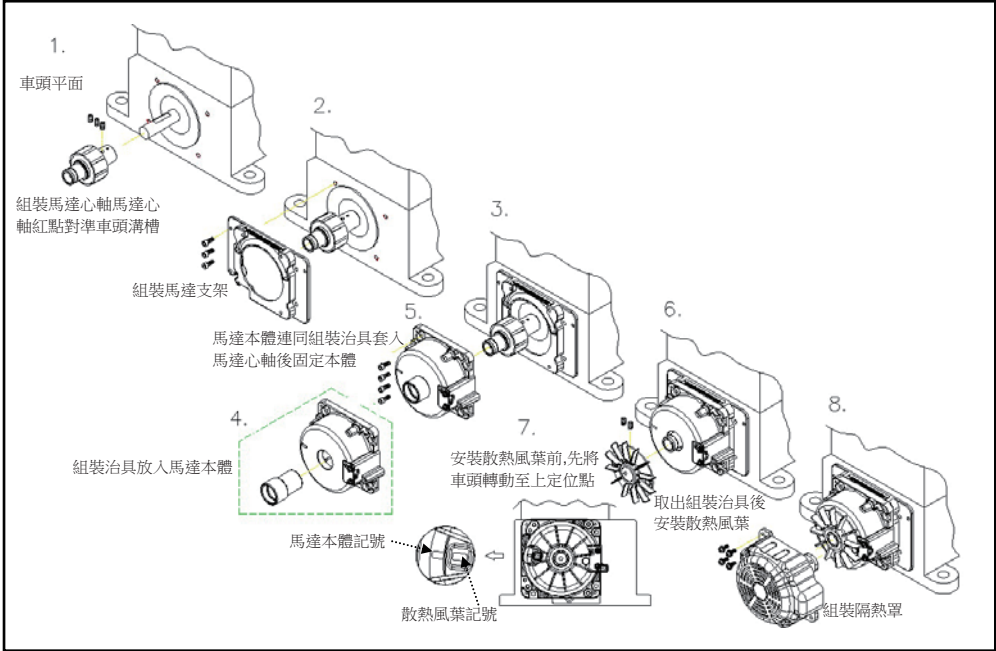
馬達安裝方式：C007L 三本車模式

- 1.將車頭的皮帶輪及散熱風葉卸下。
- 2.將馬達心軸放入車頭心軸後，並確實緊靠原裝散熱風葉端面，以 set 螺絲固定馬達心軸。
注意：馬達心軸上紅點記號的 set 螺絲對準車頭心軸平面或凹槽後鎖緊固定。
- 3.將馬達支架固定於車頭端面上。
- 4.將組裝治具放入馬達本體後,馬達本體連同組裝治具套入馬達心軸上,再將馬達本體順著組裝治具推向馬達支架端面。將螺絲鎖緊固定後,再將組裝治具取出。
注意：馬達心軸粘著強力磁石，本體推向支架平面時，注意強力磁石的吸引力，避免手指夾傷或馬達本體碰撞，造成損壞。組裝治具每安裝一台即報廢，不可以重複使用。
- 5.將散熱風葉放入心軸並推至靠面後，鎖緊 set 螺絲。
注意：鎖緊散熱風葉前，先將車頭轉動至上定位點後，轉動散熱風葉，使散熱風葉端面記號對準馬達本體記號後，固定散熱風葉 set 螺絲，馬達運轉停針時，即可停於針上位置。若停針位置不滿意，可放鬆散熱風葉，左右微調至滿意位置後固定即可。
- 6.整理馬達出口線，使其朝向車頭方向，將隔熱罩套入馬達本體後固定即完成。



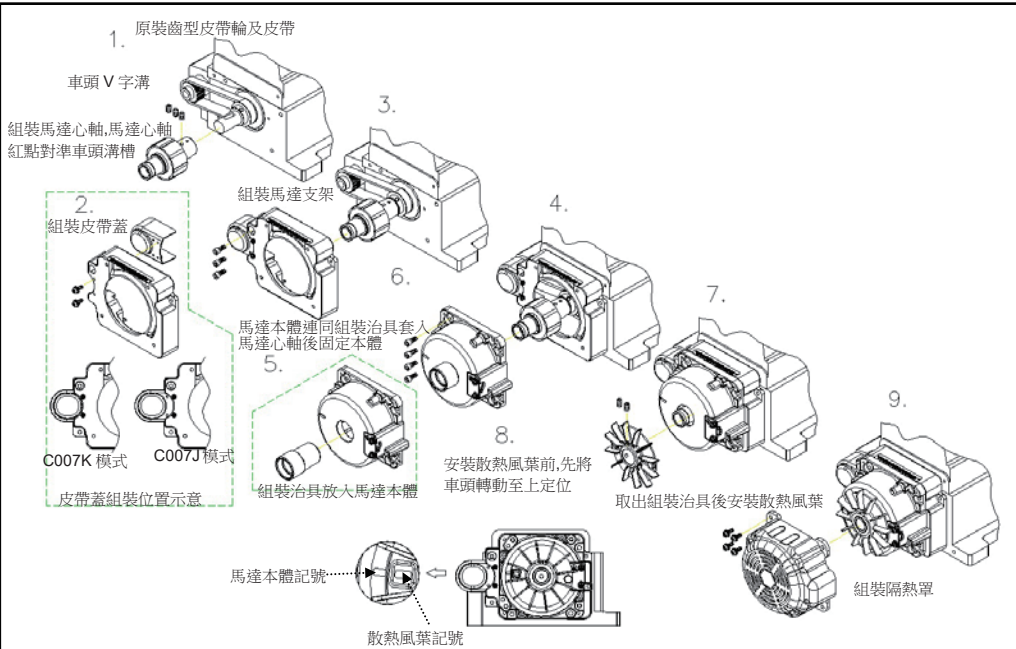
馬達安裝方式：F007K 三本車模式

- 1.將車頭的皮帶輪及散熱風葉卸下。
- 2.將馬達心軸放入車頭心軸後，並確實緊靠原裝散熱風葉端面，以 set 螺絲固定馬達心軸。
注意：馬達心軸上紅點記號的 set 螺絲對準車頭心軸平面或凹槽後鎖緊固定。
- 3.將馬達支架固定於車頭端面上。
- 4.將組裝治具放入馬達本體後,馬達本體連同組裝治具套入馬達心軸上,再將馬達本體順著組裝治具推向馬達支架端面。將螺絲鎖緊固定後,再將組裝治具取出。
注意：馬達心軸粘著強力磁石，本體推向支架平面時，注意強力磁石的吸引力，避免手指夾傷或馬達本體碰撞，造成損壞。組裝治具每安裝一台即報廢，不可以重複使用。
- 5.將散熱風葉放入心軸並推至靠面後，鎖緊 set 螺絲。
注意：鎖緊散熱風葉前，先將車頭轉動至上定位點後，轉動散熱風葉，使散熱風葉端面記號對準馬達本體記號後，固定散熱風葉 set 螺絲，馬達運轉停針時，即可停於針上位置。若停針位置不滿意，可放鬆散熱風葉，左右微調至滿意位置後固定即可。
- 6.整理馬達出口線，使其朝向車頭方向，將隔熱罩套入馬達本體後固定即完成。

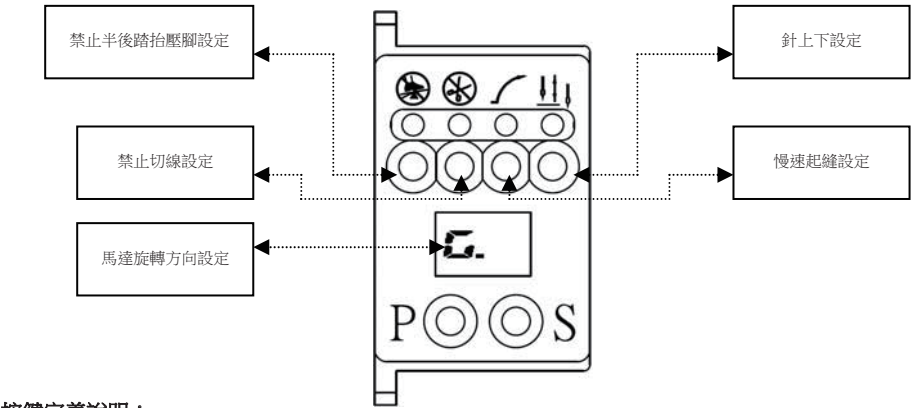


馬達安裝方式：C007K / C007J 三本車模式

- 1.將車頭的皮帶輪及散熱風葉卸下，保留原裝齒型皮帶輪及皮帶。
- 2.將馬達心軸放入車頭心軸後，並確實緊靠原裝散熱風葉端面，以 set 螺絲固定馬達心軸。
注意：馬達心軸上紅點記號的 set 螺絲對準車頭心軸平面或凹槽後鎖緊固定。
- 3.組裝支架皮帶蓋。皮帶蓋頂留 4 個螺母，與支架組裝後，可搭配 C007K 或 C007J。
- 4.將馬達支架組固定於車頭端面上。
- 5.將組裝治具放入馬達本體後,馬達本體連同組裝治具套入馬達心軸上,再將馬達本體順著組裝治具推向馬達支架端面。將螺絲鎖緊固定後,再將組裝治具取出。
注意：馬達心軸粘著強力磁石，本體推向支架平面時，注意強力磁石的吸引力，避免手指夾傷或馬達本體碰撞，造成損壞。組裝治具每安裝一台即報廢，不可以重複使用。
- 6.將散熱風葉放入心軸並推至靠面後，鎖緊 set 螺絲。
注意：鎖緊散熱風葉前，先將車頭轉動至上定位點後，轉動散熱風葉，使散熱風葉端面記號對準馬達本體記號後，固定散熱風葉 set 螺絲，馬達運轉停針時，即可停於針上位置。若停針位置不滿意，可放鬆散熱風葉，左右微調至滿意位置後固定即可。
- 7.整理馬達出口線，使其朝向車頭方向，將隔熱罩套入馬達本體後固定即完成。



3. 控制面板按鍵說明：



按鍵定義說明：

3.1 參數區內容調整步驟:

如何進入參數內容區調整內容

步驟一: 按住 P 鍵後，則進入設定模式。

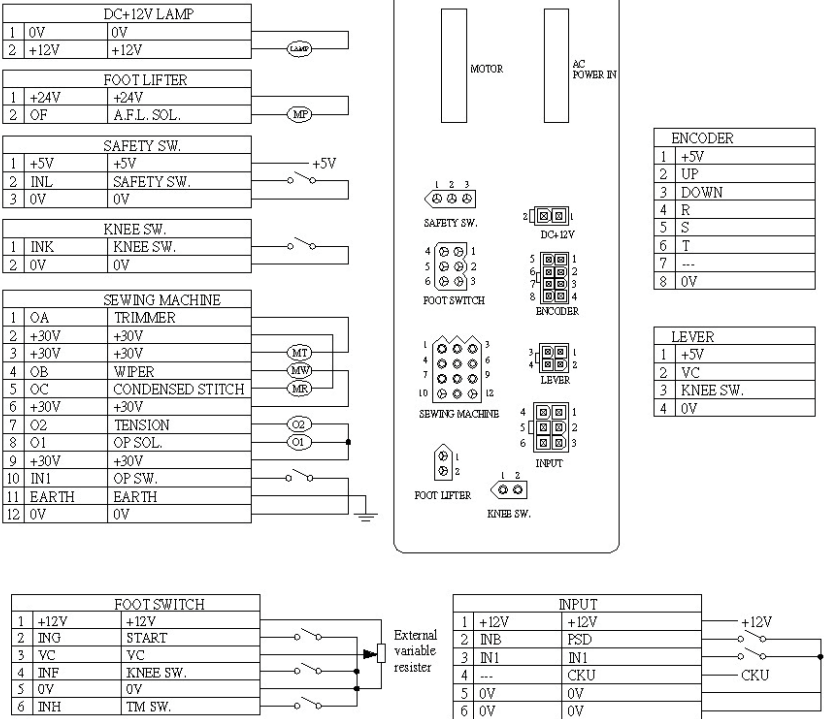
步驟二: 按 P 鍵選擇欲調整的參數

步驟三: 按 S 鍵進入數值調整模式。

步驟四: 按 P 鍵可遞增數值。

步驟五: 調整至欲設定之數值後，按 S 鍵進行儲存。

3.2 端子座示意圖



4. 常用參數列表：

長按操作盒面板 P key

參數碼	參數定義	調整範圍	單位	初始值	參數說明
				MAC – 0	
01	H	L ~ HL spm	*100	40	最高車縫速度
02	L	200 - 300 spm	*10	20	最低車縫速度
03	USP	200 - 500 spm	*10	20	後踏抬針速度
04	AS	200 - 6000 spm	*100	20	自動運轉速度
05	S	200 - 500 spm	*10	40	起縫慢針速度調整
06	SP	0 - 6000 spm	*100	xx	車縫速度顯示
07	DIR	CC/CW	---	CC	馬達運轉方向設定
08	POL	ON/OFF	---	ON	開電第一針自動慢速起動功能選擇
09	SLM	A/T	---	T	慢速起縫模式選擇
10	SLS	1 - 9 stitches	*1	2	慢速起縫針數調整
11	FD	0 - 990 ms	*10	10	壓腳放下後馬達延遲啟動時間
12	ILC	ON/OFF	---	OF	全後踏取消二本車動作時序
13	HHD	0-500 ms	10	10	半後踏抬壓腳確認時間
14	FHD	0-500 ms	0	0	全後踏抬壓腳確認時間
15	FHC	ON/OFF	---	OF	全後踏功能選擇
16	FTP	M/A	---	M	押腳電磁閥型態選擇
17	FO	0 - 990 ms	*10	25	押腳電磁閥全額出力時間
18	FC	10 – 60%	*1	40	押腳電磁閥減額出力百分比
19	AFM	OF/SF/TF/ST	---	OF	自動抬壓腳模式

按住 P key 鍵開電

參數碼	參數定義	調整範圍	單位	初始值	參數說明
				MAC-0	
31	MAC	0	---	0	車頭碼選擇
32	SFM	NC/NO	---	NC	安全開關模式選擇
36	T1	0 - 990 ms	*10	10	切線延遲動作時間
37	T2	0 - 990 ms	*10	10	切線動作時間
38	L1	0 - 990 ms	*10	10	鬆線延遲動作時間
39	L2	0-1500 ms	*10	10	鬆線動作時間
40	W1	0 - 990 ms	*10	23	掃線延遲動作時間
41	W2	0 - 3900 ms	*10	7	掃線動作時間
42	WF	0 - 990 ms	*10	5	切線後抬壓腳延遲動作時間

備註：

- 當馬達動作時，參數區是無法進入調整的，必須等 到馬達完全停止時,方可進入參數區。
- 當設定參數時，請務必瞭解參數所代表的功能，如有疑問請詳讀常用參數表或詢問銷售公司服務人員，切勿自行摸索試驗調整。
- 參數不當設定可能導致車頭操做不正常或損害車頭機械結構，請務必注意。

5. 簡易故障排除：

故障碼警示	出 現 時 機	狀 態 與 對 策
E.4	1. 電源 ON 時，檢知到電源電壓過高。 2. 插錯使用之供應電源。	馬達將關閉成無動作狀態。 請檢查供應此控制箱之 AC 電源是否正確。
E.7	1.馬達插頭配線接觸不良導致不轉。 2.定位器信號異常。 3.車頭機構鎖住或馬達皮帶輪異物捲入卡住。 4.加工物過厚，馬達扭力不足無法貫穿。	馬達將關閉成無動作狀態。 請檢查定位器信號是否異常。 請檢查車頭是否卡住或轉動困難。
E.P	電源開啟時，控速器未在中立位置。	將控速器回復至中立位置即可操作。

電控參數說明書
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SIRUBA ELECTRIC SYSTEM
KAULIN MFG. CO., LTD.

EC Declaration of Conformity

We hereby declare that the following products:
AC servo motor—HD62 series
are in conformity with the provision of the EC directives
as following :
-EC Low Voltage Directive (2014/35/EU)
-EC Electromagnetic Compatibility Directive
(2014/30/EU)
-EC Machinery Directive (2006/42/EC)
Applied harmonized standards :
EN 60204-31 : Electrical equipment of industrial
machines. Particular requirements for sewing
machines, sewing units and sewing system.
EN 12100 : Safety of machines.

Declaration of Conformity for Concentration
Limits for Certain Hazardous Substances

We hereby declare that the following products:
AC servo motor—
are complies with the following directives and
requirements :
1. European Union RoHS Directive and the concentration
limits for certain hazardous substances
(2011/65/EU & (EU) 2015/863)
2. People's Republic of China Electronic Business
Standard : Requirements for concentration limits for
certain hazardous substances in electronic information
products (SJ/T 11363-2006)
Our product itself (motor, control box) or its packing
materials and accessories (box, screws package, user
manual, sticker, label, print...etc.) or the suppliers of
parts and raw materials are all in conformity with the
provision of the European Union RoHS Directive and
People's Republic of China Electronic Business
Standard to conform the following concentration limits
for the ten hazardous substances :

Hazardous Substance	Permissible Values
Lead (Pb)	1000
Mercury (Hg)	1000
Cadmium (Cd)	100
Hexavalent chromium (Cr VI)	1000
Polybrominated Biphenyl (PBB)	1000
Polybrominated Diphenyl ether (PBDE)	1000
Di(2-ethylhexyl)phthalate (DEHP)	1000
Butyl Benzyl Phthalate (BBP)	1000
Dibutyl phthalate (DBP)	1000
Dioisobutyl phthalate (DIBP)	1000

*The concentration of lead in the lead-free process for
PCB shall be less than 800 ppm.
*For packing materials shipped with our products or
parts, the hazardous substances shall be 80 ppm or
less in sum of Pb+Hg+Cd+Cr VI.

1. Safety Precaution :

Please read this manual with sewing machine manual thoroughly and pay attention
for the following safety precaution.

- Installation and operation must be done by the trained personnel, also turn off the power switch and remove the plug from outlet and wait for 5 minutes before any installation.
- This product is designed for the specific sewing machines and must not be used for other purposes.
- Only use the power voltage as described on the name plate of the motor and control box in $\pm 10\%$ ranges.

⚠Attention : If the control box is AC 220V system, please don't connect to the AC 380V power outlet, otherwise the error will occur and motor is not functional. If that happened, please turn off the power switch immediately and check the power voltage. Continue supply the 380V power over 5 minutes might damage the fuses and burst the electrolytic capacitors and even might endanger the person safety.

- In order to prevent abnormal operation, keep the product away from the high frequency machines.
- Don't operate in direct sun light - outdoors area and the room temperature is 45°C above or 5°C under.
- Don't operate near the heater - dew area and the humidity is 30 % less or 95% more.
- Don't operate in dusty - evaporate - combustible gas area, and stay away from corrosive material.
- Don't apply heavy objects or excessive force on the power cord, also don't bend or pull the power cord.
- In order to prevent the static interference and current leakage, all grounding works must be done properly.
- After power on the machine for the first time, use low speed to operate and check the correct rotation direction.
- During machine operation, don't touch any moving parts.
- All moving parts must have protective device to avoid the body contact and objects insertion.
- Maintenance and repair must be done by the properly trained technician, also all the spare parts for repair must be approved or supplied by the manufacturer.
- Don't use any objects or force to hit or ram the product.

Danger and caution signs

- ⚠ Risks that may cause personal injury or risk to the machine are marked with this symbol in the instruction manual.
- ⚡ This symbol indicates electrical risks and warnings.

Limited Warranty

Warranty period of this product is 1 year from purchasing, or 18 months from our manufacturing date.

Warranty Detail

Any trouble found within warranty period under normal use condition in conformance with this manual, it will be repaired free of charge. Repair will be chargeable in the following cases even if within warranty period :

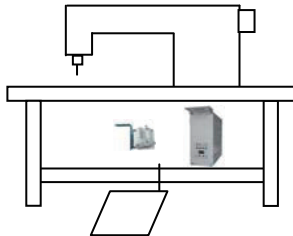
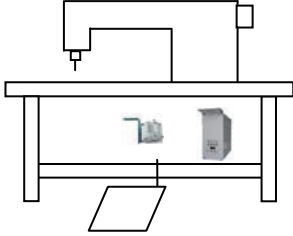
1. Inappropriate use include: wrong connecting high voltage, wrong application, disassemble, repair, modification by incompetent personnel, or operate the product without the precaution, or operate the products out of its specification range. Insert odd objects or liquids into the product.
2. Damage by fire, Earth quake, lighting, wind, flood, salt corrosive, moisture, abnormal power voltage and any other damage cause by the natural disaster or by the inappropriate environments.
3. Dropping after purchase, or damage in transportation by customer himself. (or by customer's shipping agency)

Note : We put our best effort and mind in testing and manufacturing for assuring the quality and reliable of this product. But it is possible this product can still be damaged due to external magnetic interference and electronic static or noise or unstable power source more than expected; therefore the grounding system of operate area must be well-connected to this product and it's also recommended to install a failsafe device. (such as residual current breaker).

2. Installation:

a). Install the motor and control box under the table.

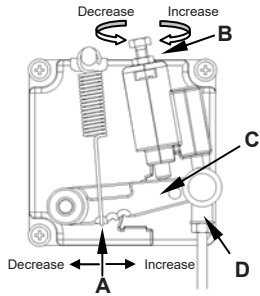
b). Install the pedal with speed control unit.



Caution :
For person safety, turn off the power switch and remove the power plug from outlet before any adjustment.

Speed Control Unit Adjustment

	Term of adjustment	Adjustment result
1	Toeing forward force adjustment	Spring A move to right = force increased Spring A move to left = force decreased
	Heeling backward force adjustment	Bolt B turn ⤵ = force decreased Bolt B turn ⤴ = force increased
3	Pedal stroke adjustment	Rod D secure at right = stroke is longer Rod D secure at left = stroke is shorter

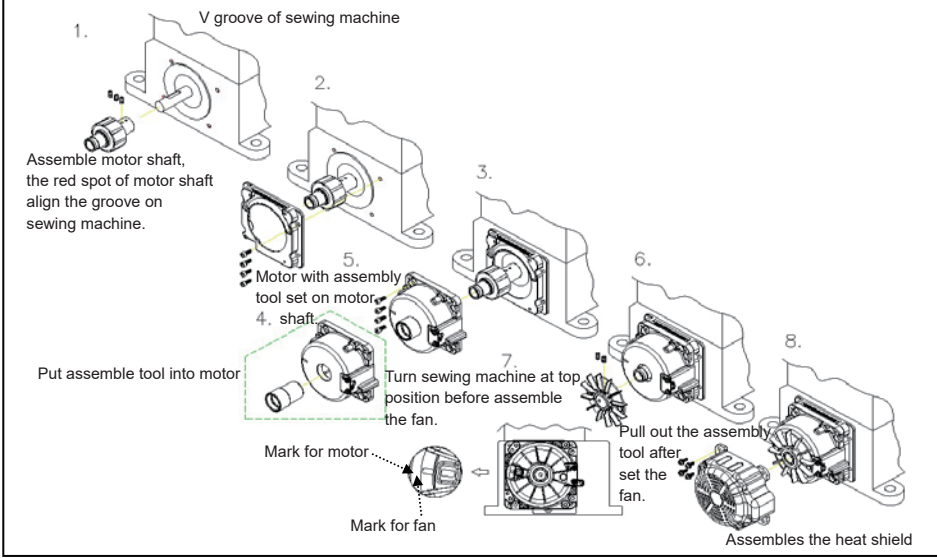


Caution :
For person safety, turn off the power switch and remove the power plug from outlet before any adjustment.

Components of speed control unit : see figure
A: Spring for toeing forward force adjustment
B: Bolt for heeling backward force adjustment
C: Pedal arm
D: Pitman rod for pedal

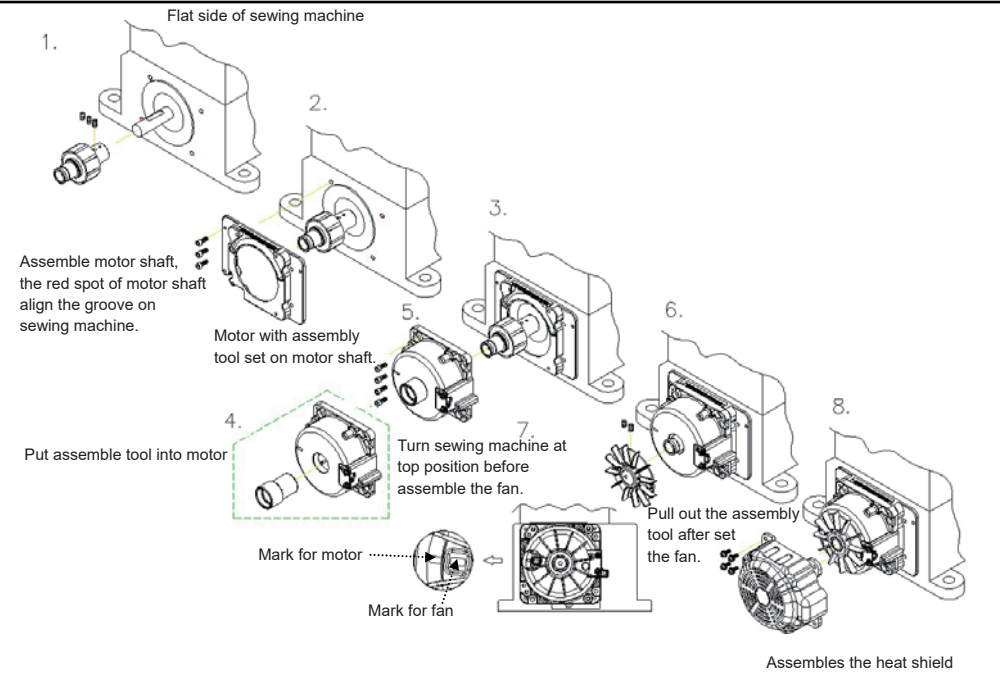
Motor Installation-Sewing mode for cover stitch C007L

1. Take off the pulley of sewing machine and exhaust fan.
2. Connects motor shaft to sewing machine shaft, closes to original fan set.
Note: The red spot on motor shaft align to sewing machine surface or groove then uses set screws to fix.
3. Fix motor bracket on sewing machine.
4. Put assembly tool into motor then set assembly tool on motor shaft and push assembly tool to mot bracket then fix by set screws. At last pull out the assembly tool.
Note: the magnet on motor shaft with strong attraction will cause hurt of finger or damage the motor. The assemble tool must depose after used.
5. Put the fan into fan and push to end, screw tightly by set screws.
Note: before set the fan pleases turn sewing machine at top position and turn the fan to align to motor mark then screw tight the fan, the motor stop at to position while it stops. Pleases release the fan to adjust slightly to right position.
6. Sort out the motor cable and ahead of sewing machine then put fan cover to motor and fix it.



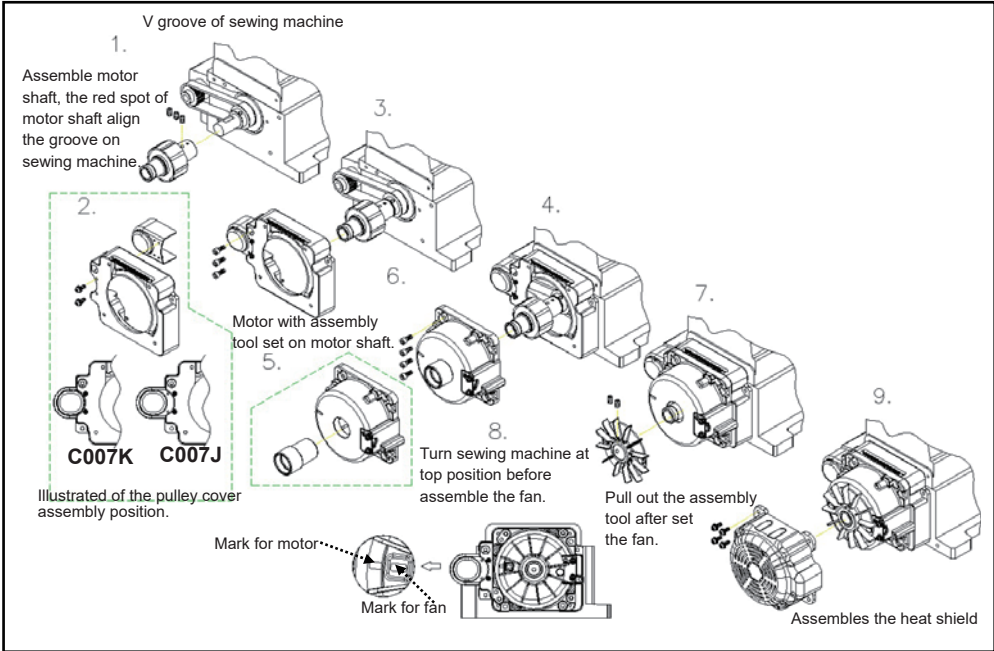
Motor Installation-Sewing mode for cover stitch F007K

1. Take off the pulley of sewing machine and exhaust fan.
2. Connects motor shaft to sewing machine shaft, closes to original fan set.
Note: The red spot on motor shaft align to sewing machine surface or groove then uses set screws to fix.
3. Fix motor bracket on sewing machine.
4. Put assembly tool into motor then set assembly tool on motor shaft and push assembly tool to mot bracket then fix by set screws. At last pull out the assembly tool.
Note: the magnet on motor shaft with strong attraction will cause hurt of finger or damage the motor. The assemble tool must depose after used.
5. Put the fan into fan and push to end, screw tightly by set screws.
Note: before set the fan pleases turn sewing machine at top position and turn the fan to align to motor mark then screw tight the fan, the motor stop at to position while it stops. Pleases release the fan to adjust slightly to right position.
6. Sort out the motor cable and ahead of sewing machine then put fan cover to motor and fix it.

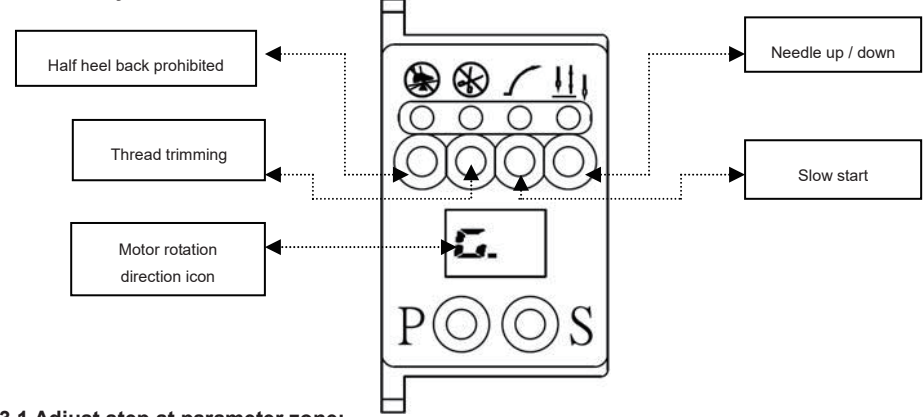


Motor Installation- Sewing mode for cover stitch C007K / C007J

1. Take off the pulley and fan on sewing machine, retain toothed pulley and belt.
2. Connects motor shaft to sewing machine shaft, closes to original fan set.
Note: The red spot on motor shaft align to sewing machine surface or groove then uses set screws to fix.
3. Assembles pulley cover. The pulley cover reserved 4 nuts uses to assemble mounting bracket for C007K or C007J.
4. Fix motor bracket on sewing machine.
5. Put assembly tool into motor then set assembly tool on motor shaft and push assembly tool to mot bracket then fix by set screws. At last pull out the assembly tool.
Note: the magnet on motor shaft with strong attraction will cause hurt of finger or damage the motor. The assemble tool must depose after used.
6. Put the fan into fan and push to end, screw tightly by set screws.
Note: before set the fan pleases turn sewing machine at top position and turn the fan to align to motor mark then screw tight the fan, the motor stop at to position while it stops. Pleases release the fan to adjust slightly to right position.
7. Sort out the motor cable and ahead of sewing machine then put fan cover to motor and fix it.



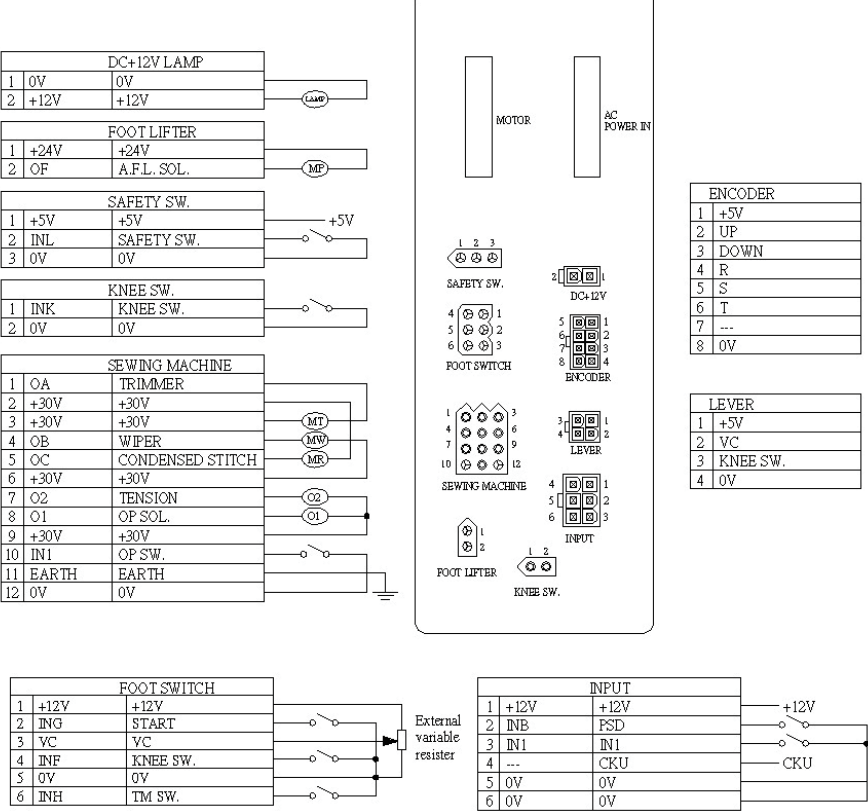
3. Panel Key Functions:



3.1 Adjust step at parameter zone:

- Step1: Press P. key to enter setting mode.
- Step2: Press P. key to select the parameter you want to adjust.
- Step3: Press S. key enter the parameter value adjustment.
- Step4: Press P. key increase the value.
- Step5: Press S. key to save.

3.2 Connector diagram :



4. General Parameter List:
Press P KEY

Parameter NO.	Function Name	Range	Ratio	Initial Value	Description
				MAC – 0	
01	H	L ~ HL spm	*100	40	Maximum sewing speed
02	L	200 - 300 spm	*10	20	Low speed
03	USP	200 - 500 spm	*10	20	Hell back move to needle UP speed
04	AS	200 - 6000 spm	*100	20	Automatic sewing speed
05	S	200 - 500 spm	*10	40	Slow start speed
06	SP	0 - 6000 spm	*100	xx	Sewing speed
07	DIR	CC/CW	---	CC	Direction of motor rotation
08	POL	ON/OFF	---	ON	Slow start at the first cycle of power ON
09	SLM	A/T	---	T	Slow start operation mode
10	SLS	1 - 9 stitches	*1	2	Stitch numbers for slow start
11	FD	0 - 990 ms	*10	10	Running delay time setting
12	ILC	ON/OFF	---	OF	Cancel of interlock timing after full heeling pedal
13	HHD	0-500 ms	10	10	Sensitivity adjustment for half-heeling pedal
14	FHD	0-500 ms	0	0	Sensitivity adjustment for full-heeling pedal
15	FHC	ON/OFF	---	OF	Cancel trimming at full-heeling pedal
16	FTP	M/A	---	M	Type selection for foot lifting solenoid
17	FO	0 - 990 ms	*10	25	Full-On time setting for foot lifting solenoid
18	FC	10 – 60%	*1	40	Duty cycle time setting for foot lifting soleoid
19	AFM	OF/SF/TF/ST	---	OF	Mode selection for foot lifting

Power On + P KEY

Parameter NO.	Function Name	Range	Ratio	Initial Value	Description
				MAC-0	
31	MAC	0	---	0	Machine code
32	SFM	NC/NO	---	NC	Safety switch protection mode
36	T1	0 - 990 ms	*10	10	Delayed timing prior to trimmer engaged
37	T2	0 - 990 ms	*10	10	Trimming time
38	L1	0 - 990 ms	*10	10	Delayed timing prior to tension release engaged
39	L2	0-1500 ms	*10	10	Trimming of tension release
40	W1	0 - 990 ms	*10	23	Delayed timing prior to wiper engaged
41	W2	0 - 3900 ms	*10	7	Setting timing of wiping
42	WF	0 - 990 ms	*10	5	Delayed timing prior to foot lifter engaged

Remark :

- You can not enter parameter area for adjusting if motor is running. You have to adjust parameter while motor stop totally.
- Pleases read the meaning of parameter in detail and fully understand it or contact qualified person while process parameter adjustment.
- Parameter adjust incorrect will cause sewing machine be damaged.

Error code	Cause of the problem	Condition and solution
E.4	1. When power on, higher power voltage has been detected. 2. Connect to a wrong AC power source.	Motor and machine will be shutting down. Please check the AC power source.
E.7	1. Bad connection to the motor connector. 2. Synchronizer (sensor) signal error. 3. Machine locked or object stuck in the motor pulley. 4. Sewing material is too thick.	Motor and machine will be shutting down. Please check the synchronizer (sensor) and its signal. Please check machine head to see if any objects stuck in the motor pulley, or machine does not rotate smoothly.
E.P	Power on, speed control unit is not at neutral position.	Speed control unit return to neutral.

Violators will be prosecuted