

SIRUBA[®] Sew Reach

使用說明書與零件圖



INSTRUCTION BOOK & PARTS LIST

■ ASO-ABF100-B





CE

危險水準的說明 Explanation of Dangerous Level

 危險 Dangerous	<p>如果忽視此標記而運行了錯誤的機械操作, 保養時肯定會引起當事者或第三者人員重傷或死亡</p> <p>Don't ignore the warning sign and don't proceed incorrect operation. Or it will cause the person or the third party seriously injured or dead during maintenance.</p>
 注意 Caution	<p>如果忽視此標記而運行了錯誤的機械操作, 保養時有可能會引起當事者或第三者人員受傷及造成設備損壞</p> <p>Ignoring this warning sign and proceed incorrect operation will cause the person involved or the third party wounded and equipment damaged during maintenance.</p>

警告圖案表示及表示標幟的說明 Explanation of Warning Signs and Labels

警告圖案表示 Warning Sign		運動部位, 謹防工傷事故 Moving part, beware of industrial accident
		高壓部位, 謹防觸電事故 High voltage, beware of electric shock
		高溫部位, 謹防燙傷事故 High temperature, beware of burns
指示標誌 Instruction Label		禁止 Prohibited
		地線的接線表示 Indication of ground wiring

索引	INDEX	頁 /PAGE
規格	SPECIFICATIONS	1
各部件名稱	NAMES OF MAJOR PARTS	3
安裝電器箱	INSTALLATION OF ELECTRIC EQUIP MENT	4
安裝廢油槽	INSTALL THE WASTE OIL TANK	4
安裝車頭	REMOVE THE MACHINE HEAD	5
搬運送扣機	REMOVE THE FEEDING BUTTON MACHINE	6
安裝送扣機組與操作盒	INSTALL THE FEEDING BUTTON MACHINE AND THE OPERATOR PANEL	7
電源開關的安裝、連接	INSTALLATION & CONNECTION OF POWER SWITCH	8
過濾調壓器與空壓管之	INSTALLATION AND ADJUSTMENT OF THE FILTER	10
安裝與調整	REGULAR AND THE TUBE	
安裝安全開關	INSTALL THE SAFETY SWITCH	12
安裝線架	INSTALL THE THREAD FRAME	13
變頻控制器操作說明	OPERATION OF THE INVERTER CONTROLLER	13
傾放與扳回機頭	LEAN & RECOVER THE MACHINE HEAD	15
鈕扣夾爪的位置	POSITION OF BUTTIN CLAMP	16
調整布壓腳底板	ADJUST THE FABRIC PRESSER FOOT BOTTOM PLATE	17
調整鈕扣壓腳上升量	ADJUST THE BUTTON PRESSER FOOT LIFTING HEIGHT	18
調整鈕扣夾爪與	ADJUST THE GAP BETWEEN THE BUTTON CLAMP	18
送扣撥爪間隙	AND THE FEEDING PLATE	
更換保險絲	SUBSTITUTE FUSE	19
更換鈕扣需要注意的步驟	THE REMARKABLE STEPS OF SUBSTITUTE BUTTONS	21
震動盤組細部調整	ADJUST THE DETAILS IN THE VIBRATION PLATE COM	25
更換送鈕撥爪	SUBSTITUTE THE FEEDING PLATE	27
更換旋轉軸的橡膠座	SUBSTITUTE THE BUBBER PLATE ON THE TURNING BAR	28

索引	INDEX	頁 /PAGE
送扣夾爪規格	SPECIFICATION OF BUTTON PLATE	29
車頭參數設定	MACHINE HEAD CONFIGURATION SETTING	30
安裝感應器	INSTALL THE SENSOR	31
回復出廠預設值	RESET TO DEFAULT MODE	32
控制系統架構	CONTROL SYSTEM STRUCTURE	33
參數說明	PARAMETER DESCRIPTION	34
故障排除	TROUBLE SHOOTING	41
ABF 控制板 (一)	ABF CONTROL BOARD (I)	42
ABF 控制板 (二)	ABF CONTROL BOARD (II)	43
ABF I/O 板	ABF I/O PANEL	44
1. 出現錯誤代碼 E41 : 送鈕扣機馬達原點檢索錯誤		45
1. ERROR CODE E41: BUTTON MOTOR MOTOR ORIGIN SEARCH ERROR		
2. 出現錯誤代碼 E45 : 旋臂逾時未回原點		45
2. ERROR CODE E45: SWIVEL ARM TIME-OUT DID NOT RETURN TO ORIGIN		
3. 出現錯誤代碼 E46 : ABF 通訊故障		46
3. ERROR CODE E46: ABF COMMUNICATION ERROR		
4. 出現錯誤代碼 E48 : 夾爪上扣異常		46
4. ERROR CODE E48: GRIPPER ERROR		
5. 出現錯誤代碼 E49 : 氣源偵測異常		47
5. ERROR CODE E49: AIR SOURCE DETECTION ANOMALY		
6. 出現錯誤代碼 E35 : 踏板控制異常		47
6. ERROR CODE E35: AIR SOURCE DETECTION ANOMALY		
簡易維修流程圖	BLOCK DIAGRAM OF SIMPLE REPAIR	48
異常檢修與解決對策	TROUBLESHOOTING	51
報廢流程	DEMOLITION PROCEDURE	52
縫製程序表	SEWING PROCEDURE CHART	53
桌板圖	TABLE CUT-OUT	56
零件圖	PARTS LIST	57

規格

SPECIFICATIONS

本說明書僅以 ASO-ABF100-B 說明

Only describe ASO-ABF100-B in this manual

1. 產品規格 (表 1)

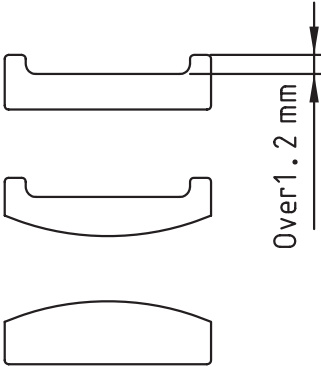
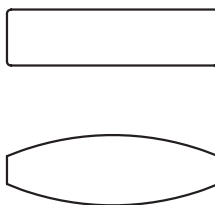
1. Product Specification (Table 1)

機種別 Machine Type	ASO-ABF100-B
搭載機頭	brother BE-438FX
使用鈕扣 Button	種類：圓形平扣 (二孔、四孔) Type : Circle Flat Button
	尺寸：φ 10 ~20mm Size : φ 10 ~20mm
鈕扣厚度 Thickness of Button	1.5~3.5mm
鈕扣直徑量測	自動式鈕扣直徑定位
鈕扣供給方式	震動方式
送扣車縫方式	後方水平送扣
夾扣檢知	有
軌道鈕扣排出功能	有
送扣速度	0.5 秒 / 個
工作夾具提升量 Rising Amount of Clamp	最大 :13mm Maximum:13mm
電源電壓 Power Voltage	單相 220V 定格 ±20% 50/60Hz Single Phase 220V Rated ±20% 50/60Hz
操作壓力	0.5 Mpa

表 1/Table 1

2. 鈕扣形狀 (圖表 1)

2.Button Shape(Char1)

<p>適用鈕扣的形狀 Available Shape of Button</p>	<p>不適用鈕扣的形狀 Unavailable Shape of Button</p>
	
<p>兩面須有明顯區別 (落差), 凹或凸須在 1.2mm 差距以上, 以順利判定正反面。 Two sides must be obviously different (Dissimilarity)For determining the positive or negative side, the convex or concave must above 1.2mm gap.</p>	<p>兩面皆相同之鈕扣, 機器無法判別。 Sides must be the same or can not be determined.</p>

圖表 1/Chart1

各部件名稱

NAMES OF PARTS

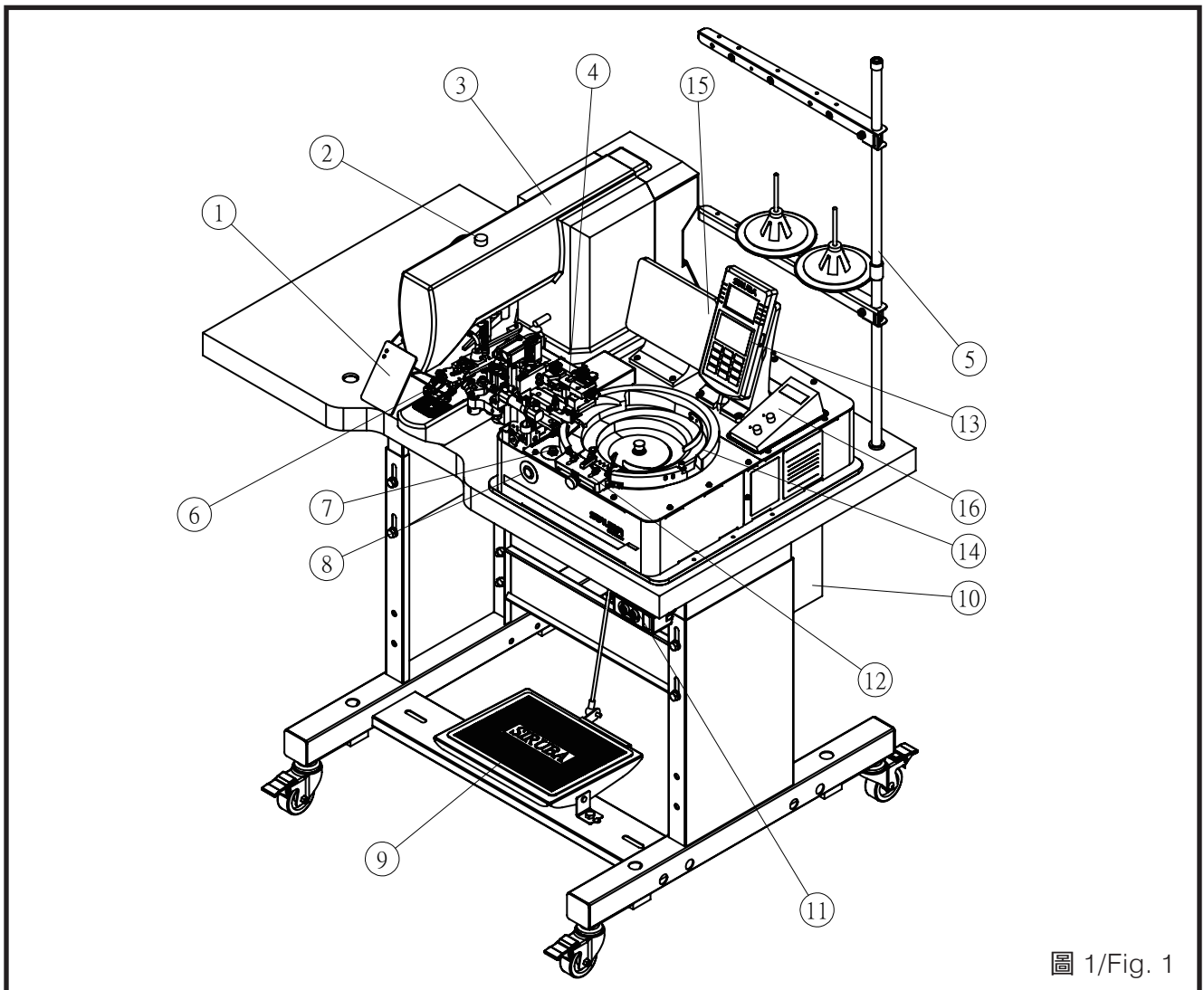


圖 1/ Fig. 1

- (1) 護目鏡
- (2) 捲線器
- (3) 縫紉機機頭
- (4) 鈕扣規格測量區
- (5) 線架
- (6) 送扣鉞
- (7) 退扣按鈕
- (8) 手動送扣按鈕
- (9) 啟動踏板
- (10) 控制箱
- (11) 電源開關
- (12) 鈕扣大小調整組
- (13) 操作盒
- (14) 振動盤
- (15) 電源開關
- (16) 變頻控制盒

- (1) Goggle
- (2) Reel
- (3) Machine Head
- (4) Measurement Zone of Button
- (5) Thread Frame
- (6) Button Seat
- (7) Retrieve Button
- (8) Manual Feeding Button
- (9) Padel
- (10) Operation Box
- (11) Power Switch
- (12) Adjustment Set of Button Size
- (13) Operation Padel
- (14) Vibration Plate
- (15) Power Switch
- (16) Inverter Control Box

安裝電器箱

INSTALLATION THE ELECTRIC BOX

電控包裝箱中附有圓頭螺絲①、平墊片②、彈簧墊片③、螺母④按照圖示的位置安裝好。(圖 2)

The electric package box accessorize with round head screw ①, washer ②, spring washer ③, nut ④, installed in the positions as the figure. (Fig. 2)

安裝廢油槽

INSTALL THE WASTE OIL TANK

- (1) 用 2 個固定螺絲⑤，把油壺固定座⑥固定到桌板的安裝孔上。
- (2) 將油壺⑦鎖入油壺固定座⑥中。
- (3) 把縫紉機油管插到油壺⑦裡。(圖 2)

- (1) Fix the oil pot fixed seat ⑥ with 2 fixed screw ⑤ to the holes on the table.
- (2) Fasten the oil pot ⑦ to the oil pot fixed seat ⑥.
- (3) Insert the oil pipe into the oil pot ⑦. (Fig. 2)

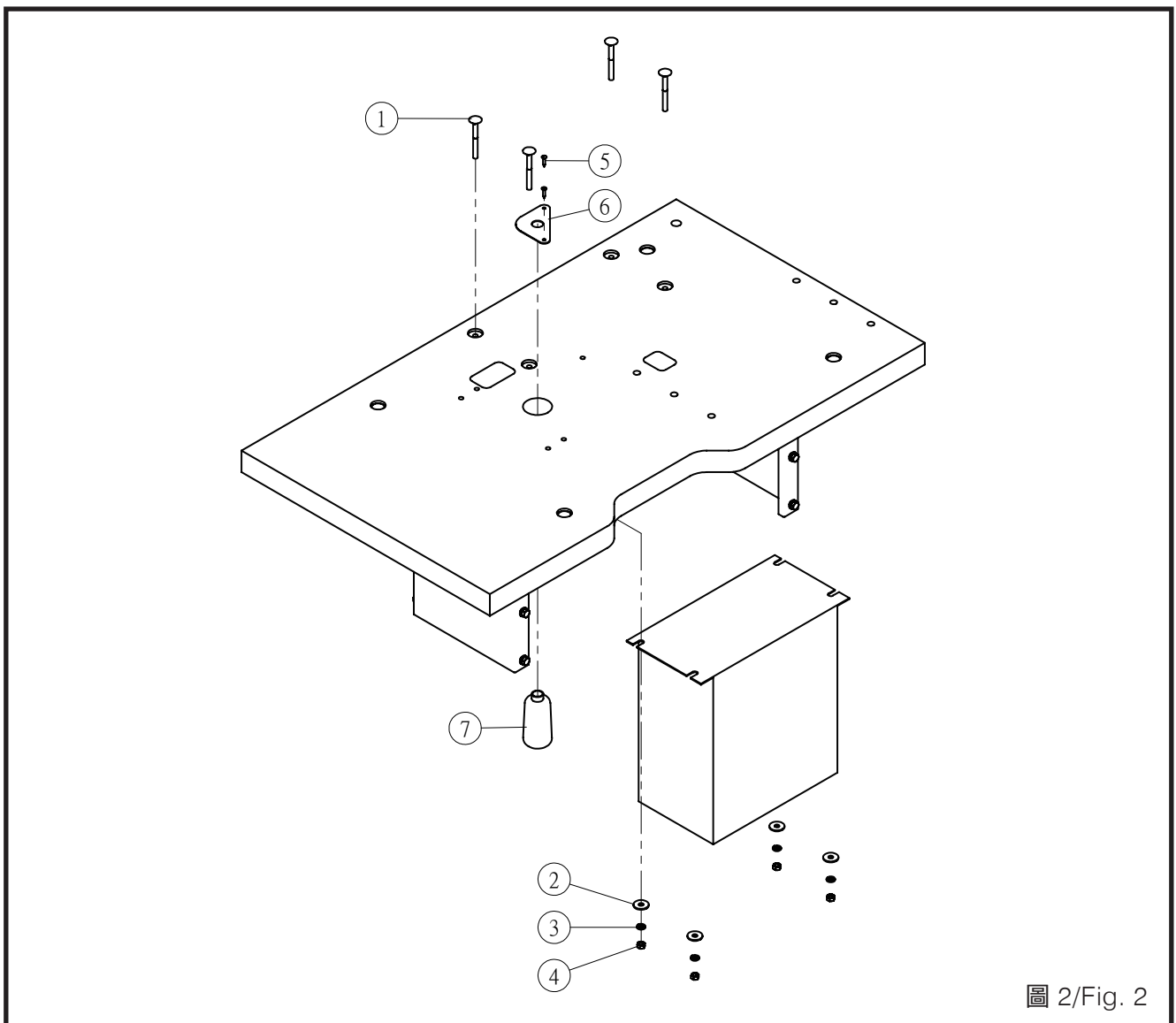


圖 2/ Fig. 2

安裝車頭

REMOVE THE MACHINE HEAD

用螺絲⑦，把固定座⑥固定到機器上，取平墊片②墊在車頭與固定座中間，將固定座對準桌板上的孔後，取螺絲①、彈簧墊片③和平墊片④，穿過固定板⑤，桌板與固定座鎖固，即可將車頭安裝完成。(圖 3)

Fix the fixed seat ⑥ with screw ⑦ to on the machine. Place washer ②, between machine head and fixer mount. Align fixer mount towards holes on the table. Fasten screw ①. Spring washer ③, and washer ④, through fixer plate ⑤, table and fixer mount to complete the machine head installation. (Fig. 3)

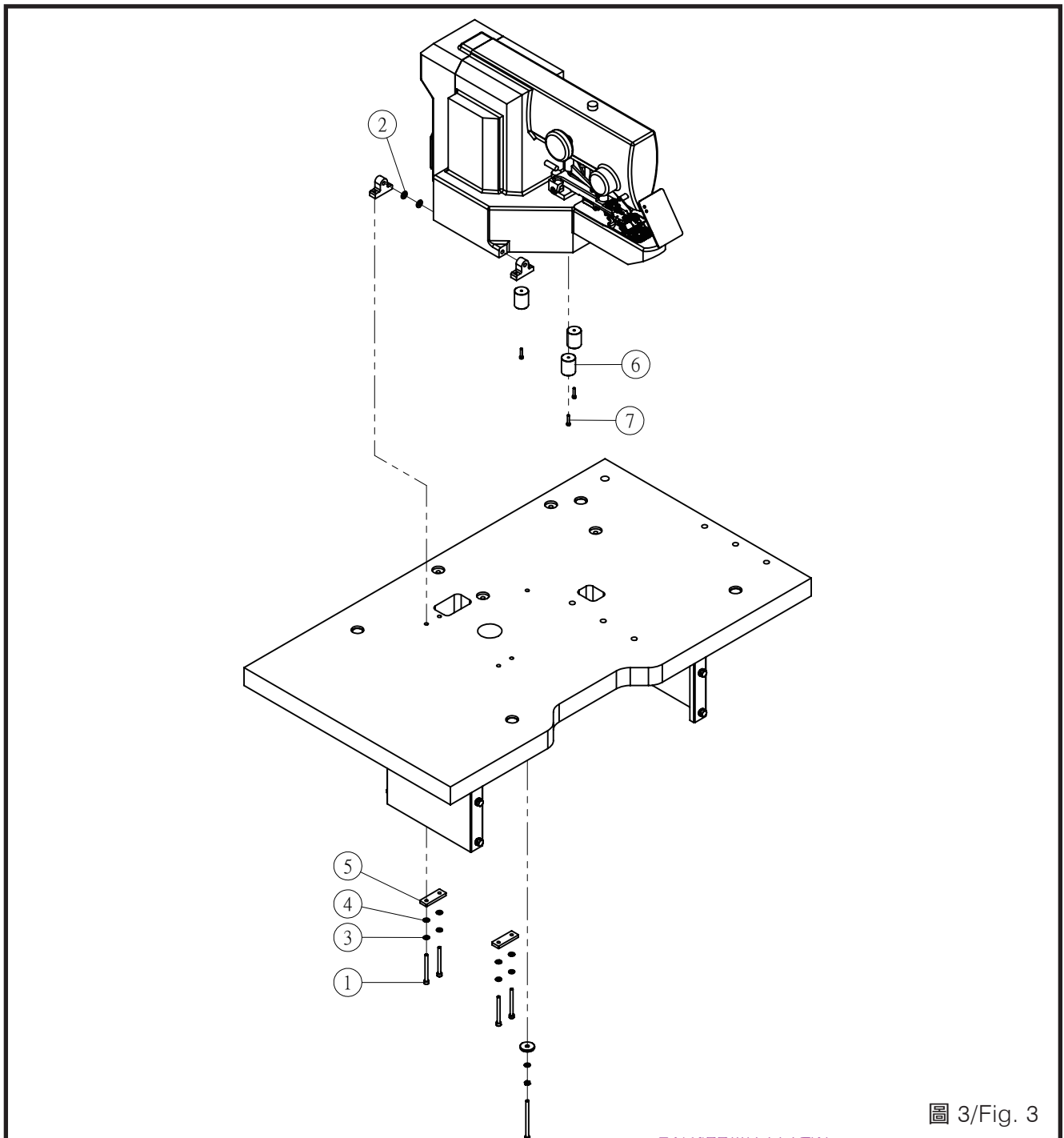


圖 3/ Fig. 3

搬運送扣機

REMOVE THE FEEDING BUTTON MACHINE

(1) 將保護機台的上方保麗龍取出，當要取出機台時須由二至三人協助搬運，兩人將雙手分別伸入機台的底部①、②與③、④，兩手出力需平衡，身體與膝蓋彎曲，確認提起沒問題後，再慢慢起身，若中途發現雙手無法支撐重量時，請由第三者協助搬運或輕輕放至穩定平台，並小心手指不要被壓傷；請更換適當人員，絕對不可強行搬運，以免發生身體傷害之危險。

(2) 搬運全程，請穿著安全鞋。(圖 4)(圖 5)

(1) Take out the polystyrene above the machine. It is needed 2 to 3 people to move out the machine together. Two people stretch both hands into the bottom ①, ②, ③ and ④ of the bottom of the machine with the balanced strength. The knees and bodies should be bent. After assuring the state, move up the machine slowly. It is necessary to ask for help if you cannot stand the weight. Slowly put on the flat table and be careful not to hurt your fingers. Ask for assistance if you need. Do not remove with force for avoiding danger.

(2) Please put on safety shoes during the moving. (Fig.4)(Fig.5)

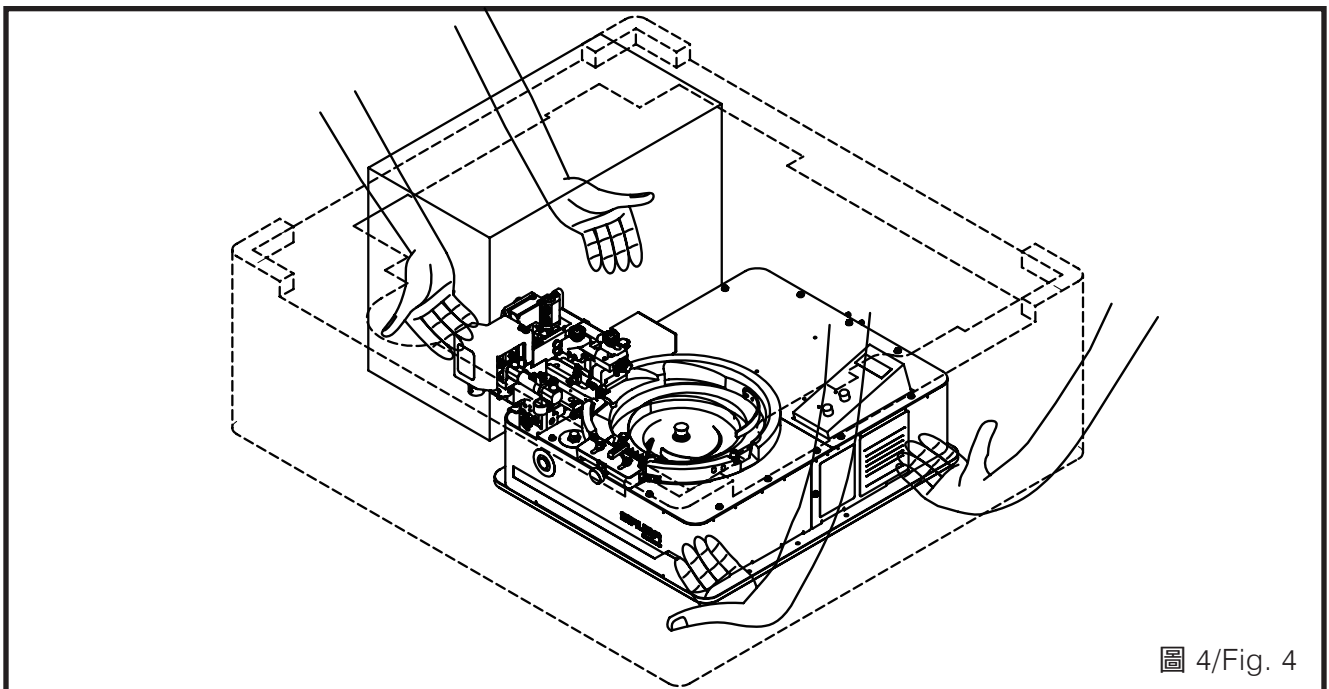


圖 4/ Fig. 4

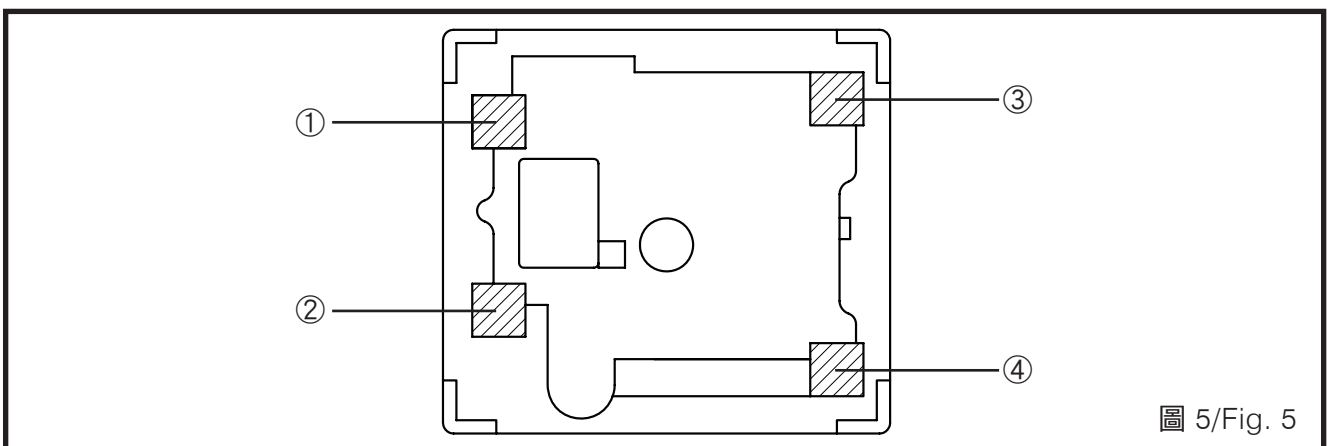


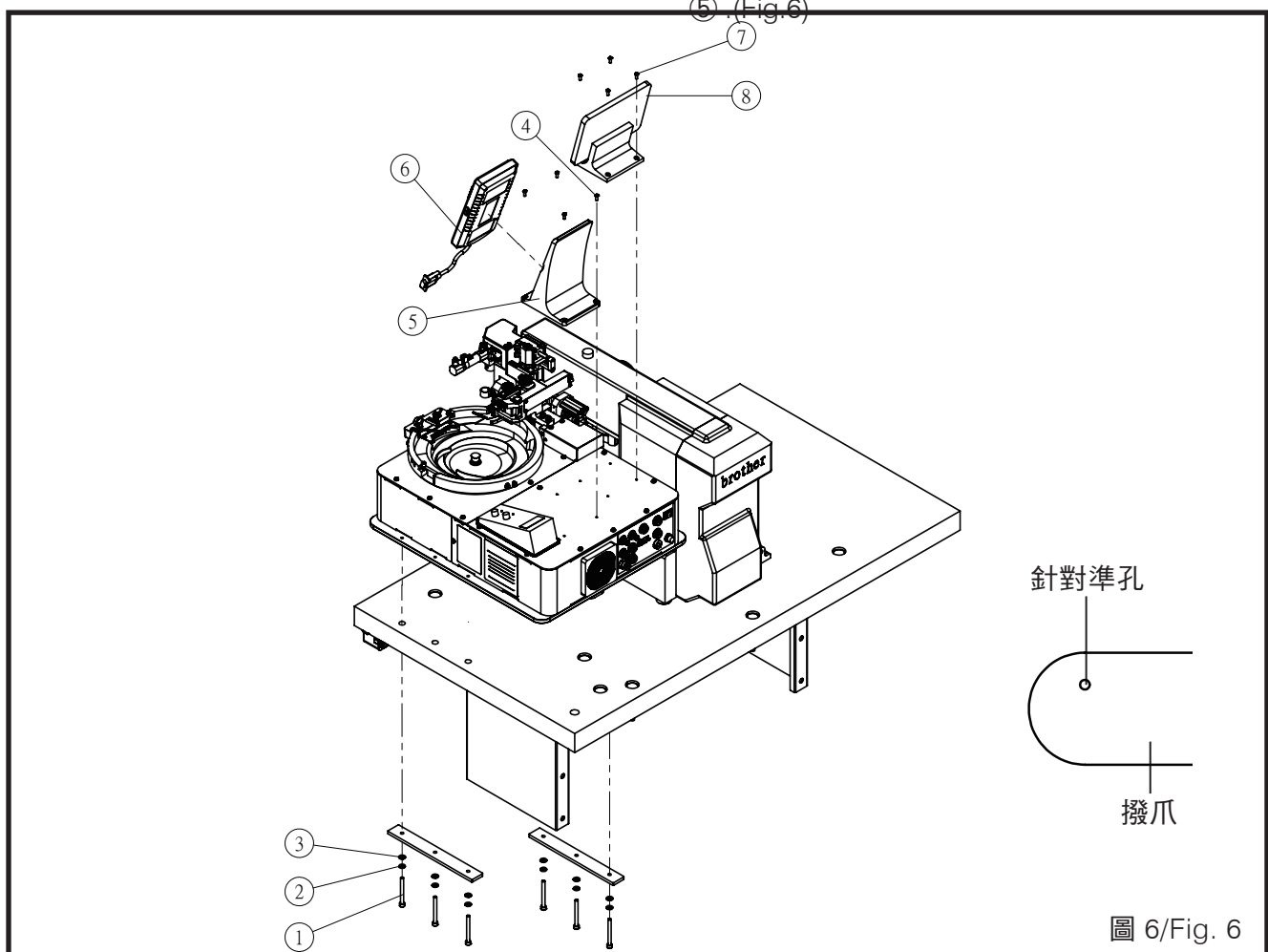
圖 5/ Fig. 5

安裝送扣機組與操作盒

INSTALL THE FEEDING BUTTON MACHINE AND THE OPERATOR PANEL

- (1) 打開電源，踩腳踏板一次，壓腳裝置移動到原點位置，讓送鈕撥爪送出（參照更換送鈕撥爪），更換撥爪，確認位置，讓車頭上的針對準撥爪的孔，即完成送扣機與縫紉機的定位。
- (2) 將送扣機組上 6 個孔，對準桌板上的 6 個孔後，取螺絲①、彈簧墊片②和平墊片③穿過固定板，桌板和送扣機組鎖固，即可將送扣機組裝完成。
- (3) 將螺絲④穿過操作盒支架⑤固定到送扣機組上，將螺絲⑦穿過操作盒支架⑧固定到送扣機組上，取操作面板盒⑥吸附於操作盒支架⑤上。（圖 6）

- (1) Switch on power. Step on the board 1 time. Press foot device will move to original position to make way for button clamp feede (ref. Change of button feede clamp). Change clamp confirm position. Let the needle on the machine head align with holes on the button clamp to complete the alignment sequence between machine head and button feede.
- (2) Have the 6 holes on the feeding button machine align to the 6 holes on the table. Put the screw ① and the washer ② through the table form the bottom plate of the machine. Then, cap with the washer ② and the spring washer ③. Last, fasten the nut to finish the installation.
- (3) Place the screw ④ through control box stand ⑤ fix it to button feeder module, place the screw ⑦ through control box stand ⑧ fix it to button feeder module, place the operating panel box onto stand ⑤. (Fig.6)



電源開關的安裝、連接

INSTALLATION & CONNECTION OF POWER SWITCH

1. 電源開關的安裝

依照指示圖 (圖 8) 安裝相關電纜與控制線。
踏板控制線的端子與①互接，另一個端子則是接到電控箱控制板上②的位置。(圖 7)

1. Installation of Power Switch

Follow the direction graph (Fig. 8) to install the related cable and the control wire.
The terminal of the pedal control wire is connected with ①, and other terminal is connected to the position of ② on the control panel. (Fig. 7)



②

①

圖 7/ Fig. 7

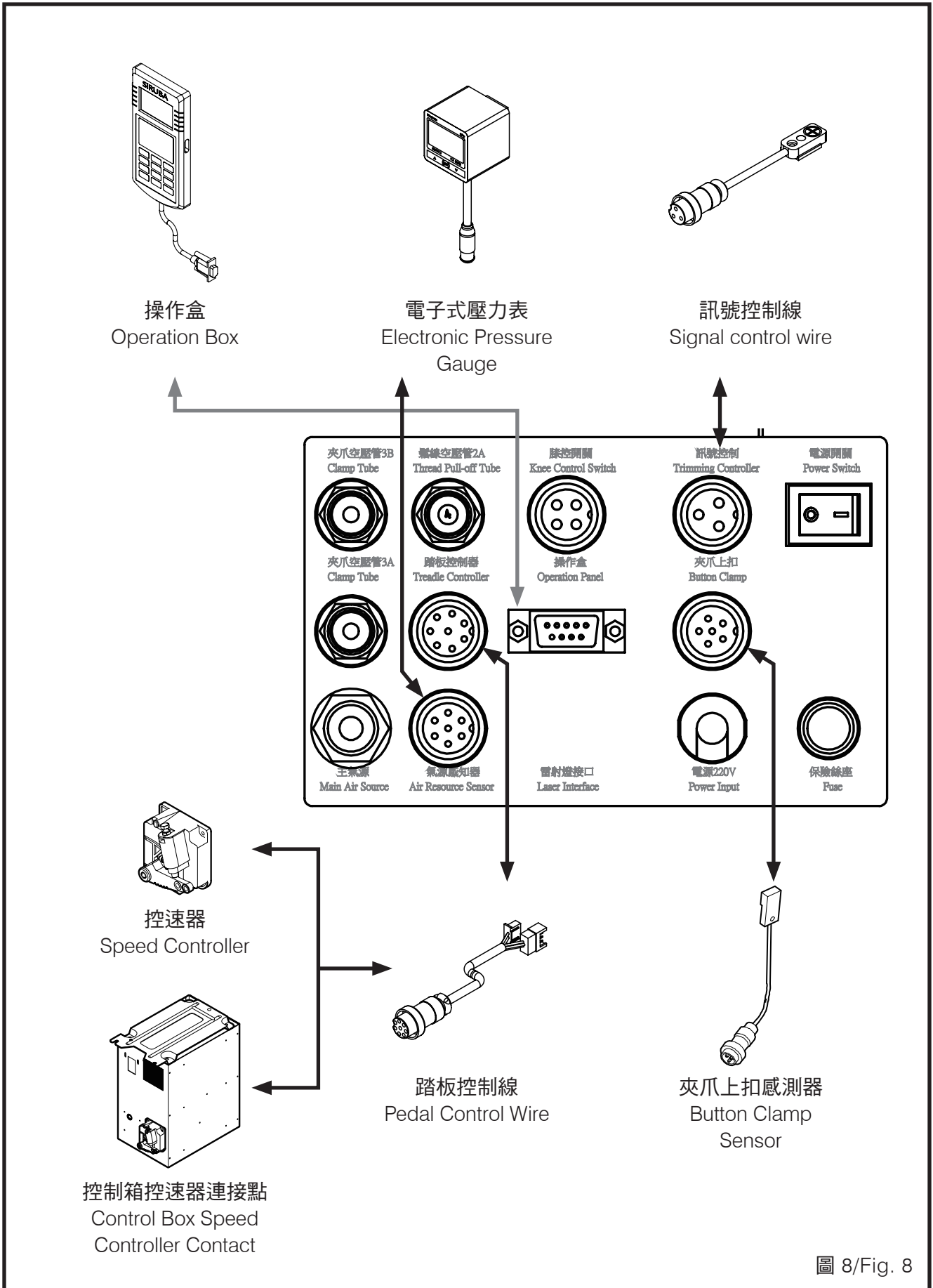


圖 8/ Fig. 8

2. 電源線的連接 (圖 9)

在電壓標籤上寫有電壓規格。請根據規格選擇電壓，並依送扣機組電纜線上文字套管做連接。

2. Connect the Power Wire (Fig. 9)

The voltage specification is on the voltage label. Please choose the voltage by it, and connect the wires based on the descriptions on the tubes.

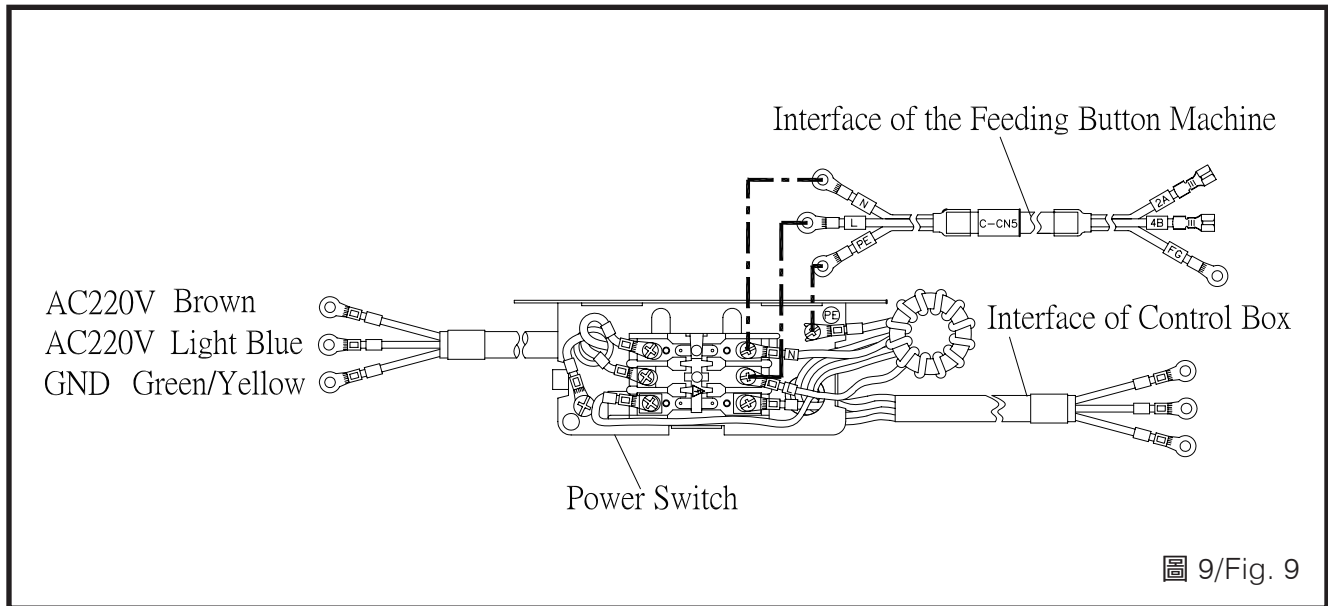


圖 9/ Fig. 9

過濾調壓器與空壓管之安裝與調整

INSTALLATION AND ADJUSTMENT OF THE FILTER REGULAR AND THE TUBE

1. 送扣機組①的後方有三個空壓管③、④、⑥，將空壓管③連接至過濾調壓器②；將空壓管④連接至壓腳機構⑤上，將空壓管⑥連接至壓腳機構⑦上。

1. There are three tubes ③, ④, ⑥ behind the feeding button machine set ①. Connect the tube ③ to the filter regular ②. Connect the tube ④ to the presser foot mechanism ⑤. Connect the tube ⑥ to the presser foot mechanism ⑦.

2. 在氣壓源接至過濾調壓器②，並將壓力錶壓力調至 4.5 ~ 4.8 kgf/cm。

2. Connect the pneumatic source to the filter regular ② and adjust the presser to 4.5 ~ 4.8 kgf/cm.

注意：

(1) 工作場所使用的空壓機設備，必須安裝濾水元件，以防止水氣進入機台而引發觸電，導致人員嚴重傷害或死亡之可能性。

Remark:

(1) The air compressor used in the work place should be equipped with a filter element, protecting the mechanism from water to cause an electric shock to operators seriously injured or even death.

(2) 當過濾調壓器的壓力低於 4kgf/cm 或超過 5kgf/cm，可能會導致送扣動作失敗。(圖 10)

(2) When the presser of the filter regular is lower than 4kgf/cm, or higher than 5 kgf/cm, it might cause the button feeding failure. (Fig. 10)

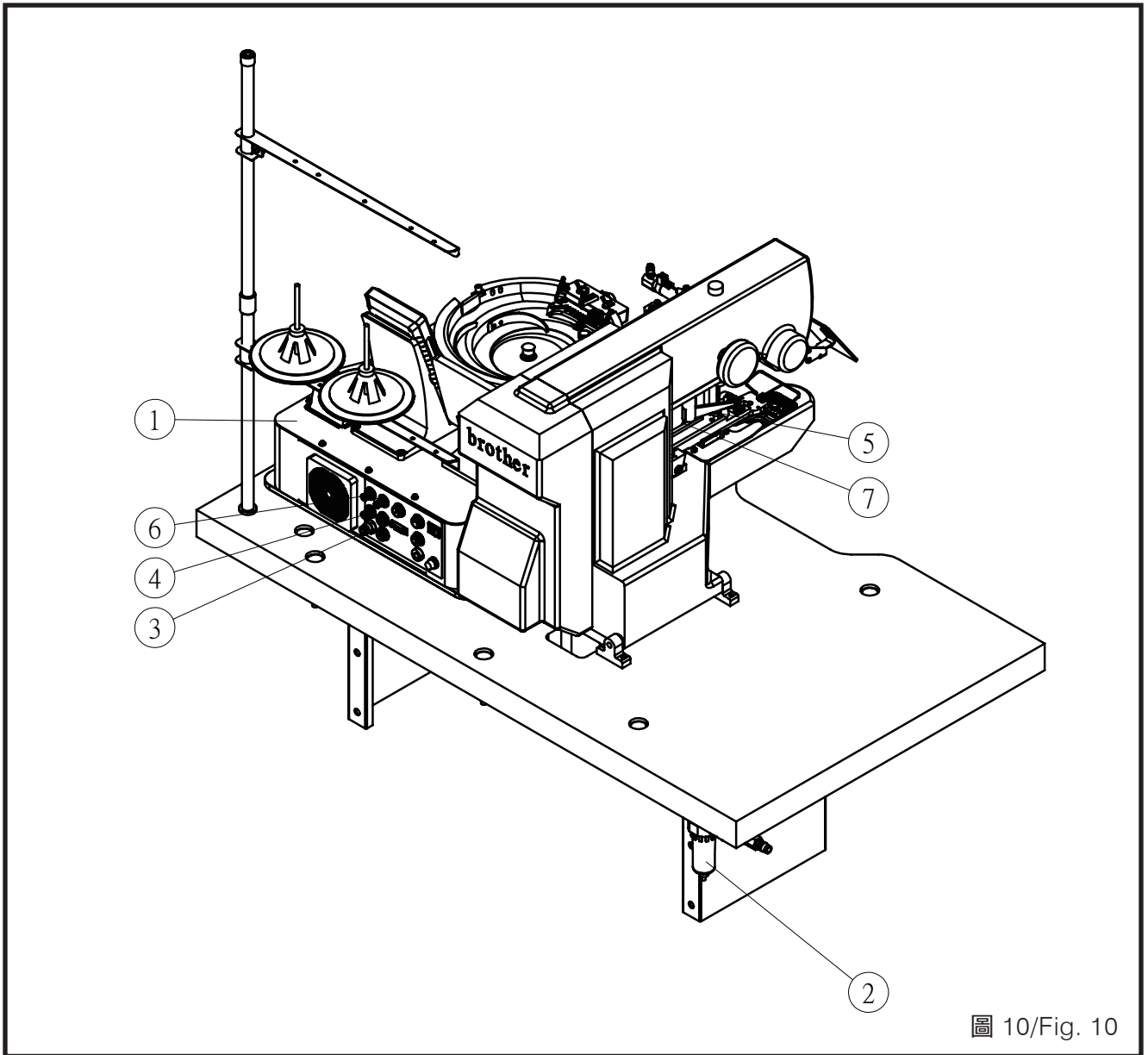


圖 10/ Fig. 10

安裝安全開關

INSTALL THE SAFETY SWITCH

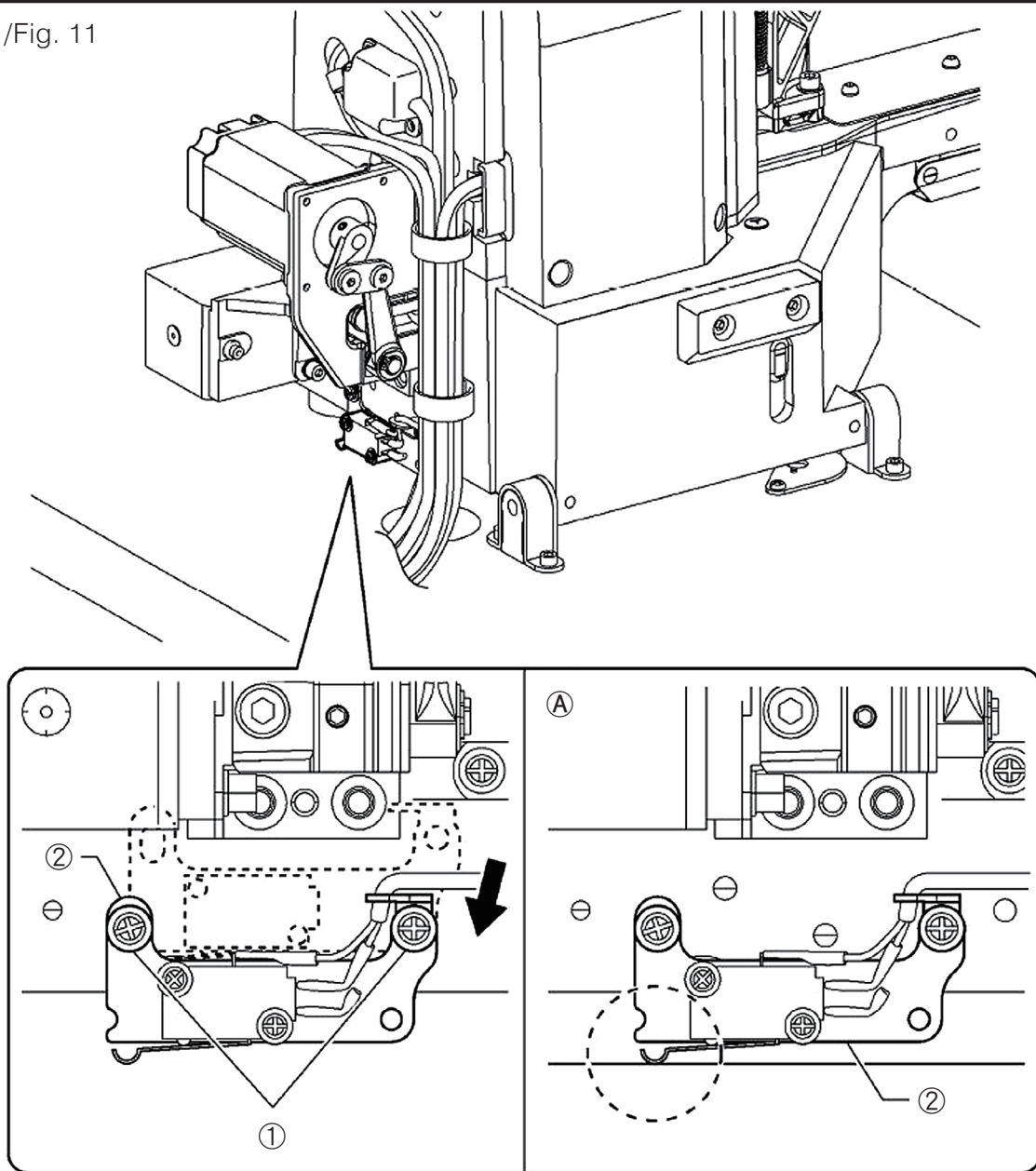
1. 卸下兩個螺絲①，然後臨時卸下機頭開關②。(圖 11)
2. 使用剛剛卸下的兩個螺絲①，在圖中所示位置安裝機頭開關②。
3. 檢查機頭開關是否如圖(A)所示打開。

※ 如果機頭開關未打開，請參閱「3-14. 檢查機頭開關」調整安裝位置。

1. Remove the two screws ①, and then temporarily remove the machine head switch ②. (Fig. 11)
2. Use the two screws ① which were remove to install the machine head switch ② in the position shown in the illustration.
3. Check that the machine head switch as turned on as shown in figure (A).

* If the machine head switch is not turned on, adjust the installation position while referring to "3-14. Checking the machine head switch".

圖 11/ Fig. 11

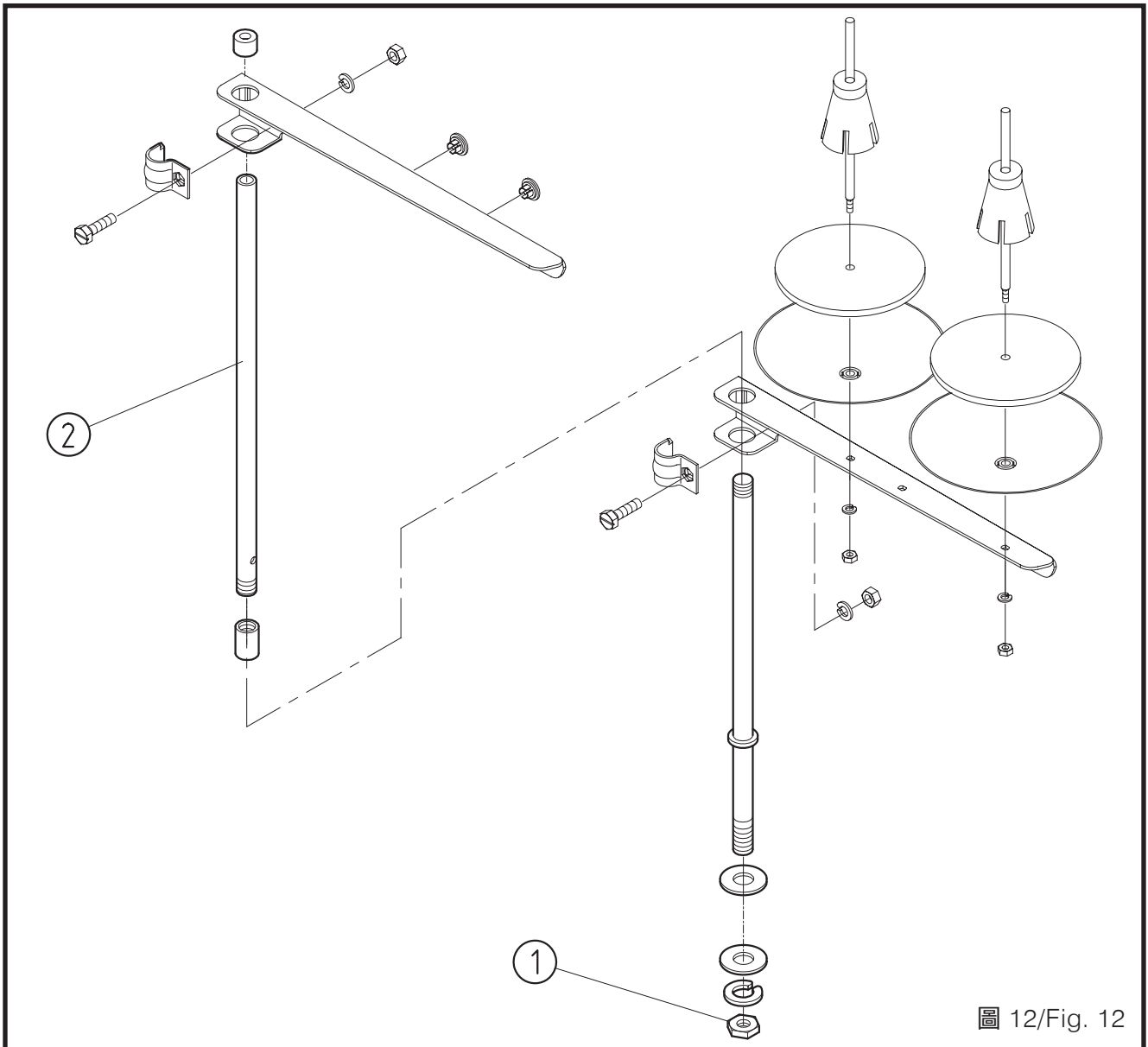


安裝線架

INSTALL THE THREAD FRAME

1. 把線架安裝到桌板孔上。
2. 用固定螺帽①固定線架。
3. 頂線配線時，請把電源線從線架桿②中穿過。(圖 12)

1. Install the thread frame to the holes of the table.
 2. Fasten the thread frame with the nut ①.
 3. When wiring the upper thread, please insert the power cord through the thread stand rod ②.
- (Fig. 12)



變頻控制器操作說明

OPERATION OF THE INVERTER CONTROLLER

鈕扣的運送方式是經由振動變頻器，鈕扣依循振動盤的蝸形軌道運送至送扣機，變頻器面板功能說明如下。(圖 13)

The way to send buttons is via the vibration inverter. Buttons are sent by the vortex track to the feeding button machine. The description of function of the inverter panel as below: (Fig 13)

①顯示面板

顯示設定的電壓及目前振動頻率。

②振動(電壓、頻率)調整鈕

將旋鈕順時針轉動時,(電壓、頻率)漸大。

將旋鈕逆時針轉動時,(電壓、頻率)漸小。

電壓、頻率控制切換方式:

(1) 電壓調整:轉動旋鈕可改變輸出電壓及振幅大小,並且亮V燈。

(2) 頻率調整:按旋鈕 0.5 秒後放開,顯示器閃爍並進入頻率調整功能。

③變頻控制器開關

④變頻控制器開關顯示燈若顯示燈沒亮時,請打開電源開關。

⑤振動盤啟動顯示燈

當變頻控制器開啟時,顯示燈隨之亮啟。

① Display Panel

Display the setting voltage and the present vibration frequency.

② Vibrating(Voltage,Frequency)adjusting knob strengthen(Voltage,Frequency)by turning the knob clockwise.

Weaken(Voltage,Frequency)by turning the knob counterclockwise.

Switch manner of voltage & frequency operation method:

(1)Voltage adjustment: Turning the knob can change the output of voltage value and amplitude as well as light up the V light.

(2)Frequency adjustment: Pressing the knob for 0.5 second and the screen will flicker and the enter the function of frequency adjustment.

③ Switch of the Inverter Controller

④ Switch light of the inverter controller if the light isn't lit, please turn on the power switch.

⑤ Light of Starting the Vibration Plate

When turn on the vibration plate, the light will be lit.

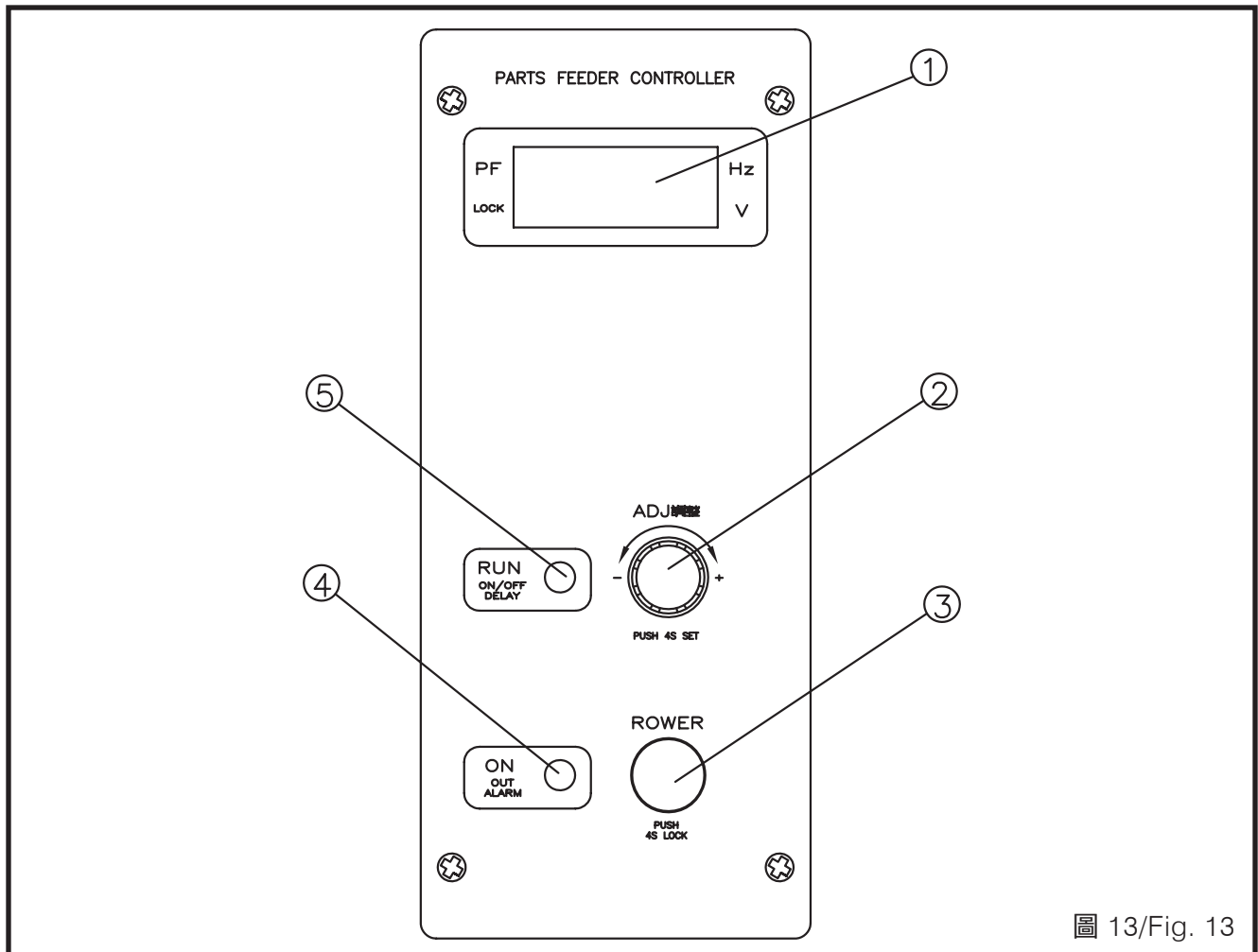


圖 13/ Fig. 13

傾放與扳回機頭

LEAN & RECOVER
THE MACHINE HEAD

注意CAUTION



進行維修或調整時，為了避免突發狀況發生而導致意外，請務必先關閉電源再進行操作；需要將機台傾放縫紉機，請注意手指被縫紉機或送扣機給夾傷，尤其是扳回機頭時。

For avoiding the emergency or accident, please make sure to turn off the power to operate when doing maintenance or the adjustment. It is needed to lean the sewing machine, and please pay attention your fingers not to be pinched, especially when recovering the machine.

為求機頭的穩定度，在板子底部裝有一螺絲①固定。因此若要將機頭傾倒，需將螺絲①鬆開。需將機頭歸位時，要注意機頭輕輕扳回，且小心手指被壓傷；也不可過猛扳回，以免損壞機座及基準變動。當縫紉機定位後，再將螺絲①鎖回。(圖 14)

Keeping the stability, there is a screw ① under the board to fix the machine. Thus, if leaning the machine head, loosening the screw ① first. When recovering the machine head, pay attention to put it gently and be careful of fingers from being hurt. Not to move back forcefully, it is easy to damage the bottom and the benchmark. After fixing the machine, fasten the screw ①. (Fig.14)

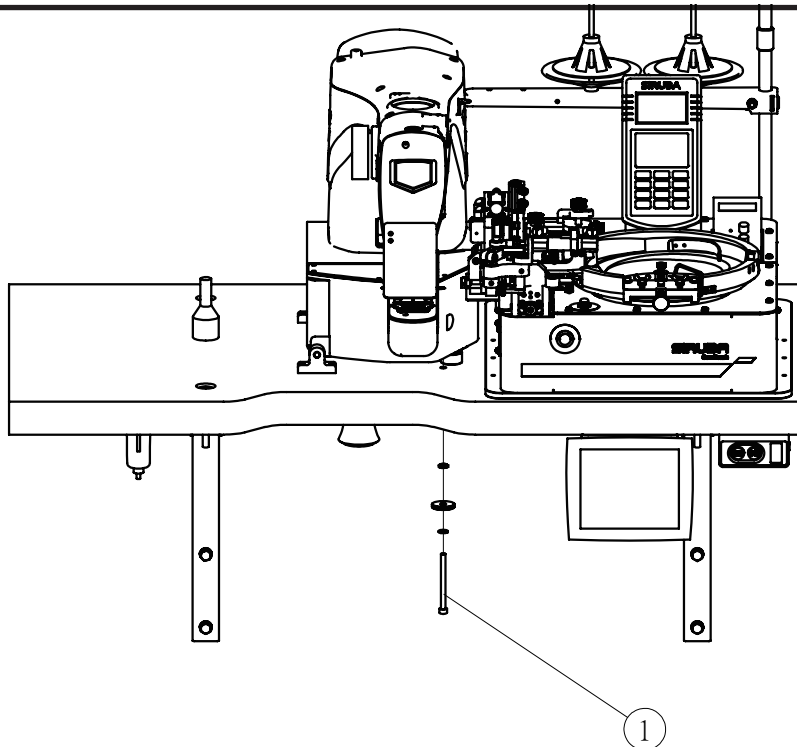




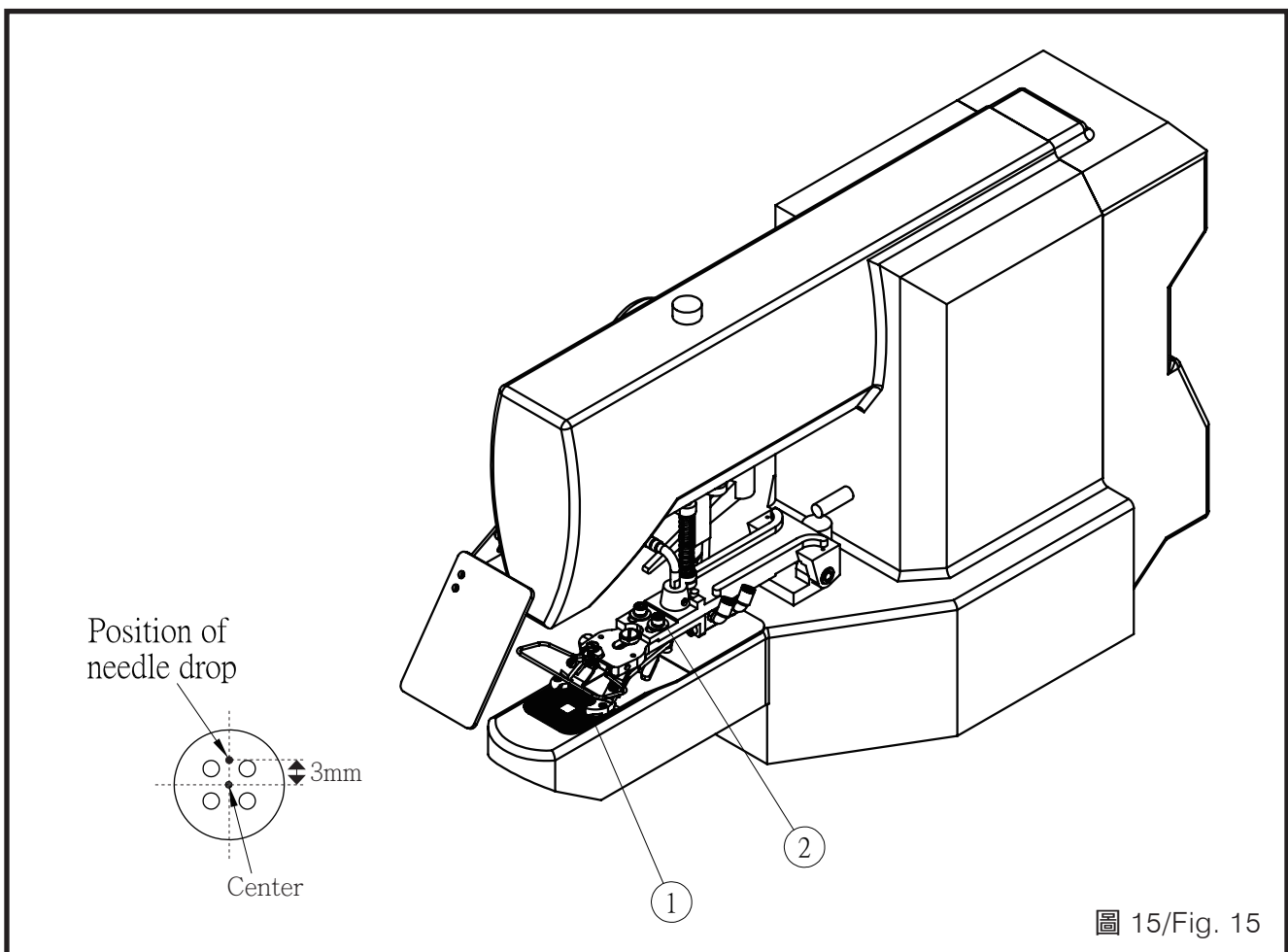
圖 14/ Fig. 14

鈕扣夾爪的位置

POSITION OF BUTTON CLAMP

1. 打開電源。
2. 踩腳踏板一次，壓腳裝置移動到原點位置，然後上升。
3. 把鈕扣放入鈕扣夾爪①中。
4. 按  鍵，壓腳裝置固定在下面再進行調整。
5. 轉動手輪，確認機針中心是否在鈕扣中心點上方 3mm。確認原點位置。
6. 如果機針沒有在鈕扣中心上方 3mm 時，鬆開鈕扣夾爪安裝台固定螺絲②進行調整。
7. 調整後，請確認圖案形狀。用圖形單步驟模擬功能，確認是否機針落在鈕扣孔中。(圖 15)

1. Turn on the power.
2. Step on the board 1 time and move the presser device to the initial position and rise up.
3. Put the button on the button clamp ①.
4. Press the key , have the presser device under it and adjust.
5. Turn the hand wheel to ensure if the needle's center is on the button's center above 3mm. Confirm the initial position.
6. If the needle is not at the center above 3mm of the button, loosen the screw ② on the clamp to adjust.
7. After adjusting, please affirm the button's pattern. Ensure the needle drops in the hole of the button by the mock function.(Fig.15)



調整布壓腳底板

ADJUST THE FABRIC PRESSER
FOOT BOTTOM PLATE

注意：若不小心踩到踏板，壓腳裝置會上下移動，以及當二次踩時送扣機會有動作。為了避免突發狀況發生而導致意外，請務必先關閉電源再行調整。變更了鈕扣形狀、圖案，或調整 X、Y 長寬度範圍功能變更了縫紉寬度之後，請一定要確認落針位置為鈕扣中心點。如果布壓腳與針孔導板相碰，會發生斷針危險。

1. 打開電源。
2. 踩腳踏板一次，壓腳裝置移動到原點位置，然後上升。
3. 調整布壓腳底板①，使針孔導板②正好在布壓腳底板的左右置中，上方靠齊。(圖 16)

Note: If step on the pedal accidentally, the presser device will move up and down; step on it again the feeding button machine will start work. Avoiding the emergency and accidents, please make sure to turn off the power and then do the adjustment. As long as the sewing width is changed by changing the button shape, patterns or adjusting X, Y length and width range, please confirm the dropper position is the center of the button. If the fabric presser foot collides with needle hole guide will cause the needle broken.

1. Turn on the power.
2. Step on the board 1 time. The presser foot device move to original position and then lifting.
3. Adjust the cloth presser foot bottom plate ① to make the needle hole guide plate at left and right centered, align top. (Fig. 16)

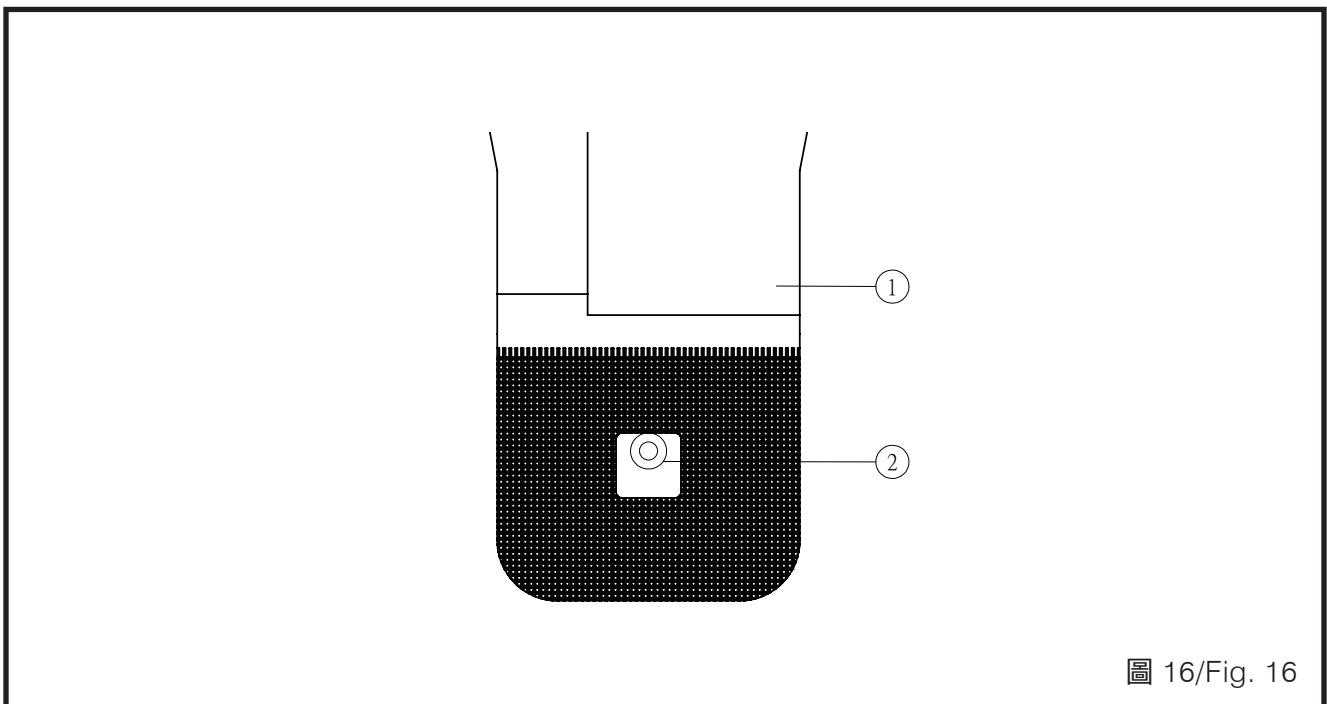


圖 16/ Fig. 16

調整鈕扣壓腳上升量

ADJUST THE BUTTON PRESSER FOOT LIFTING HEIGHT

鬆開螺絲①，移動螺栓②，使壓腳高度提升。
(壓腳提升量依實際需求調整，最大高度為13mm)

注意：螺栓②當向 A 方向移動，提升量變高，
向 B 移動則變低。(圖 17)

Loosen screw ①, and move the bolt ② to lift the
presser foot height. (Adjust the height in demand.
The max height is 13mm.)

Note: When the bolt ② moves the towards A, it
becomes higher; moving to B, the lifting
height becomes shorter.(Fig.17)

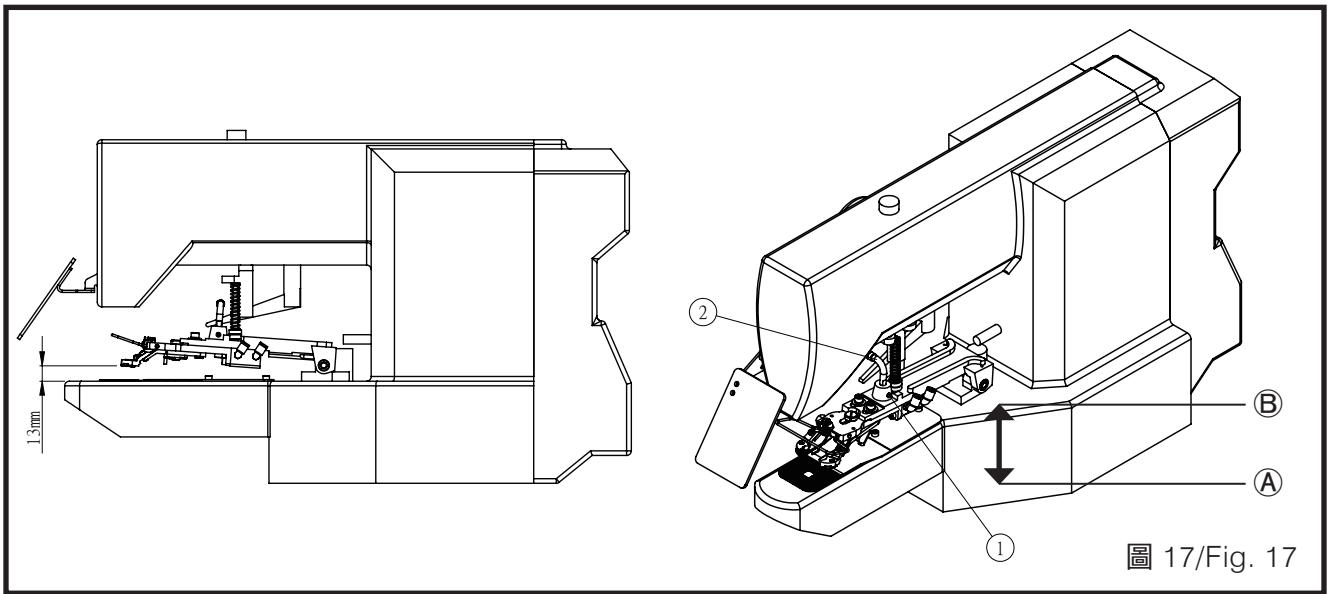


圖 17/ Fig. 17

調整鈕扣夾爪與送扣撥爪間隙

ADJUST THE GAP BETWEEN THE BUTTON CLAMP AND THE FEEDING PLATE

鈕扣夾爪①與送扣撥爪②間隙在 0.5mm 之間，
若此間隙過小則兩件會產生碰撞導致零件損
傷；若間隙太大 (鈕扣③的 A 面低於鈕扣夾
爪①的 B 面)，鈕扣③因無法完整夾持在鈕扣
夾爪①內部，而導致鈕扣被彈出 (送扣失敗)。
調整方法，參考調整鈕扣壓腳上升量。(圖 18)

The gap between the clamp ① and the feeding
plate ② is at 0.5mm. If the gap is too narrow, the two
would be crashed and damage the parts; If the gap
is too wide, (A side of button ③ is lower than B
side of clamp ①, button ③ cannot be clamped in
the clamp ①, so the button bounce out (Button
feeding failure). The adjustment is to loosen screw
and adjust the height of the bracket. (Fig.18)

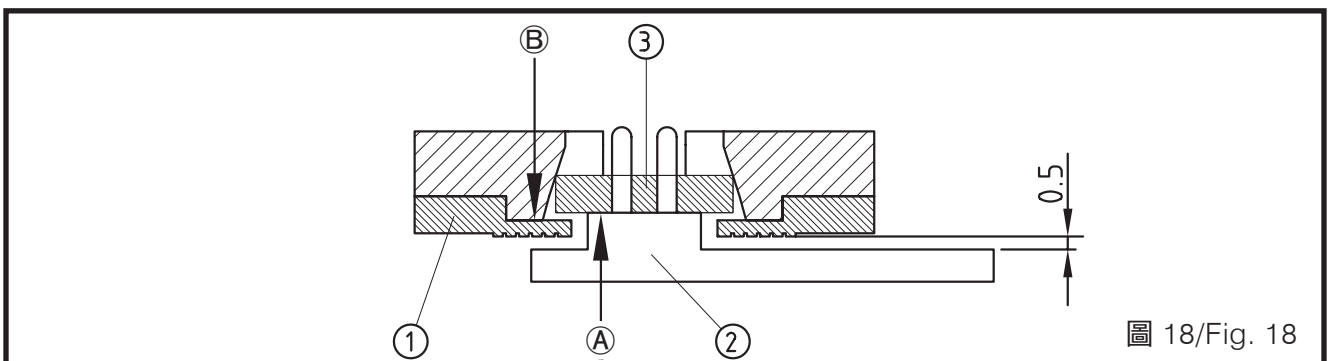


圖 18/ Fig. 18

更換保險絲

SUBSTITUTE FUSE



注意CAUTION



為了防止觸電事故,請關掉電源過5分鐘後再打開控制箱、送扣機蓋子,更換保險絲需依規定容量,規格如下說明。

Preventing from electric shock, please turn off the power for 5minutes, and then open the control box, and cover of the feeding button machine. Must follow the regulation to substitute the fuse; the specification as below:

1. 控制板 (F1) : 電源輸入保險絲 (圖 19)。
2. 送扣主機板 (F2) : 電源輸入保險絲 (圖 20)。

- 1.Emi Filter (F1) : Power input fuse.(fig.19)
- 2.Servo Board (F2):Power input fuse.(fig.20)

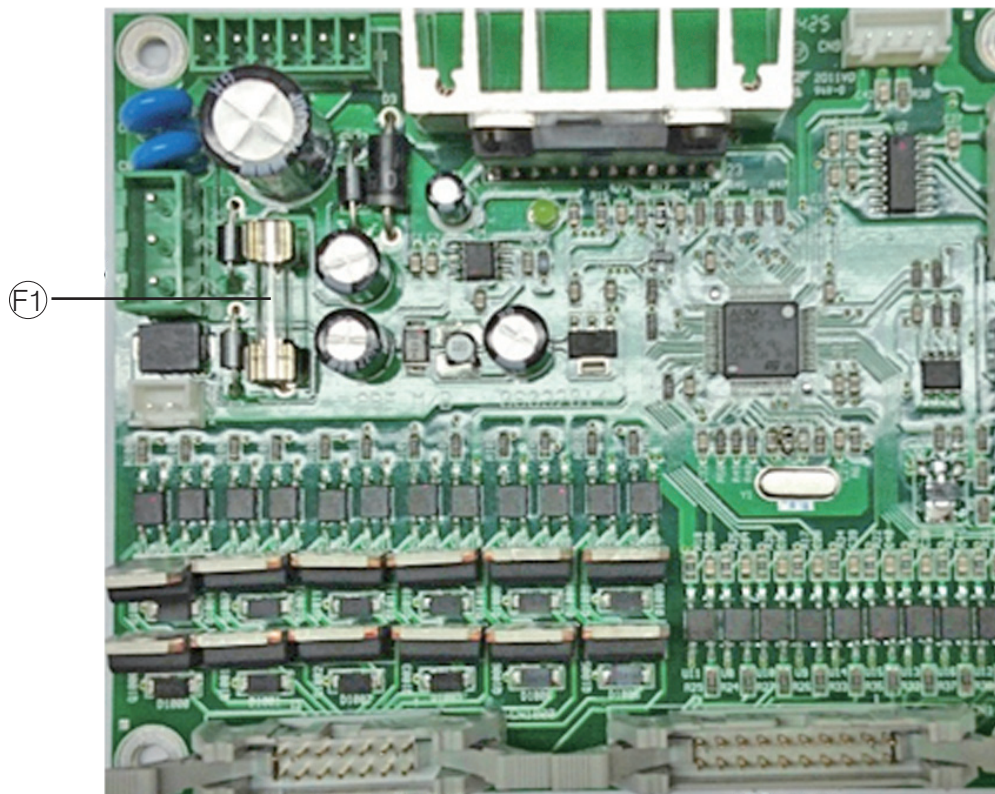
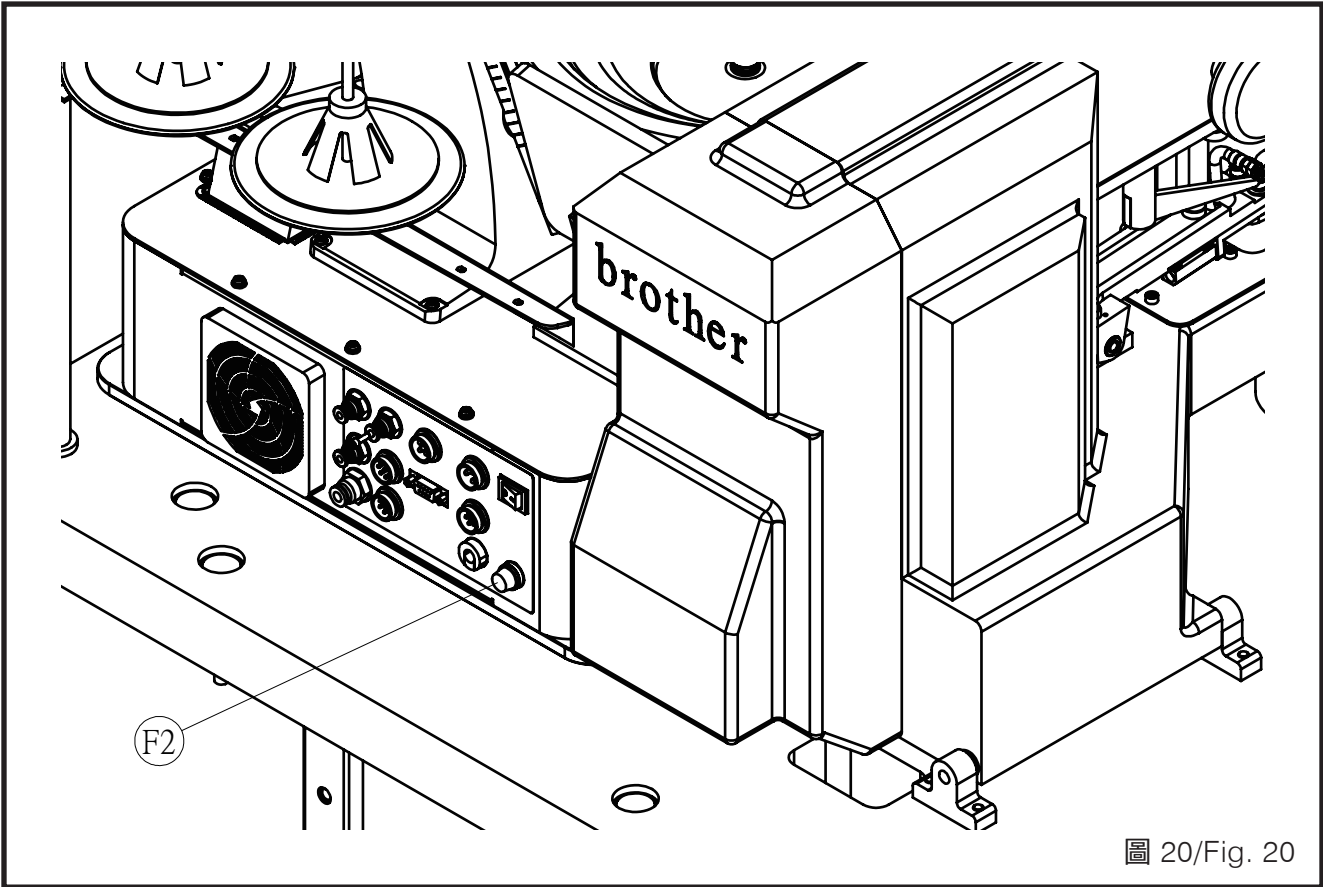


圖 19/Fig. 19



更換鈕扣需要注意的步驟

THE REMARKABLE STEPS OF
SUBSTITUTE BUTTONS

1. 重新偵測鈕扣大小 (圖 21)

取一新鈕扣②放置在鈕扣調整組平台①，姆指將靠邊器③向外推動，食指同時將活動壓板④往上拉，即可將新鈕扣②放入。當手指放開後，定位器Ⓐ往外拉，靠邊器③與活動壓板④，將會自動歸至定位。

2. 調整鈕扣高度間隙 (圖 21)

在振動盤運作當中，若發現鈕扣高度間隙太大或不足，可依需要調整適當高度，調整鈕⑤向順時針或逆時針方向旋轉至所需要的高度。當調整鈕旋轉時，調整桿⑥會上下動作，帶動控制鈕扣間隙的射扣塊⑦作上下動作。

注意：變更鈕扣的厚度需要特別注意，當鈕扣間隙太小，會影響鈕扣無法進入送扣軌道；若鈕扣間隙太大，會發生鈕扣重疊問題，導致送扣失敗，無法車縫。

1. Detect the size of button again (Fig 21)

Put the new button ② on the adjusting plate ①, thumb push aside device ③ outward; at the same time, index finger pull the movable plate ④ up, and then the new button ② can be put in. After the fingers release, Locator Ⓐ pull out, the aside device ③ and movable plate ④ will be positioned automatically.

2. Adjust the gap of the button height (Fig 21)

If find the gap of the button height is too large or insufficient during the vibration working, it can adjusted in demand. Adjust knob ⑤ clockwise or counterclockwise to the height in demand. When turning the adjusting knob, the adjusting bar ⑥ will move up and down and then, it has the feeding block ⑦ act.

Note: Pay attention to the thickness of different buttons, if the gap of buttons is too small, it will cause the feeding failure; if the gap is too large, it will cause the problem of buttons overloading and the failure of feeding.

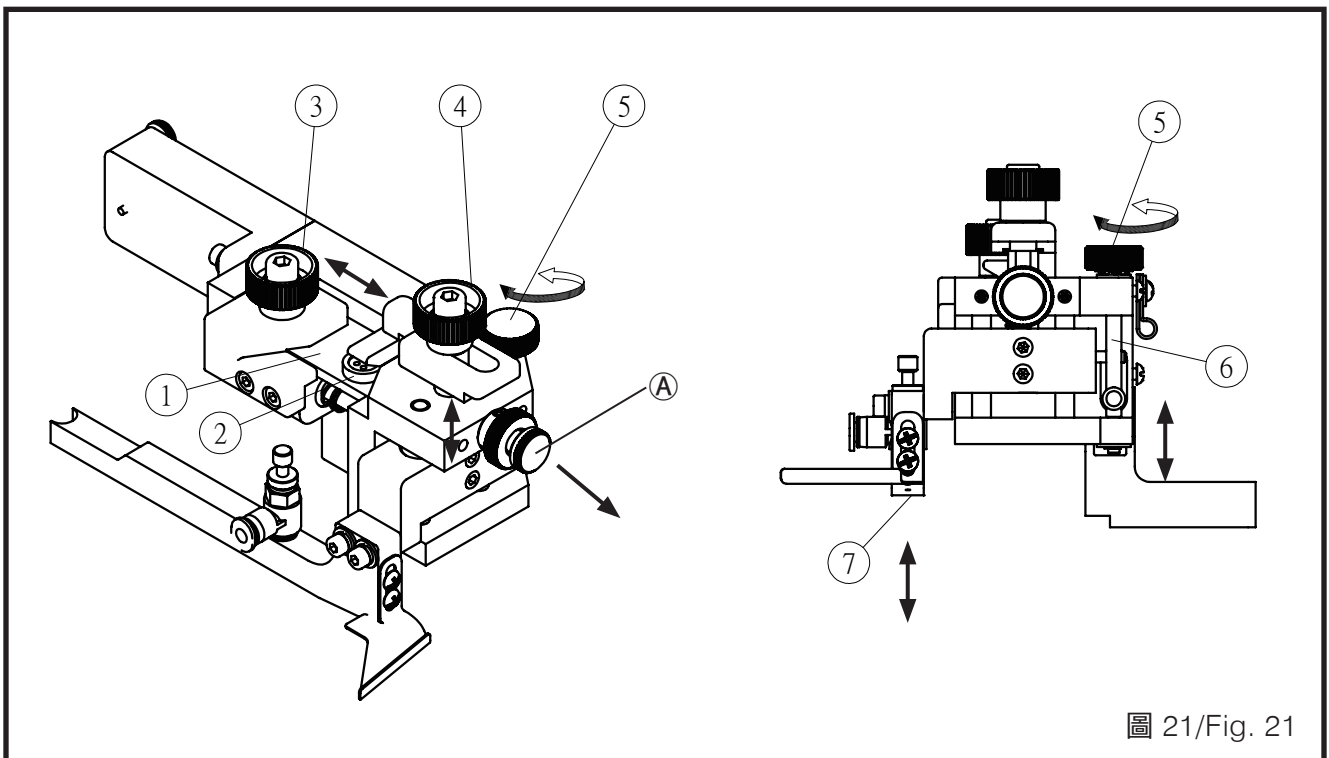


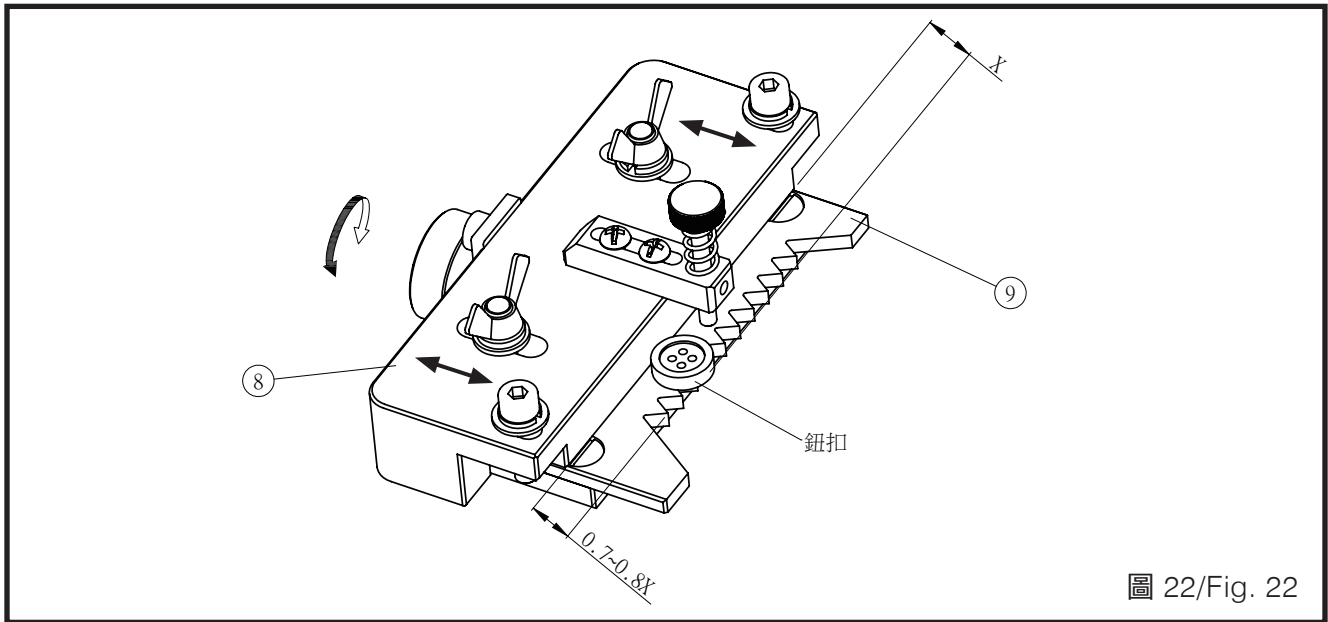
圖 21/ Fig. 21

3. 調整選扣器 (圖 22)

因鈕扣大小有差異，需將選扣器⑧上篩選鈕扣正反面的鋸齒板⑨調整到鈕扣的 0.7~0.8 倍左右。調整的方法請參閱 (振動盤組細部調整)。

3. Adjust the adjusting buttons device (Fig.22)

Due to the difference of buttons, adjust the serrated plate ⑨ on the adjusting buttons device ⑧ to button's 0.7 ~ 0.8 times. Please refer to (Adjust the details in vibration plate com.) for the adjusting method.



4. 更換大、小鈕扣鋸齒板 (圖 23)

(1) 大、小鈕扣鋸齒板選用建議：(表 2)

4. Adjust the stopper on the vibration plate (Fig 23)

(1) Suggestion of selecting the serrated plate : (Table 2)

使用鈕扣 Using Buttons	尺寸: $\phi 8 \sim 16\text{mm}$ Size: $\phi 8 \sim 16\text{mm}$	尺寸: $\phi 16 \sim 25\text{mm}$ Size: $\phi 16 \sim 25\text{mm}$
	小鈕扣鋸齒板 The small button serrated plate	大鈕扣鋸齒板 The big button serrated plate

表 2/ Table 2

(2) 出廠為小鈕扣鋸齒板⑨，需使用大鈕扣時，請更換成大鈕扣鋸齒板⑩，更改方式為：先將選扣器⑧上的兩顆手鈕⑪旋開一圈，旋轉鈕⑫逆時針旋轉至小鈕扣鋸齒板⑨上兩顆螺絲⑭至完全顯現，並使用一字起子⑬，將兩顆螺絲⑭卸除，並取出大鈕扣鋸齒板⑩做更換，並將螺絲⑭鎖回並鎖緊；旋轉鈕⑫順時針旋轉，調整到可以全部篩選至正面為止，並將兩顆手鈕⑪和旋轉鈕⑫同時鎖緊。

(2) The small button serrated plate ⑨ is set on the machine while manufacturing; thus, when sewing big buttons, please change to the big button serrated plate ⑩. The changing manner is as below: Loosen the two knobs ⑪ on the adjusting buttons device ⑧ for one circle. Turn the turning knob ⑫ counterclockwise until the two screws ⑭ on the small button serrated plate ⑨ showed completely. Then, remove the two screws ⑭ with the slotted screwdriver ⑬. Then, remove the two screws ⑭ with the slotted screwdriver ⑬. Turn the turning knob ⑫ clockwise, adjust to the point that all buttons can be selected to the front, and lock the two knobs ⑪ and the turning knob ⑫ together.

5. 調整振動盤面的撥扣板 (圖 24)

撥扣靶共有二件。將撥扣板⑮調整在鈕扣的 1.3 倍左右，不可調太高，以免造成鈕扣重疊而無法正常送扣。調整的方法請參閱。(振動盤組細部調整)

6. 換扣注意事項 (圖 24)

振動盤內⑯若有先前使用的鈕扣，要清除乾淨，以免混淆導致車縫問題，除了盤面上的鈕扣外，軌道內的鈕扣取出；請按下退扣鈕⑰，鈕扣就會從軌道全部吹出來。

Substitute with the big button serrated plate ⑩ and fasten with the screws ⑭ . Turn the turning knob ⑫ clockwise, and adjust it until all the positive sides of buttons could be chosen. Finally fasten the two knobs ⑪ and the turning knob ⑫ .

5. Adjust the stopper on the vibration plate (Fig 24)

There are two stoppers. Adjust the stopper ⑮ about the button's 1.3 times, and not too high, for avoiding the button overloading and feeding failure. Please refer to (Adjust the details in vibration plate com.) for the adjusting method.

6. The remarks of substitute the buttons (Fig 24)

If there are buttons in the vibration plate ⑯ , it is needed to be cleaned. Not only take out all the buttons on the plate, but take out all the buttons on the track. Please press the button ⑰ , and all the button will be blown out from the track.

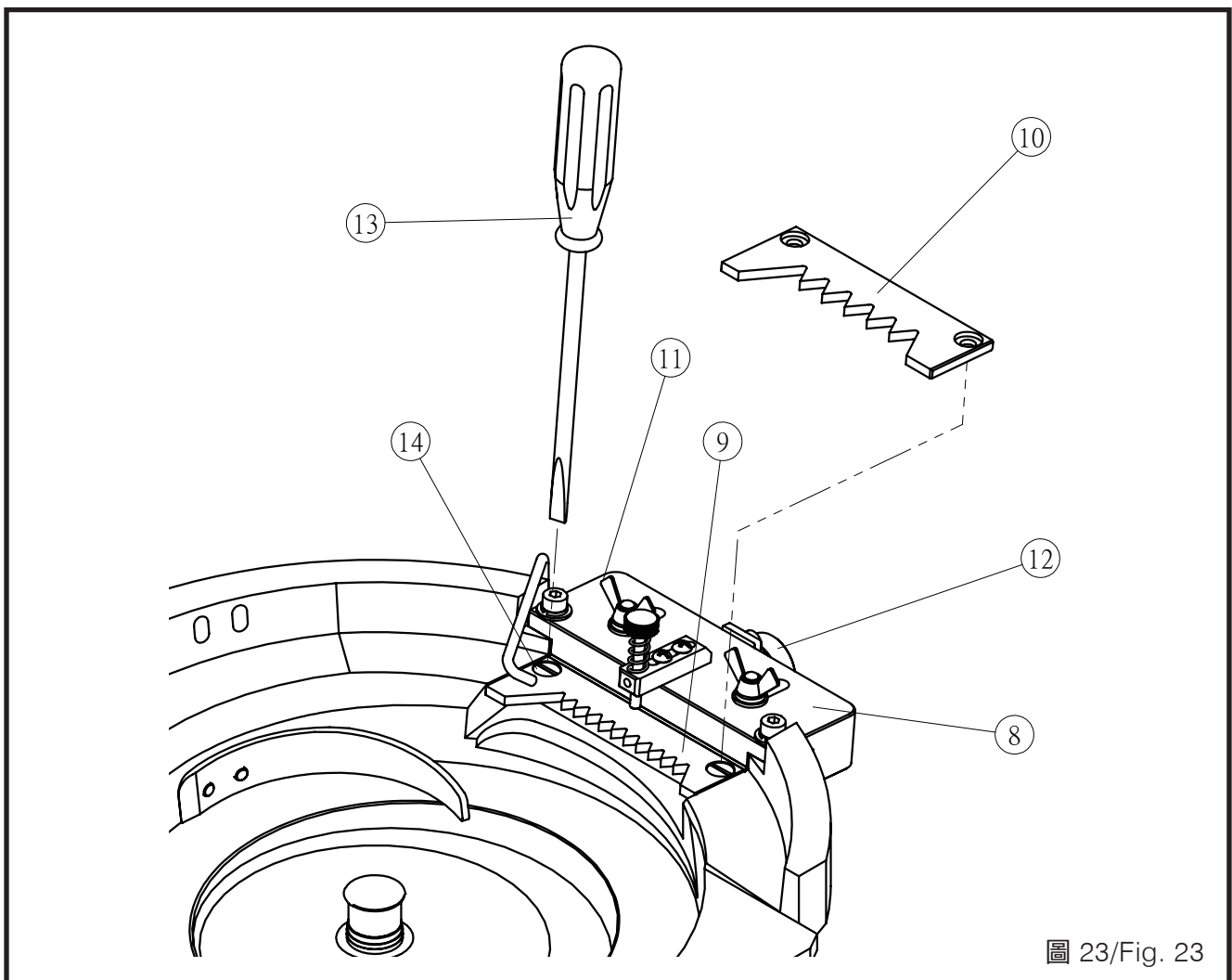


圖 23/ Fig. 23

7. 電控啟動新扣軌道之寬度 (圖 25)

電腦會依所放的鈕扣讀出數據顯示在面板上 ⑱，操作如下說明：使用操作盒，按 ⑳ 準備鍵 (本畫面顯示鈕扣為 12.8mm)。再按一次準備鍵 ㉑ 時，送扣機將會開始運作，自動調整送扣軌道，該軌道寬度即為目前使用鈕扣所需的寬度。(調整細節在後章節說明)

7. Electric start the width for the new button (Fig 25)

Computer will display the data on the panel ⑱ according to the button put on. The operation is as below: Operation panel, press ㉑ (The panel shows the button is 12.8mm). Press ㉒ again, the feeding button machine will start work, and auto adjust the feeding track. The width of the track is the width of the button in demand. (The adjusting details will be described in the following chapter.)

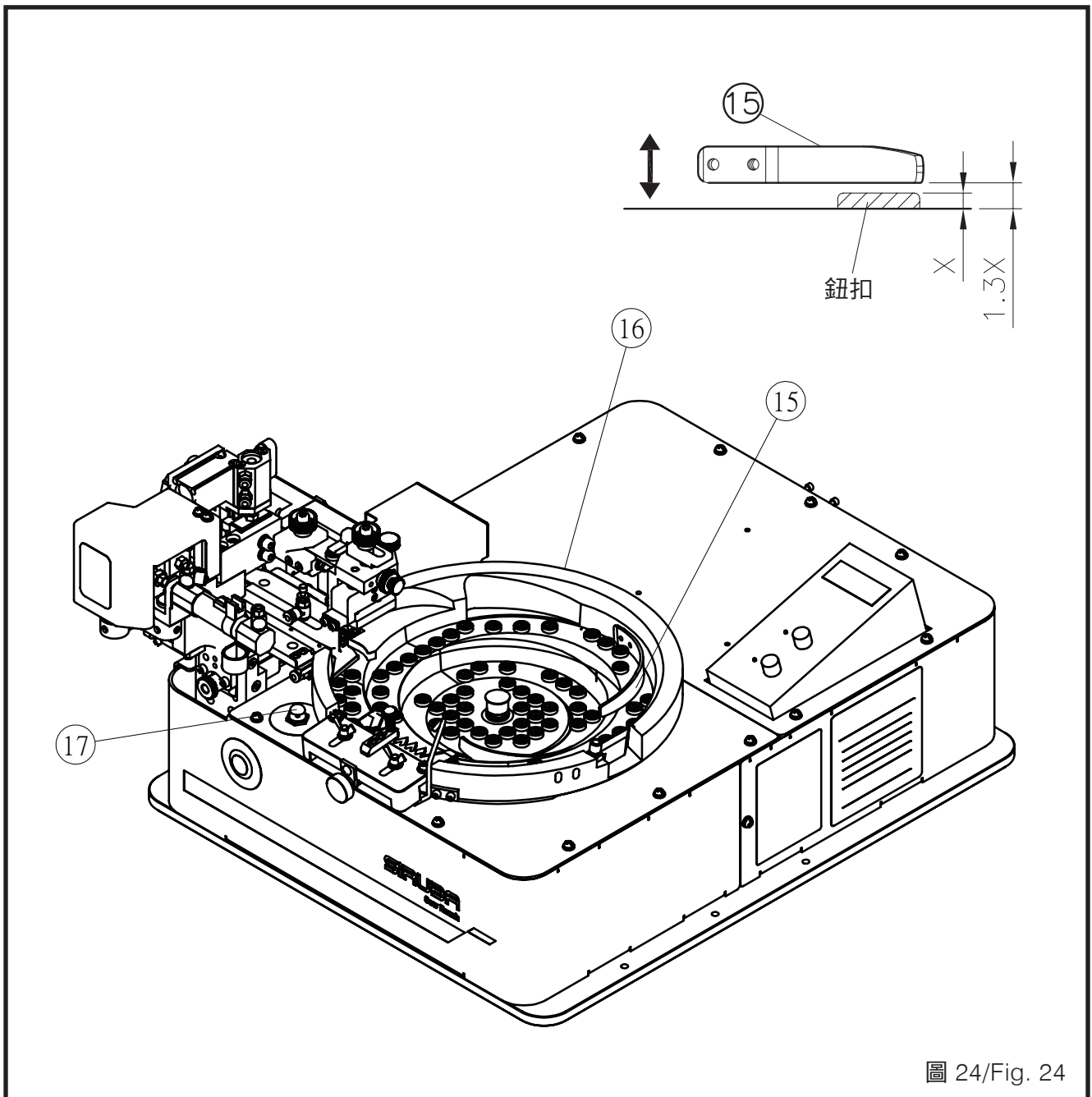


圖 24/ Fig. 24



圖 25/ Fig. 25

震動盤組細部調整

1. 振動盤面僅用一顆固定螺絲①固鎖，若發現振動盤面有異聲時，應先檢查此螺絲是否有鬆脫，且振動盤面不可與送扣機台面直接接觸，兩者間隙為 1mm。
2. 撥扣板調整。鈕扣頂部與撥扣板③、⑤的適當間隙為鈕扣的 1.3 倍左右，調整時需將螺絲②、④鬆開，上或下的移動撥扣板，完成後鎖回螺絲。(圖 26)

ADJUST THE DETAILS IN THE VIBRATION PLATE COM

1. There is only one fixed screw ① fastened on the vibration plate. If there is weird sound from the vibration plate, please check if the screw is loosening or not. The vibration plate cannot touch the feeding machine directly. There should be 1mm gap between them.
2. Adjust the stopper: The gap between the top of button and the stopper ③, ⑤ is 1.3 times of the height of the button. Before adjusting, loosen screw ② and ④; move the stoppers up and down. After adjusting, fasten the screw. (Fig .26)

3. 選扣器調整：

選扣器⑧的功能是篩選鈕扣的正反面與排除鈕扣堆疊的發生。只有翻正的鈕扣可以通過；沒有翻正的鈕扣就會掉落至盤底而重新篩選。調整選扣器⑧的方法：鬆開兩顆手鈕⑥，旋轉鈕⑦向左時逆時針旋轉，鋸齒板⑩向往前移動；反之向移動。調整到可以全部篩選至正面為止。完成後將兩顆螺絲⑥鎖緊，並將旋轉鈕⑦也鎖緊，若旋轉鈕⑦沒有完成鎖緊，則振動盤組會發出刺耳異聲（共振）。原則上限高器⑨調整的時機是在較薄或較厚的鈕扣，調整限高器⑨的方法：轉動螺絲⑪向上或向下調整高度。（圖 26）

4. 鈕扣放置數量建議：

小鈕扣 (8mm~16mm)：1000 顆
大鈕扣 (16mm~25mm)：150 顆

3. Adjust the button selection device:

The function of device ⑧ is to select the side of button and avoid overloading. Only the positive side can pass; those negative sides of buttons will fall down to the bottom and restart selecting. Adjust the button selection device ⑧ : Loosen two knobs ⑥ , turn the knob ⑦ counter clock wise, and move the serrated plate ⑩ forward. Adjust it until it can select all the positive sides of buttons. Then, fasten two screw ⑥ and fasten the knob ⑦ . If the knob ⑦ isn't fastened completely, the vibration plate will sound piercingly (Resonance). Basically, the timing of adjusting the limit device ⑨ is when selecting the thinner or thicker buttons. The way to adjust the limit device ⑨ : Adjust screw ⑪ up or down. (Fig.26)

4. Suggestion of buttons on the plate:

Small buttons(8mm~16mm):1000 pics
Big buttons(16mm~25mm):150 pics

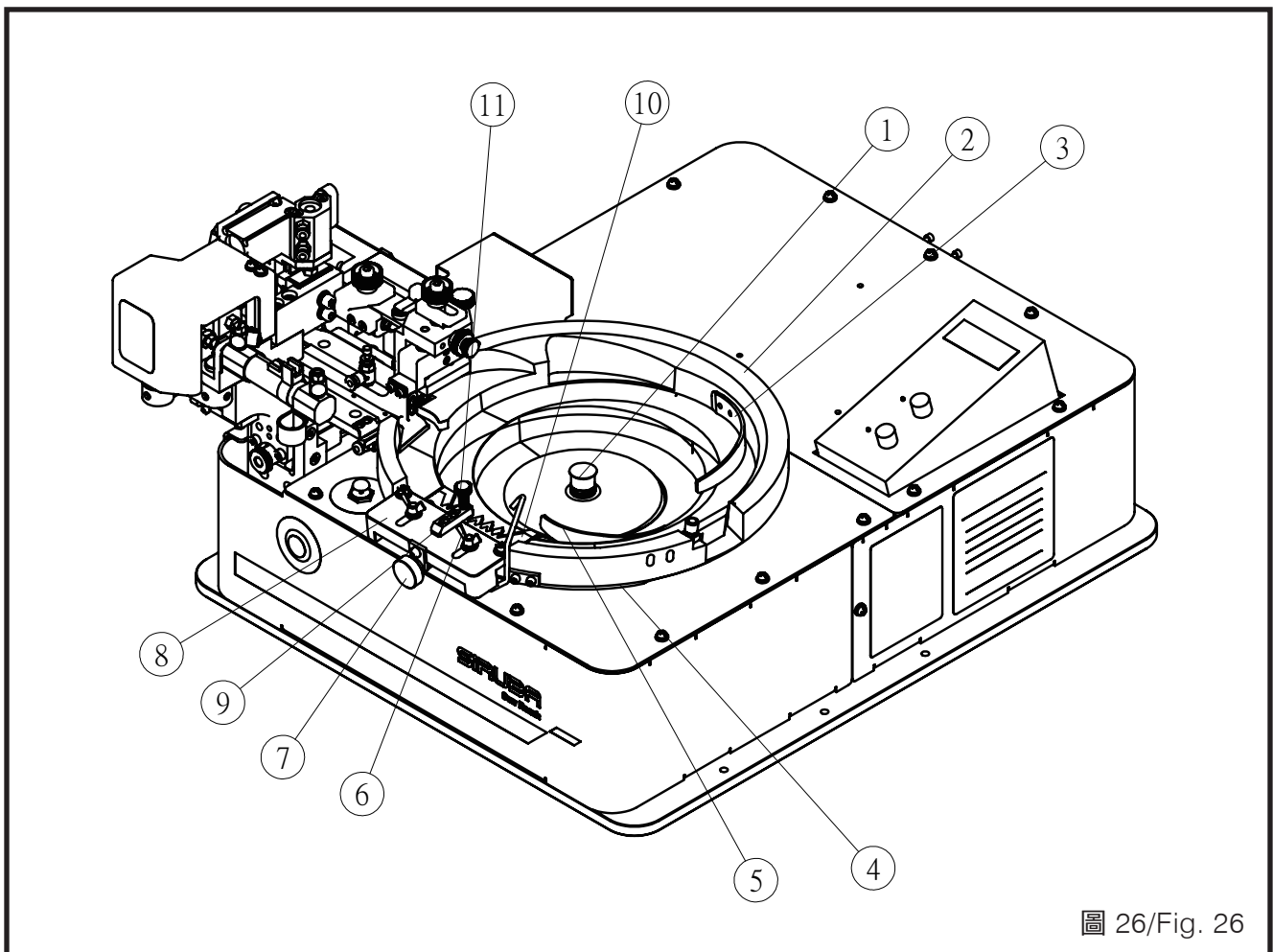


圖 26/ Fig. 26

更換送鈕撥爪

鈕扣的規格眾多，鈕扣大小、孔數、孔距均不同，因此當更換鈕扣時，同時也必須需更換送扣撥爪①，更換的方式為：使用操作盒，按參數設定鍵 **M**，按項目選擇鍵 **+**/**-**，當出現畫面 **A03**，按準備鍵 **☞** 進入設定，按項目選擇鍵 **+**，此時送鈕撥爪會送出，這時就可以更換撥爪（除機頭外，配件盒有其他送扣撥爪），將 2 顆螺絲②鬆開，更換送鈕撥爪後，再將螺絲②鎖固即可。（圖 27）

SUBSTITUTE THE FEEDING PLATE

There are many different specifications of buttons, including the size, hole and the distance of holes. Thus, when changing the buttons, there is necessary to change the feeding plate ① at the same time. The steps are as following: Use the operation panel, press **M**, and press the item selection key **+**/**-**. When display **A03**, press **☞** to the setting. Press the item selection key **+**, and the feeding plate will and the feeding plate will move out and can be changed. (Except the machine head, there are other kinds of feeding plate in the accessories.) Loosen two screws ②, change the feeding plate, and then fasten screw ②. (Fig.27)

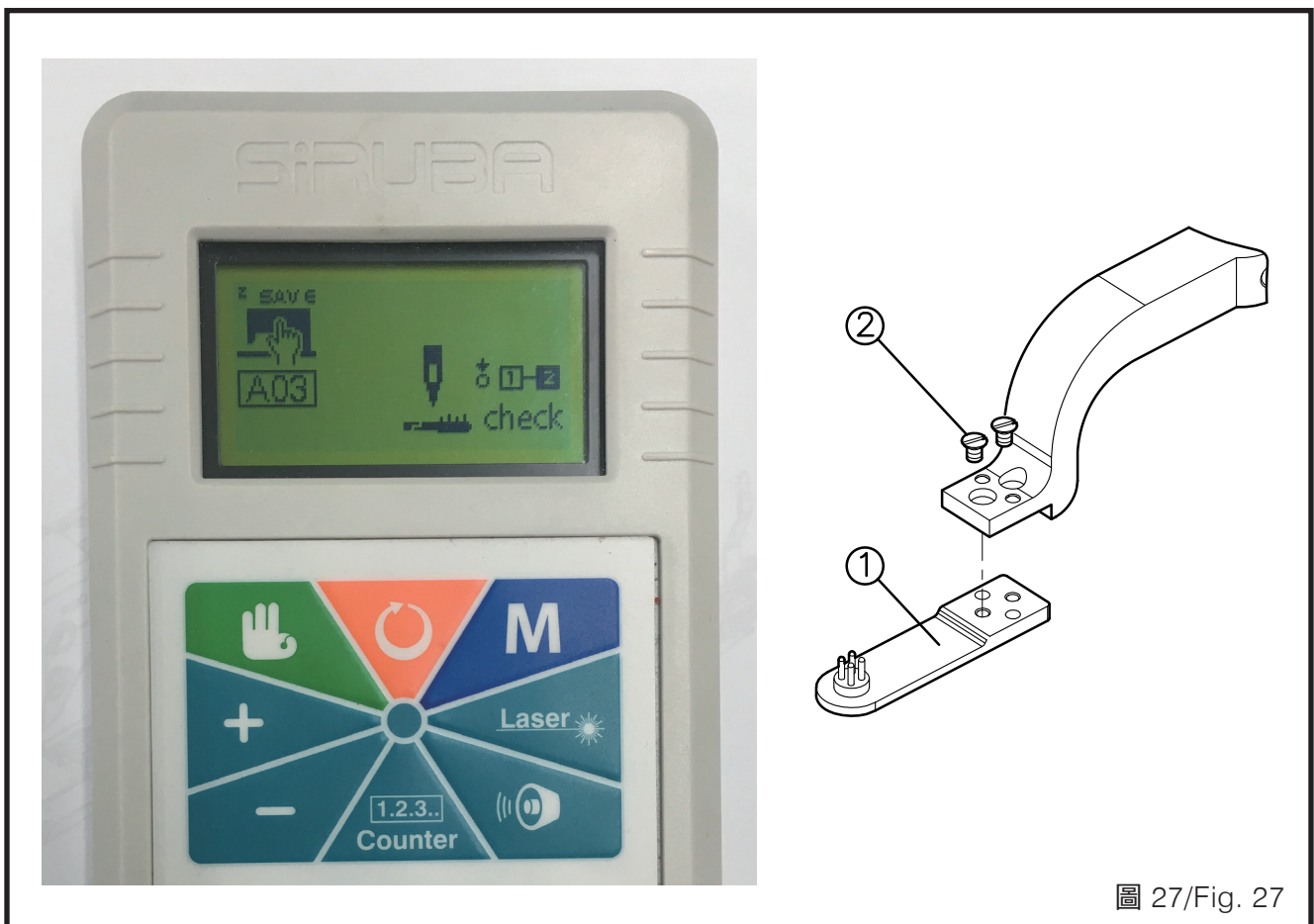


圖 27/ Fig. 27

更換旋轉軸的橡膠座

SUBSTITUTE THE RUBBER PLATE ON THE TURNING BAR

橡膠座②因每次須與送扣撥爪接觸，經多次運轉後，會有磨損發生，而更換時間需依實際磨耗決定；若只是輕微磨損則可繼續使用。更換方式為：使用操作盒，按參數設定鍵[M]，按項目選擇鍵⊕⊖，當出現畫面[A03]，按準備鍵☞進入設定，按項目選擇鍵⊕，橡膠座送出，此時可更換橡膠座②；將隨機所附的兩支扳手取出，一支鉸手A卡住氣缸①的軸心上，另一支鉸手B卡住氣缸①上橡膠座②的六角螺帽，以鉸手A固定不動，鉸手B向逆時針方向扳轉，即可將橡膠座②取下。要安裝新橡膠座②，請依循上述動作即可。更換完成後需要回復原點，則在操作盒按[M]鍵2次回主畫面。(圖28)

Because the rubber plate ② touches the feeding plate all the time, it will be worn-out. The timing of changing it is relying on the time of using. If the damage is slight, it still can be used. The way to substitute: Use the operation panel press the [M], press the item selection key ⊕⊖. When display [A03], press key ☞ to the setting. Press the item selection key ⊕ and the rubber plate ② will be sent and can be changed. Take it out with the two attached wrenches, one (A) for the axis center of the cylinder ①; the other (B) is for the hexagonal nut on the rubber plate ② of the cylinder ①. Fix it with the wrench (A), and move the wrench (B) counterclockwise. Then, take off the rubber plate ②. Follow the above steps to change the new rubber plate ②. After completion, it is needed to be back to the initial. Press the key [M] twice on the operation panel to back to the main window.(Fig.28)

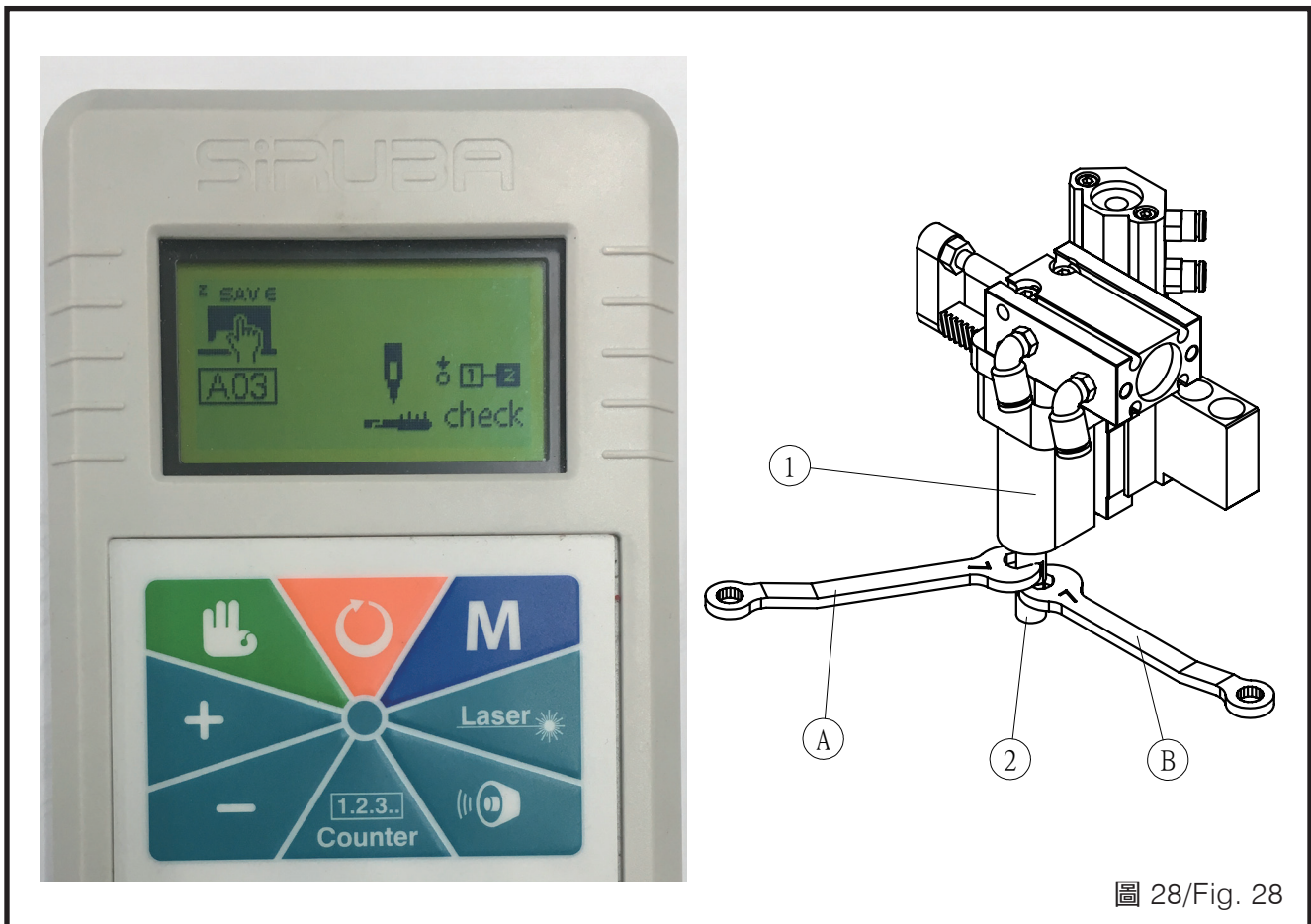


圖 28/Fig. 28

送扣夾爪規格

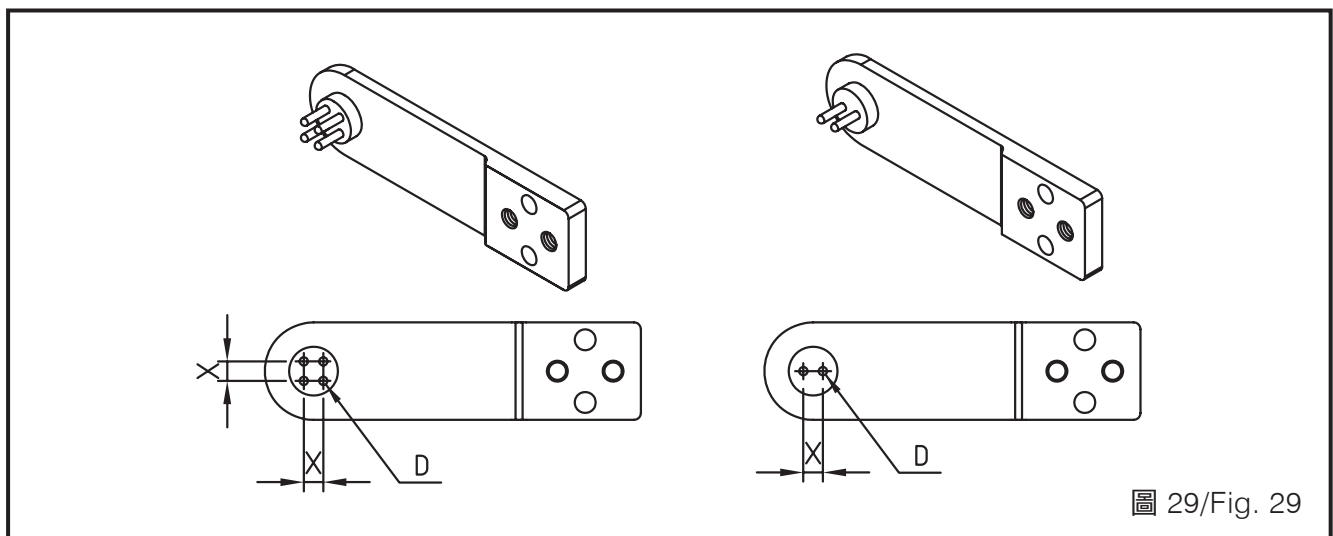
SPECIFICATION OF BUTTON
PLATE

如下說明 (圖 29)(表 3)

Description as below (Fig. 29) (Table3)

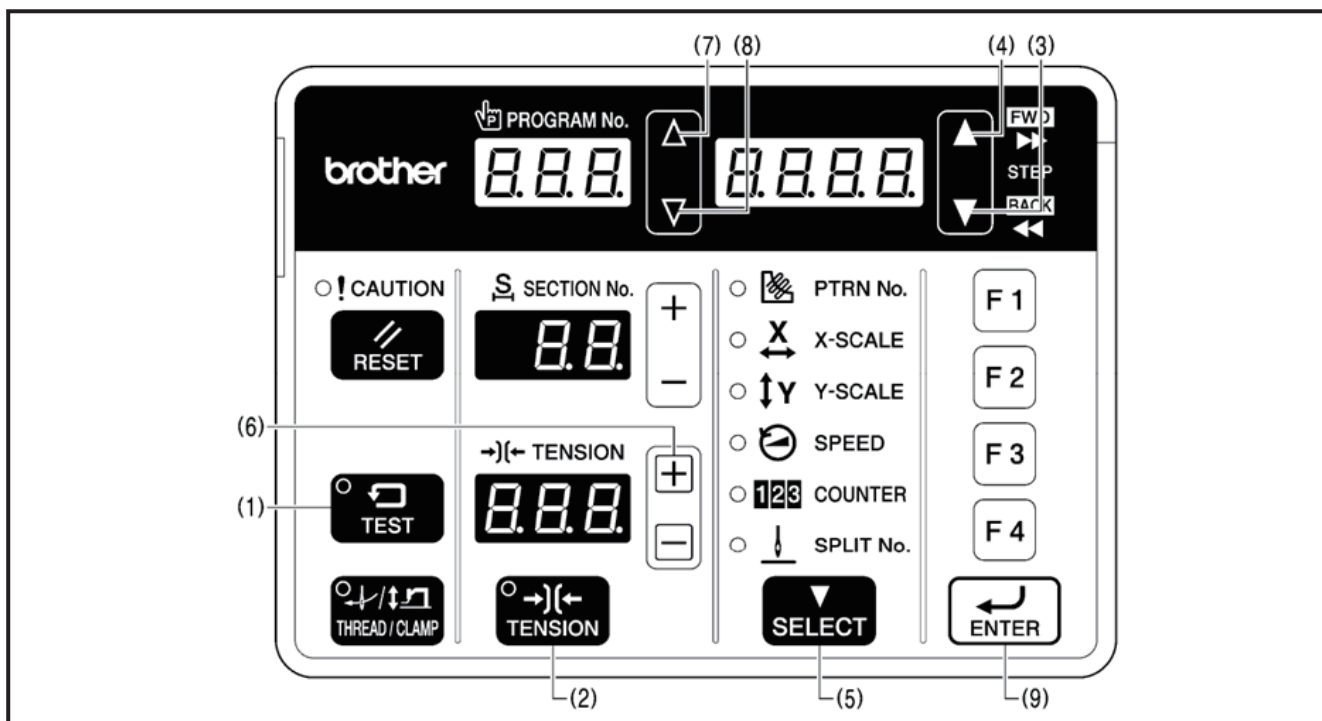
零件編碼 Codes of Parts	$X^{+0.05}_{-0.05}$	$D^{-0.006}_{-0.016}$	鈕扣孔數 Button Holes
ABF118	2.2	1.0	4
ABF119	2.2	1.0	2
ABF120	2.4	1.2	4
ABF121	2.4	1.2	2
ABF269	2.6	1.2	4
ABF270	2.6	1.2	2
ABF122	2.8	1.2	4
ABF123	2.8	1.2	2
ABF124	3.2	1.2	4
ABF125	3.2	1.2	2
ABF126	3.6	1.2	4
ABF127	3.6	1.2	2

表 3/Table3



車頭參數設定

MACHINE HEAD CONFIGURATION SETTING



1. 按 TEST 鍵和 SELECT 鍵，打開電源開關。



2. 按 ⑦ 或 ⑧ 鍵選擇存儲開關編號。

3. 按 ③ 或 ④ 鍵更改設定值。

4. 按 鍵。應用更改的設置。

5. 按 鍵。退出設置模式。

6. 修改的參數內容如下表

1. While pressing the TEST key and the SELECT key, turn on the power switch.



2. Press the ⑦ or ⑧ key to select the memory switch number.

3. Press the ③ or ④ key to change the setting value.

4. Press the key. Apply the changed setting.


5. Press the key. Exit setting mode.

6. Refer below for configuration figures.


參數編號 Configuration No.	設定值 Setting value	說明 Description
271	ON	夾鉗 / 按鈕夾待機位置 ON：對於 430F，縫紉區域的中心是待機位置（退出點）。 對於 438F，前方是待機位置（逃生點）。 OFF：縫製開始位置成為待機位置。 Work clamp/button clamp standby position ON: For the 430F, the center of the sewing area is the standby position(escape point). For the 438F, the front is the standby position(escape point). OFF: The sewing start position becomes the standby position.

安裝感應器

INSTALL THE SENSOR

1. 打開電源，按  鍵，踩踏板一次，壓腳裝置移動到原點位置，然後上升。(圖 30)
2. 將螺絲①、③放鬆，調整固定板②與感應器④到正確位置後再將螺絲①、③轉緊。
3. 踩踏板一次，確認車縫完後，會自動送鈕扣，如有送扣代表位置正確，如沒有送扣需重新調整位置直到可以自動送扣。

注意：感應器如不在正確位置，則送扣機不會動作。

1. Turn on the power. Press  key. Step on the board 1 time and move the presser foot device to the initial position and rise up. (Fig.30)
2. Loosen the screws ①, ③ adjust the plate ② and the sensor ④ to the correct position and then tighten the screws ①, ③.
3. Step on the board 1 time. Make sure that the buttons are automatically sent after sewing. If the button is not sent to be re-adjusted position until the button can be automatically sent.

Caution: If the sensor is not in the correct position, then the button will not be sent to action.

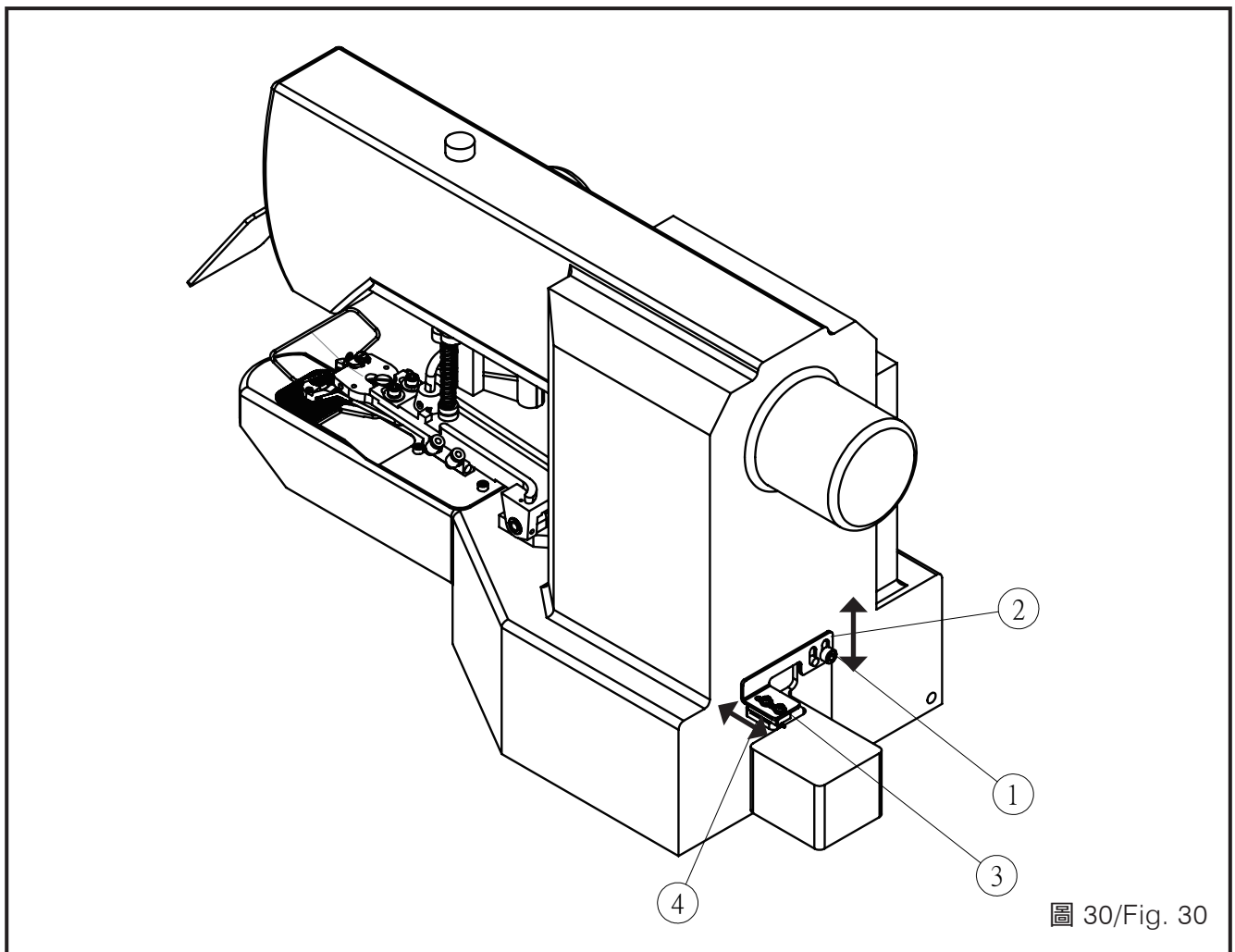



圖 30/ Fig. 30

回復出廠預設值

RESET TO DEFAULT MODE

將  與 "0" 同時按，即可回覆出場預設值。
(圖 31)


Press  and "0" at the same time. To enable default configuration (fig.31)



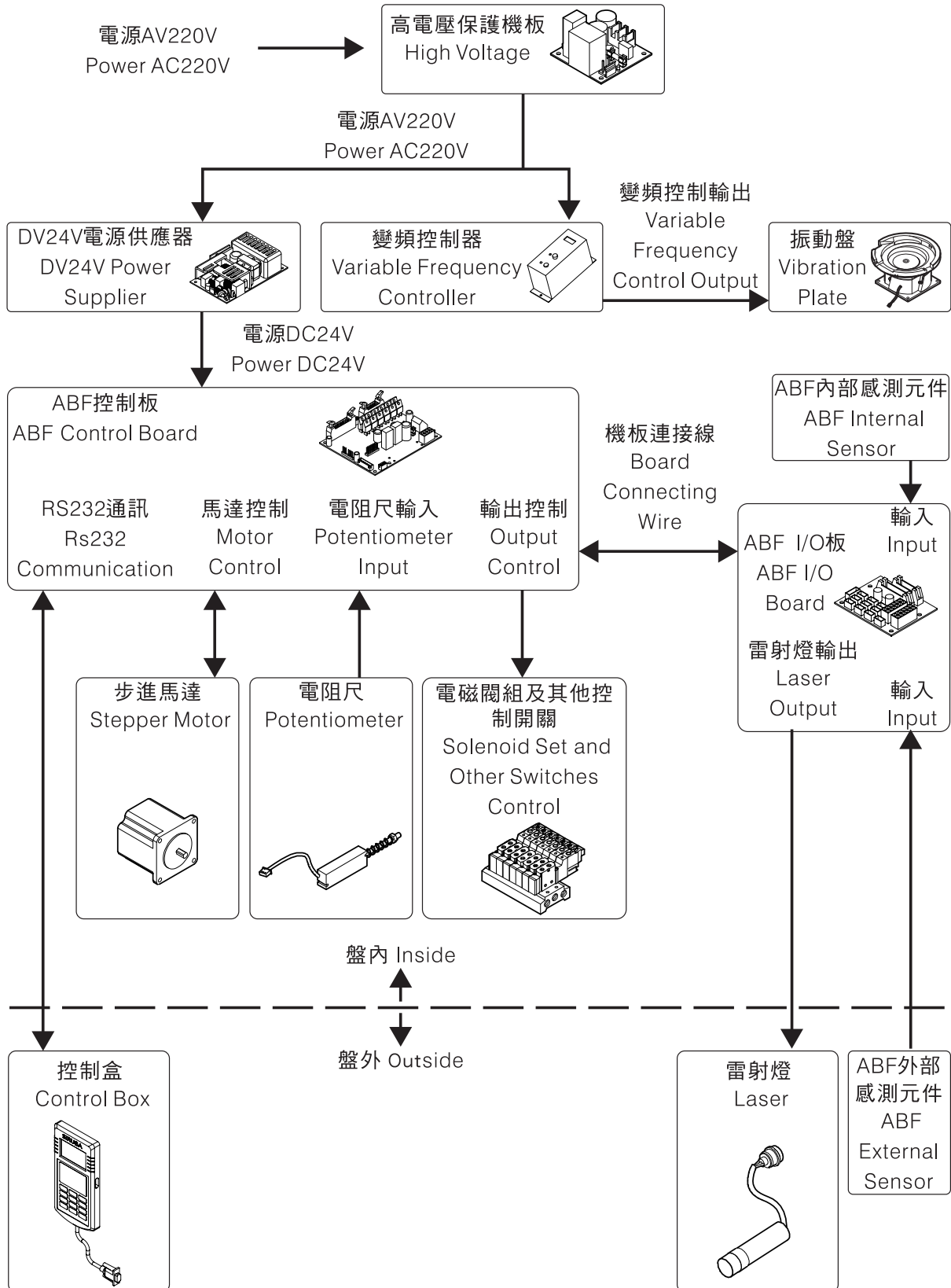
圖 31/Fig. 31

控制系統架構

CONTROL SYSTEM STRUCTURE

1.ABF主機

1.ABF Mainframe



參數說明

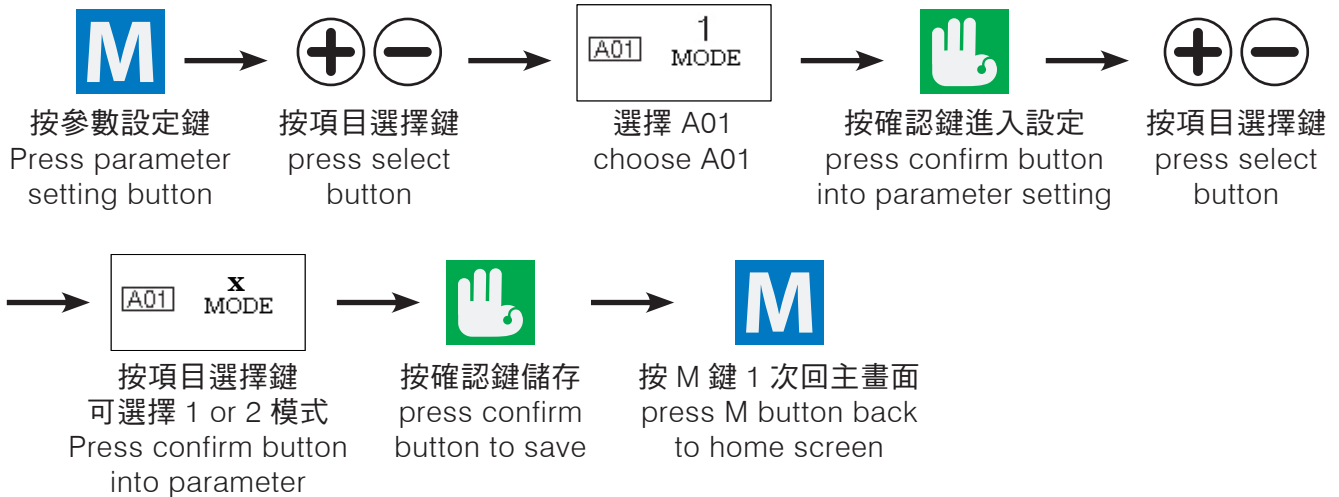
PARAMETER DESCRIPTION

※A 參數

(1) A01 模式選擇

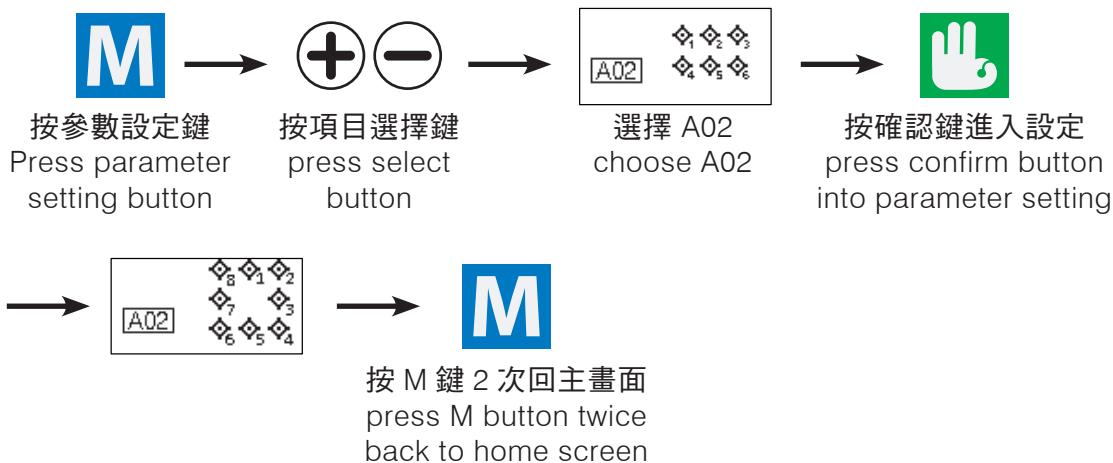
※Parameter A

(1) A01 mode choose



(2) A02 傳感器訊號檢測

(2) A02 sensor signal detect



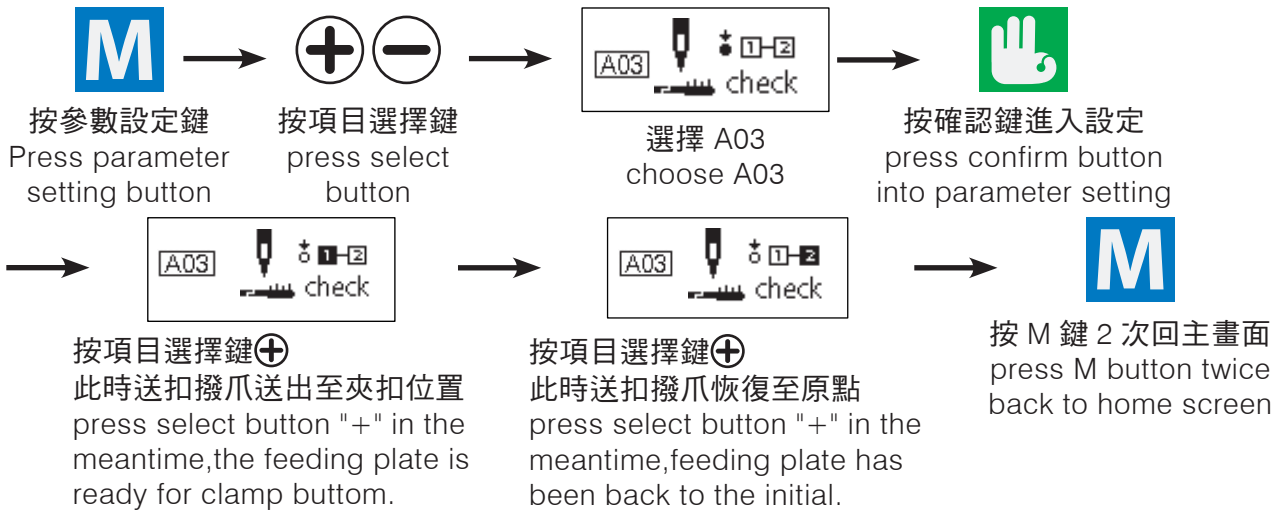
1：送扣軌道定位開關	Position switch to feeding track
2：氣源偵測感測器	Air source detect sensor
3：旋臂原點位置開關	Initial position switch to rotating arm
4：手動按鈕訊號	Manual button signal
6：夾爪上扣開關	Switch to upper clamp
8：懸臂上抬感應器	Cantilever upper lift sensor

※ 手動檢測各訊號，配合手動操作數字點有亮滅表示 sensor 正常。

※ Manually detect each signal, it means sensor working normal if the light will be flickering.

(3) A03 送扣撥爪定位

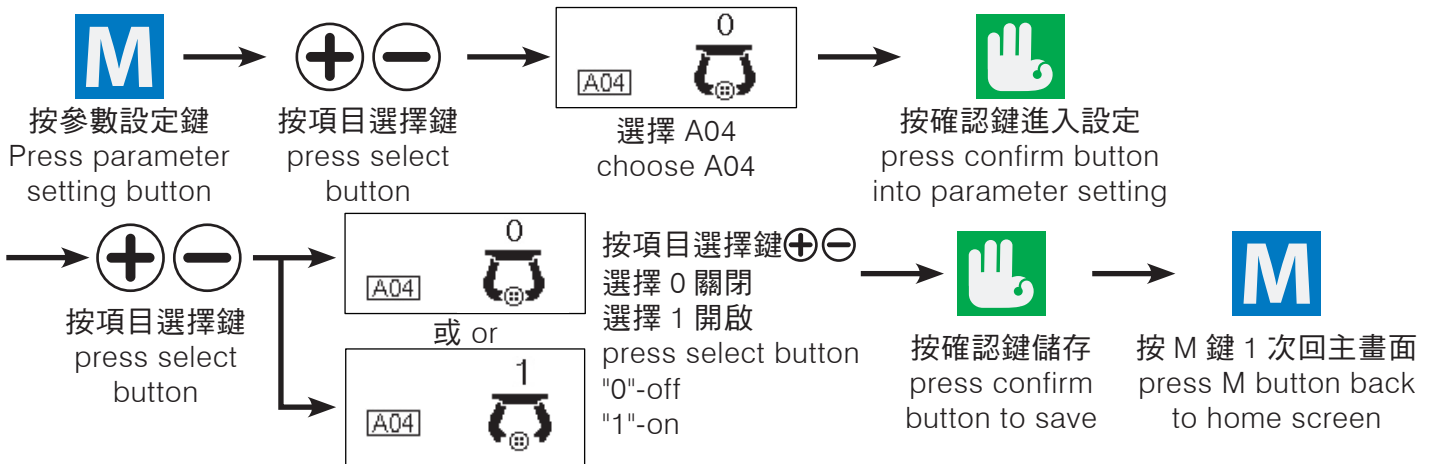
(3) A03 Adjust feeding plate position



※ 送鈕撥爪依搭配廠牌不同配合調整，如有偏差易造成斷針或夾扣異常。
 ※ adjust the feeding plate by each supplier requirement, it's easy to make needle broken or clamp button failure.

(4) A04 送扣測試模式開放

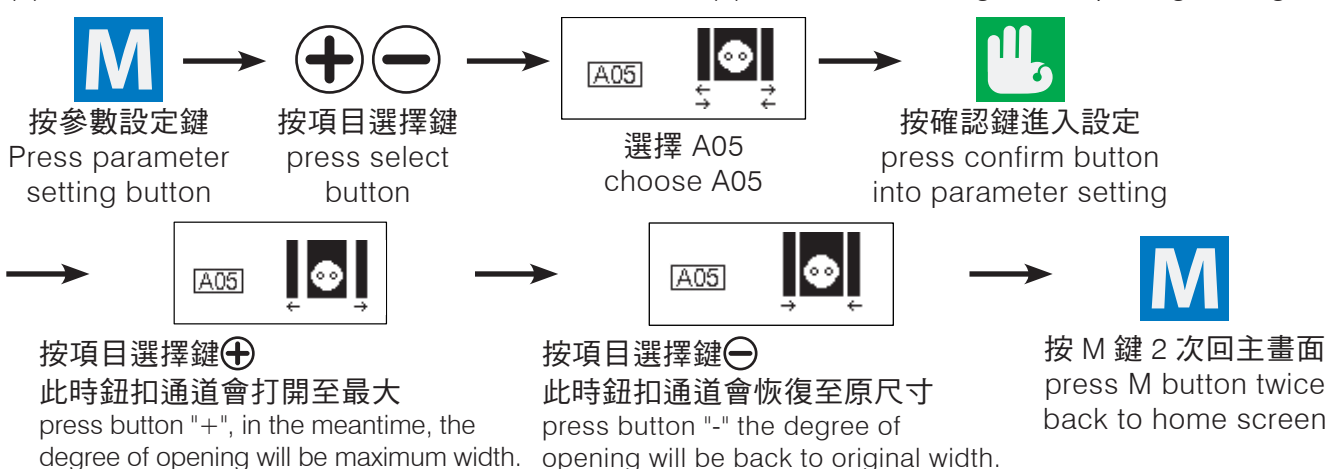
(4) A04 Open testing mode for feeding button



※ 功能開啟：當鈕扣送出後，夾爪在夾扣後會將鈕扣放開，再合起來等待下一次送扣。
 ※ 此功能僅適用於穩定度測試，正常操作下勿開啟。
 ※ function opening: after button delivered, clamp will release the button, and close to wait till next time.
 ※ this function is use for stability testing, do not use for normally operate.

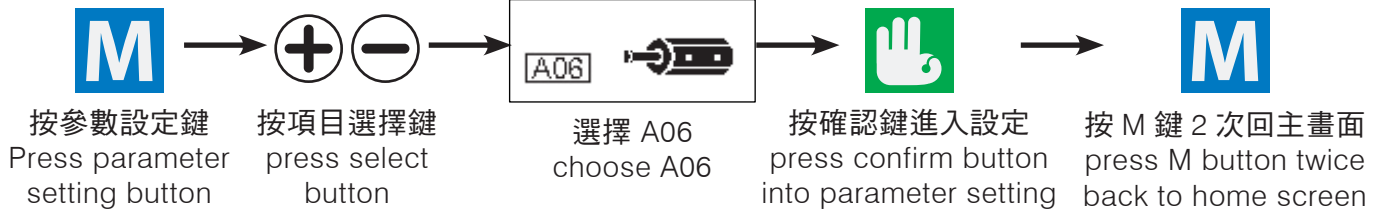
(5) A05 軌道開度測試

(5) A05 the track degree of opening testing



(6) A06 各氣缸單步模式

(6) A06 single motion mode for cylinders

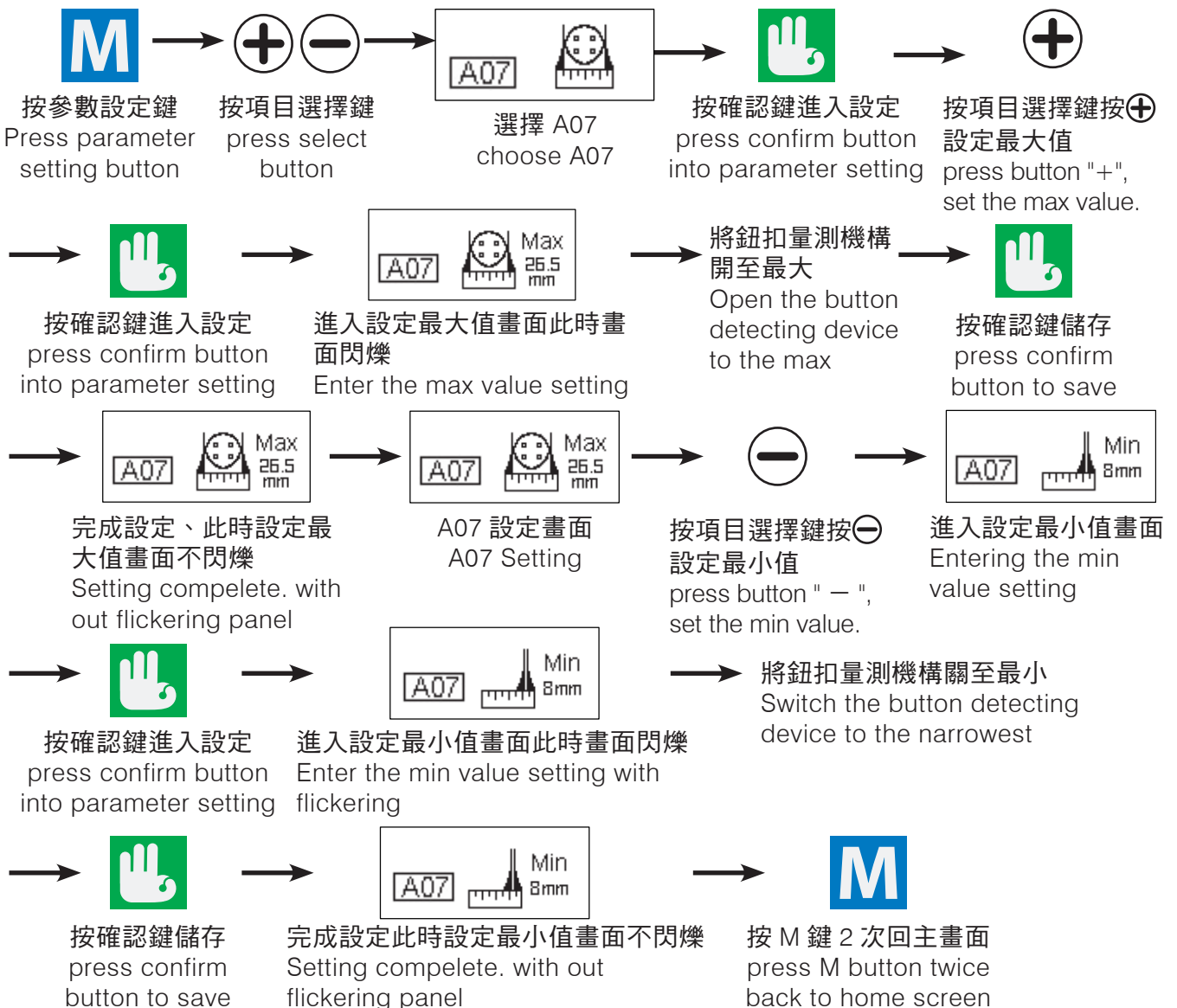


數字鍵 Number keys	氣缸 Cylinder	說明 Remark
1	氣缸 1 Cylinder 1	外門檔 Outside stopper
2	氣缸 2 Cylinder 2	旋臂送出 Rotary arm
3	氣缸 3 Cylinder 3	夾爪 Clamp
4	氣缸 4 Cylinder 4	旋臂上下 Arm up/down

數字鍵 Number keys	氣缸 Cylinder	說明 Remark
5	氣缸 5 Cylinder 5	上下壓扣 Button fixed
9	氣缸 9 Cylinder 9	壓扣旋轉 Rotation
0	氣缸 A Cylinder A	進扣吹氣 Blowing

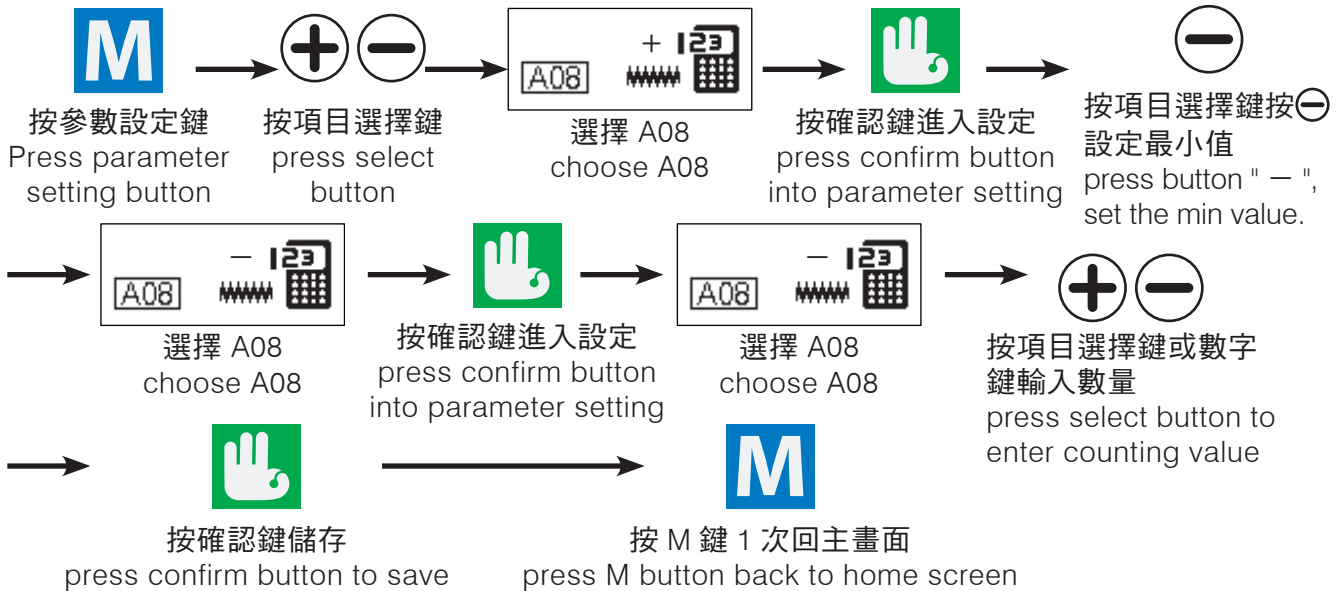
(7) A07 鈕扣量測機構最大值與最小值

(7) A07 Button maximum and minimum measurement means



(8) A08 計數操作 (減數計算)

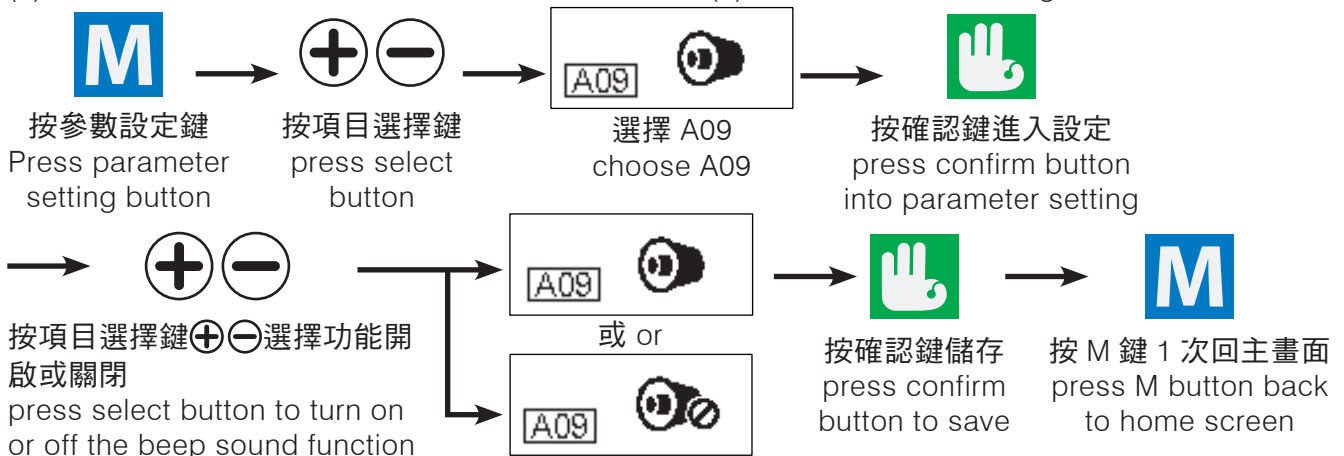
(8) A08 Counting operation (Count down)



※ 當到達所設定鈕扣數量後，會發出長嗶聲，畫面顯示設定的顆數，需按返回鍵消除畫面。
 ※ When it achieve the set quantity of button, there will be a long beep sound. And then press the back key to reset.

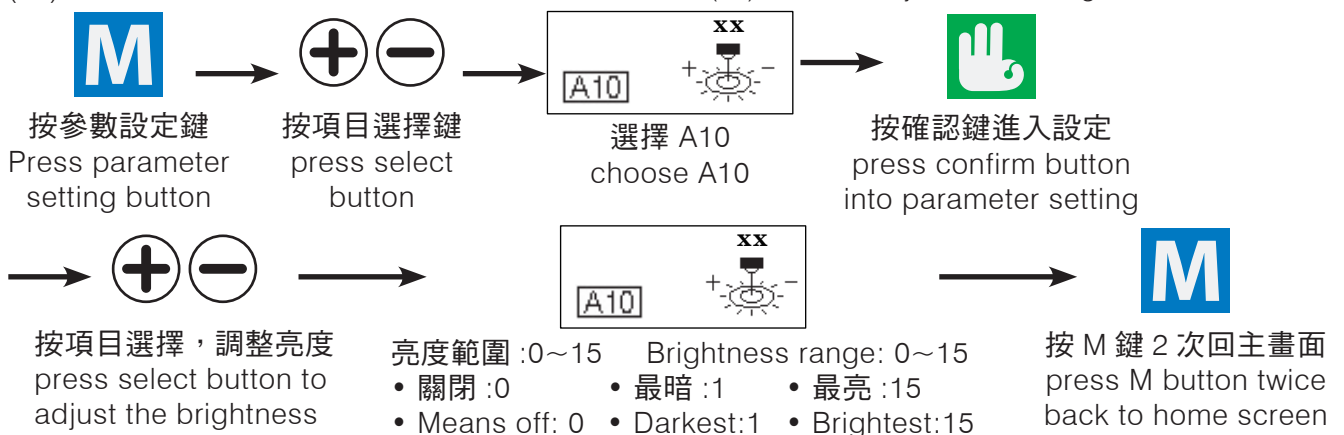
(9) A09 鳴叫聲

(9) A09 The sound setting



(10) A10 雷射標定燈亮度調整

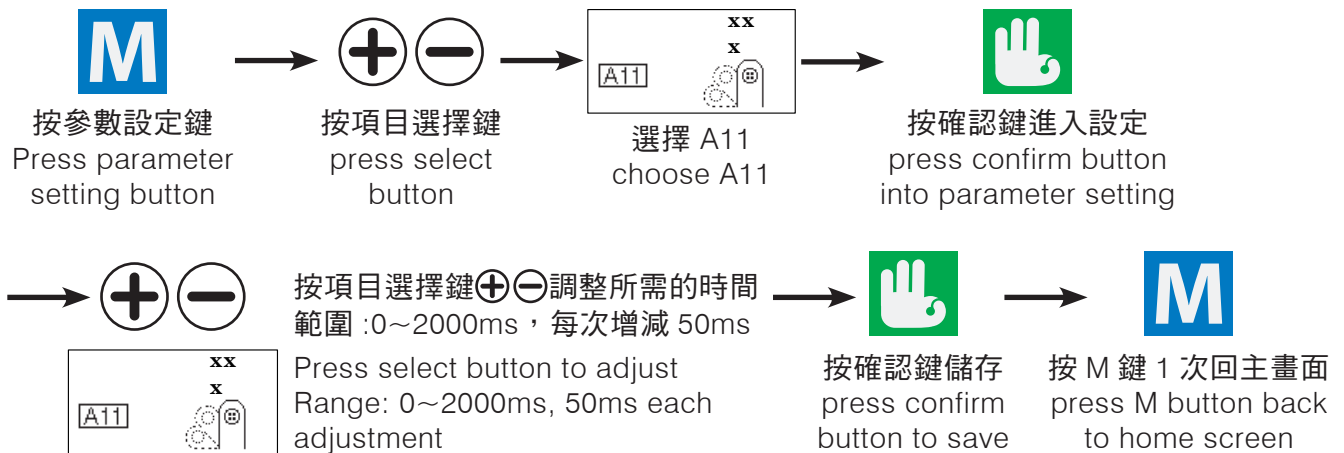
(10) A10 The adjustment of brightness of laser mark



※ 當進行調整時，雷射燈亮度會即時改變並儲存，無需再按確認鍵做儲存。
 ※ When adjusting the brightness of laser mark, the setting will be changed and saved immediately.
 No need to press confirm to save setting.

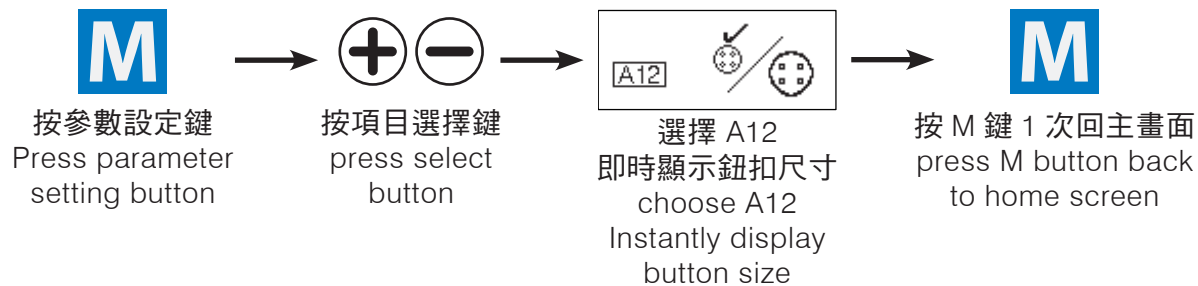
(11) A11 延遲送扣設定

(11) A11 Delay feeding setting



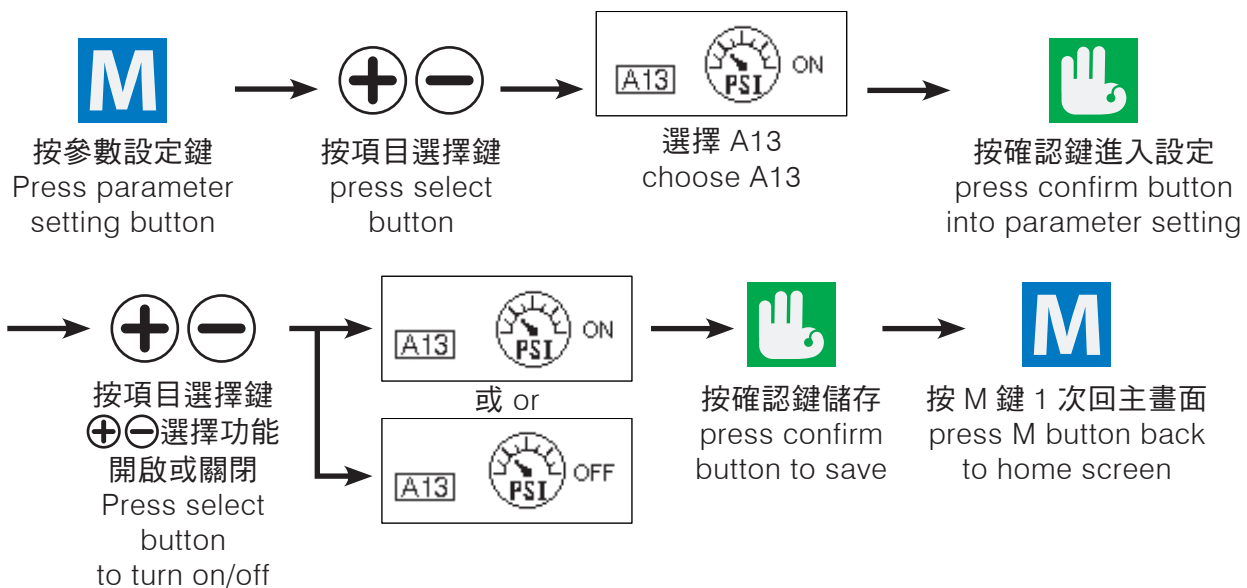
(12) A12 鈕扣尺寸顯示

(12) A12 Button size display



(13) A13 氣源偵測設定

(13) A13 Air detect setting

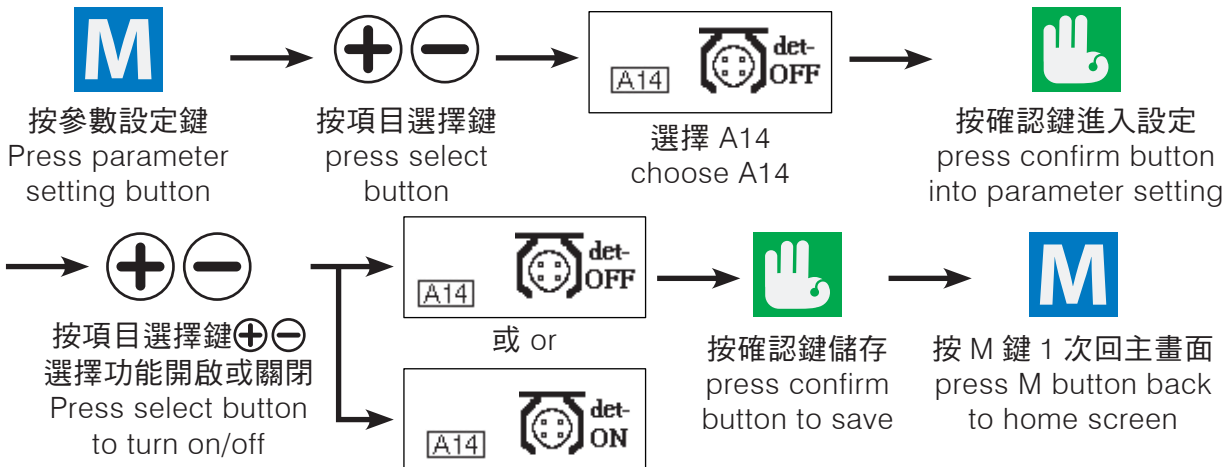


※ 當氣壓不在範圍值內，會出現 E49(氣源異常) 警示。

※ When pressure is out of limit, screen will show E49 (air supply problem).

(14) A14 夾爪上扣判定

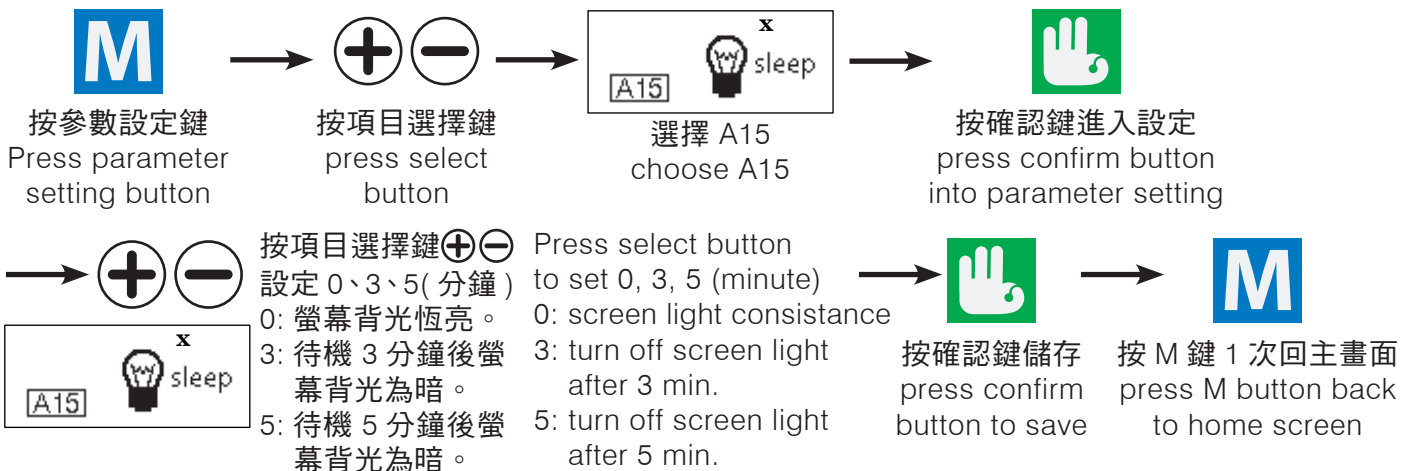
(14) A14 Clamp button detection setting



※ 當 A14 設為 ON 時，在送扣模式下，如夾爪上無鈕扣時，則出現 E48(夾爪上扣異常) 警示。
 ※ When A14 is ON, it will show E48 (clamp button detecting error) if there's no button on clamp ring button feeding mode.

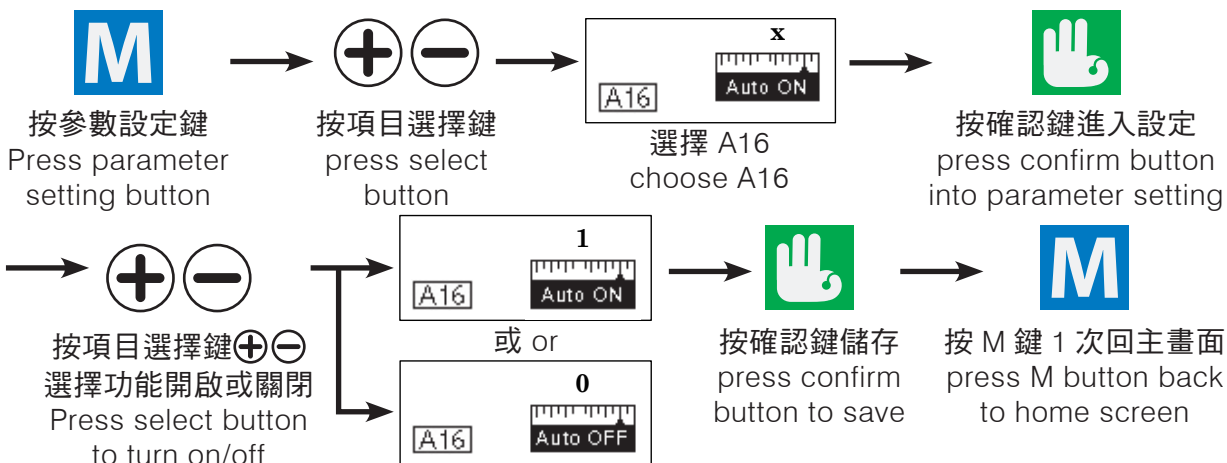
(15) A15 背光休眠模式

(15) A15 Sleep mode



(16) A16 電阻尺功能開啟

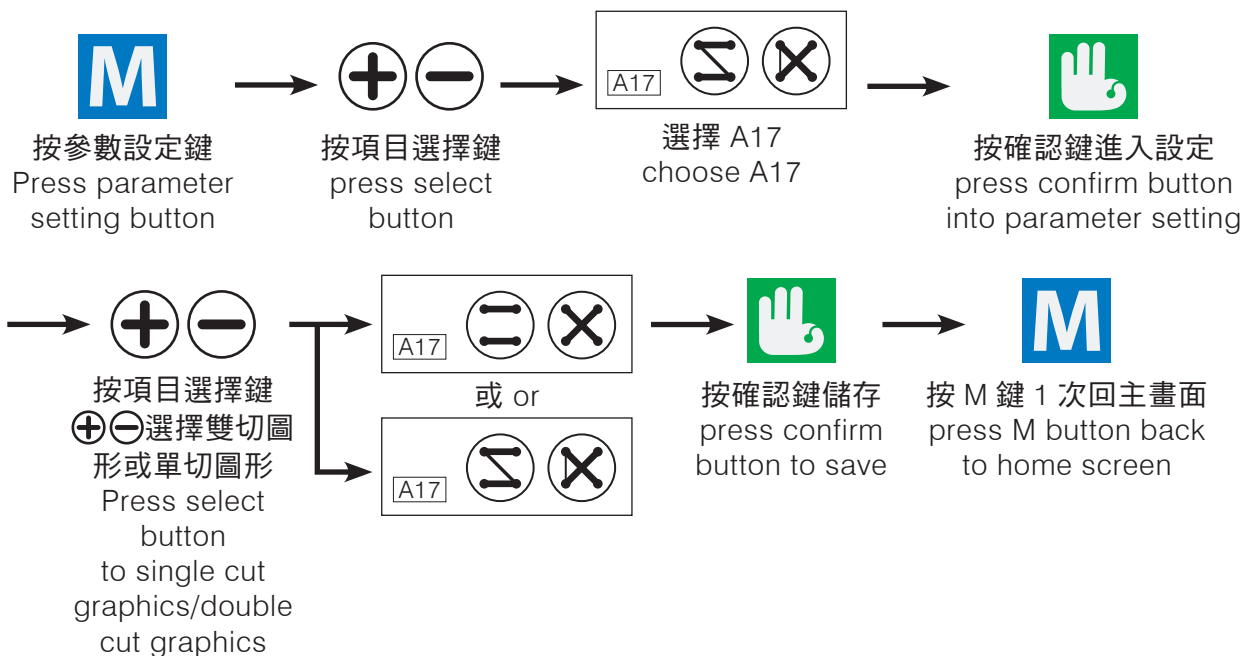
(16) A16 Turn on of position transducer



※ 當 A16 設為 ON 時，在設定模式下，放置鈕扣時可自動檢測鈕扣尺寸。
 ※ When turn ON A16, it can detect button size automatically when placing the button on the clamp under setting mode.

(17) A17 搭配縫紉機圖形設定

(17) A17 Collocation sewing machine graphics setting

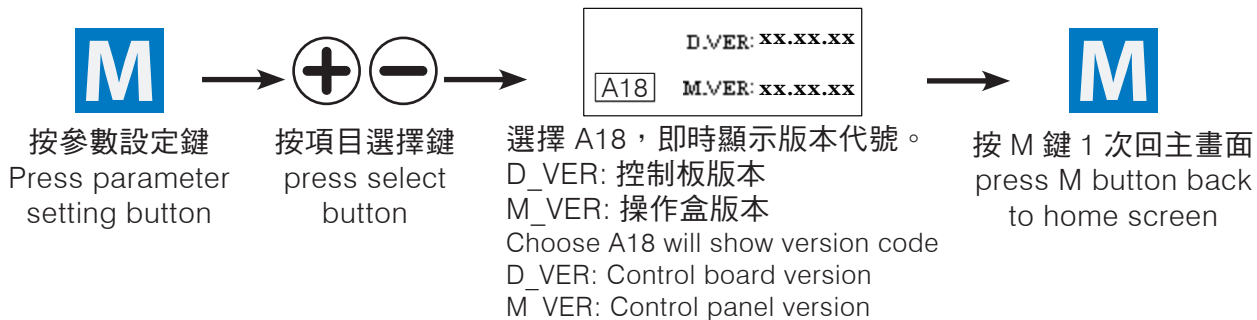


※ 當選擇圖形與縫紉機車縫圖形不一致時，會出現送扣異常現象。

※ When the selection of graphics and sewing machine sewing pattern is inconsistent, there will be feeding button abnormal phenomenon.

(18) A18 版本顯示

(18) A18 Version display

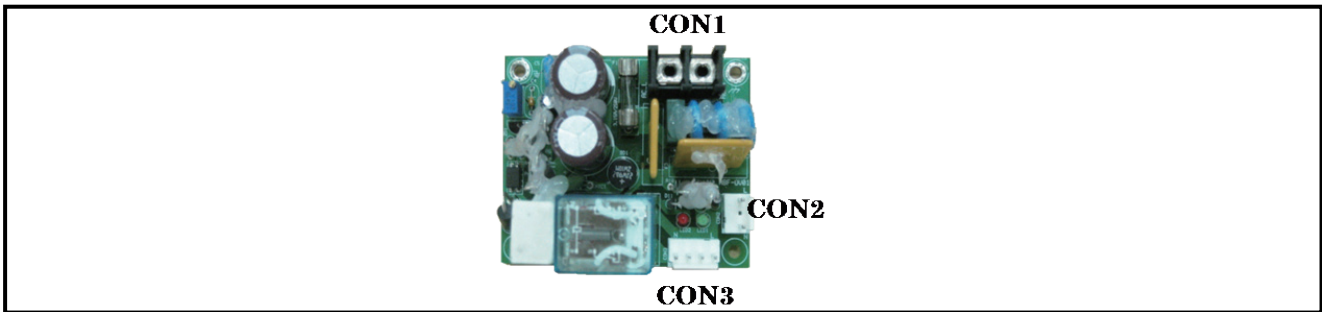


故障排除

TROUBLE SHOOTING

•ABF 高電壓保護板

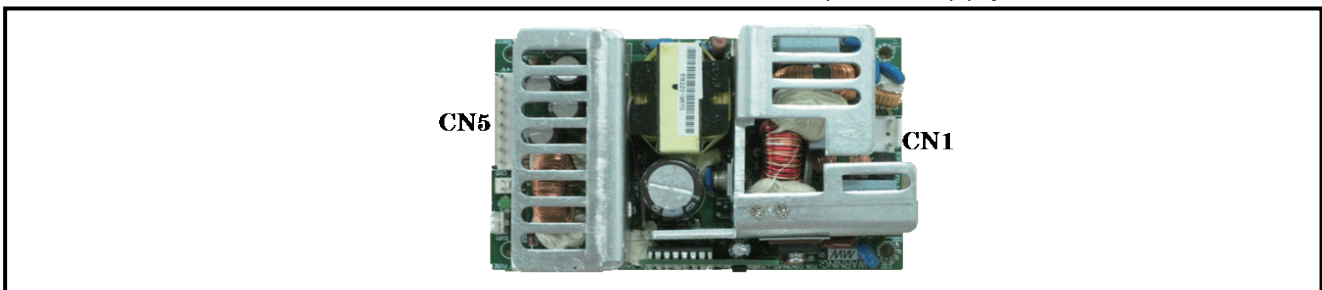
•ABF high-voltage defender



CON1 AC220V 輸入 CON1 AC220V INPUT		CON2 DC24V ABF 系統電源 CON2 DC24V ABF SYSTEM POWER			CON3 DC24V 振動盤電源 CON3 VIBRATION PLATE POWER		
符號	說明 Description	PIN	符號	說明 Description	PIN	符號	說明 Description
AC_L	AC220V 電源輸入 AC220V input	1	L	AC220V 輸出 output	1	L	AC220V 輸出 output
AC_N		2			2		
		3	N	AC220V 輸出 output	3		
					4	N	AC220V 輸出 output

•DC24V 電源供應器

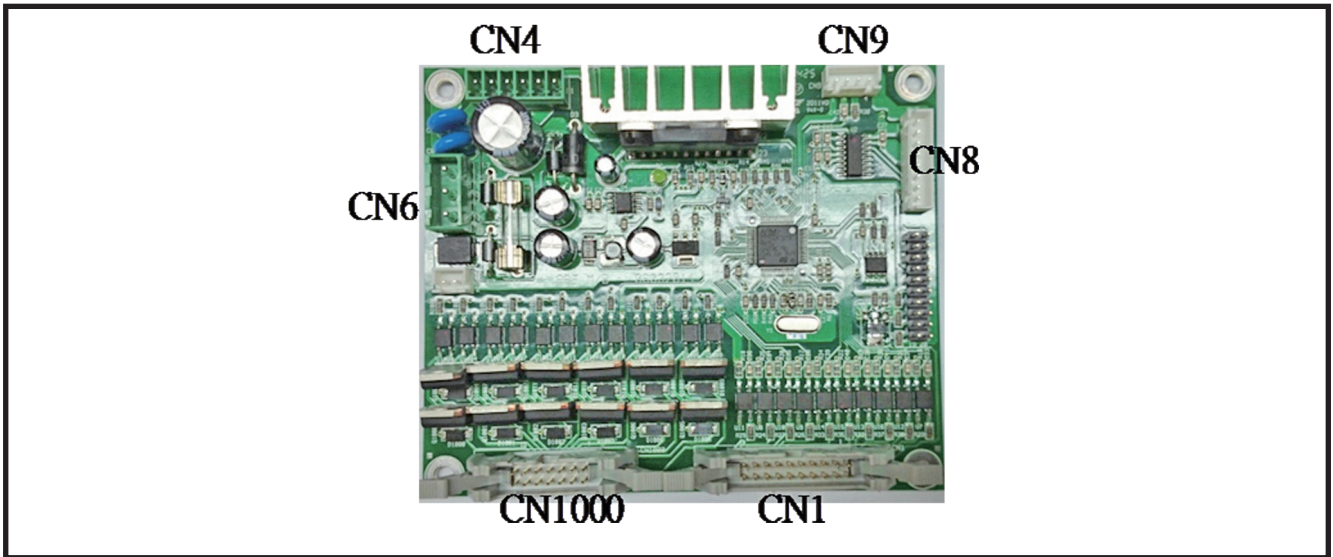
•DC24V power supply



CN1 AC110/220V 電源輸入 CN1 AC110/220V INPUT			CN5 DC 電源輸出 CN5 DC OUTPUT		
PIN	符號	說明 Description	PIN	符號	說明 Description
1	L	AC220V 輸入 input	1		
2			2		
3	N	AC220V 輸入 input	3		
			4	DC24V	DC24V 輸出 output
			5	0V	GND 輸出 output
			6		
			7		
			8		

ABF 控制板 (一)

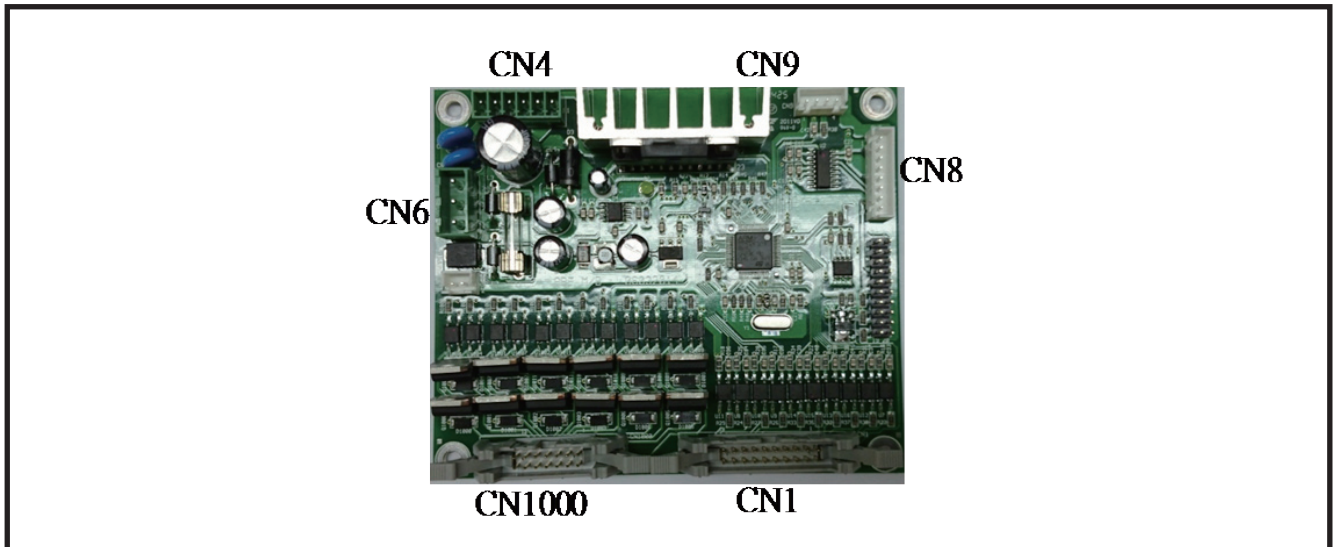
ABF CONTROL BOARD (I)



CN1000 輸出控制 CN1000 OUTPUT CONTROL			CN1 I/O 板連接埠 CN1 I/O Port		
PIN	符號 Symbol	說明 Description	PIN	符號 Symbol	說明 Description
1	OUT 1	電磁閥 1 出口門擋 Outside Stopper	1	5V	5V 輸出 (Output) 5V
2	OUT 2	電磁閥 2 旋臂送出 Rotary Arm	2	ENC	雷射燈輸出點 Laser Light Output
3	OUT 3	電磁閥 3 鈕扣夾爪 Clamp	3	NC	
4	OUT 4	電磁閥 4 旋臂上下 Arm Up / Down	4	NC	
5	OUT 5	電磁閥 5 壓扣上下 Button Fixed	5	NC	
6	OUT D	特殊功能 LED 輸出 Special Function LED Output	6	NC	
7	OUT 7		7	DC24V	DC24V 電源輸出 DC24V Power Input
8	OUT 8		8	DC24V	
9	OUT 9	電磁閥 9 壓扣旋轉 Rotation	9	DC 0V	
10	OUT A	電磁閥 A 射扣吹氣 Blowing	10	DC 0V	
11	OUT B	振動盤開關 Vibration Plate Switch	11	IN1	軌道開度設定 Track Setting Sensor
12	OUT C	踏板聯動開關 Pedal Linkage Switch	12	IN2	氣源偵測 Air Source Sensor
13	24V	DC24V 電源輸出 DC24V Power Input	13	IN3	旋臂原點位置 Rotary Arm Origin Position Sensor
14	24V	DC24V 電源輸出 DC24V Power Input	14	IN4	手動補扣按鈕 Manual Button
			15	IN5	切刀原點位置 Cutter Origin Position Sensor
			16	IN6	夾爪上扣 Upper Clip Sensor
			17	IN7	手動放扣踏板 Manual Button Mode Pedal Sensor
			18	IN8	
			19	IN9	
			20	IN10	

ABF 控制板 (二)

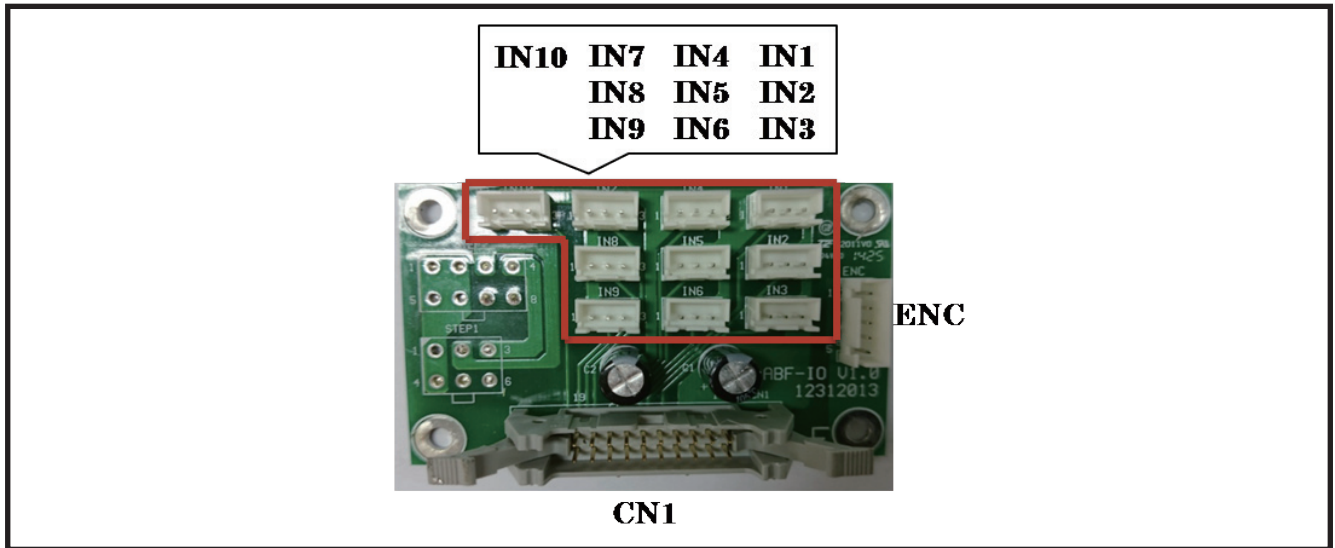
ABF CONTROL BOARD (II)



CN4 步進馬達 CN4 Stepper Motor				CN8 操作盒通信接口 CN8 Operation Box Communication Interface			
PIN	符號 Symbol	說明 Description	線色 Cable Color	PIN	符號 Symbol	說明 Description	
1	CA	A 相中心點 Phase A Center Point	白 White	1	5V	5V 電源輸出 5V power output	
2	CB	B 相中心點 Phase B Center Pint	黃 Yellow	2	BOOT0		
3	A	A 相 Phase A	紅 Red	3	GND	GND	
4	/A	/A 相 /Phase A	藍 Blue	4			
5	B	B 相 Phase B	綠 Green	5			
6	/B	/B 相 /Phase B	黑 Black	6	TX		
				7	RX	信號輸入 Signal Input	
				8	GND	GND	
CN6 DC24V 輸入 CN6 DC24V INPUT				CN9 電阻尺信號輸入 CN9 Resistance Scale Signal Input			
PIN	符號 Symbol	說明 Description		PIN	符號 Symbol	說明 Description	線色 Cable Color
1	24V	DC24V 電源輸入 DC24V Power Input		1	5V	5V 電源輸出 5V power output	紅 Red
2	0V			2	GND	GND	黑 Black
3	FG	外殼接地 Case Ground Protection		3	RIN	電阻尺信號輸入 Resistance Scale Signal Input	藍 Blue
				4	NC		

ABF I/O 板

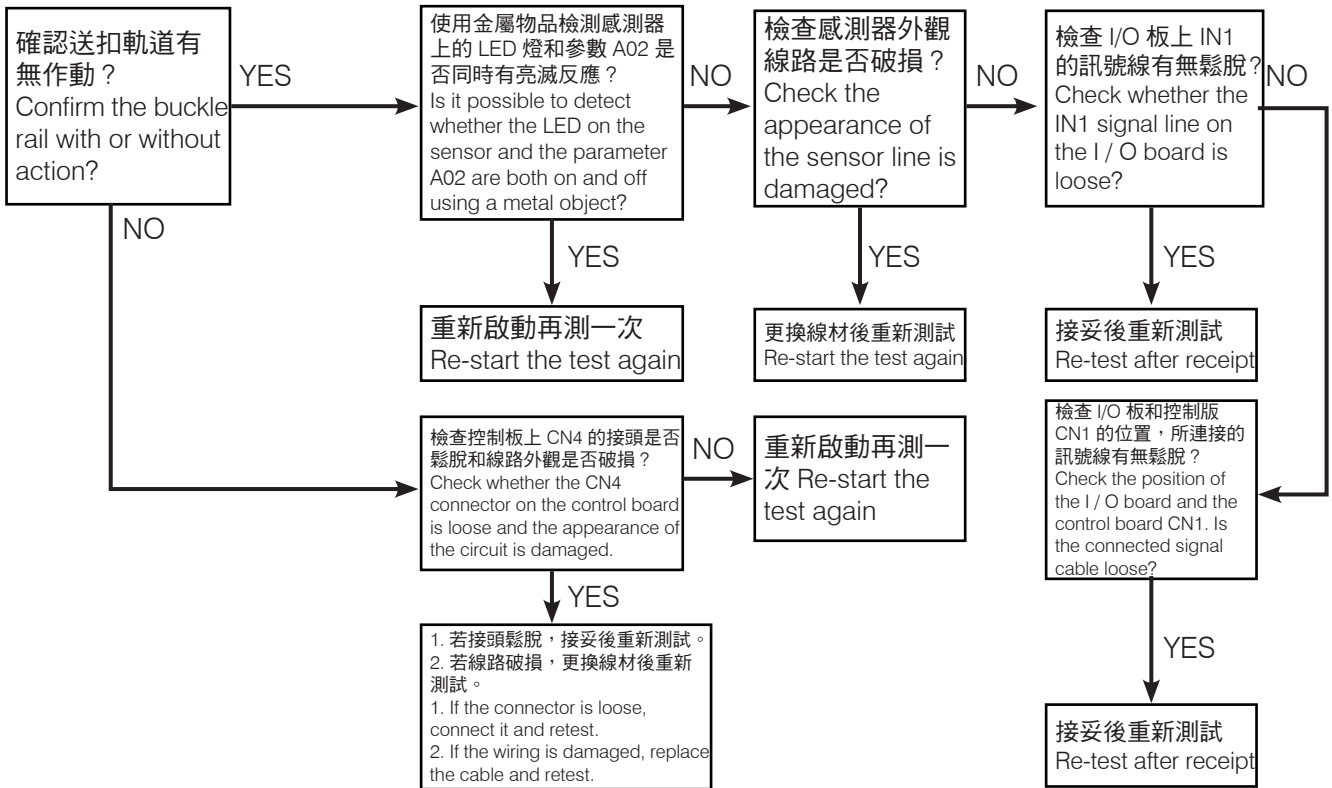
ABF I/O Panel



CN1 ABF 控制板連接埠 CN1 ABF Control Panel Port			IN1~IN10 輸入信號 IN1~IN10 Input Signal		
PIN	符號 Symbol	說明 Description	PIN	符號 Symbol	說明 Description
1	5V	5V 輸出 (Output) 5V	IN(X)_Pin1	P24	此接點為輸出 24V Output
2	YL	雷射燈輸出 Laser Light Output	IN(X)_Pin3	N20	此接點為輸出 GND Output
3	NC				
4	NC		IN 1_Pin2	IN1	軌道開度設定 Track Sensor
5	NC		IN 2_Pin2	IN2	氣源偵測 Air Source Sensor
6	NC		IN 3_Pin2	IN3	旋臂原點位置 Rotary Arm Origin Position Sensor
7	DC24V	DC24V 電源輸出 DC24V Power Input	IN 4_Pin2	IN4	手動補扣按鈕 Manual Button
8	DC24V		IN 5_Pin2	IN5	切刀原點位置 Cutter Origin Position Sensor
9	DC 0V		IN 6_Pin2	IN6	夾爪上扣 Upper Clip Sensor
10	DC 0V		IN 7_Pin2	IN7	手動放扣踏板 Manual Button Mode Pedal Sensor
11	IN1	軌道開度設定 Track Setting Sensor	IN 8_Pin2	IN8	
12	IN2	氣源偵測 Air Source Sensor	IN 9_Pin2	IN9	
13	IN3	旋臂原點位置 Rotary Arm Origin Position Sensor	IN 10_Pin2	IN10	
14	IN4	手動補扣按鈕 Manual Button	ENC 雷射燈輸出 ENC Laser Light Output		
15	IN5	切刀原點位置 Cutter Origin Position Sensor	PIN	符號	說明
16	IN6	夾爪上扣 Upper Clip Sensor	Pin1	NC	
17	IN7	手動放扣踏板 Manual Button Mode Pedal Sensor	Pin2	YL	雷射燈輸出 Laser Light Output
18	IN8		Pin3	5V	5V 輸出 5V Output
19	IN9		Pin4	NC	
20	IN10		Pin5	NC	

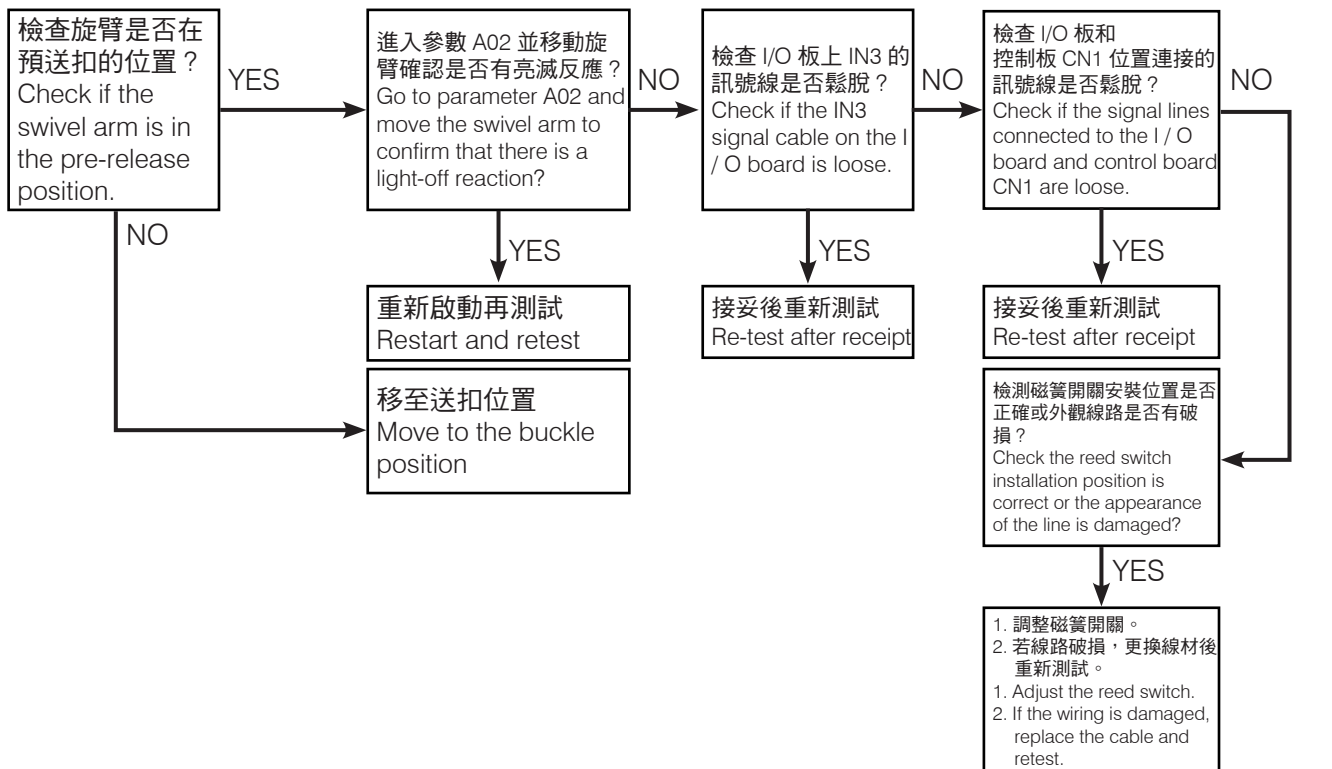
1. 出現錯誤代碼 E41：送鈕扣機馬
達原點檢索錯誤

1. ERROR CODE E41: BUTTON MOTOR
MOTOR ORIGIN SEARCH ERROR



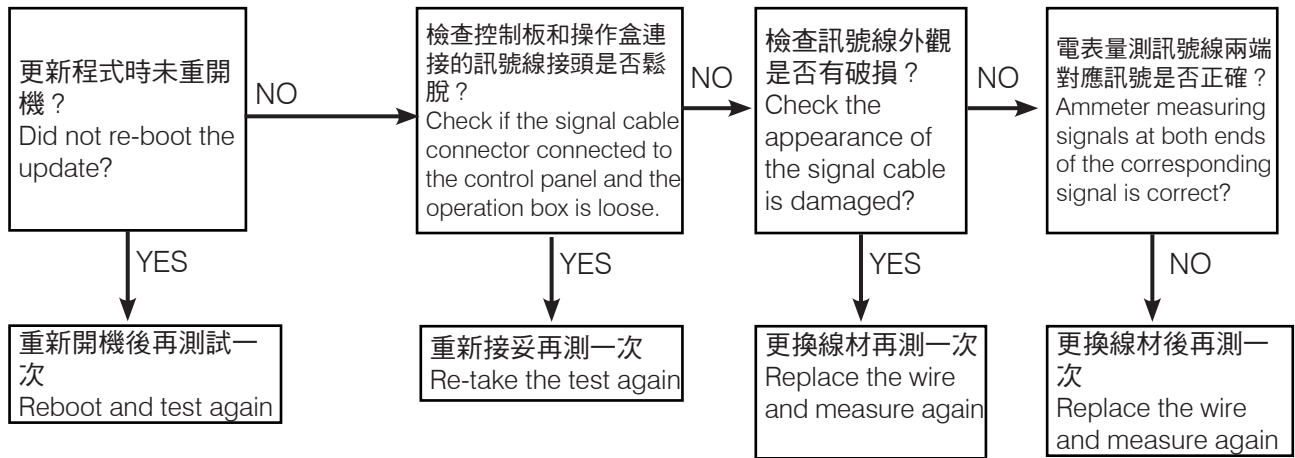
2. 出現錯誤代碼 E45：旋臂逾時未回原點

2. ERROR CODE E45: SWIVEL ARM
TIME-OUT DID NOT RETURN TO ORIGIN



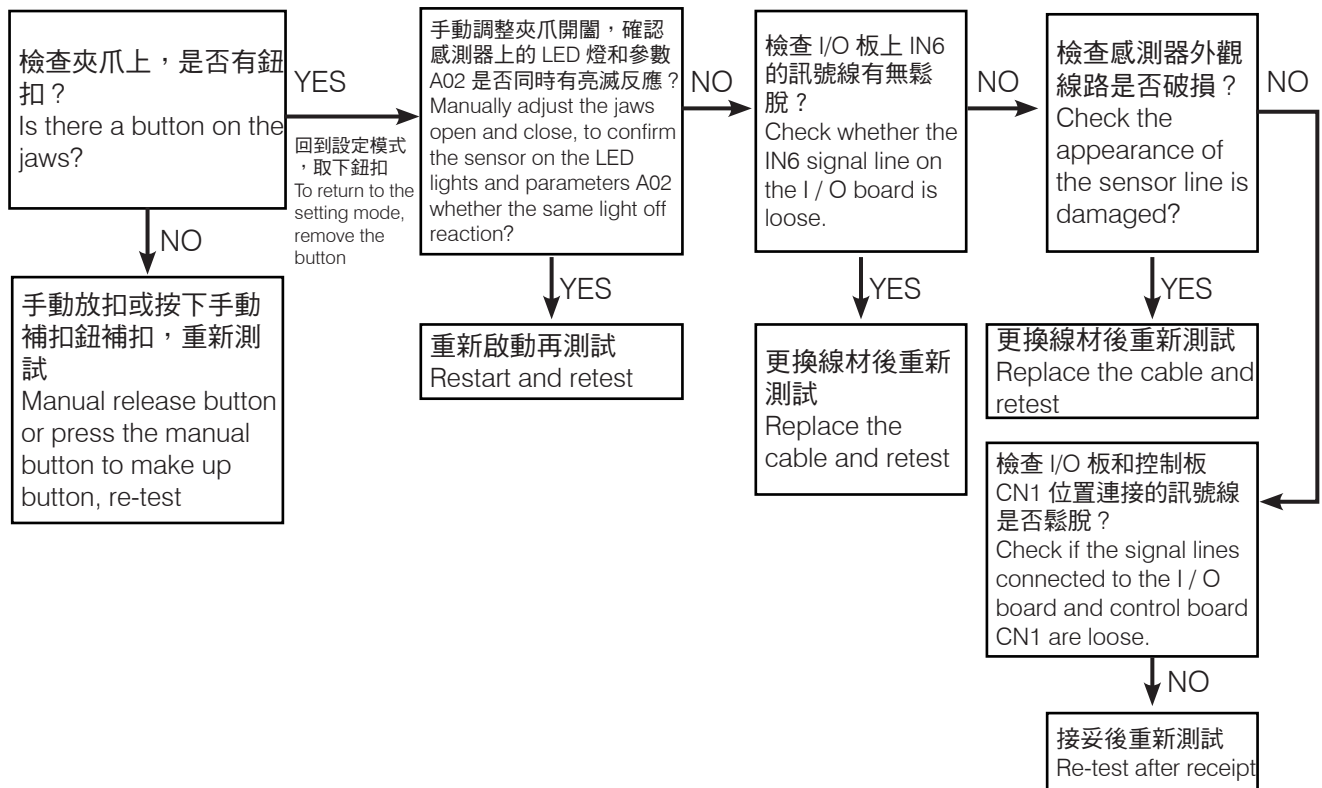
3. 出現錯誤代碼 E46 : ABF 通訊故障

3. ERROR CODE E46: ABF COMMUNICATION ERROR



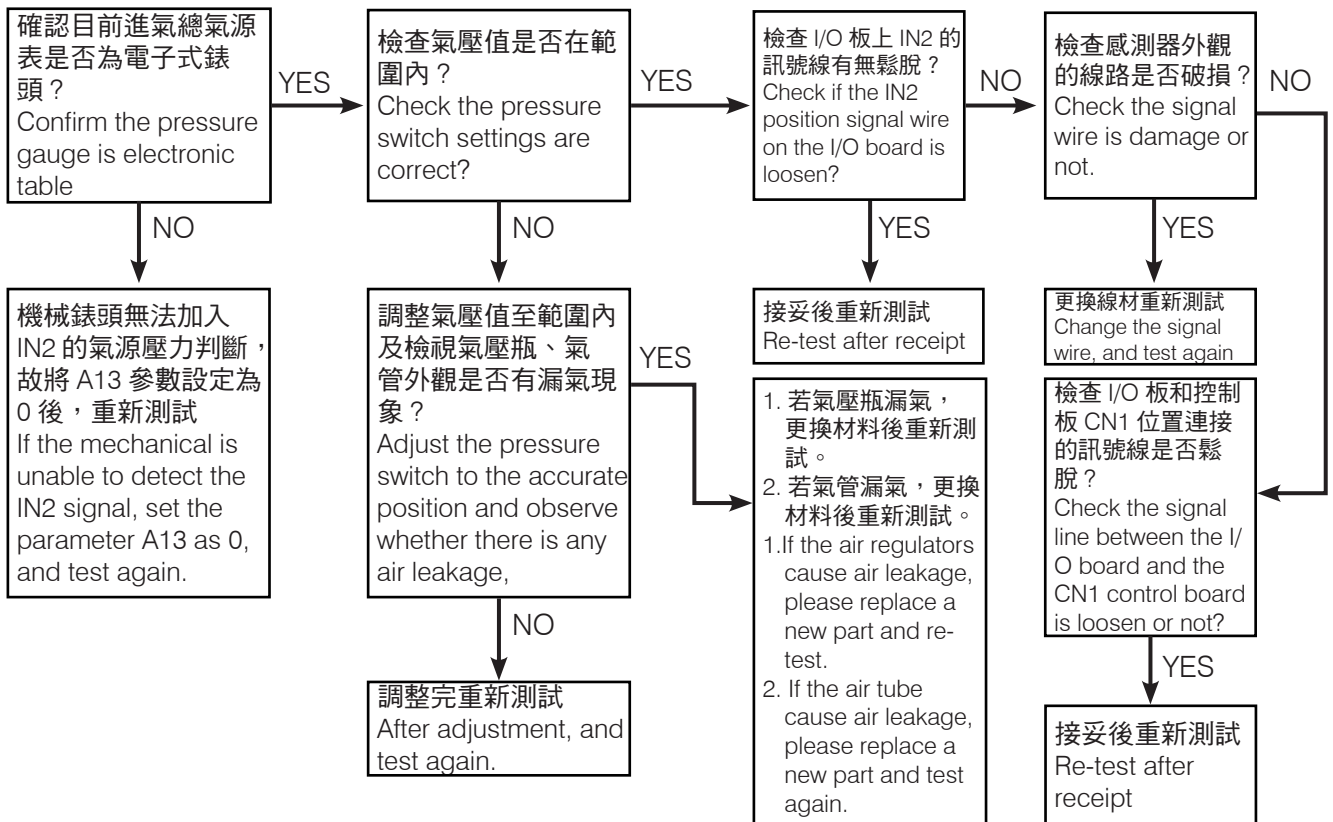
4. 出現錯誤代碼 E48 : 夾爪上扣異常

4. ERROR CODE E48: GRIPPER ERROR



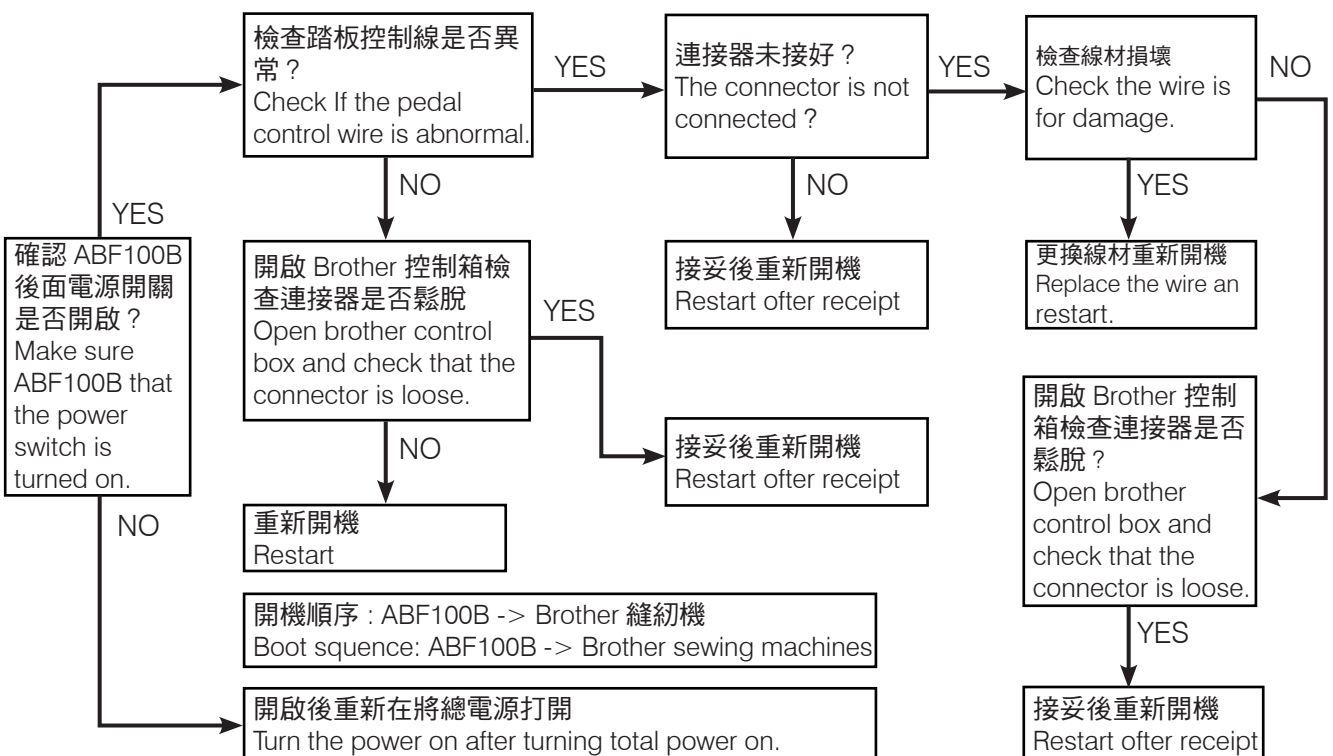
5. 出現錯誤代碼 E49：氣源偵測異常

5. ERROR CODE E49: AIR SOURCE DETECTION ANOMALY



6. 出現錯誤代碼 E35：踏板控制異常

6. ERROR CODE E35: AIR SOURCE DETECTION ANOMALY



簡易維修流程圖

BLOCK DIAGRAM OF SIMPLE REPAIR

A. 無電源

Step 1. 檢查電源插頭是否完整插入？

Step 2. 檢查電源開關是否開啟？

Step 3. 檢查控制基板

a. 檢查控制板 LED 是否正常亮起？

b. 電錶量測 CN6 是否為 DC24V？

c. 檢查 F1 (3.15A FUES) 是否燒斷？

A. No Power

Step 1. Check whether the plug is inserting completely?

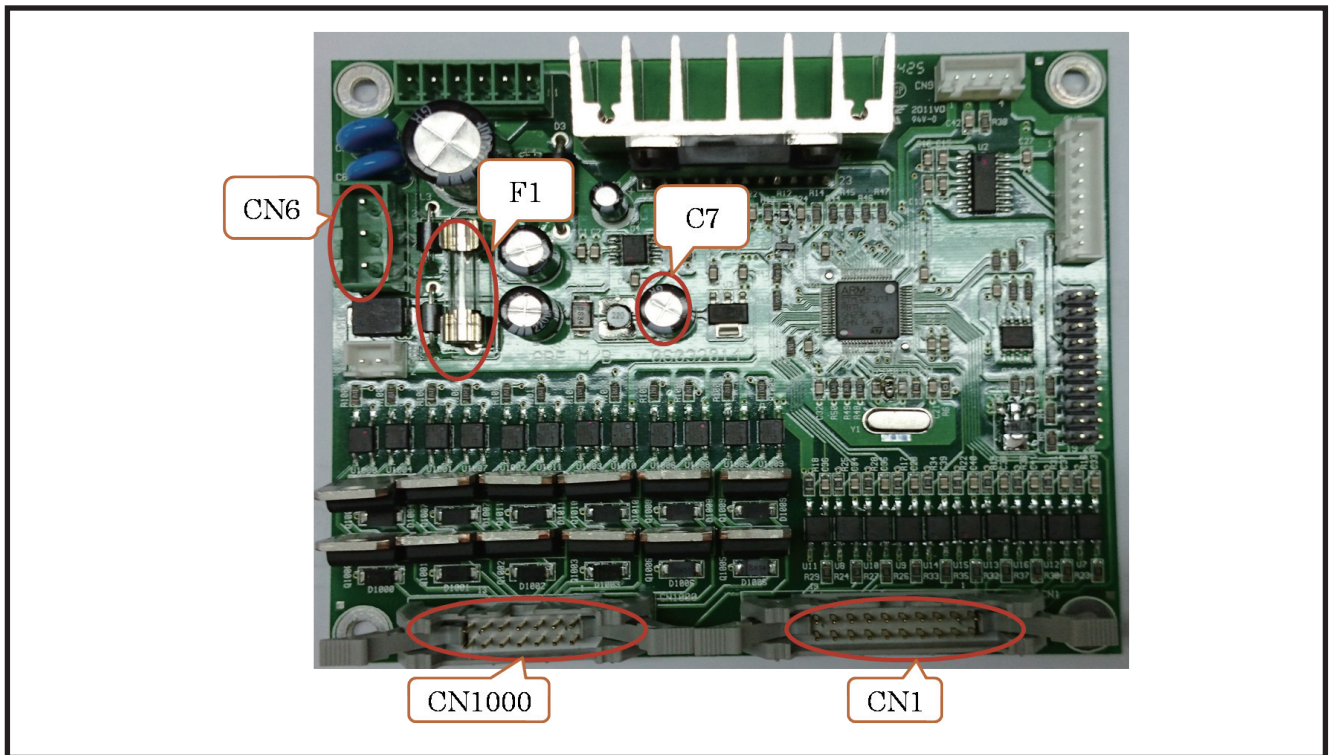
Step 2. Check the power case is switch on properly?

Step 3. Check the control panel.

a. Check the control panel LED is light up?

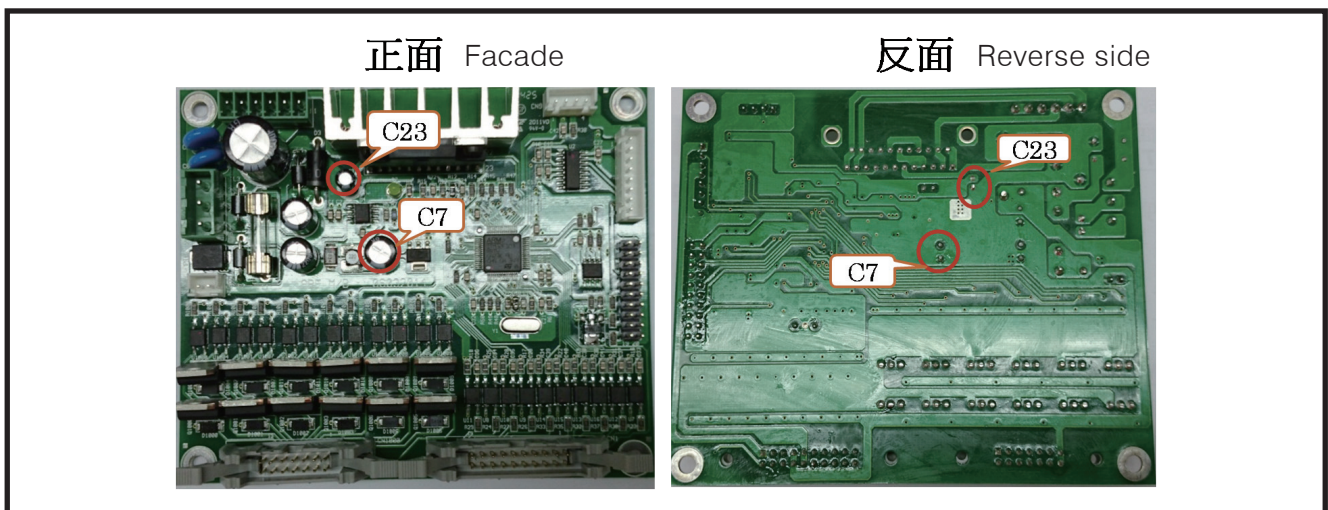
b. The electricity meters test CN6 should be DC24V?

c. Check F1 (3.15A FUES) is burn out or not?



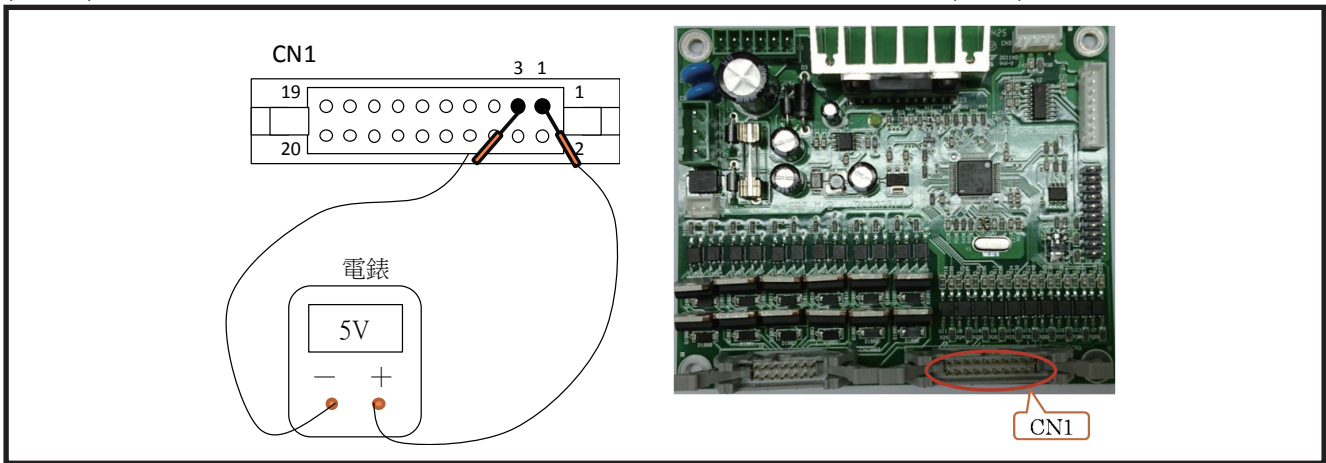
d. 電錶量測 C7 和 C23 電容兩端的電壓是否為 5V？

d. Use the electricity meters to check C7 and C23 both capacitance voltage is 5V or not?



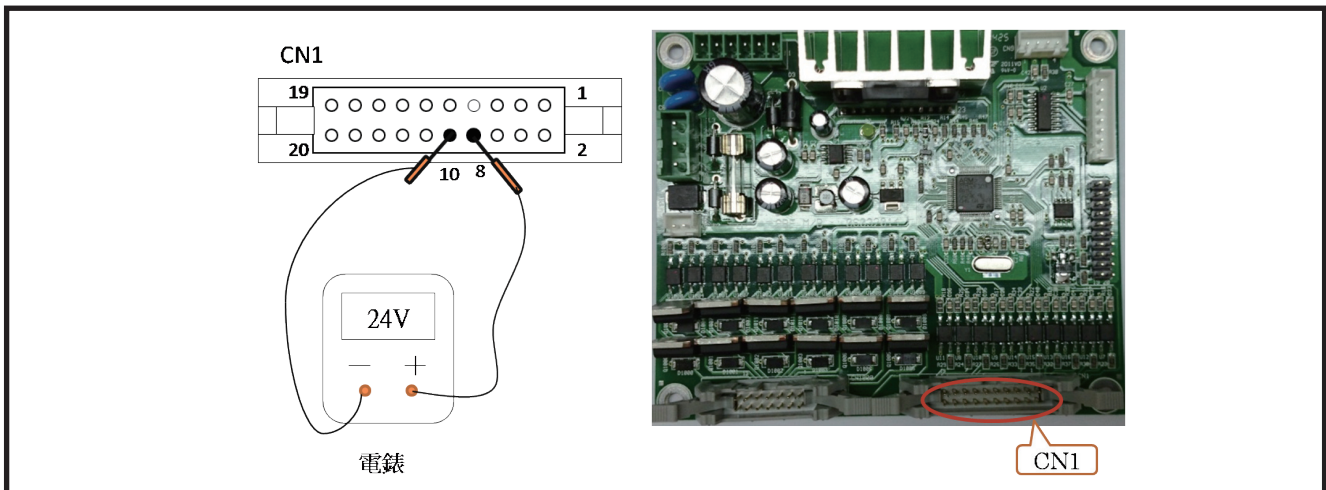
e. 電錶量測 CN1 的 Pin1 (5V) 對 CN1 的 Pin9 (GND) 是否為 5V?

e. Use the electricity meters to check the PIN 1 (5V) in CN1 to the PIN9 (GND) in CN1 is 5V or not?



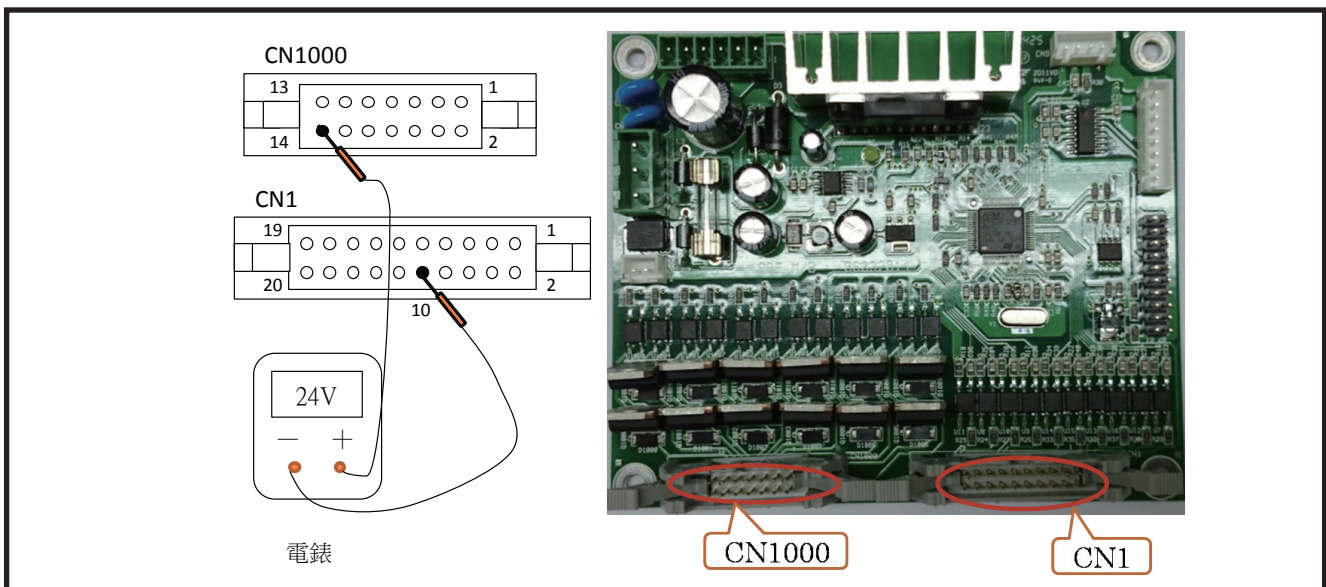
f. 電錶量測 CN1 的 Pin8 (24V) 對 CN1 的 Pin10 (GND) 是否為 24V?

f. Use the electricity meters to check the PIN 8 (24V) in CN1 to the PIN10 (GND) in CN1 is 24V or not?



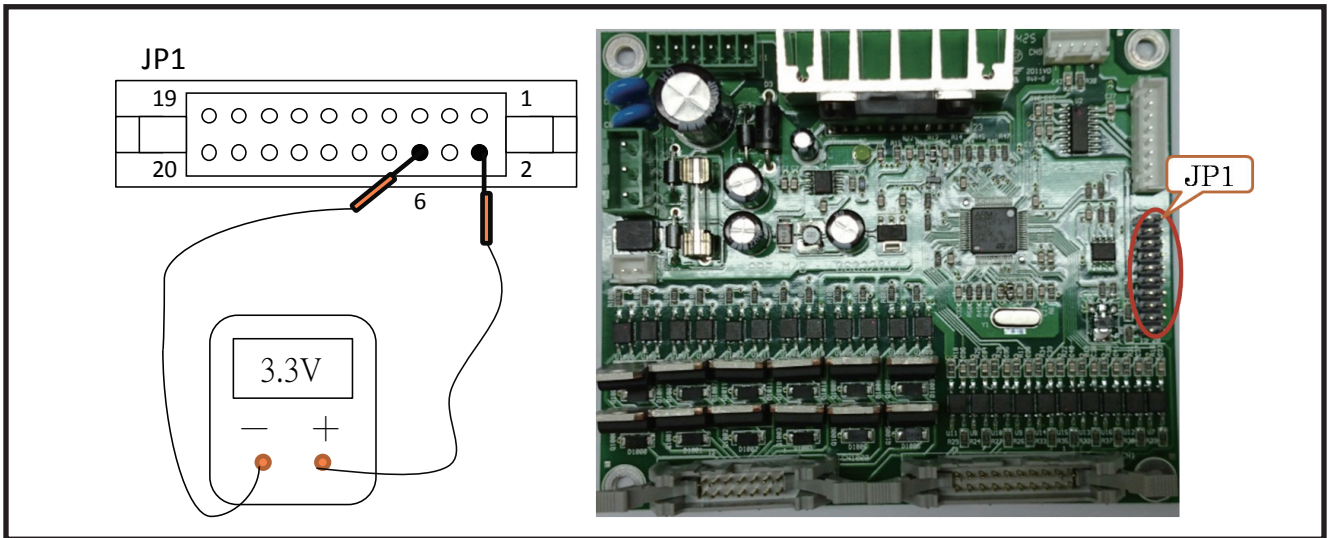
g. 電錶量測 CN1000 的 Pin14(24V) 對 CN1 的 Pin10 (GND) 是否為 24V?

g. Use the electricity meters to check the PIN14 (24V) in CN1000 to the PIN10 (GND) in CN1 is 24V or not?



h. 電表量測 JP1 的 Pin2(3.3V) 對 JP1 的 Pin6(GND) 是否為 3.3V?

h. Use the electricity meters to check the PIN 2 (3.3V) in JP1 to the PIN6 (GND) in JP1 is 3.3V or not?

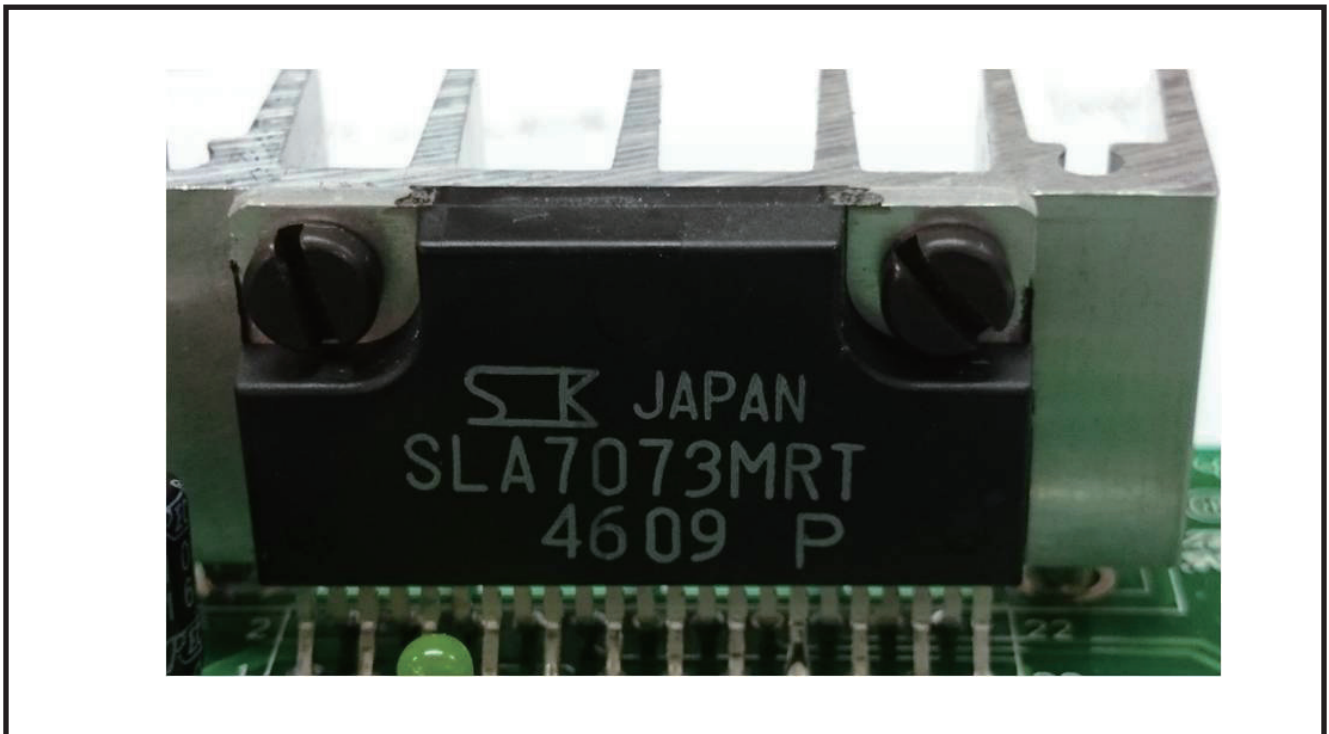


B. 步進馬達轉動異常

• 目測 U27 (SLA7073MRT) IC 外觀塑膠部份 是否有裂痕?

B. Stepping motor running abnormal.

Check the U27 (SLA7073MRT) IC outer plastic part is damage or not?



異常檢修與解決對策

TROUBLESHOOTING

問題 Problem	原因 Reason	解決對策 Solution
1. 開始車縫時脫線或在車縫中途才開始車縫。 1. Thread slips off when or the machine starts sewing on the halfway.	<ul style="list-style-type: none"> ● 上線的殘餘線過短。 ● 切布粘在一起。 ● 挑線桿沒有壓到線。 ● 開始車縫時縫紉機速度快。 ● The upper thread is too short after trimming. ● Cloth is stuck together. ● The thread take-up lever doesn't press the thread. ● The speed is too fast during the sewing. 	<ul style="list-style-type: none"> ● 第 1 線張力器調弱。 ● 調整第 2 線張力器盤的拉起量。 ● 使用較高的針孔導引器。 ● 調整撥線彈簧。 ● 增加存儲器開關的針數。 ● Decrease the tension of the first stitch. ● Adjust the rising amount of the second thread. ● Use the higher needle hole guide. ● Adjust the wiper spring. ● Add the numbers of the switch of the saving.
2. 常斷針 2. Needle broken	<ul style="list-style-type: none"> ● 針碰到鈕扣眼。 ● 針孔導引器凸部和布壓腳相撞。 ● 針過細。 ● Needle touches the hole of button. ● The guide touches the cloth presser foot. ● The needle is too thin. 	<ul style="list-style-type: none"> ● 調整夾爪的位置，讓針落到針眼中。 ● 調整布壓腳底位置，使之不與針孔導引器凸部相碰，縫紉鈕扣尺寸大時，請使用中鈕扣或大鈕扣用的布壓腳底板。 ● 換成適合於縫的布料或鈕眼的機針。 ● Adjust the clamp, have the needle drops to the needle center. ● Adjust the position of the presser foot, not to touch the convex of the guide. If the size of button is too large, please use the suitable presser foot for the size. ● Change the another suitable needle.
3. 縫紉背面收線非常不好。 3. The back of sewing is neatly.	<ul style="list-style-type: none"> ● 上線殘線留太長。 ● 撥線桿抓線過緊。 ● 底面為圓形的鈕扣時，車縫成球狀。 ● The waste of upper thread is too long. ● The lever is to tight. ● Sewing becomes a mess when the bottom of button is round. 	<ul style="list-style-type: none"> ● 增強第 1 線張力器。 ● 調整第 2 線張力器拉起時間。 ● 減弱撥線桿彈簧。 ● Strengthen the first thread tension. ● Adjust the rising time of the second thread tension. ● Decrease the wiper spring tension.

問題 Problem	原因 Reason	解決對策 Solution
4. 釘扣品質不佳。 4. The quality of button stitch is not good.	<ul style="list-style-type: none"> ● 鈕扣挾持力弱。 ● 夾爪彈力過強。 ● 底面為圓形的鈕扣時，鈕扣下面和針孔導引器凸部上面有線進入，鈕扣不能活動。 <ul style="list-style-type: none"> ● The clamp is weak. ● The clamp is too strong. ● The button cannot move button or in the convexif there is thread in the of the guide; the bottom of the button is round. 	<ul style="list-style-type: none"> ● 糾正夾爪的動作。 ● 調整鈕扣夾爪彈簧，加強鈕扣夾持力。 ● 調整鈕扣夾爪彈簧，減弱彈力。 <ul style="list-style-type: none"> ● Correct the clamp. ● Adjust the spring of the clamp, strengthen it. ● Adjust the spring of the clamp, decrease the strength.

表 5/Table5

報廢流程






DEMOLITION PROCEDURE

1. 當機器需要被淘汰與報廢時，有一些基本規則必須採納、遵守以保護環境及公眾健康。
2. 所有的機器零組件必須依照下列分類來區分開：
 - (1) 所有護套、可伸縮軟管及塑膠或非金屬零件。
 - (2) 電器零件：開關、照明器具等。
 - (3) 絕緣材料：石棉、彈性／可伸縮橡膠片。
 - (4) 金屬：含鐵金屬、銅、青銅與黃銅、其他各種金屬。
3. 以此方法，所有材質可以正確的淘汰，回收再利用或鎔解為可再使用或再處理而不至於危害環境。

1. When the machine needs to be eliminated and demolished, certain basic rules must be observed to protect the environment and public health.
2. All machine componenets must be divided according to categories as the followings:
 - (1) All sheathes, flexible hosing and plastic or non-metal components.
 - (2) Electricity components: switches, or lighting components.
 - (3) Insulation materials: rock wool, and flexible rubber strips.
 - (4) Metals: ferrous metals, copper, bronze and brass, various.
3. In this way, all materials can be eliminated correctly, recycled, or melted down for reuse or disposed of so that they do not harm the environment.

縫製程序表

SEWING PROCEDURE CHART





No.	鈕孔數 No. of holes in button	花樣 Pattern	線數 No. of threads	包縫數 No. of crossover stitches	針數 No. of stitches	尺寸 (mm) Sewing size(mm)				
						X	Y			
1	2		6	—	12	3.4	0			
※1 54			6	—	12					
2			8	—	14					
※1 55			8	—	14					
3			10	—	16					
4			12	—	18					
※2 5			16	—	22					
※2 6			20	—	26					
※1 56				6	—			11	0	3.4
※3 7				6	—			12		
※3 23	10	—		16						
※3 8	12	—		18						
※3 9	3		5-5-5	—	21	2.6	2.4			
※3 24			7-7-7	—	27					
※3 25			5-5-5	—	21					
※3 26			7-7-7	—	27					
※1 57	4		6-6	1	18	3.4	3.4			
10			6-6	1	19					
※1 58			8-8	1	22					
11			8-8	1	23					
12			8-8	3	25					
13			10-10	1	27					
27			12-12	1	31					

※1 用於小鈕扣。 ※2 使用程序前，請檢查鈕孔直徑不小於 2mm。 ※3 不可使用鈕扣抬起彈簧。

*1 Use for buttons with small holes.

*2 Check that the diameter of the holes in the buttons is 2 mm or greater before using the programs.

*3 Do not use the button lifter spring.

No.	鈕孔數 No. of holes in button	花樣 Pattern	線數 No. of threads	包縫數 No. of crossover stitches	針數 No. of stitches	尺寸 (mm) Sewing size(mm)	
						X	Y
14 ※4	4		6-6	0	24	3.4	3.4
36 ※5			6-6	0	24		
28 ※4			8-8	0	28		
37 ※5			8-8	0	28		
15 ※4			10-10	0	32		
38 ※5			10-10	0	32		
29 ※4			12-12	0	36		
39 ※5			12-12	0	36		
59 ※1			6-5	1	17		
16			6-5	1	18		
60 ※1			8-7	1	21		
17			8-7	1	22		
30			10-9	1	26		
61 ※1			6-6	1	18		
18			6-6	1	19		
62 ※1			8-8	1	22		
19			8-8	1	23		
63 ※1			10-10	1	26		
31			10-10	1	27		
45			12-12	1	31		
20 ※4			6-6	0	24		
40 ※5			6-6	0	24		
32 ※4			8-8	0	28		
41 ※5			8-8	0	28		
33 ※4			10-10	0	32		
42 ※5			10-10	0	32		

※1 用於小鈕扣。

※4 在完成一邊縫紉後，鈕扣夾就上升並進行撥線動作。為了將縫紉進行到底，在另一邊的縫紉開始之前，請繼續踩下腳踩開關；或在完成一邊縫紉後，請再次踩下腳踩開關。

※5 在完成一邊縫紉後，鈕扣夾不上升而只進行撥線動作。並繼續進行另一邊的縫紉。

*1 Use for buttons with small holes.

*4 When sewing of one side is completed, the button clamp rises and the thread is trimmed. To finish sewing, press the foot switch until sewing of the other side starts, or press the foot switch again after sewing of the other side is completed.

*5 When sewing of one side is completed, the thread will be trimmed without the button clamp rising, and then the other side will be sewn.

No.	鈕孔數 No. of holes in button	花樣 Pattern	線數 No. of threads	包縫數 No. of crossover stitches	針數 No. of stitches	尺寸 (mm) Sewing size(mm)	
						X	Y
64	※1		6-6	1	18	3.4	3.4
21	※3		6-6	1	19	2.4	
34	※3		10-10	1	27		
22	※3※4	6-6	0	24			
43	※3※5	6-6	0	24	3.4		
35	※3※4	10-10	0	32			
44	※3※5	10-10	0	32			
46	4		6-7	1	19	3.4	3.4
47			8-9	1	23		
48			10-11	1	27		
49			12-13	1	31		

※1 用於小鈕扣。

※3 不可使用鈕扣抬起彈簧。

※4 在完成一邊縫紉後，鈕扣夾就上升並進行撥線動作。為了將縫紉進行到底，在另一邊的縫紉開始之前，請繼續踩下腳踩開關；或在完成一邊縫紉後，請再次踩下腳踩開關。

※5 在完成一邊縫紉後，鈕扣夾不上升而只進行撥線動作。並繼續進行另一邊的縫紉。

*1 Use for buttons with small holes.

*3 Do not use the button lifter spring.

*4 When sewing of one side is completed, the button clamp rises and the thread is trimmed. To finish sewing, press the foot switch until sewing of the other side starts, or press the foot switch again after sewing of the other side is completed.

*5 When sewing of one side is completed, the thread will be trimmed without the button clamp rising, and then the other side will be sewn.

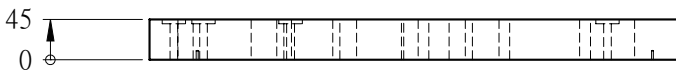
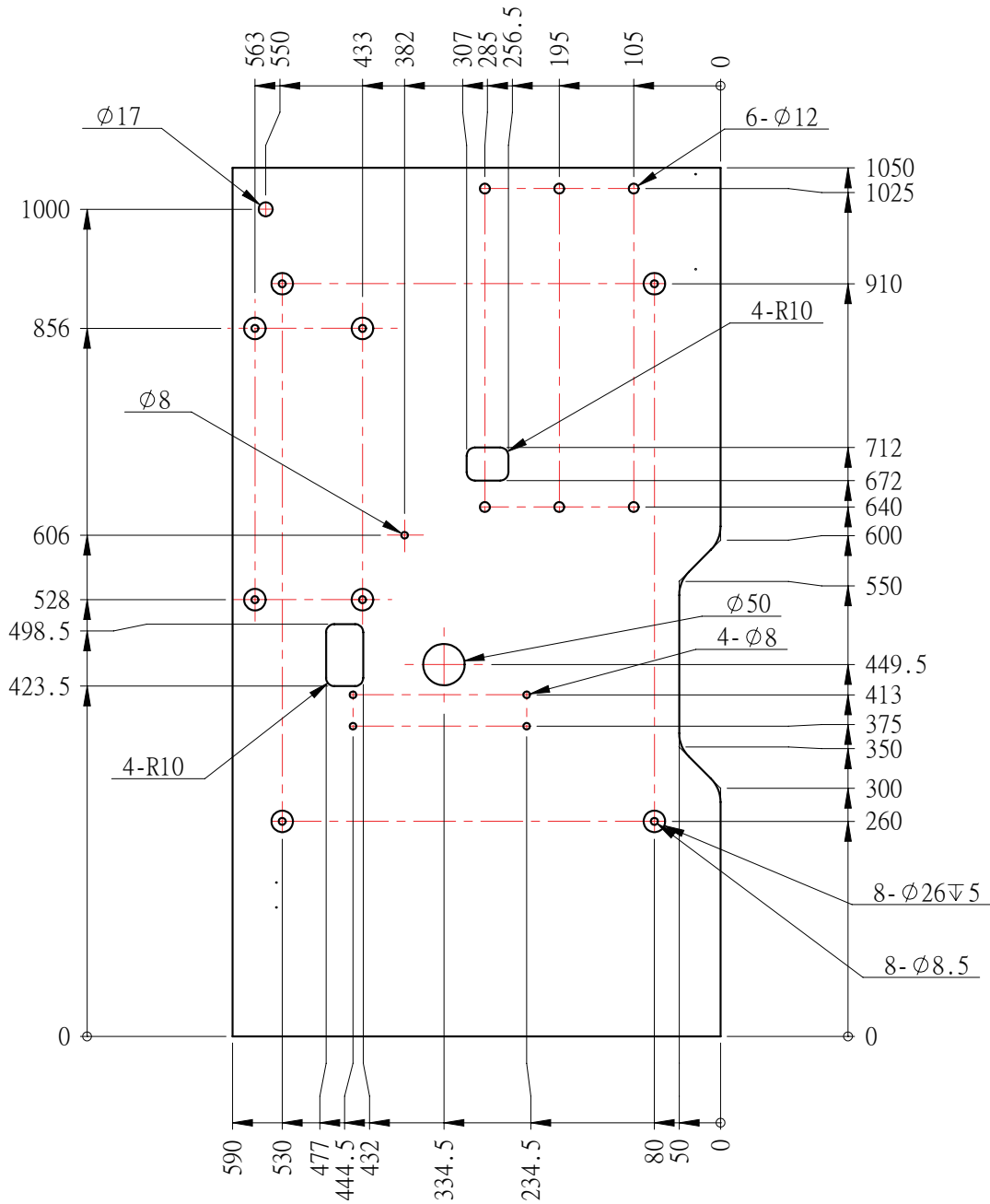
A

B

C

D

E



SIRUBA PARTS LIST	Series	Parts Group	Subclass Remark	Page
	ABF	操作盒	ABF306-A1	1 / 1
				Date 2017/4/13

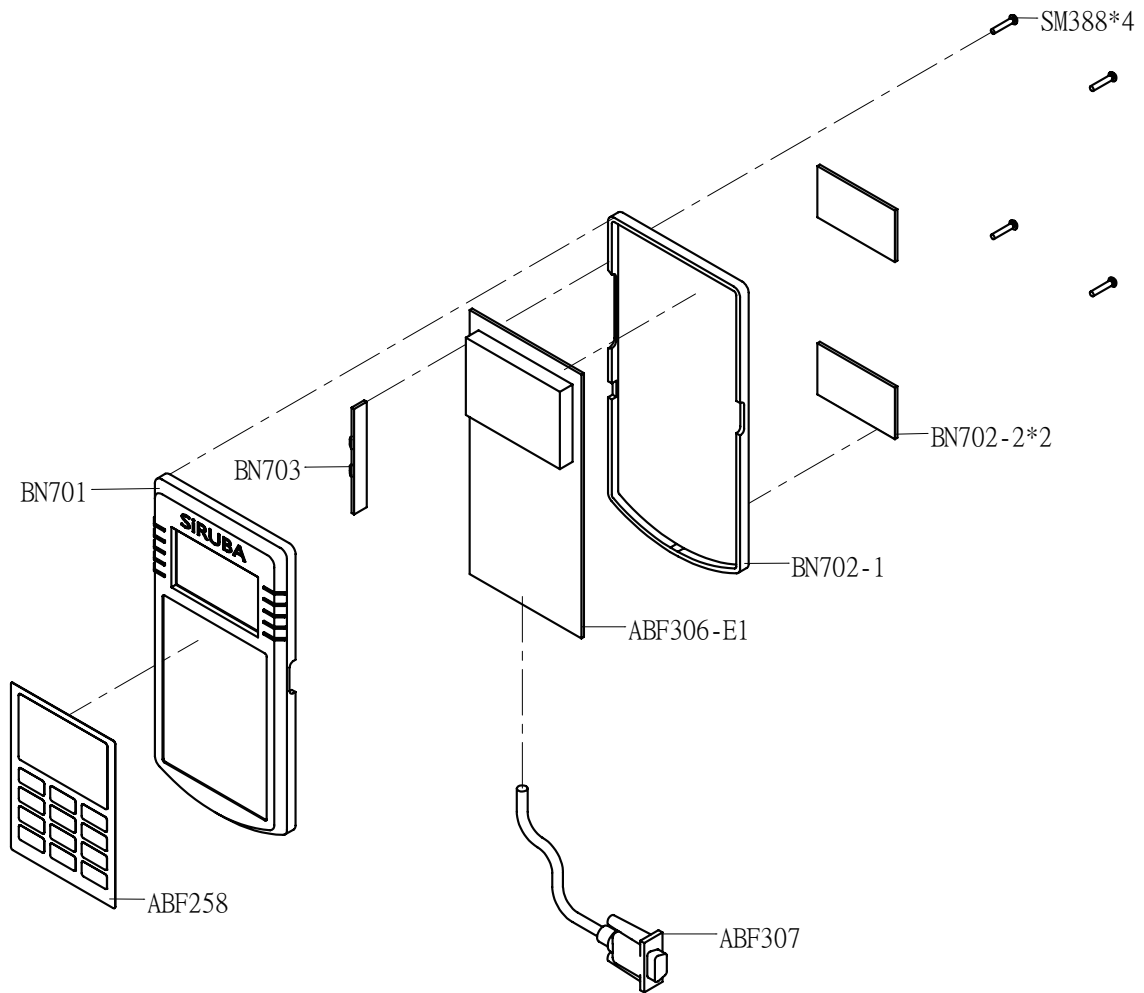
A

B

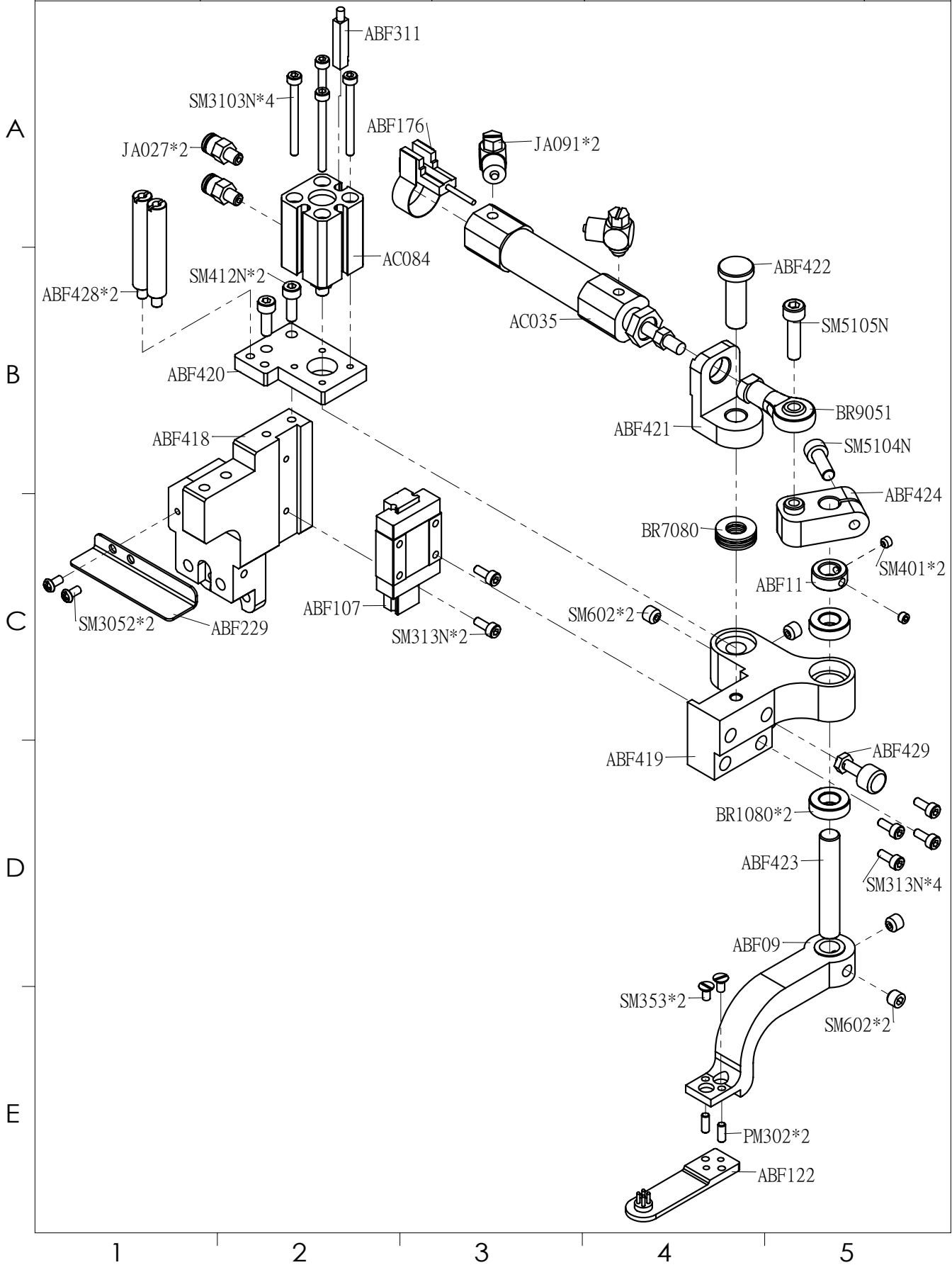
C

D

E



1 2 3 4 5



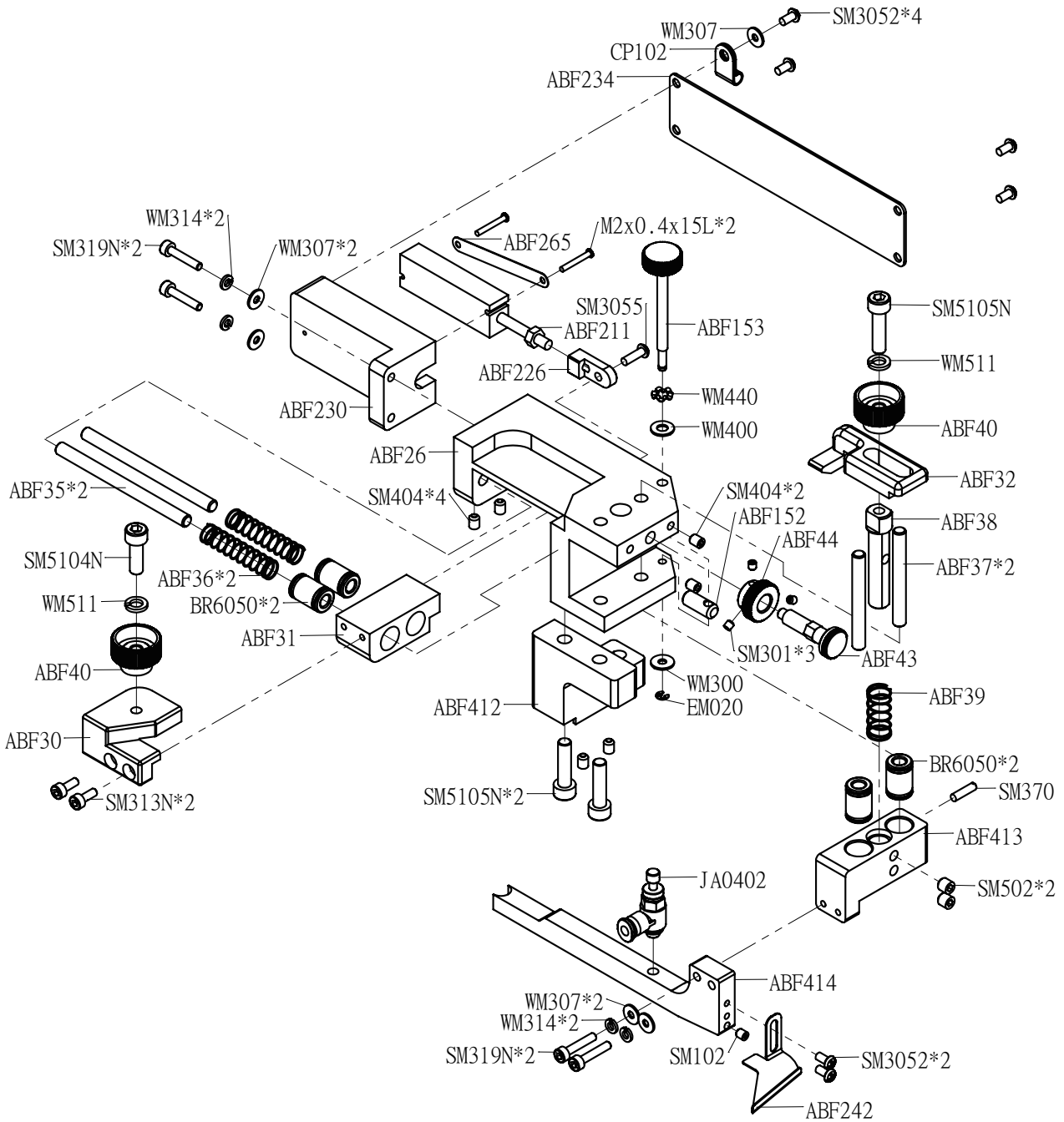
A

B

C

D

E



1

2

3

4

5

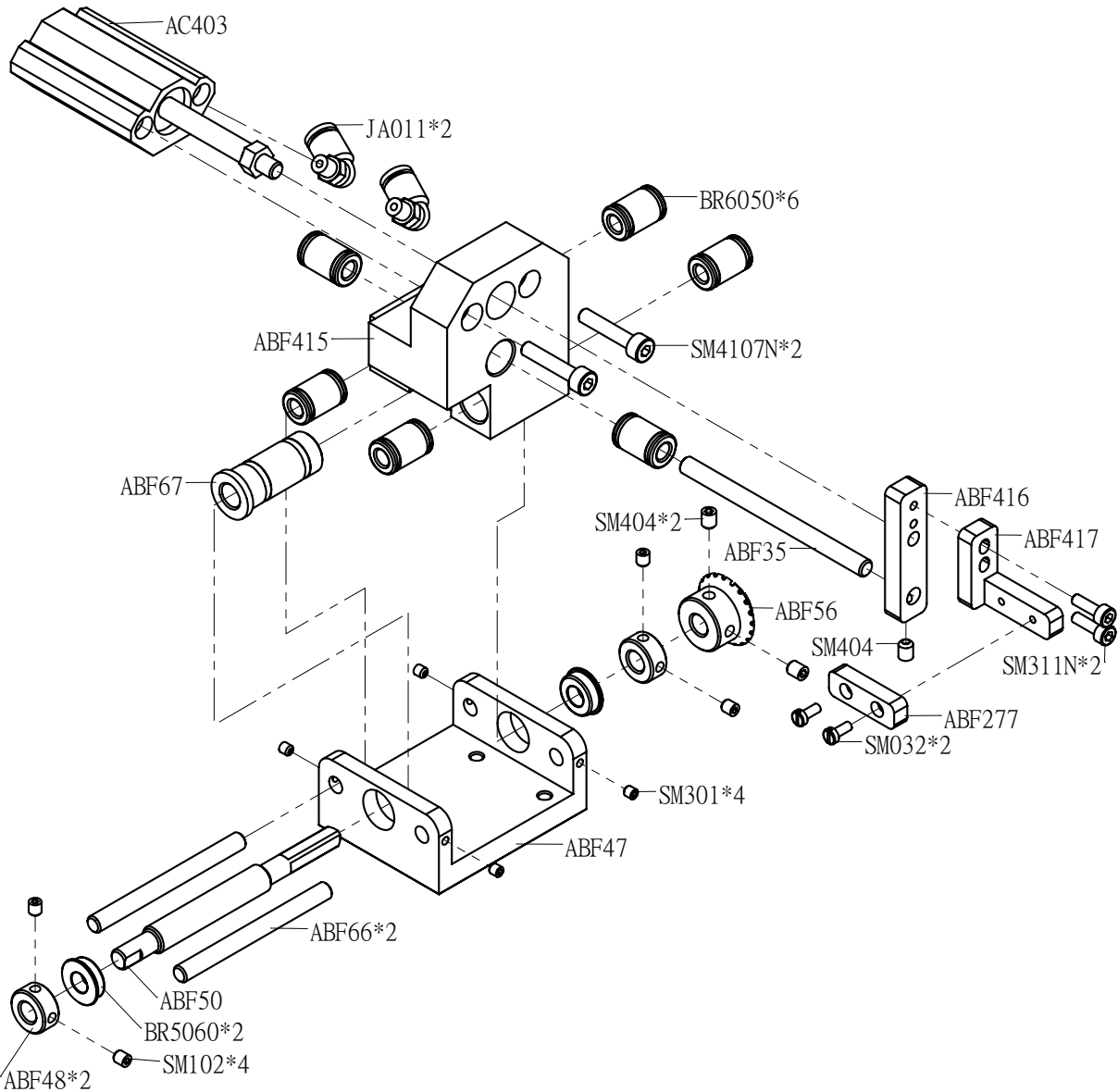
A

B

C

D

E



1

2

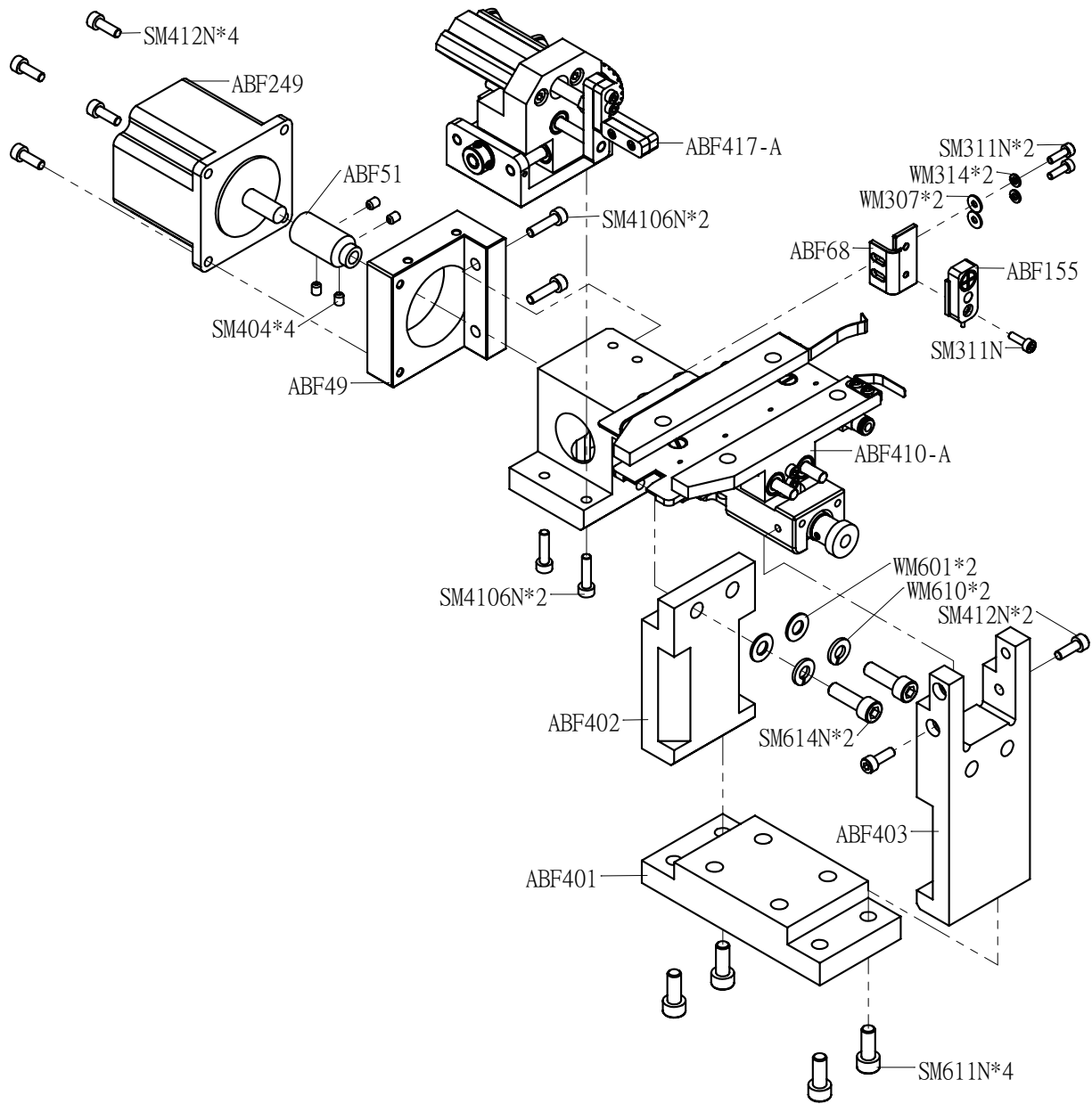
3

4

5

SIRUBA PARTS LIST	Series	Parts Group	Subclass Remark	Page
	ABF	傳動開闔		6 / 17
				Date
				2016/10/6

A
B
C
D
E



1 2 3 4 5

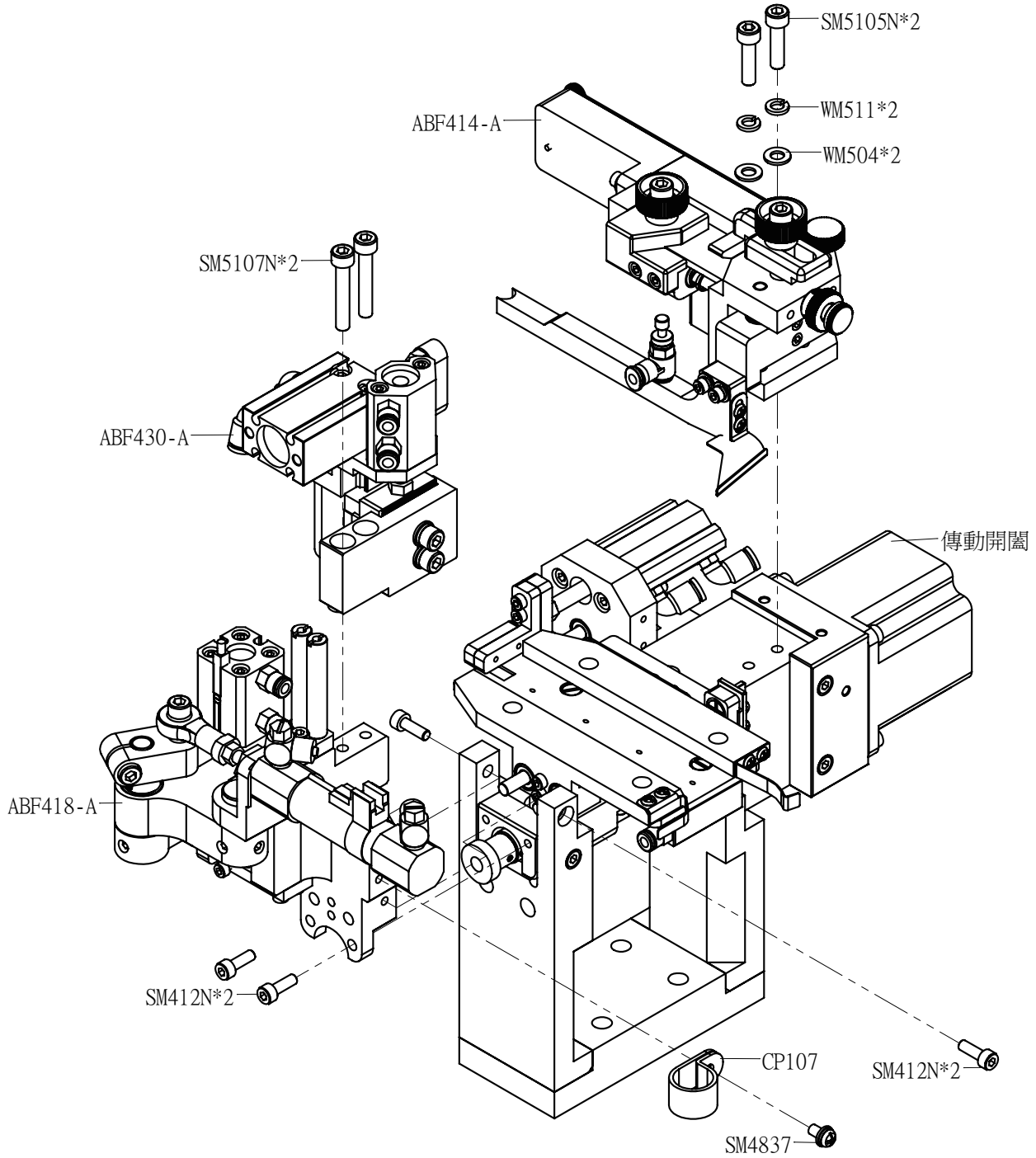
A

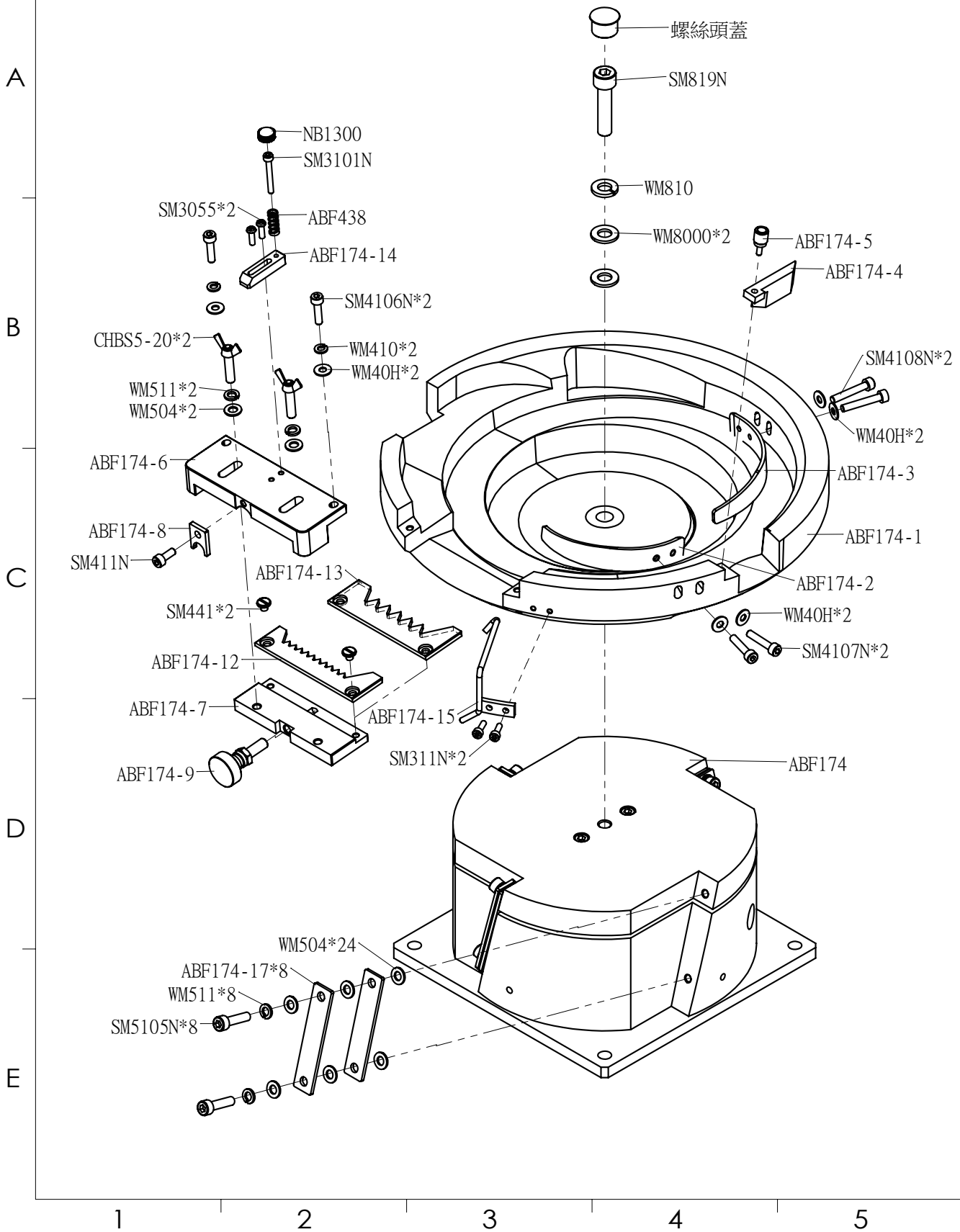
B

C

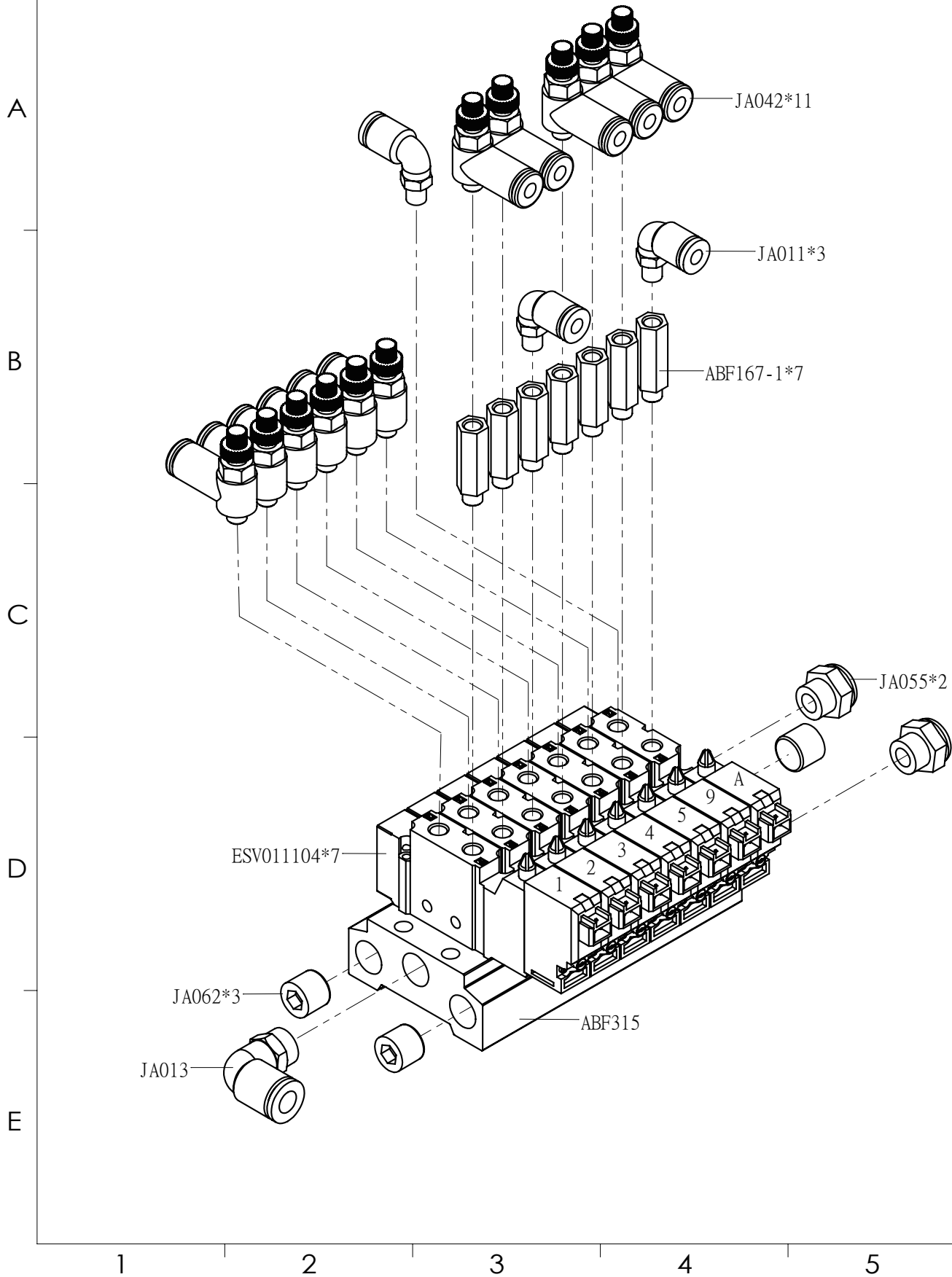
D

E





SIRUBA PARTS LIST	Series	Parts Group	Subclass Remark	Page
	ABF	電磁閥組	ABF315-A	10 / 17
				Date
				2016/10/7



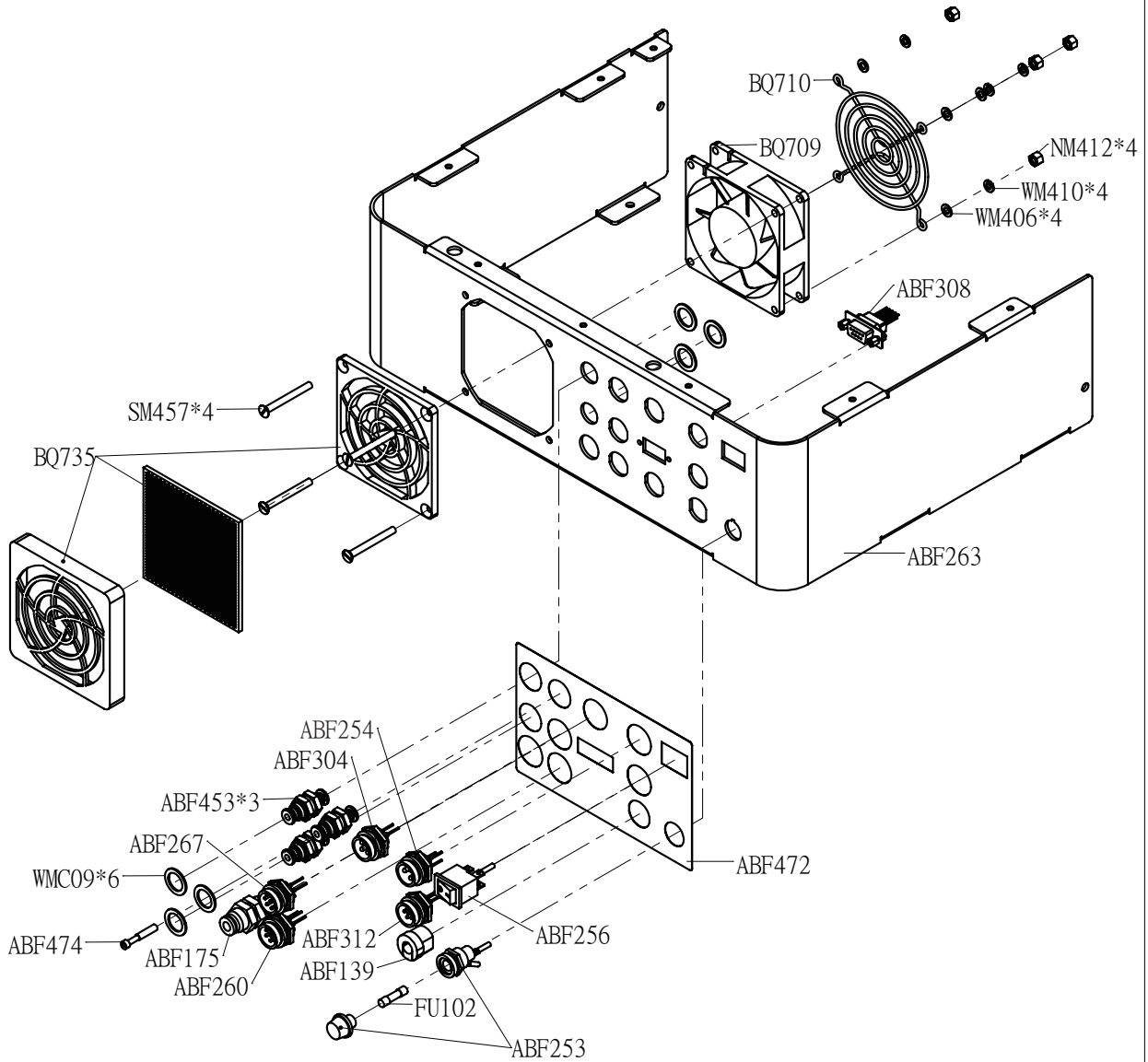
A

B

C

D

E



1

2

3

4

5

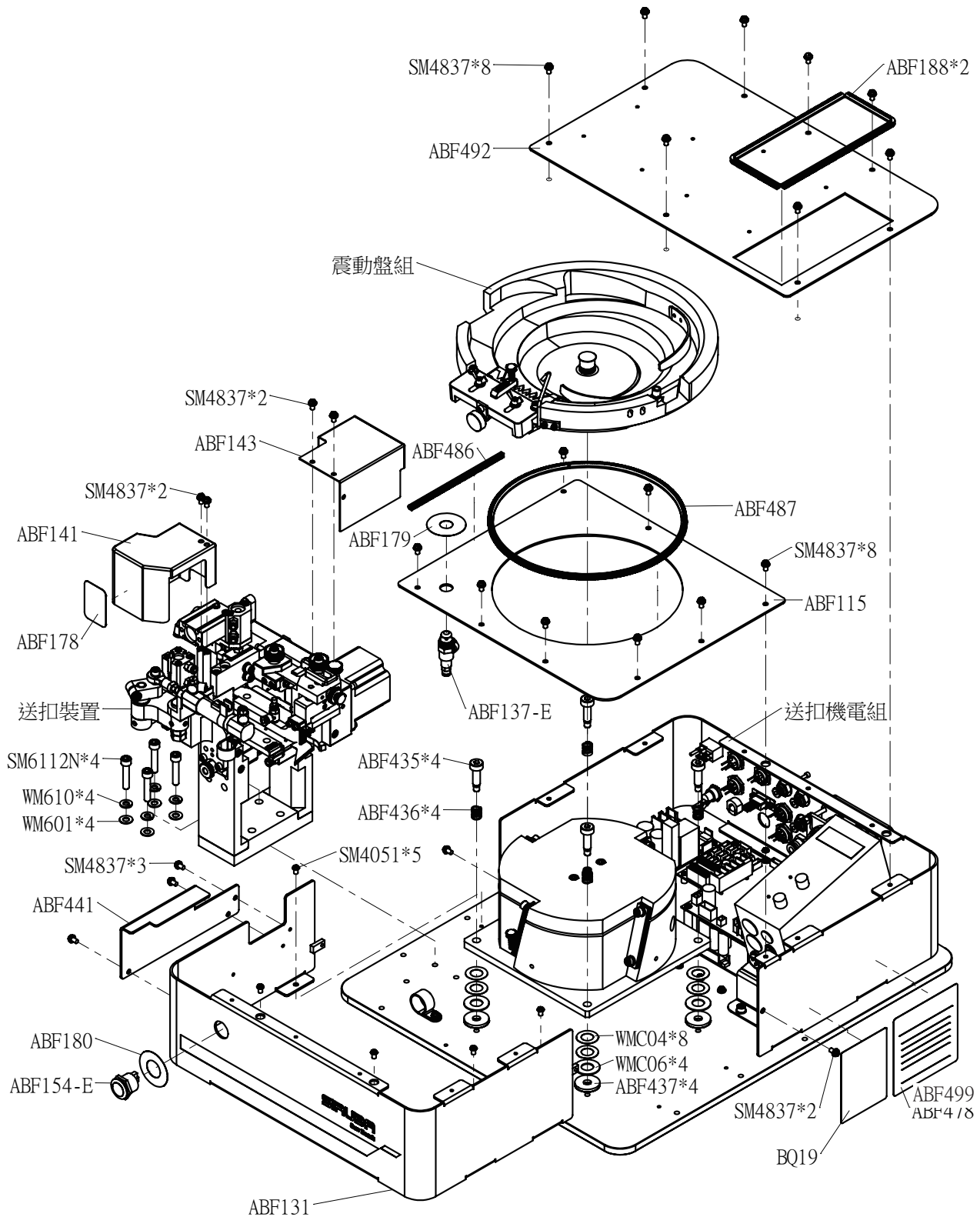
A

B

C

D

E



1

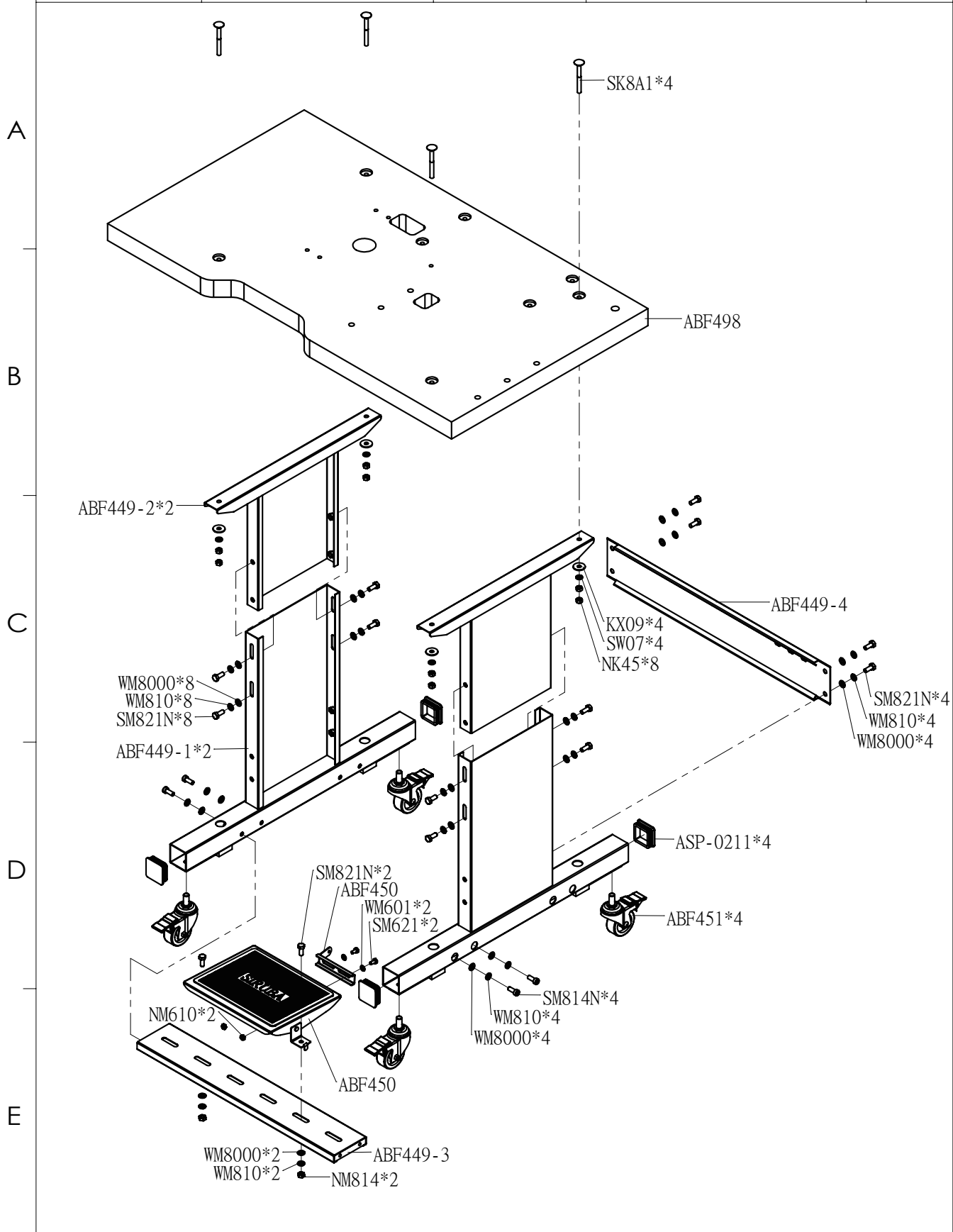
2

3

4

5

SIRUBA PARTS LIST	Series	Parts Group	Subclass Remark	Page
	ABF	桌板腳架-B	ABF449-A1	14 / 17
				Date
				2017/2/20



1 2 3 4 5

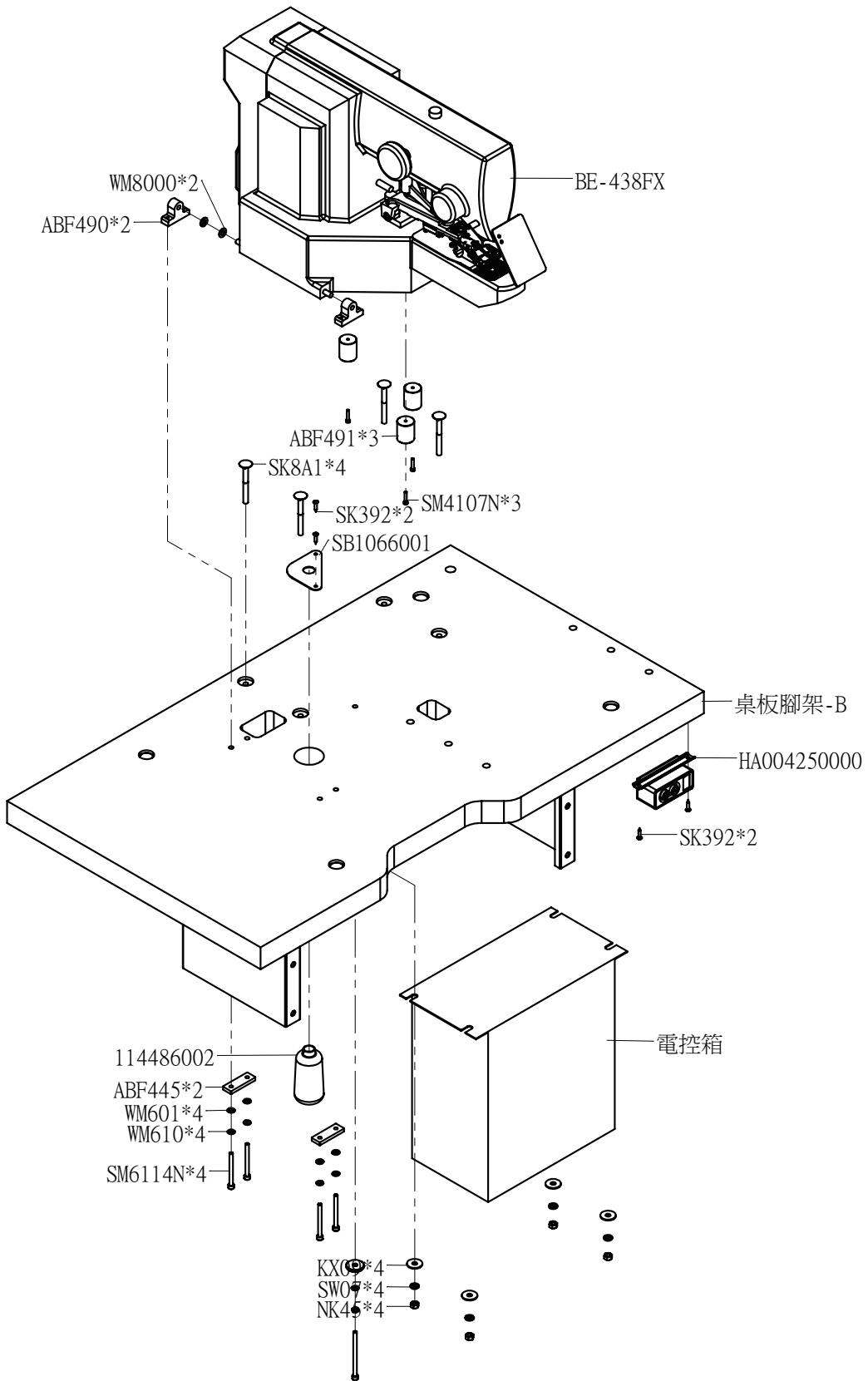
A

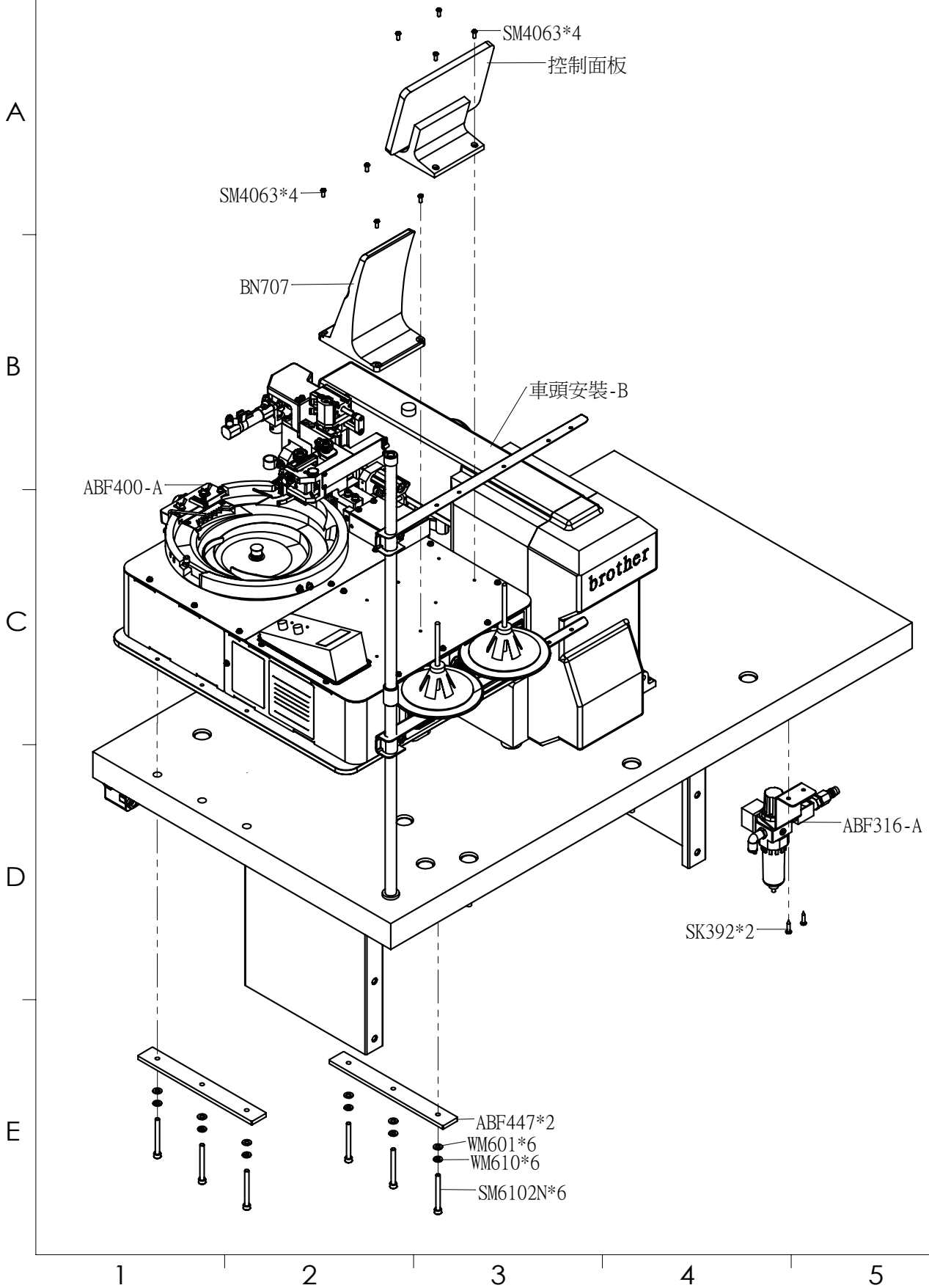
B

C

D

E





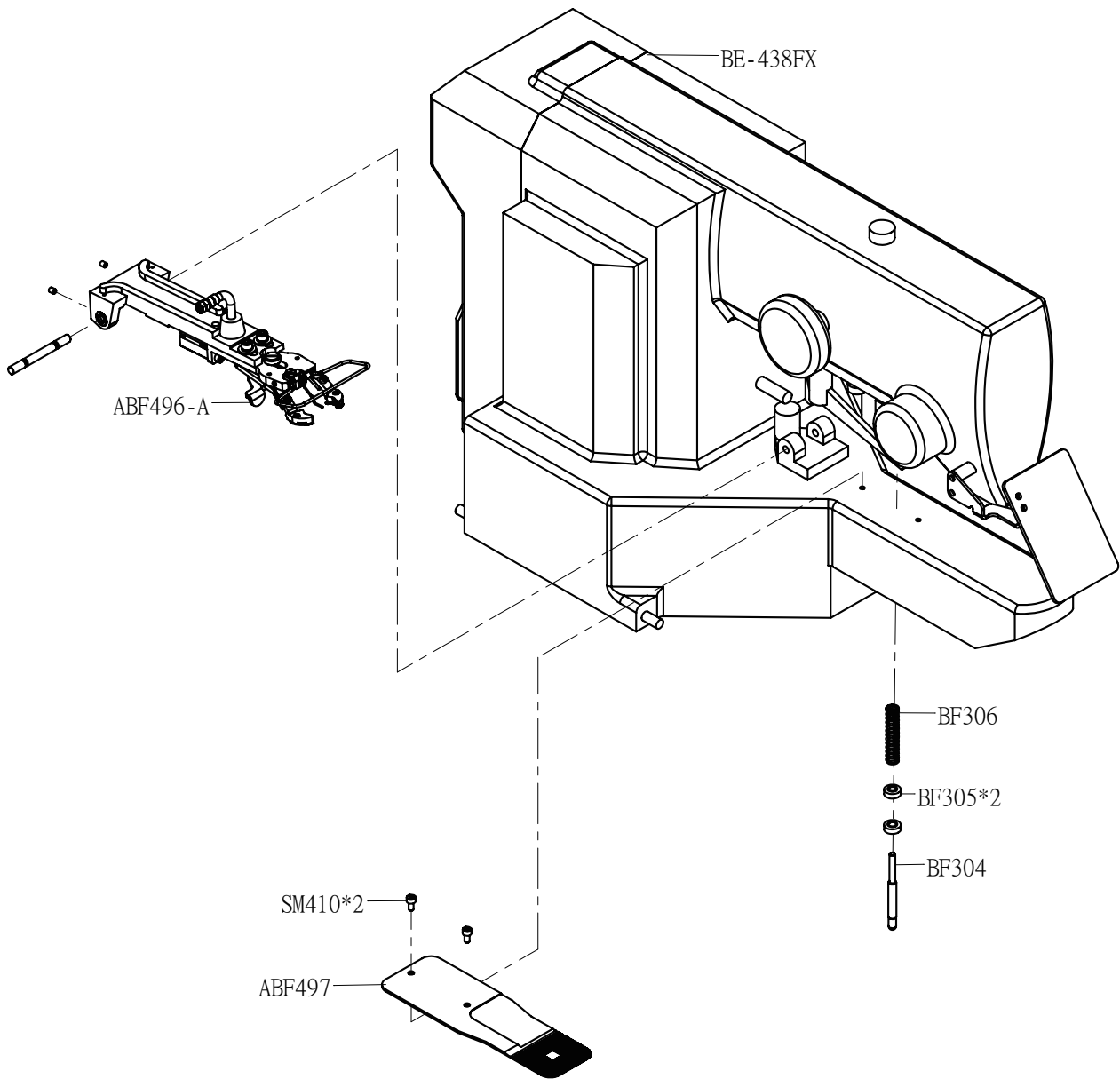
A

B

C

D

E



SIRUBA PARTS LIST	Series	Parts Group	Subclass Remark	Page
	ABF	切刀検知-B		1 / 1
				Date
				2016/12/20

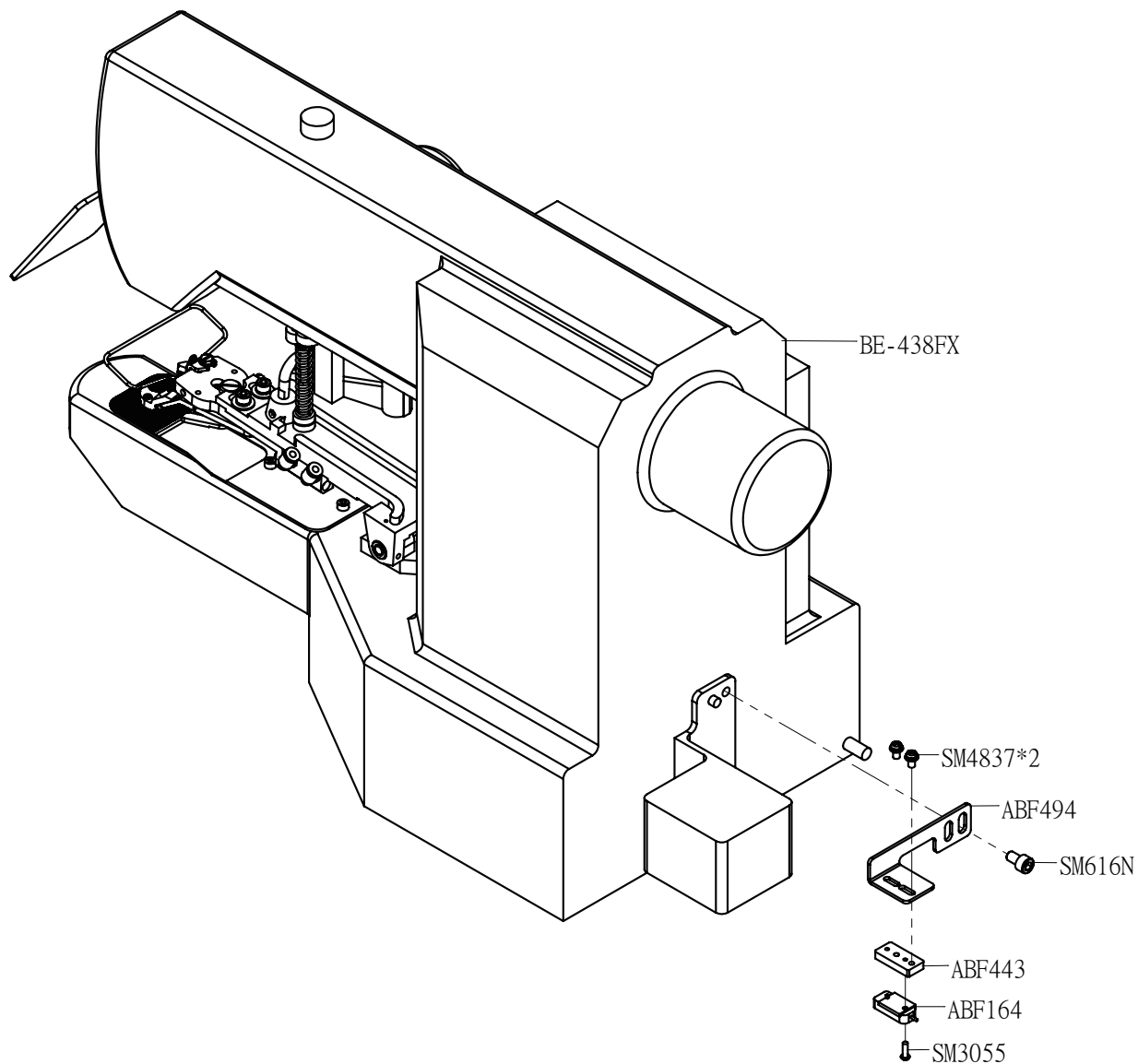
A

B

C

D

E



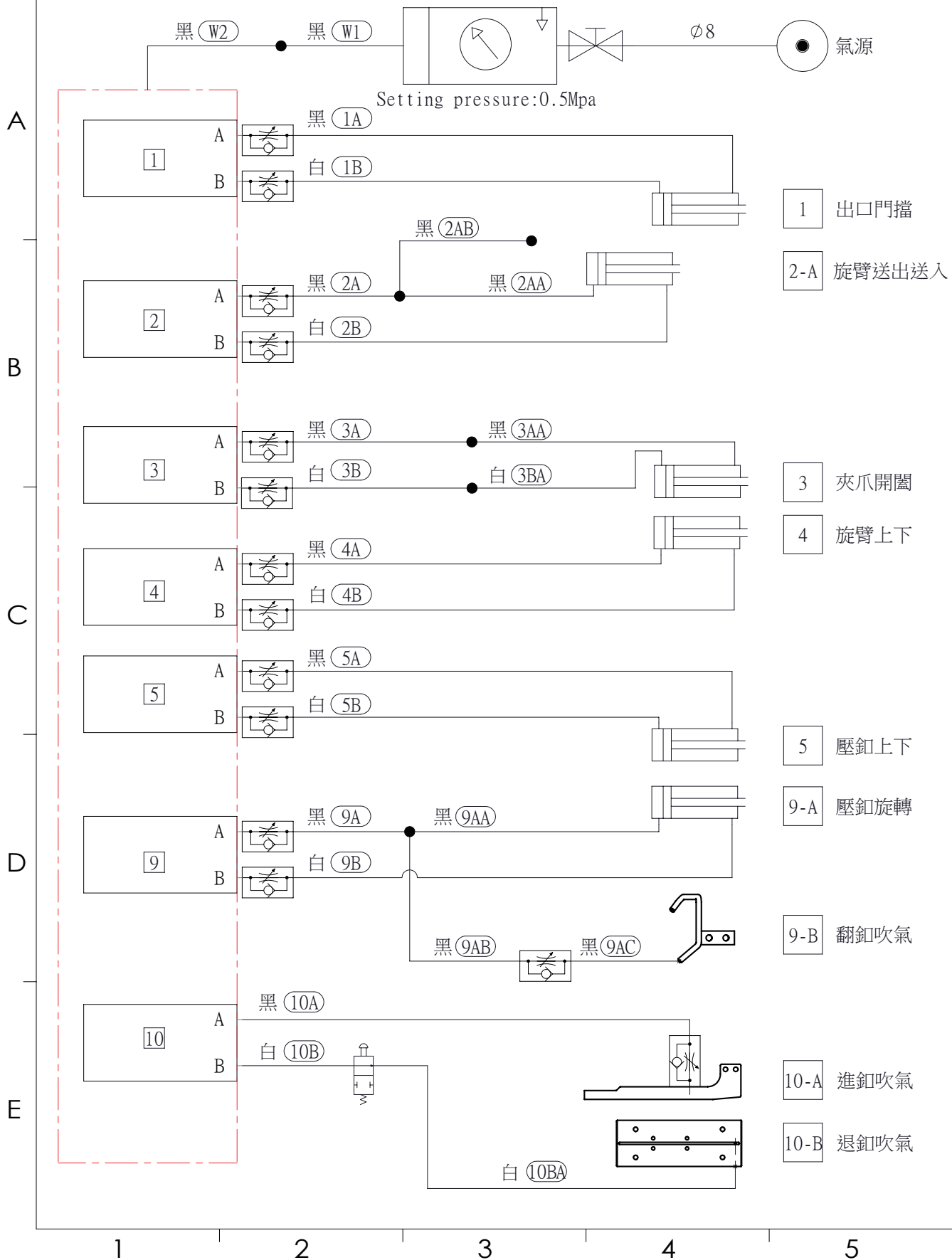
1

2

3

4

5





 高林股份有限公司
KAULIN MFG. CO., LTD.

由於對產品的改良及更新，本產品使用說明書中與零件圖之產品及外觀的修改恕不事先通知！
The specification and/or the equipment described in the instruction book and parts list
are subject to change because of modification with out previous notice
ASO-ABF100-B.APR.2017