SiRUBA

ORIGINAL

INSTRUCTIONS BOOK

ASO-ABF100-B

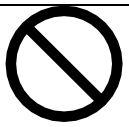
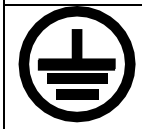


CE

Explanation of Dangerous Level

 PERIGO	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.
 ATENÇÃO	Ignoring this warning sign and proceed incorrect operation will cause the person involved or the third party wounded and equipment damaged during maintenance.

Explanation of Warning Signs and Labels

Warning Sign		Moving part, beware of industrial accident
		High voltage, beware of electric shock
		High temperature, beware of burns
Instruction Label		Prohibited
		Indication of ground wiring

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SPECIFICATIONS

Only describe ASO-ABF100-B in this manual

1. Product Specification (Table1)

Machine Type	ASO-ABF100-B
Nose-mounted	brother BE-438FX
Button	Type : Circle Flat Button
	Size : ϕ 10 ~20mm
Thickness of Button	1.5~3.5mm
Measurement of button diameter	Automatic button diameter positioning
Button supply method	Vibration mode
Button sewing method	Horizontal buckle feed from the rear
Clamping/Gripping Detection	have
Rail-based button ejection function	have
Fastener application speed	0.5 seconds per item
Rising Amount of Clamp	Maximum:13mm
Power Voltage	Phase220V Rated±20% 50/60Hz
Operating pressure	0.5 Mpa

Table1

2. Button Shape (Chart1)

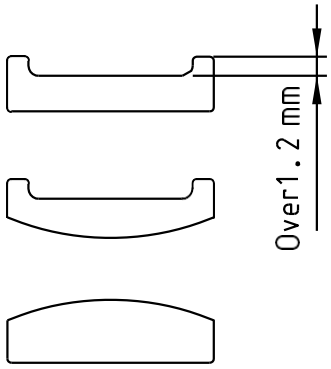
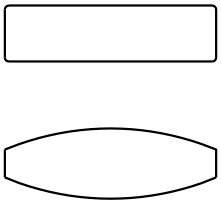
Available Shape of Button	Unavailable Shape of Button
	
Two sides must be obviously different (Dissimilarity)For determining the positive or negative side, the convex or concave must above 1.2mm gap.	Sides must be the same or cannot be determined.

Chart1

NAMES OF PARTS

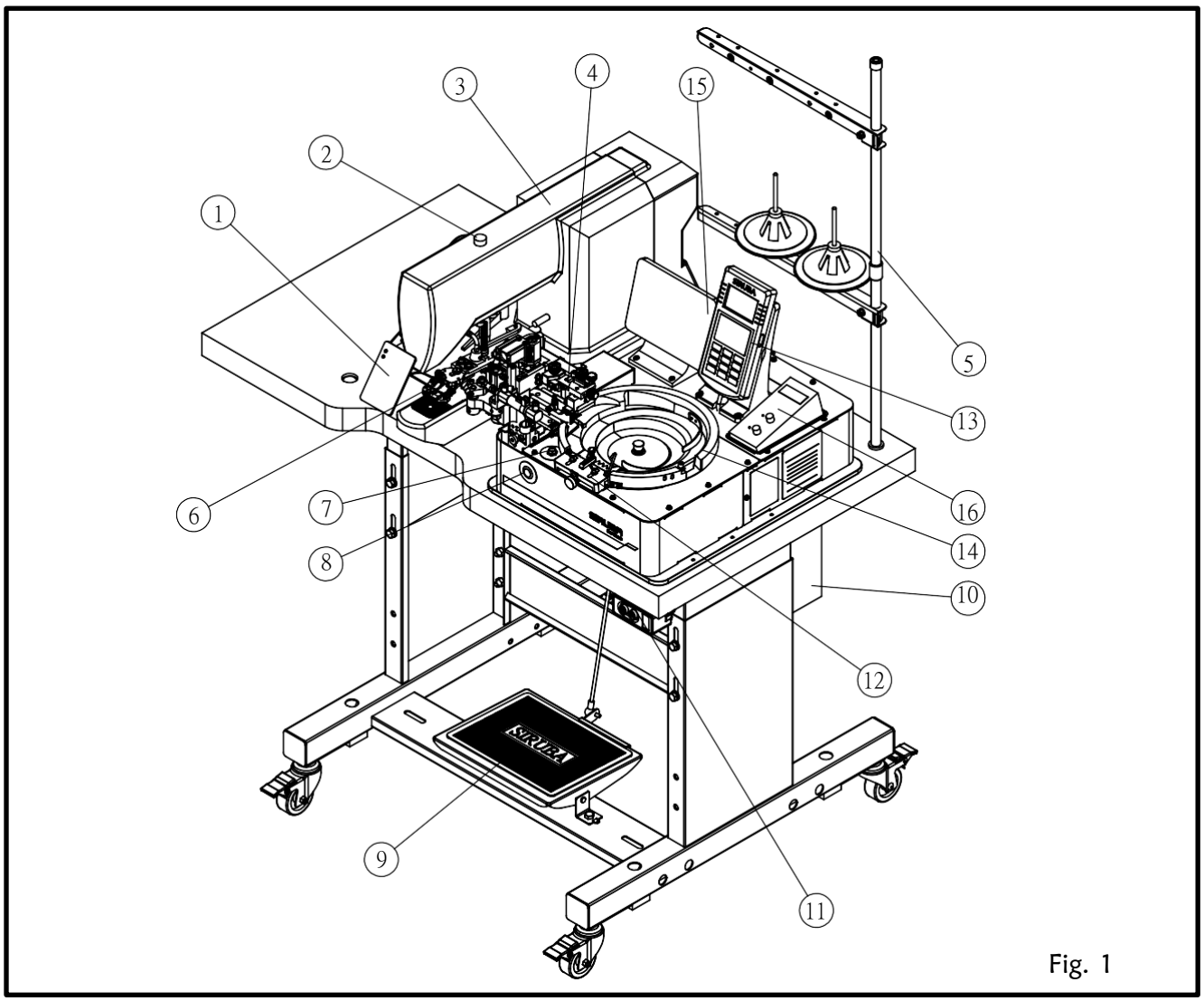


Fig. 1

(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

INSTALLATION THE ELECTRIC BOX

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

INSTALL THE WASTE OIL TANK

(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)

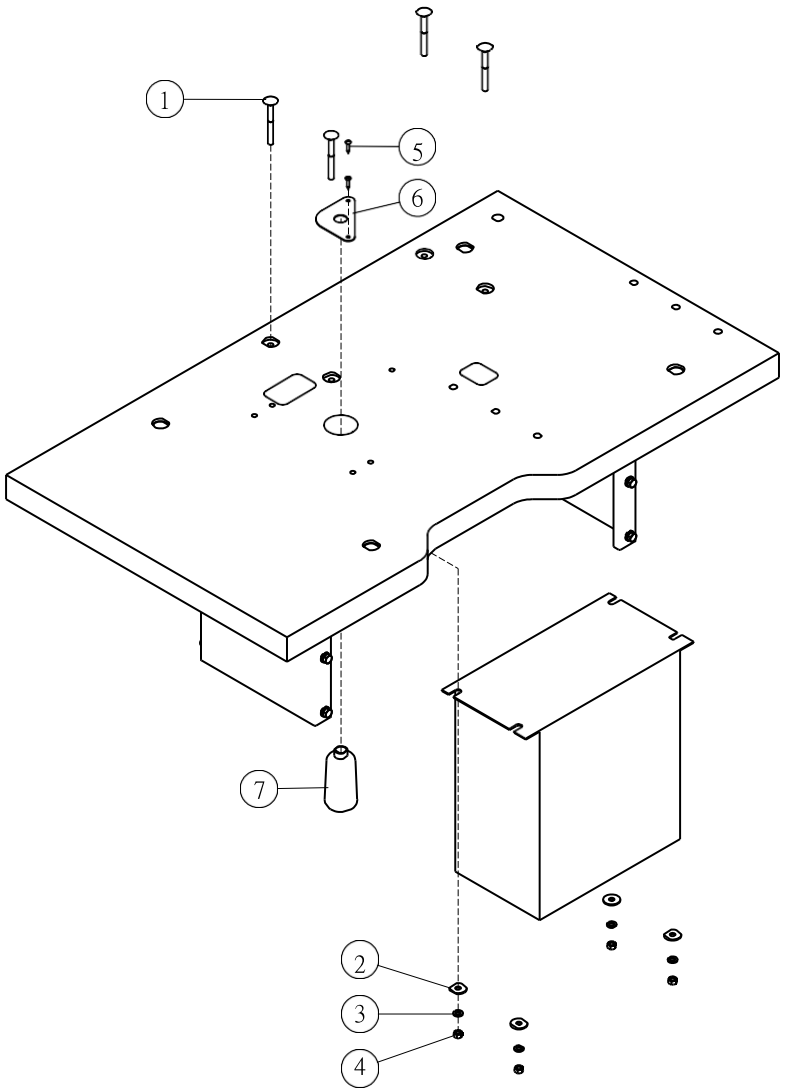


Fig. 2

REMOVE THE MACHINE HEAD

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)

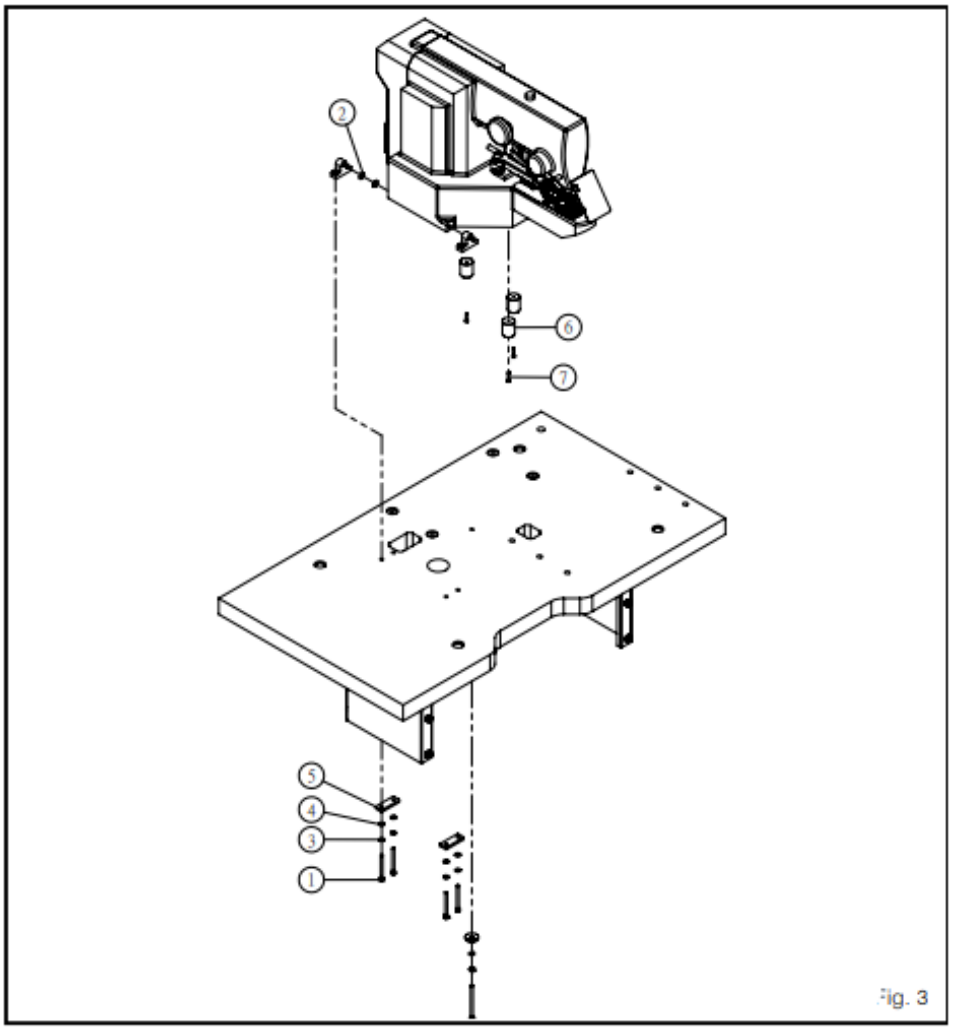


Fig. 3

REMOVE THE FEEDING BUTTON MACHINE

(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 note remove with force for avoiding danger.

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

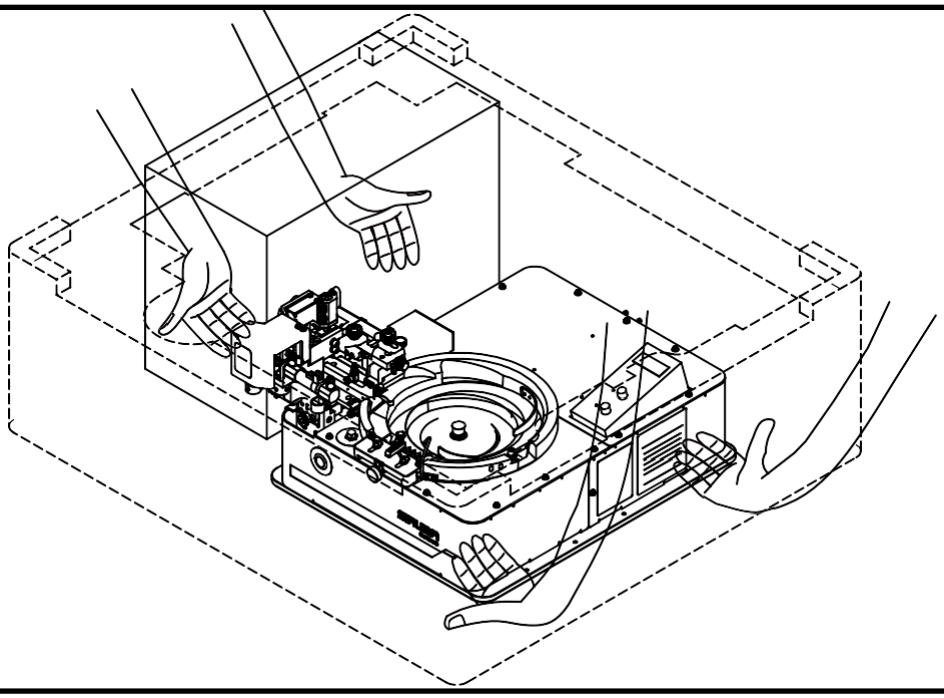


Fig. 4

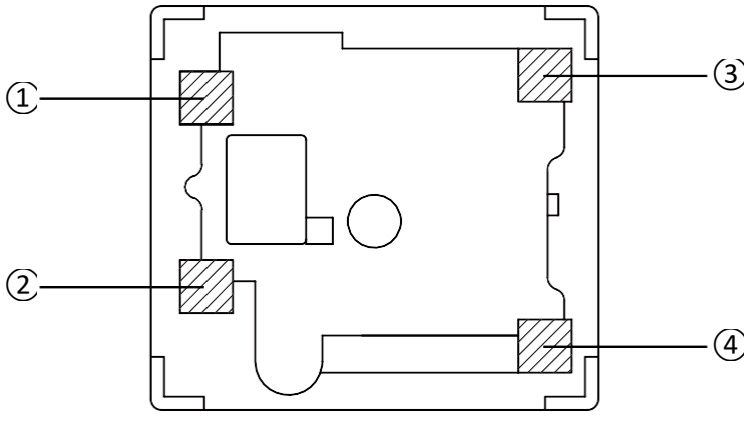


Fig. 5

INSTALL THE FEEDING BUTTON MACHINE AND THE OPERATOR PANEL

(1) Switch on power. Step on the board 1 time. Press foot device will mone 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)

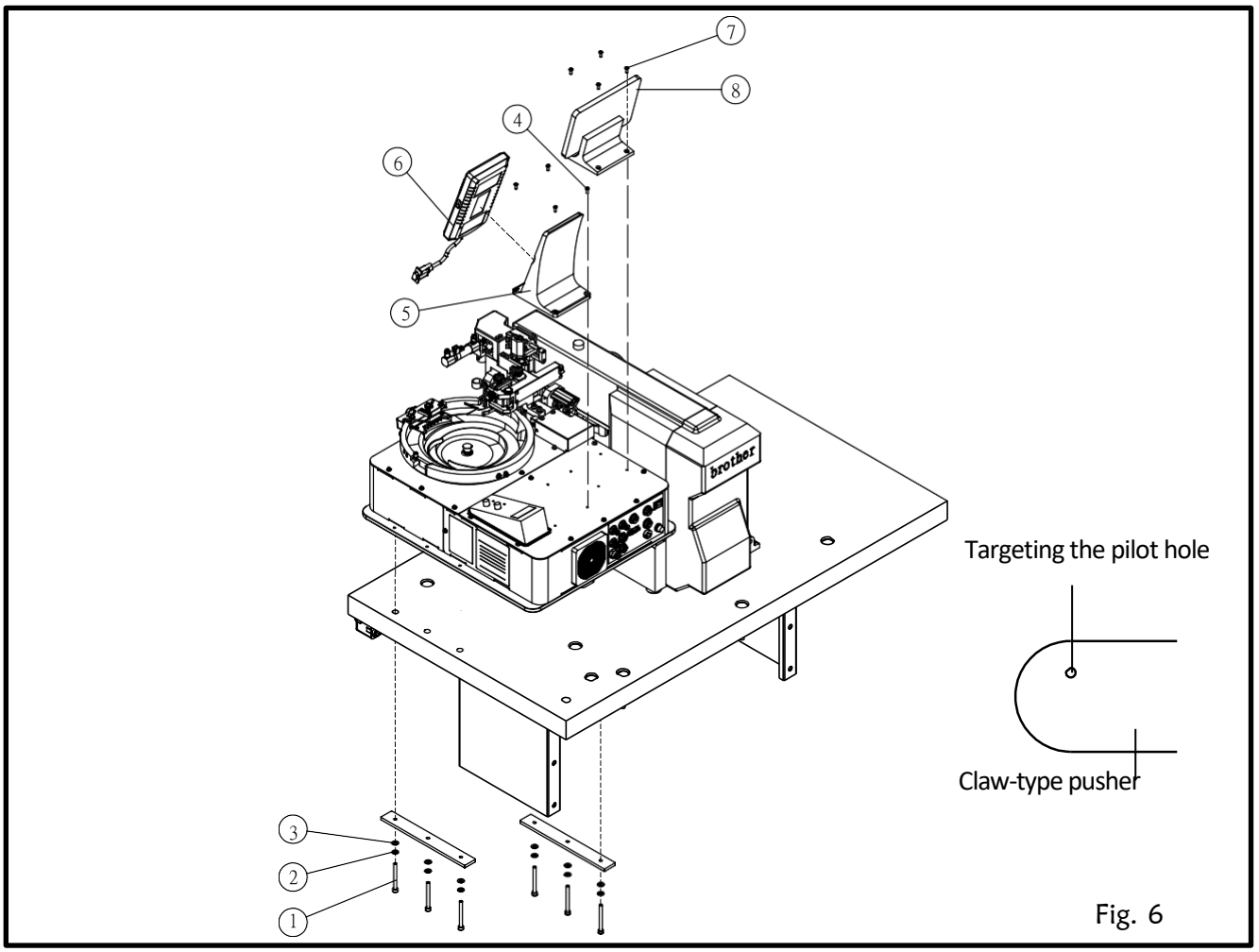


Fig. 6

INSTALLATION & CONNECTION OF POWER SWITCH

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).



Fig. 7

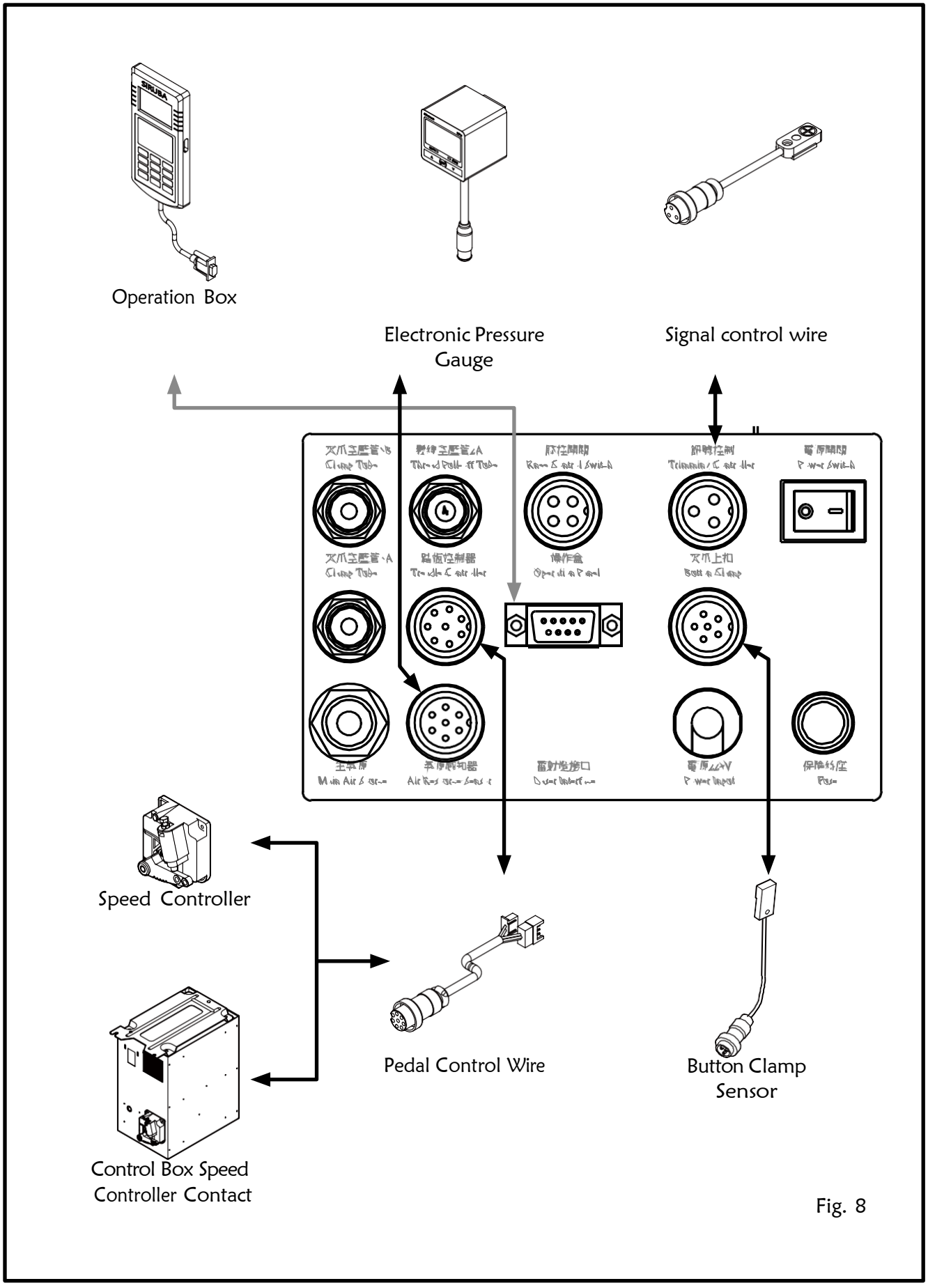

Operation Box
Electronic Pressure Gauge
Signal control wire
Speed Controller
Pedal Control Wire
Button Clamp Sensor
Control Box Speed Controller Contact

Fig. 8

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.

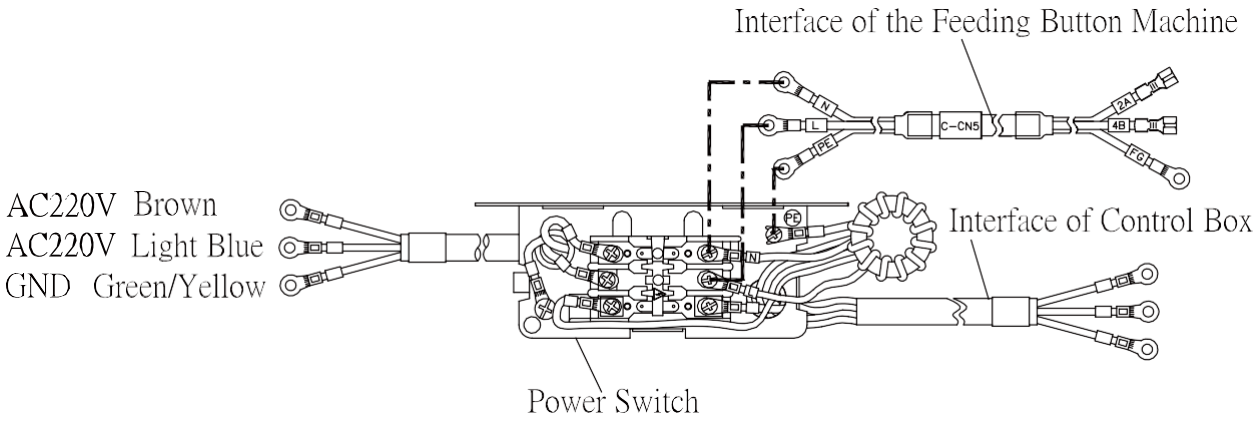


Fig. 9

INSTALLATION AND ADJUSTMENT OF THE FILTER REGULAR AND THE TUBE

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

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) 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)

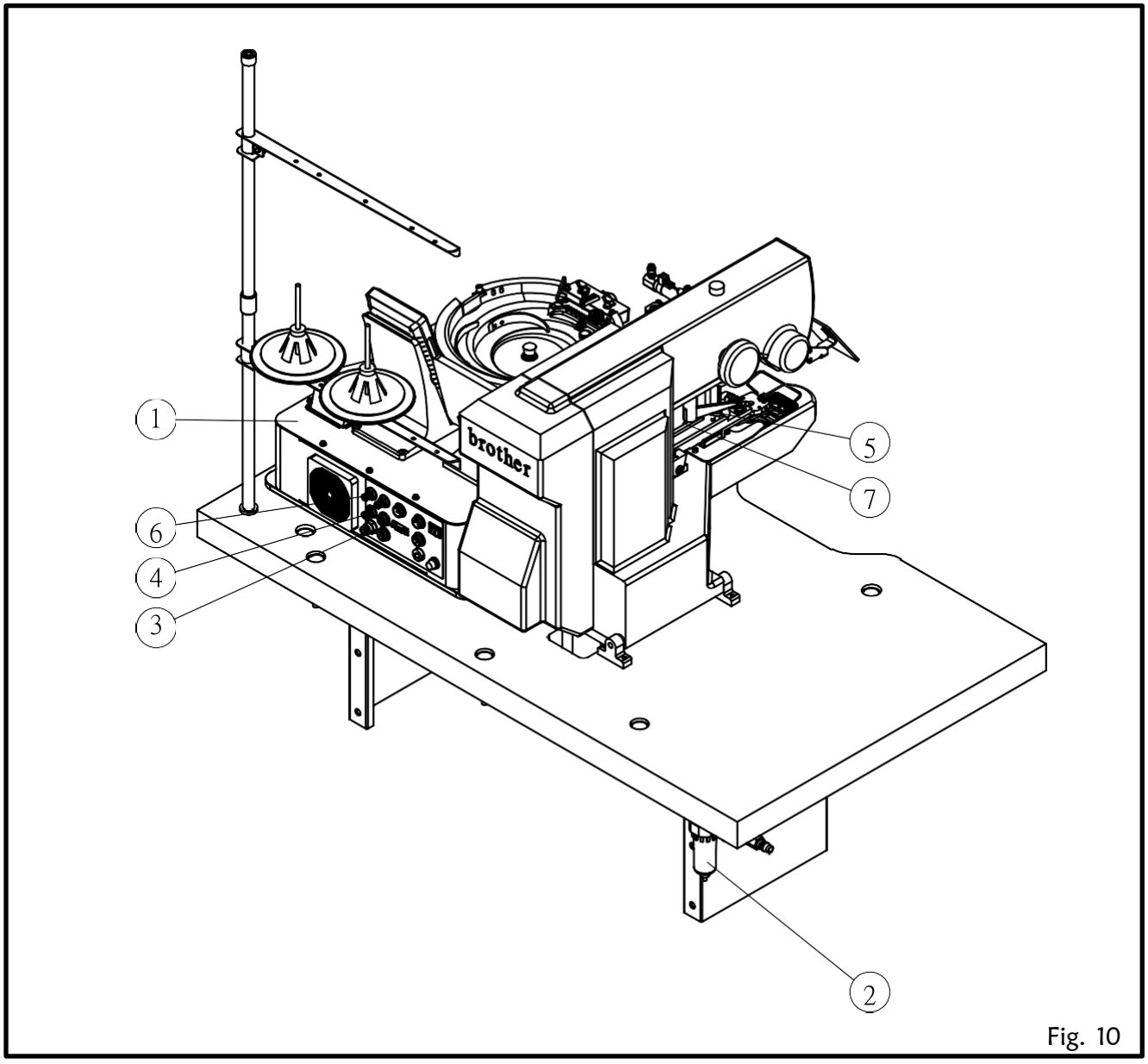


Fig. 10

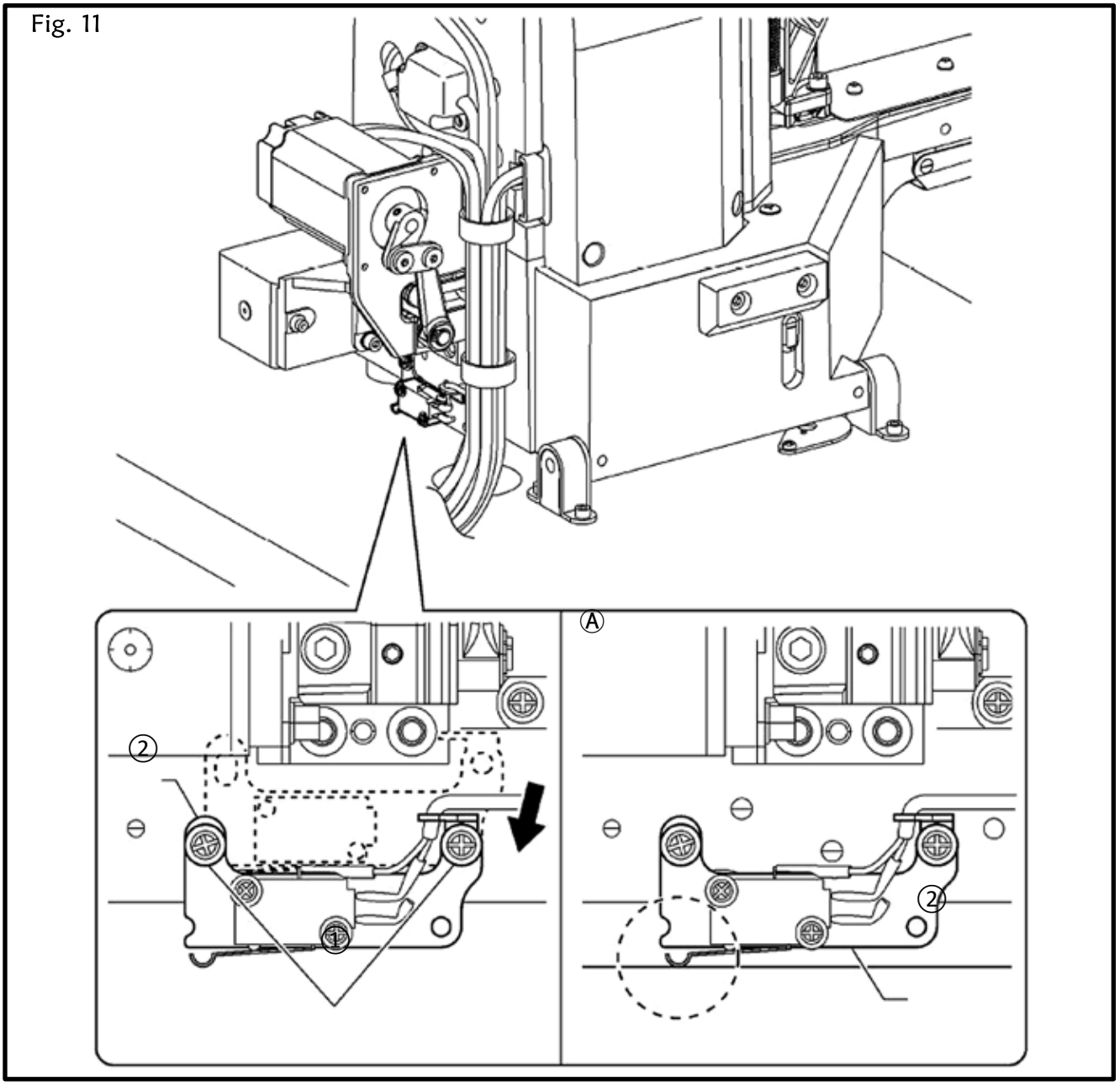
INSTALL THE SAFETY SWITCH

Remove the two screws ①, and then temporarily remove the machine head switch ② . (Fig. 11)

1. Use the two screws ① which were remove to install the machine head switch ② in the position shown in the illustration.
2. Check that the machine head switch as turned on as shown in figure Ⓐ.

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

Fig. 11

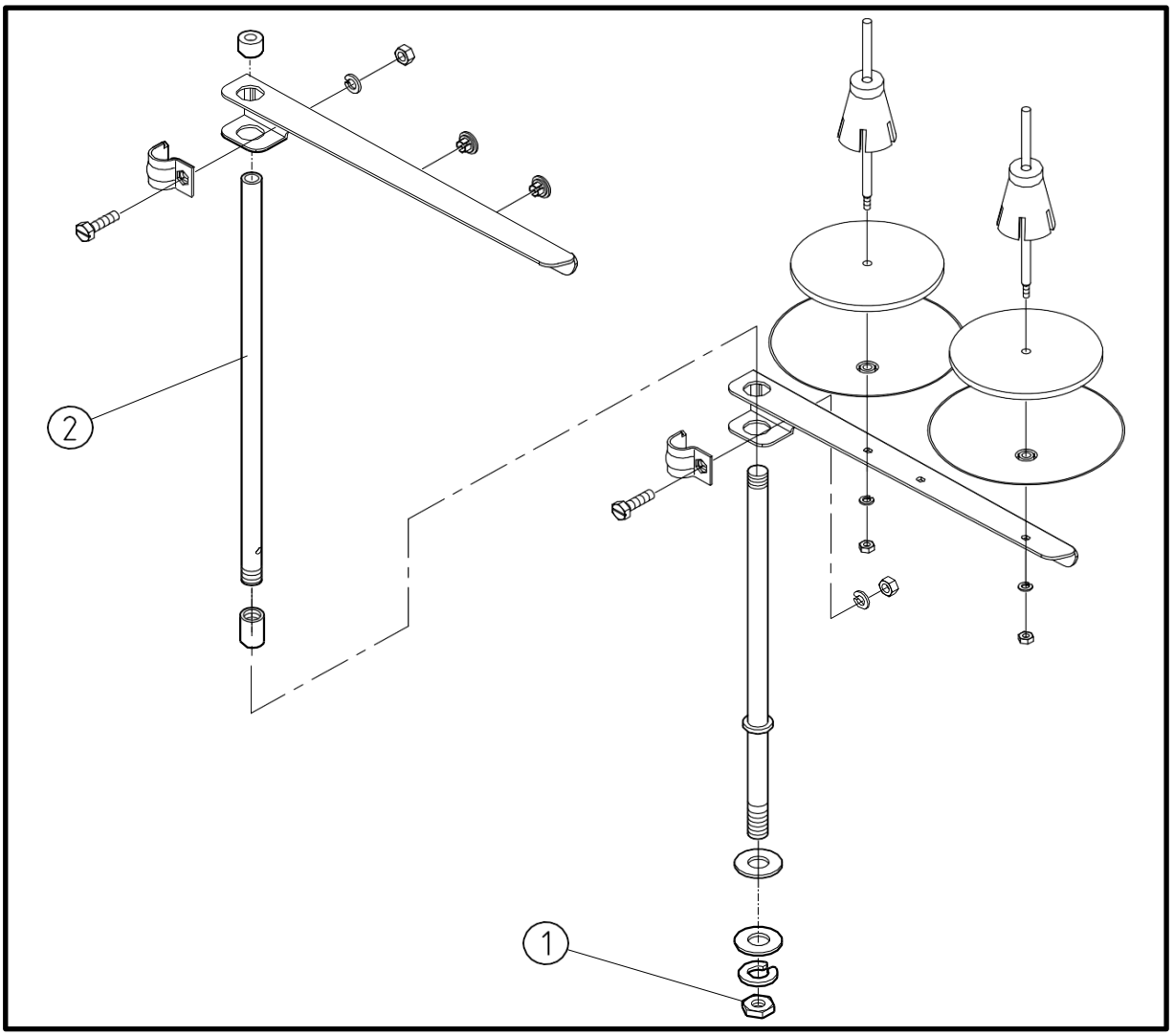


INSTALL THE THREAD FRAME

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)



OPERATION OF THE INVERTER CONTROLLER

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 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.

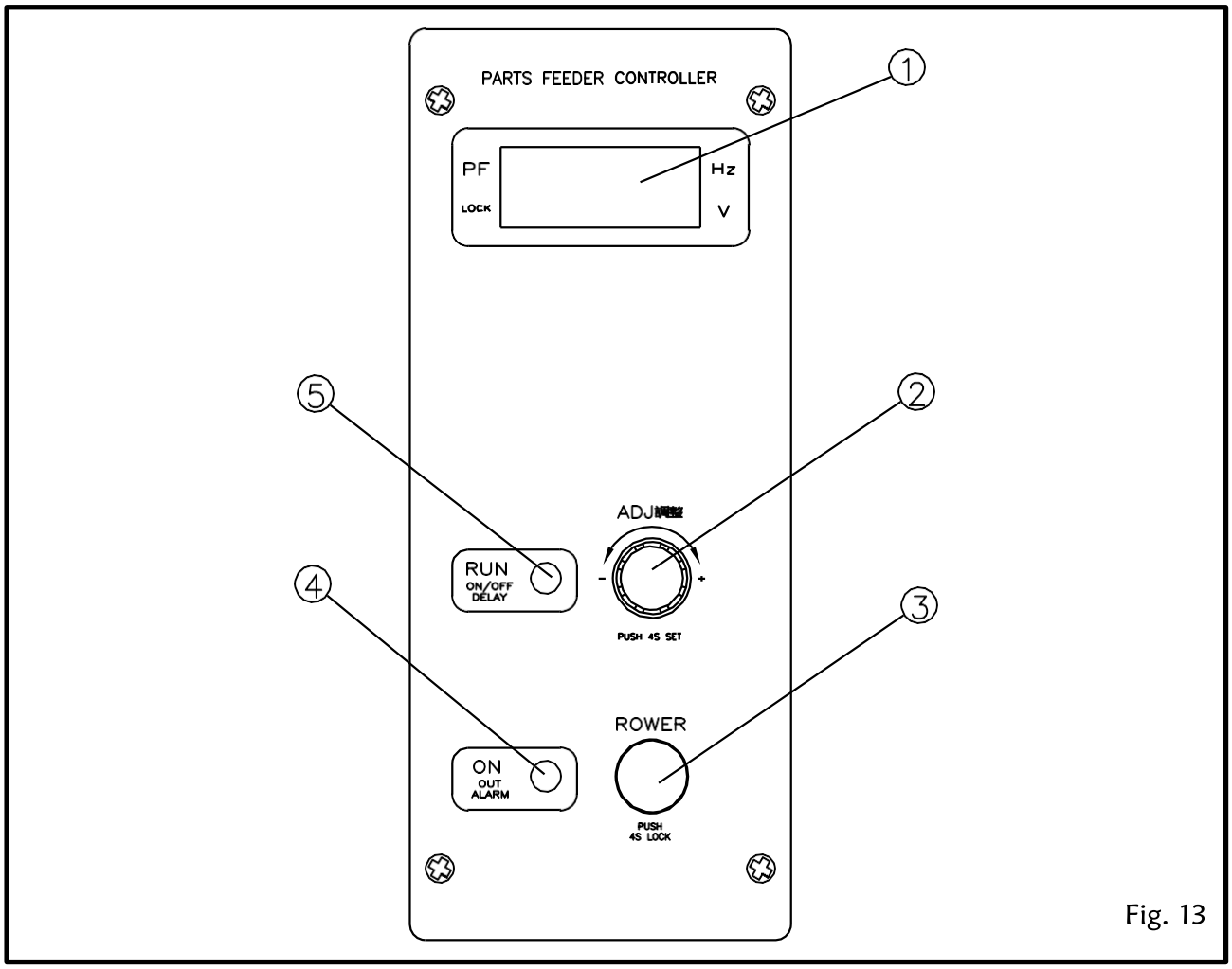


Fig. 13

LEAN & RECOVER THE MACHINE HEAD

ATENÇÃO

For avoiding the emergency or accidence, please make sure to turn off the power to operate when doing maintenance or the adjustment. It is needed to lean he sewing machine, and please pa y attention your fingers not to be pinched. especially when recovering the mac hi ne.

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)

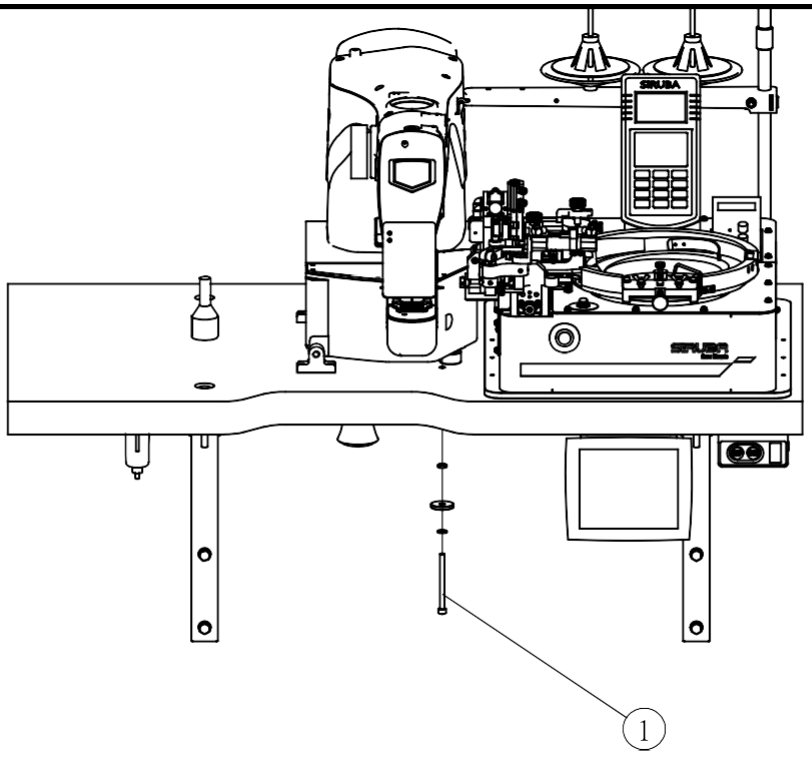


Fig. 14

POSITION OF BUTTON CLAMP

1.

2. Turn on the power.
3. Step on the board 1 time and move the presser device to the initial position and rise up.
4. Put the button on the button clamp ①.
5. Press the key 

, have the presser device under it and adjust.
6. Turn the hand wheel to ensure if the needle's center is on the button's center above 3mm.
7. If the needle is not at the center above 3mm of the button, loosen the screw ② on the clamp to adjust.
8. After adjusting, please affirm the button's pattern. Ensure the needle drops in the hole of the button by the mock function. (Fig.15)

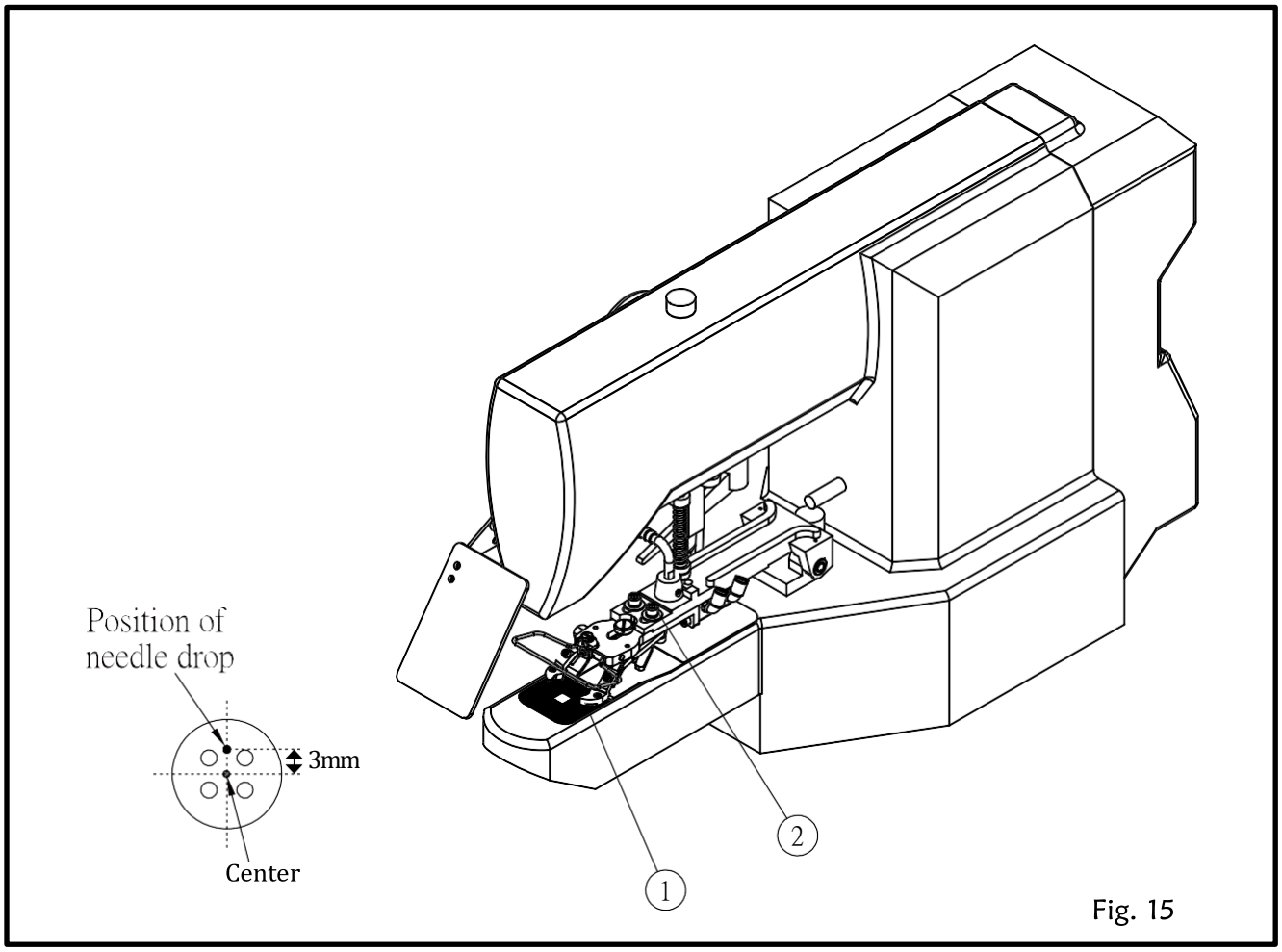


Fig. 15

ADJUST THE FABRIC PRESSER FOOT BOTTOM PLATE

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 moves 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)

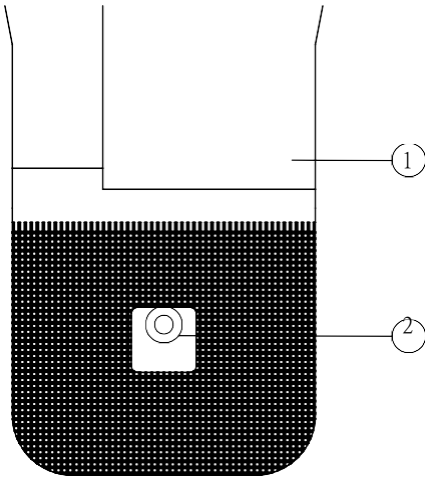


Fig. 16

ADJUST THE BUTTON PRESSER FOOT LIFTING HEIGHT

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)

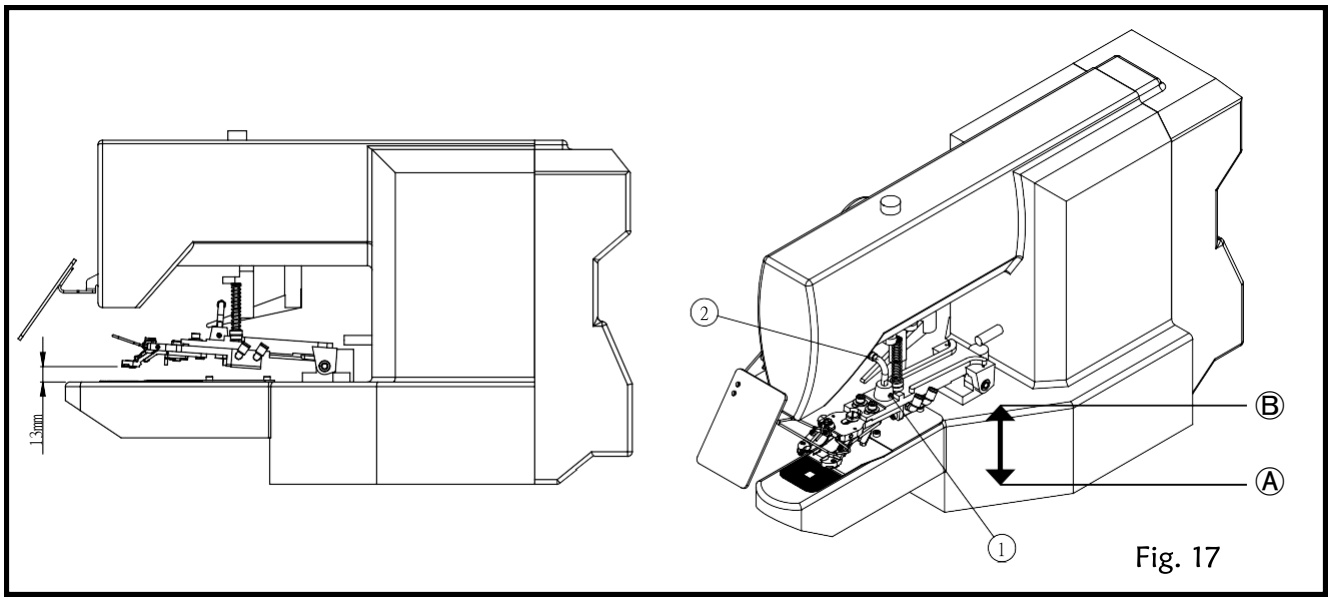


Fig. 17

ADJUST THE GAP BETWEEN THE BUTTON CLAMP AND THE FEEDING PLATE

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, (Ⓐ side of button ③ is lower than Ⓑ side of clamp ①, button ③ cannot be clamped in the clamp ①, so the button bounces out (Button feeding failure). The adjustment is to loosen screw and adjust the height of the bracket. (Fig.18)

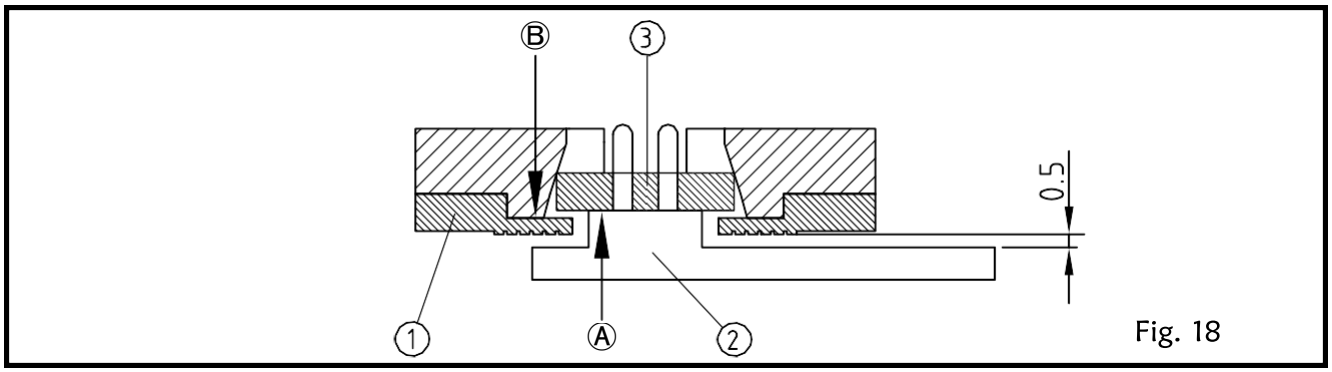


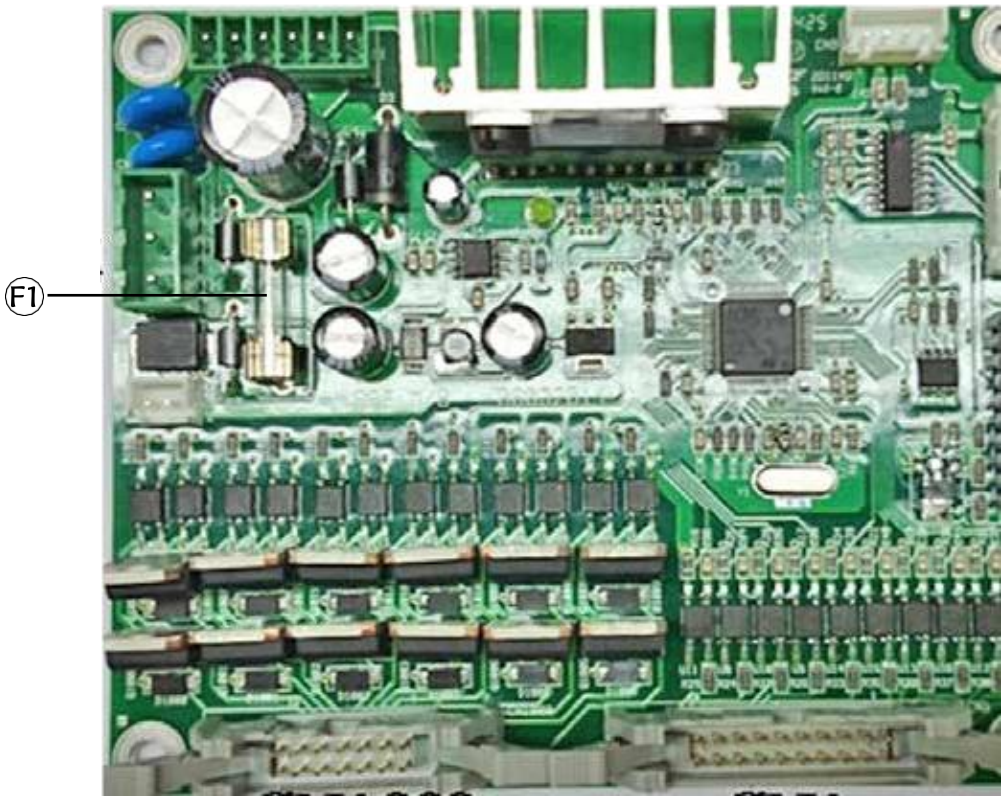
Fig. 18

SUBSTITUTE FUSE

ATENÇÃO

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



/Fig. 19

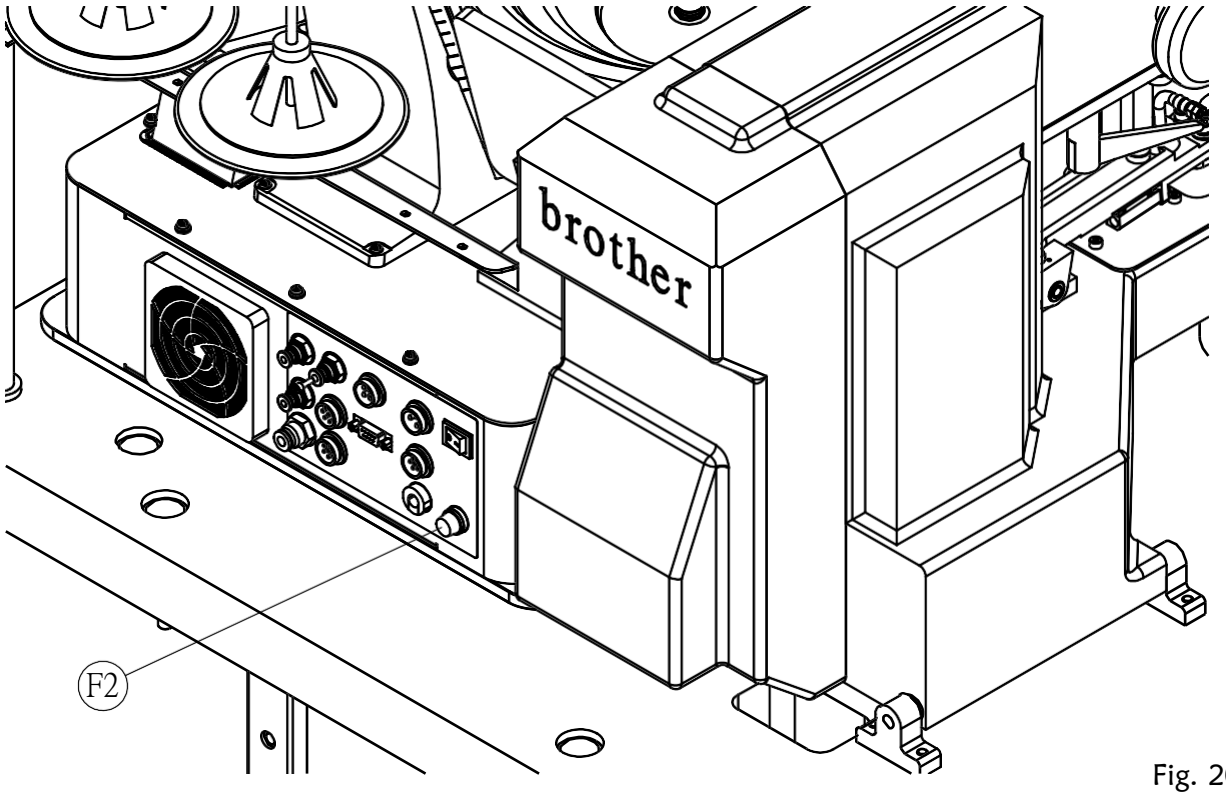


Fig. 20

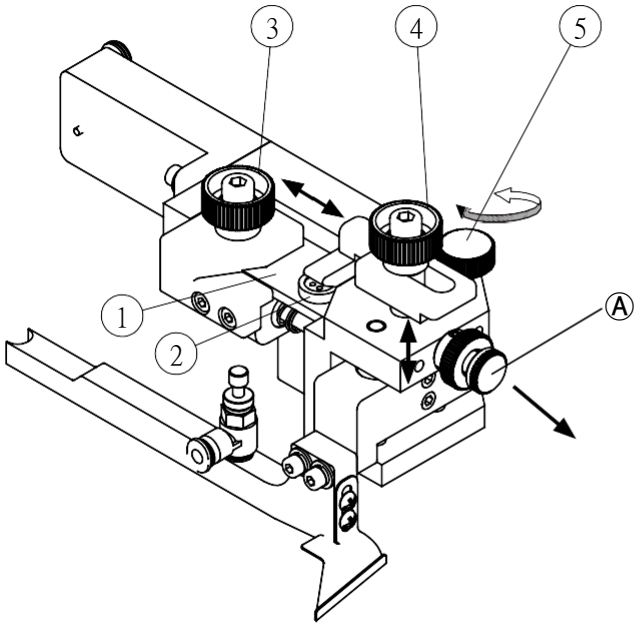
THE REMARKABLE STEPS OF SUBSTITUTE BUTTONS

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 pulls 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 adjust 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.



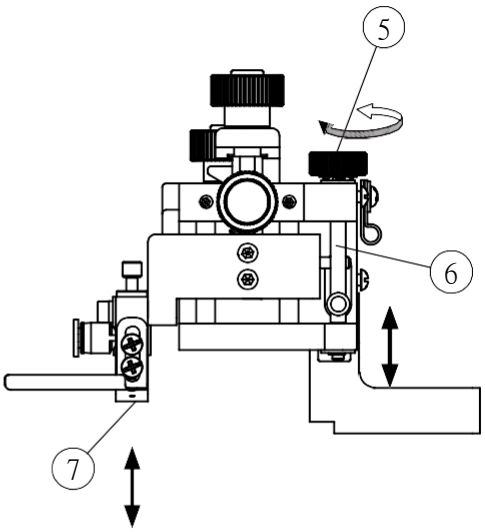
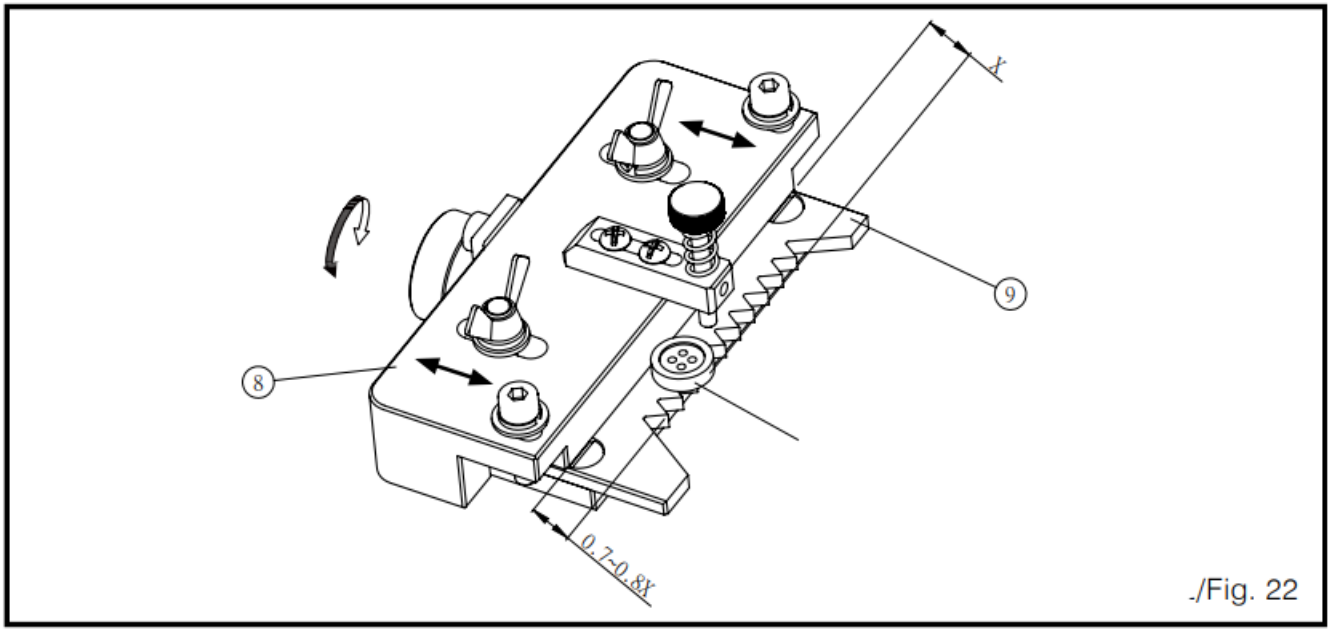


Fig. 21

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.



./Fig. 22

4. Adjust the stopper on the vibration plate (Fig 23)
(1) Suggestion of selecting the serrated plate : (Table 2)

Using Buttons	Size: §8~16mm	Size: §16~25mm
	The small button serrated plate	The big button serrated plate

Table 2

(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 ④ 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.

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 ④ 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 ④, and all the button will be blown out from the track.

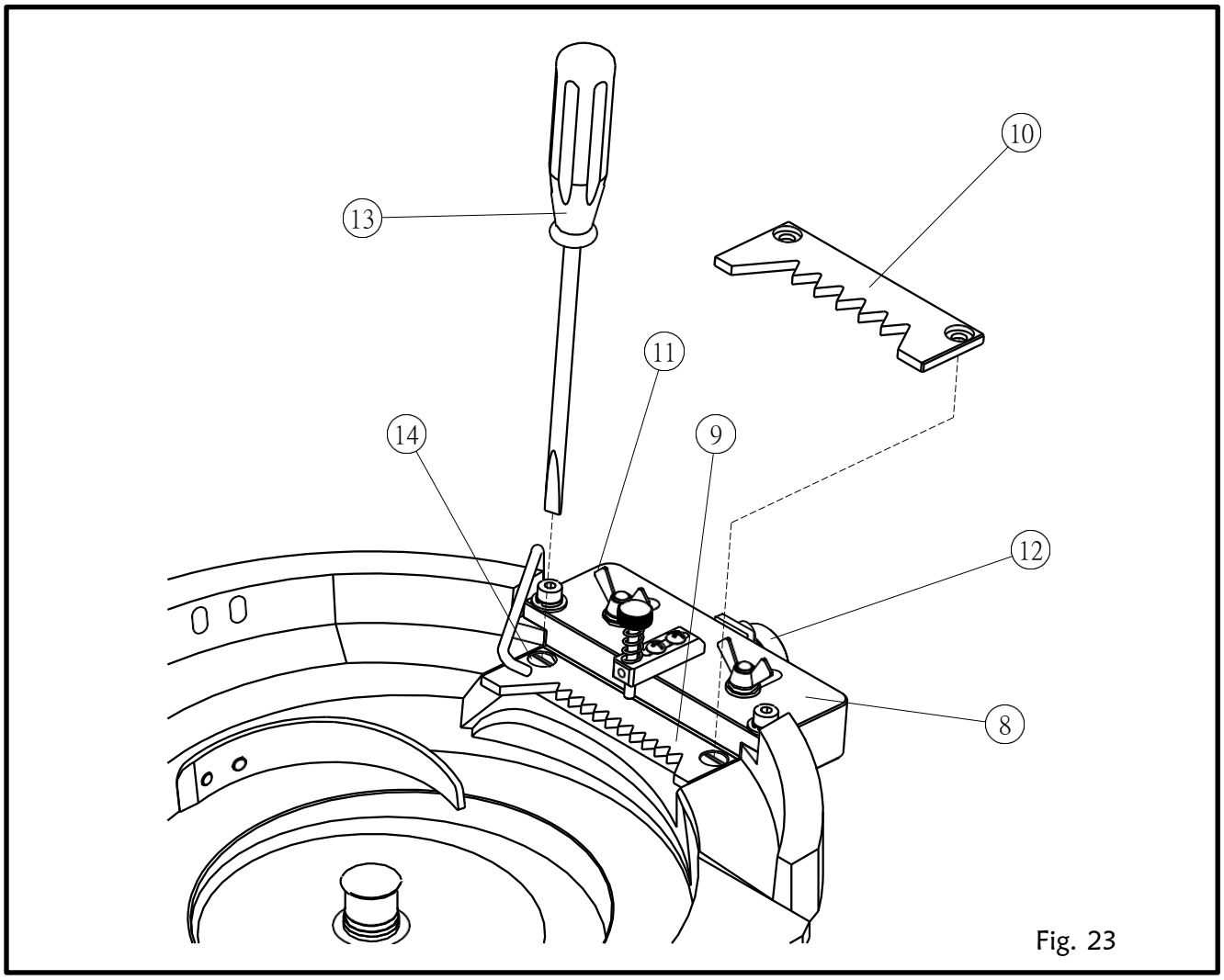


Fig. 23

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 (The panel shows the button is 12.8mm). Press 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.)

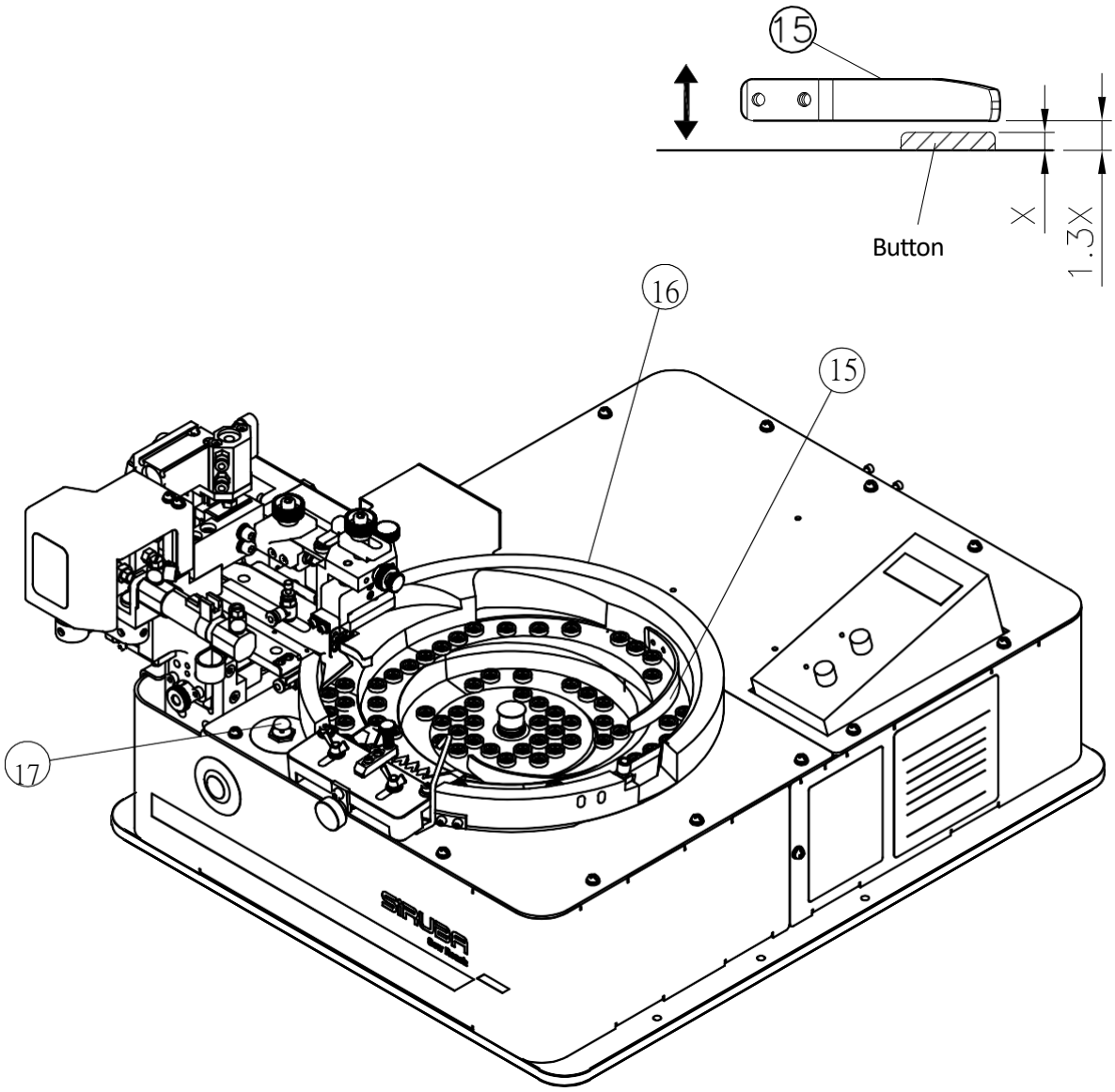


Fig. 24



Fig. 25

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. 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.

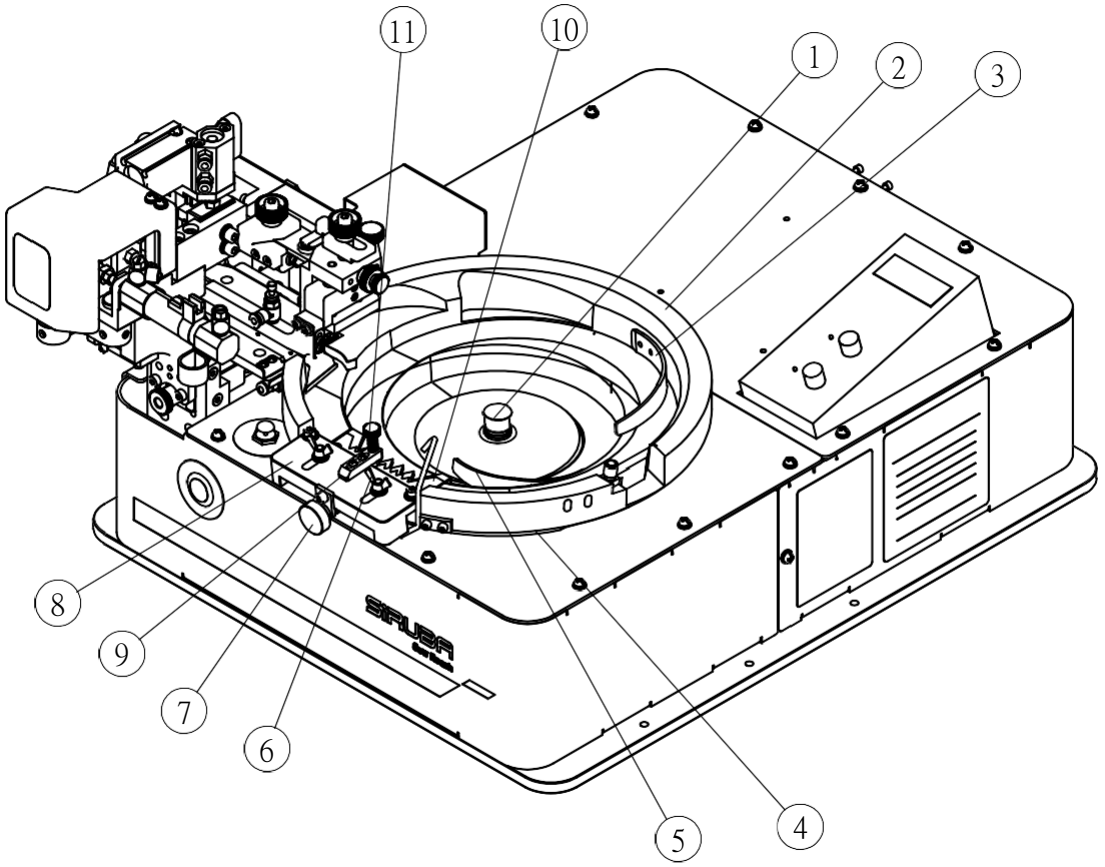


Fig. 26

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 ①, change the feeding plate, and then fasten screw ②. (Fig.27)



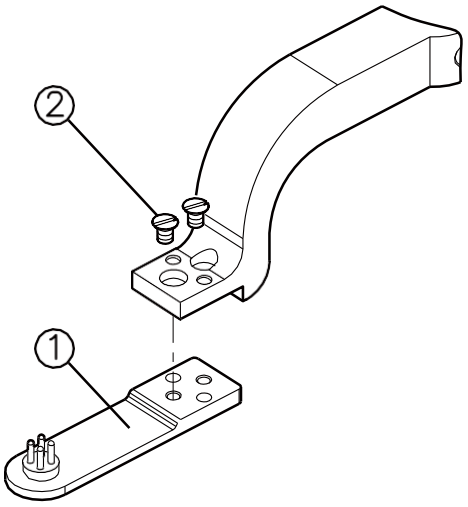


Fig. 27

SUBSTITUTE THE BUBBER PLATE ON THE TURNING BAR

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 Ⓐ for the axis center of the cylinder ①; the other Ⓑ is for the hexagonal nut on the rubber plate ② of the cylinder ①. Fix it with the wrench Ⓐ, and move the wrench Ⓑ 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)



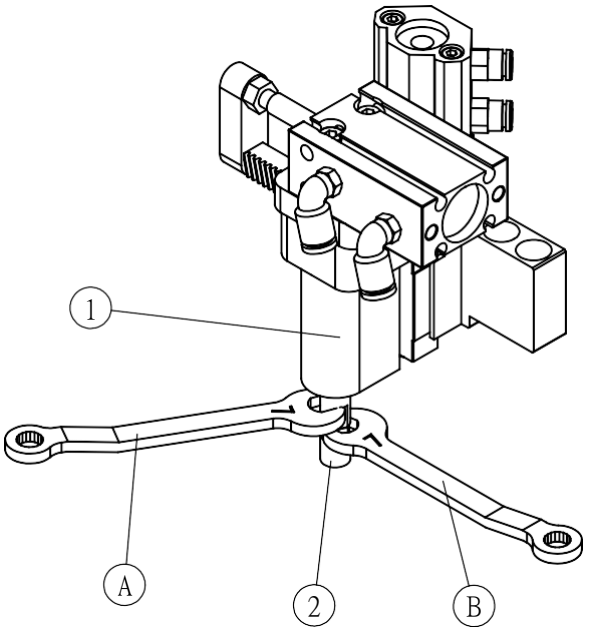


Fig. 28

SPECIFICATION OF BUTTON PLATE

Description as below (Fig. 29) (Table3)

Codes of Parts	$X^{+0.05}_{-0.05}$	$D^{-0.006}_{-0.016}$	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

Table3

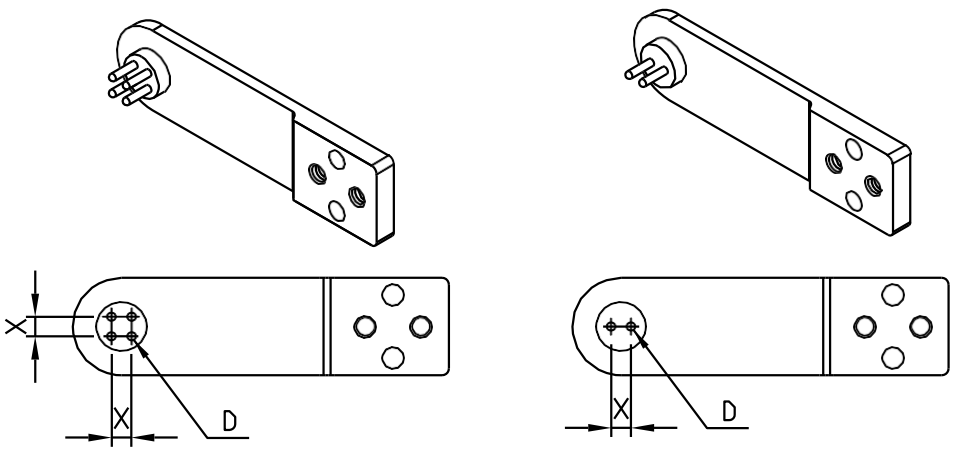
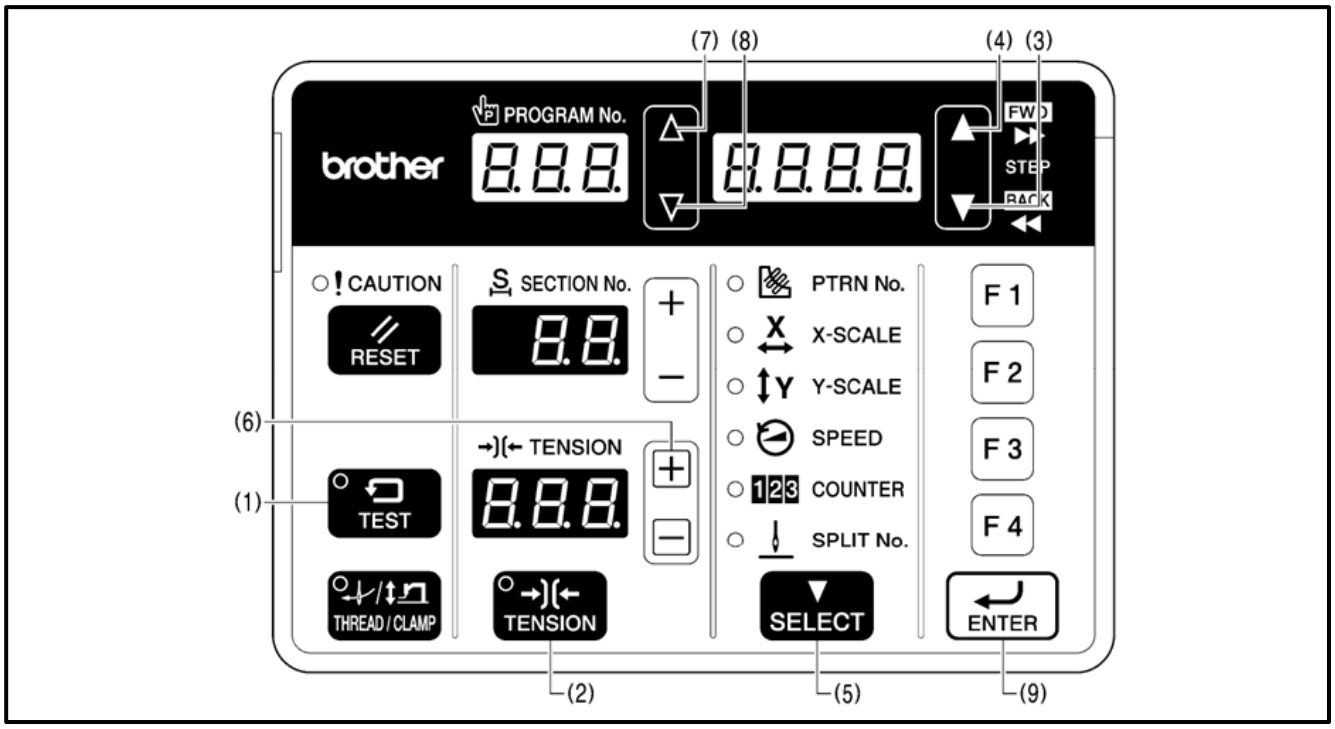


Fig. 29

MACHINE HEAD CONFIGURATION SETTING



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.

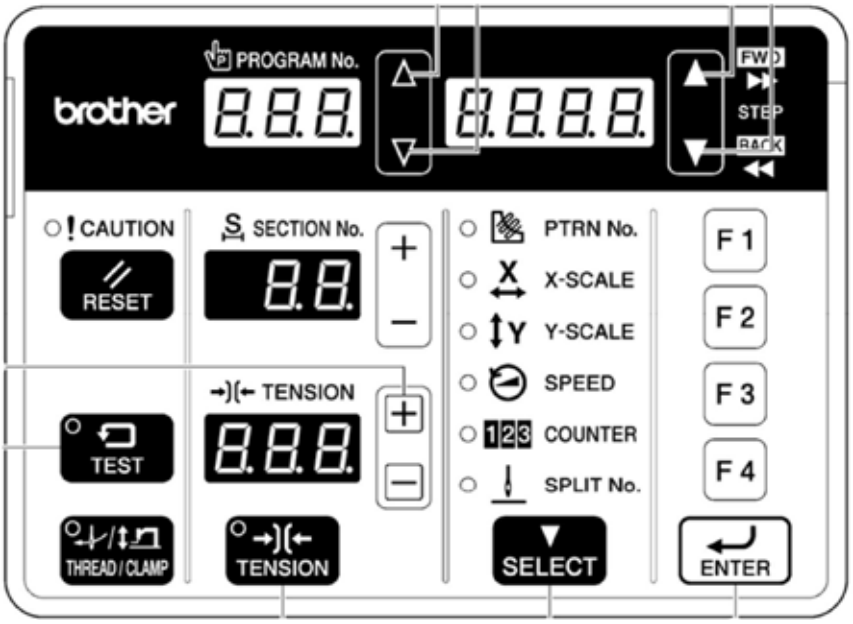
4. Press the  key. Apply the changed setting.

5. Press the  key. Exit setting mode.

6. Refer below for configuration figures.

Configuration No.	Setting value	Description
271	ON	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.

SINGLE CUT GRAPHICS/ DOUBLE CUT GRAPHICS





Single cut graphics



Double cut graphics

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

INSTALL THE SENSOR

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.

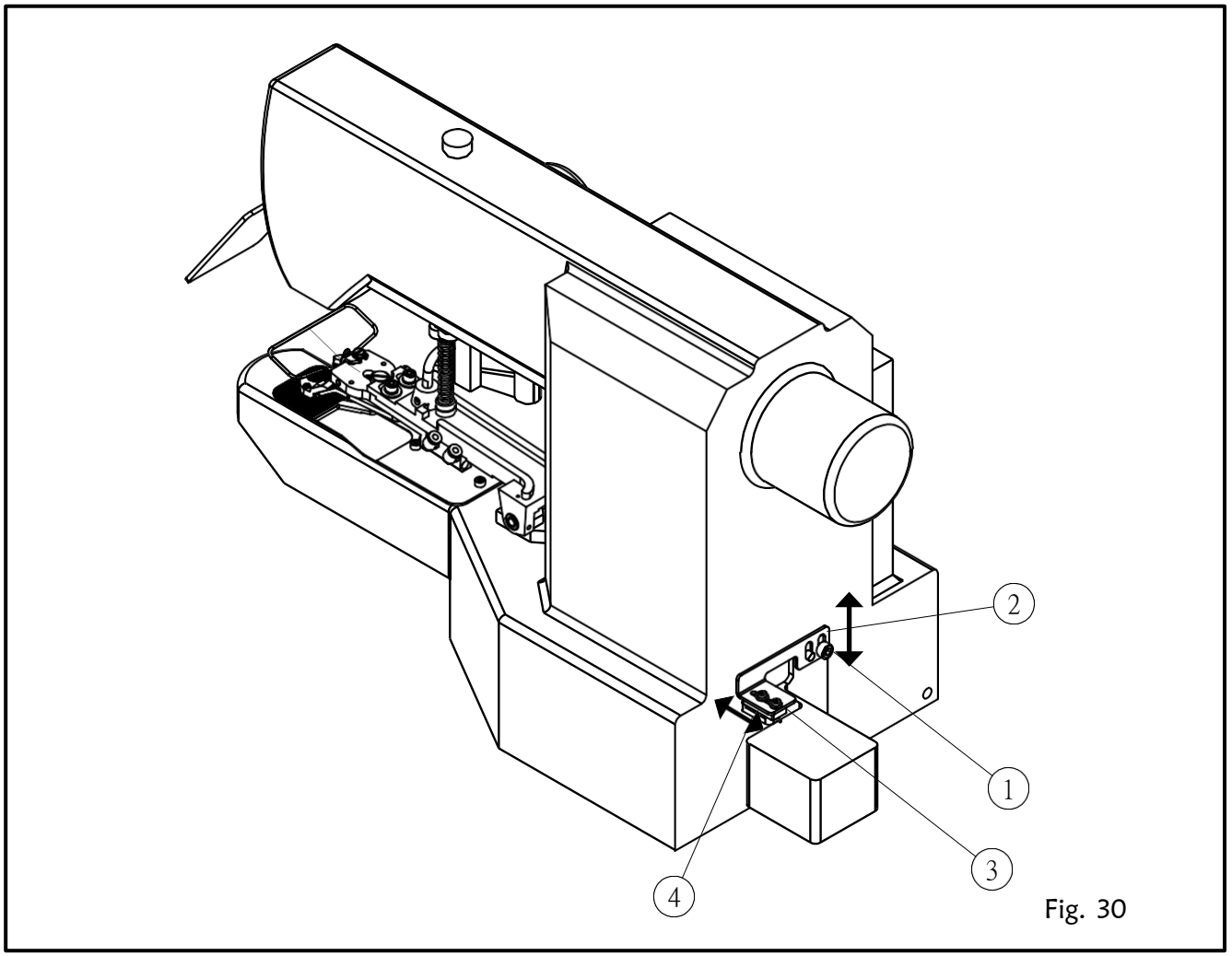


Fig. 30

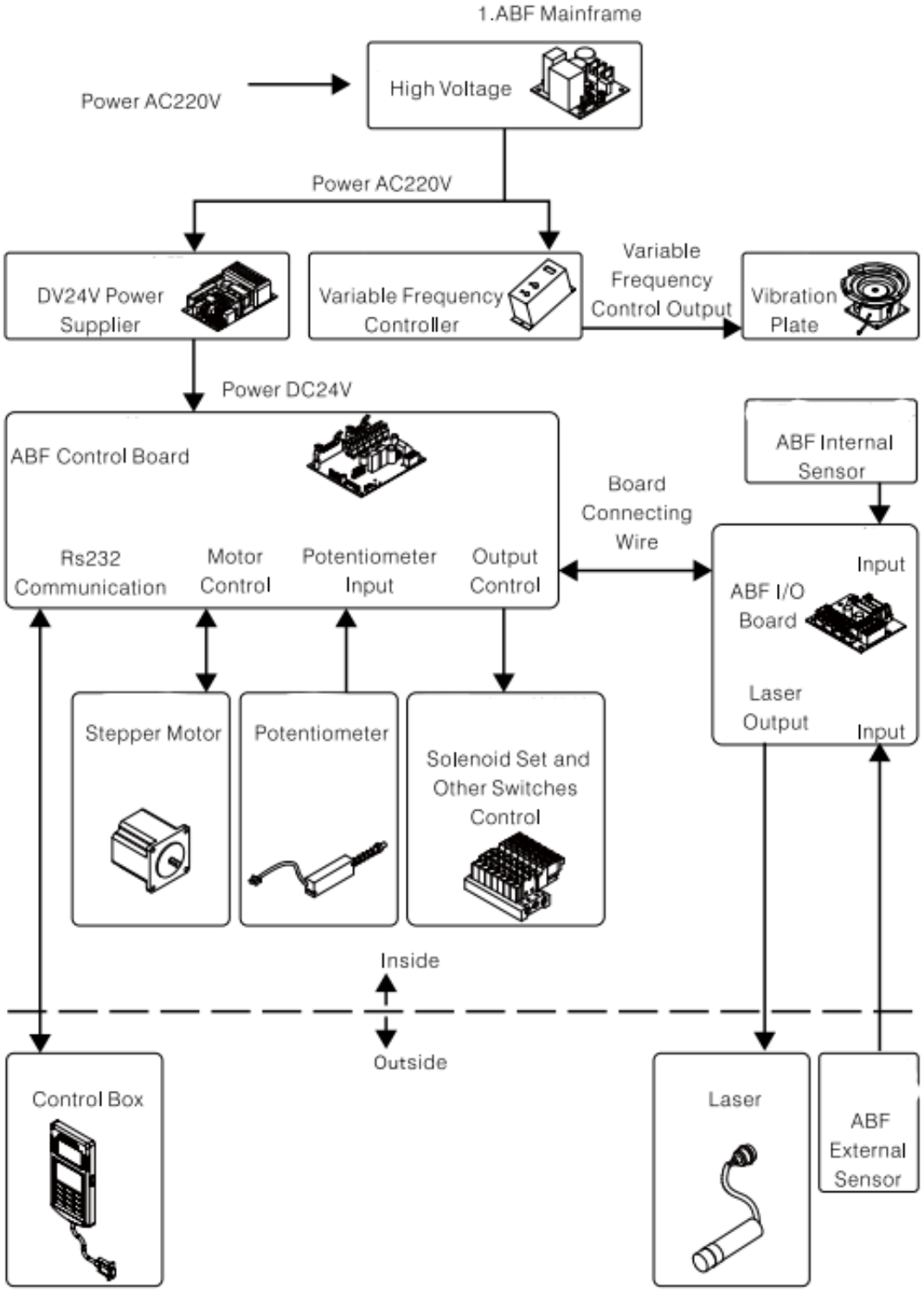
RESET TO DEFAULT MODE

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



Fig. 31

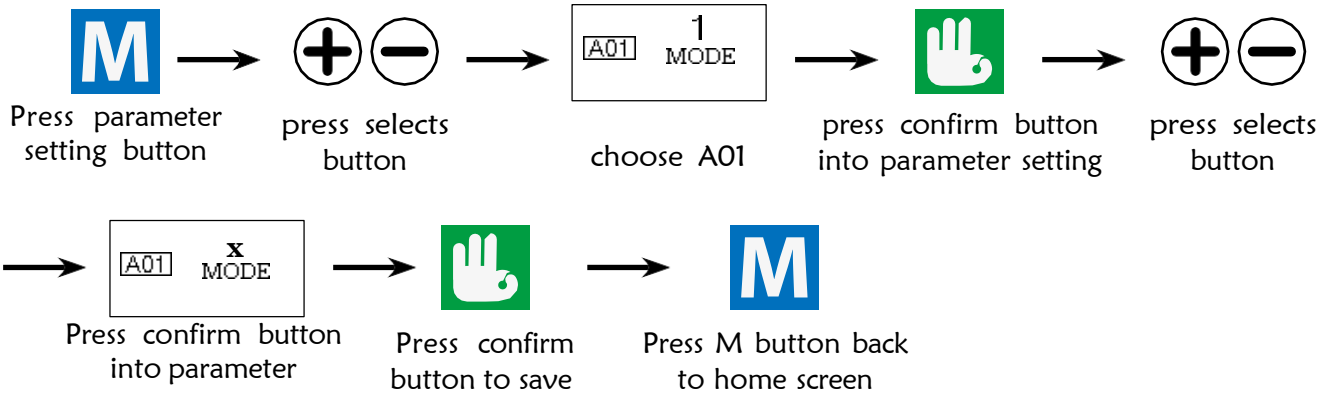
CONTROL SYSTEM STRUCTURE



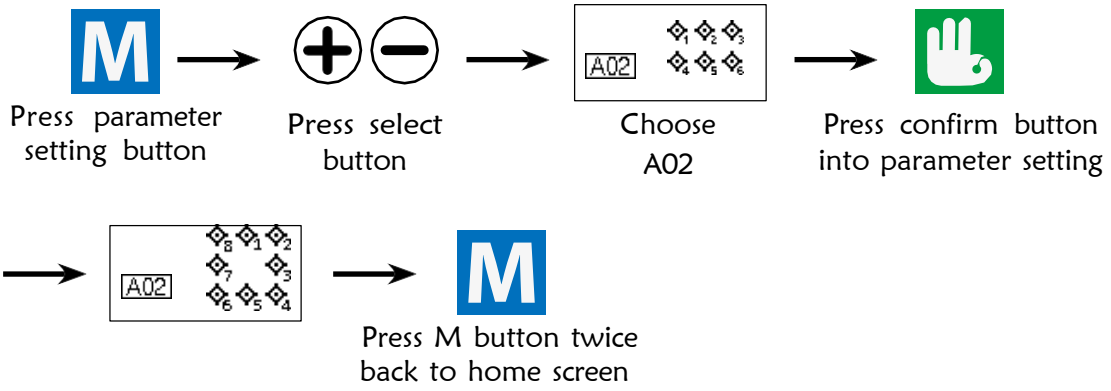
PARAMETER DESCRIPTION

※Parameter A

(1) A01 mode choose



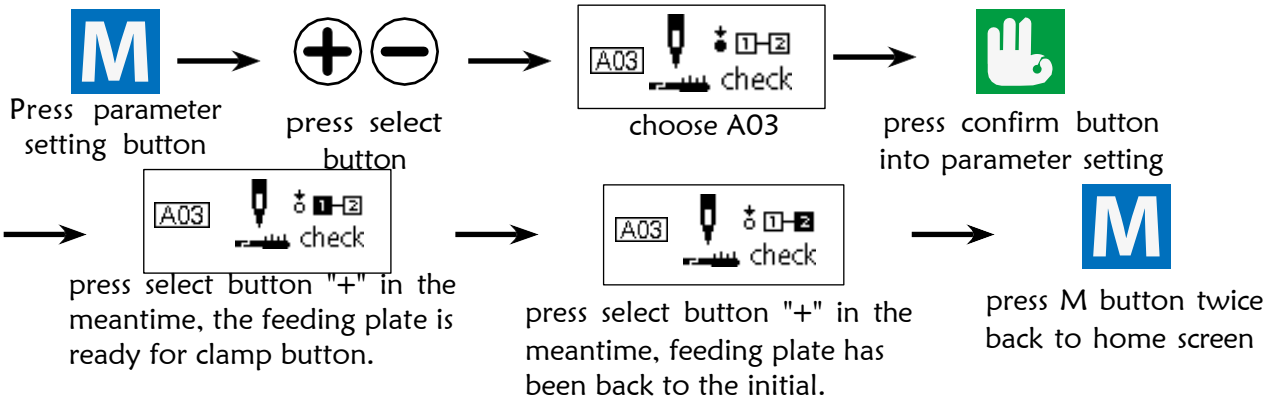
(2) A02 sensor signal detect



1 :	Position switch to feeding track
2 :	Air source detect sensor
3 :	Initial position switch to rotating arm
4 :	Manual button signal
6 :	Switch to upper clamp
8 :	Cantilever upper lift sensor

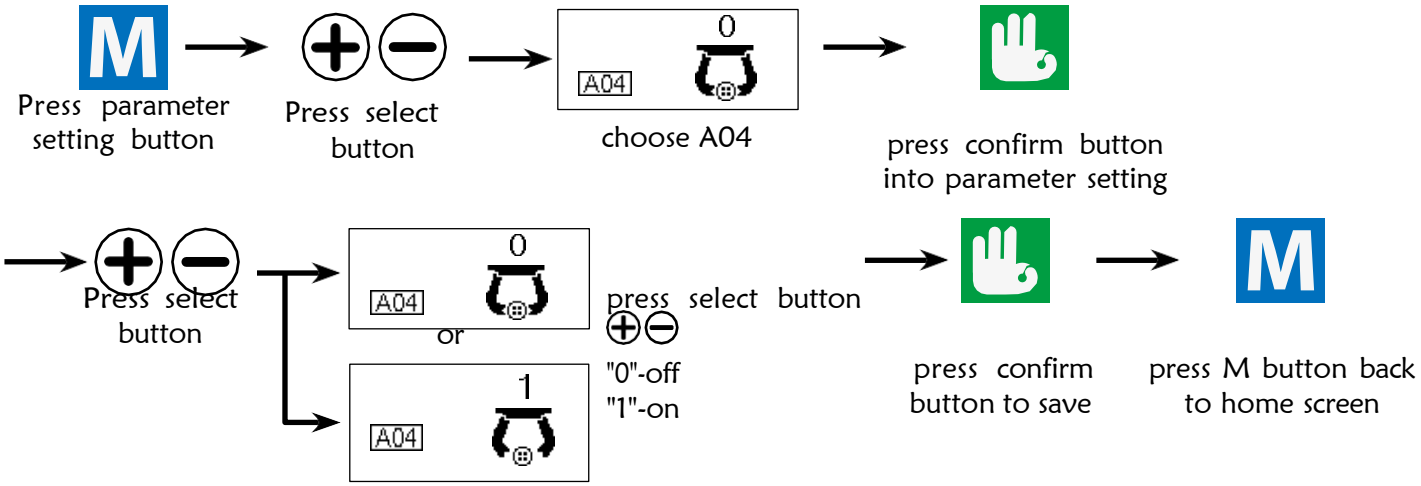
※ Manually detect each signal, it means sensor working normal if the light will be flickering.

(3) A03 Adjust feeding plate position



※ Adjust the feeding plate by each supplier requirement, it's easy to make needle broken or clamp button failure.

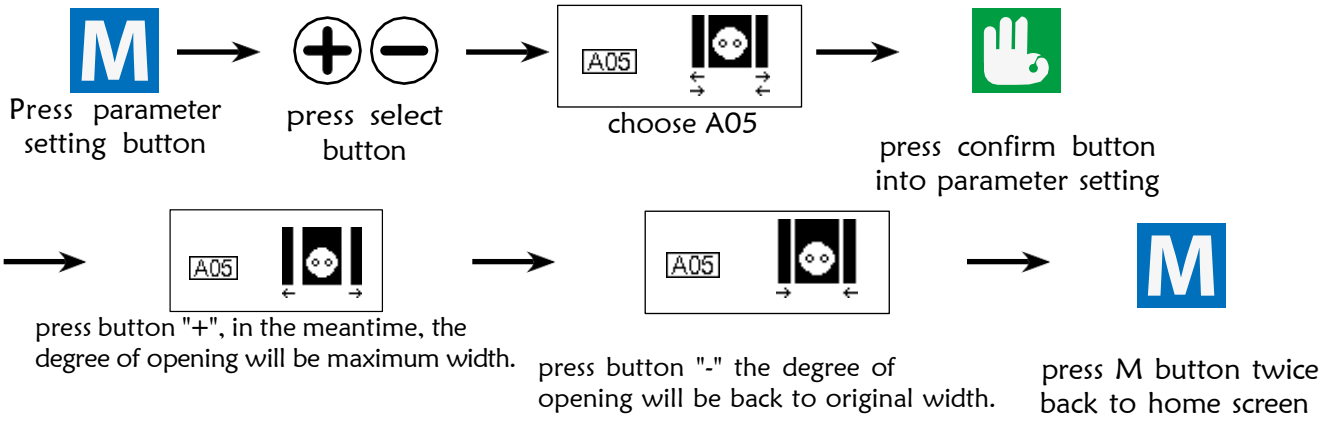
(4) A04 Open testing mode for feeding button



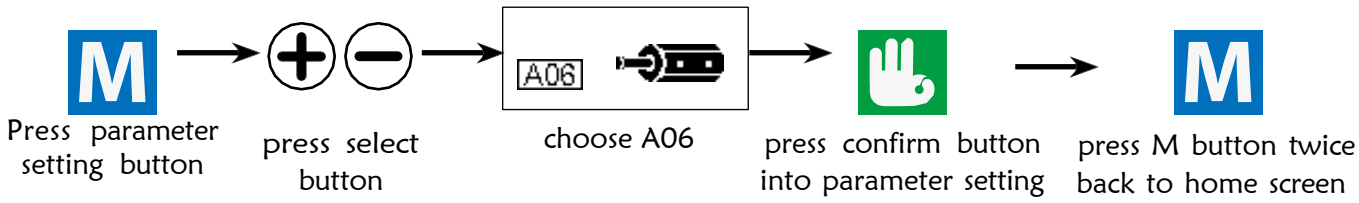
※ Function opening: after button delivered, clamp will release the button, and close to wait till next time.

※ This function is use for stability testing, do not use for normally operate.

(5) A05 the track degree of opening testing



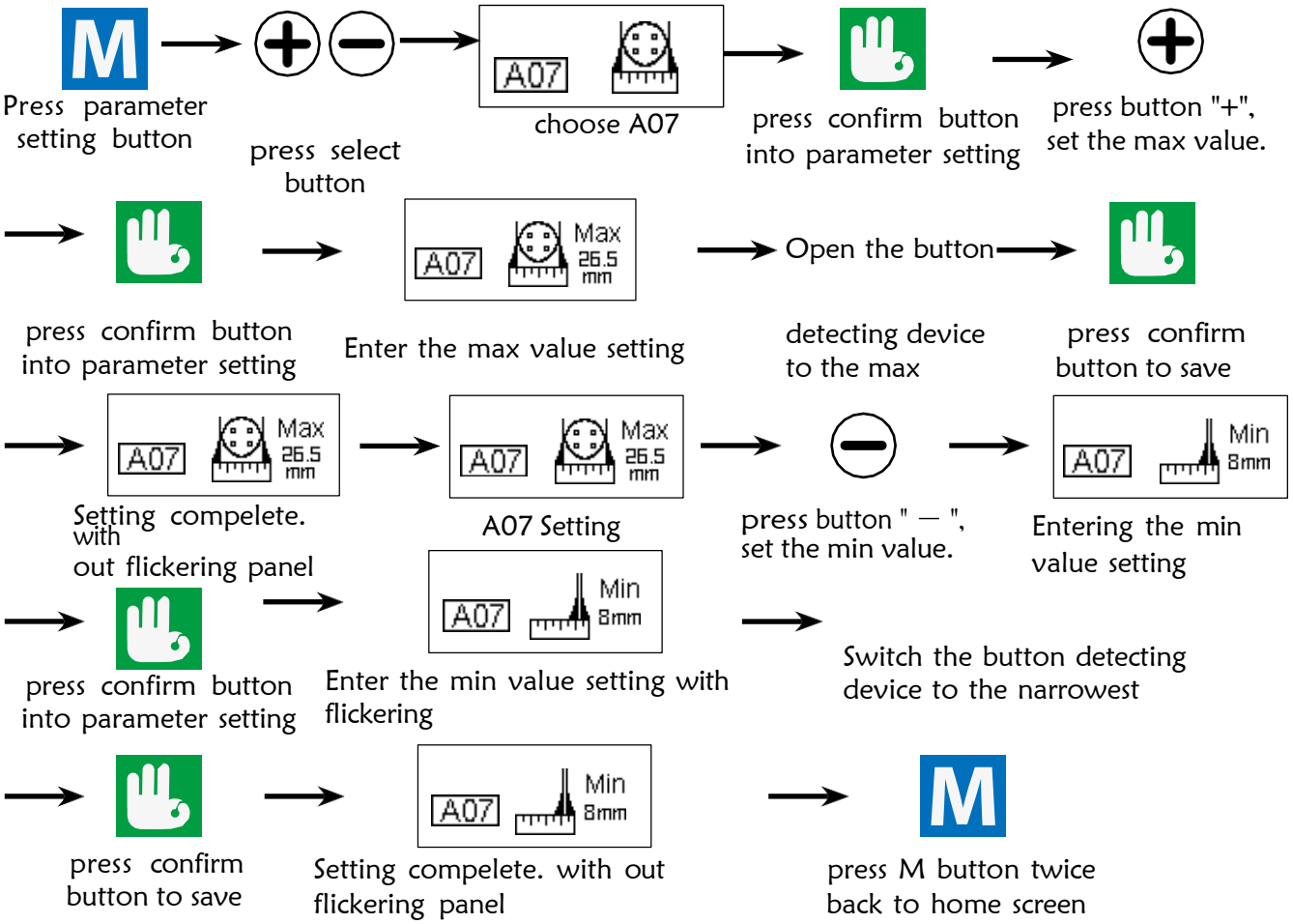
(6) A06 single motion mode for cylinders



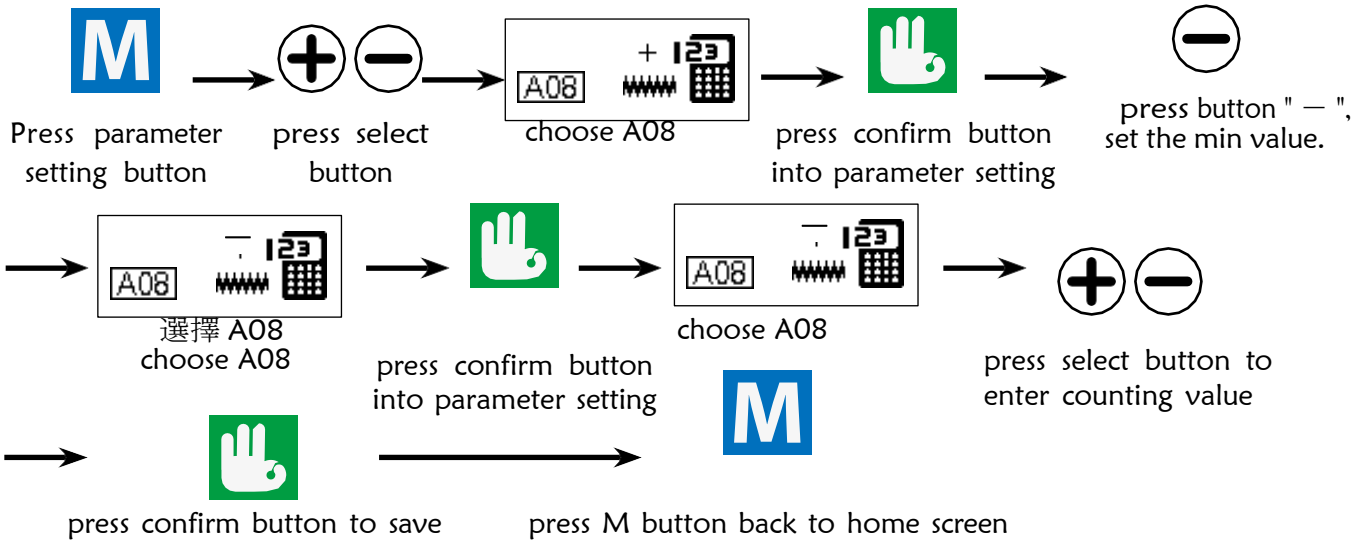
Number keys	Cylinder	Remark
1	Cylinder 1	Outside stopper
2	Cylinder 2	Rotary arm
3	Cylinder 3	Clamp
4	Cylinder 4	Arm up/down

Number keys	Cylinder	Remark
5	Cylinder 5	Button fixed
9	Cylinder 9	Rotation
0	Cylinder A	Blowing

(7) A07 Button maximum and minimum measurement mean

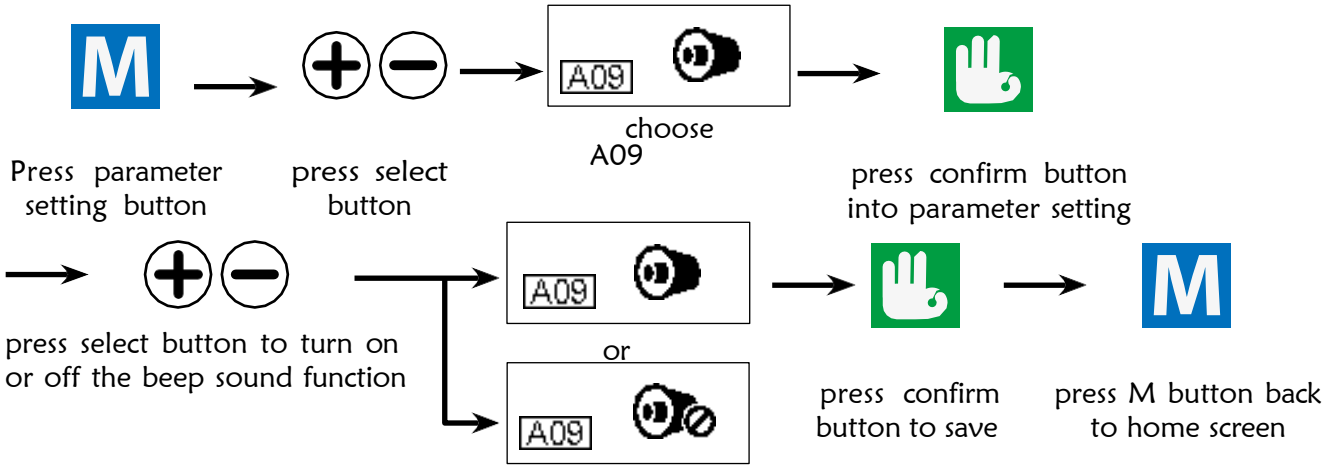


(8) A08 Counting operation (Count down)

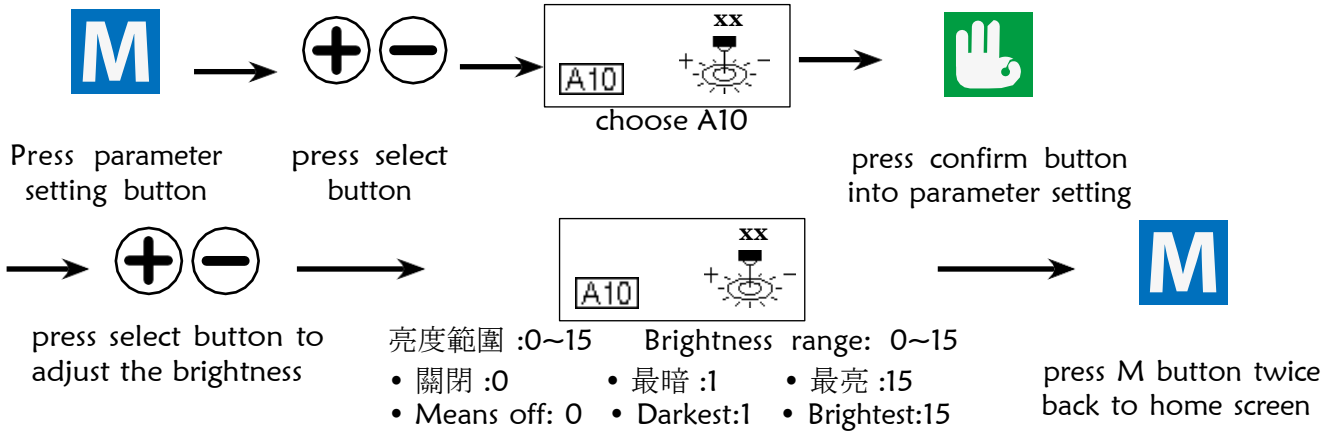


※ When it achieve the set quantity of button, there will be a long beep sound. And then press the back key to reset.

(9) A09 The sound setting

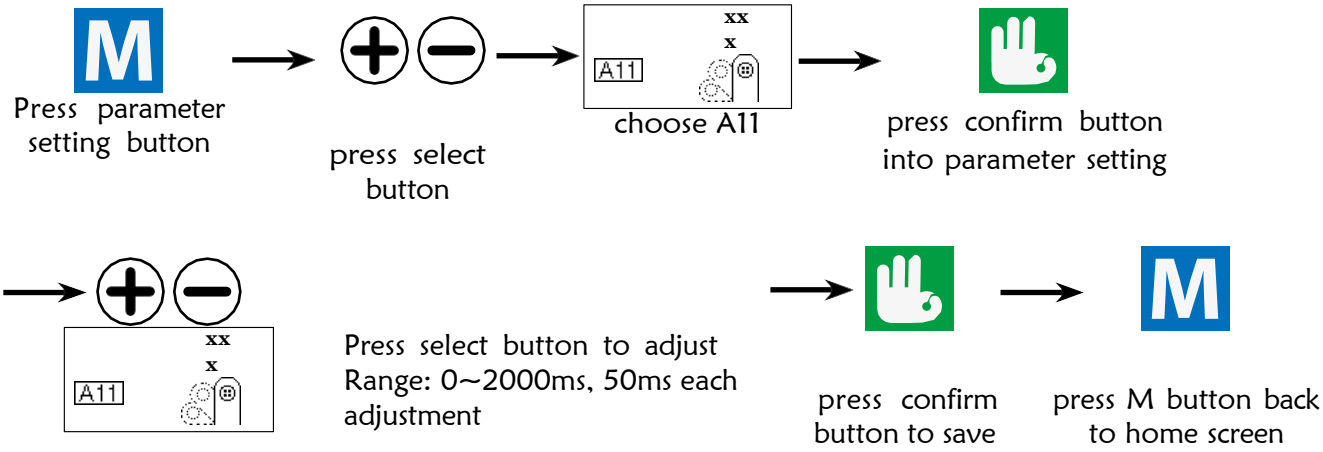


(10) A10 The adjustment of brightness of laser mark

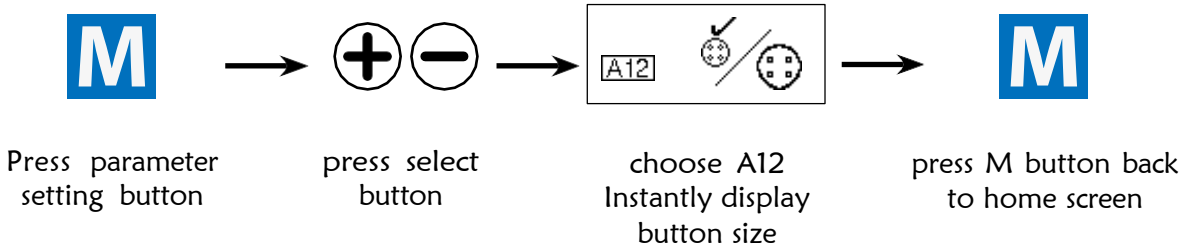


※ When adjusting the brightness of laser mark, the setting will be changed and saved immediately. No need to press confirm to save setting.

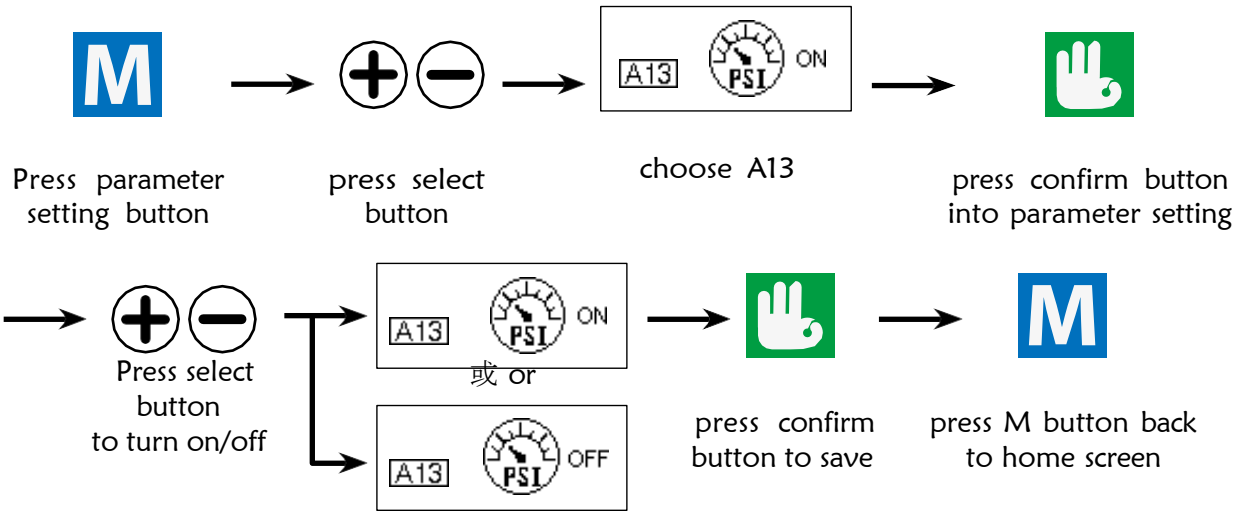
(11) A11 Delay feeding setting



(12) A12 Button size display

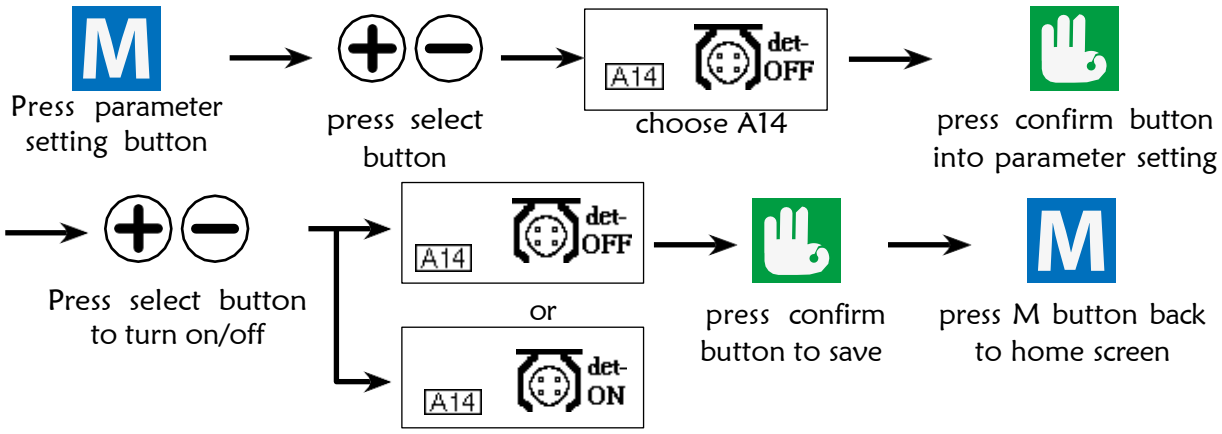


(13) A13 Air detect setting



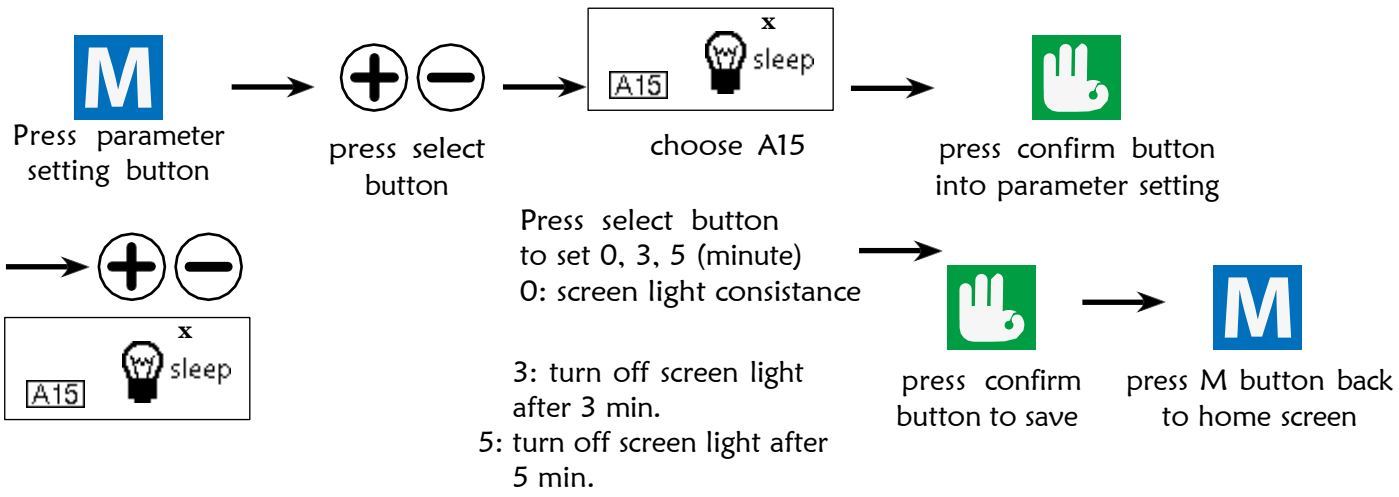
※ When pressure is out of limit, screen will show E49 (air supply problem).

(14) A14 Clamp button detection setting

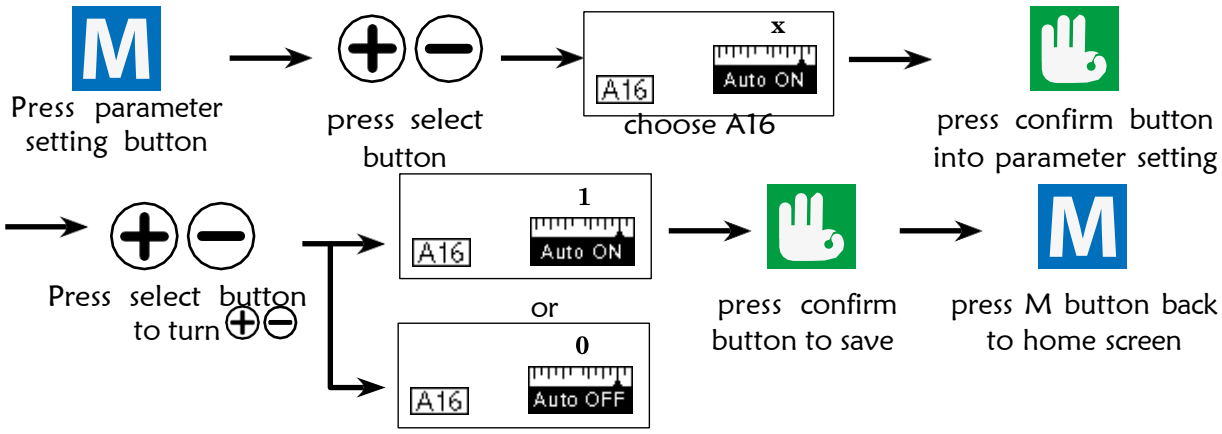


※ When A14 is ON, it will show E48 (clamp button detecting error) if there's no button on clamp ring button feeding mode.

(15) A15 Sleep mode

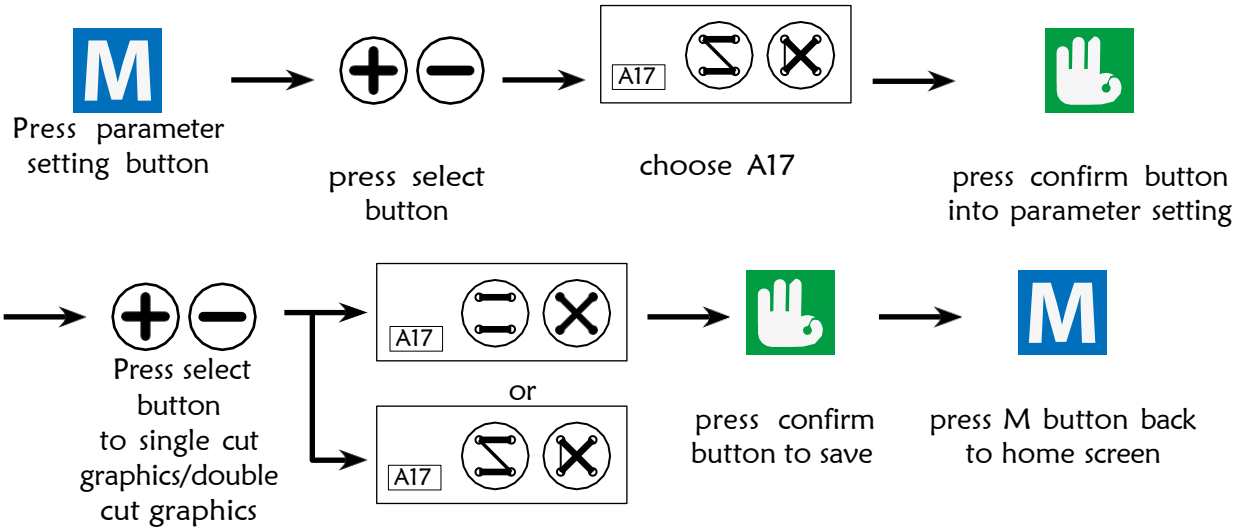


(16) A16 Turn on of position transducer



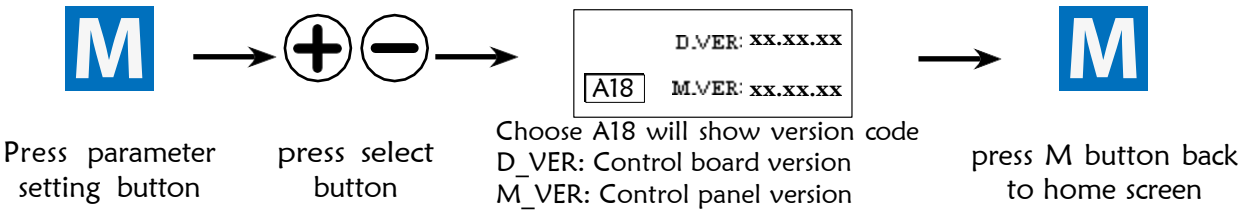
※ When turn ON A16, it can detect button size automatically when placing the button on the clamp under setting mode.

(17) A17 Collocation sewing machine graphics setting



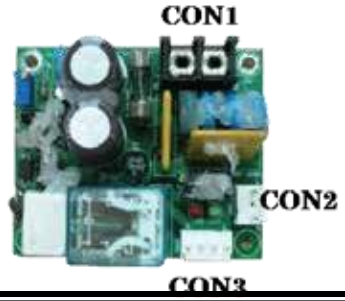
※ When the selection of graphics and sewing machine sewing pattern is inconsistent, there will be feeding button abnormal phenomenon.

(18) A18 Version display



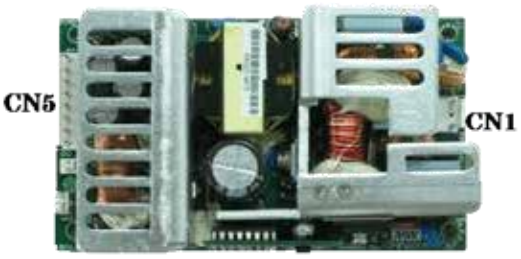
TROUBLE SHOOTING

•ABF high-voltage defender



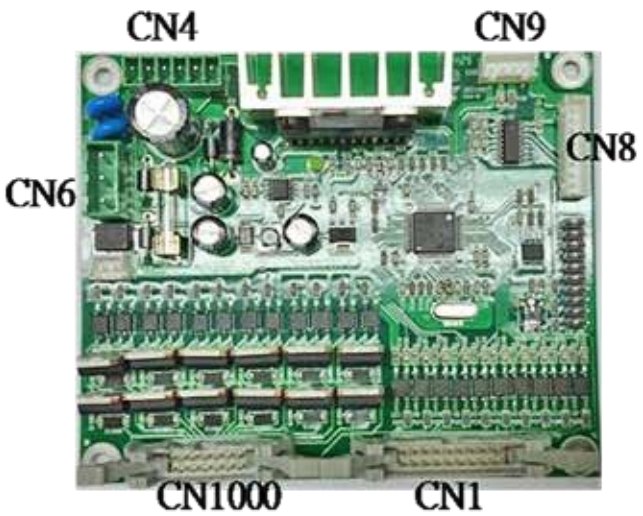
CON1 AC220V INPUT		CON2 DC24V ABF SYSTEM POWER			VIBRATION PLATE POWER		
symbol	Description	PIN	symbol	Description	PIN	symbol	Description
AC_L	AC220V input	1	L	AC220V output	1	L	AC220V output
AC_N		2			2		
		3	N	AC220V output	3		
					4	N	AC220V output

•DC24V power supply



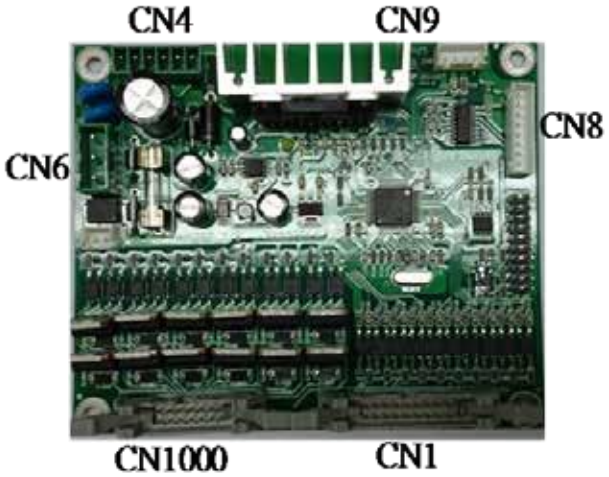
CN1 AC110/220V INPUT			CN5 DC OUTPUT		
PIN	symbol	Description	PIN	symbol	Description
1	L	AC220V input	1		
2			2		
3	N	AC220V input	3		
			4	DC24V	DC24V output
			5	0V	GND output
			6		
			7		
			8		

ABF CONTROL BOARD (I)



CN1000 OUTPUT CONTROL			CN1 I/O Port		
PIN	Symbol	Description	PIN	Symbol	Description
1	OUT 1	Solenoid Valve 1: Exit Gate Stopper	1	5V	(Output) 5V
2	OUT 2	Solenoid Valve 2: Rotary Arm Feed	2	ENC	Laser Light Output
3	OUT 3	Solenoid Valve 3: Button Clamp	3	NC	
4	OUT 4	Solenoid Valve 4: Rotary Arm Up/Down	4	NC	
5	OUT 5	Solenoid Valve 5: Button Pressing (Up/Down)	5	NC	
6	OUT D	Special Function LED Output	6	NC	
7	OUT 7		7	DC24V	DC24V Power Input
8	OUT 8		8	DC24V	
9	OUT 9	Solenoid Valve 9: Press-fit Rotation	9	DC 0V	
10	OUT A	Solenoid Valve A: Press-fit Air Blast (Blowing)	10	DC 0V	
11	OUT B	Vibration Plate Switch	11	IN1	Track Setting Sensor
12	OUT C	Pedal Linkage Switch	12	IN2	Air Source Sensor
13	24V	DC24V Power Input	13	IN3	Rotary Arm Origin Position Sensor
14	24V	DC24V Power Input	14	IN4	Manual Button
			15	IN5	Cutter Origin Position Sensor
			16	IN6	Upper Clip Sensor
			17	IN7	Manual Button Mode Pedal Sensor
			18	IN8	
			19	IN9	
			20	IN10	

ABF CONTROL BOARD (II)



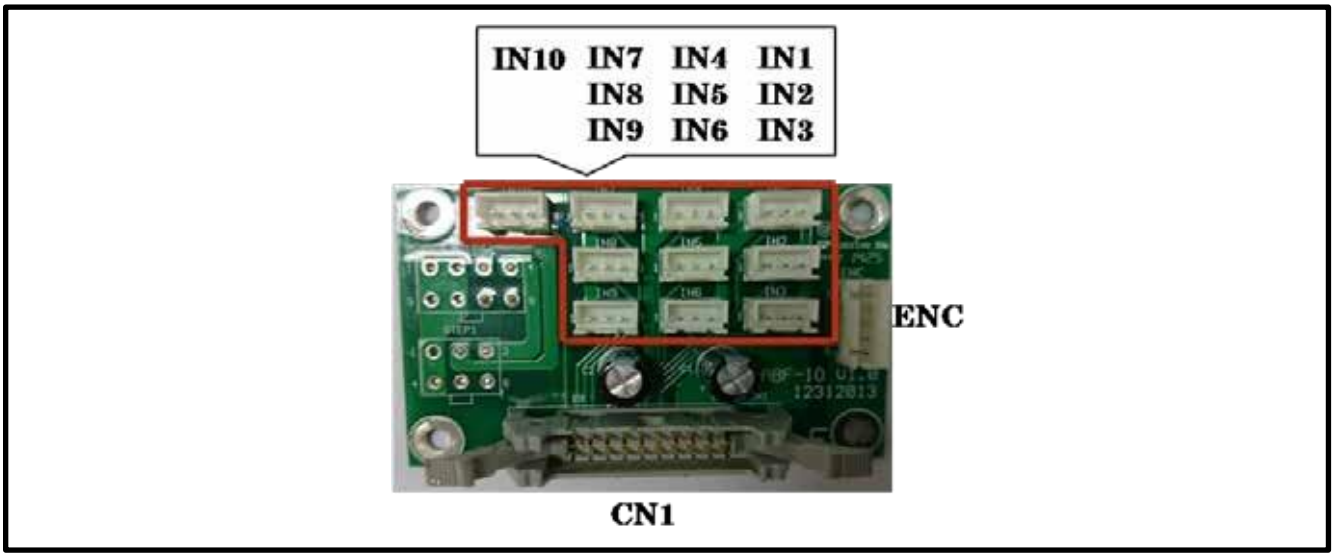
CN4 Stepper Motor			
PIN	Symbol	Description	Cable Color
1	CA	Phase A Center Point	Whie
2	CB	Phase B Center Pint	Yellow
3	A	Phase A	Red
4	/A	Phase A	Blue
5	B	Phase B	Green
6	/B	Phase B	Black

CN8 Operation Box Communication Interface		
PIN	Symbol	Description
1	5V	5V power output
2	BOOT0	
3	GND	GND
4		
5		
6	TX	
7	RX	Signal Input
8	GND	GND

CN6 DC24V INPUT		
PIN	Symbol	Description
1	24V	DC24V Power Input
2	0V	
3	FG	Case Ground Protection

CN9 Resistance Scale Signal Input			
PIN	Symbol	Description	Cable Color
1	5V	5V power output	Red
2	GND	GND	Black
3	RIN	Resistance Scale Signal Input	Blue
4	NC		

ABF I/O Panel

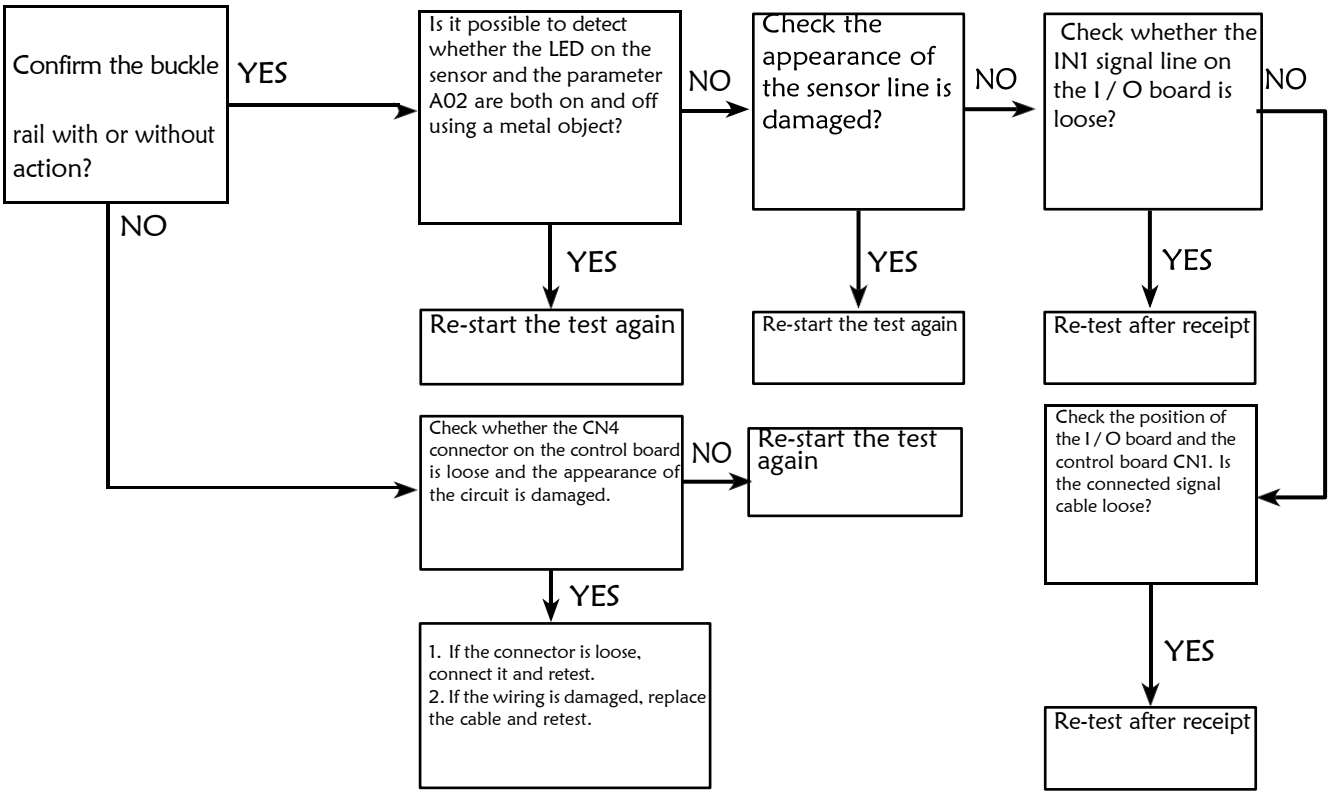


CN1 ABF Control Panel Port		
PIN	Symbol	Description
1	5V	(Output) 5V
2	YL	Laser Light Output
3	NC	
4	NC	
5	NC	
6	NC	
7	DC24V	DC24V Power Input
8	DC24V	
9	DC 0V	
10	DC 0V	
11	IN1	Track Setting Sensor
12	IN2	Air Source Sensor
13	IN3	Rotary Arm Origin Position Sensor
14	IN4	Manual Button
15	IN5	Cutter Origin Position Sensor
16	IN6	Upper Clip Sensor
17	IN7	Manual Button Mode Pedal Sensor
18	IN8	
19	IN9	
20	IN10	

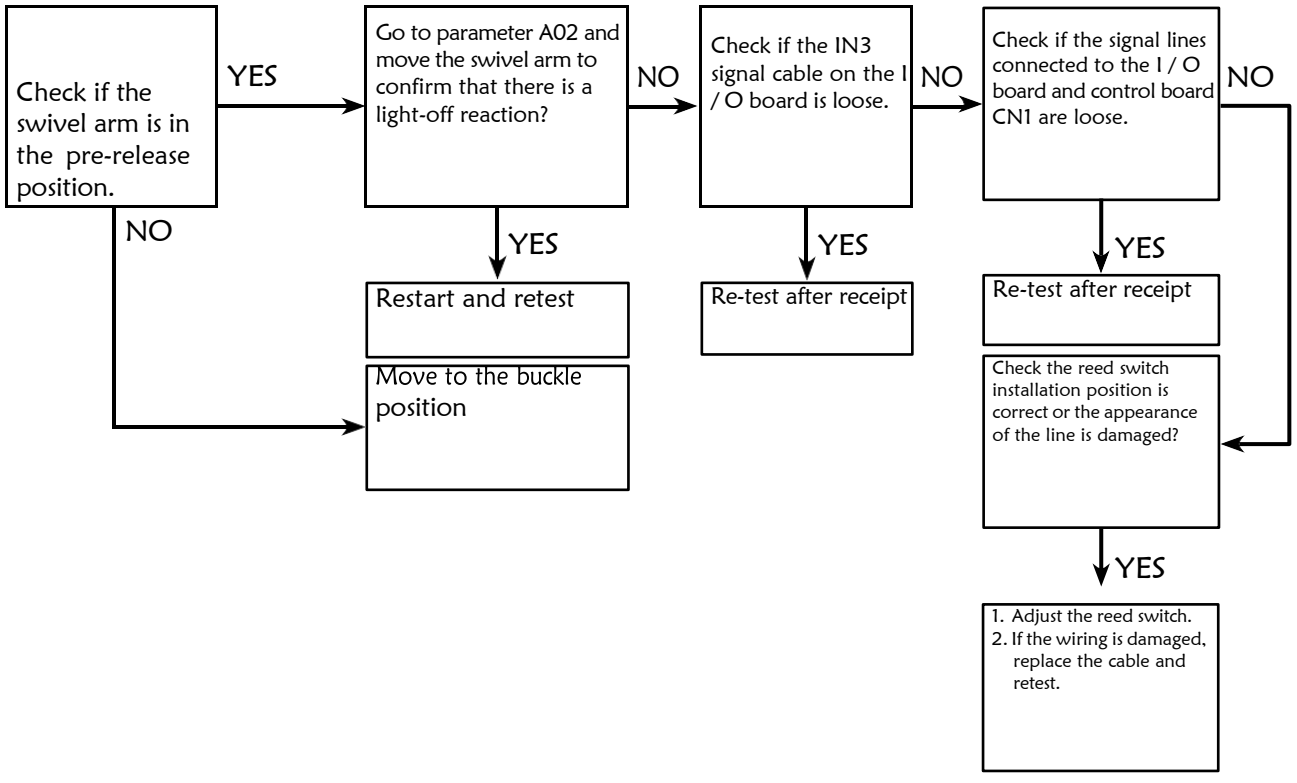
IN1~IN10 Input Signal		
PIN	Symbol	Description
IN(X)_Pin1	P24	24V Output
IN(X)_Pin3	N20	GND Output
IN 1_Pin2	IN1	Track Sensor
IN 2_Pin2	IN2	Air Source Sensor
IN 3_Pin2	IN3	Rotary Arm Origin Position Sensor
IN 4_Pin2	IN4	Manual Button
IN 5_Pin2	IN5	Cutter Origin Position Sensor
IN 6_Pin2	IN6	Upper Clip Sensor
IN 7_Pin2	IN7	Manual Button Mode Pedal Sensor
IN 8_Pin2	IN8	
IN 9_Pin2	IN9	
IN 10_Pin2	IN10	

ENC Laser Light Output		
PIN	Symbol	Description
Pin1	NC	
Pin2	YL	Laser Light Output
Pin3	5V	5V Output
Pin4	NC	
Pin5	NC	

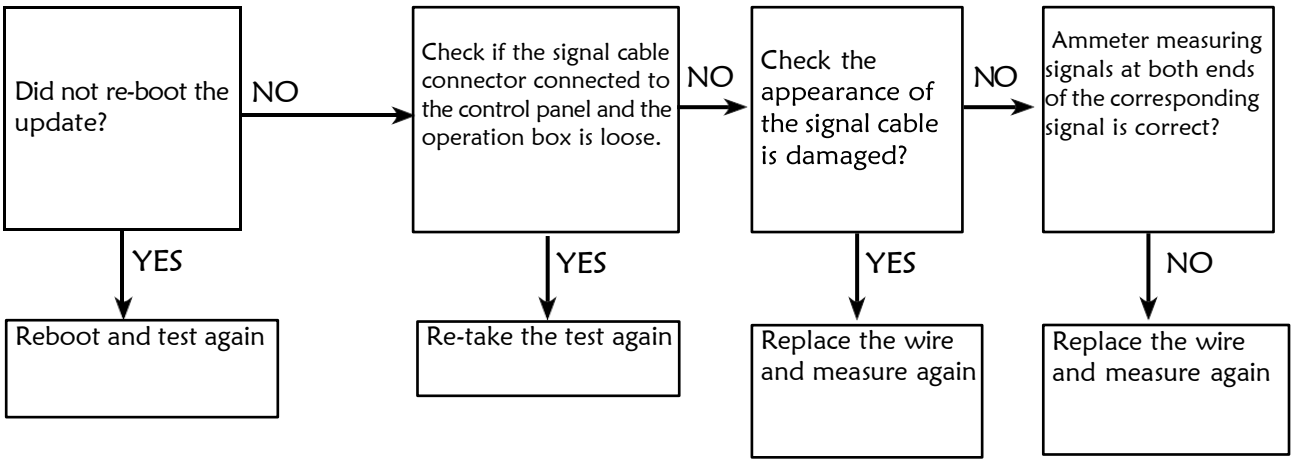
1. ERROR CODE E41: BUTTON MOTOR MOTOR ORIGIN SEARCH ERROR



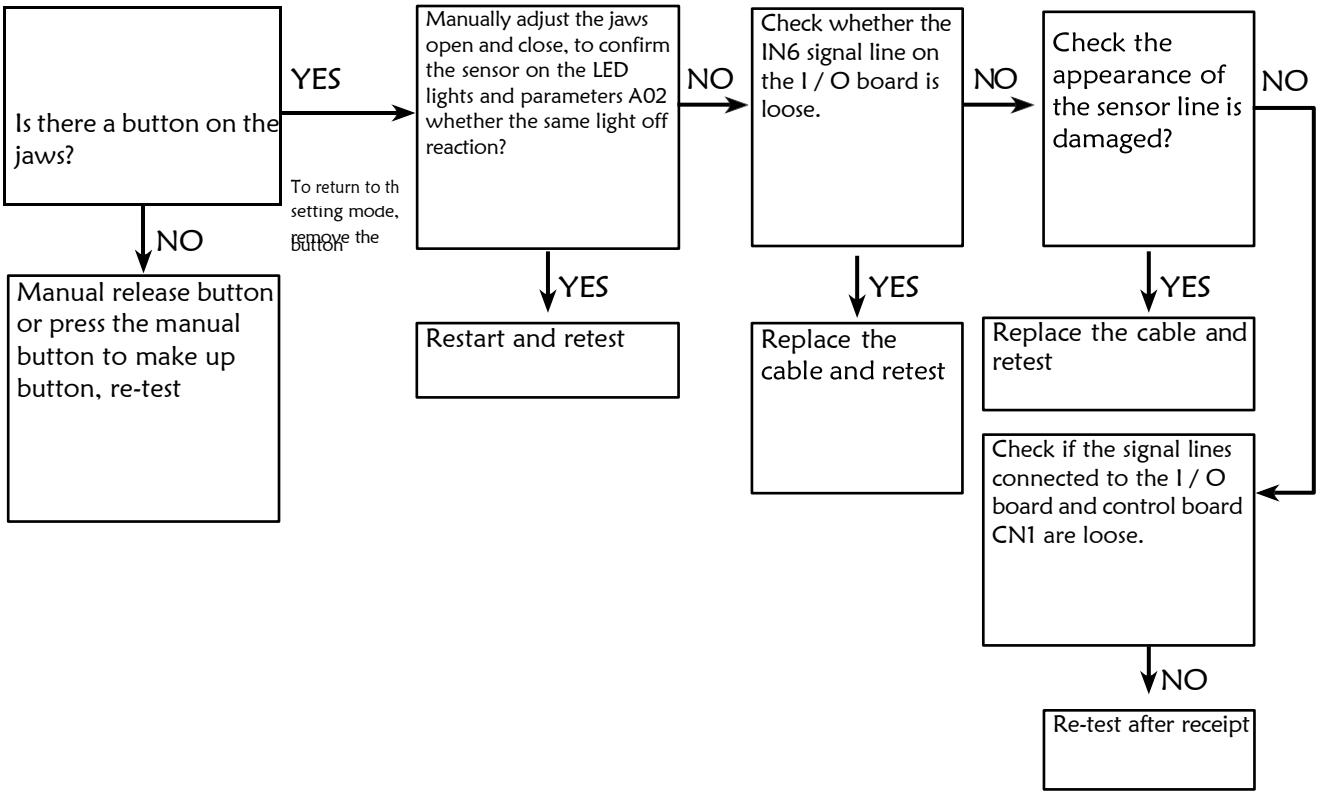
2. ERROR CODE E45: SWIVEL ARM TIME-OUT DID NOT RETURN TO ORIGIN



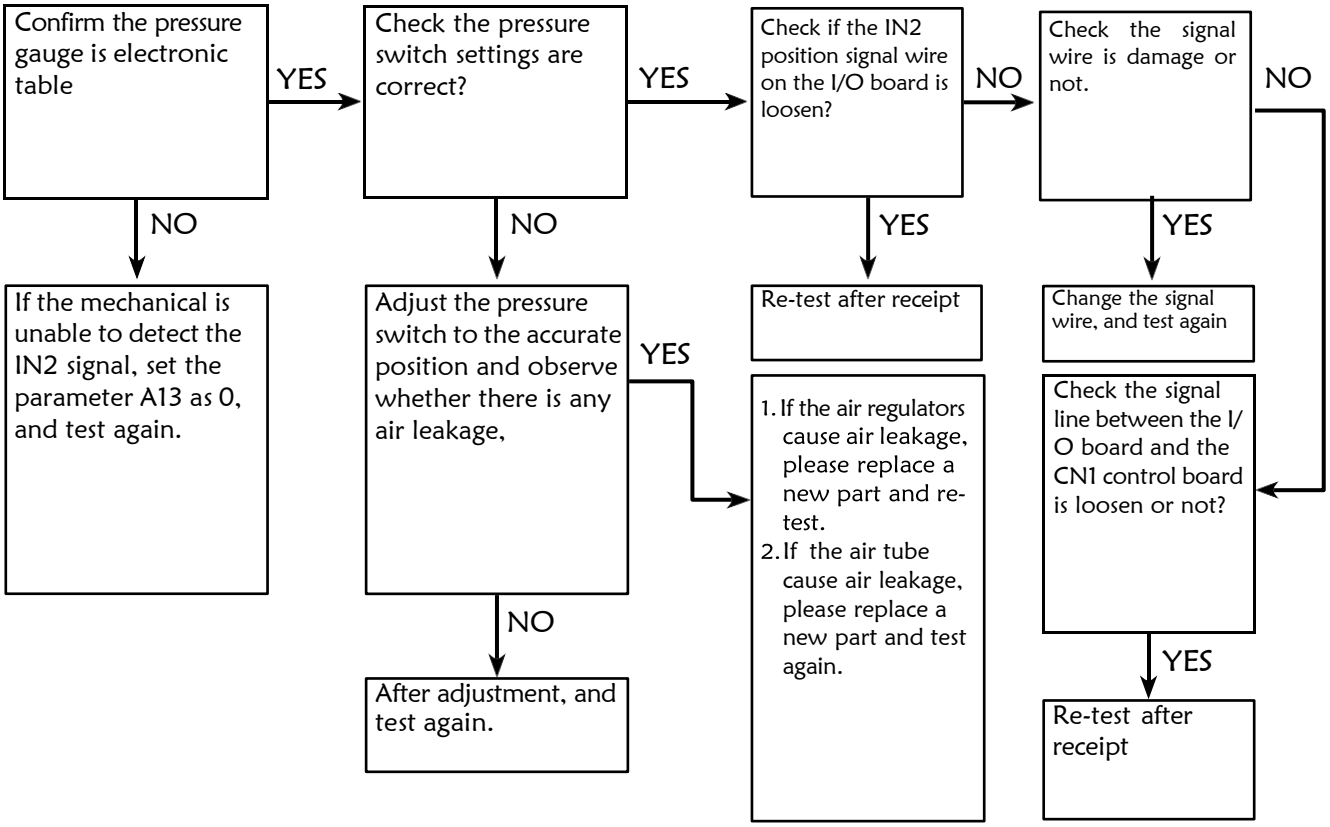
3. ERROR CODE E46: ABF COMMUNICATION ERROR



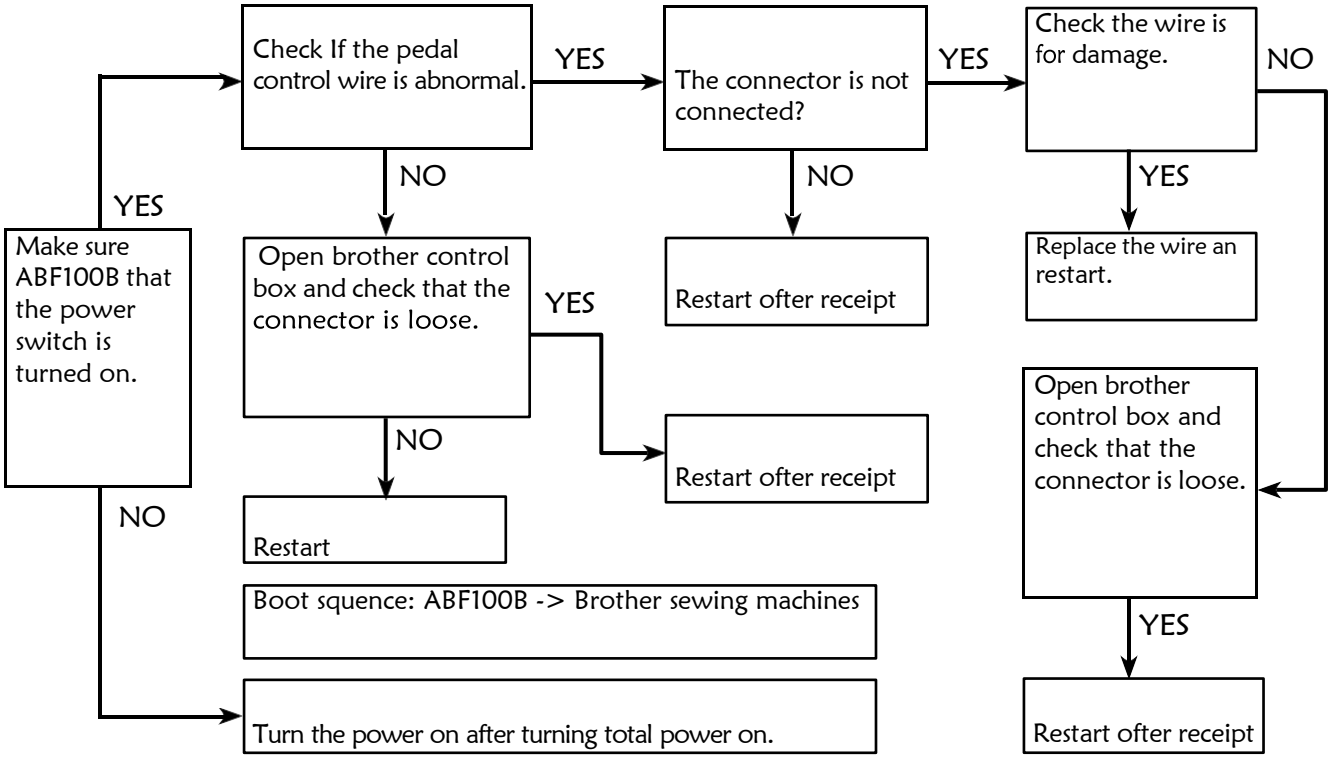
4. ERROR CODE E48: GRIPPER ERROR



5. ERROR CODE E49: AIR SOURCE DETECTION ANOMALY

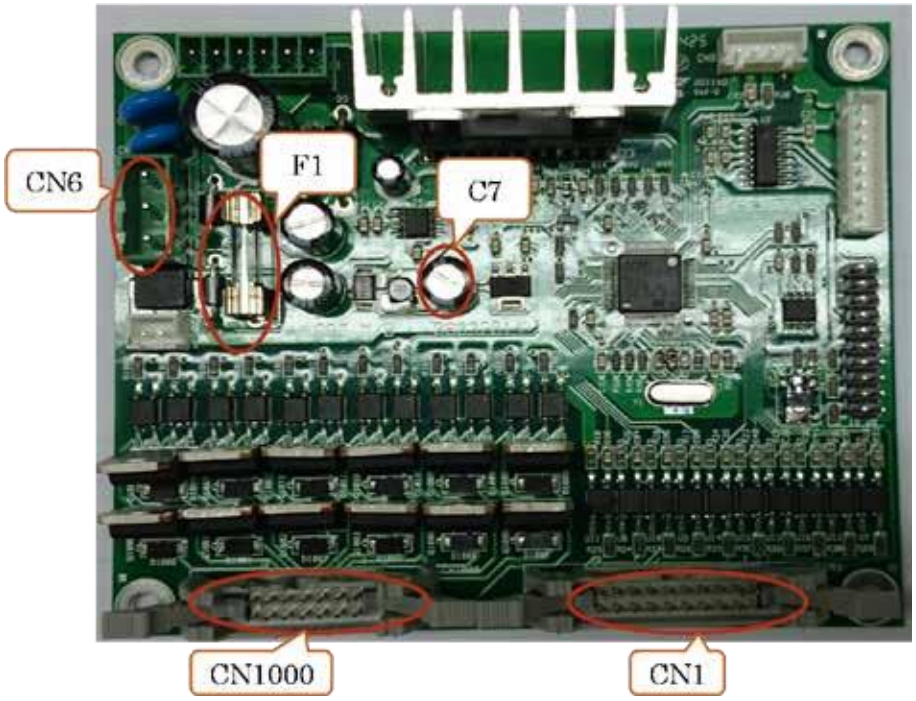


6. ERROR CODE E35: AIR SOURCE DETECTION ANOMALY

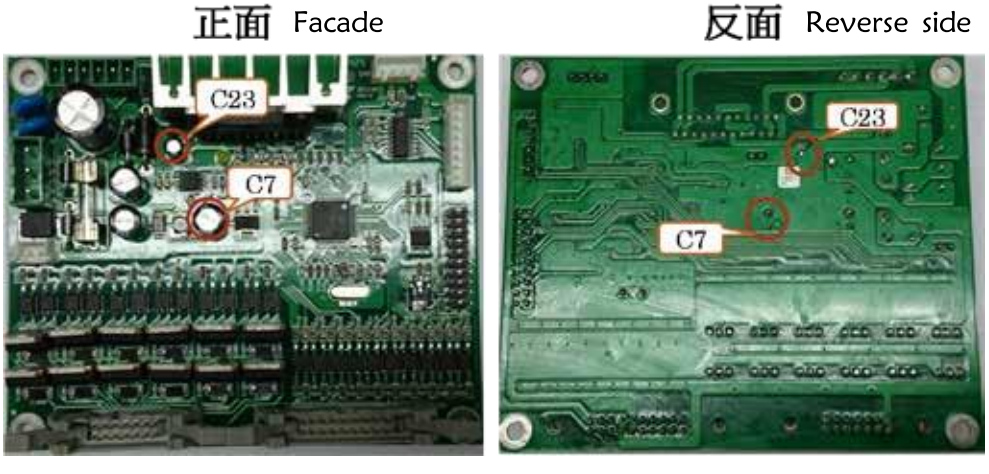


BLOCK DIAGRAM OF SIMPLE REPAIR

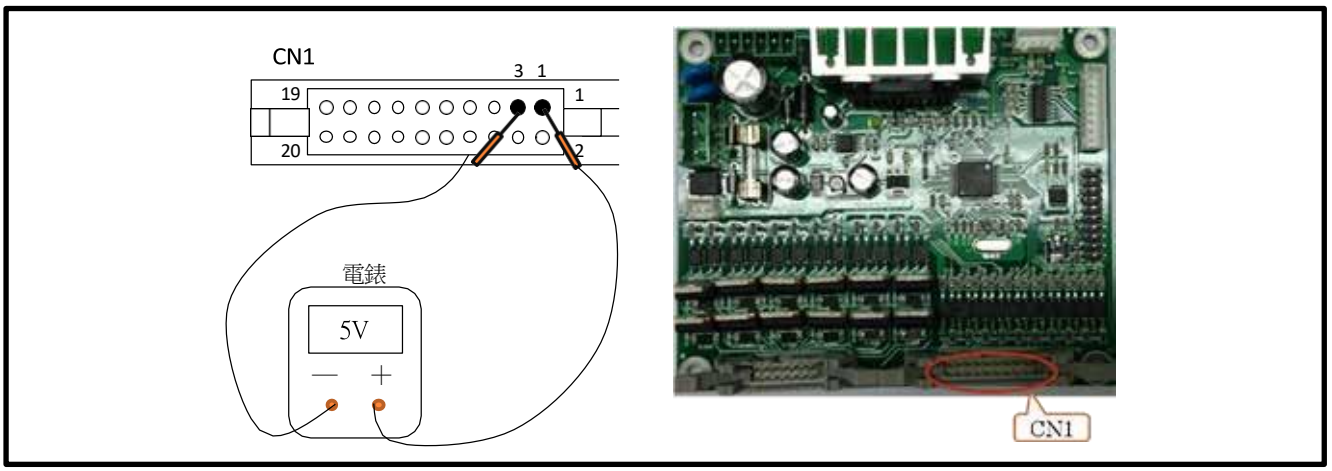
A. No Power
Step 1. Check whether the plug is inserting completely?
Step 2. Check the power case is switch on properly? Step 3. Check the control panel.
a. Check the control panel LED is light up?
b. The electricity meters test CN6 should be DC24V?
c. Check F1 (3.15A FUES) is burn out or not



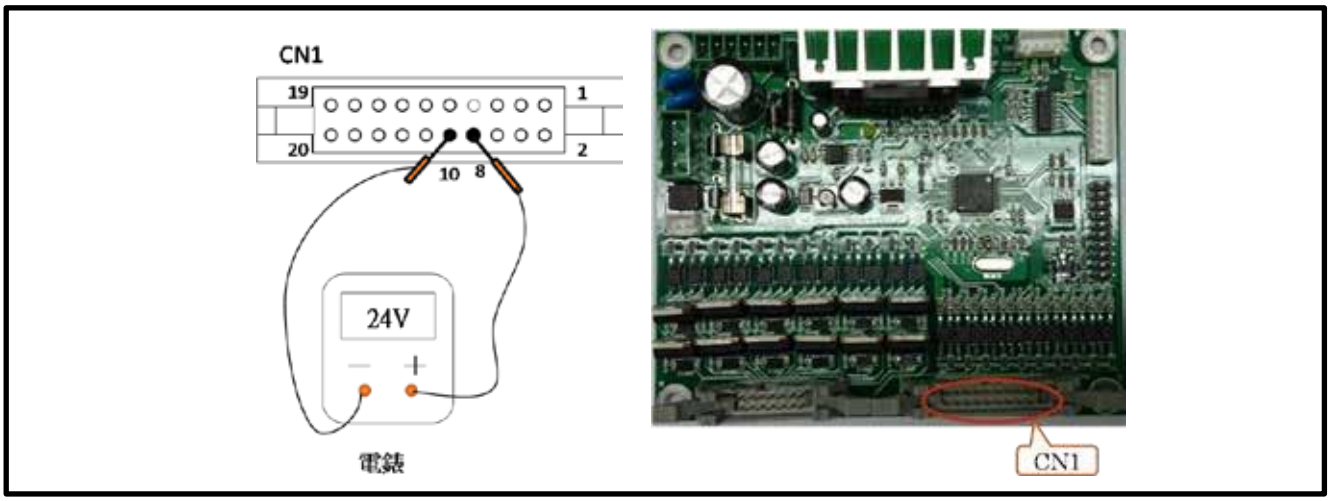
d. Use the electricity meters to check C7 and C23 both capacitance voltage is 5V or not?



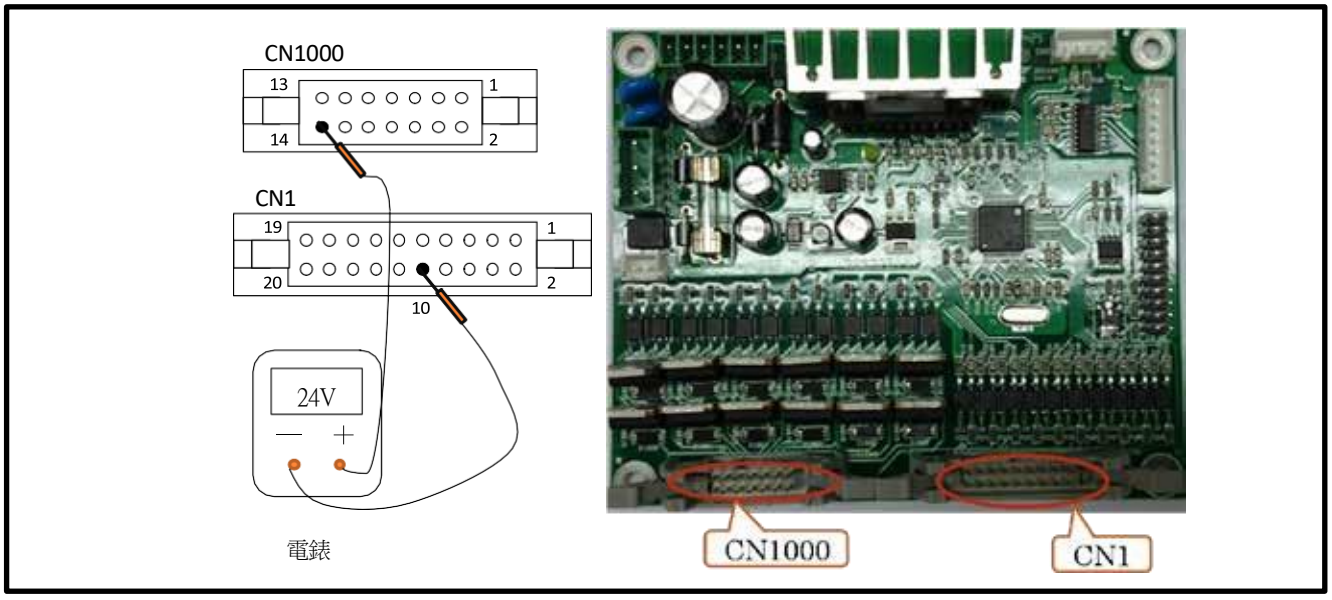
e.Use the electricity meters to check the PIN 1 (5V) in CN1 to the PIN9 (GND) in CN1 is 5V or not?



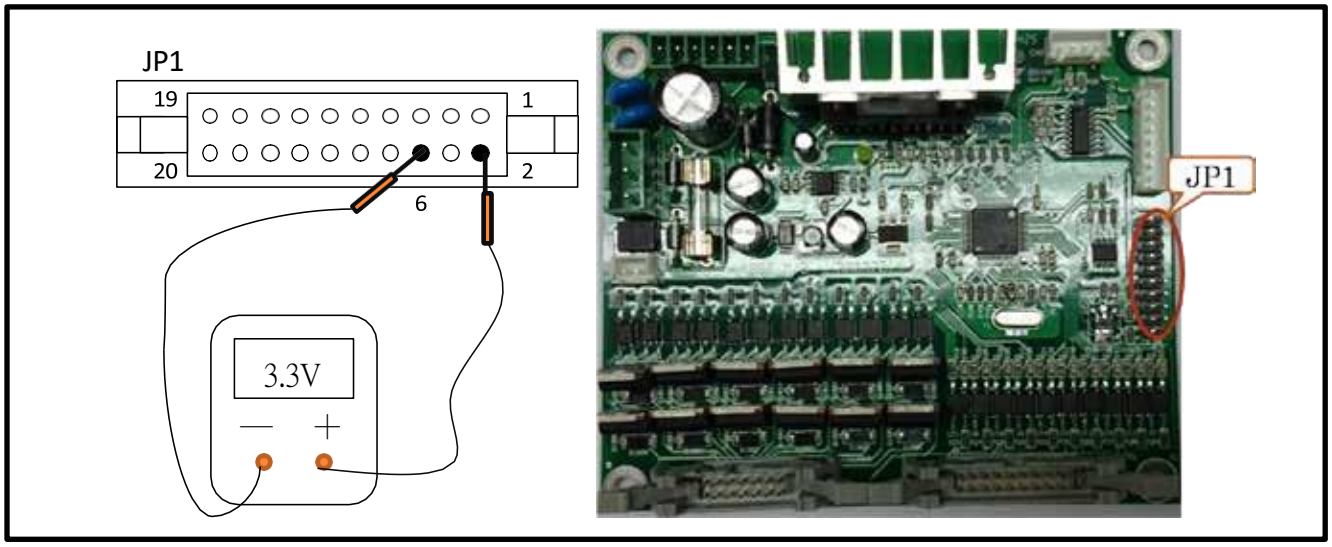
f.Use the electricity meters to check the PIN 8 (24V) in CN1 to the PIN10 (GND) in CN1 is 24V or not?



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



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?



i. Stepping motor running abnormal.
Check the U27 (SLA7073MRT) IC outer plastic part is damage or not?



TROUBLESHOOTING

Problem	Reason	Solution
1. Thread slips off when or the machine starts sewing on the halfway.	• 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.	• 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. Needle broken	• Needle touches the hole of button. • The guide touches the cloth presser foot. • The needle is too thin.	• 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 another suitable needle.
3. The back of sewing is neatly.	• The waste of upper thread is too long. • The lever is to tight. • Sewing becomes a mess when the bottom of button is round.	• Strengthen the first thread tension. • Adjust the rising time of the second thread tension. • Decrease the wiper spring tension.
4. The quality of button stitch is not good.	• 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.	• Correct the clamp. • Adjust the spring of the clamp, strengthen it. Adjust the spring of the clamp, decrease the strength.

DEMOLITION PROCEDURE

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 components 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.

SEWING PROCEDURE CHART

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

*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.



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.JAN.2019