

CEDAR *Special*

CS-988

AUTOMATIC BUTTON FEEDER MANUAL BOOK



www.collierequipment.com

Collier Equipment
100 Mill Creek Circle/Po Box 175
Lexington, Alabama 35648 USA
Phone: (256)229-6595 Fax: (256)229-6779

I. Overview

Automatic button feeding device is composed of feeding identification mechanism, pneumatic button transmission mechanism, button rotating and falling mechanism, thickness measuring mechanism, gate adjusting mechanism, mechanical arm button feeding device, thread loosening mechanism, as well as mechanical, electrical and gas part and control mechanism. It can be compatible with different brands and models of button sewing machine, featuring quick button feeding speed, high button feeding stability, small failure rate, significant reduction of labor intensity, improvement of production efficiency, simple operation, etc.

II. Technical Parameters

No.	Parameter contents	Standard range	Remarks
1	Power supply voltage	110/220V	
2	Rated power	80W	
3	Package size	580×630×500MM	
4	Weight	40KG	
5	Rated button sewing speed	40-50pcs/min	
6	Continuous button feeding speed	60-65pcs/min	
7	Button feeding stability	99.7%	
8	Button diameter	9-28mm	
9	Suggested air pressure	0.3-0.35Mpa	

III. Safety Warning

1. Before installing and using this equipment, users must carefully read the relevant safety precautions, to ensure personal safety and avoid equipment damage. The company will not bear any responsibility for any personal injury or equipment damage resulting from failure to comply with the operational requirements of this instructions.

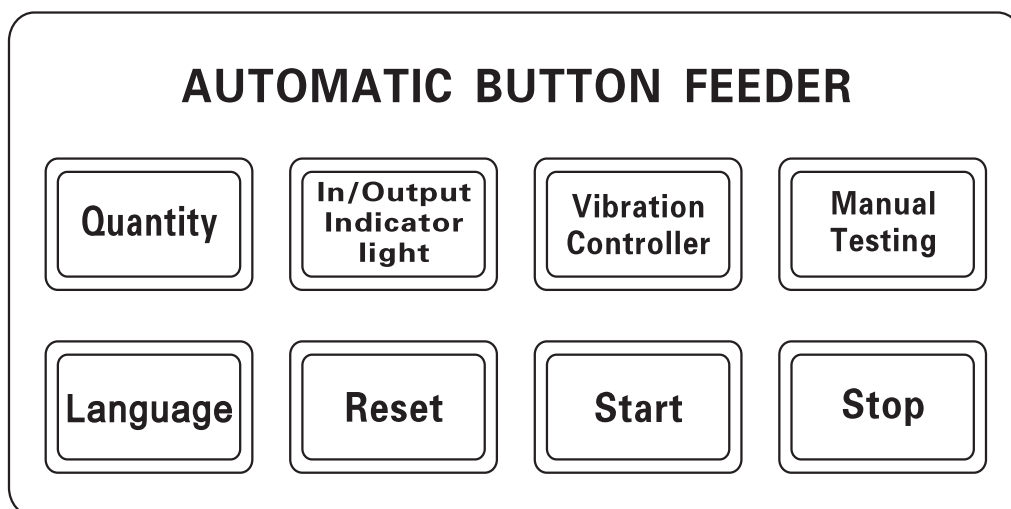
2. Before installation, be ensure the pressing foot working well at the highest area.

3. Before connecting the machine to the power supply, arrange the qualified professional electrician to check the power supply voltage, frequency, power and other parameters are in line with the identifications of machine nameplate. The metal casing of machine must be connected to the case of sewing machine using metal wire and then connected to the special protective grounding wire using grounding wire.

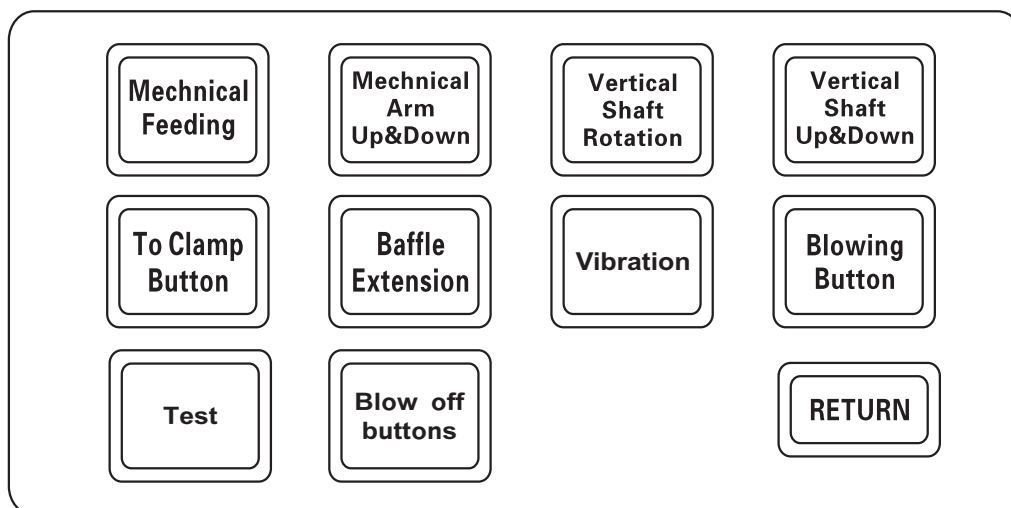
4. During the repair or adjustment of device, cut off the power supply and gas supply to ensure safety.

5. Do not put hands on the moving parts of machine to avoid injury. The total intake source of compressed air should be between 0.35 and 0.4Mpa.

IV. Introduction to Panel Functions



Quantity	“Quantity”: It shows the current quantity; the quantity will be reset after pressing this key.
In/Output Indicator light	“Output/input indicator light”:Display the working indicator lights of all systems by pressing this key.
Vibration Controller	“Button feeding control/Vibration Controller”:Set the time of vibration, gear of vibration and speed of button feeding by pressing this key.
Manual Testing	“Manual testing”:Enter function page by pressing this key, select the function button that you want to test, and make the machine run by pressing this key.
Language	“Language”:Multilingual switch.
Reset	“Resetting”:Pressing this key for resetting when the system is giving an alarm.
Start	“Start”:The machine will start working after pressing this key.
Stop	“Stop”:The machine will stop working after pressing this key.



Mechanical Feeding	“Feeding button by engine arm”: Engine arm will rotate anticlockwise after pressing this key; the engine arm will rotate clockwise after pressing this key again.
Mechanical Arm Up&Down	“Moving up and down of engine arm”: The engine arm will move up after pressing this key; and the engine arm will move down after pressing this key again.
Vertical Shaft Rotation	“Rotation of vertical shaft”: Vertical shaft will rotate after pressing this key.
Vertical Shaft Up&Down	The vertical shaft will move down after pressing this key and the vertical shaft will move up after pressing this key again.
To Clamp Button	Button clamp will be unfolded after pressing this key and the button clamp will be folded after pressing this key again.

Baffle Extension	The damper will stretch out to block the button from moving, and the damper will draw back and button can freely move after pressing this key again.
Vibration	Vibration start after pressing this key.
Blowing Button	Button feeding will be conducted once by blowing gas after pressing this key.
Test	Automatic single step operation after pressing this key.
Blow off Buttons	Blow off the buttons feeding groove after pressing this key.
RETURN	Return to the previous page after pressing this key.

Vibration Delay(S)	Main button	
0	0	
Vibration Speed(0-20)	Vice button	
0	0	
Mechanical arm spd (1-6)	Main & Vice button	
0	OFF	
Size over 20mm	Double trimming	
0	OFF	Return

Vibration Delay	The vibration disk will stop vibration lingeringly when machine stops working. The larger the input digits, the longer the delay. The maximum delay will last for 30s.
Vibration speed	The larger the input digits, the bigger the vibration force when vibration disk is under vibration.
Mechanical arm spd	The larger the value, the faster the mechanical arm speed; The smaller the value, the smaller the mechanical arm speed.
Main/vice button	Set the quantity of main and vice button before button attaching. If one digit is zero, the main and vice button will not be classified. The system default number is 0.
Double trimming	Open the secondary trimming function of button attaching machine if necessary, then press this key to launch the secondary trimming function, at this moment, the button attaching machine will shear line twice and button sender feeds button once. The system is opened by default.
Size over 20mm	When sewing big buttons (button diameter $\geq 20\text{mm}$), only need to open "big button ON" on the screen, and the system parameters will be adjusted automatically. Then, according to the effect of button feeding, if there is flying button, adjust the throttle valve of the arm X6 of the button feeding machine appropriately, the stability of the clip without flying button shall be subject to.

RETURN

Return to the precious page after pressing this key.



J9 pressure regulating valve by gas blowing: When buttons are delivered to button feeding track at the vibrating plate, feed the buttons at the gripper arm through gas blowing, and the recommended air pressure is between 0.3-0.35Mpa.



Thickness Measurement: Pressing this key, lift the pressing plate for measuring thickness, take one button to be used and place it on the plate, and then release this key.



Manually Feeding: Press this key for manually repairing button when there is no button in the gripper.

V. Introduction to Basic Operation

1.Start-up operation:

- 1.Check whether there are tools or foreign objects around the machine.
- 2.Connect to the gas source, adjust the pressure and ensure the value of pressure gauge is between 0.3-0.35Mpa.
- 3.After turning on the power, the button indicator lights at the panel will become green and function interfaces will be displayed on the touch screen.
- 4.After pressing the resetting key, the machine will be restored to the original state, namely standby state.
- 5.After pressing the preparation key of sewing machine, the presser foot will be lifted, and the operation screen will become green and the machine will enter standby state.

2.Original state:(standby state)

NO.	Name of cylinder	Name of magnetic switch	State	Indicator light of magnetic switch	Remarks
1	Cylinder for making mechanical arm move up and down	X0(J2)	At the up position	It is on	
2	Cylinder for making gripper take button	X1(J1)	Fold	It is on when there is button	Putting on button manually
3	Vice buttons sensor	X3(J7)			
4	Manually feeding button	X4			
5	Home position	X6	Correct degree position	It is off	
6	Correct degree position sensor	X7	Correct degree position	It is on	
7	Thickness measurement button	X10			
8	Needle protection sensor	J28			

3.Button change operation:

- 1.Press the thickness measuring key (as shown in Fig.1), and then take one button to be used and put it below the pressing plate for measuring thickness 、 width and adjusting the blocker automatically.(as shown in Fig.2 3 4).



Fig.1

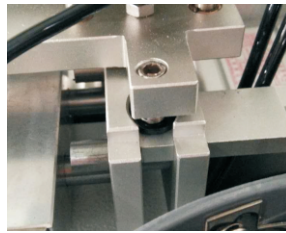


Fig.2

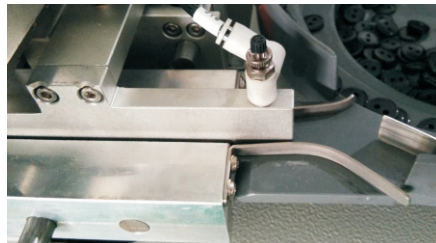


Fig.3

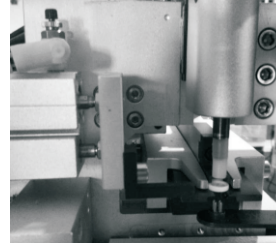


Fig.4

2. When change buttons, in order to feeding buttons correctly, according to the different size of button's diameter to adjusting the J1 sensor position. (as shown in Fig.5)

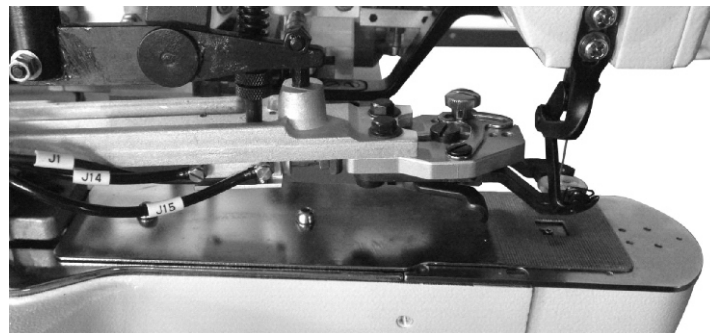


Fig.5

3. Connect to the total intake air supply, adjust the pressure of gas pressure meter to be between 0.35-0.4Mpa. (as shown in Fig.6)



Fig.6

4. After pressing the power switch, the power indicator light will be on (as shown in Fig.7), the touch screen will display function page to adjust the speed of feed tray, so as to continuously feed buttons and make track full of buttons.



Fig.7

5. Lift the presser foot of button sewing machine, press the key “Manually Feeding button” .(as shown in Fig.8)



MANUALLY FEEDING

Fig.8

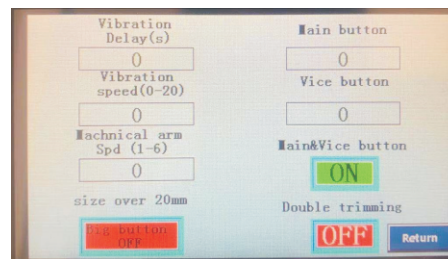


Fig.9

6. Press the key “Manually Feeding button”, check whether the specifications of button gripper base are appropriate, and replace it if the specifications are not appropriate.

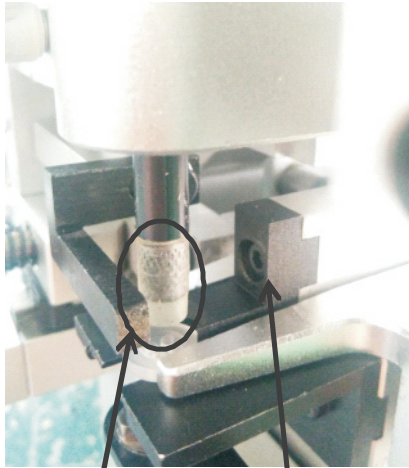
7. Press the key “Manual testing” and then “Stretching out and drawing back of damper”. Stretch out the gate, and adjust the gap between buttons to be 0.2-0.5MM.

8. Main buttons & Vice buttons set : Large number of buttons for Main buttons through to the vibrate plate for feed. Little number of buttons for vice buttons by manual feed Before start, set the main buttons and vice buttons quantity. Vice buttons set “0” means only one type buttons for work.(Fig.9)

9. Sewing big size of button(over 20mm diameter, Fig.9)

When sewing big buttons (button diameter $\geq 20\text{mm}$), only need to open "big button ON" on the screen, and the system parameters will be adjusted automatically. Then, according to the effect of button feeding, if there is flying button, adjust the throttle valve of the arm X6 of the button feeding machine appropriately, the stability of the clip without flying button shall be subject to.

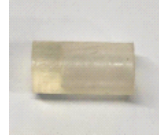
10. Pressing buttons area



Rubber nozzle Front guide block



Front guide block
Fig.(1)



Rubber nozzle
Fig.(2)



Rubber nozzle
Fig.(3)

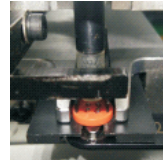


Fig.4



Fig.5

1.Original machine installed (1)Front guide block & (2)Rubber nozzle

2.Accessory packing with (1)Front guide block & (3)Rubber nozzle

3.Important note :

(2)Suitable for buttons size less than 15mm

(3)Suitable for buttons size over than 15mm or convex buttons

4.Suggestion collocation of above, please following the actual situations to change different size of front guide block and rubber nozzle.

In order to press buttons stability and smoothly on the pin plate, plz use correct demensions of the pin plate for buttons when replace the pin plate. (Important note. its the best size for the pin plate if all pins in the middle center position of the button's hole)

5.Loosen J10 throttling valve to increase the cylinder pressure, meanwhile, the pressing button motor will rise at a higher speed, but the tightened cylinder pressure is decreased and pressing button motor rises at a slower pace.Fig4 5

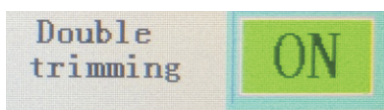
6.Pressure control for the spring: For thin buttons, clockwise rotating the spring ,spring's pressure became bigger. For thick buttons ,anticlockwise rotating the spring, spring's pressure became small. Important note : All based on press buttons smoothly , stability, lower noisy as the standard.(Fig.6)



(6)

11.Press the key “Resetting” to restore the machine to initial state.

4. Support second time thread trimming function:



Support button sewing machine second time and one time thread trimming function

VI. Button Sewing Operations:

Conduct Operations according to the instructions of button sewing machine.

VII. Troubleshooting

1.Buttons do not fall to the proper position

Solution:

- 1.Check the position of magnetic switch
- 2.Check the central position of rotating column and button feeding needle plate
- 3.Check the position of gate
- 4.Check whether the 24V input terminal of PLC is normal
- 5.Check 24V power supply

2. Do not feed buttons:

Solution:

- 1.Check the position of photoelectric switch X6 for automatically feeding buttons
- 2.Check the position of magnetic switch X0 for lifting engine arm
- 3.Check the position of magnetic at origin
- 4.Check motherboard-related input terminal
- 5.Check 24V power supply

3. Vibrator does not work

Solution:

- 1.Check whether the vibration output power supply has voltage
- 2.Check 485 communication

Button sewing machine(JUKI type):1900 and 1903 series**Proper position for installation of sensor fixing support**

Fig.1 Before the button feeder machine sensor is installed



Fig.2 After the button feeder machine sensor is installed

Installation method: Take the white fastener out of the machine (Fig.1), Adjust the trimming rod to the lowest level. Then install the button feeder's sensor on to the screws. Adjusting to make the distance between sensor and connector is 0.5mm(Fig.2).

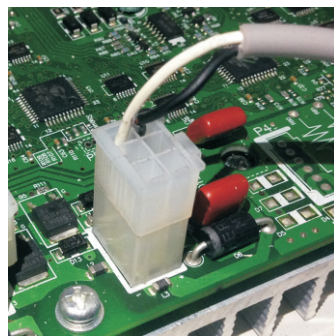
Button sewing machine brother type/438D series 438FX series

Fig.3 Electromagnet connector position(438D)

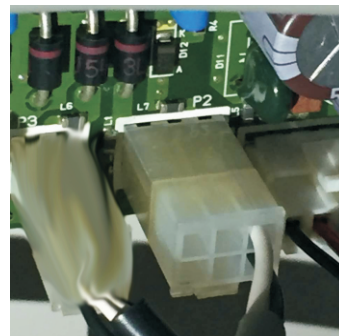


Fig.4 Electromagnet connector position(438FX)

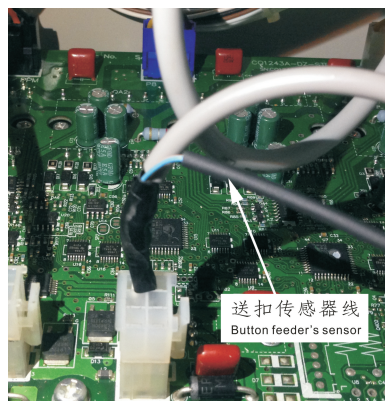


Fig.5 After the sensor is installed(438D/438FX)

Installation method: Before installation, pill out the electromagnet sensor wires, connect together with the automatic button feeder's sensor, then connect on the PCB.(Fig.3 4 5)

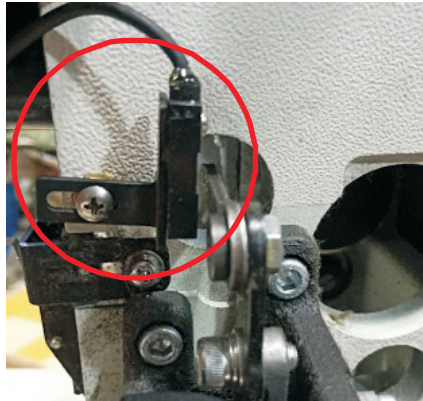
Brother products: 438HS Series**Installation Position of Sensor Fixing Support**

Fig.6 Installation Position of Button Sender Sensor

Installation method: The red circle with the corresponding position of the first punch ,bottom out the trimming connecting rod, install button attaching machine sensor in screw hole, adjust the sensor and connecting rod until the spacing is 0.5mm (sensor light is on), as shown in Fig. (6). Notes: Don't touch sensor for fear of any damage.

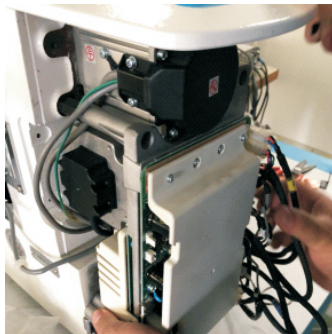
JACK (JACK) all-in-one machine**Installation Position of Induction Fixing Support**

Fig. (7) Before Installation

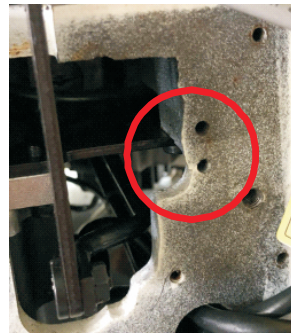


Fig. (8) Before Installation

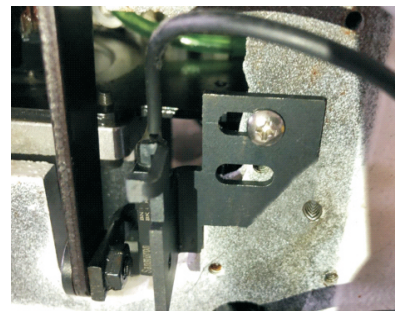


Fig. (9) After Button Sender Sensor Installation

Installation method: Pull down the back of the nail catcher machine shell Fig(7),then Electric control tear down Fig(8), bottom out the trimming connecting rod, install button attaching machine sensor in screw hole, adjust the sensor and connecting rod until the spacing is 0.5mm (sensor light is on), as shown in Fig. (9). Notes: Don't touch sensor for fear of any damage.

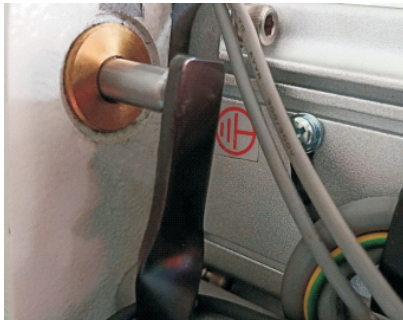
ZOJE all-in-one machine**Installation Position of Induction Fixing Support**

Fig. (10) Before Installation

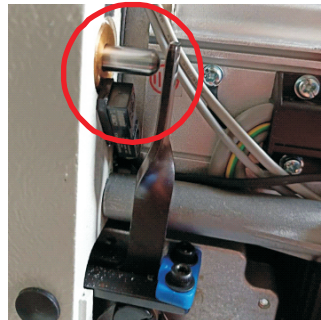


Fig. (11) After the Sensor Installation



Fig. (12) After the Sensor Installation

Installation method: Dismantle the shell behind button attaching machine (Fig. 10), fix the sensor on button attaching machine until sensor light is on (Fig. 11) and sensor is not touched by trimming iron (Fig. 12).

JACK and ZOJE split machine**Installation Position of Induction Fixing Support**

Fig. (13) Before Installation



Fig. (14) After the Sensor Installation

Installation method: Behind the nailcatcher machine shell down first (Fig. 13), bottom out the trimming connecting rod, install button attaching machine sensor in screw hole, adjust the sensor and connecting rod until the spacing is 0.5mm (sensor light is on), as shown in Fig. (14).
Notes: Don't touch sensor for fear of any damage.

Position for install the sensor(373D)

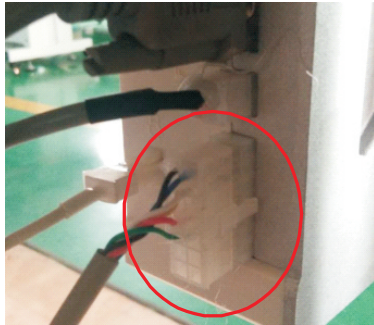


Fig.15 Before the 373D sensor is installed

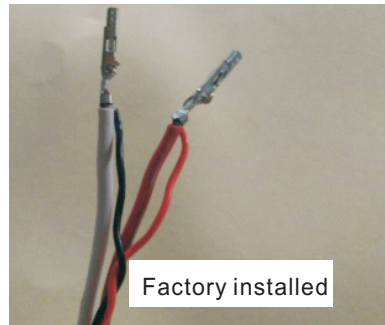


Fig.16

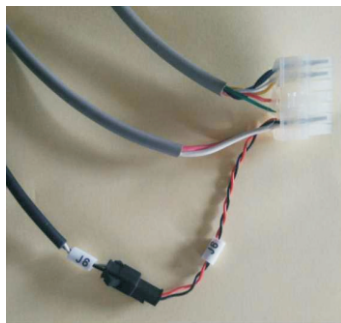


Fig.17 After the 373D sensor is installed

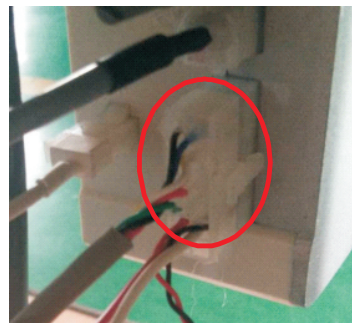


Fig.18 After the 373D sensor is installed

Installation method: Installation method: Before installing, find out the trimming electromagnet of the button attaching machine Fig. 15, then push the wire aside, connect the button feeding sensor of the feeder with the wiper signal cable, then insert jack. See Fig. (17)(18).

Installation position of J28 broken needle protection sensor (protect button attaching machine)

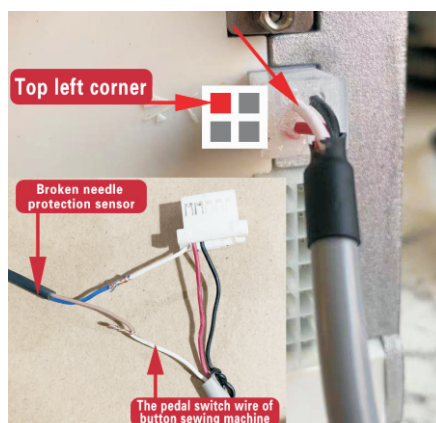


Fig.19

Installation method(373D):

Connect J28 broken needle protection sensor to the pedal switch wire of button attaching machine, cut the pedal switch line in the upper left corner and link up another end with corresponding wire of J28 sensor. Wrap the insulating tape around it (Fig.19).

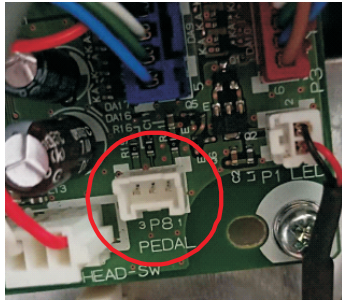


Fig.(20) 438HS Electromagnet Socket Position

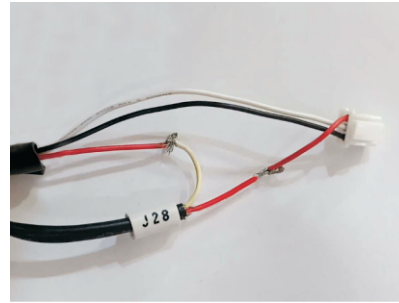


Fig. (21) Installation Position of J28 Broken Needle Protection Sensor (Protect the Button Attaching Machine)

Installation method: Find out pedal switch (Fig. 7) (P8 position) socket of button attaching machine (For Brother style) before installation, pull out the pedal switch wire from socket, shear a red wire, connect one end with J28 sensor wire and link up the other end with another J28 sensor (Fig. 8), wrap the insulated tape and insert the pedal switch in P8.

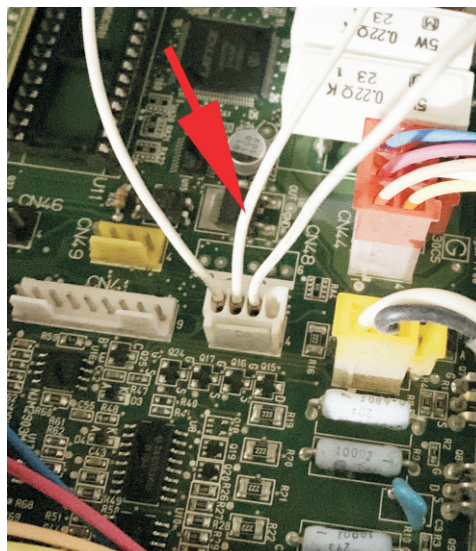


Fig.22

Installation method(Old style of JUKI):

Connect J28 broken needle protection sensor to the pedal switch wire of button attaching machine, shear off the white line in the middle of pedal switch, connect one end with that of J28 sensor and link up another end with corresponding wire of J28 sensor. Wrap the insulating tape around it. (Fig.22)

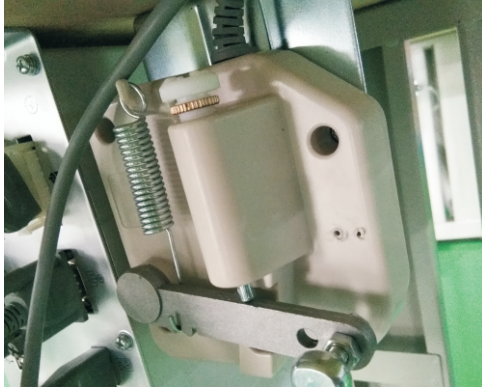
Proper position for installation of Vice button feeder sensor

Fig.23 Before the sensor is installed

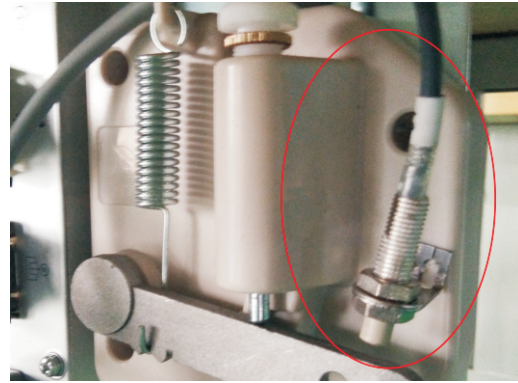
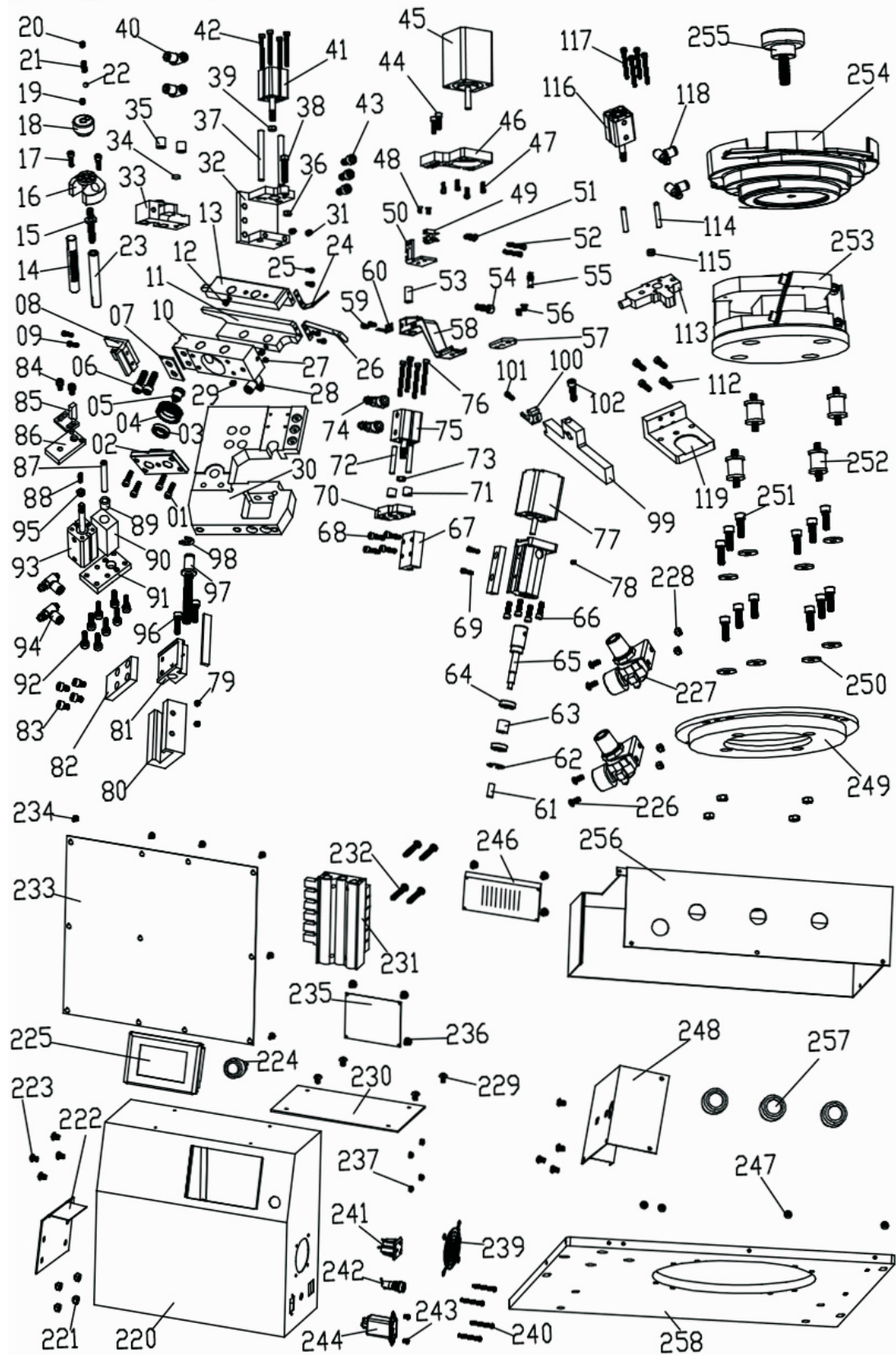


Fig.24 After the sensor is installed

Installation method: First install the sensor fixing rack, then install needle protection sensor. Stepped on the pedal at the backward, move the sensor to make the lamp go out. tighten the screw. Fig.(23) (24)

Parts Drawing



Parts drawing

No.	Name	No.	Name
01	Hexagon socket screw M4×15	41	Air cylinder 25×10
02	Fixing plate	42	Hexagon socket screw M3×35
03	Bearing 19×10×5	43	Hexagon socket screw M6×12
04	Gear	44	Hexagon socket screw M4×15
05	Pillar screw	45	Motor
06	Hexagon socket screw M6×20	46	Motor base
07	Tilting pad	47	Hexagon socket screw M3×8
08	Button tray	48	Flat-head screw M3×6
09	Hexagon socket screw M3×10	49	Photoelectric sensor
10	Button guiding bar(B)	50	Sensor base
11	Button side guiding bar(2)B	51	Hexagon socket screw M3×10
12	Fixing screw M5×5	52	Hexagon socket screw M3×20
13	Button side guiding bar(1)A	53	Motor shaft sleeve
14	Guide gear rack(2)	54	Hexagon socket screw M5×16
15	Adjustment lead screw	55	Button gripper
16	Adjustment base	56	Flat-head screw M4×6
17	Hexagon socket screw M4×15	57	Button gripper base
18	Adjustment handle	58	Gripper arm
19	Fixing screw M5×5	59	Hexagon socket screw M3×5
20	Fixing screw M5×5	60	Photoelectric spacer
21	Spring	61	Rubber nozzle
22	Steel ball	62	Hole closing ring 17
23	Guide gear rack(1)	63	Spacer bush
24	Guide vane(1)	64	Bearing 17×7×5
25	Hexagon socket screw M2.5×6	65	Pressing shaft
26	Guide vane(2)	66	Hexagon socket screw M4×15
27	Fixing screw M4×5	67	Sliding track
28	Three-way connector	68	Hexagon socket screw M4×15
29	Fixing screw M4×5	69	Hexagon socket screw M3×10
30	Frame plate	70	Lifting block
31	Fixing screw M5×5	71	Coppe bush
32	Guide post base	72	Guide pillar
33	Slider	73	M5 nut
34	Rubber gasket	74	Air connector
35	Copper bushing	75	Air cylinder 25×10
36	M5 nut	76	Hexagon socket screw M3×35
37	Guide pillar	77	Motor(35)
38	Screw M5×30	78	Fixing screw M4×5
39	M5 nut	79	Fixing screw M4×5
40	Air pipe joint	80	Sliding block base

Parts drawing

No.	Name	No.	Name
81	Sliding block	230	Top plate
82	Air cylinder fixing plate(2)	231	Valve assembly
83	Hexagon socket screw M5×8	232	Philip's head screw M4×35
84	Hexagon socket screw M4×10	233	Back cover plate
85	Check block	234	Self-tapping screw M4
86	Guide plate	235	Electronic motherboard
87	Guide pillar	236	Philip's head screw M4×6
88	Hexagon socket screw M3×10	237	Nut M4
89	Copper bush	239	Mesh enclosure
90	Guide rod base	240	Philip's head screw M4×35
91	Vertical plate	241	Power socket
92	Hexagon socket screw M4×20	242	Fuse
93	Air cylinder 25×20	243	Philip's head screw M4×6
94	Air connector	244	Host socket
95	Nut M5	246	Encoder
96	Hexagon socket screw M5×20	247	Philip's head screw M4×6
97	Screw	248	Side plate
98	Split washer 10×1	249	Vibration base
108	Button depression bar	250	Gasket
109	Front guide block	251	Hexagon socket screw M6×20
110	Hexagon socket screw M3×10	252	Shock pad
111	Hexagon socket screw M5×20	253	Vibration base
112	Hexagon socket screw M4×15	254	Button plate
113	Location-limited plate	255	With plastic bolt
114	Guide pillar	256	Main cover
115	Nut M5	257	Button
116	Aircylinder 25×10	258	Baseplate
117	Hexagon socket screw M3×35		
118	Air connector		
119	Location-limited base		
220	Electric cabinet		
221	Nut M4		
222	Outer cover		
223	Philip's head screw M4×6		
224	Start button		
225	Control panel		
226	Philip's head screw M4×10		
227	Pressure gauge		
228	Nut M4		
229	Philip's head screw M4×6		

CEDAR *Special*

www.collierequipment.com

**Collier Equipment
100 Mill Creek Circle/Po Box 175
Lexington, Alabama 35648 USA
Phone: (256)229-6595 Fax: (256)229-6779**