



## TECHNICAL MANUAL

Attachment for Electronic Pattern Sewing Machine

Label Holder Unit

Model MP-G10-AH

# FOR YOUR SAFETY !

If you operate the sewing machine first time, please make sure to read the following instructions for your safety and proper operation.

In this technical manual, the notice **CAUTION** is mentioned at some paragraph to attract your attention for the safety. Please keep it in mind whenever you work with the sewing machine.



**CAUTION** is used as the notice to warn a possible danger to cause a wound.

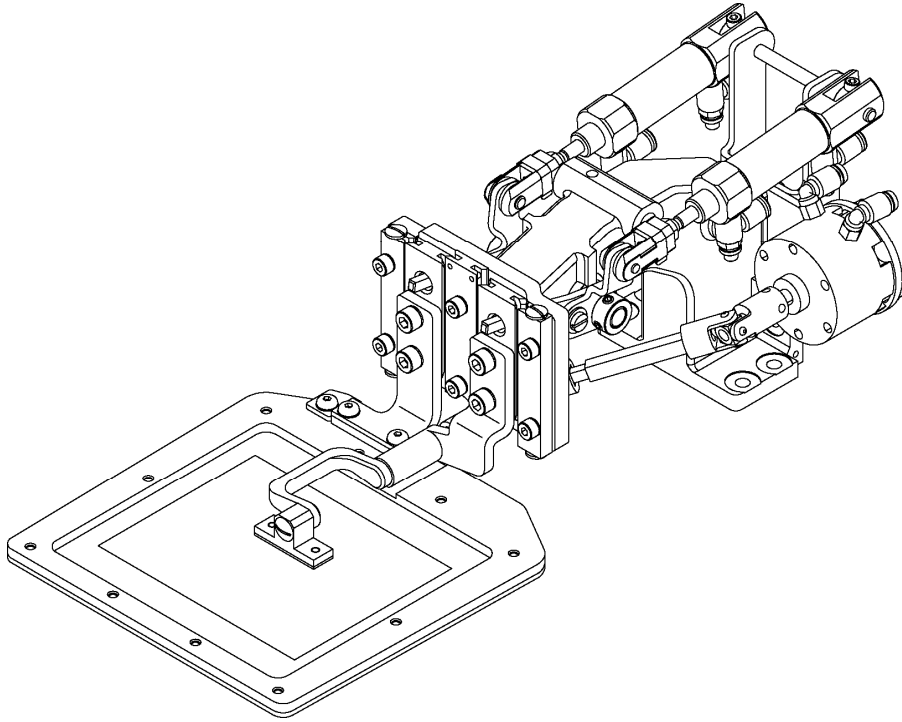
- ★ This technical manual explains the instructions how to operate and maintain the sewing machine.
- ★ All information in this technical manual are subject to change without notice.
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## Explanations for the warning signs

No	Warning sign	Meanings of warning sign
1		<p>Caution for sewing machine operation: Warning to operate the sewing machine without safety guards and to prohibit doing any operation except sewing while the power is turned ON.</p> <p>&lt; Interpretation of sign &gt;</p> <ul style="list-style-type: none"> <li>• Do not operate without finger guard, eye guard, belt cover and other safety devices.</li> <li>• Before threading, changing needle and bobbin, clearing, oiling etc. switch off main switch.</li> </ul>
2		<p>Caution for a wound on the fingers: Warning to a possible danger to cause a wound on the fingers under the specified operation.</p>
3		<p>Caution for the fingers to be caught in the machine: Warning to a possible danger to be caught the fingers in the machine under the specified operation.</p>

## 1. Features

The pneumatic type label holder unit is an attachment dedicated for sewing on labels. The entire periphery of the label can be sewn on while pressing down on the inside of the label. Superimposed stitching or backstitching can be done at the start and end of stitching.



## 2. Specifications

Name	: MP-G10-AH (pneumatic type label holder unit)	
Applicable model:	: PLK-G1010	
Stitching range	: 100(X) mm × 80(Y) mm	
Maximum speed	: 2,300 rpm	
Clamp UP position	: 20 mm	
Pressing operation	: Use foot switch (2-pedal) normally provided with the electronic sewing machine and the expansion foot switch (1-pedal)	
Drive source air pressure	Primary side	: 0.5MPa (5kg/cm <sup>2</sup> ) or more
	Secondary side:	: 0.4MPa (4kg/cm <sup>2</sup> )



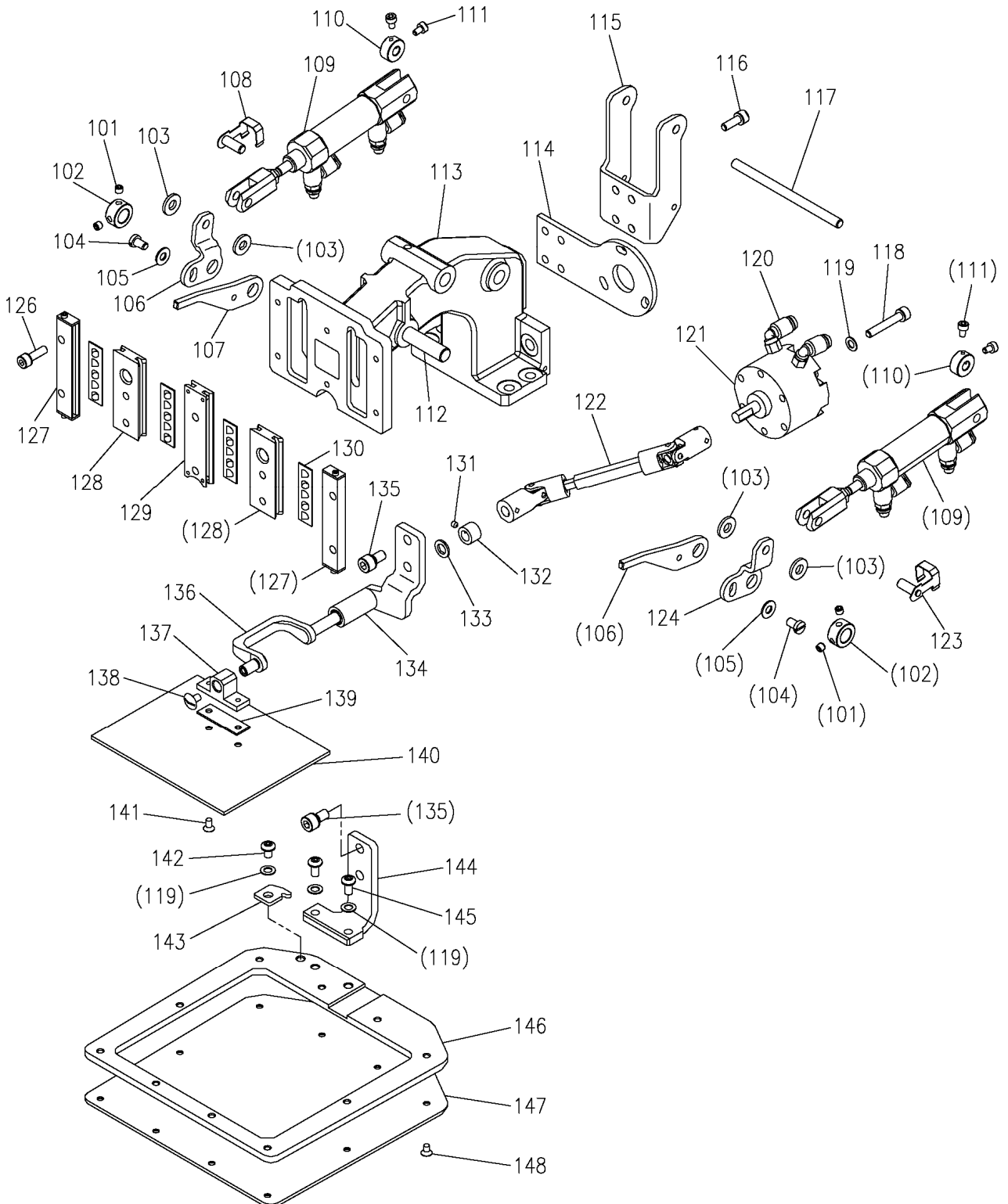
### CAUTION

Trouble such as operation errors could occur if the secondary pressure is set too high. Use within the range of 0.4MPa (4kg/cm<sup>2</sup>).

### 3. Configuration

★ The Fig. numbers in the drawing correspond to the part numbers given in the following explanations.

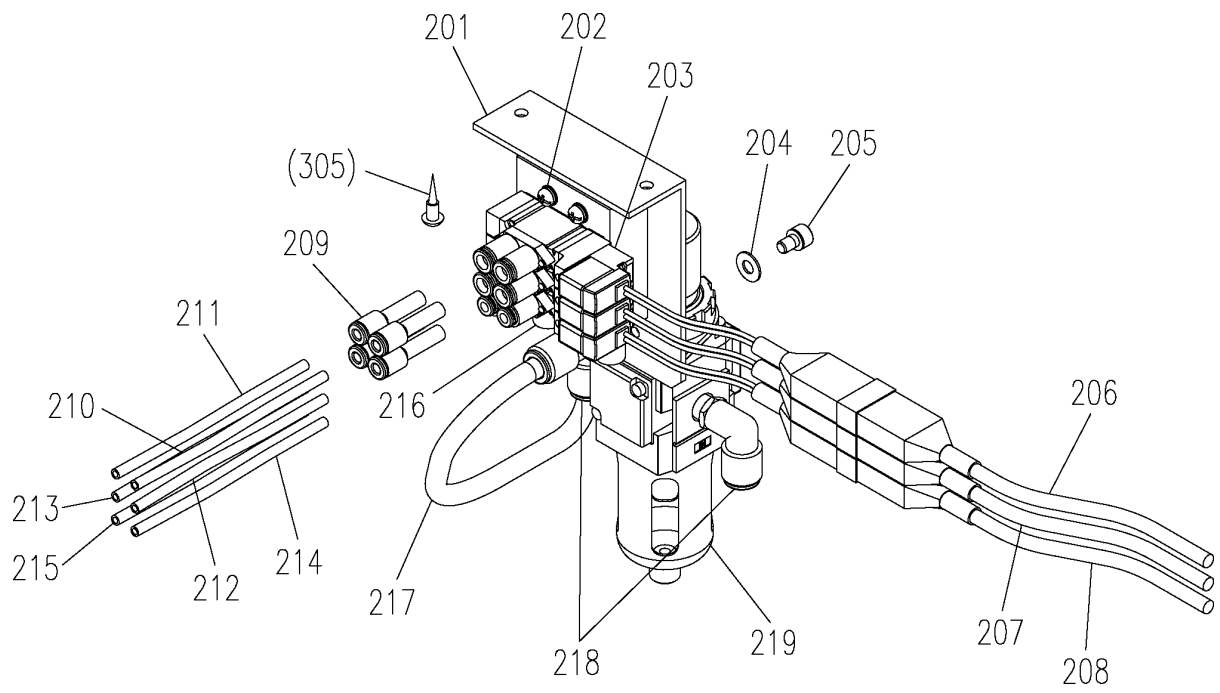
#### 3.1 Clamp mechanism



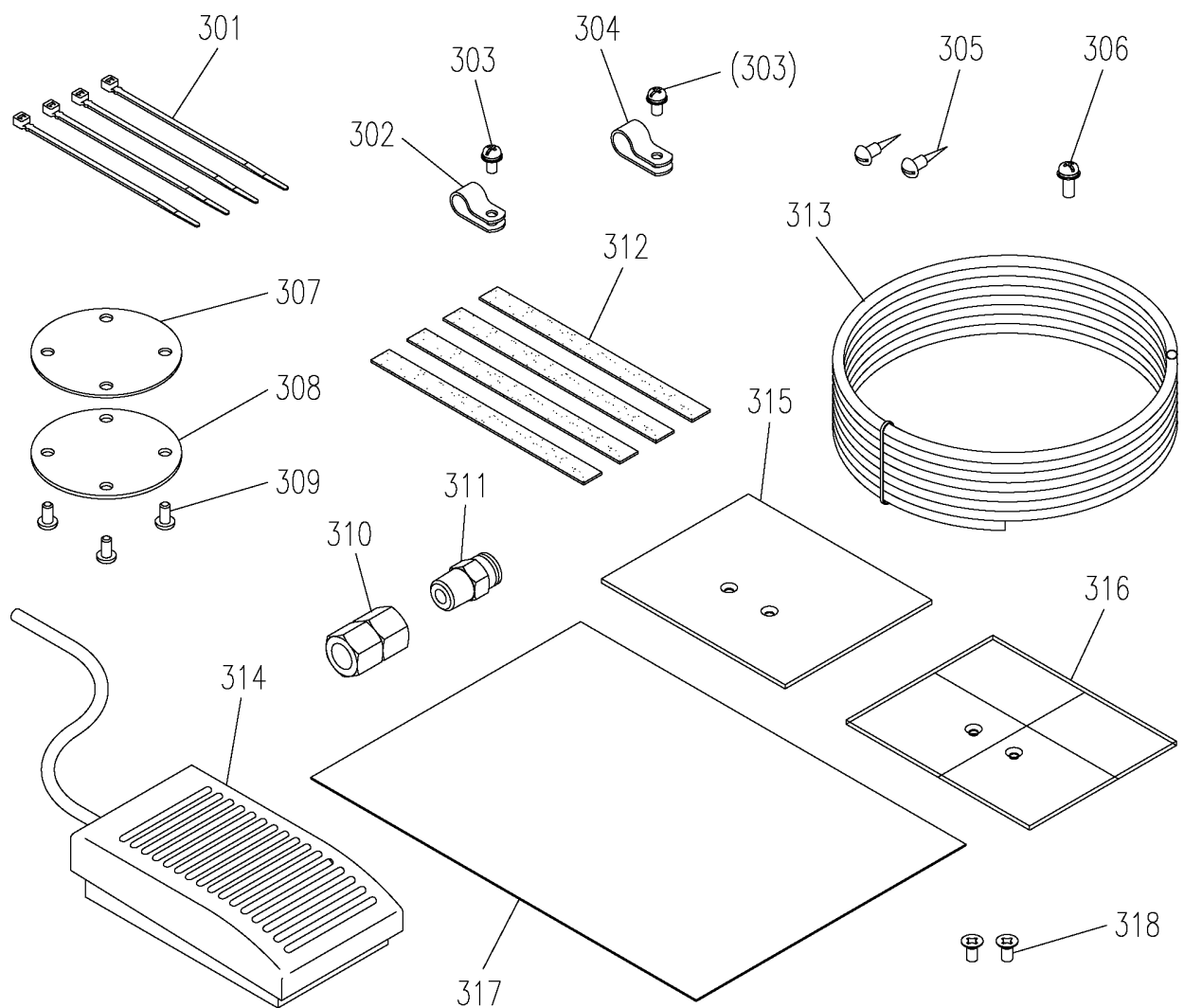
### 3.1 Clamp mechanism (Parts list)

Fig No.	部品コード Parts No.	品名	Description	数量 Amt. Req.
101	M91055020	ロッカアナツキメネジ M4X4	Screw M4X4	4
102	MH10A0352	カラー	Collar	2
103	M90519050	ナイロンワッシャ	Nylon washer	4
104	M91109002	ヒラネジ	Screw 11/64(40)X7	2
105	M90421050	ワッシャ 4	Washer 4	2
106	MH10K0950	レバー(S2L)	Lever (S2L)	1
107	MH10K1950	レバー(S1)	Lever (S1)	2
108	M90538060	ナックルピン(L)	Knuckle pin (L)	1
109	ME10P0434	エアシリンダ	Air cylinder	2
110	ME10P0352	カラー	Collar	2
111	M93004021	ロッカアナツキボルト M3X5	Socket bolt M3X5	4
112	M90822060	ピン	Pin	1
113	MH10A0308	オサエタイ	Work holder arm	1
114	ME10H1601	アクチュエータトリツケイタ	Actuator plate	1
115	MH10H0601	シリンダトリツケイタ	Cylinder bracket	1
116	M94007017	セフティソケット M4X12	Safety socket bolt M4X12	4
117	M90555060	ピン	Pin	1
118	M94025017	セフティソケット M4X25	Safety socket bolt M4X25	3
119	M90422050	ワッシャ 4	Washer 4	6
120	MB61A1571	エルボユニオン	Air fitting	2
121	ME10H0170	ロータリアクチュエータ	Rotary actuator	1
122	MY08H0571	ユニバーサルジョイント	Universal joint	1
123	M90548060	ナックルピン(R)	Knuckle pin (R)	1
124	ME10K2950	レバー(S2R)	Lever (S2R)	1
126	M94019017	セフティソケット M4X14	Safety socket bolt M4X14	6
127	MH10A6957	オサエコイレース	Fixed race	2
128	MH10A3957	オサエイトウレース	Movable race	2
129	MH10H0957	オサエコイレース	Fixed race	1
130	M94008070	ローラリテーナ	Roller retainer	4
131	M93003020	ロッカアナツキメネジ M3X3	Screw M3X3	1
132	MS03A0352	カラー	Collar	1
133	M90635017	ワッシャ	Washer	1
134	MH10H0697	ハンテンスクタイ	Flip-flop shaft bracket	1
135	M95005017	セフティソケット M5X10	Safety socket bolt M5X10	4
136	ME10H0454	ハンテンスク	Flip-flop shaft	1
137	MS02A1308	ナカオサエタイ	Label plate mounting block	1
138	M90904012	マルネジ 9/64(40)X6.2	Screw 9/64(40)X6.2	1
139	ME10H0476	スペーサ	Spacer	1
140	ME10H0257	ラベルオサエ	Label holder plate	1
141	M90858004	P サラネジ M3X6	Screw M3X6	2
142	M94041021	ロッカアナツキボルト M4X6	Bolt M4X6	1
143	MH10A0196	イチキメイタ	Guide plate	1
144	MH10H0308	オサエトリツケイタ	Clamp foot	1
145	M94005022	ロッカアナツキボルト M4X8	Bolt M4X8	2
146	MH10H0105	オサエ	Clamp frame	1
147	MH10H0257	ソトオサエイタ	Work holder plate	1
148	M91303010	P サラネジ M3X5	Screw M3X5	10

### 3.2 Pneumatic pressure control unit



### 3.3 Accessories



### 3.2 Pneumatic pressure control unit (Parts list)

Fig No.	部品コード Parts No.	品名	Description	数量 Amt. Req.
201	MH25A1601	レギュレー外リツケイタ	Valve mounting plate	1
202	M91066004	SW-PWツキPナベネジ M4×25	Screw M4×25	4
203	MB10H0599	テンジベンクミタテ	Solenoid valve assy	1
204	M90511050	サガネ 5	Washer 5	2
205	M95003017	セフティソケット M5×8	Bolt M5×8	2
206	MB10B0508	セツゾクテンセンクミタテ	Cable assy	1
207	MH10K0508	セツゾクテンセンクミタテ	Cable assy	1
208	MH10H0508	セツゾクテンセンクミタテ	Cable assy	1
209	MA30A0964	レジューサ	Reducer	4
210	MB10K0567	エアチューブクミタテ(A)	Air tube assy (A)	1
211	MB10K1567	エアチューブクミタテ(B)	Air tube assy (B)	1
212	MB10K2567	エアチューブクミタテ(C)	Air tube assy (C)	1
213	MB10K3567	エアチューブクミタテ(D)	Air tube assy (D)	1
214	MB10H4567	エアチューブクミタテ(E)	Air tube assy (E)	1
215	MB10H5567	エアチューブクミタテ(F)	Air tube assy (F)	1
216	M91035089	サイレンサ	Muffler	2
217	MB20P1567	エアチューブ	Air tube	1
218	MA20A8571	Lガタワソクツキテ	L-type quick joint	3
219	ME40A0963	フィルタレギュレータ	Filter regulator	1

### 3.3 Accessories (Parts list)

Fig No.	部品コード Parts No.	品名	Description	数量 Amt. Req.
301	MF06A1620	インシュロックタイ	Cord tie	4
302	M91054004	SW-PWツキPナベネジ M4×8	Screw M4×8	2
303	M94007099	ナイロンクリップ 6	Nylon clip 6	1
304	MB60A1620	ナイロンクリップ 8	Nylon clip 8	1
305	M90409041	マルモクネジ 4.5×20	Wood screw 4.5×20	2
306	M90409037	SW-PWツキPナベネジ M4×10	Screw M4×10	1
307	ME10P0691	パッキン	Pad	1
308	MB10X0742	フタ	Cap	1
309	M94005022	ロツカクアナツキホルト M4×8	Bolt M4×8	4
310	M91010089	ロツカクソケット	Socket	1
311	MA30A0571	ワソクツキテ	Quick joint	1
312	MB61A1691	パッキン	Clamp pad	4
313	MS06A0567	エアチューブ	Air tube	1
314	MH10K0FSW	フツスイツチ	Foot switch	1
315	ME10H0257	ラベルオサエ	Label holder plate	1
316	ME10H2257	ラベルオサエ(ブラ)	Label holder plate	1
317	MB25C0469	スベリトメシート	Clamp pad	1
318	M90858004	Pサラネジ M3×6	Screw M3X6	2

## 4. Setup procedures



### CAUTION

Always make sure that the power is OFF before starting setting work.

### 4.1 Installing the clamp drive mechanism

- (1) Remove the four screws on the Y axis movement race side fixing the work holder arm (Fig. No. 113) and the two screws on the axis support side, and remove the magnetic work holder mounted as a standard on the sewing machine.
- (2) Using the screws removed above, install this pneumatic type label holder unit following the above step in reverse. Make sure that the holder is not inclined at this time.
- (3) Remove the drive mechanism sections in the sewing machine head.  
To remove these parts, refer to the part catalog P-246 for the PLK-G1010 sewing machine unit, and remove the parts including Fig. No. H123 Pin C, and Fig. No. H134 clamp plate shown in the catalog. Use the parts Fig. No. 307 and 308 and 309 enclosed with this attachment as a cover.

### 4.2 Installing the pneumatic pressure control related parts

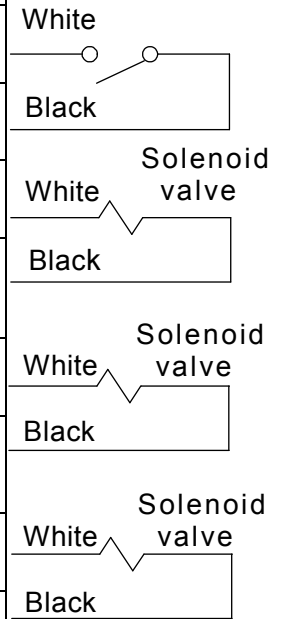
- (1) The regulator and solenoid valve assembly configured in Fig. No. 201 are fixed to the bottom of the sewing machine table with the enclosed Fig. No. 305 wood screws (two screws).
- (2) Align the piping symbols of the Fig. No. 209, 210, 211 and 212 air tubes ( $\phi 4$ ) with ports A to D on the pneumatic type holder unit's Fig. No. 109 air cylinder, and insert the tubes.
- (3) Align the piping symbols of the Fig. No. 213 and 214 air tubes ( $\phi 4$ ) with the ports E and F on the Fig. No. 121 rotary actuator for flip-flop shaft rotation, and insert the tubes.
- (4) Pass the six air tubes through the notched section on the side of the sewing machine unit's motor cover, and lead the tubes to the bottom of the table from the square hole on the table.
- (5) Align the air tubes led out above with the ports A to F of the solenoid valve installed in step (1), and insert the tubes.
- (6) Bind the air tubes appropriately with the enclosed Fig. No. 301 Cord ties.

### 4.3 Connecting the switches and cables

- (1) Remove the cover for the connector panel on the back of the sewing machine.
- (2) Disconnect the cable connected to CON13(FU) on the connector PCB. This cable is not used after this attachment is mounted. Fix it where it will not obstruct the other electric parts.
- (3) Lead out the Fig. No. 206 and 207 and 208 cables and foot switch (1-pedal) cable connected to the solenoid valve from the slot on the back of the sewing machine table, pass through the cord bushing on the connector panel, and lead in to the solenoid PCB side.
- (4) Insert the Fig. No. 206 cable connector to CON13(FU) on the PCB from where the cable was disconnected above.
- (5) For the Fig. No. 207 cable (cable symbol B), connector to CON15 (OP1) on the PCB.
- (6) For the Fig. No. 208 cable (cable symbol C), connector to CON14 (OP2) on the PCB.
- (7) Connect the Fig. No. 314 foot switch (1-pedal) cable to the CON L (12P) on the head of the sewing machine. The green lead wire is the grounding wire. Connect this wire to the sewing machine bed.
- (8) This completes connection of the wiring. Check the connection with the following table, and then securely install the cover removed from the connector panel.



Cable		Signal name	Connection	
Input	Fig.No.314	Work holder input 2 (I8)	Sewing machine head Connector CON L (12P) - ①	White
		0V	Sewing machine head Connector CON L (12P) - ②	Black
Output	Fig.No.206 Cable symbol A	+24V	Sewing machine head connector PCB CON13 (FU)-②	White
		Work holder output 1 (O4)	Sewing machine head connector PCB CON13 (FU)-①	Black
	Fig.No.207 Cable symbol B	+24V	On machine head PCB terminal block CON15 (OP1) - ③	White
		Label holder output 2 (O5)	On machine head PCB terminal block CON15 (OP1) - ①	Black
	Fig.No.208 Cable symbol C	+24V	On machine head PCB terminal block CON14 (OP2) - ③	White
		Flip-flop shaft rotation output 3 (O6)	On machine head PCB terminal block CON14 (OP2) - ①	Black



#### 4.4 Removing the standard parts

When this label holder unit is mounted, the presser foot and wiper drive mechanism mounted on the sewing machine head cannot be used and must be removed.

To remove these parts, refer to the part catalog P-246 for the PLK-G1010 sewing machine unit, and remove the parts including Fig. No. M111 presser foot, Fig. No. M112 needle guard, Fig. No. M113 screw and Fig. No. N124 wiper.

## 4.5 Installing the setting



### CAUTION

If the sewing machine is operated with the magnetic clamp settings, faults could occur.

Always change setting for the pneumatic type clamp.

#### (1) Points changed in setting details

Please change setting as follows.

Mode	Function name	Two stage clamp setting value	Default value	Remarks
Stitching area	ALC	ON	OF	Stitching area limit is canceled
Presser	WHY	ON	OF	Pressing order of priority setting
Presser	FN	2	1	Valid number of clamps setting
Home position	HPM	JE	--	Home position return method when operation is halted
Home position	HPF	ON	OF	Prohibition of automatic home position return operation
Home position	HPS	ON	OF	Presser state setting during home position return at power ON
Stitching speed	HIGH	2,300	2,800	Maximum speed
Input/output setting	O4	66H	33	Set this when changing from the magnetic drive clamp to the pneumatic drive clamp
Input/output setting	O5	66H	33	Set this when changing from the magnetic drive clamp to the pneumatic drive clamp
Input/output setting	O7	FN3	NO	Set of Function code 3
Input/output setting	O7	66H	33	Set this when changing from the magnetic drive clamp to the pneumatic drive clamp

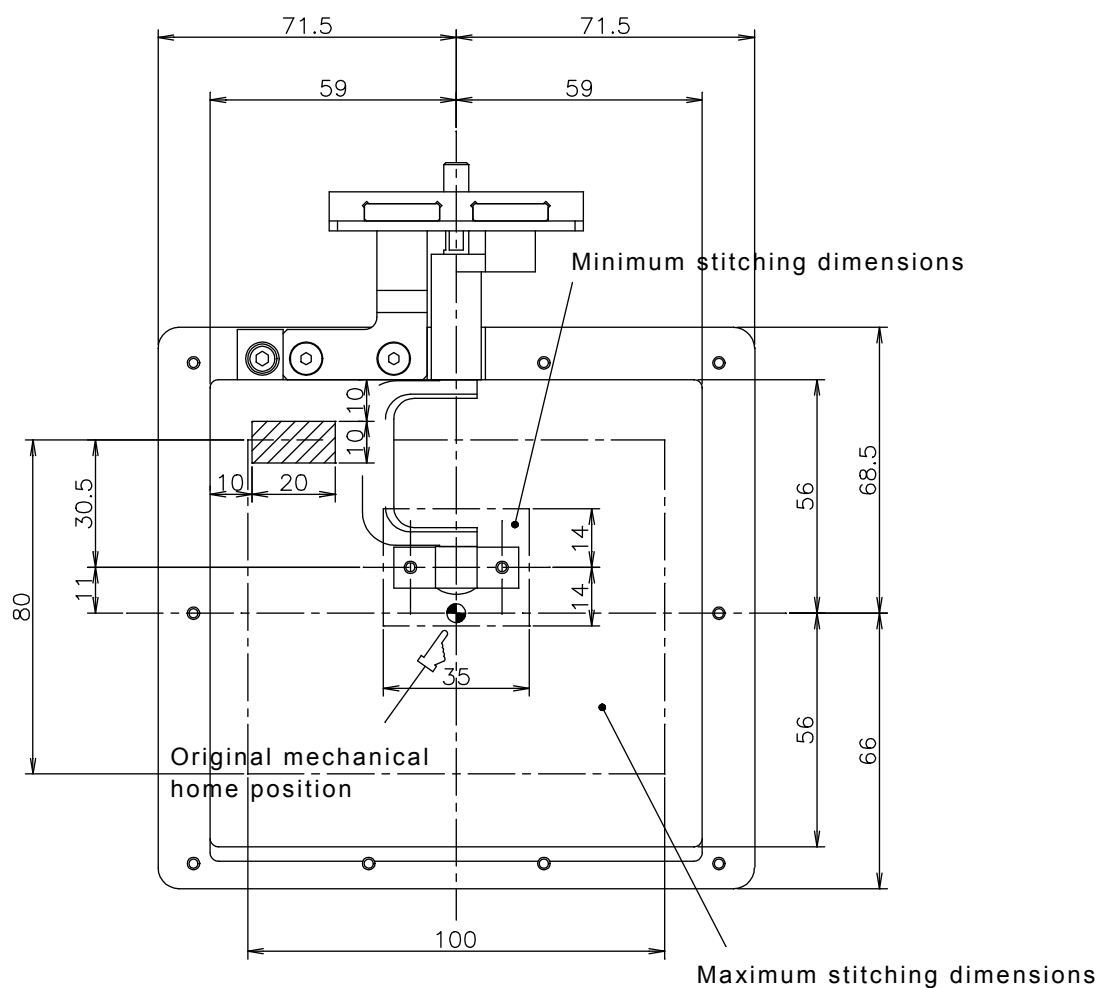
## 5. Home position

### 5.1 Adjusting the home position

If the machine's home position is at the same position even if the label size changes, it will be easier to make a clamp and change it. Thus, change the home position in anticipation of the maximum size.

The relation of the work holder, stitching area and home position is as shown below.


- (1) The optimum range for moving the home position is shown as the shaded section. Note that when considering the label size, the home position should be moved at a position within the shaded area at least 4mm or more away from the label holder plate when the No.142 label holder plate overlaps the shaded area or when it is near this area.
- (2) Refer to the PLK-G1010 Sewing machine head instruction manual (7-21 Adjustment of the X-Y mechanical home position), and adjust the home position.



## 5.2 Return to home position

- (1) Turn the sewing machine power switch ON.
- (2) Confirm that the work holder lowers when the foot switch (2-pedal) [Black] side is turned ON, and rises when the switch is turned ON again.
- (3) Confirm that the label holder lowers when the expanded foot switch (1-pedal) is turned ON, and rises when the switch is turned ON again. The label holder will not move even if the foot switch is depressed unless the work holder is lowered.

(If proper operation is not possible, refer to the Setup Procedures and check the settings and connections.)

- (3) Lower the work holder and label holder, and press  on the operation panel. Return to home position will start.

## 6. Preparing to stitch labels

### 6.1 Stitching conditions

- (1) Stitching size

Label holder (mm)			
A		B	
Max	Min.	Max	Min.
100	35	80	28

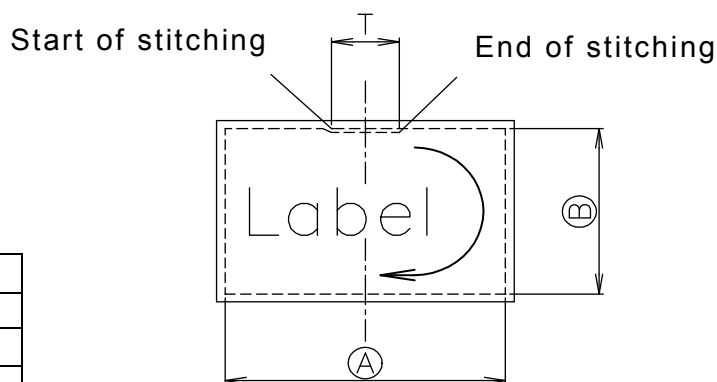


Fig. 1

(Looking from front of sewing machine)

- (2) Stitching material thickness: 4mm or less
- (3) Superimposed stitching length (Fig. 1 T dimension) ... 12mm or less
- (4) Restrictions

Input the stitching data in a clockwise direction (direction of bold arrow in Fig. 1). The entire periphery cannot be stitched when the data is input in the reverse direction (counterclockwise direction).

The presser foot (cylindrical presser) and wiper mechanism cannot be used. Remove these parts.

### 6.2 Preparing the label holder plate

Prepare the label holder plate with the following procedures to match the size of the label to be sewn on.

- (1) Remove the Fig. No. 140 round screw, and remove the Fig. No. 139 label plate mounting block and Fig. No. 142 label holder plate.

- (2) As shown in Fig. 2 on the next page, mark the label holder to indicate the size obtained by subtracting the holder amount  $S$  from the stitching pattern position of the label to be sewn on. (At this time, the holder amount  $S$  is set to the size of the needle or more. If set too large, the stitches may miss the material.)
- (3) Cut the plate along the marked lines using a cutter knife, fret saw or file, etc.

### 6.3 Drilling the work holder plate

A hole to allow the needle to escape at the home position, and holes to store and position the label must be drilled on the work holder. Drill the plate with the following procedures.

- (1) Install the parts removed when preparing the label holder plate at their original positions.
- (2) Install the Fig. No. 149 work holder plate to the bottom of the Fig. No. 148 clamp frame using the Fig. No. 150 pan-head screw.
- (3) Depress the [Black] side of the 2-pedal foot switch, and lower the work holder.
- (4) After placing a label under the label holder plate, depress the 1-pedal foot switch, and lower the label holder. Check that the label is pressed at the correct position.
- (5) Make marks at the moved home position and at the four corners of the label.
- (6) Raise the label holder and work holder, and remove the work holder plate.
- (7) As shown in Fig. 2, mark an escape hole for a  $\phi 10$  or more needle at the home position, and mark lines connecting the four corners of label.
- (8) Cut out the plate along the marked lines using a cutter knife, fret saw or file, etc.

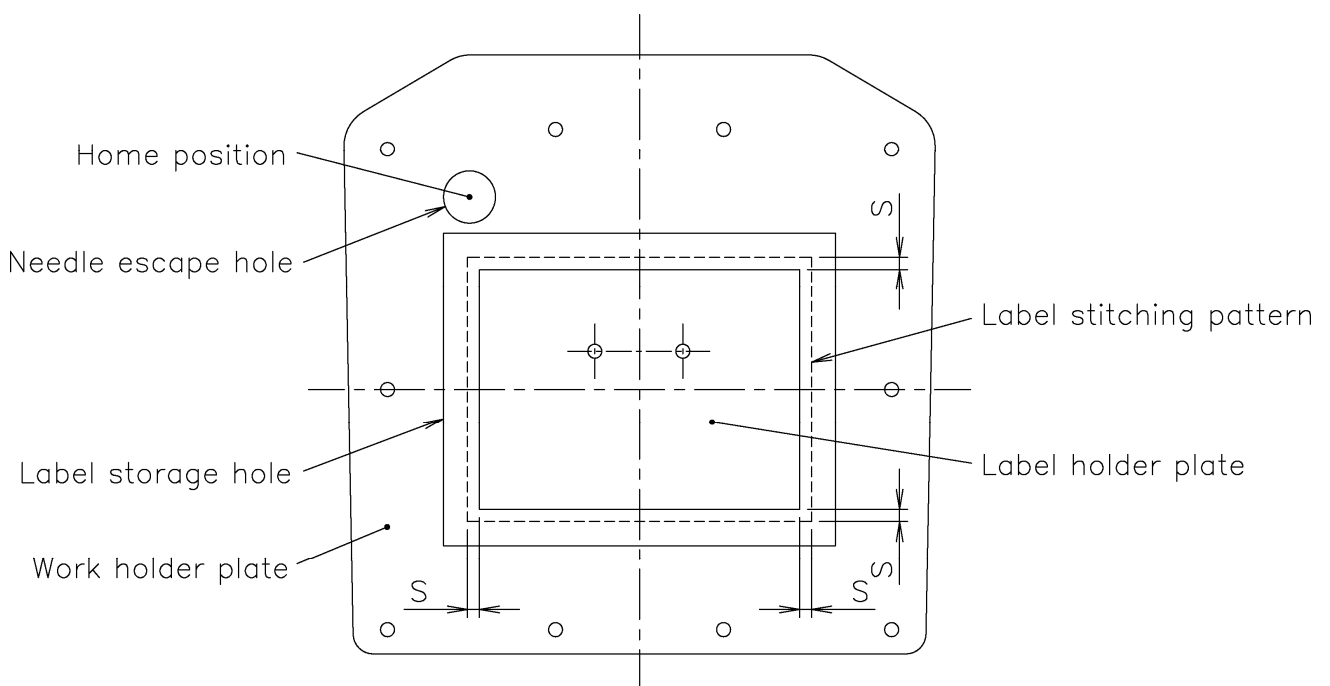


Fig. 2

## 6.4 Creating the stitching data

Refer to the pattern in Fig. 1, and set points A to G as shown in Fig. 3.

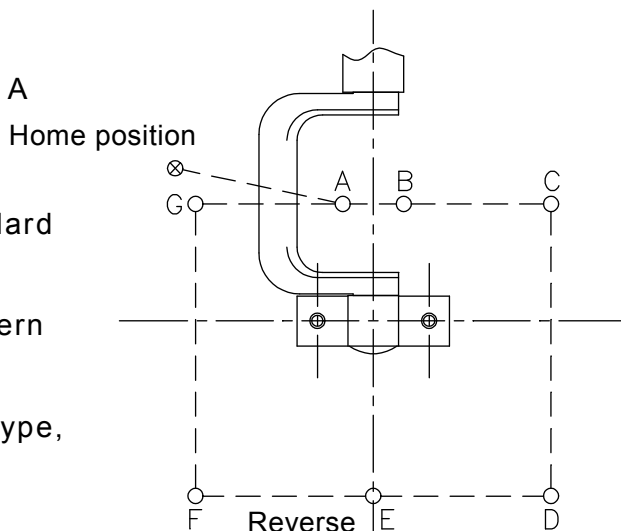








Fig. 3


(1) Press  on the operation panel's standard screen.






(2) Press the menu icon . The Pattern Input Mode screen will open.

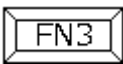

(3) Select , and set the stitching data type, speed and stitch length.





Press , and then press . The Arrow Input Mode screen will open.



(If there is no stitching data in the internal memory,  will not appear.)


(4) Input dry feed from the home position to point A with the arrow keys, and then press .

(5) Next using the arrow keys, input point B  → point C  → point D  → point E . Then, select . The Code Input screen will open.

(6) Press  (reverse signal), and press . The Arrow Input screen will reopen.

(7) Using the arrows keys, input point F  → point G  → point A  → point B .

(8) Select , and then press .

(9) When  is pressed, the stitching data will be created and written in.

This completes creation of the stitching data.

## 7. Stitching test

(1) Select the stitching pattern.

(Refer to the PLK-G1010 Control section instruction manual.)

(2) Set the material to be stitched, and then press the [Black] side of the 2-pedal foot switch to lower the work holder.

(3) Set the label under the label holder plate, and then press the 1-pedal foot switch to lower the label holder.

(If the position of the label deviates due to the thrust when the label holder lowers, adjust the lowering speed with the speed controller at the Fig. No. 109 air cylinder in the work holder mechanism.)

(4) Press the [Gray] side of the 2-pedal foot switch to rotate the sewing machine and start stitching.

(Stitching will not start unless the work holder and label holder are lowered.)

(5) The flip-flop shaft will rotate at the position where the reverse signal is issued in the stitching pattern.

(6) When stitching is completed, the sewing machine will automatically return to home position, and the holders will rise.



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