

***ENGLISH***

**AMS-221F**  
**Pneumatic type cassette chuck device**  
**INSTRUCTION MANUAL**

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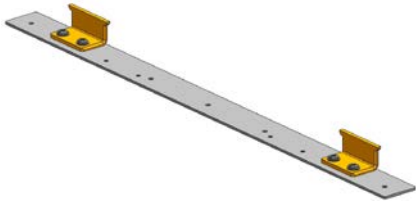
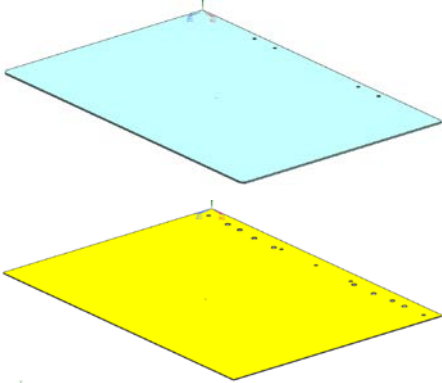
## 1. Specifications of the device

1	Chucking method	Cassette base sandwiching type
2	Air pressure	0.3 to 0.5 MPa (in accordance with the standard air pressure of the sewing machine)
3	Sewing area	longitudinal 200mm lateral 300mm
4	Cassette	By the dedicated cassette

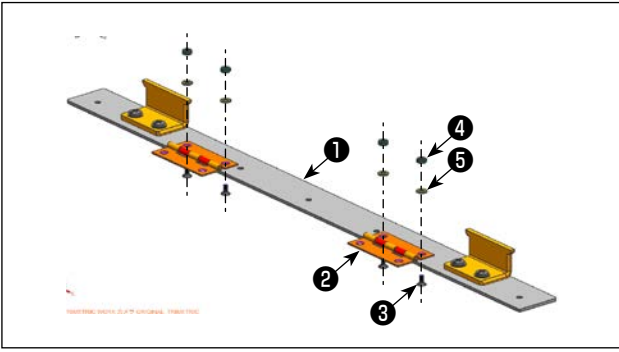
## 2. Sewing cassette

### 1-1. Assembling the cassette asm. and the upper and under plates

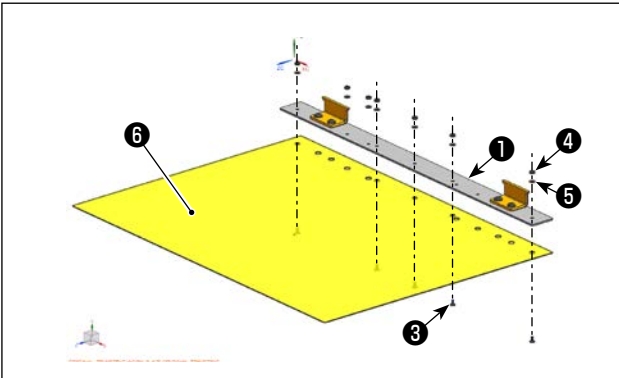
The cassette base device cannot be used alone. The cassette chuck base and the upper and under plates for the cassette described below are also necessary. Purchase the parts with the part numbers shown below depending on your needs.

	Part No.	Part name		Q'ty
	40218942	CASSET ASM 3020	カセット組 (3020)	1
 <p>Refer to the next page for the assembling procedure.</p>	40218943	CASSET_ UNDER_3020	カセット下板_3020	1
	40218944	CASSET_ UPPER_3020	カセット上板_3020	1
	GPK2600300B	PEDAL HINGE	ペダル兆番	2
	NM6030001SC	NUT M3X0.5	六角 ナット M3X0.5	13
	WP0320501SC	WASHER M3	ヒラザガネ M3	13
	SM1030601SC	SCREW M3X6	サラネジ M3X6	13

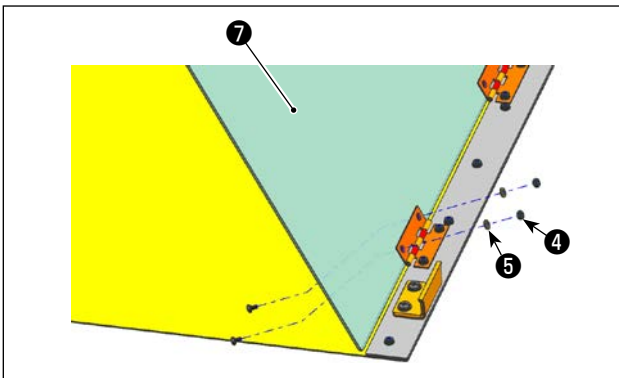
## 1-2. Cassette



- 1) Attach hinges 2 to cassette asm. 1 with screws 3 , nuts 4 and washers 5 .

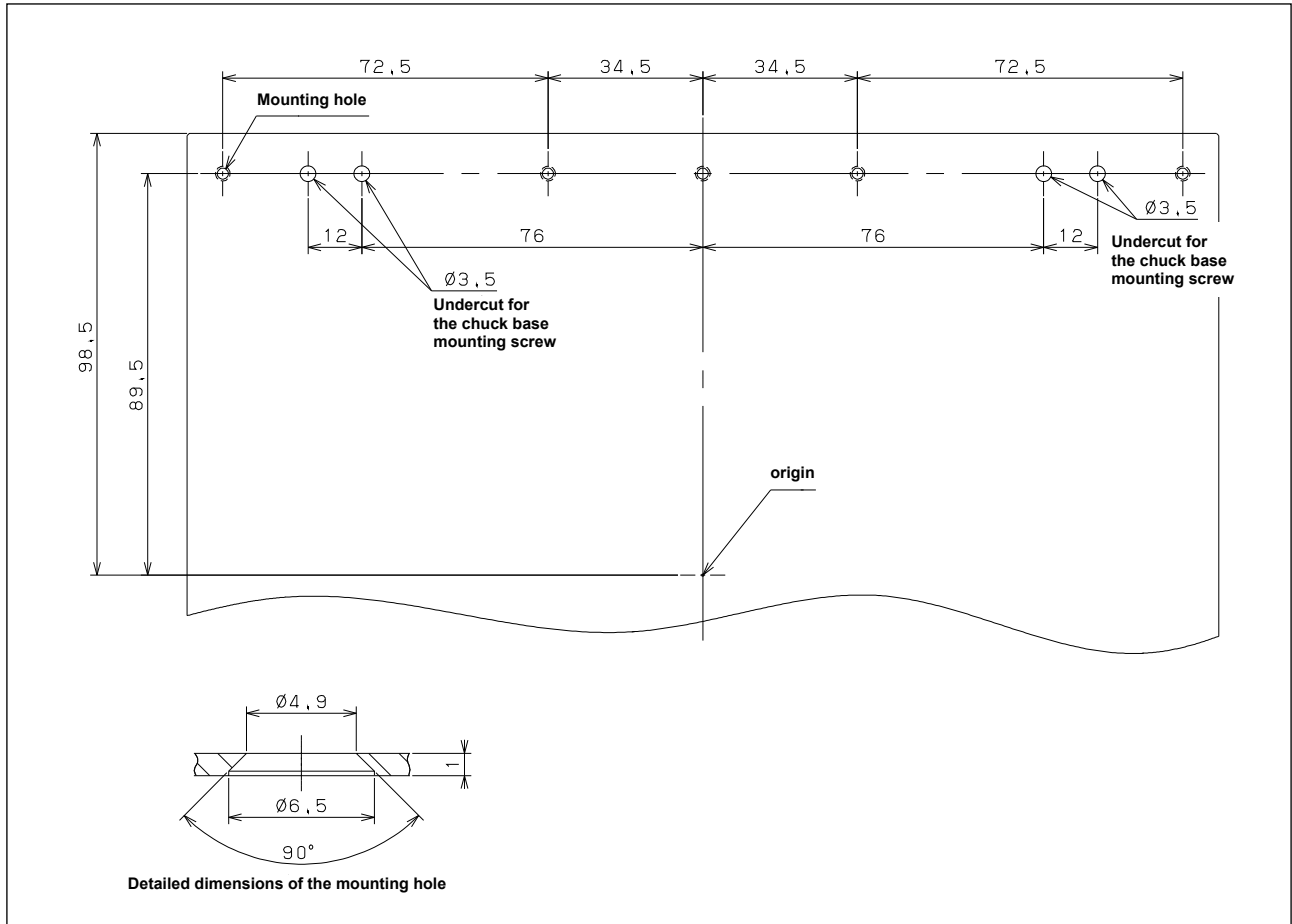


- 2) Install under plate 6 to cassette asm. 1 with screws 3 , nuts 4 and washers 5 .



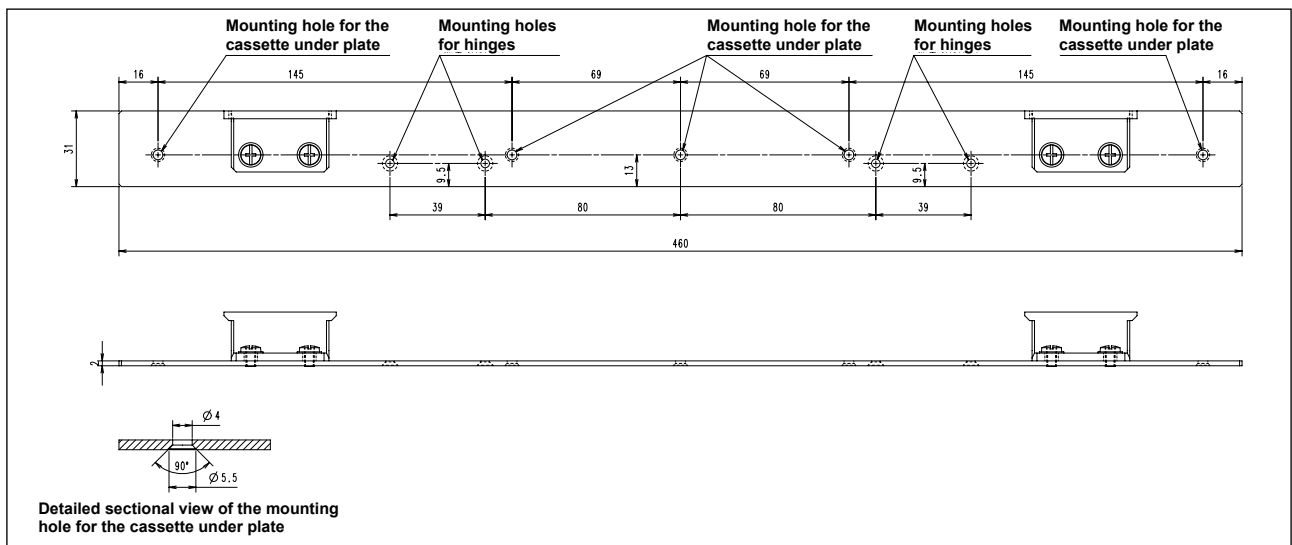
- 3) Install upper plate 7 to the hinges with screws 3 , nuts 4 and washers 5 .

If you use upper and under plates for the cassette other than those with the part numbers 40218943 and 40218644, machine them as shown below to install them to the cassette asm. (40218942). Diameter of the mounting hole is the dimension for the case where M3 flat head screws (JUKI part number: SM1030601SC) are used and the material thickness is 1 mm.



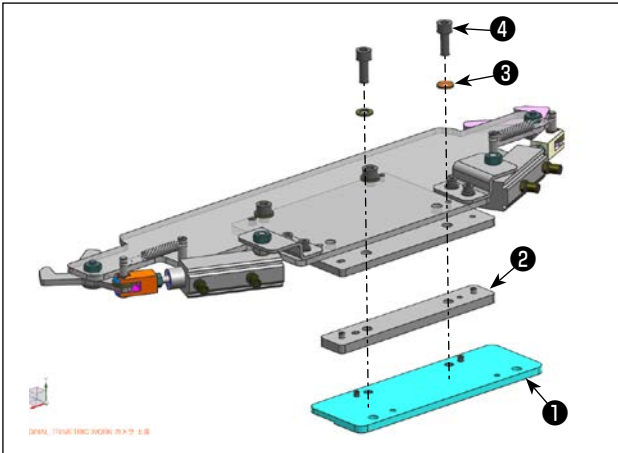
(Reference)

Dimensions of the hole position for the cassette asm. (40218942)

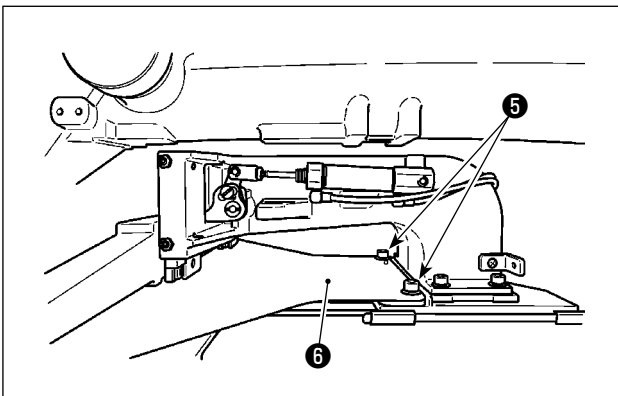


### 3. Device installing procedure

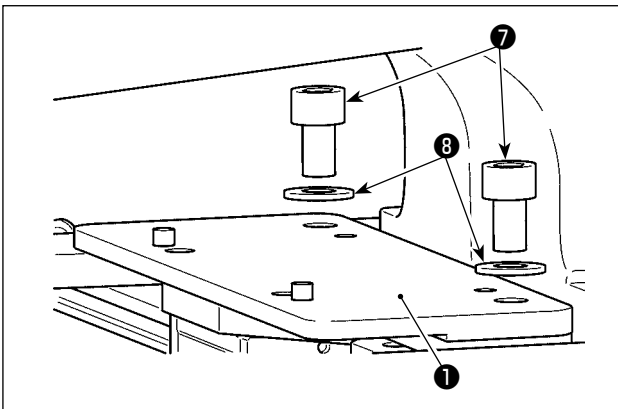
#### 3-1. Installing the device



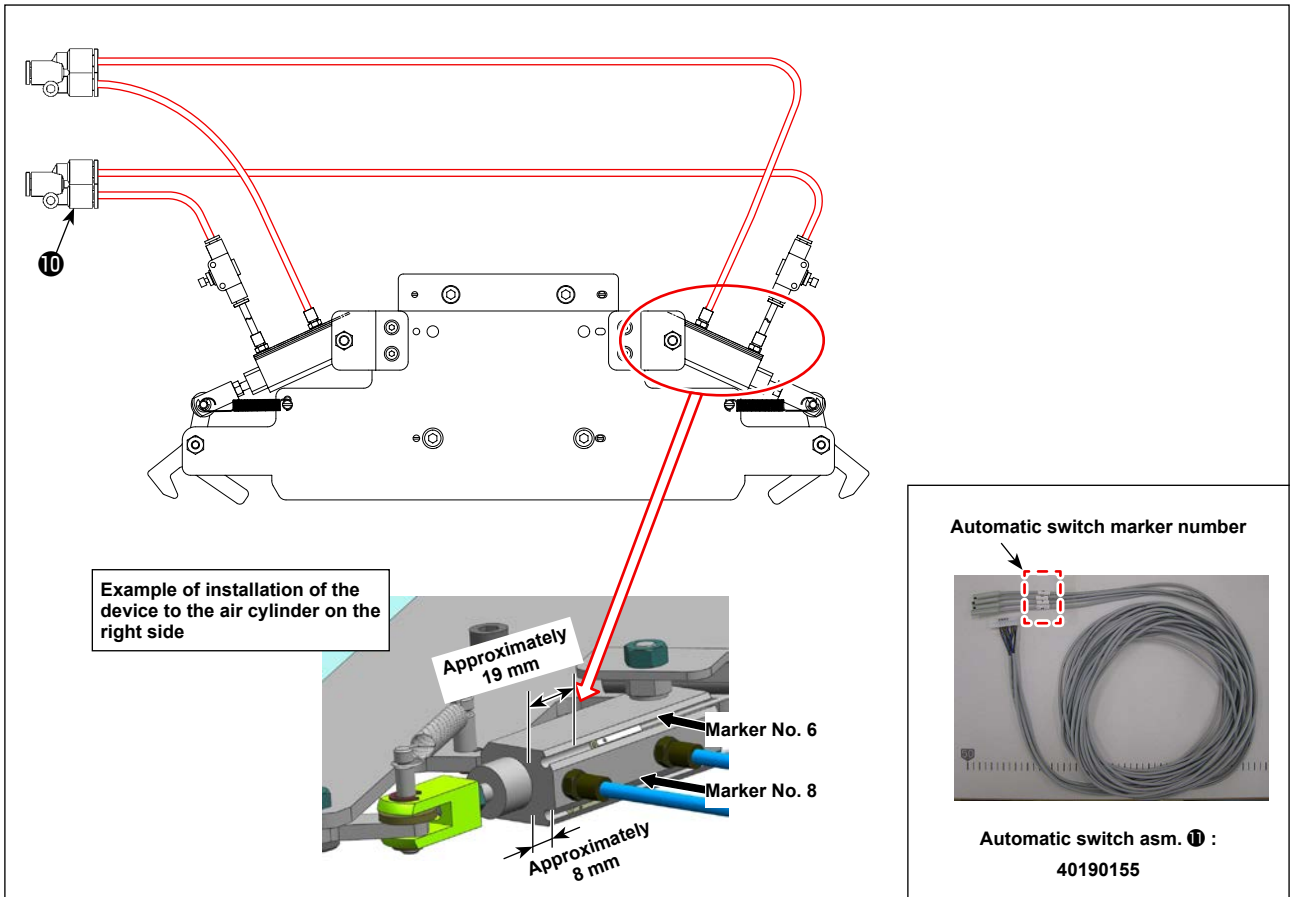
- 1) Install the cassette base asm. to the under plate extension plate ① with supplied screws ④ and washers ③ while placing spacer ② between them.



- 2) Detach feed plate screws ⑤ from the sewing machine to remove feed plate ⑥ . Note that these screws are to be used later.



- 3) Attach under plate extension plate ① to the sewing machine using screws ⑦ and washers ⑧ you have detached before. The spring washers are not used.



- 4) Pipe the air tubes to Y-shaped union ⑩ as shown in the figure.
- 5) Temporarily secure automatic switches of automatic switch asm. ⑪ (40190155) to the air cylinder. Accurate positioning of the switches is to be carried out after the wiring to the electrical control box. Refer to the table and figure given below for the installing position.

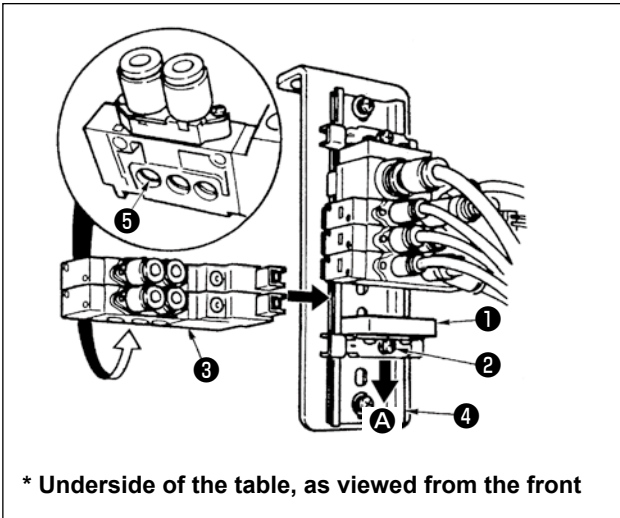
Automatic switch marker number	Position of the cylinder	Cylinder rail
5	LEFT	UPPER
6	RIGHT	UPPER
7	LEFT	UNDER
8	RIGHT	UNDER

### 3-2. Connecting the device to the solenoid valve and the electrical control box



**DANGER :**

1. To avoid electrical shock hazards, turn OFF the power and open the control box cover after about five minutes have passed.
2. Be sure to turn OFF the power switch first. Then, open the control box cover and carry out the work.



- 1) Loosen setscrew ② in end block ① , and draw out end block ① in the direction A.
- 2) Insert solenoid valve ③ into the position as shown in the figure.
- 3) Insert end block ① into rail ④ , and tighten set-screw ② while contacting the end block closely to the solenoid valve.

**When tightening setscrew ② , care should be taken so that there will be no clearance among the solenoid valve and other components since air leakage will be caused if solenoid valve and other components are not closely set. Be sure to insert three bushings ⑤ into solenoid valve ③ .**

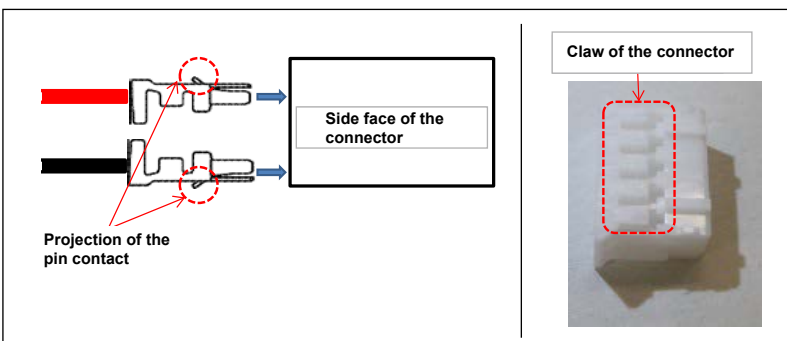
- 4) Connect two solenoid valve cables (40190157) that are packed together with the device to the connectors (HK063610100).



connector(10P) : HK063610100 1 piece



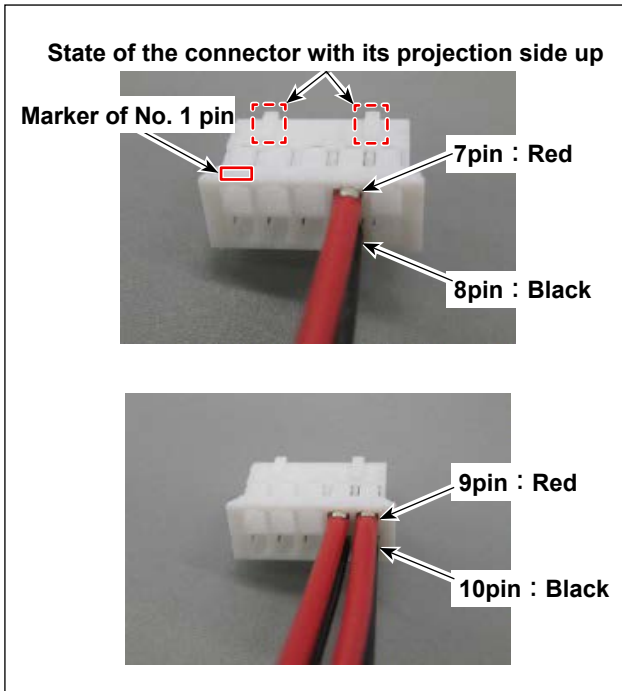
solenoid valve cables asm. : 40190157 2 pieces



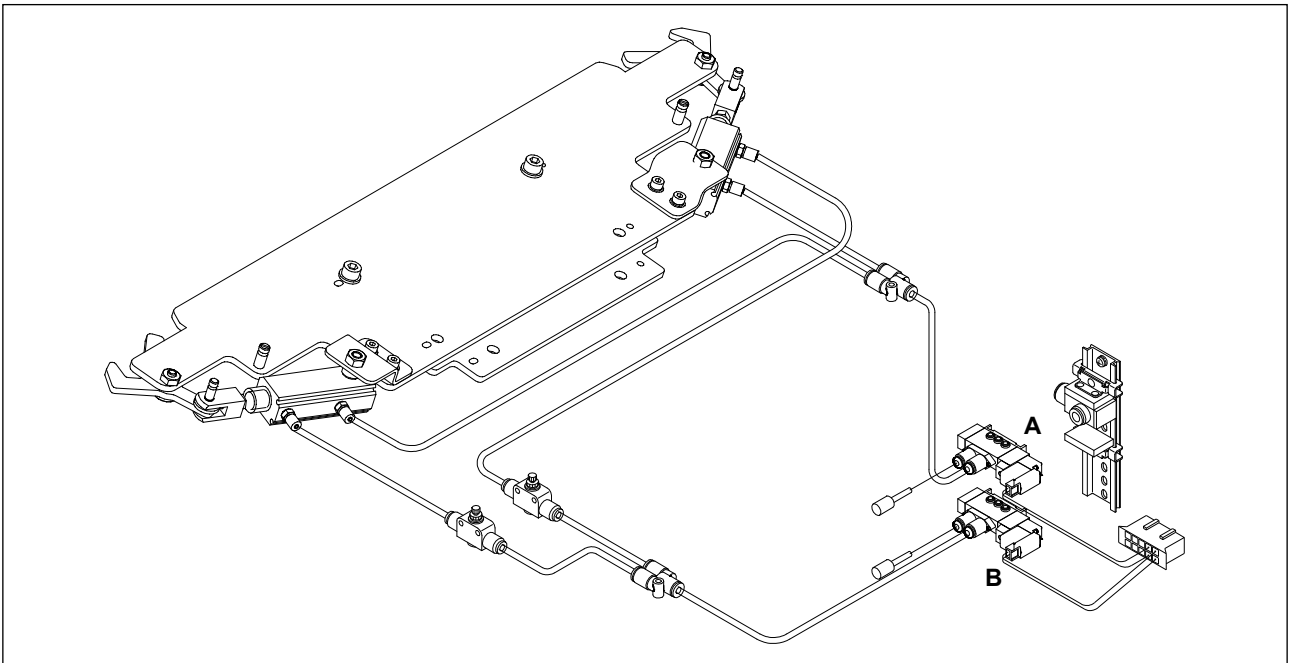
- 5) Connect the solenoid valve cable asm. to the connectors. Insert the red cable to the 7P and 9P of the connector. Insert the black cable into the 8P and 10P of the connector.

Insert the cables into the connectors in such a way that the pin contact projections are caught on the connector claws.

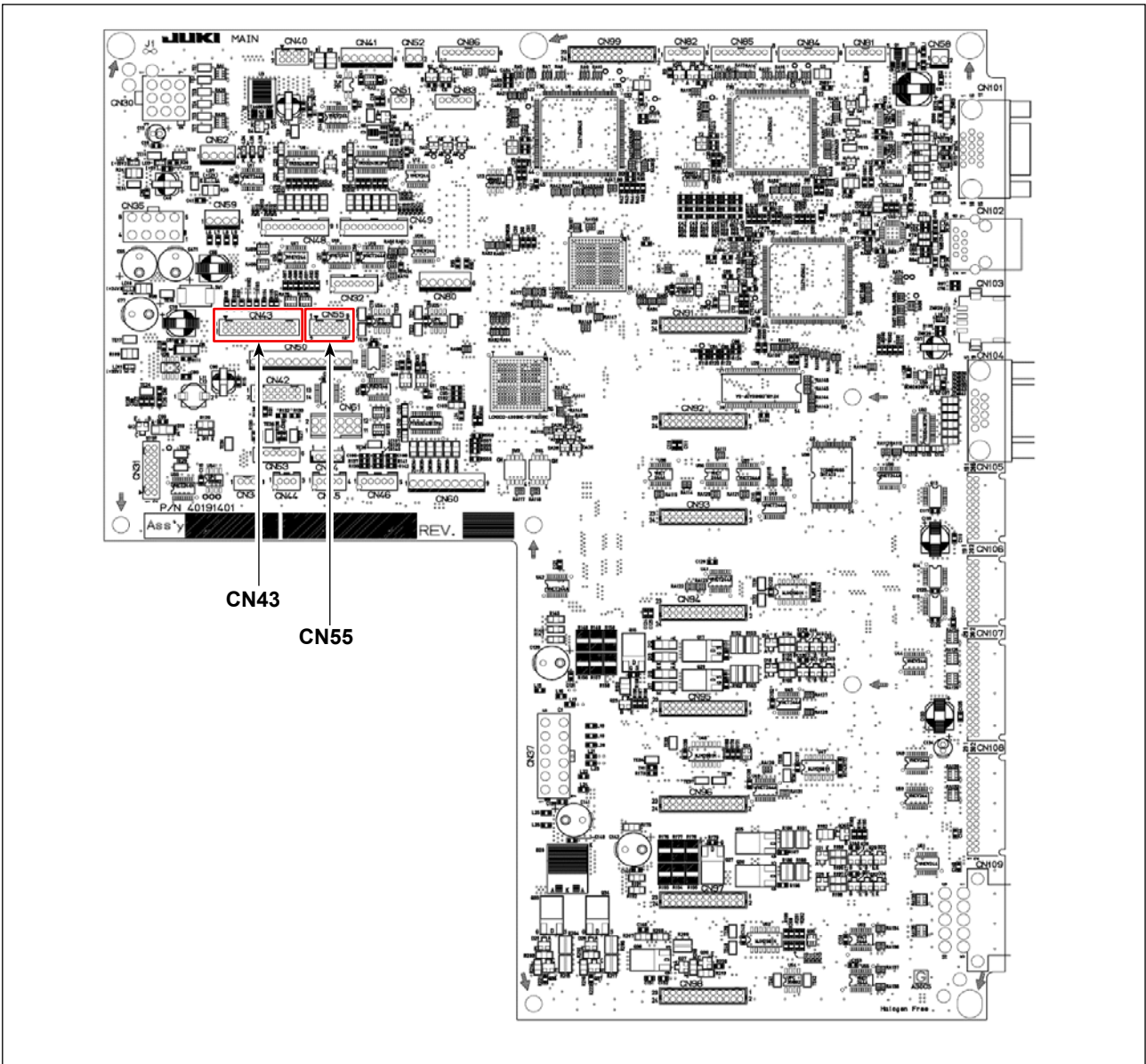




- 6) Connect the assembled solenoid valve cable to the solenoid valve.
- Connect the solenoid valve cable you have connected to 7 and 8 pins of the connector to the solenoid valve A.
- Connect the solenoid valve cable you have connected to 9 and 10 pins of the connector to the solenoid valve B.



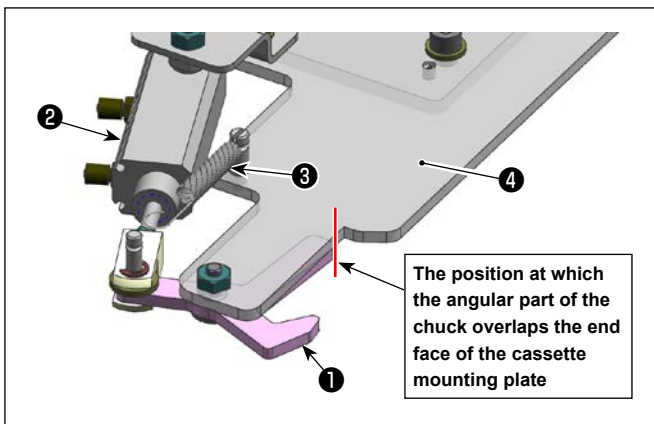
- 7) Carry out pinning and wiring to the solenoid valve.
- Pipe the air tubes and wire the solenoid valve cables as shown in the figure.



- 8) Connect the assembled solenoid valve cable asm. to the CN55 and the switch to the CN43 on the MAIN PCB.

### 3-3. Adjustment method (Adjusting the position of the automatic switch)

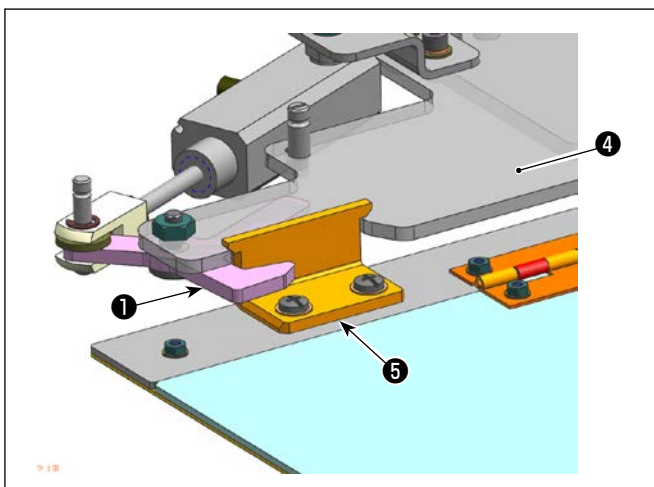
When you carry out adjustment with the power to the sewing machine ON, the air is expelled from the cylinder. Carry out setting in this state. Carry out the work while carefully protecting your fingers, etc. from being caught in the clamp device.



- 1) With respect to cassette mounting plate ④, put left chuck ① into the state as shown in the figure. Detach spring ③ once. Then, carry out the aforementioned work.
- 2) In the state shown in the figure, move sensor (marker No. 5) ② to such a position that the sensor LED lights up. Tighten the screw to secure the sensor.
- 3) For the sensor (marker No. 6) on the right side, also carry out the aforementioned adjustment as described in 1 and 2.

#### [Point]

- When the sensors (marker Nos. 5 and 6) are both ON, the air is supplied to the air cylinders to clamp the cassette.
- If the aforementioned adjustment is insufficient, the cassette clamp device will not clamp a cassette even when a cassette is inserted into the clamping position.



- 4) Insert chuck base ⑤ between chuck ① and cassette mounting plate ④ so that chuck ① firmly holds chuck base ⑤.
- 5) In the state as shown in the figure, move the sensor (marker No. 7) to the position at which the LED lights up. Then, tighten the screw to secure the sensor at that position.
- 6) For the sensor (marker No. 8) on the right side, also carry out the aforementioned adjustment as described in 5).

#### [Point]

- \* The sensors (marker Nos. 7 and 8) work to confirm that the cassette is clamped. The "Start" instruction is accepted only when both of these sensors are ON. If the aforementioned adjustment is insufficient, the sewing machine will fail to start sewing even if you press the Start switch.

- 7) After the completion of the adjustment, turn the power OFF.

### 3-4. Bundle wires of the automatic switch and air tubes

Move the feed by hand to confirm that the air tubes, etc. are not caught on the mechanisms, and that the air tubes and automatic switch wires have some slack regardless of the position of the feed.

## 4. Setting the operation panel

### 4-1. Setting input/output of the ports

In order to use the cassette clamping function, input/output of the ports have to be set.

For the input/output settings of the ports, the following settings have been factory-set as default values.

If you have not changed the aforementioned settings, input/output setting of the ports is not necessary.

If you have changed the settings, set the ports as shown in the table given below. Refer to **"4-4. Setting the ports" p.12** or to the Engineer's Manual for the input/output settings of the ports.

IN/OUT	Terminal name	Connector number	Function number	Active level
IN	IOP04	CN43-18	5 : Cassette clamp, clamp check L	LOW
	IOP05	CN43-19	7 : Cassette clamp, clamp check R	LOW
	IOP06	CN43-20	4 : Cassette clamp, cassette detection L	LOW
	IOP07	CN43-21	6 : Cassette clamp, cassette detection R	LOW
OUT	OOP04	CN55-8	4 : Cassette clamp, clamp locking	LOW
	OOP05	CN55-10	5 : Cassette clamp, clamp release	LOW

Table 1: Input/output settings of the ports

### 4-2. To use the cassette clamp

Set the memory switch K193 "One-touch utility clamp type" to "Type 1".

Refer to the Engineer's Manual for how to select the memory switch Kxxx (level 2).



Item	Description
Without	Not use
Type 1	Cassette clamp is used
Type 2	Automatic clamp is used

### 4-3. Setting the pedal

When you use the cassette clamp, it is possible to select 2-pedal unit or 3-pedal unit.  
Set the memory switch as described below according to the pedal to be used.

memory switch	Item name	Set value	
		two-pedal	Three-pedal
U081	<b>When the feeding frame control is carried out normally</b> <b>Operation sequence of the feeding frame is set by operating the pedal</b>	0	2
U082	<b>When the feeding frame control is stopped in the middle</b> <b>Operation sequence of the feeding frame is set by operating the pedal</b>	0	2

Table 3: Setting the pedal

Carry out the following settings depending on your needs.

Refer to the Engineer's Manual for how to change the memory switch Kxxx (level 2).

memory switch	Item name	Set value
K194	<b>One-touch utility cassette clamp mode</b>	Manual (feeding frame switch) →The feeding frame comes down with the pedal switch.C125Automatic (clamp sensor)
		Automatic (clamp sensor) →After the cassette is clamped, the feeding frame automatically comes down.C128
K195	<b>One-touch utility cassette clamp, feeding frame delay time</b> When the 2-pedal unit is used or when the K194 is set to "Automatic", this memory switch is used for setting the time lapse after the cassette is clamped before the feeding frame comes down.	Range: 0 to 5000 (msec) Editing unit: 10 (msec) Default value: 500 (msec)
K196	<b>One-touch utility cassette clamp, auxiliary presser delay time</b>	Range: 0 to 5000 (msec) Editing unit: 10 (msec) Default value: 500 (msec)

Table 3: Detailed setting of the pedal

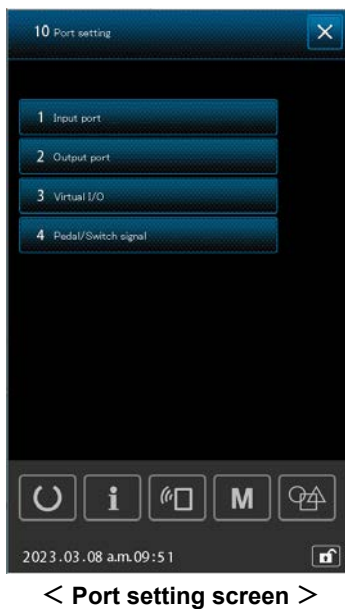
## 4-4. Setting the ports

Ports can be set in the steps of procedure described below.

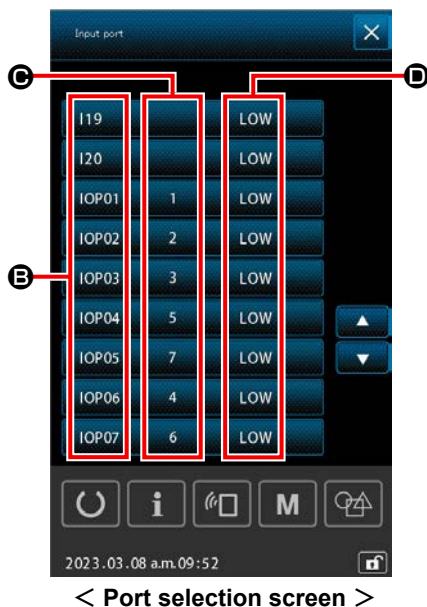


- 1) Displaying the port setting screen.

Keep **M** key held pressed for six seconds on the pattern setting screen to display the list (maintenance personnel level). Press the "Port setting" button **A** to display the port setting screen.



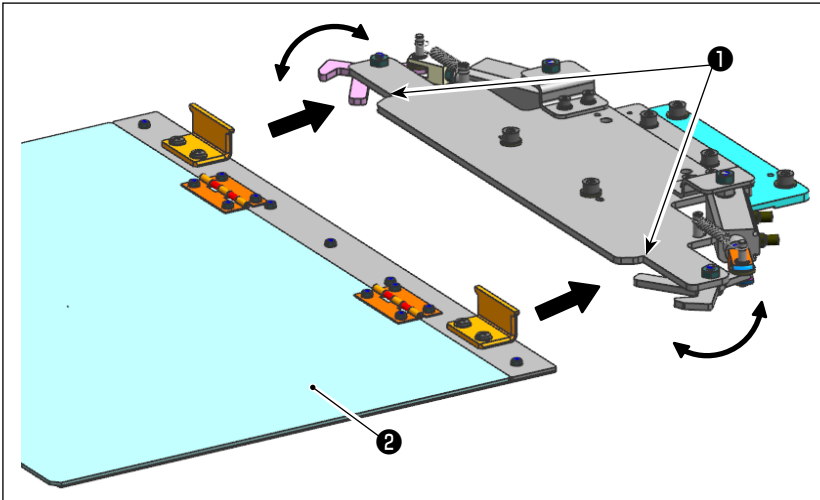
- 2) Select the type of port you want to change on the port setting screen to display the port selection screen.



- 3) Carrying out setting of the ports  
When the port selection screen is displayed, the terminal name **B**, function number **C** and active level **D** are displayed. Press the Select button for the terminal name you want to edit to display the edit screen. Set the function number and the active level.



## 5. Operation procedure



- 1) When you press the Ready key, the origin is retrieved, then, the feeding frame goes up and the cassette chuck opens. Be aware that, if a cassette is inserted into the cassette clamp, it will be automatically discharged.

### [In the case of the 2-pedal unit (U81 and U82: 0)]

	pedal switch <b>A</b>	pedal switch <b>B</b>
In the case the K194 is set to "Automatic"	The cassette is discharged.	Sewing starts.
In the case the K194 is set to "Manual"	Feeding frame goes up and comes down.	Sewing starts.

- 2) In the case the K194 is set to "Automatic", the cassette will be automatically clamped after you have inserted one into the clamp section. In the case the K194 is set to "Manual", the feeding frame will be lowered by depressing the 2-pedal unit switch **A** or 3-pedal unit switch **B** with the cassette being clamped.

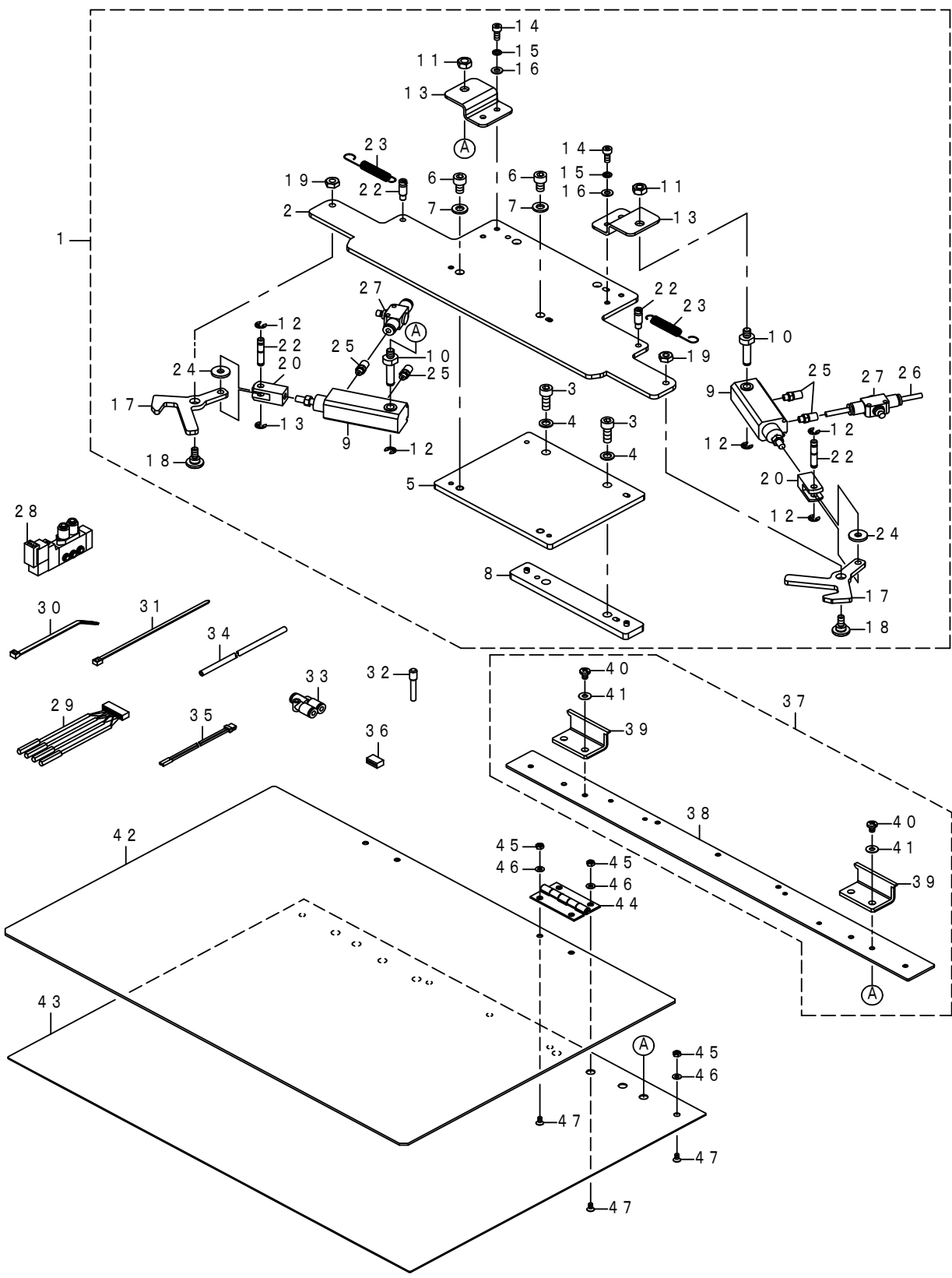
### [In the case the 3-pedal unit (U81 and U82: 2)]

	pedal switch <b>A</b>	pedal switch <b>B</b>	pedal switch <b>C</b>
In the case the K194 is set to "Automatic"	Not used	The cassette is discharged.	Sewing starts.
In the case the K194 is set to "Manual"	The cassette is discharged.	Feeding frame goes up and comes down.	Sewing starts.

- 3) When you depress the 2-pedal unit switch **B** or 3-pedal unit switch **C** while the feeding frame is in its lower position, the sewing machine will start sewing. If the sewing machine fails to start, the cassette is not securely clamped. Discharge the cassette once and re-clamp it. In order to discharge the cassette that has been in place once, depress the 2-pedal unit switch **A**. When the 3-pedal unit is used and the K194 is set to "Automatic", press the switch **B** to discharge the cassette. Or, when the K194 is set to "Manual", press the switch **B** to lift the feeding frame and press the switch **A** to discharge the cassette.

- 4) After the completion of sewing, the sewing machine moves to the second origin (or to the sewing starting point if the second origin is not set). After that, the feeding frame goes up. Then, the cassette is discharged. After the aforementioned operation is carried out in the written order, the sewing machine will return to the ready state.

# 6. Parts list





REF.NO	NOTE	PART NO	DESCRIPTION	品名	Qty
1		402-18930	CASSET_FIXING_BASE_ASM(221)	カセット土台組 (221)	1
2		401-50745	CASSET_INSTALLING_PLATE_221	カセット取付板221	(1)
3		SM-6061602-TP	SCREW M6 L=16	ロッククアナ ボルト M6 L=16	(2)
4		WP-0651056-SD	WASHER 6.5X11X1	ヒラザガネ 6.5X11X1	(2)
5		401-86704	CASSET_BASE_221_ASM	カセット固定土台支え221組	(1)
6		SM-6061002-TP	SCREW M6 L=10	ロッククアナ ボルト M6 L=10	(2)
7		WP-0641601-SD	WASHER M6	ヒラザガネ ミガキマル M6	(2)
8		401-86703	BASE_221_ASM	カセット固定土台取付板221組	(1)
9		401-30337	AIR_CYLINDER	エアシリンダ	(2)
10		401-30073	AIR_CYLINDER_PIN	エアシリンダ軸	(2)
11		NM-6060002-SD	NUT M6X1 TYPE2	六角ナット M6X1 2種	(2)
12		RE-0400000-K0	E-RING 4	E形止め輪 4	(6)
13		401-30075	CYLINDER_BRACKET	シリンダ取付板	(2)
14		SM-6041002-TN	SCREW	ロッククアナ ボルト	(4)
15		WS-0410002-KN	SPRING WASHER M4	バネザガネ M4	(4)
16		WP-0430801-SC	WASHER M4	平座金 M4	(4)
17		401-30076	CHUCK	チャック	(2)
18		SD-0800426-TP	SHOULDER SCREW D=8 H=4.2	段ねじ D=8 H=4.2	(2)
19		NM-6050001-SD	NUT M5X0.8 TYPE1	六角ナット M5X0.8 1種	(2)
20		PX-5000200-00	KNUCKLE JOINT	ナックル ジョイント	(2)
21		401-30076	SUSPENSION_PIN	バネ掛け	(2)
22		262-26407	TENSION SPRING HOOK	バネカケ	(2)
23		B2431-215-000	THREAD TRIMMER LINK SPRING	イトキリ リンクバネ	(2)
24		WP-0522016-SH	WASHER	ヒラザガネ 5.2X15X2	(2)
25		PJ-0320525-03	HOSE NIPPLE	ホースニップル	(4)
26		BT-0400251-EB	URETHANE TUBE BLACK 4X2.5	ポリウレタンチューブ黒 4X2.5	(3.6)
27		PC-0124010-00	SPEED CONTROLLER	スピード コントローラ	(2)
28		PV-1502090-00	5 PORT SOLENOID VALVE	5ポート デンジベン	2
29		401-90155	LABEL_SENSOR ASM	ラベルセンサ組	1
30		HX-0023300-00	CABLE BAND	ソクセンバンド	7
31		EA-9500B02-00	CABLE BAND	ソクセンバンド	7
32		PX-5000140-00	PLUG 4	トメセン マル4	2
33		PJ-3080400-06	UNION	ユニオンワイ	2
34		BT-0400251-EB	URETHANE TUBE BLACK 4X2.5	ポリウレタンチューブ黒 4X2.5	3.4
35		401-90157	OP SOL VALVE CABLE ASM	電磁弁コネクタ組	2
36		HK-0636101-00	CONNECTOR	コネクタ	1
37	#01	402-18942	CASSET ASM 3020	カセット組 (3020)	1
38	#01	401-50748	CASSET_3020	カセット3020	(1)
39	#01	400-85012	CHUCK	チャック	(2)
40	#01	SM-5040655-SN	SCREW	バインドネジ	(4)
41	#01	WP-0410516-SD	PLAIN WASHER	ヒラザガネ 4.1X10X0.5	(4)
42	#01	402-18943	CASSET_UNDER_3020	カセット下板 3020	1
43	#01	402-18944	CASSET_UPPER_3020	カセット上板 3020	1
44	#01	GPK-2600300B	PEDAL HINGE	ペダルチヨウバン	2
45	#01	NM-6030001-SC	NUT M3X0.5 TYPE1	六角ナット M3X0.5 1種	13
46	#01	WP-0320501-SC	WASHER M3	ヒラザガネ M3	13
47	#01	SM-1030601-SC	SCREW M3X6	サラネジ M3X6	13
		NOTE(注記)	#01...FOR 3020	3020用	