

# USER'S MANUAL

## **UBCII** *(Bobbin changer II)*





## Foreword

This user's manual describes about the correct using method and instructions for use of this product. Please use this machine after understanding the contents of the manual.

This manual may contain discrepancies in detailed specifications as compared with the actual production model. If you have any questions about this manual, consult your TAJIMA distributor.

We believe that "BASICS TAJIMA EMBROIDERY MACHINES" and "MACHINE SETUP INSTRUCTIONS" are useful to deepen your knowledge about this product. Please also read those booklets.

Regarding how to handle the products related, refer to the user's manual exclusive for them included in the manual CD.

**TISM Co.,Ltd.**

## Safety precautions

To prevent any harm or damage to the person who use this product or other person, we describe items that must be surely followed as below.



Indicates that there is a lot of danger of death or serious injuries [\*1] if handled by mistake.




Indicates that there is a likelihood of death or serious injuries [\*1] if handled by mistake.





Indicates a potentially hazardous situation which may result in minor or moderate injury [\*2] or property damage if handled by mistake.

\*1: A condition caused by electric shock, injury, fracture of a bone, etc., that leads to aftereffects, or an injury that necessitates hospitalization or visits to a hospital over a long period.

\*2: An injury that does not necessitate hospitalization or visit to a hospital over a long period.

 : Prohibited items

 : Items that may cause electric shock if not observed

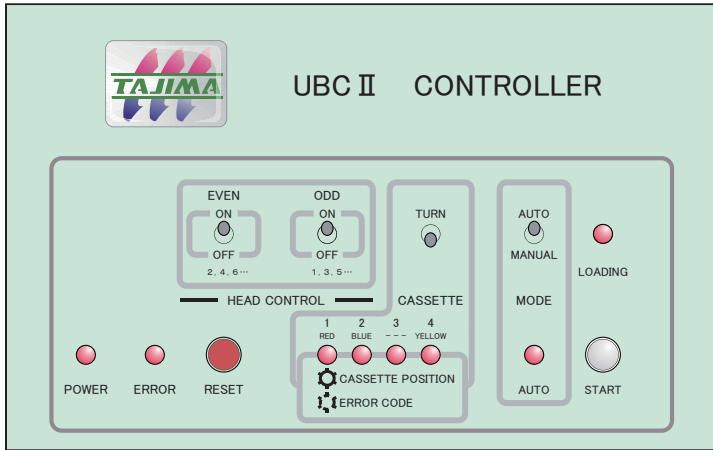
 : Items that must be followed carefully to ensure safe operation

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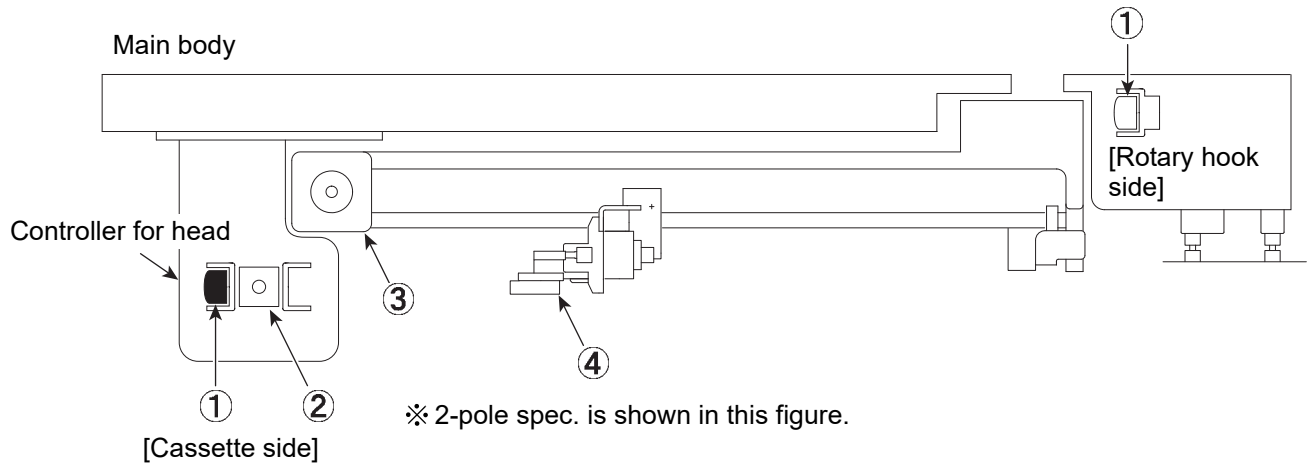
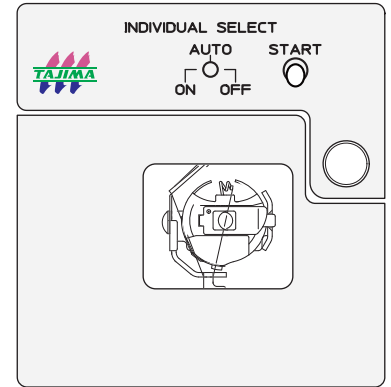
# 1 Construction

## 1. Name

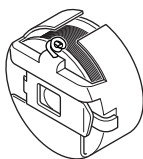
Controller(p.2)



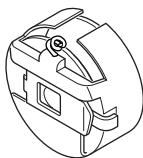
Controller for head(p.3)



① Bobbin case



Already filled with a bobbin  
\* It is indicated by the figure below in the sentence.



Vacant bobbin



② Cassette(p.3)

There are following two types.

(a) 2-pole spec. (Standard)

(b) 4-pole spec. (Option)

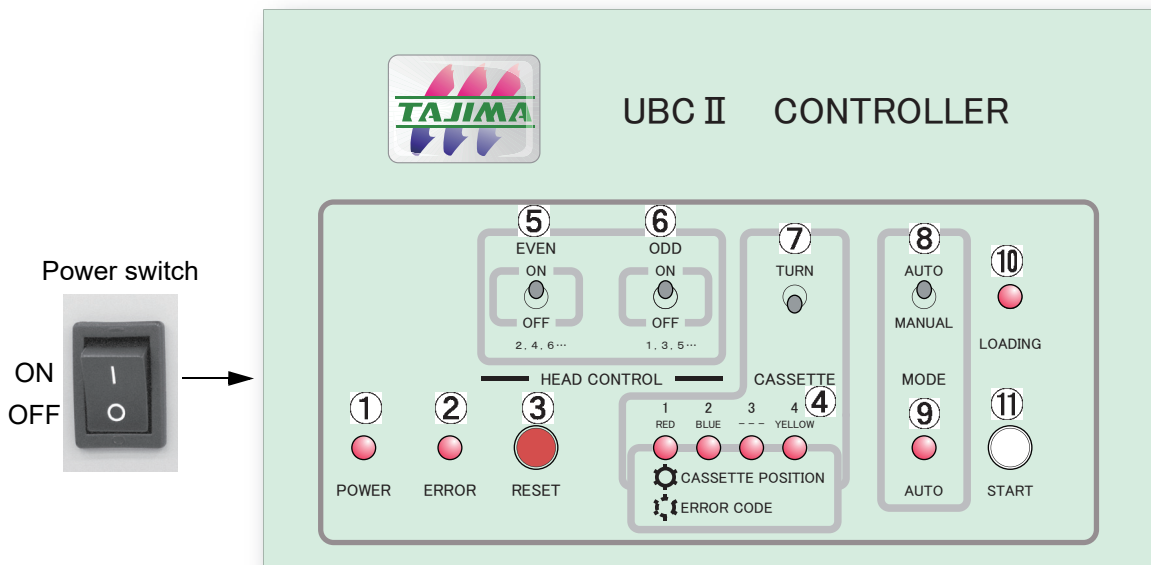
③ Carriage motor

④ Chuck

A device to catch the bobbin case

## 2. Controller

### 2-1. Switch, indicator lamp



- ① Power indication lamp  
It will be lit at power ON.
- ② Error indicator lamp(p.17)  
It will light at occurrence of error.
- ③ Reset switch  
At occurrence of error, pressing this switch will stop the warning buzzer. In some condition, the cassette will rotate by 180°. (p.19)
- ④ Cassette position and error code indication lamp  
In normal state, it shows cassette position.  
Lit in red: Cassette (red label) is positioned to the front.  
Lit in blue: Cassette (without label) is positioned to the front.  

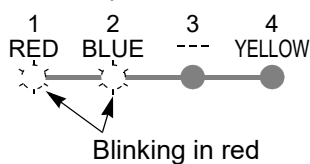
1	2	3[*]	4[*]
RED	BLUE	---	YELLOW

● — ● — ● — ●

\* 3 and 4 aren't used at 2-pole spec.
- ⑤ Even-numbered head switch  
It makes the heads work (ON) or suspended (OFF).  
It makes the single-head suspended (OFF).
- ⑥ Odd-numbered head switch  
It makes the heads work (ON) or suspended (OFF).
- ⑦ Manual cassette rotation(p.14)  
It makes cassette rotate by switch operation (4-pole spec. only).
- ⑧ Auto/manual mode  
AUTO: Regular position  
MANUAL:Manual cassette rotation(p.14)
- ⑨ In case of automatic mode: Lit  
In case of manual mode: Unlit
- ⑩ Operation indicator lamp  
It will be lit when the device is working.
- ⑪ Start switch  
Execute change of bobbin.

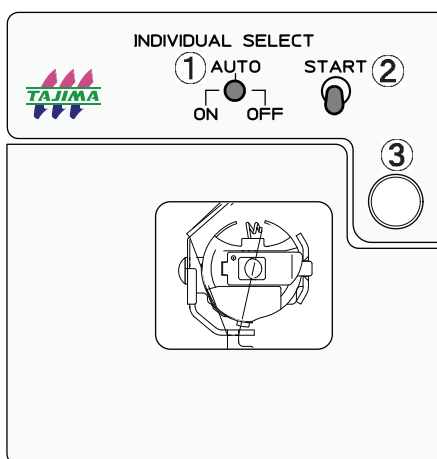
It will blink at occurrence of error.(p.17)\$XRef\$

An example



### 3. Controller for head

- (1) Even if the operator is apart from the controller, it is possible to make the device work from the the controller for head.
- (2) Sincer the indicator lamp of the head where the error occurs will blink in red, it can be identified immediately.
- (3) It is possible to activate or suspend only desired head.

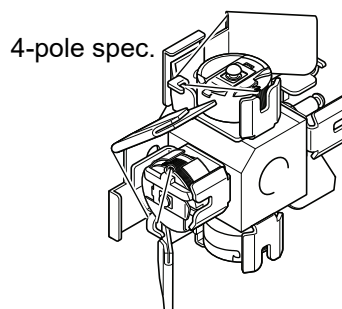
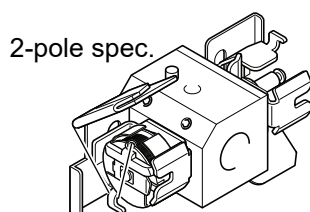


- ① Switch  
AUTO: regular position  
ON: works only at this head  
OFF: Suspend this head only
- ② Start switch  
It executes change of bobbin case. it serves the same as "START" on the controller.
- ③ Indicator lamp  
Lit in green: normal operation  
Blinking in red: occurrence of error or operation uncompleted  
Lit in red, or unlit: In the state of suspension

### 4. Cassette

#### 4-1. Type

The device falls into two types according to the number of bobbin cases that can be contained.



#### 4-2. Difference between 2-pole spec. and 4-pole spec.

Type	Merit	Demerit
2-pole spec.	Since position of bobbin cases in a cassette is always unified, it is simple and easy to use.	Since there is one bobbin case in a cassette, changing frequency of bobbin case by operator will become high.
	Rate of mis-operation by operator is low.	Comparing with 4 poles, there are operations and mode settings that can not be done.
4-pole spec.	Since there are three bobbin cases in a cassette, changing frequency of bobbin case will become low and it will be possible to change bobbin cases at once.	Position of bobbin case in cassette deviates when other operations than all head actuation are performed. Therefore, it is necessary for operator to perform positioning. In addition, mis-operation by operator tends to happen.

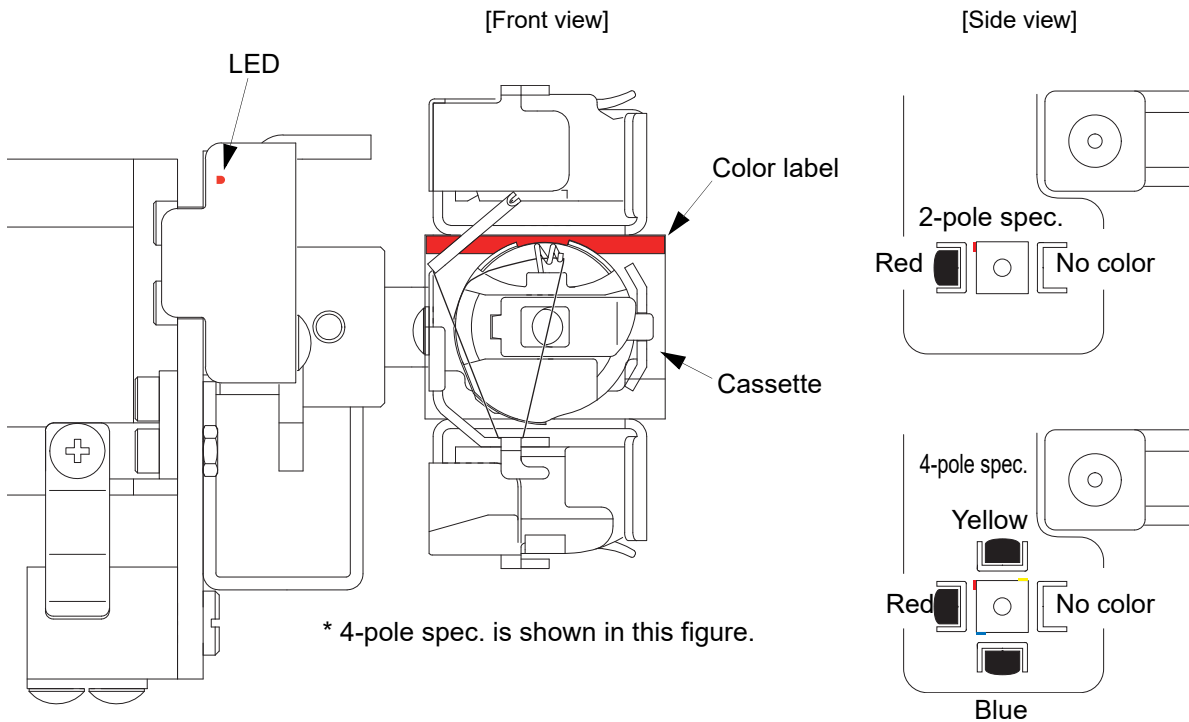
### 4-3. Color label

**(1)** In case of 2-pole spec.

Red label is affixed to the cassette. This is for identification if cassettes at all heads face to the same direction. When cassette (red) comes to the front, it is the position of the origin of the cassette. At this moment, the LED lamp neighboring to the left will be lit in red.

**(2)** In case of 4-pole spec.

3 types of label are affixed to the cassette. When rotating the cassette, it is possible to see the blue, yellow labels. This is for identification if cassettes at all heads face to the same direction. When cassette (red) comes to the front, it is the position of the origin of the cassette. At this moment, the LED lamp neighboring to the left will be lit in red.



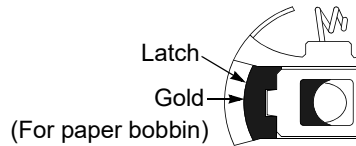
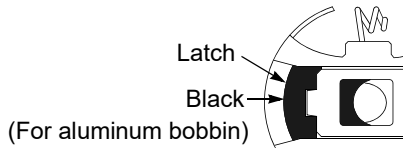
## 2 Preparation

### 1. Setting of bobbin case

#### ! CAUTION

- ! Use bobbin case exclusive for the device (colored item).

Coloring (black or gold)

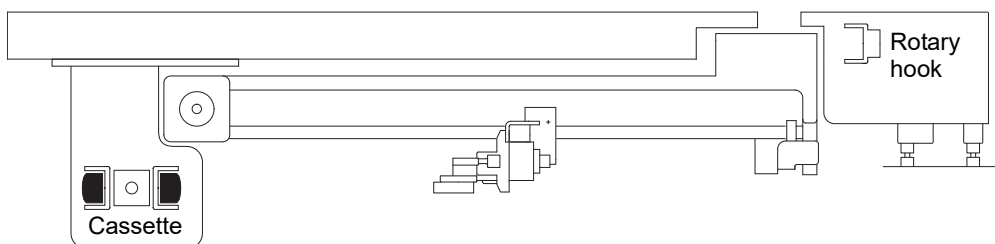


- ! When you use other than our genuine bobbin case, make a test operation and check if there is no scratch or deform on the outer of the bobbin or not falling during operation.
- ⊘ Do not use paper bobbin whose side base is deteriorated or deformed. Bobbins could come off from the arm head when the bobbin is carried.
- ⊘ Do not use paper bobbin without side base.

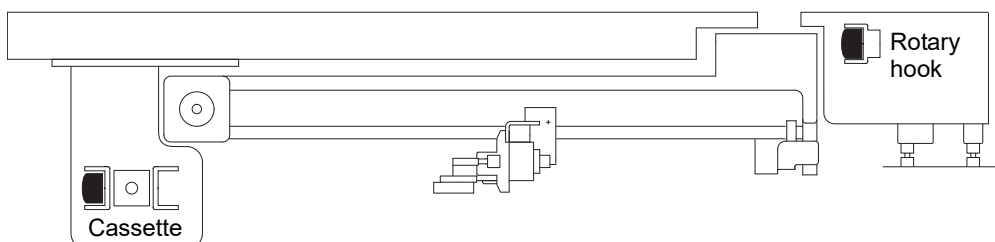
#### 1-1. In case of 2-pole spec.

#### ! CAUTION

- ⊘ When you set bobbin case at the first time, limit the number of bobbin cases to two pieces to the cassette section and do not set bobbin case to the rotary hook. When there is no vacant space to contain bobbin case, this device will stop.



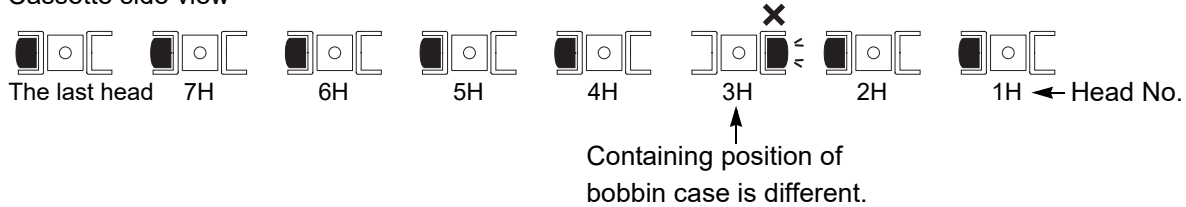
- ! When bobbin case is set to rotary hook, set one piece of bobbin case to the cassette. When there is no vacant space in the cassette, this device will stop.



## ! CAUTION

- ! Set bobbin cases to bobbin cassettes so that position of bobbin cases becomes the same at all the working head (all heads, odd-numbered heads, even-numbered heads). if you make a mistake, an error will occur.

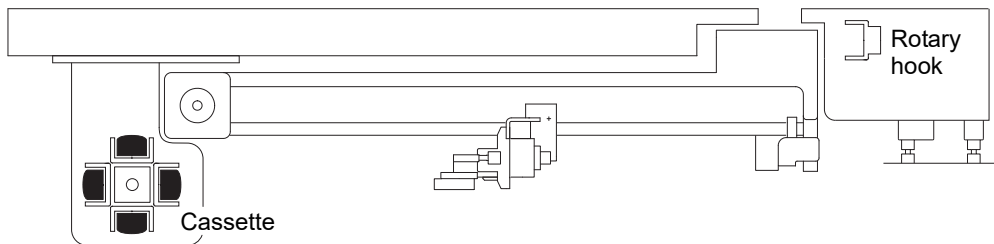
Cassette side view



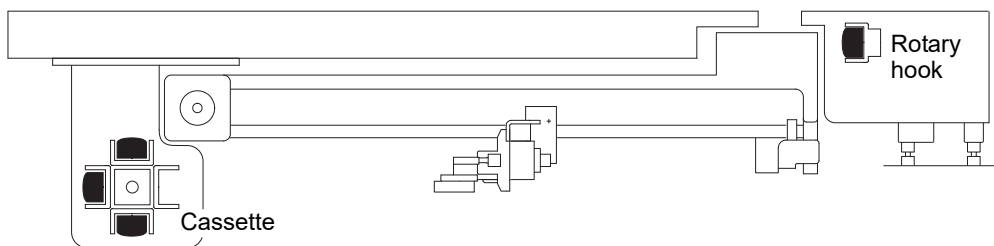
### 1-2. In case of 4-pole spec.

## ! CAUTION

- ⊘ When you set bobbin case at the first time, limit the number of bobbin cases to four pieces to the cassette section and do not set bobbin case to the rotary hook. When there is no vacant space to contain bobbin case, this device will stop.

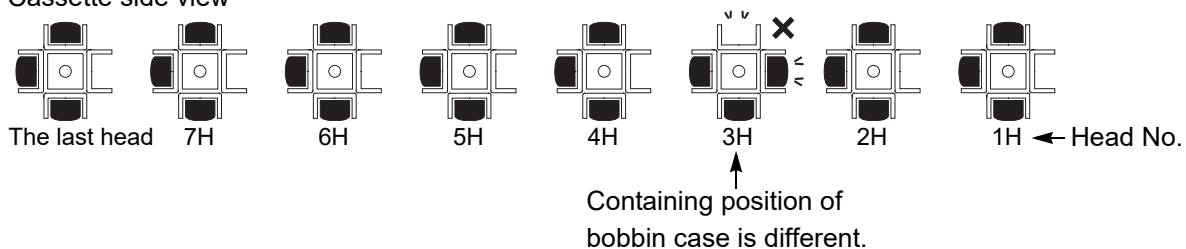


- ! When bobbin case is set to rotary hook, limit the number of bobbin cases set to cassette to three pieces.



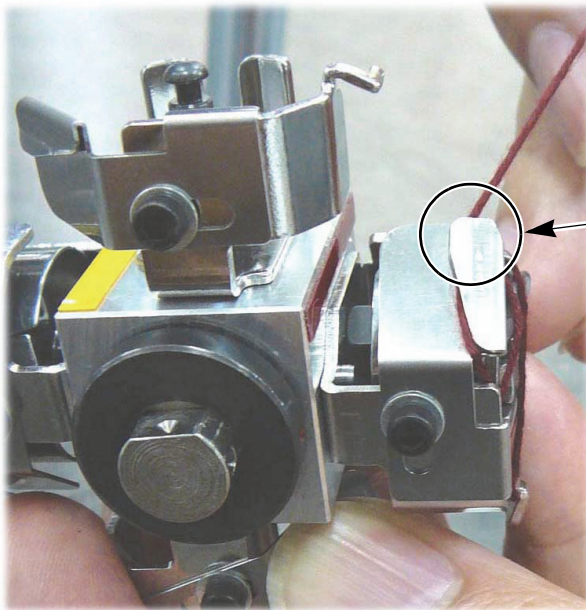
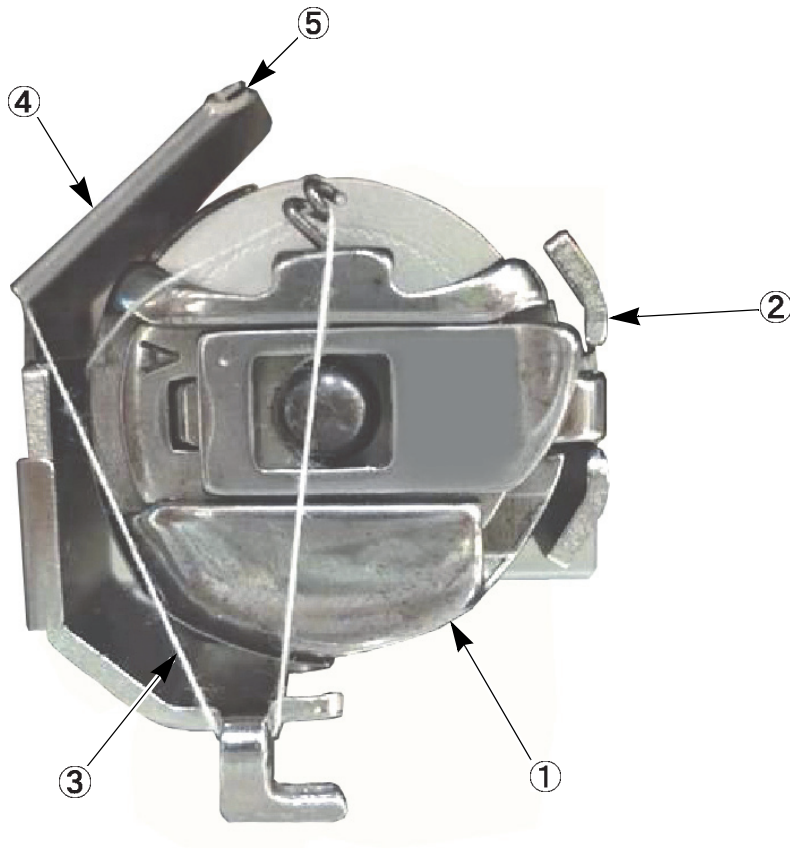
- ! Set bobbin cases to bobbin cassettes so that position of bobbin cases becomes the same at all the working head (all heads, odd-numbered heads, even-numbered heads). if you make a mistake, an error will occur.

Cassette side view



## 2. How to set a bobbin case

Fit the bobbin case ① into the cassette ②. Pass the under thread ③ to the groove ④ and cut it by the cutter ⑤.

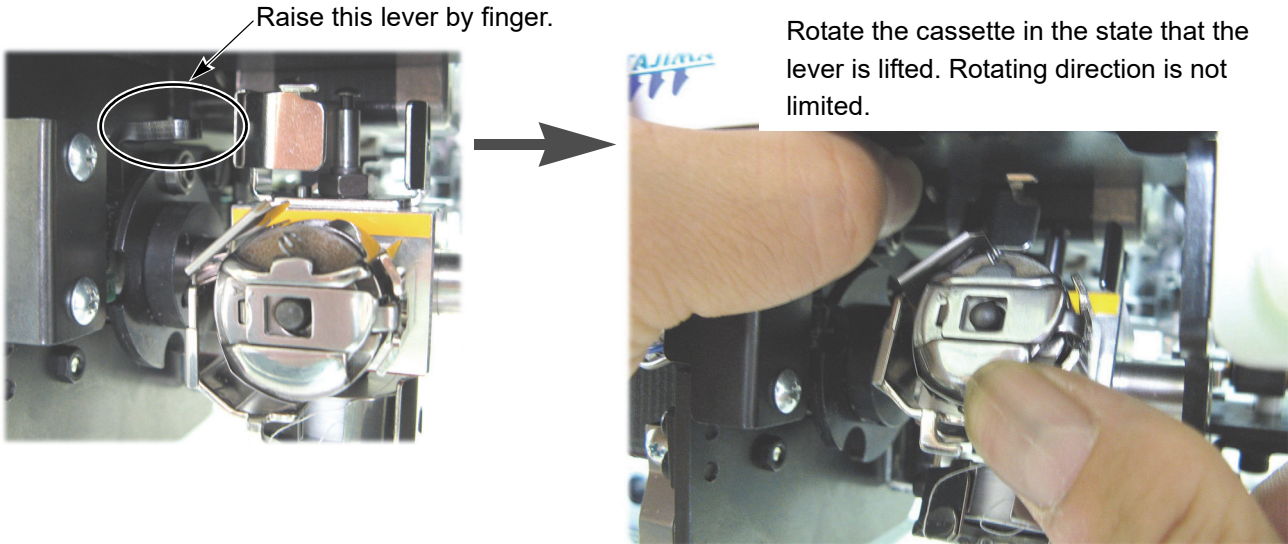


A cassette is removed from the device for the explanation.

Under thread is cut here.

### 3. When rotating cassette by hand


- (1) When changing bobbin case by the unit of head
- (2) When rotating position of cassette at certain head deviates
- (3) When bobbin cases are not set to the same cassette position at the working heads etc.

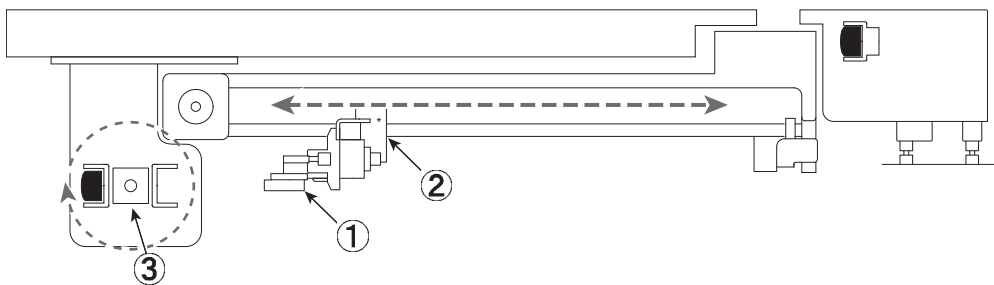


### 4. Movements of the device at power ON

The device performs the initialization when turning ON the power switch.

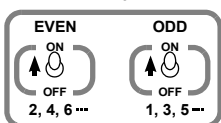
Position of DIP switch or condition of the device may cause occurrence of error when the power is turned ON. Therefore, refer to p.17 to cope with the error.

-  As for the initialization, the chuck ① will move to search the stand-by position ②. In addition, the cassette ③ will rotate by 360 degrees to detect the origin position.



### 5. Switch of controller

Even-numbered head    Odd-numbered head



- (a) Turn ON the even-numbered head/odd-numbered head switches. If the switch is OFF, the device does not operate.

- (b) Set the manual/auto mode switch to "AUTO".



### 3 Operation

## ! CAUTION

- ⊘ When you activate the device before thread trimming of the embroidery machine, ATH will work. Do not put your hands etc. near the needle or on the machine table. Since the needle bar moves up and down and the frame moves, you could be injured.
- ⊘ While the device is working, do not touch the controller or controller for head (Do not change switch position). Malfunctioning of the device could cause occurrence of error or restoring could be difficult.

### 1. 2-pole spec.

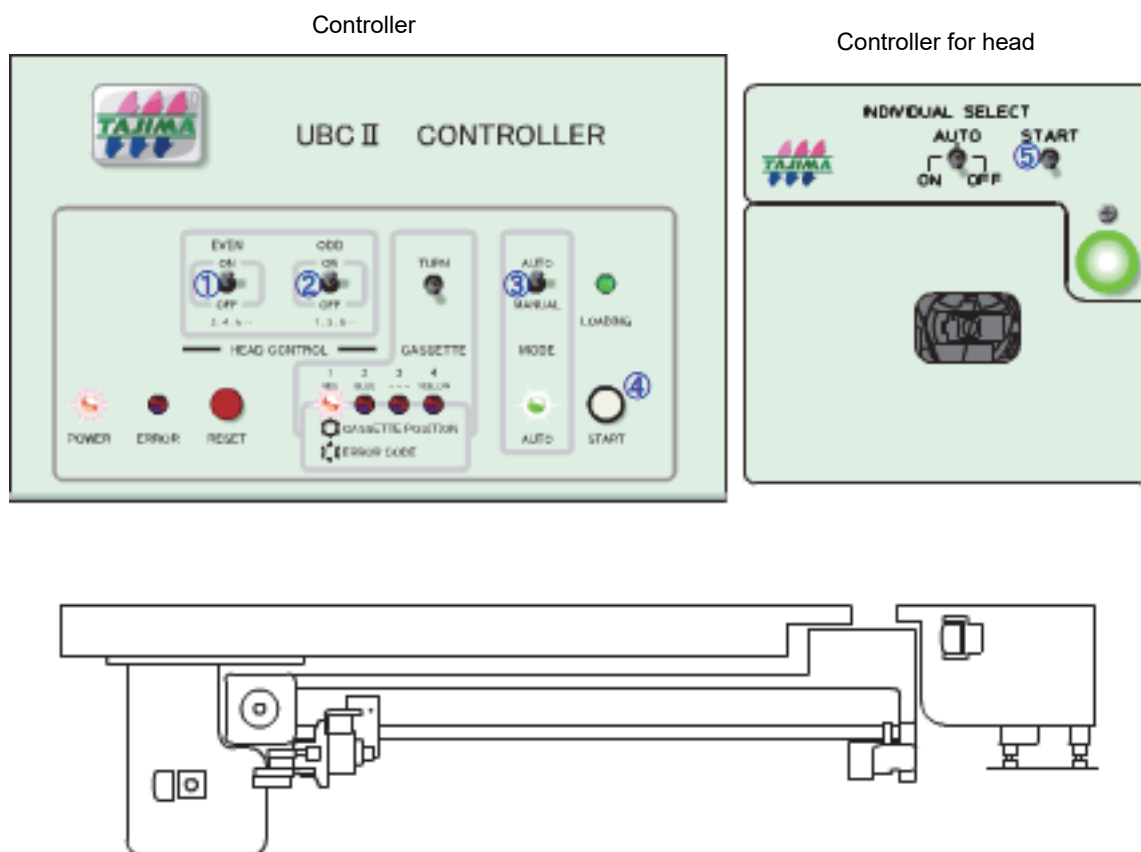
#### 1-1. To change bobbin ( all heads)


(1) Raise the switches ①, ②, ③ of the controller.

 For the single-head machine, lower the switch ① and raise the switch ②, ③.

(2) Press the start button ④, or raise the switch ⑤ of the controller for head.

 Clicking the start button ④ and the switch ⑤ in the PDF below will play the movie.



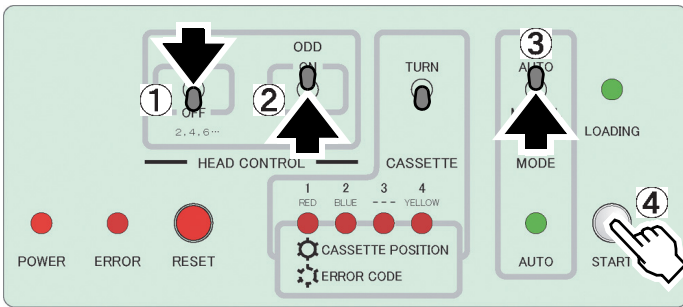
 To play the video in this manual, it is necessary to install the latest version of Adobe® Flash® Player. Adobe and Flash are the trademarks of Adobe Systems Incorporated.

**1-2.** To change bobbin ( even-numbered heads/odd-numbered heads)

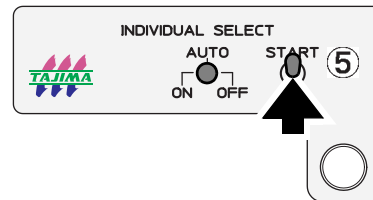
[Example of exchanging odd-numbered heads only]

- (1) Lower the switch ① of the controller.
- (2) Raise the switch ②, ③.
- (3) Press the start button ④, or raise the switch ⑤ of the controller for head.

Controller



Controller for head

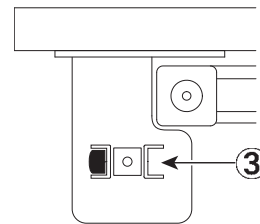
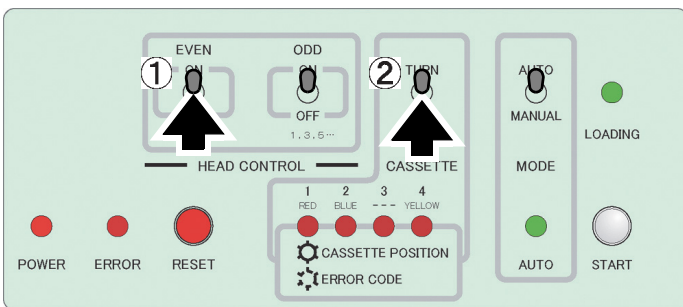


Both ④ and ⑤ can be operated.

⑤ is accepted by the controller for all heads.

[To return from odd-numbered heads to all heads]

- (1) By raising the switch ② for a few seconds, the cassettes will rotate to make the cassette ③ (at rotary hook side) empty when cassettes ③ (at rotary hook side) are not empty at all heads.
- (2) The buzzer sounds, and the indication lamp of the controller for head is blinking in red.
- (3) Raise the switch ① (Buzzer sound will stop).

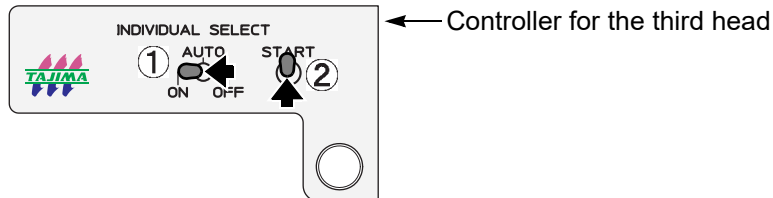


**1-3.** To change bobbin ( selected heads)

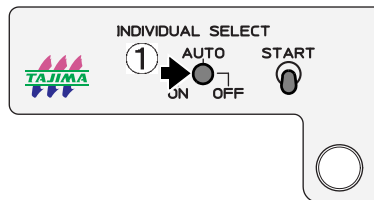
<Example of exchanging the third head only>

(1) Tilt the switch ① to the left.

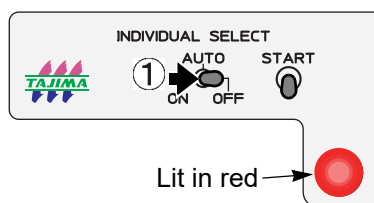
(2) Raise the switch ②.



(3) After completion of movement, return the switch ① to "AUTO".

**1-4.** To suspend the device

Tilt the switch ① of the third head (example) to the right.




The position of the cassette at the suspended head is displaced from that at other heads.

When operating with all heads, rotate the cassette by hand to align the position. (p.8)

## 2. 4-pole spec.

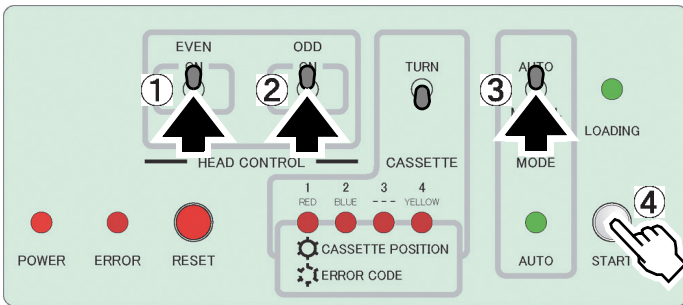
### 2-1. To change bobbin ( all heads)

(1) Raise the switches ①, ②, ③ of the controller.

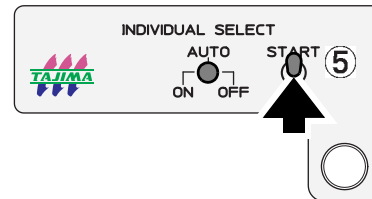
 For the single-head machine, lower the switch ① and raise the switch ②, ③.

(2) Press the start button ④, or raise the switch ⑤ of the controller for head.

Controller




or  
Controller for head



Both ④ and ⑤ can be operated.

⑤ is accepted by the controller for all heads.

### 2-2. To change bobbin ( even-numbered heads/odd-numbered heads)

 It is not possible to perform operation when the device is set to bobbin change prenotice mode (p.14).

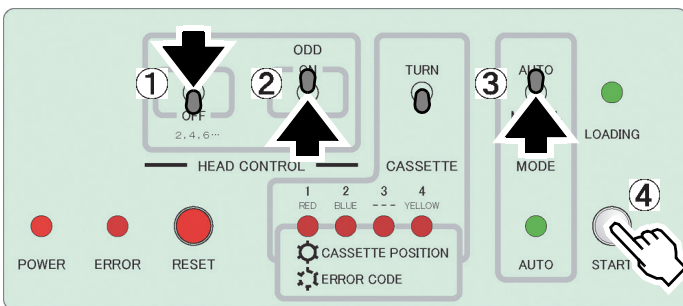
[Example of exchanging odd-numbered heads only]

(1) Lower the switch ① of the controller.

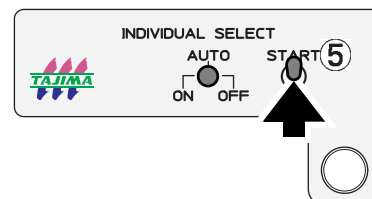
(2) Raise the switches ②, ③.

(3) Press the start button ④, or, raise the switch ⑤ of the controller for head.

Controller



Controller for head



Both ④ and ⑤ can be operated.

⑤ is accepted by the controller for all heads.

[To return from odd-numbered heads to all heads]

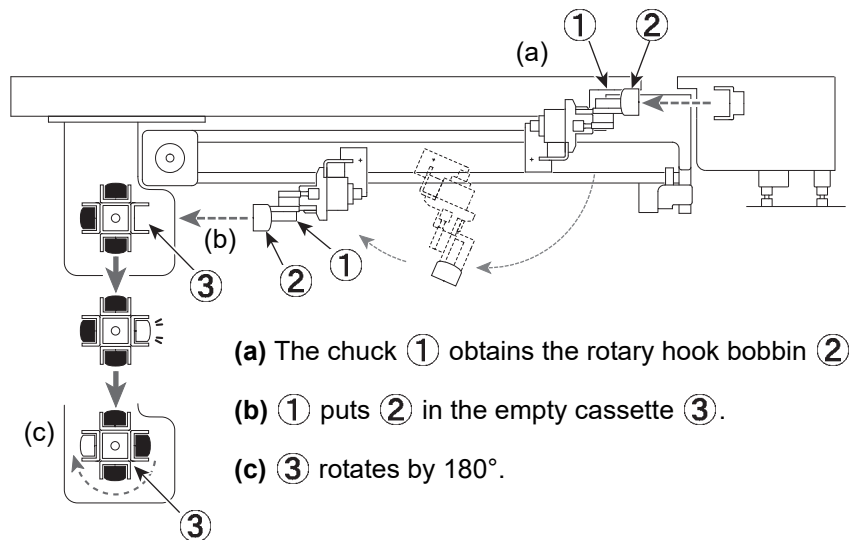
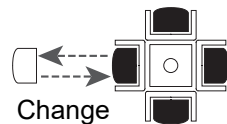
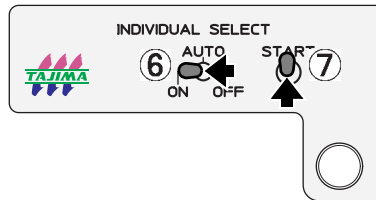
After checking the bobbin case in the cassette, rotate the cassette by hand to change the bobbin case (p.8).

## 2-3. [To change bobbin ( selected heads )

<Example of exchanging the third head only>

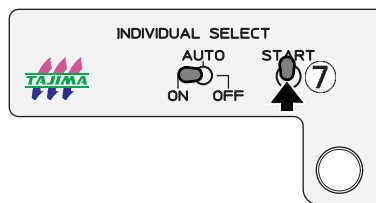
- (1) Tilt the switch ⑥ to the left.
- (2) Raise the switch ⑦ (The device will work).

Controller for the third head

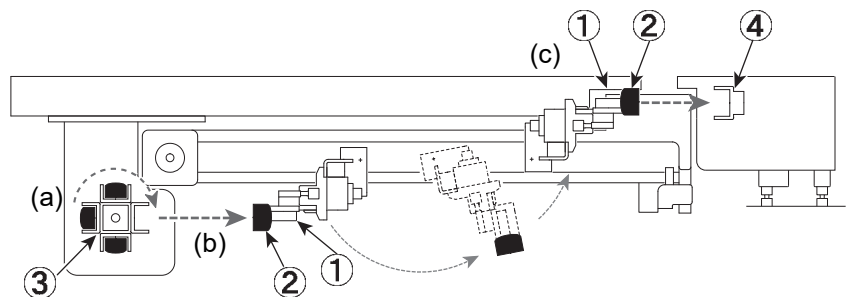
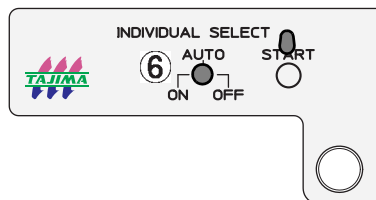


- (a) The chuck ① obtains the rotary hook bobbin ②.
- (b) ① puts ② in the empty cassette ③.
- (c) ③ rotates by 180°.

- (3) Replace the bobbin case in cassette.
- (4) Raise the switch ⑦ again (The device will work).



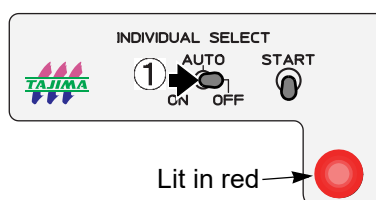
- (5) After completion of working, return the switch ⑥ to the original position (AUTO).



- (a) ③ rotates by 180°.
- (b) ① obtains the cassette bobbin ②.
- (c) ① puts ② in the rotary hook ④.

## 3. To suspend the device

Tilt the switch ① of the third head (example) to the right.



The position of the cassette at the suspended head is displaced from that at other heads.

When operating with all heads, rotate the cassette by hand to align the position (p.8).

## 4. Manual cassette rotation

Cassettes of all heads will rotate together. It is not possible to rotate a specified cassette by selecting an individual head.

It is not possible to perform operation when the device is set to Bobbin change prenotice mode.

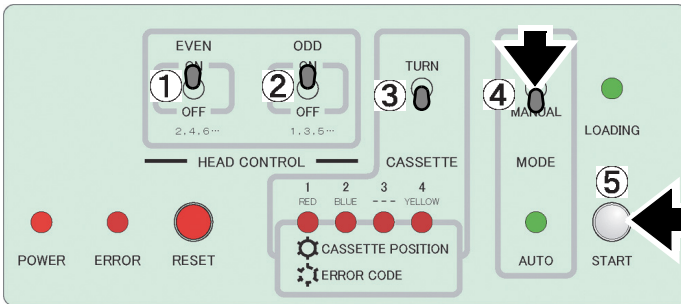
(1) Lower the switch ④.

\* Switches ① and ② : Any position of "Up or Down" is acceptable.

(2) Perform the following operation of a or b.

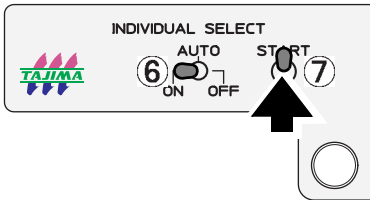
a. Press the start button ⑤ (cassettes will make one rotation).

Controller



b. Raise the switch ⑦ (cassettes will make one rotation).

Controller for head



\*Switch ⑥ : Any position of "ON or OFF" is acceptable.

## 5. Bobbin change prenotice mode

When the second bobbin is changed, the intermittent buzzer will sound to inform changing time of bobbin case.

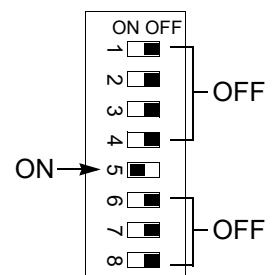
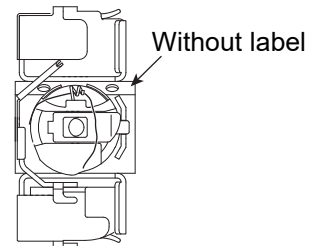
In this mode, it is not possible to perform the following operations.

"To change bobbin ( even-numbered heads/odd-numbered heads)(P.12)"

"Manual cassette rotation(P.14)"

[How to switch]

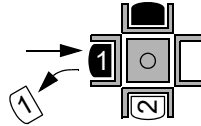
Turn OFF the power and turn ON 5 of the DIP switch positioned at the side of the controller (p.3).



### [Bobbin changing procedure]

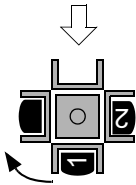
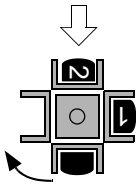
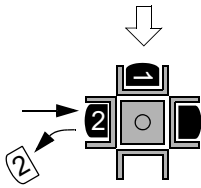
If the buzzer sounds, follow the procedure below (the buzzer sounds until the following (3) is completed).

- (1)** Change the bobbin case, and keep on pressing the start switch for more than 4 seconds (or raise the start switch on the controller for head for more than 4 seconds).

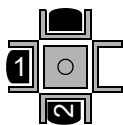


The cassette will rotate by 90°.

- (2)** Replace 2, and keep on pressing the start switch more than 4 seconds to repeat the rotation.



- (3)** When returning the cassette to the original position, the buzzer stops sounding.



← The vacant cassette will come to the rotary hook side.

## 6. Color change mode

Switch the bobbin when you want to match the under thread to the color of the upper thread.

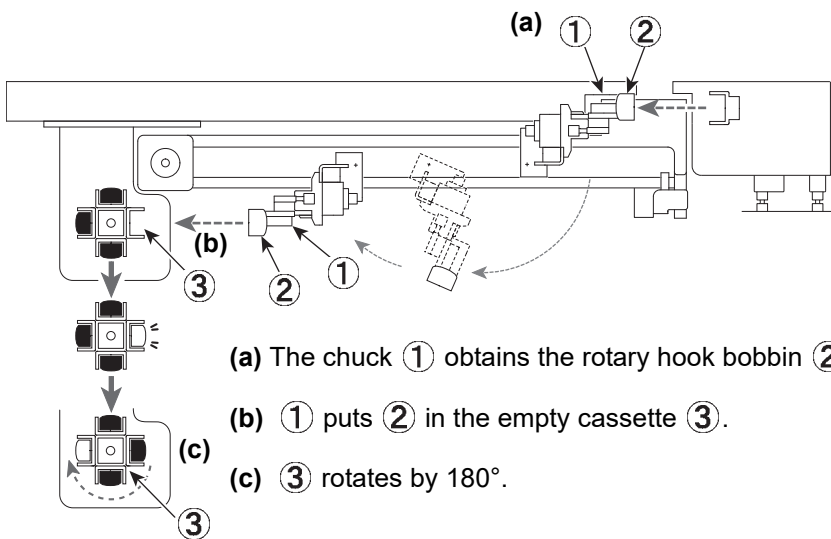
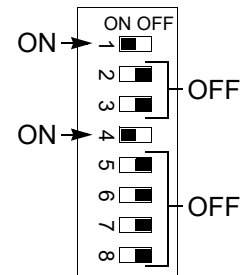
### [How to switch]

Turn OFF the power and turn ON 1 and 4 of the DIP switch positioned at the side of Controller for head.

### [Bobbin changing procedure]

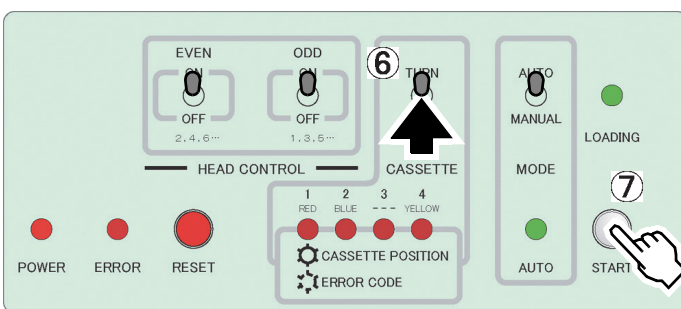
#### (1) Press the start button ⑦.

The device will perform a series of movements, and the rotary hook bobbin ① will move to the front cassette.



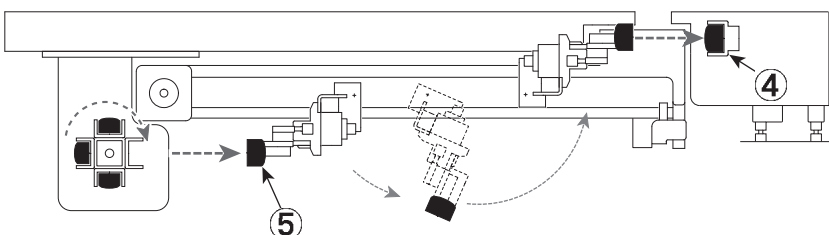
#### (2) When the desired cassette is in front, replace the bobbin case.

When the desired cassette is not in front, rotate the cassette (raise the switch ⑥), and replace the bobbin case.



#### (3) Press the start button ⑦ again.

The device will perform series of movements, and the cassette bobbin ⑤ will be contained to the rotary hook ④.

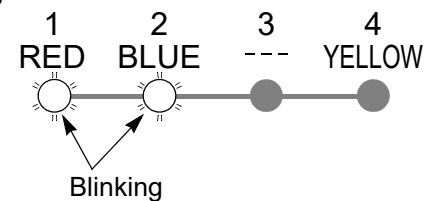


It rotates by 180° only when bobbin cases are contained to all 4 poles of cassette.

## 4 Correction of error and maintenance









### 1. Correction of error

Warning buzzer will sound and the lamp of the headwhere the error occurs will blink in red. It is possible to check the factor by the lamp on the controller.



#### 1-1. Error factor

Error indicator lamp				Contents of error	Error factor	How to restore
1	2	3	4			
	●	●	●	Bobbin case mis-catching at rotary-hook-side (The device cannot catch bobbin case.)	1. Breakage and/or bad contact of chuck motor harness 2. Bad adjustment of sensor position	(1) p.19
●	●		●	Mis-catching of bobbin case at cassette-side (Bobbin case is not caught.)	3. Bad catching position of chuck device (Bad mechanical adjustment)	
●		●	●	Bobbin case is absent at cassette-side.	1. Neglect of refilling bobbin case by operator 2. Mis-rotation of cassette 3. Direction of cassette deviates. 4. "EVEN" is ON for the single-head machine.	(2) p.19
		●	●	Bobbin case exists at cassette-side.	1. Overfilling of bobbin case by operator 2. Direction of cassette deviates.	(3) p.19
	●		●	Rotary-hook-side sensor does not perform detection.	1. Under thread was entangled in sensor section. 2. Breakdown of sensor	(4) p.19
●			●	Cassette-side sensor does not perform detection.	3. Setting (carriage stroke) error of DIP switch "7"Controller for head(p.3)	
			●	Cassette origin sensor does perform detection.	1. Direction of cassette deviates. 2. Bad contact of the cassette motor and/or cassette solenoid 3. Bad rotation of cassette occurred due to overload such as jamming of under thread.	(5) p.19
				Cassette displacement error in 2-pole spec.	Direction of cassette deviates.	
	●	●		Individual head selection power ON error	The power was turned ON in the state that the switch of the controller for head was turned "ON".	(7) p.20
●		●		Alternate head mode power ON error	The power was turned ON when only even-numbered heads or odd-numbered heads were selected.	(8) p.20

Error indicator lamp				Contents of error	Error factor	How to restore
1	2	3	4			
				Rotary-hook-side sensor ON power charge error	The power was turned ON in the state that the chuck device was positioned at the rotary-hook-side.	(9) p.20
				Wrong setting of DIP switch	The power was turned ON in the state of wrong setting of DIP switch.	(10) p.20

## 1-2. How to restore



Please make contact with the distributor when it is not possible to recover the device from trouble even after you perform the following operations.

"Start switch" described below indicates the start switch on the controller.

- (1)** Bobbin case mis-catching at rotary-hook-side (The device cannot catch bobbin case.), Mis-catching of bobbin case at cassette-side (Bobbin case is not caught.)
  - (a)** Press the reset switch. (Warning buzzer will stop.)
  - (b)** Remove the factor that causes occurrence of error.
  - (c)** Keep on pressing the start switch for four or more seconds (The device will work).
  - (d)** Set "EVEN" of the controller for the single-head machine to OFF.
  
- (2)** Bobbin case is absent at cassette-side.
  - (a)** Press the reset switch. (The cassette will rotate by 180°.)
  - (b)** Refill bobbin case(s) to the cassette.
  - (c)** Keep on pressing the start switch for four or more seconds (Warning buzzer will stop to sound. Cassette will rotate by 180°, and chuck device will contain the cassette bobbin case to the rotary hook after catching it).
  
- (3)** Bobbin case exists at cassette-side.
  - (a)** Press the reset switch. (The cassette will rotate by 180°.)
  - (b)** Take out the bobbin case from the cassette.
  - (c)** Keep on pressing the start switch for four or more seconds (Warning buzzer will stop to sound. Cassette will rotate by 180°, and chuck device will contain the bobbin case to the rotary hook).
  
- (4)** Rotary-hook-side sensor does not perform detection., Cassette-side sensor does not perform detection.
  - (a)** Press the reset switch. (Warning buzzer will stop.)
  - (b)** Remove the factor that causes occurrence of error.
  - (c)** Keep on pressing the start switch for four or more seconds (The device will work).
  
- (5)** Cassette origin sensor does perform detection.
  - (a)** Rotate cassette so that cassettes of all heads face to the same direction with the same color label.
  - (b)** To turn OFF/ON the power (The device will perform initialization.)
  
- (6)** Cassette displacement error in 2-pole spec.
  - (a)** Make cassette [Red] or [Without color] face to the front.
  - (b)** To turn OFF/ON the power (The device will perform initialization.)

**(7)** Individual head selection power ON error

- (a) Set the switch of the controller for head to "NOR (middle position)", "AUTO (middle position)".
- (b) Press the reset switch. (Warning buzzer will stop.)
- (c) Keep on pressing the start switch for 4 seconds or more. (The device will perform initialization.)

**(8)** Alternate head mode power ON error

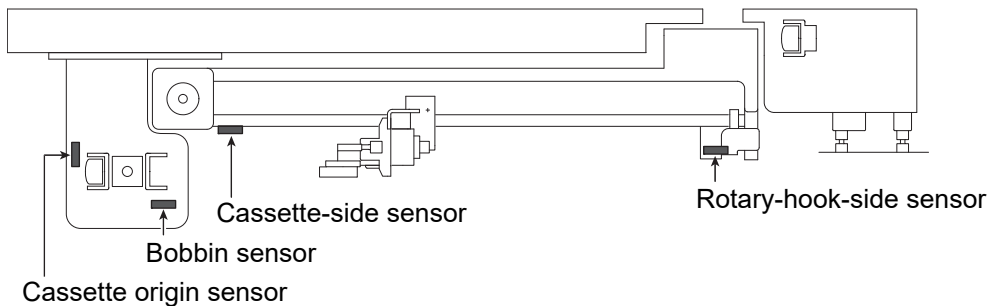
- (d) Press the reset switch. (Warning buzzer will stop.)
- (e) After turning ON both the "ODD" and "EVEN" of the controller, keep on pressing the start switch for four or more seconds.

**(9)** Rotary-hook-side sensor ON power charge error

- (f) Press the reset switch. (Warning buzzer will stop.)
- (g) Move the position of chuck device by hand (Keep the chuck device away from the rotary hook).
- (h) Keep on pressing the start switch for 4 seconds or more. (The device will perform initialization.)

**(10)** Wrong setting of DIP switch

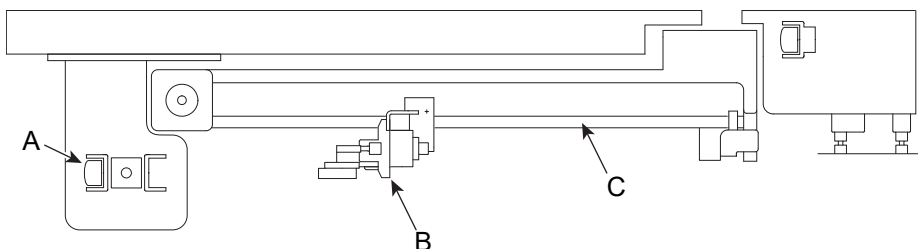
Wrong setting value of DIP switch will cause occurrence of error. Check the table of p.21, and change the value.

**1-3.** Arrangement of detecting sensors**2.** Maintenance**2-1.** Cleaning

Remove dust and lint attached to the device by using air compressor, etc. Cleaning points are the cassette section (figure A below), chuck section B and carriage section C.

Dust adhesion causes the malfunction of device. Therefore, remove dust frequently.

Depending on the environment of use, dust generation and adhesion amount varies. Therefore, check the adhesion status of dust once a day and clean it.



### 3. Supplemental documentation

#### 3-1. DIP switch

Switching of 2-pole spec./4-pole spec. and change of mode

		DIP switch at side face (1 in the figure below) <sup>[*1]</sup>								DIP switch at the rear face (2 in the figure below) <sup>[*2]</sup>							
		1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8
2-pole spec.	Usual setting (Cassette synchronization mode)	OFF	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	ON	[*3]	OFF
4-pole spec.	Usual setting	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	[*3]	OFF
	Color change mode	ON	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	[*3]	OFF
	With bobbin change prenotice mode	OFF	OFF	OFF	OFF	ON	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	OFF	[*3]	OFF

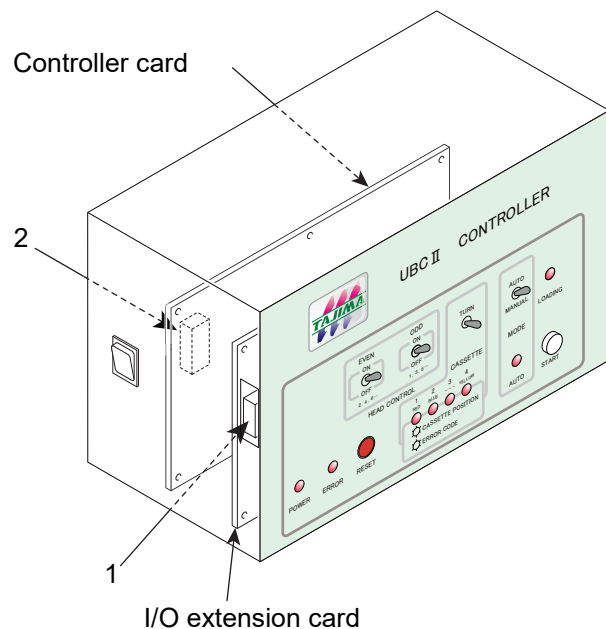
\*1 It is on the I/O extension card.

\*2 It is on the controller card. To switch this DIP switch, detach the rear cover.

\*3 Y-axis embroidery space

ON: 680 mm or more

OFF: 450, or 550 mm





1st Edition November, 2007

13th Edition October, 2019

■ **Manufactured by : TISM Co.,Ltd.**

Address : NO.1800, Ushiyama-cho, Kasugai, Aichi-pref., 486-0901, Japan

TEL : 81-568-33-1161 FAX : 81-568-33-1191

■ **Distributed by : Tajima Industries Ltd.**

Address : NO.1800, Ushiyama-cho, Kasugai, Aichi-pref., 486-0901, Japan

TEL : 81-568-37-1130 FAX : 81-568-37-1230

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