



Optional Device Manual

SBC

(Smart Bobbin Changer)

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 specification as compared with the actual production. If you have any question about this manual, consult your TAJIMA distributor.

We believe that "BASICS" of 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

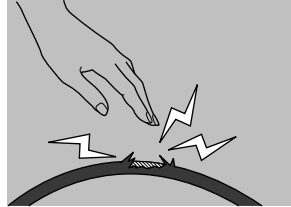
1. Instructions for use	5
2. Name of each part	6
2-1. Bobbin changer.....	6
2-2. Controller	6
3. Preparation	7
3-1. Attaching a bobbin	7
3-2. Setting on the operation panel.....	8
3-3. Initialization	9
4. Operation	9
4-1. To change bobbin case	9
4-2. Head selection	10
4-3. Retracting switch	10
4-4. Catching prevention magnet.....	10
5. Error.....	11
5-1. Carriage error	11
5-2. Detection error of bobbin case.....	11
5-3. Communication error	12
6. Optional SW	13
6-1. Parts	13
6-2. How to attach Laser line marker	13
7. Maintenance	14
7-1. Cleaning.....	14
7-2. Electric diagram.....	15

1. Instructions for use



WARNING

- ⚠ Do not damage, modify or heat the power or other cables. Do not exert undue force to them, either. Otherwise the cables will be damaged causing fire and electric shock.



- ⚠ Before opening the electrical boxes, be sure to turn OFF the power switch of the machine and shut OFF the primary power. If not, it may cause electric shock.

- ⚠ Keep away electrical units from water and chemicals. Entry or splashing of them into electrical units leads to short circuits, causing fire, electric shock and other troubles. If water or other chemicals enter the unit, turn OFF the power switch, shut OFF the primary power of the machine and contact your local distributor.

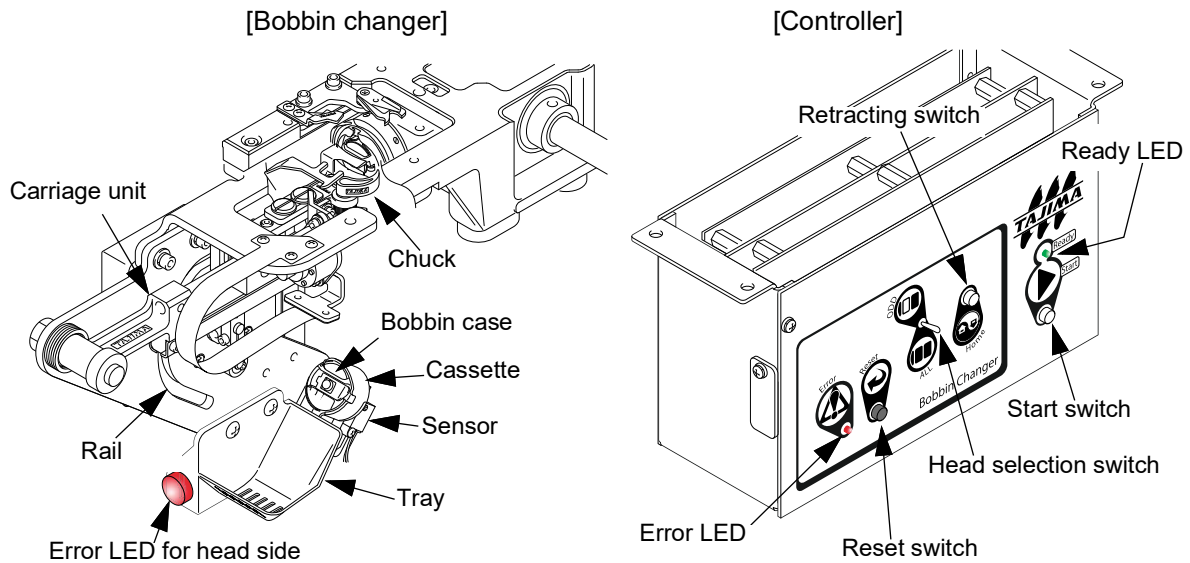
- ⊘ This unit uses strong magnet. The person, who is equipped with internal implantable medical electronics like a pacemaker, should not use this unit. The person who is equipped with a device described above also should not access to magnet inside of this unit. The internal equipment could malfunction.



CAUTION

- ⊘ When operating this device, do not bring your hands close to rotary hook. Movement of the device could injure you.
- ⊘ This unit uses strong magnet. This unit including magnet should not be accessed to a cellular phone, an analogue watch, a floppy disk, a magnetic card, a magnetic tape or a magnetic ticket.

2. Name of each part



2-1. Bobbin changer

Error LED for head side

- Blinking when bobbin cases are not set to cassettes correctly
- Lit when error occurred during carriage

2-2. Controller

Ready LED

- Lit when bobbin changer can be operated
- Unlit when bobbin changer is in operation or inoperable

Start switch

- To start the change of bobbin case

Retracting switch

- To move the carriage unit to Stand-by position or Releasing position

Head selection switch

- TMCP, TMCR, TMCS, TCWM-100, TLMX-100: To switch all heads and odd numbered heads
- TCWM-T00, TLMX-T00: To switch even heads and odd numbered heads

Reset switch

- To clear error
- Press for more than 2 seconds to start the initialization. (Clearing error is also possible.)


Error LED

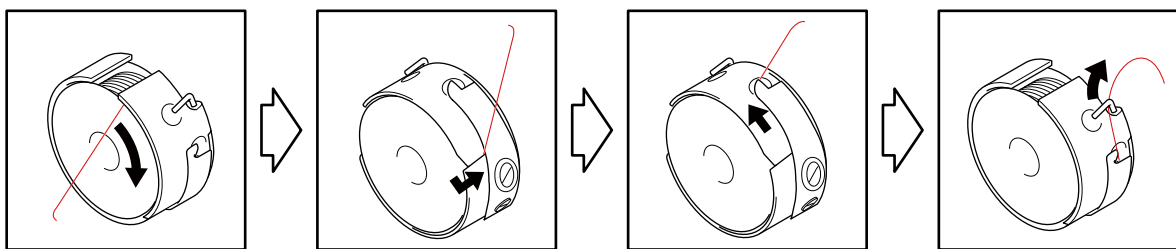
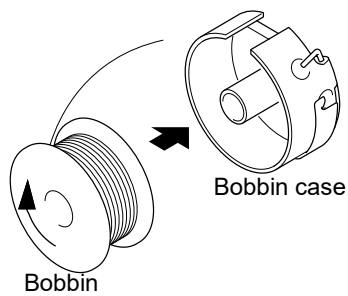
- Blinking when bobbin cases are not set to cassettes correctly
- Lit when error occurred during carriage

3. Preparation

3-1. Attaching a bobbin

(1) Set the bobbin in the bobbin case.

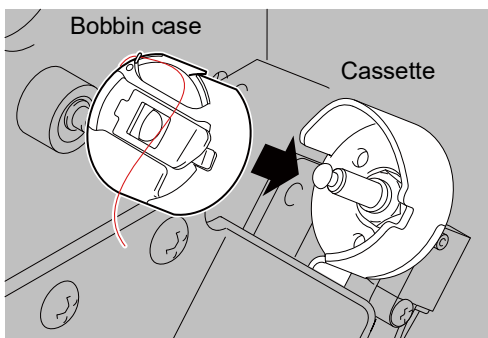
 Be careful not to set the bobbin case with wrong winding direction.



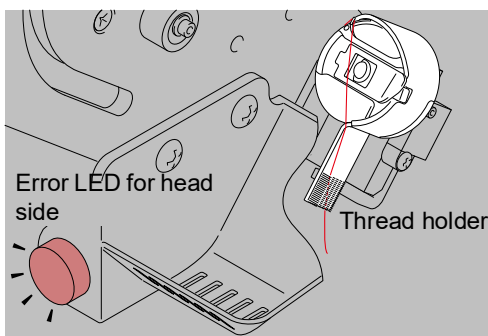
(2) Pull the thread into the notch of bobbin case.

(3) Pass the thread into the L-shaped guide through the hole of bobbin case.

 Thread should be come out from bobbin case about 5 to 6 cm.



(4) Set the bobbin case into the cassette.



(5) Blinking of the error LED at head side will turn OFF when the bobbin case is set to the cassettes correctly.

(6) Hook the thread to the thread holder

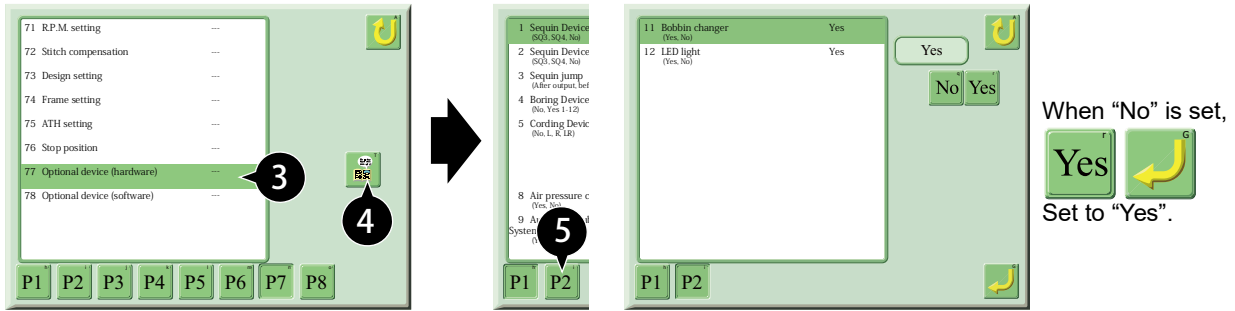
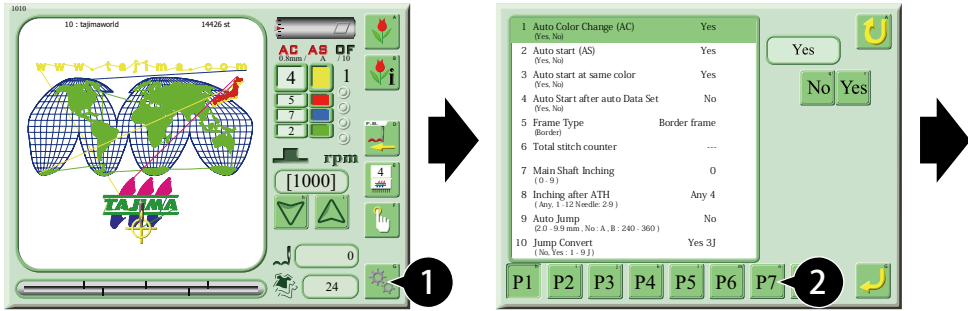
3-2. Setting on the operation panel

When you use this device for the first time, check if parameter “Bobbin Changer” is set to “Yes” (to use) on the operation panel of the embroidery machine.

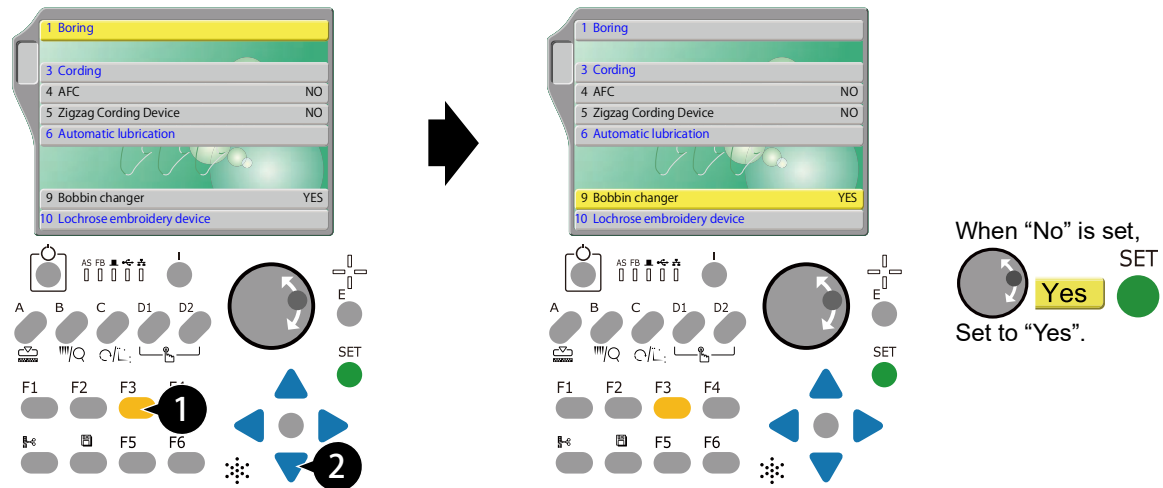
Input of password is necessary.

The contents of display differ depending on model.

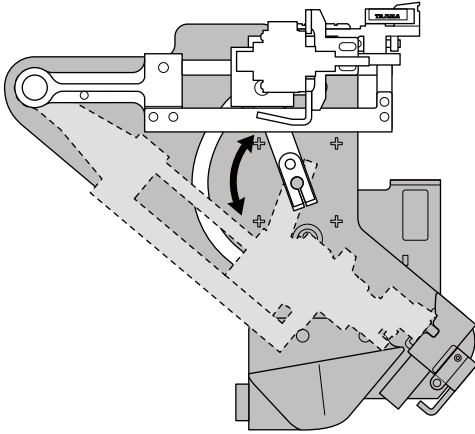
TMCR, TMCP, TMCS




TLMX, TCWM



3-3. Initialization



When turning ON the power of the embroidery machine, bobbin changer will perform initialization. The initialization is performed regardless of with/without bobbin. After the end of the initialization, if the cassettes have not contained the bobbin cases, the error LED will be blinking. If bobbins are set in cassettes, Ready LED will be lit.


-  If the bobbin changer starts working when turning ON the power, the communication error will occur. Start the operation of bobbin changer surely after turning ON the power.
(Communication error : P12)

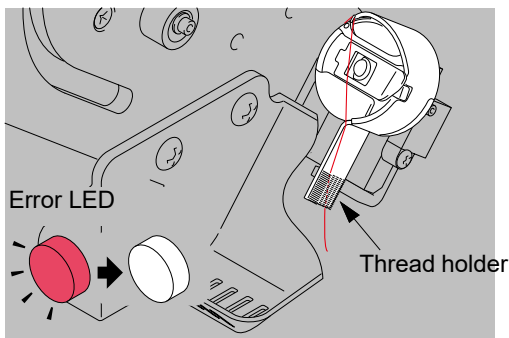
4. Operation

4-1. To change bobbin case




CAUTION

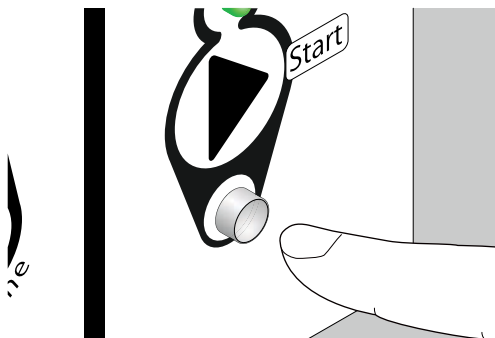
-  When starting the operation of bobbin changer, do not put your hands etc. near needle or on the table. Since ATH is operated, moving needle bar and/or frame could injure you.




(1) Set the bobbin case into the cassette correctly.

-  If bobbin cases are not set to the cassettes correctly or the cassettes have not contained bobbin cases, the error LED for head side will be blinking. If bobbin cases have been set into the cassettes correctly, the error LED for head side will be unlit.

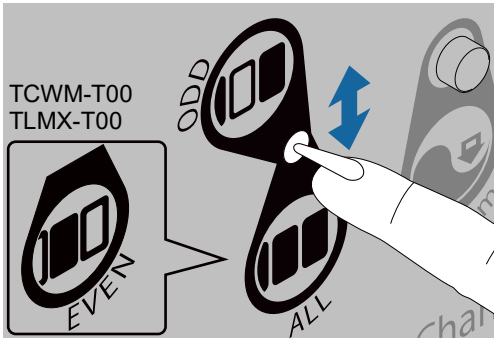
(2) Hook the thread to the thread holder



(3) Press Start switch.

-  If Start switch is pressed, ATH is executed. After that, bobbin changer will start to operate.

4-2. Head selection



Switch the head for performing the exchange of bobbin.

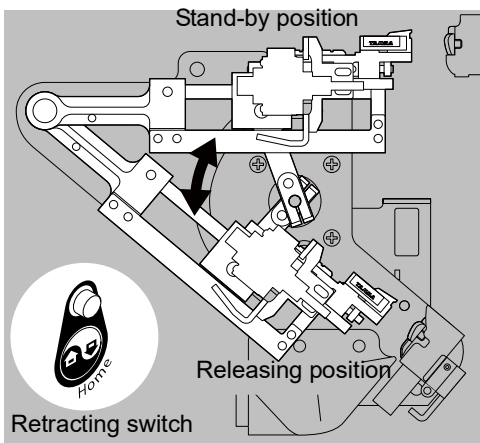
(1) Switch the position of switch.

For TMCP, TMCR, TMCS, TCWM-100, TLMX-100, "ALL" means operation of all heads and "ODD" means operation of odd heads.

For TCWM-T00, TLMX-T00, "EVEN" means operation of even heads and "ODD" means operation of odd heads.

When the switch is set to "ODD", error will not occur even if the bobbin case has not been set in the cassettes of even-numbered head.

4-3. Retracting switch



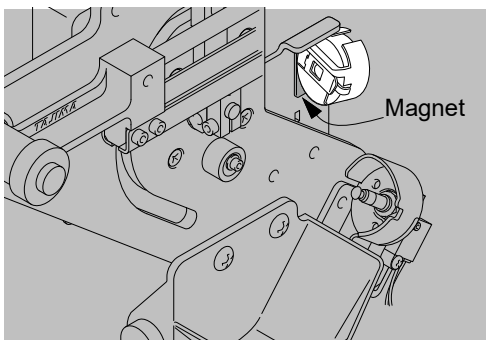
Retract the carriage unit to easily check the rotary hook and bobbin.

(1) Press the retracting switch to move to the releasing position.

(2) Pressing the retracting switch again will return to the stand-by position.

Every time you press the switch, the carriage unit will move to the stand-by position and releasing position.

4-4. Catching prevention magnet



When the bobbin that the under thread was not trimmed is operated by bobbin changer, it will be released to the tray with the lower thread being connected.

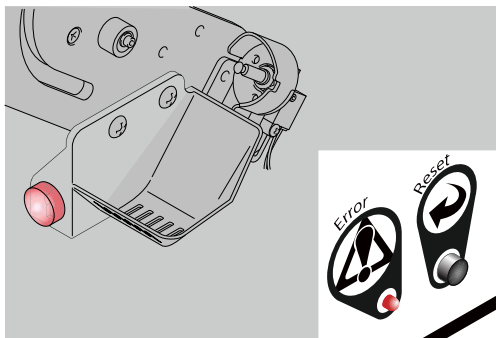
Bobbin cases are wound up together with the under thread at the start of embroidery.

The bobbin case will be fixed by the magnet in the middle of the motion to wind up the bobbin case.

Check the position of the magnet when there is no bobbin case in the tray.

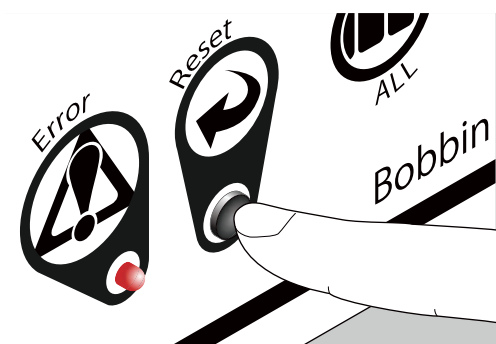
5. Error

5-1. Carriage error



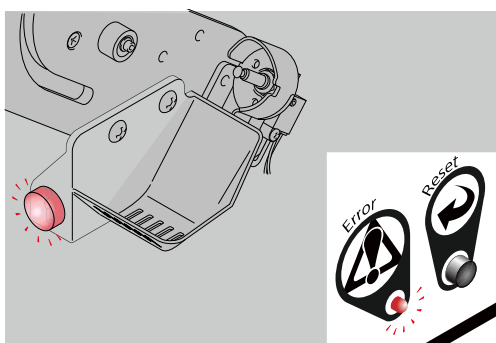
When an error occurs during the carriage of bobbin cases, bobbin changer will stop and the error LED for head side and the error LED for controller will be lit.

- (1) Check the bobbin changer for the head where the error LED for head side is lit.
 - ☞ Clean the straight pin and rail for the carriage unit if they are dirty with dust, etc.
(Cleaning : P14)



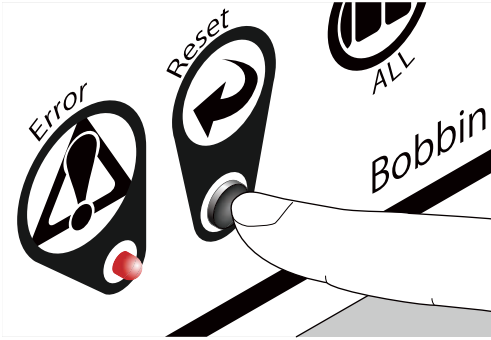
- (2) Press Reset switch for 2 seconds or more to execute the initialization, and clear the error.
- (3) When resetting is completed, Ready LED will be lit.
 - ☞ When the bobbin case at the rotary hook is chucked, the bobbin changer will release the bobbin case to the tray and return to the stand-by position. When the bobbin case at the cassette is chucked, the bobbin changer will return the bobbin case to the cassette and return to the stand-by position.
 - ☞ In case Reset switch is pressed shortly, the excitation of the carriage motor will be turned OFF under error condition.

5-2. Detection error of bobbin case




The existence/absence of bobbin cases are detected by the sensor. The error LED for head side where error was detected and the error LED for controller are blinking.

- (1) Check the bobbin changer of the head whose error LED for head side is flashing.
- (2) Supply the bobbin when it is required.

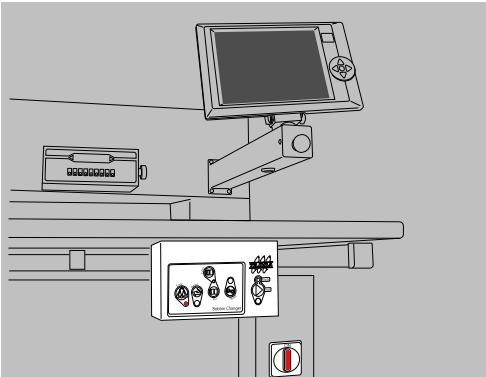


(3) Press Reset switch for 2 seconds or more to execute the initialization, and clear the error.

(4) When resetting is completed, Ready LED will be lit.

 When the bobbin case at the rotary hook is chucked, the bobbin changer will release the bobbin case to the tray and return to the stand-by position. When the bobbin case at the cassette is chucked, the bobbin changer will return the bobbin case to the cassette and return to the stand-by position.

5-3. Communication error



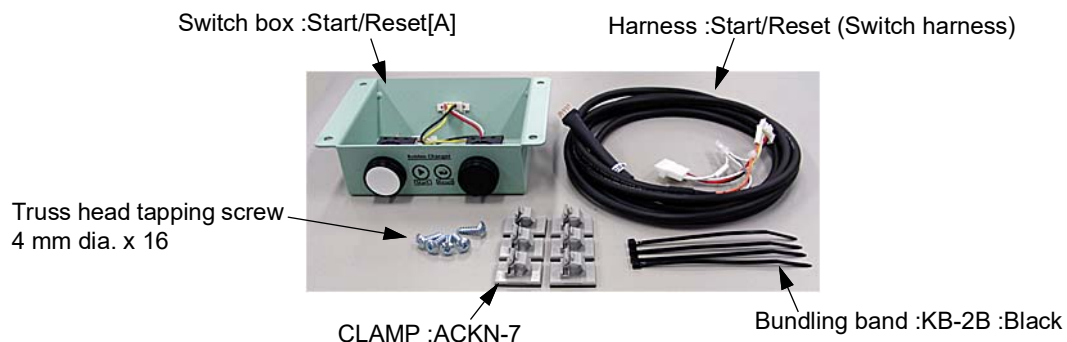
If there is no reply from the embroidery machine side when starting the bobbin changer in the process of turning ON the embroidery machine, an error will occur.

(1) Press Reset switch for 2 seconds or more to clear the error.

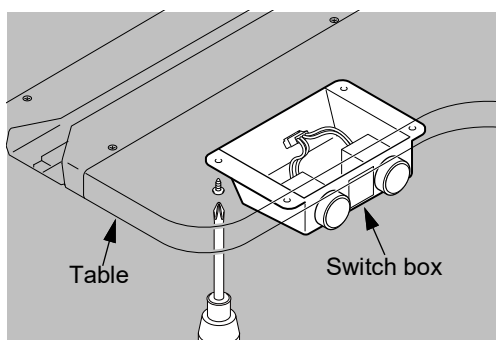
(2) When resetting is completed, Ready LED will be lit.

6. Optional SW

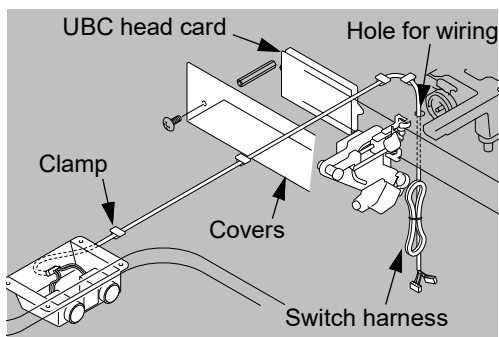
6-1. Parts




6-2. How to attach Laser line marker



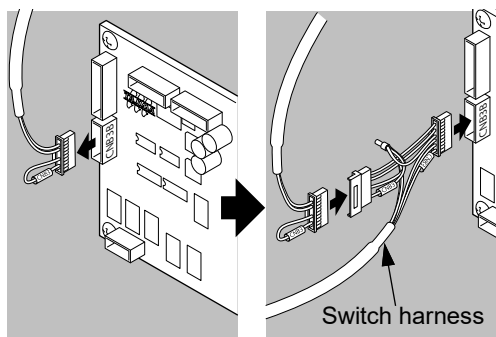
- (1) The switch box is fixed at the back side of the table with screws so that it's easy to operate the switch.



- (2) Detach the cover of UBC head card.

 The shape of the cover differs depending on machine specification.

- (3) Pass the switch harness through the hole for wiring near UBC head card, connect it to the switch box and fix with the clamp.



- (4) Remove the harness connected to the CNB 3 A or CNB 3B of UBC head card, and connect it by relaying the switch harness.

- (5) Bundle and fix the extra harness with the other harness by using the bundling band.

- (6) Attach the cover of UBC head card.

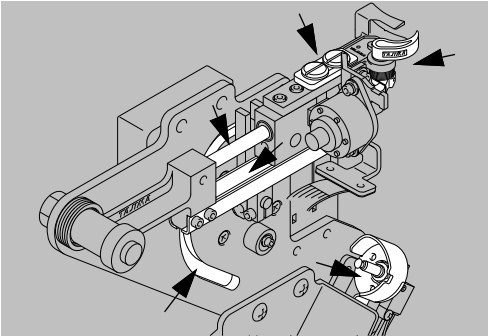
7. Maintenance



CAUTION

- ⊘ Do not lubricate because oil less bushing is adopted.
Oiling or greasing to the driving section could cause the trouble of machine by accumulating dirt and dust easily.

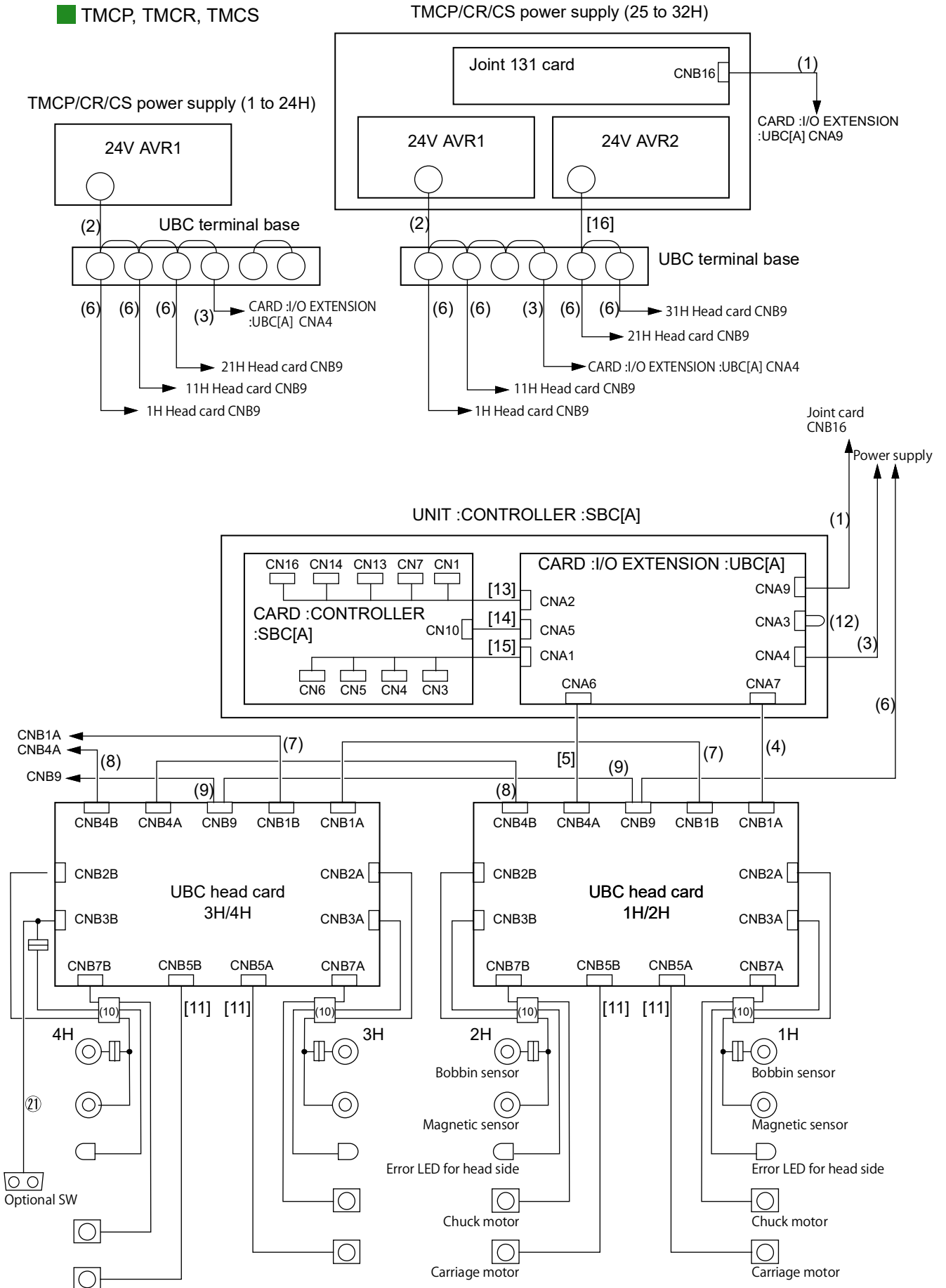
7-1. Cleaning



Dust and lint are easily accumulated around carriage unit, rail, chuck, cassette and rotary hook . Clean by using air compressor once a week.

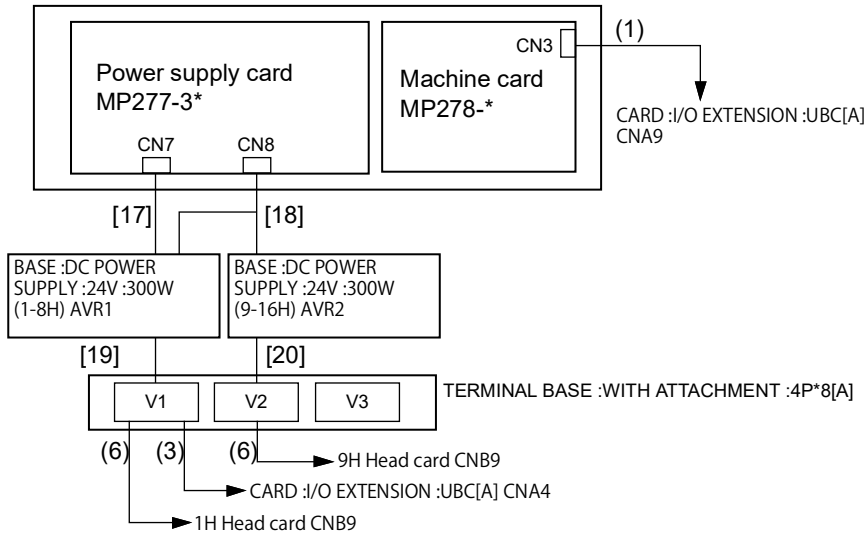
7-2. Electric diagram

■ TMCP, TMCR, TMCS

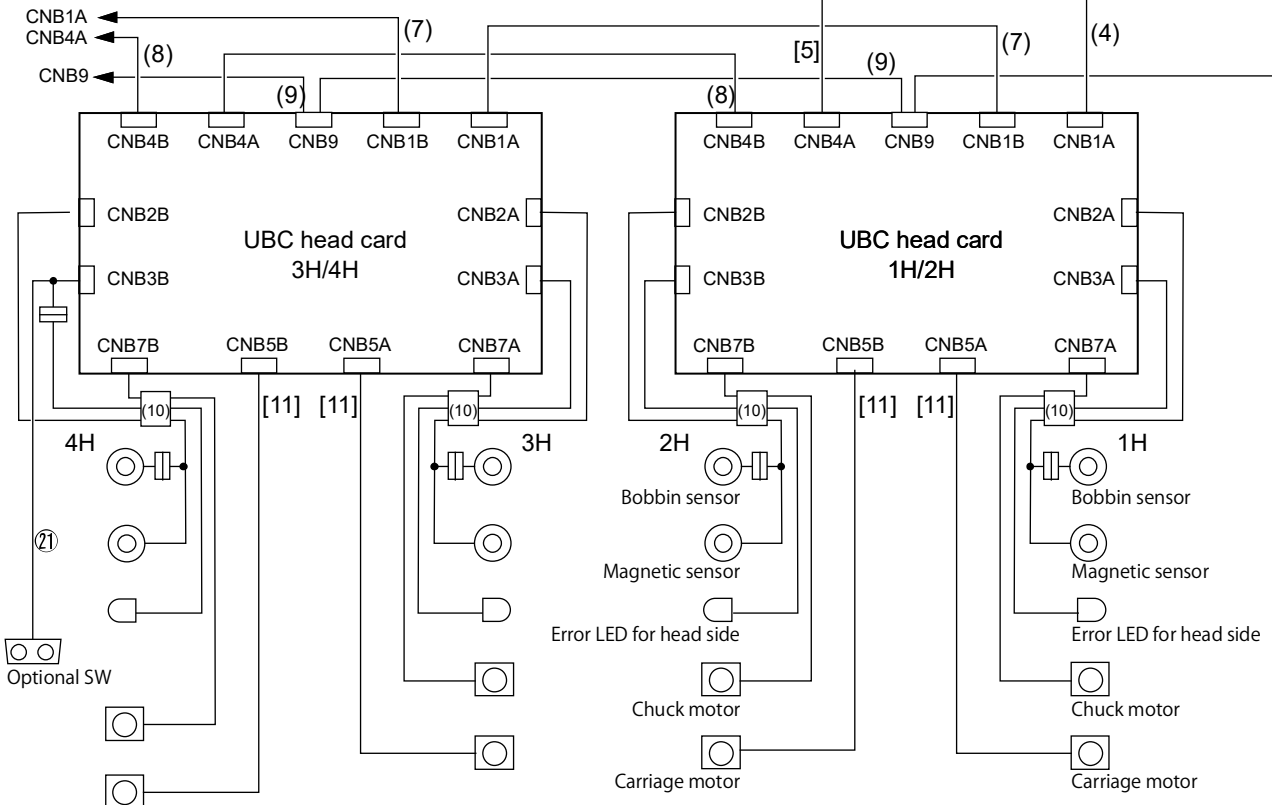
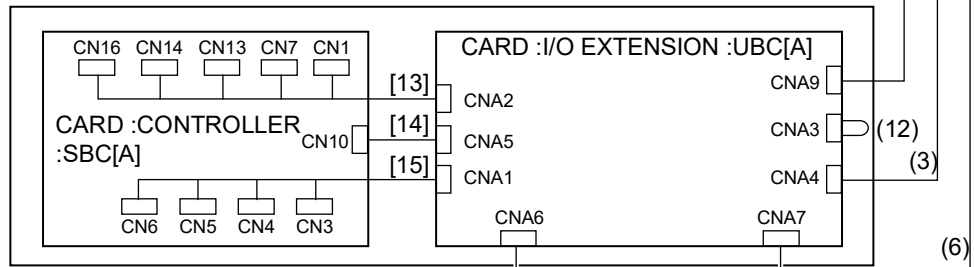


TCWM, TLMX

TCWM, TLMX power supply



UNIT :CONTROLLER :SBC[A]



Harness list

No.	Name	Item No.	Remarks
(1)	HARNESS :UBC MACHINE I/F	H021054@@000	TMCP, TMCR, TMCS, TCWM-100, TLMX-100
		H021049@@000	TCWM-T00, TLMX-T00
(2)	HARNESS :UBC TERMINAL BASE POWER SUPPLY :ROUND TERMINAL	H021050@@000	
(3)	HARNESS :UBC CONTROL POWER SUPPLY 1	H021001@@000	
(4)	HARNESS :UBC HEAD SIGNAL 1	H021006@@000	
[5]	HARNESS :UBC MOTOR SIGNAL 1	H021007@@000	
(6)	HARNESS :UBC POWER SUPPLY 1	H021019@@000	
(7)	HARNESS ;UBC HEAD SIGNAL 2	H021016@@000	
(8)	HARNESS :UBC MOTOR SIGNAL 2	H021017@@000	
(9)	HARNESS :UBC POWER SUPPLY 2	H021018@@000	
(10)	HARNESS UNIT :SBC :BASIC LENGTH	H03100502000	
	HARNESS UNIT :SBC :BASIC LENGTH+500MM	03100507000	
[11]	HARNESS :MOTOR EXTENSION	H03101905000	For basic length + 500 mm
(12)	HARNESS :POWER SUPPLY SWITCH JP CONNECTOR	H03101100000	
[13]	HARNESS :UBC I/O SIGNAL	H02100300000	
[14]	HARNESS :UBC CONTROL POWER SUPPLY 2	H02100200000	
[15]	HARNESS :UBC MOTOR CONTROL SIGNAL	H02100500000	
[16]	HARNESS :UBC TERMINAL BASE POWER SUPPLY	H021058@@000	25H to
[17]	HARNESS :SBC POWER :AC :1	H031023@@000	1-8 head machine
[18]	HARNESS :SBC POWER :AC :2	H031024@@000	9-16 head machine
[19]	HARNESS :SBC POWER :DC :V1	H031025@@000	
[20]	HARNESS :SBC POWER :DC :V2	H031026@@000	9-16 head machine
⑳	HARNESS :START/RESET	H03101000000	Optional SW

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