SWF

USER'S MANUAL

MACHINE

SUNNY22

MOBASE SUNSTAR CO., LTD

MME-231102

1. This manual explains and describes the operation methods and related issues of SWF "Automatic Embroidery Machine" to ensure the proper use. Please have a thorough understanding of the manual before operating the machine.

2. The manual is subject to change without prior notice to enhance the quality of the embroidery machine and may be different a bit from the purchased product. If you have any inquiry on the product and manual, please contact a sales agency.

3. The manual must be passed on to next users.

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01 MACHINE TYPES AND SPECIFICATIONS

1.1) SPECIFICATIONS

Color	7
Head	1
Stitch Length	0.1~12.7mm
Speed	Max. 800 rpm
Motor	DC Motor×1 (Main Shaft Motor)
	Pulse Motor×2 (Frame Driving Motor)
Electricity	1-Phase : 100V ~ 240V (50~60 Hz)
Power Consumption	100W

1.2) PERIPHERALS

Bobbin Winder	Standard(Built-in)
Memory Capacity	Max. 40,000,000
Memory Medium	USB Memory Stick
LED Light	Standard(Built-in)
Device(Option)	Robot Frame, Cap Hoop

02 SAFETY RULES

2.1) SAFETY INDICATIONS

The following set of safety rules categorized as **DANGER**, **WARNING**, and **CAUTION** indicates possibilities of physical or property damages if not fully observed.

No.	Names	Content
	CAUTION	Users may be subject to physical or property damages if not fully observe the CAUTION.
	WARNING	Users may be subject to death or severe damages if not fully observe the WARNING.
	DANGER	Users may be subject to death or severe damages and emergency if not fully observe the DANGER.

2.2) MACHINE DELIVERY

Warning mark	Description
 DANGER	ONLY TRAINED AND EXPERIENCED PERSONS, FAMILIAR WITH THE RELEVANT SAFETY INSTRUCTIONS, SHOULD HANDLE THE MACHINE. MAKE SURE TO FULLY OBSERVE THE FOLLOWING INSTRUCTIONS. **2.2.1) Delivery by hand** Make sure to wear safety boots. Hold the machine tightly at both left and right.

2.3) MACHINE INSTALLATION

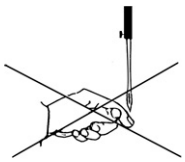


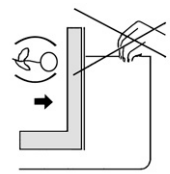
2.3.1) Machine malfunctions or physical damages may occur due to condition of the installation environment. Make sure to meet the following conditions.

1) The foundation (floor) under the machine must be strong enough to support the weight of the machine.
2) Air conditioning can eliminate dust and humidity, which may cause pollution and corrosion of the machine. Make sure your machine is regularly maintained.
3) Do not expose the machine to direct sunlight. (Long exposure to direct sunlight can fade the machine paint or deform the machine shape.)
4) Allow at least 50cm space on each side of the machine (right, left, rear) from the wall for convenient maintenance.

2.4) MACHINE OPERATION









2.4.1) The machine has CAUTION and WARNING labels on each risky parts. Pay careful attention to the labels and make sure to observe them during operation.

1) Read thoroughly and fully understand the manual before operating the machine.
2) Dress for safety. Long and unbound hair, jewelry such as necklaces, bracelets, and wide sleeves can get caught in the machine. Wear shoes with non-slip soles to prevent slip-off accidents.
3) Check the scope of machine operation to see if there is no problem.
4) Keep your hands or head away from the moving parts of the machine such as needle, hook, take-up lever, and pulley when the machine is in operation.
5) Do not remove the safety covers on the pulley or shaft when the machine is in operation for your safety.
6) Be sure the main power is turned off and the power switch is OFF before opening the cover of any electrical components such as control box.
7) Be sure the main switch is OFF before manually turning the main shaft.
8) Turn OFF the machine when you thread needles or inspect the finished embroidery.
9) Do not lean against the cradle or place your fingers near the pantograph guide grooves. You may hurt your fingers when the frame moves.
10) The machine noise may exceed 85db when it runs at the maximum speed.

2.5) REPAIR



2.5.1) Only SWF-trained and designated engineers should perform repair work.

1) Turn OFF the power before cleaning or repair. Wait for 4 minutes so the machine electricity is completely discharged.



It takes approximately 10 minutes after turning off the main switch before the electricity is fully discharged from main shafts and the X/Y drive box.

2) Do not change the settings or any parts on the machine without consulting with SWF.



Machine changes without consultation with SWF may cause risks to your safety when you operate the machine.

3) Use only **official SWF parts** when repairing your machine or replacing parts.
4) Re-install all safety covers when you are finished with the repair.

03 PRODUCT FEATURES

1) MEMORY SIZE.

A maximum of 200 designs can be stored in your machine. This can be expanded to 40 million stitches. One design maximum is 2 million stitches.

2) MIRROR IMAGE CONVERSION AND DESIGN DIRECTION

You can turn the design from one degree to 359 degrees. Your machine is also capable of mirror conversion.

3) ENLARGING AND REDUCING THE DESIGN

The embroidery design can be reduced or enlarged in size from 50% to 200% along the X and Y axis in increments of 1%.

4) AUTOMATIC SELECTION OF NEEDLE BAR

You can select the order of the needle bars up to the 500th bar.

5) REPETITION OF DESIGNS

The same design can be repeated up to 99 times along the X and Y axis.

6) NON-STITCHING FUNCTION

The frame can be moved backward and forward in units of 1,100,1,000 and 10,000 stitches. The needle bar can also be moved backward and forward by color without stitching.

7) FRAME REVERSAL

When the thread breaks or the needle becomes unthreaded, the frame can be moved in units of setting stitches back to the beginning point of the design.

8) AUTOMATIC TRIMMING DEVICE

The trimming function is automatic, determined by the design and the setup of the machine.

9) AUTOMATIC DETECTION OF UPPER AND LOWER THREAD BREAKS

This device automatically stops the machine when the upper thread breaks, the thread pulls out of the needle, or the bobbin thread runs out.

10) POWER FAILURE SAFEGUARDS

In the event of a power outage, it provides the ability to move to the location where the power supply was interrupted, and this feature reduces defects in finished products.

11) EDITING

Stitch work length and function codes (jump, finish, thread trimming) can be deleted, changed, or inserted.

12) MACHINE STOPPAGE

The screen will indicate why the machine has stopped operating.

13) RPM

The revolutions per minute is indicated on the screen.

14) FRAME SPEED

The speed can be adjusted to high, medium and low.

15) MEMORY

The screen indicates how much memory remains.

16) CODES FROM OTHER MACHINE BRANDS

[Recognized Formats]			
1. SST	2. DST	3. EBD	4. TBF

04 MACHINE INSTALLATION AND PRECAUTIONS



Meet the conditions described in the manual when installing the machine. Failure to follow the directions may result in unexpected machine malfunctions.

4.1) INSTALLATION CONDITION

4.1.1) Temperatures

1) When machine in operation: 15 ~ 40℃ (59 ~ 104℉)
2) When machine is idle: − 25 ~ 55℃ (− 13 ~ 131℉)

4.1.2) Humidity

1) relative humidity : 45~85%



1) Do not let moisture drops on the machine.
2) Provide air conditioning to control humidity and to prevent dust and corrosion.

4.1.3) Grounding

Ensure the electricity is properly grounded.



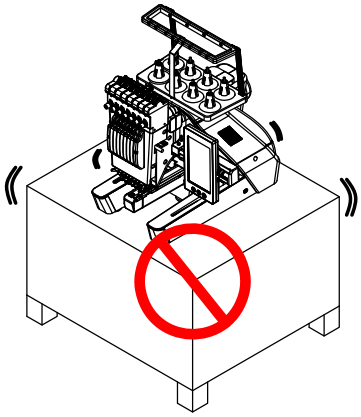
Ensure properly grounding of the machine to avoid the possibility of electric shock. Use three-wire grounding (grounding resistance below 100 ohms).

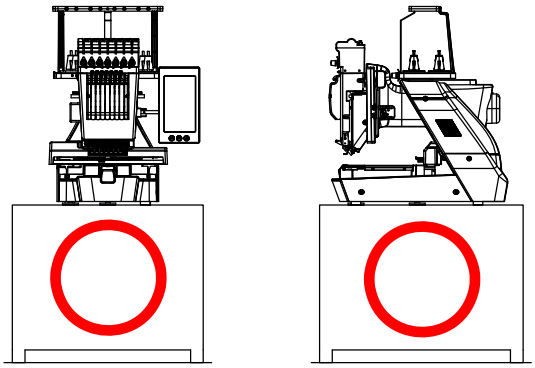
4.1.4) Surrounding environment

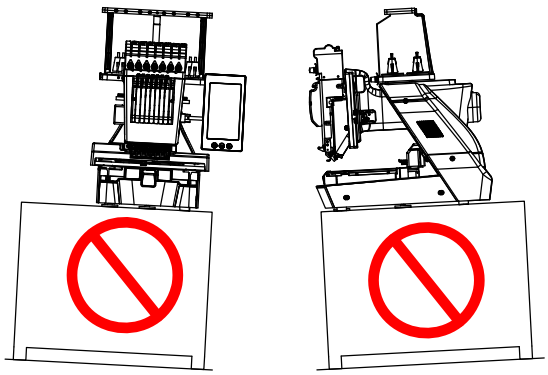
Close any doors or windows near the machine to prevent direct sunlight, dust, and humidity.

4.1.5) Place of installation

Install it on a sturdy table that can withstand the weight and vibration of the machine.







Secure enough space around the machine (at least 20cm on the left/right/front of the machine) and install it so that the frame can move freely.

4.2) ELECTRICITY INSTALLATION ENVIRONMENT

WARNING

Check if the input voltage of the machine corresponds with the voltage supply before installing or operating the machine.

4.2.1) Input voltage (to be adjusted at installation)

100V~250V free voltage

4.2.2) Allowed voltage range

Within 10% of the voltage set

4.2.3) Electric capacity and power consumption

120Wh

WARNING

1) Make sure to check the voltage supply where the machine will be installed.
2) Install the cable away from the operator's work space to prevent accident or injury.

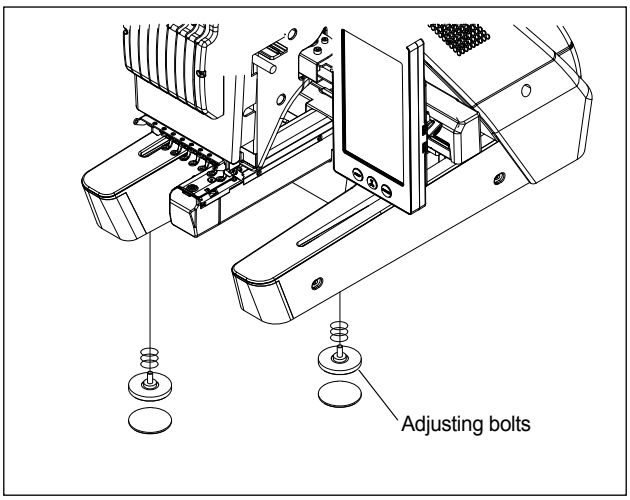
4.3) LEVELING THE MACHINE

CAUTION

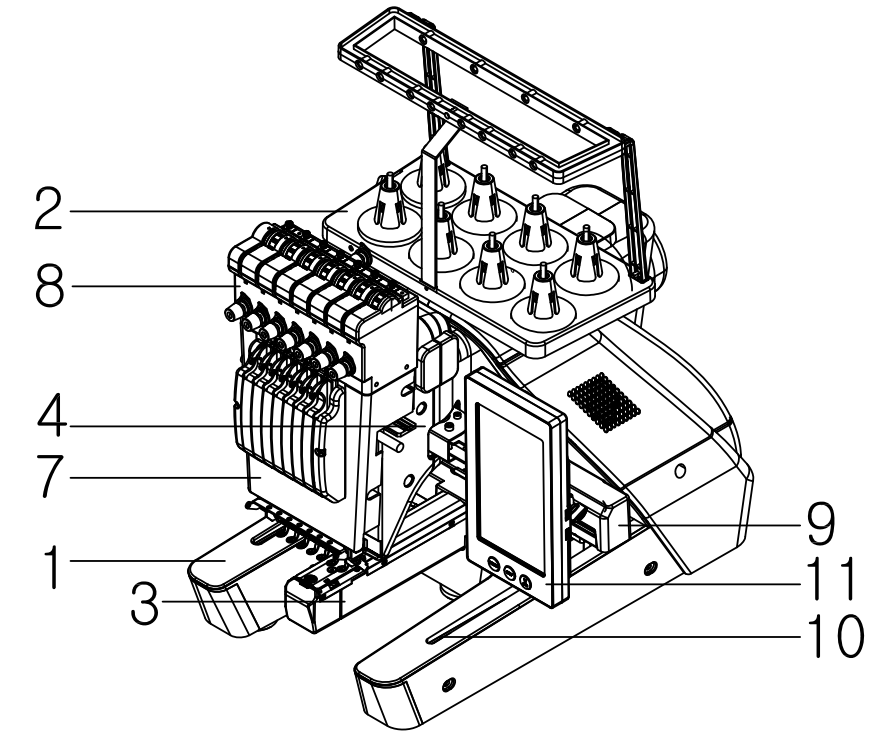
The machine must be accurately leveled (especially front-back) to prevent machine from deformation or needle from moving out of position.

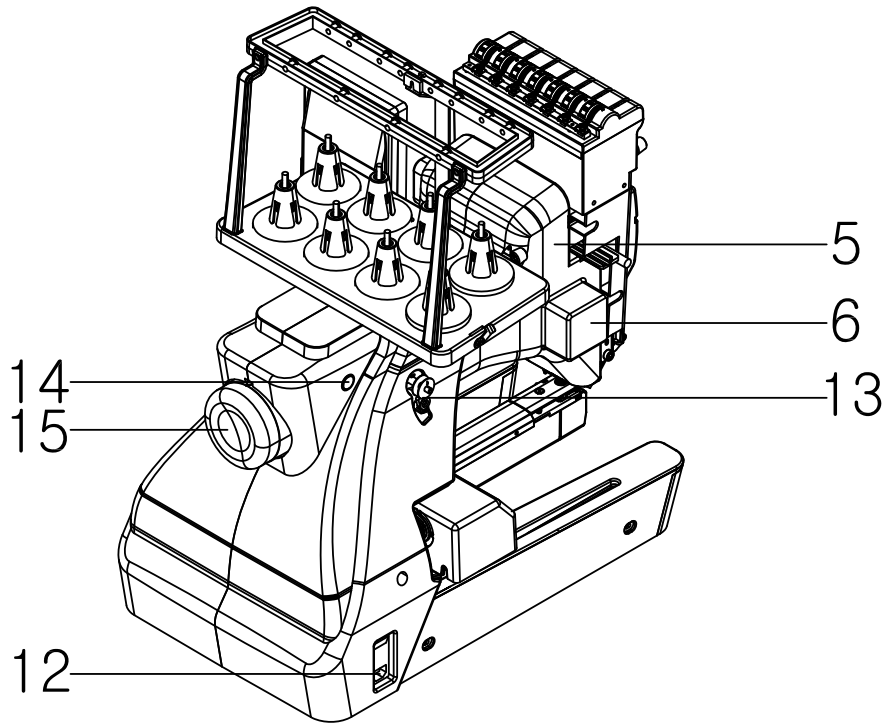
4.3.1) Leveling the equipment

1) Stand
   - Use the adjusting bolt to adjust the back & front and left & right balance of the machine.



05 NAMES OF MACHINE PARTS



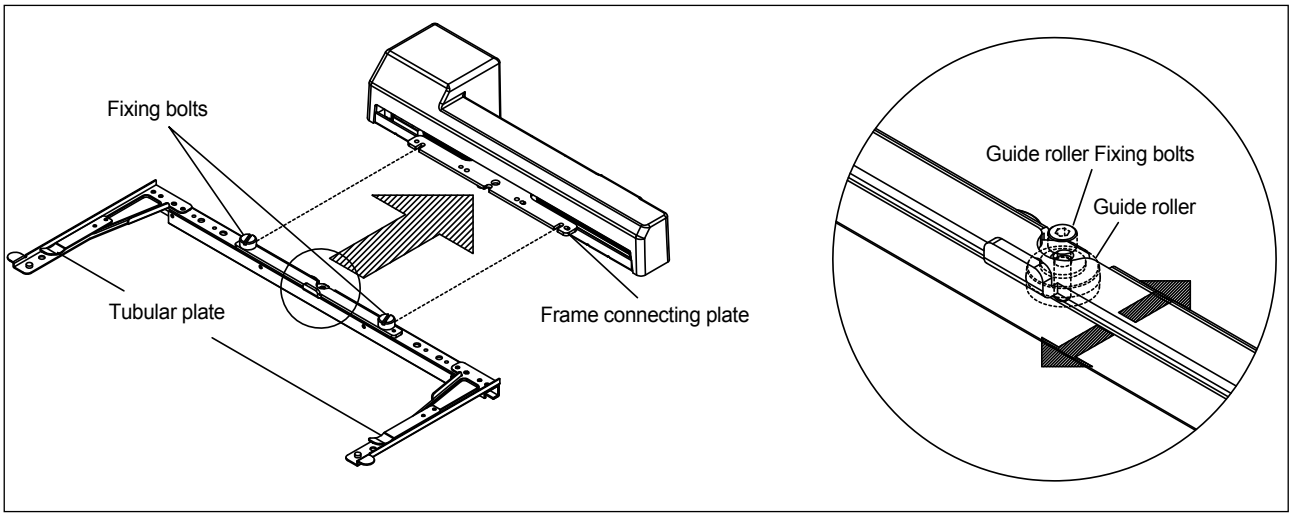


1. Machine Body	6. Upper Thread Holder	11. Operation Box
2. Spool Plate	7. Head	12. Main Power Switch
3. Bed	8. Thread Tension Adjustment	13. Bobbin Winder
4. Arm	9. X-axis Driving System	14. Bobbin Winder Button
5. Color Change Box	10. Y-axis Driving System	15. Main Shaft Drive Pulley

06 PERIPHERALS ASSEMBLY

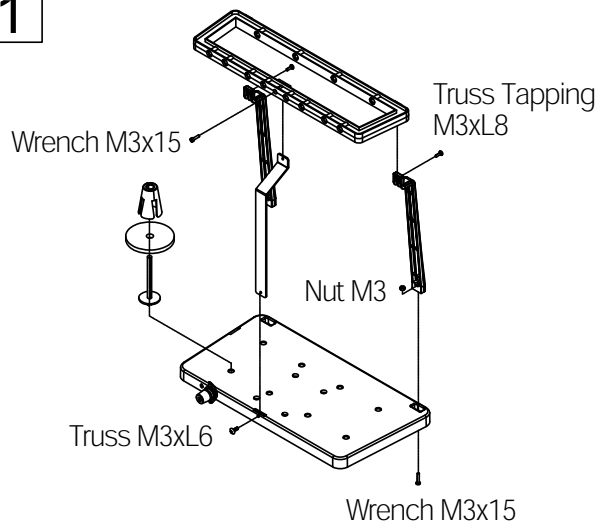
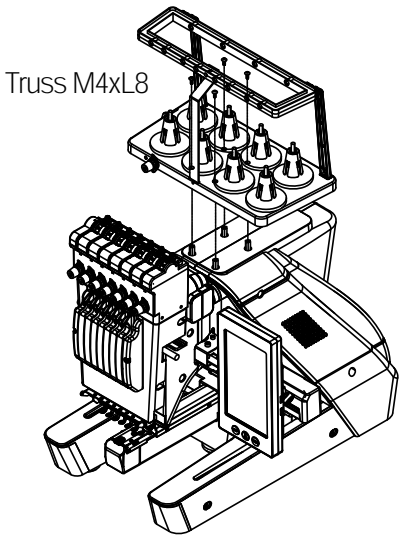
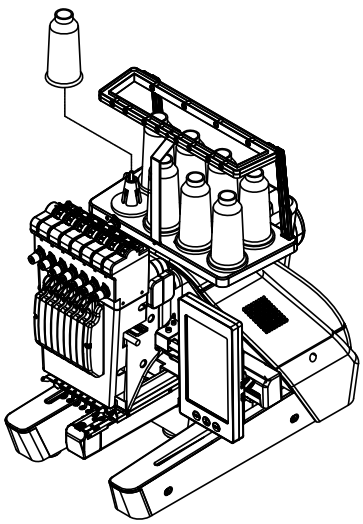
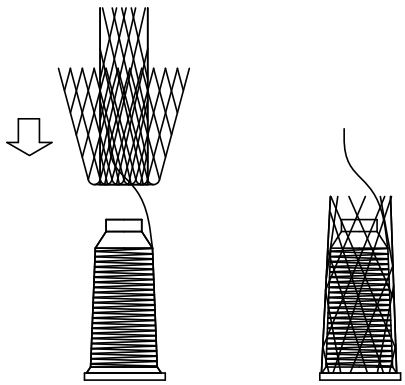
6.1) Assembling tubular frame plate

Use the fixing bolts to fix the tubular frame tightly to the frame connecting plate.



When using the tubular attachment plate or robot frame for a long period of time, the tubular attachment plate may sag. In that case, loosen the guide roller fixing screw and fix the guide roller as close to the X-frame as possible.

6.2) Assembling Spool plate

<table>
<tr>
<td>1

</td>
<td>2

</td>
</tr>
<tr>
<td>Assemble the spool plate using the included screws.</td>
<td>Assemble the assembled spool plate (set) to the machine with the included screws.</td>
</tr>
<tr>
<td>3
</td>
<td>4
</td>
</tr>
<tr>
<td>Place the spool on the spool plate.</td>
<td>Cover the spool with a net and Upper threading</td>
</tr>
</table>

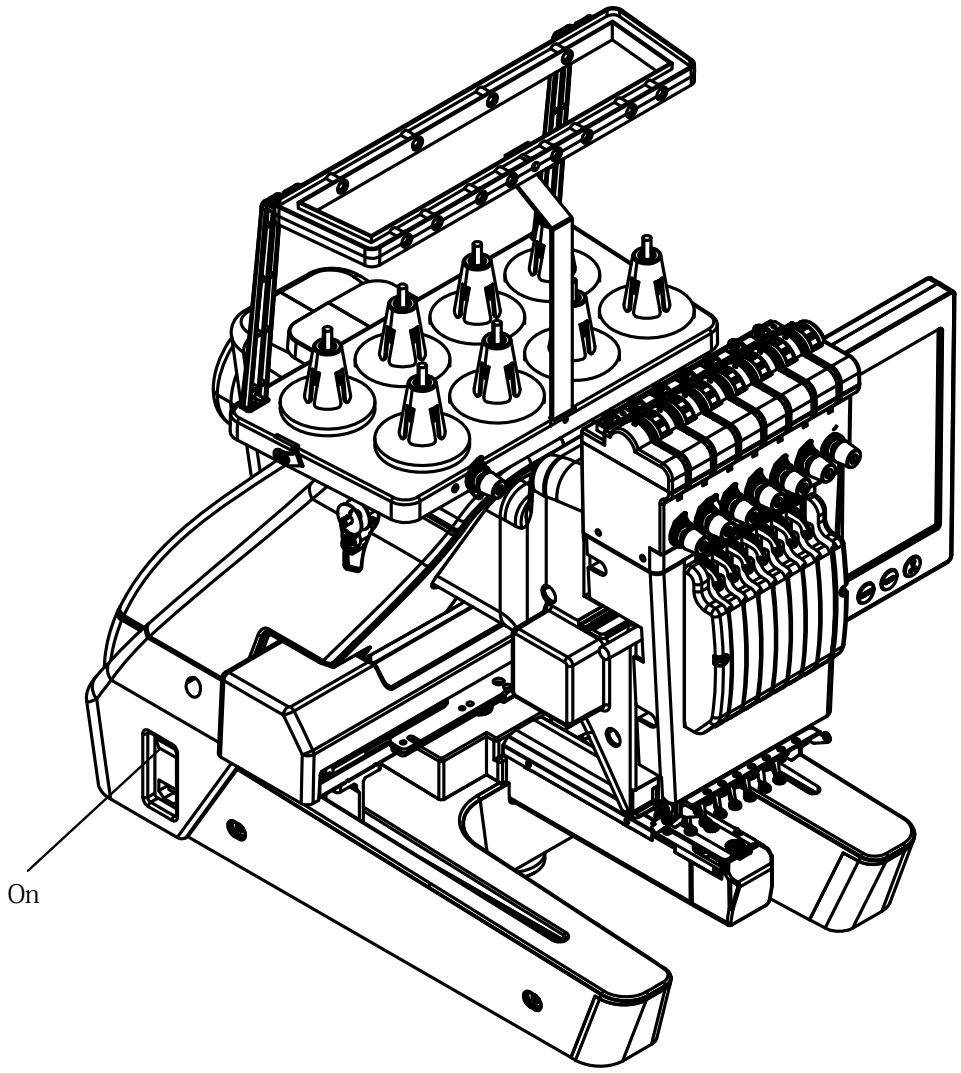
* Be careful not to let the embroidery thread flutter around due to wind from a fan or another.

07 BASIC FUNCTIONS FOR MACHINE OPERATION

7.1) BASIC OPERATION

7.1.1) Power

1) Plug in the power of the embroidery machine.
2) Turn on the power switch.
3) OP Box's LCD screen is turned on, and the operating program starts running.

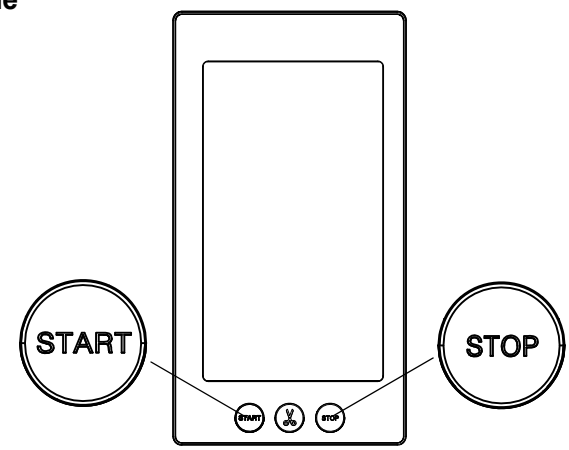


CAUTION

Make sure to plug OFF the power when inspecting the machine.

7.1.2) For starting embroidery and stopping the machine

You can use START and STOP switches during machine operation in the following cases. 1) For starting or stopping the embroidery work



Switch	Machine Operation
Press START	Machine starts and embroidery work begins.
Hold START	Machine "inching (see Note1)" until you release the START switch.
Press STOP	Machine stops.

NOTE

1) Non-stitching (floating) function is not available in the initial menu.
2) To perform floating at the start of embroidery, press STOP switch. The machine will then go into STOP MODE. Select FLOAT and set the number of non-stitching desired in the sub menu.

2) For moving the frame backward during embroidery work stop

Switch	Machine Operation
Press STOP	Frame moves backward in selected frame movement units (see Note 2)
Hold STOP	Frame starts to move backward. If you release STOP before the machine goes 10 of the selected stitches, the machine will stop immediately (the machine moves in the selected frame movement units). If you release the switch after the machine traveled 10 of the selected stitches, the machine will continue to move back.
Press STOP	Press STOP again and the machine will stop moving backward.

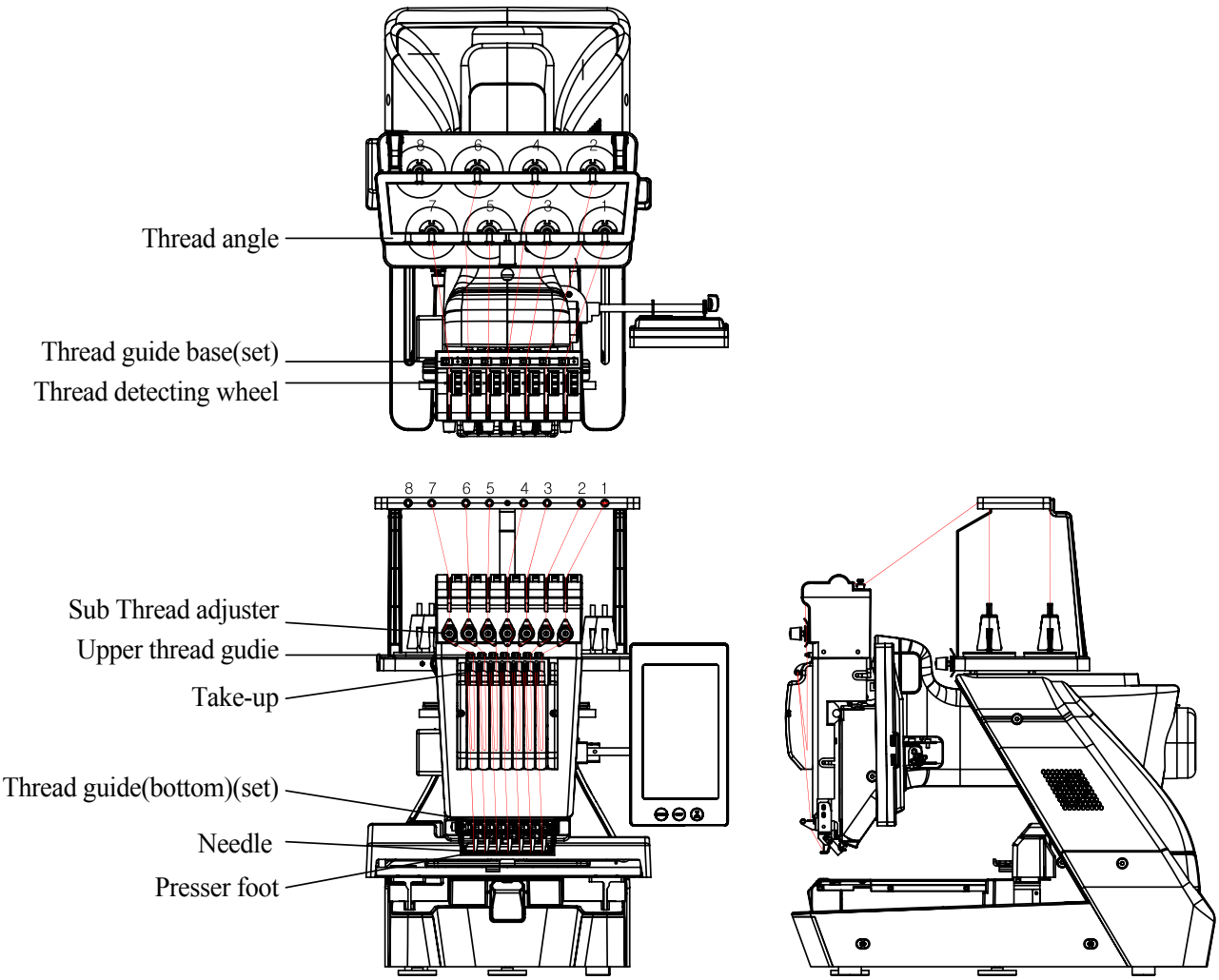
3) For backward non-stitching during embroidery work stop
Same as START/STOP during embroidery work stop

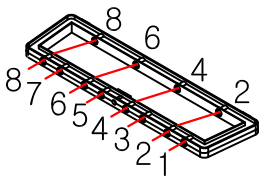
NOTE

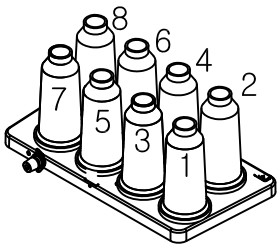
1) "Inching" refers to low-speed embroidery at 100 rpm range, performed for stable stitching when the machine is re-started after stop.
2) "Frame movement unit" refers to the "13. BK STITCH UNIT" in "Parameter Set-Up". You can select from 1 to 10 stitches (by 1 stitch).

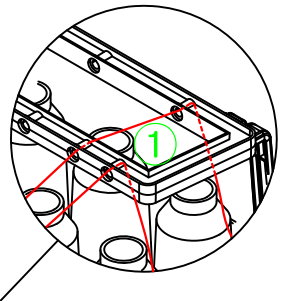
7.1.3) Upper threading and tension adjustment

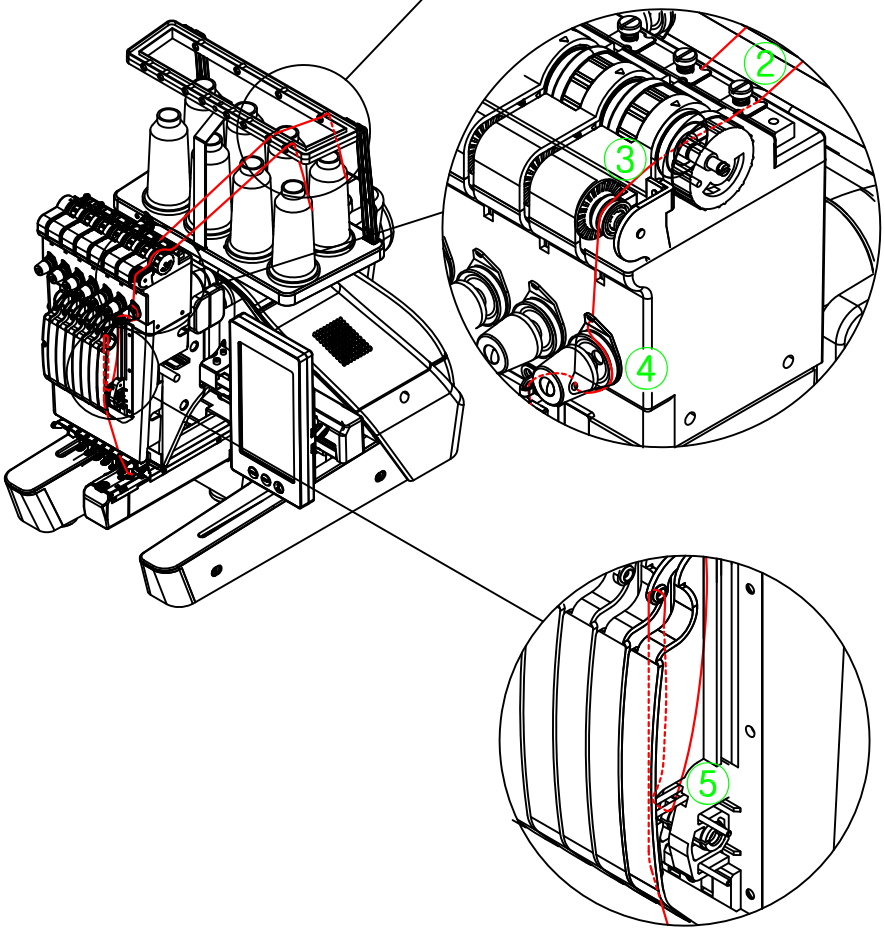
1) Upper threading





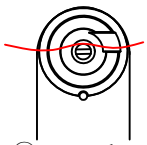






① Insert the thread into the thread hanger angle according to each needle bar.

② Slightly lift thread guide A of the tension plate thread guide base (set) and pass the thread underneath.

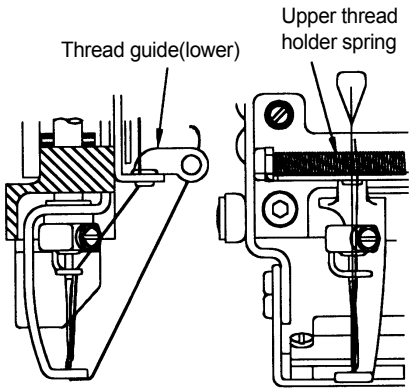


③ Pass the thread through the gap between the two plates of the tension plate roller by attaching it to the shaft. Place the thread on the thread sensing wheel rubber and then lower it.

④ As shown in the picture, pass the thread between the auxiliary thread tension adjustment device hole and the plate and then insert it into the upper thread guide.

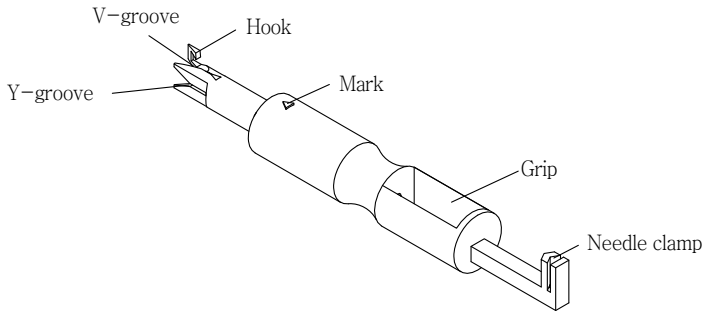
⑤ Pass the thread under the thread guide inside the head face plate guide cover and then insert it into the thread take-up hole. Lower the thread that comes out of the thread take-up hole and insert it into the eyelet hole of the thread guide (bottom).

Threading around the needle

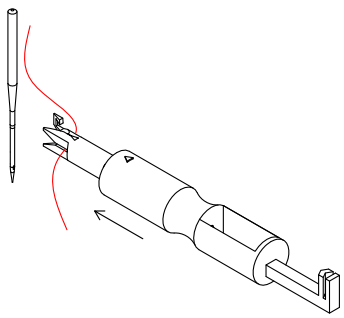


Let the thread pass the islet hole of the thread guide (lower). Thread the needle holder thread guide and the needle. Fix the upper thread in the upper thread holder spring of the thread guide (lower).

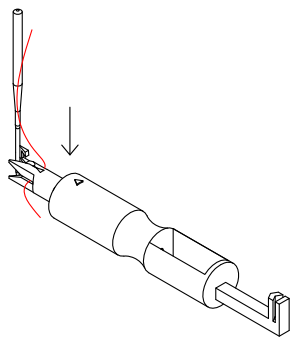
threading a needle



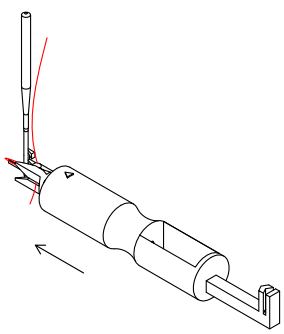
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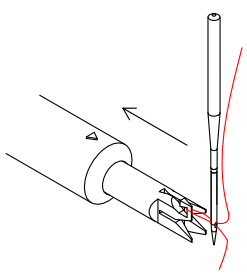
2



3



4



① Turn the thread holder's mark upward, pass the thread through the Y groove, and then attach the V groove to the needle.
② Push down the tightly fitted threader and align it with the needle groove.
③ After aligning with the needle groove, push the needle threader to pass the thread.
④ Hang the thread that has passed through the needle onto the threader hook and pull the remaining thread.

2) Upper Thread Tension Adjustment

Thread tension adjustment is critical for producing high quality of the embroidery. A balance of 2/3 upper thread and 1/3 lower thread generally indicates good tension.

CAUTION

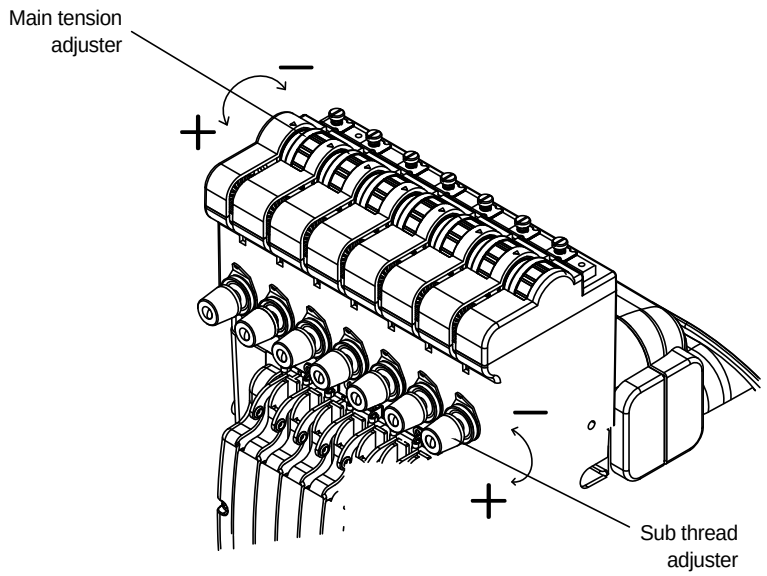
1) If tension is too weak
The upper thread will loop, causing thread tangles or breaks.
2) If tension is too strong
Puckering may occur as well as thread and needle breaks.

− The tension of the upper thread is adjusted by the main tension adjuster and the sub tension adjuster on the thread tension adjustment plate.

− When the main tension adjuster rotates in the direction of the operator, the tension increases.

− When the sub tension adjuster is rotated clockwise, the tension increases.

− Set the tension plate and thread sensing roller of the main thread adjusting device to sufficient tension so that they can rotate smoothly along the upper thread.



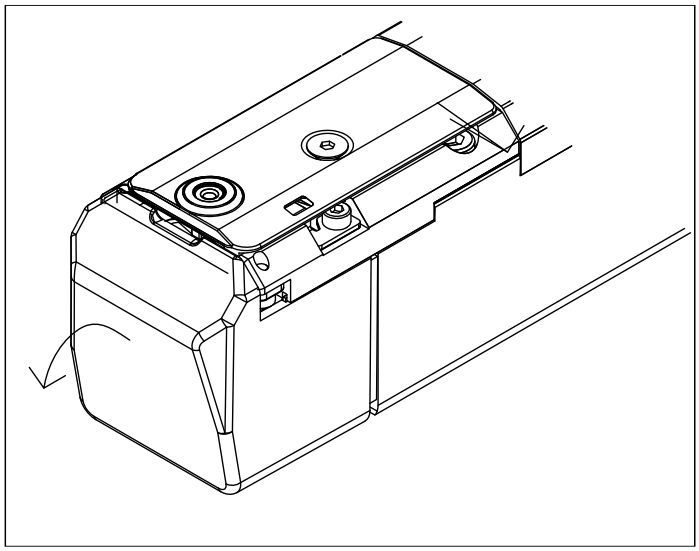
CAUTION

1) If tension at the sub thread tension adjuster is too loose, the detector roller may not rotate well and make wrong detections.
2) After adjusting the tension, check if the upper thread tension is what can be pulled with little force of around 100-120g.
3) After adjusting the tension, pull the upper thread to see if the detector roller rotates well.
4) Adjust the tension constantly according to the type of thread and fabric used.

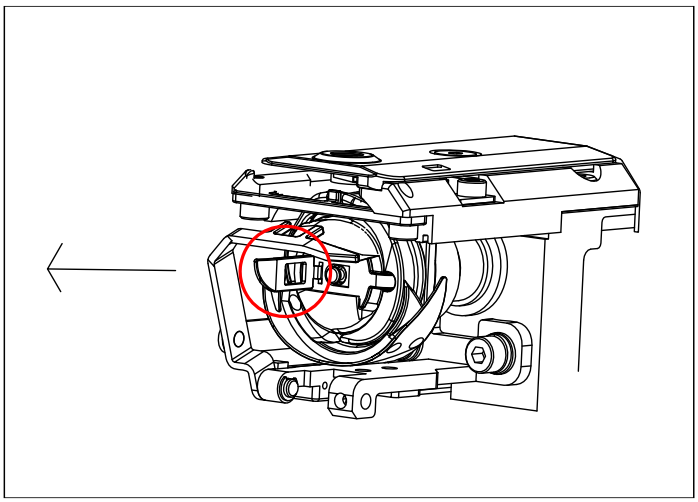
7.1.4) LOWER THREADING AND TENSION ADJUSTMENT

1) Removing the bobbin case

− Open the hook cover toward you.

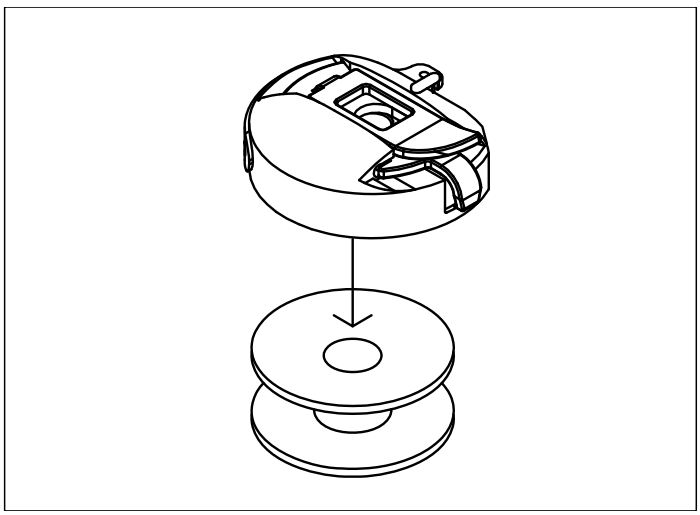


- Hold and open the latch of the bobbin case.
Take the bobbin case out from the machine.



2) Removing the bobbin

− Release the latch and take out the bobbin.



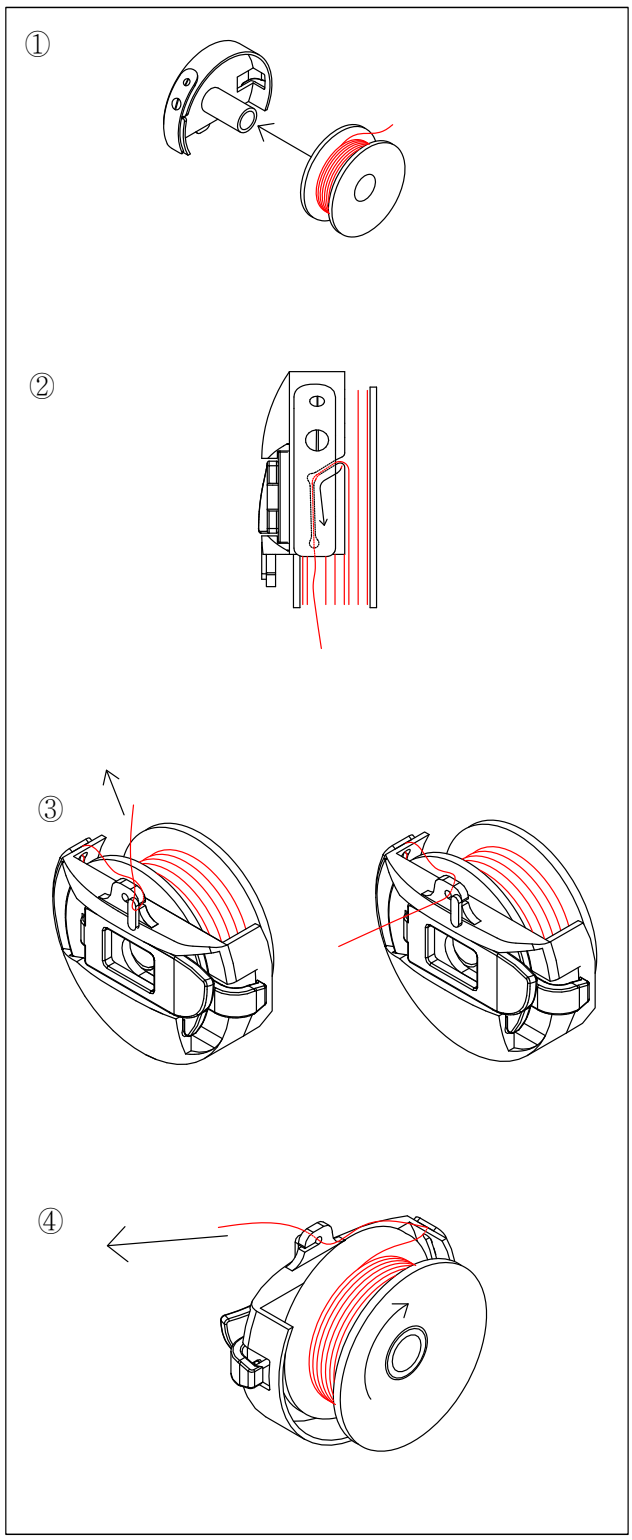
3) Inserting the bobbin

① Insert the bobbin into the bobbin case leaving a 2″ (5 cm) thread tail as illustrated.

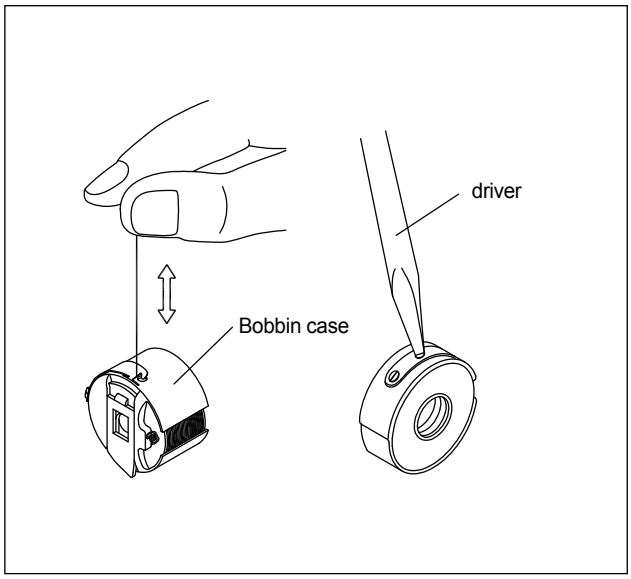
② Draw the thread to slip it into the slit of the bobbin case.
Pull the thread to slide it under the tension blade until the thread comes out from the notch.

③ Draw the thread to the right behind the thread guide and slip the thread into the back slit.

④ The bobbin should turn clockwise when the thread is pulled.



4) Lower thread tension adjustment
Adjust the tension of the lower thread using the bolt on the tension spring of the bobbin case. Turn the bolt clockwise to increase the tension and counterclockwise to decrease the tension.

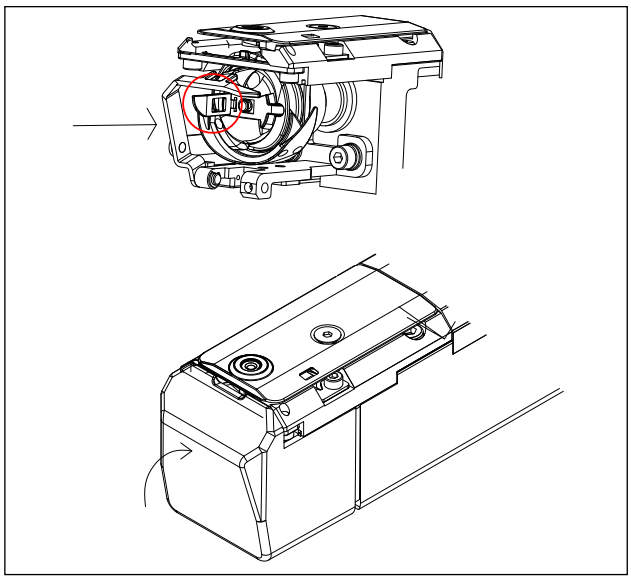


CAUTION

To check if the lower thread tension is adequate, hold the thread from the bobbin and jiggle the bobbin case lightly up and down. The thread should come out from its own weight and the tension should be 25-35g.

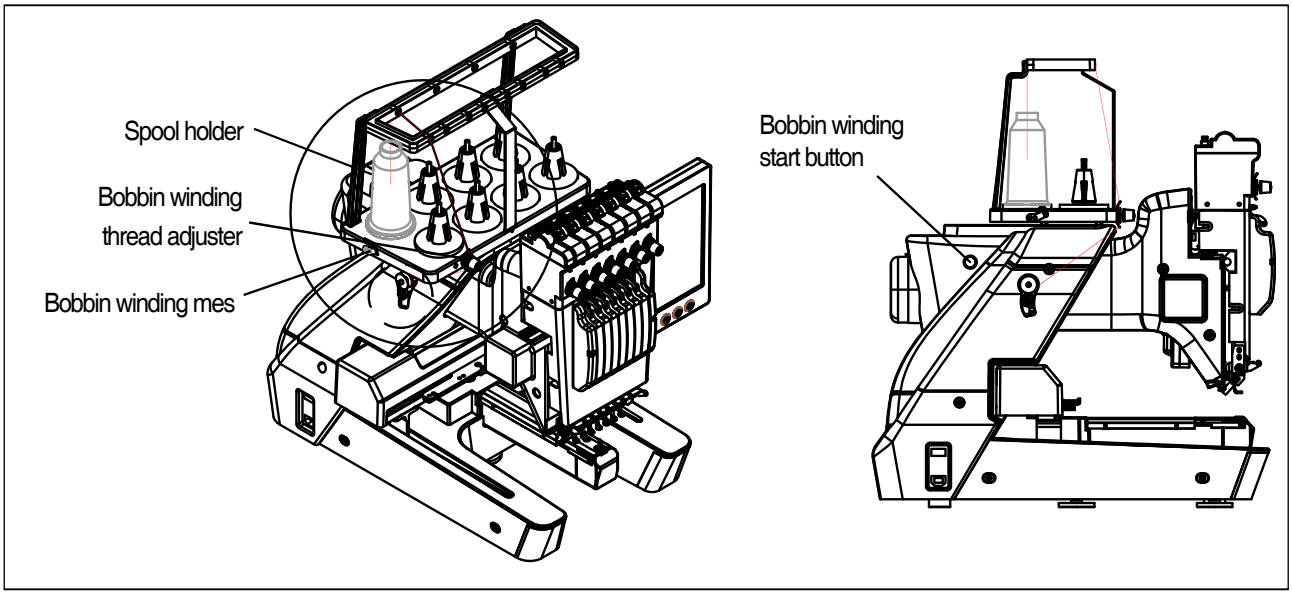
5) Inserting the bobbin case
- Hold the bobbin case with the latch and insert the bobbin case into the hook Push the bobbin case as far as it will go and release the latch.

-Close the hook cover.

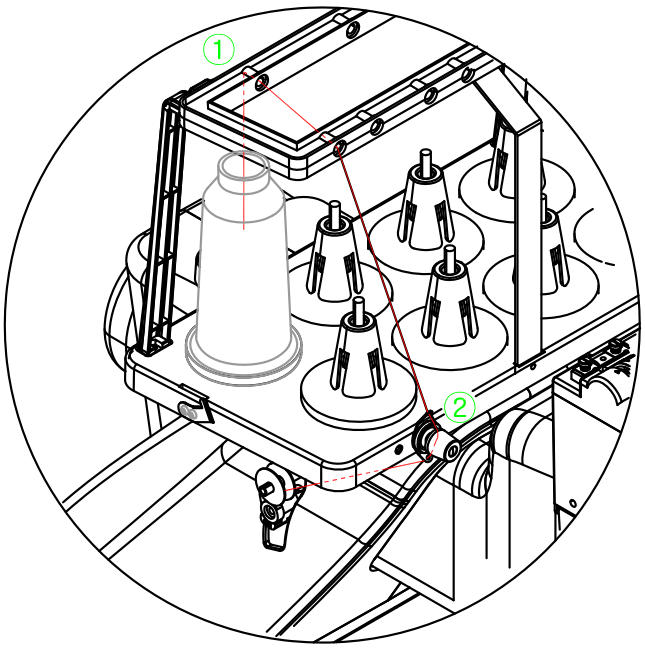


7.1.5) BOBBIN WINDER

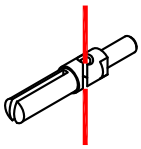
1) Bobbin winding



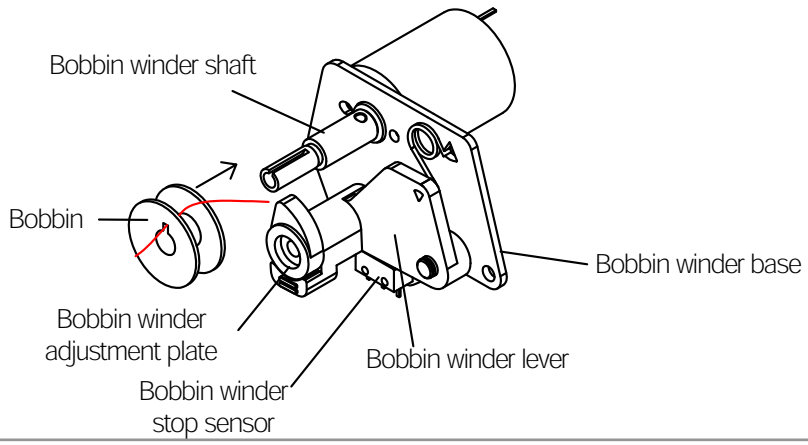
① Insert the thread into the thread angle no. 8.



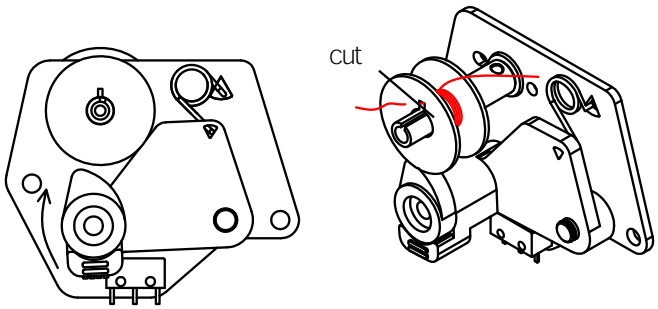
② Pass the thread through the bobbin winder thread adjuster hole and the disk plate.
When passing the thread between the disk plates, pass the thread through the shaft groove as shown in the picture.



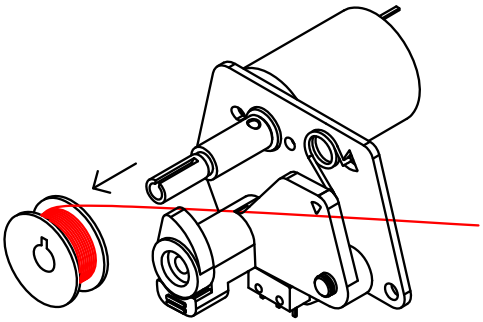
③ After passing the thread from inside the bobbin to the outside, push the bobbin all the way to the thread winder shaft.



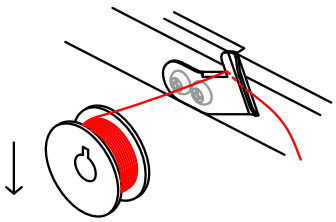
④ Press the bobbin winding button while holding the thread end.
Press the bobbin winder button to stop the machine
when the bobbin has wound a few layers.
Cut the thread close to the bobbin and press the bobbin winder button again.



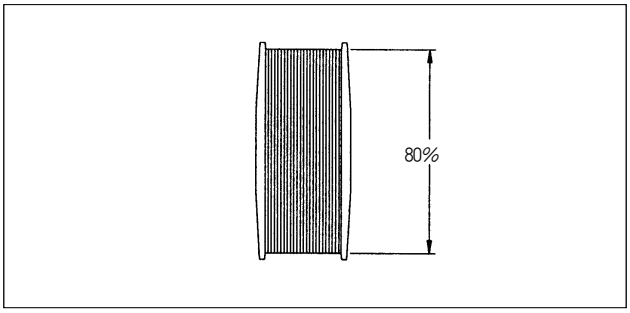
⑤ When the bobbin is fully wound, the machine will stop automatically. Remove the bobbin from the bobbin winder shaft.



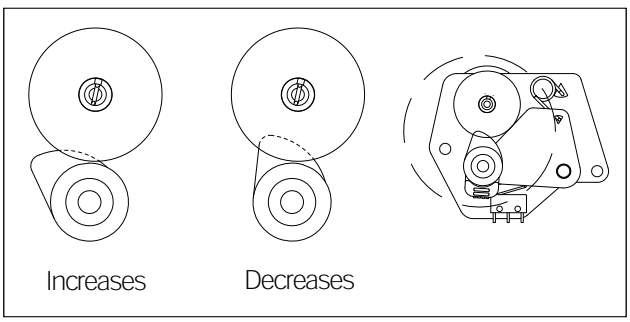
⑥ Pass the bobbin through the thread winder mes as shown in the picture, and when the thread is caught on the mes, pull it down to trim the thread.



2) Adjusting thread volume on the bobbin
   – Fill the bobbin 80% and make sure the thread is parallel to the bobbin as shown in the figure.



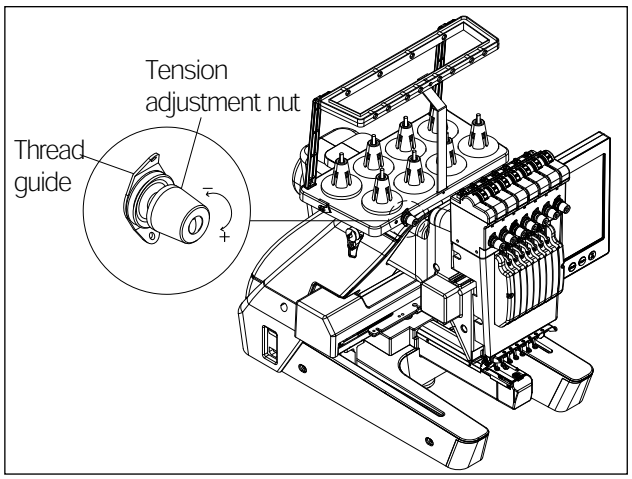
– The amount of thread winding is adjusted using the thread winder adjustment plate. Turning the adjustment plate counterclockwise increases the amount of thread winding, and turning it clockwise decreases the amount of thread winding.



CAUTION

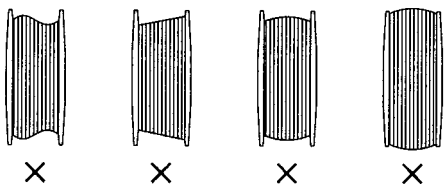
1) Overfilling the bobbin may interfere with the smooth pull of the lower thread.
2) For normal bobbin, 80% fill will render around 80m of lower thread.

3) Adjusting the bobbin winding condition
   - When the thread is wound around the bobbin, make sure it is wound parallel to the bobbin. If it is not wound parallel, adjust the thread guide by turning it left or right.
   - Adjust the winding strength of the thread wound on the bobbin with the tension adjustment nut.



CAUTION

Winding the bobbin off-center or uneven as shown below can cause thread breaks, skipped stitches, or thread tangles.



CAUTION

Too tight tension of the bobbin winding can block smooth pulling of the thread and cause thread breaks or short tails.

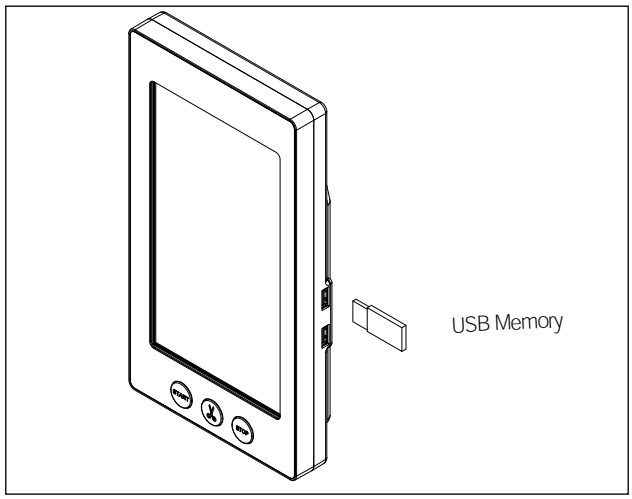
7.1.6) Notes when using USB memory sticks.

Make sure to meet the following conditions when using the above devices.

▶ When using USB memory sticks
- Do not delete USB memory from the USB port when reading and writing with USB.

7.1.7) How to insert USB memory sticks

- Inserting USB memory sticks
  Insert the USB memory into the USB port.



7.1.8) How to take out USB memory sticks

- For USB, close the input/output window and delete the USB memory.

7.1.9) Reading and writing of embroidery designs

Serial USB memory communication is adopted in order to input the embroidery design in an op box through an external device.

7.1.10) Return to stop position in unexpected blackouts

Your SWF embroidery machine automatically returns to the previous position when the power comes back on after an unexpected blackout, thereby not affecting the quality of the embroidery.
(See LCD Monitor User Manual)

CAUTION	**Make sure to turn OFF the main switch in unexpected blackouts until the power comes back on.**

7.2) NEEDLE-HOOK TIMING AND RELATED TIPS

7.2.1) Needle

- It is very important to select the right needle for the type of thread and fabric used.
- Inappropriate needles can cause bad embroidery, thread breaks, skipped stitches, etc.
- For normal embroidery, use a DB × K5 needle.

CAUTION	**DB × K5 needle has an eye twice larger than that of DB1 (used for normal stitching). Use DB × K5 for normal embroidery.**

7.2.2) Relationship between needle and thread

- Inadequate selection of threads and needles can result in thread breaks, skipped stitches, as well as in bad-quality embroidery.
- Refer to the following table for threads and needles used in normal embroidery.

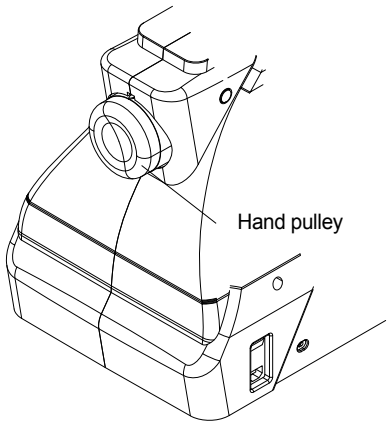
Needle Size			Thread Size			
US	Japan	Germany	Cotton #	Silk	Nylon	Rayon
0.25	9	65	70~80	100~120	130~150	70~100
0.27	10	70				
0.29	11	75	50~60	80~100	100~130	100~130
0.32	12	80				
0.34	13	85	36~40	60~70	80~100	130~150
0.36	14	90				

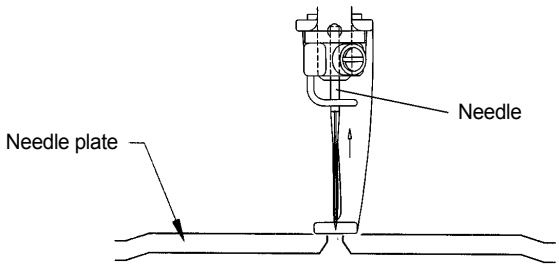
NOTE	**Needle and thread most commonly used in embroidery Thread : rayon yarn 120d/2. Needle : DB × K5 #11**

7.2.3) Changing the needle

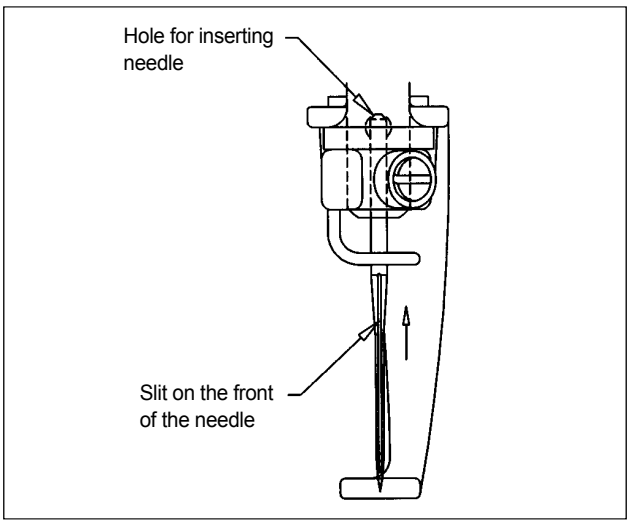
– Make sure the needle is completely clear of the needle plate before changing it. If the needle is not clear of the plate, use the main shaft handle, manually turn the main shaft to put the needle in the right location for change.

CAUTION	**Turn OFF the machine according to the safety rules before turning the main shaft manually.**

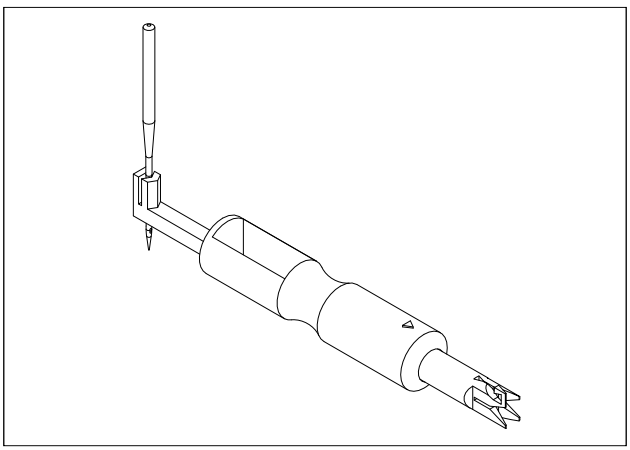




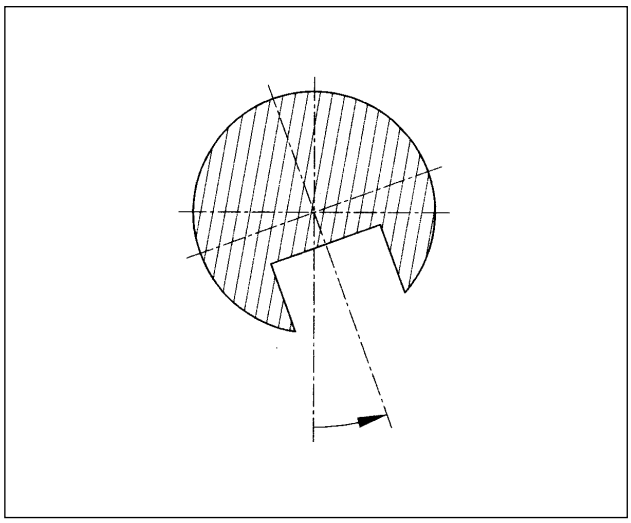
– When inserting the needle, make sure that the groove of the needle is facing front.
– End tip of the needle should be inserted completely into the needle bar.



– You can easily replace the needle by inserting the needle into the back of the needle threader supplied in the accessory box.



– When using special threads, such as artificial silk, you might want to turn the groove of the needle to the right in order to minimize the thread breaks.

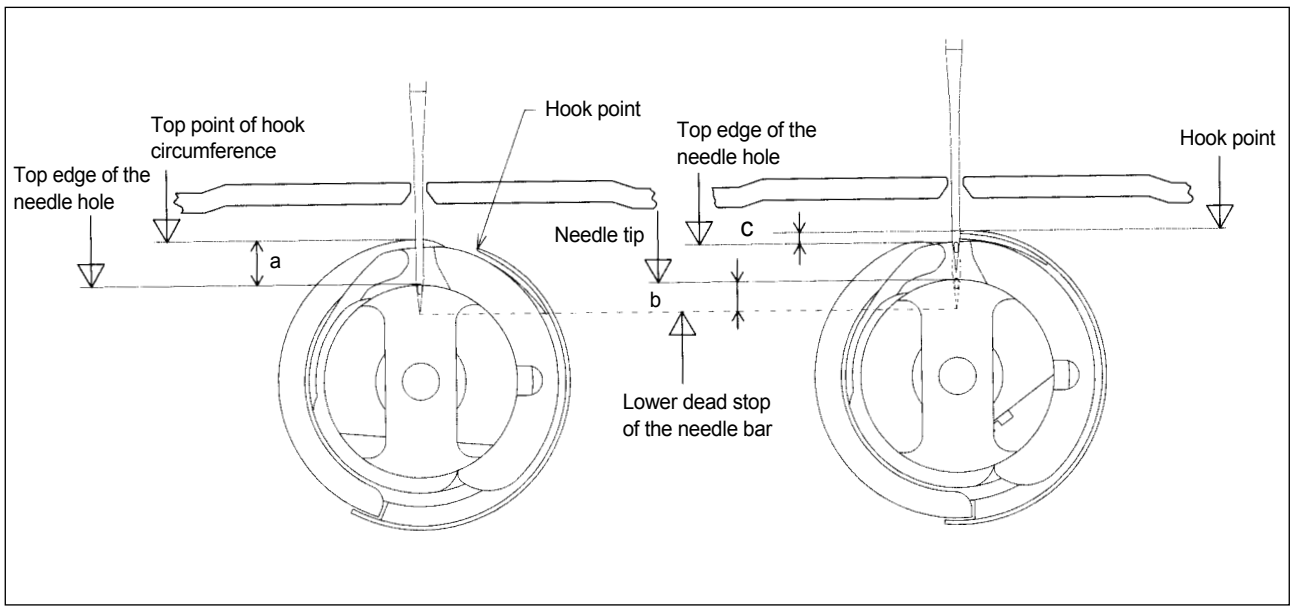


CAUTION

If the needle is not inserted all the way to the top of the needle bar hole, timing of the machine will go off, causing broken needles and thread breaks.

7.2.4) Relationship between needle and hook

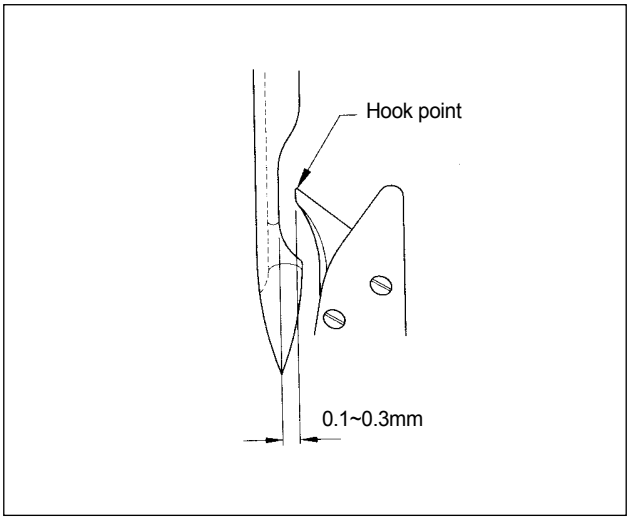
– Adjusting timing between needle and hook
Default timing of the needle and the hook is set by the main shaft angle of 201°. Relationship between the needle and the hook varies as below.



a. At lower dead stop of the needle bar	2.3~3.7 mm
b. At needle-hook timing	1.8~2.2 mm
c. At needle-hook timing	0.5~1.5 mm

7.2.5) Adjusting gap between needle and hook point

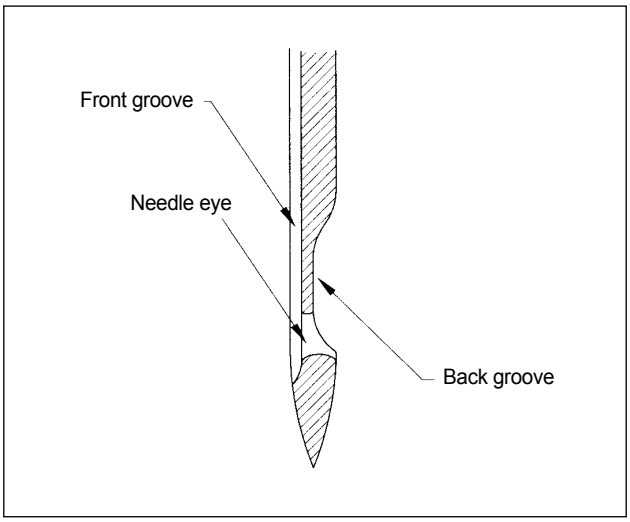
- Gap between the hook point and the needle
  The distance between the needle and the hook should be 0.1-0.3mm at their closest interface.
- Thread skip
  Thread skip occurs due to thread looping or inadequate balance or gap between the needle and the hook.
- Adjustment
  The closer the hook point is to the needle, the hook point will be inside the loop and threading will be more stable.



7.2.6) Functions by needle shape

Hole and groove of the needle vary by the size and type of the needle.

- Front groove
  It protects the thread from the friction heat of the sewing (which can cause thread breaks).
- Back groove
  It adjusts the hook timing according to the needle movement, thus preventing thread skips.

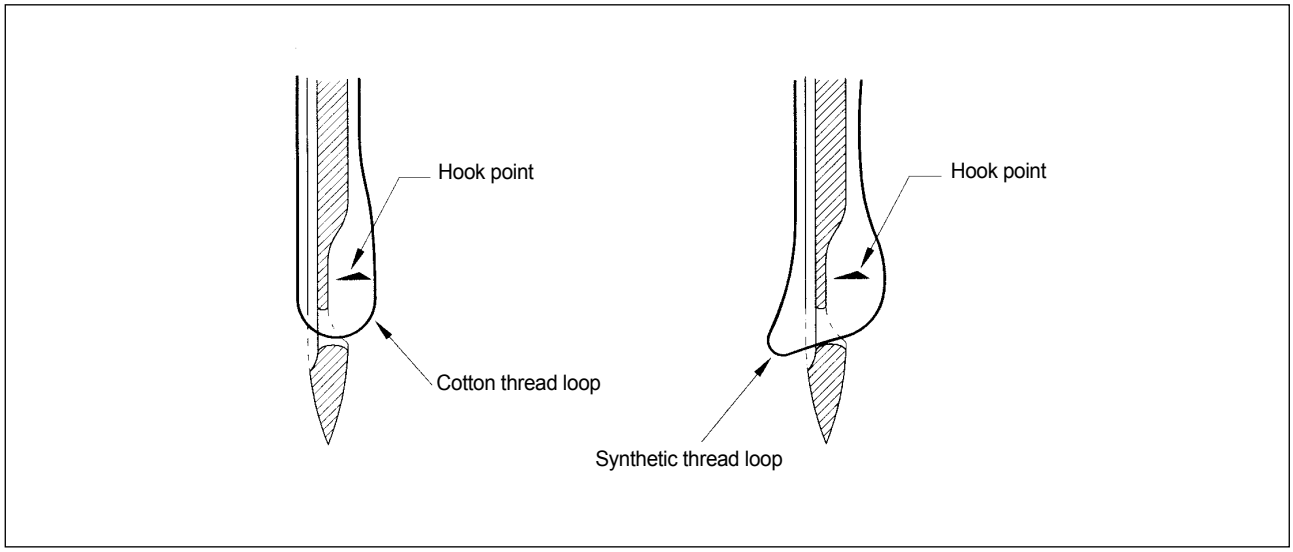


CAUTION

1) Prevention of looping is important for stitching. Adjust the hook point as close to the needle as possible to achieve the perfect thread position.
2) If embroidery state is not good, move the needle slightly to the right.

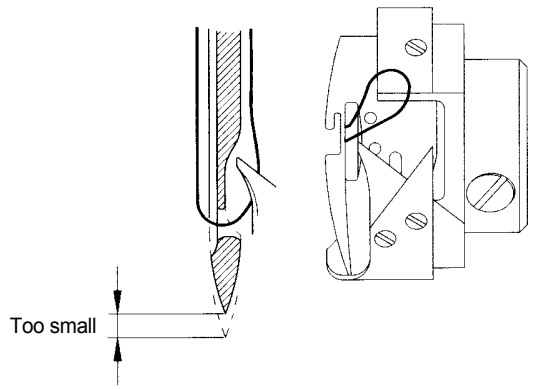
7.2.7) Different loop shapes

Shape of the loop varies by the type of thread or fabric. Unstable shape of the loop may result in skipped stitches. The following pictures show different shapes of loop formed by different types of thread.



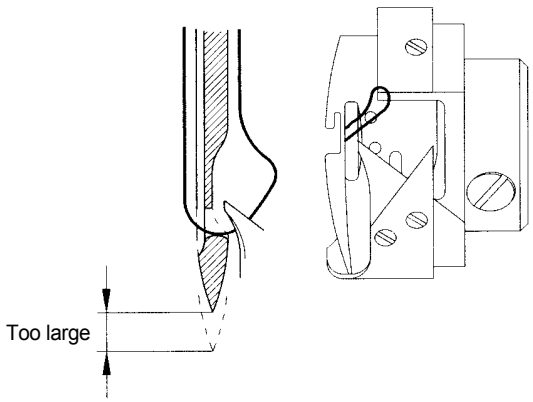
7.2.8) Relationship between the take-up lever and the hook

Hook point timing is directly related to thread tension and thread breaks. The following pictures show the location of hook when the take-up lever starts to move up from the lower dead stop (main shaft rotation angle: 291˚).



1) Hook timing is fast (in the A range)

The hook starts to take the thread from the take-up lever. Loop is small because the upper thread is pulled. Stitches are made but stitch tension is bad. Thread skips occur, where hook fails to go through the loop.

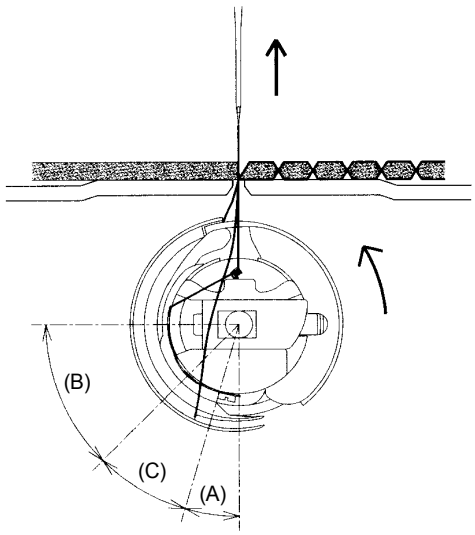


2) Hook timing is slow (in the B range)

The hook starts to take the loop before the take-up lever goes up. Thread skips don't occur, but thread breaks occur, because the take-up lever moves faster than the thread coming off the hook.

NOTE

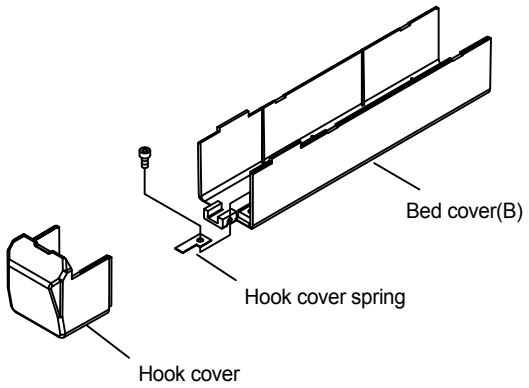
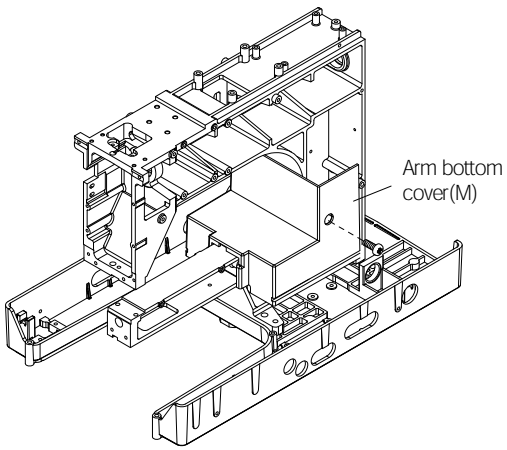
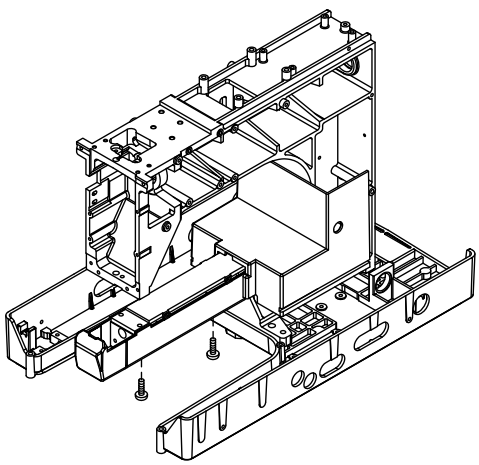
In normal hook timing, the hook should be in the (C) range.

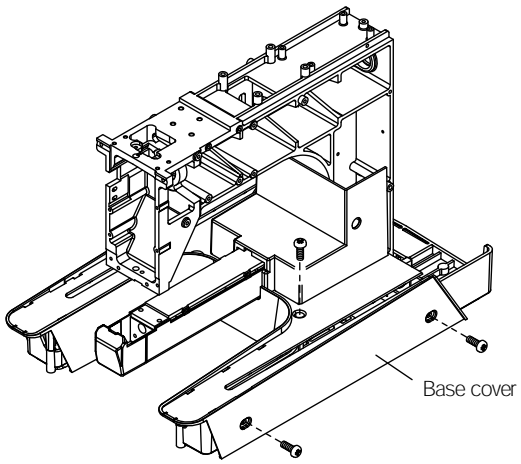
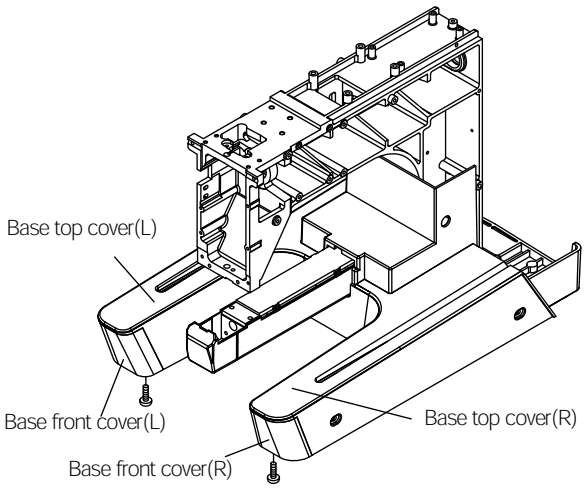
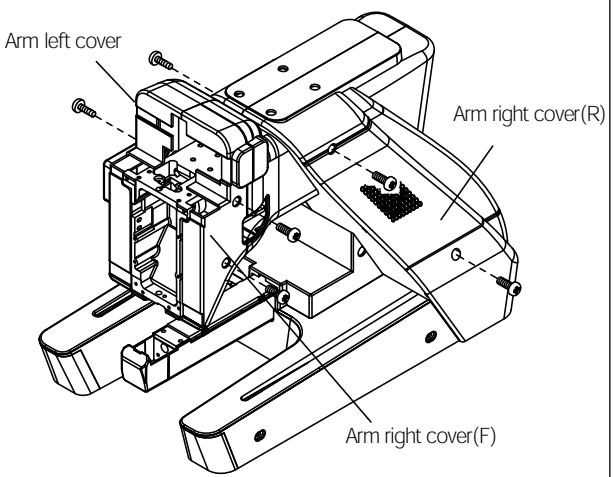


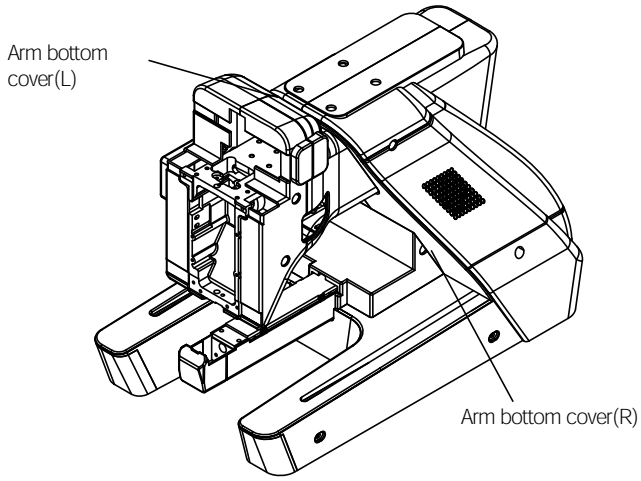
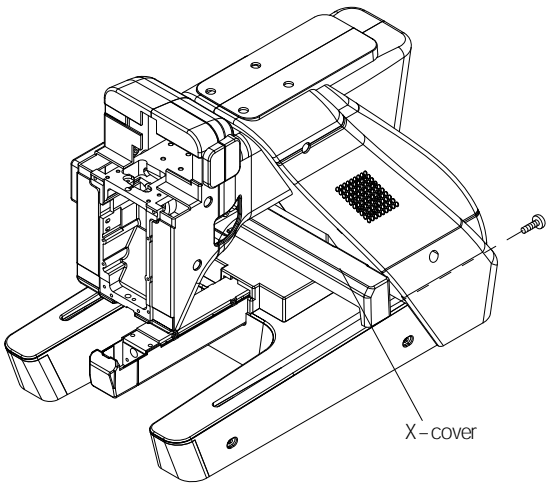
7.3) COVER ASSEMBLY

CAUTION

1) Follow the order of assembly.
2) Do not put excessive pressure or force on the plastic cover.
3) Use appropriate tools to prevent breaking or damage of the cover.

No	Picture	Instructions
①		– Assemble the hook cover and bed cover(B) using the hook cover spring. – Joining bolts : M3xL8 wrench bolt
②		– Assemble the arm bottom cover (M) to the arm bed. – Joining bolts : M4xL10 Truss Screw
③		– Assemble the hook cover and bed bottom cover to the bed. – Joining bolts : M4xL6 wrench bolt

No	Picture	Instructions
④		– Assemble the base cover. – Joining bolts : M4xL10 Truss Screw
⑤		– Insert the base top cover and assemble the base front cover. – Joining bolts : M4×L45 truss screw
⑥		– Assemble the arm left cover and the arm right cover. – Joining bolts : M4xL10 Truss Screw

No	Picture	Instructions
⑦		– Assemble the arm bottom cover.
⑧		– Assemble the X-cover. – Joining bolts : M4xL10 Truss Screw

08 MAINTENANCE AND INSPECTION

Consumable parts shall not be guaranteed even in warranty period.

8.1) CHECK POINTS FOR REGULAR INSPECTION

CAUTION

1) Machine and electricity safety rules must be observed during the inspection.
2) Make sure to turn OFF and STOP the machine when performing inspection.

9.1.1) Clean, oil, and grease the set parts of the machine on a regular basis.

9.1.2) Inspect tension of each driver belt.

9.1.3) Failure to perform regular inspections can cause the following.

- Corrosion of P/C circuit board
- Damage to the semi-conductor on P/C circuit board
- Malfunction of the floppy disk drive
- Ill connection of the connector
- Abnormal wear-outs of machine parts due to insufficient oiling and greasing

8.2) CLEANING

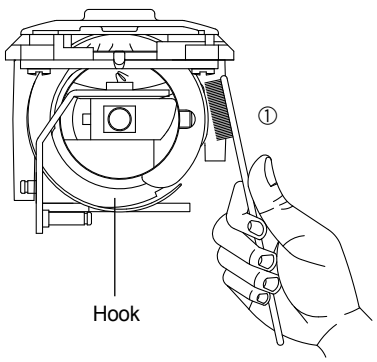
Use the air compressor to clean each part of the machine.

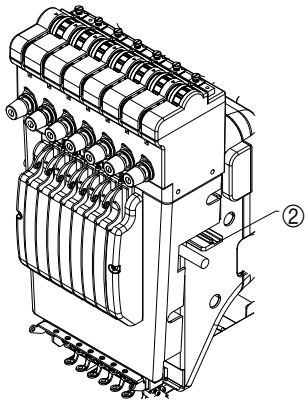
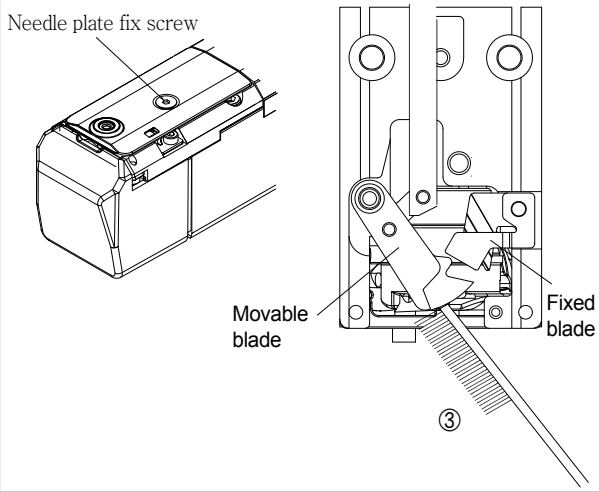
CAUTION

1) Turn OFF the main power before inspecting or cleaning of the machine.
2) Adjust the cleaning cycle according to the conditions of use and to the environment.

CAUTION

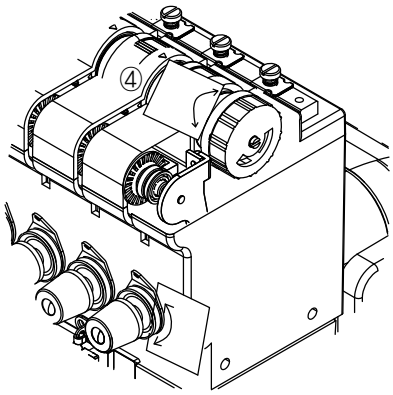
SWF is not responsible for machine damages or malfunction caused by insufficient regular inspection.

No.	Major parts for cleaning		Cleaning cycle	Fig.
1	Around the hook		Every day	①

No.	Major parts for cleaning		Cleaning cycle	Fig.
2	Guide rail to the take-up lever of the head		Once a week	②
3	Around the movable blade and the fixed blade		Once in 3 days	③

CAUTION

After loosening the needle plate fixing screw, remove the needle plate. Pull the moving knife forward to make it as shown in the picture, then clean it. After cleaning, assemble it in reverse order.

No.	Major parts for cleaning		Cleaning cycle	Fig.
4	between tension disk		Once a week	④

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Remove dust and wax from between the thread tension adjuster plates using thin paper.

8.3) OIL SUPPLY

CAUTION

1) Make sure to turn the power OFF during oil supply.
2) SWF is not responsible for machine damages or wear-outs caused by insufficient oiling.

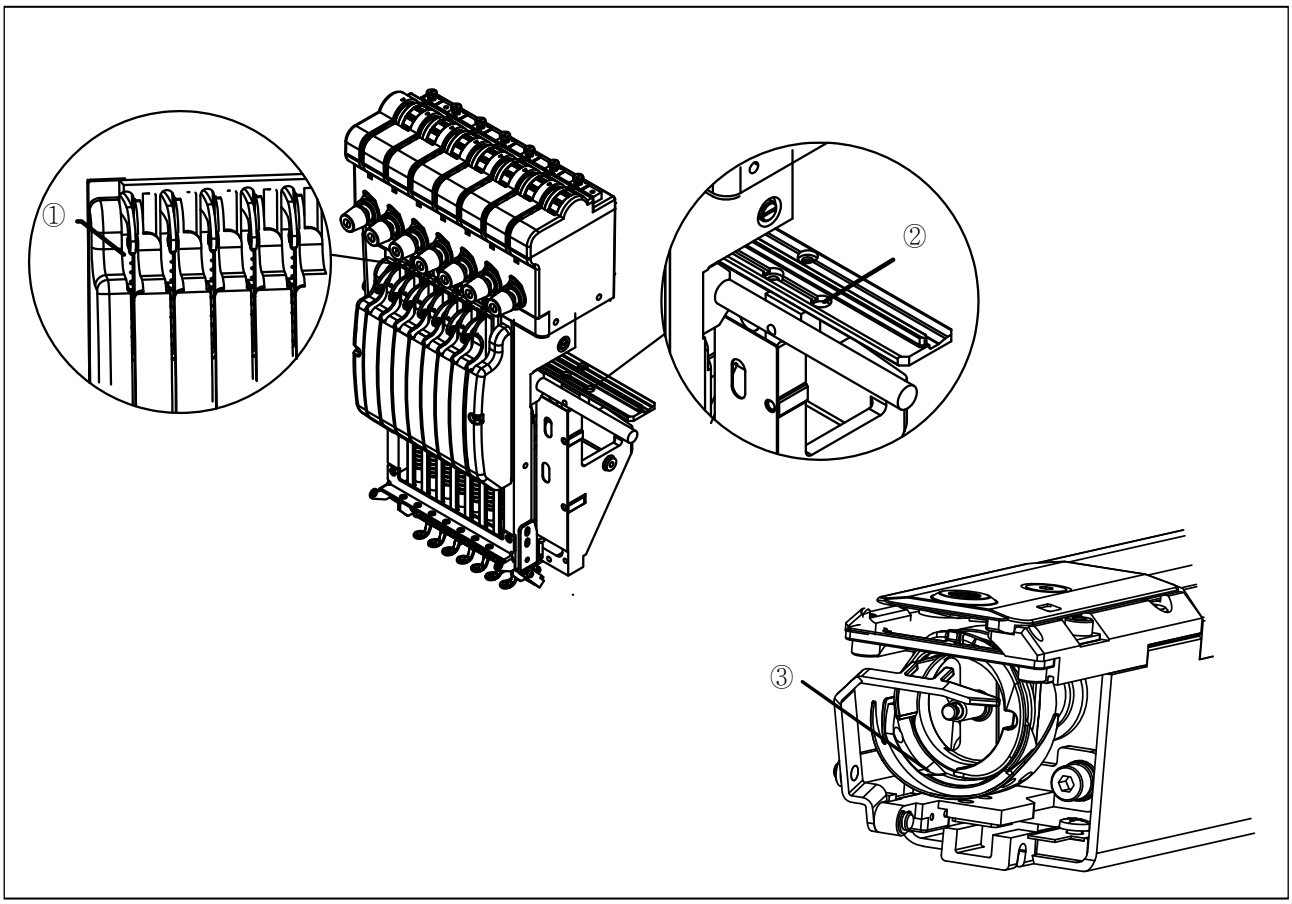
8.3.1) Oil supply

Use the SWF-provided sewing machine oil (Spindle Oil) or ISO-level VG18(VG8~20 is Avaliable).

No.	Where to oil	Oiling cycle	Fig.
1	Needle bar	Once a week	①
2	Guide rail to the take-up lever	Once a week	②
3	Take the bobbin case out of the hook. Feed small amount of oil on the raceway.	Once in 3-4 hours	③

CAUTION

1) Excess oil may stain the thread and the fabric.
2) Run the machine without stitching for 2-3 minutes after oiling.
3) Excessive oiling in the hook may cause trimming problems and thread breaks.

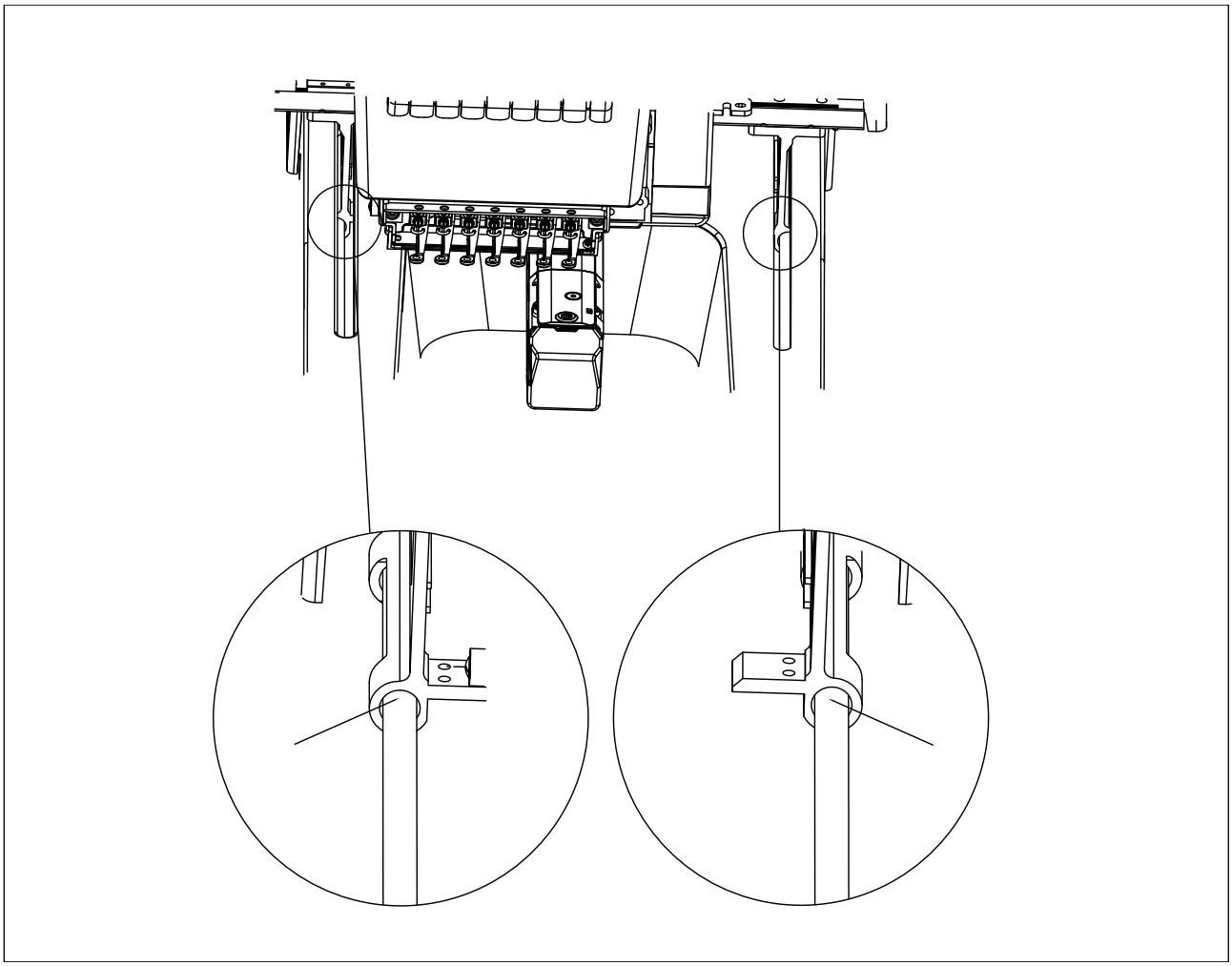


8.3.2) Greasing

CAUTION	**Make sure to turn OFF the main power during the grease supply.**

1) Y transfer guide rail grease supply

− Apply grease between the Y transfer guide and the shaft through the gap in the base cover once a month.



9 TROUBLESHOOTING

9.1) ERROR DISPLAY AND TROUBLESHOOTING

9.1.1) Main shaft motor and others

No.	Error	Description	Troubleshooting
100	Main shaft stop	Main shaft doesn't stop at 100°	Adjust the main shaft at 100° using lever.
101	Main shaft motor drive	Error in main shaft motor driver	Turn the main switch off and on again.
102	Main shaft motor overload	Thread tangles in the hook Error in needle bar controller Thread tangle in trimming	Check hooks of all heads. Turn the switch off and on again.
103	Trimming return	Trimming sensor doesn't return when trimming	Check for errors in the trimming system
104	START switch	START is pressed when turning power on	Check START – connector connection
105	STOP switch	STOP is pressed when turning power on	Check STOP – connector connection
107	Valve	Valve is opened	
108	Air pressure	Air pressure is below standard (Sequin)	
109	AC line	Power supply error or power measurement circuit error	Check power or replace circuit

9.1.2) X, Y-axis motors

No.	Error	Description	Troubleshooting
200	(+X) frame limit	Frame reaches +X limit	Move the frame −X
201	(−X) frame limit	Frame reaches −X limit	Move the frame +X
202	(+Y) frame limit	Frame reaches +Y limit	Move the frame −Y
203	(−Y) frame limit	Frame reaches −Y limit	Move the frame +Y
204	X-axis driver	Error in X-axis driver	Turn the main switch off and on again
205	Y-axis driver	Error in Y-axis driver Trimmer solenoid doesn't return	Turn the main switch off and on again
206	Wiper return	Wiper motor doesn't return	Repair the wiper mechanism
207	Trimmer return		Repair the trimmer mechanism

9.1.3) Color change

No.	Error	Description	Troubleshooting
300	Needle bar position	Needle bar doesn' t come to correct position when changed	Move the needle bar manually. Check the load. Position it at the correct location.

9.1.4) Encoder

No.	Error	Description	Troubleshooting
400	Main shaft encoder A	Error in signal in main shaft encoder A	Check encoder connection. Turn the main switch off and on again.
401	Main shaft encoder Z	Error in signal in main shaft encoder Z	Check encoder connection. Turn the main switch off and on again

9.1.5) Repetition work

No.	Error	Description	Troubleshooting
501	Repetition set-up	Off the repetition limit (X set-up) × (Y set-up) 〉99	Change the set-up to: (X set-up) × (Y set-up) 〈 99

9.1.6) Memory

No.	Error	Description	Troubleshooting
700	No embroidery data in the memory	No embroidery data in the memory	Store data in memory via disk
701	Insufficient memory	Unable to copy data to memory due to insufficient memory	Delete unnecessary data
702	Memory full	memory rooms are full	Delete unnecessary data
703	Design memory system	Error in copy/delete between memories	RESET or turn the main power off and on again.

9.1.7) Communication

No.	Error	Description	Troubleshooting
900	Comm. Error 0	CAN communication error	Turn the power off and on again
901	Comm. Error 1	CAN communication error	Turn the power off and on again
902	Comm. Error 2	CAN communication error	Turn the power off and on again
903	Comm. Error 3	CAN communication error	Turn the power off and on again
904	Comm. Error 4	CAN communication error	Turn the power off and on again
905	Comm. Error 5	CAN communication error	Turn the power off and on again
906	Comm. Error 6	CAN communication error	Turn the power off and on again
907	Comm. Error 7	CAN communication error	Turn the power off and on again
908	Comm. Error 8	CAN communication error	Turn the power off and on again
909	Comm. Error 9	CAN communication error	Turn the power off and on again
910	Comm. Error 10	CAN communication error	Turn the power off and on again
911	Comm. Error 11	CAN communication error	Turn the power off and on again
912	Comm. Error 12	CAN communication error	Turn the power off and on again
913	Comm. Error 13	CAN communication error	Turn the power off and on again
914	Comm. Error 14	CAN communication error	Turn the power off and on again
915	Comm. Error 15	CAN communication error	Turn the power off and on again