

baby lock

SERVICE MANUAL

MODEL BLQK

Sashiko

Vol.1.0

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1. General

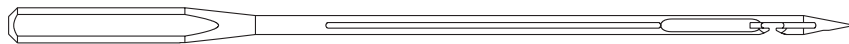
Caution

The Baby Lock Sashiko is different than any other conventional sewing machine you have ever fixed. The Sashiko will make one stitch on the top of the fabric after the handwheel makes two complete rotations when the needle is in the down position. When the needle is in the up position it will make one stitch after the handwheel makes one and a half rotations. The specialty needle will catch and release the bobbin thread alternately.

Due to the unique function of the Sashiko machine, adjustments of hook timing etc. are quite different from ordinary sewing machine settings.

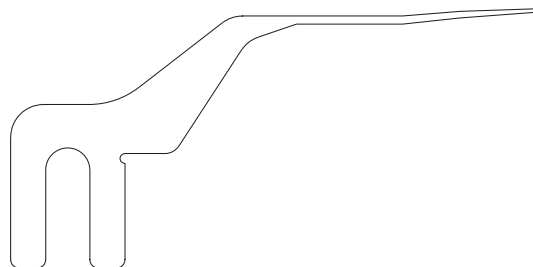
Needle

Your Baby Lock Sashiko uses a size 110/18 specialty needle, which is suitable for most fabrics. Use the Organ brand needles – system QKx1 (part #BLQK-N).



Latch Wire

The latch wire is located in the front of the needle which slides in the needle groove in order to open and close the eye of the needle. The latch wire plays an important role for creating the stitches. In case of skip stitches or fabric damage, change to a new latch wire (part #BLQK-LW).

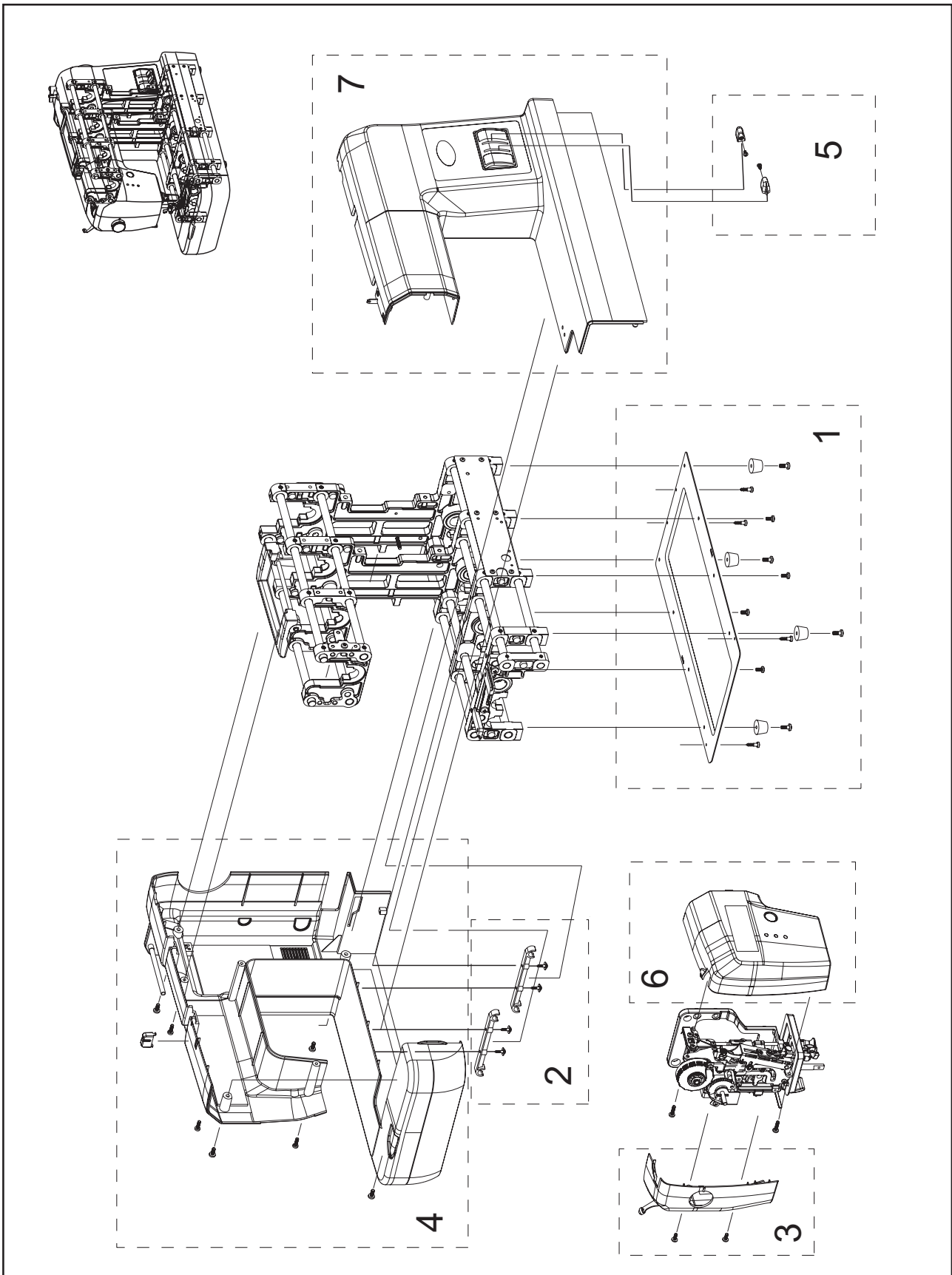


2. Construction of Covers

CAUTION: To reduce the risk of electric shock.

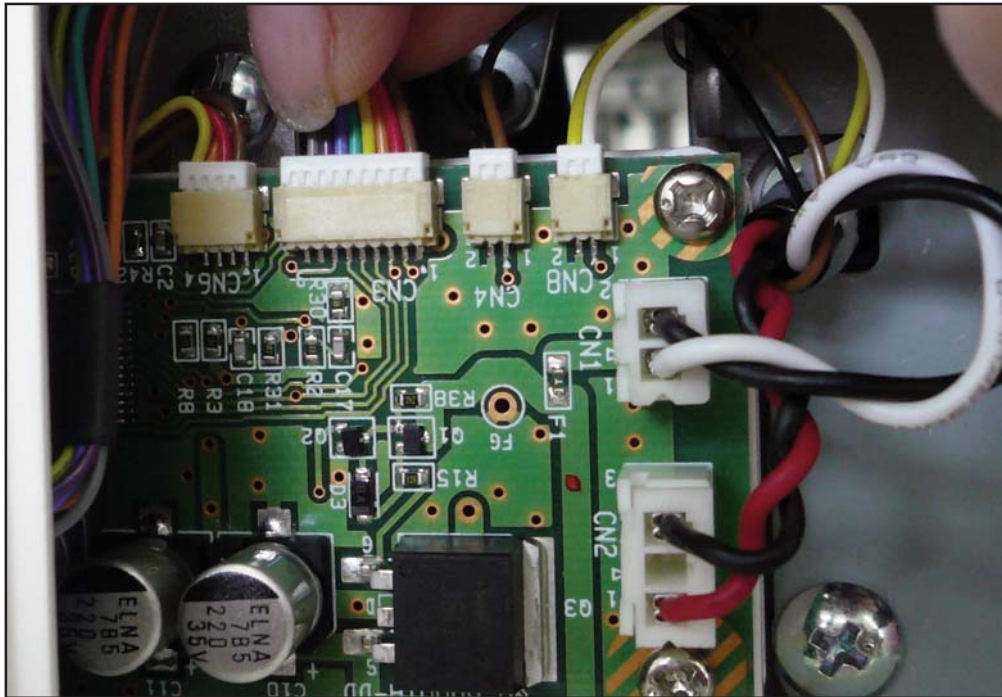
When removing covers, unplug 2 minuits before.

Remove covers 1-5 sequence as shown.

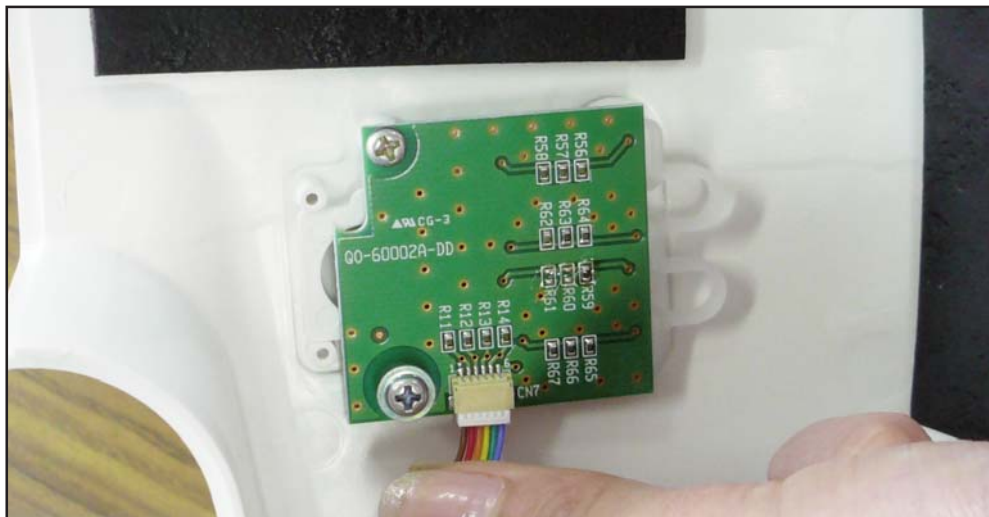


2. Construction of Covers (Cont.)

Before remove the front cover, remove the connector from circuit board located right side of main casting as shown.



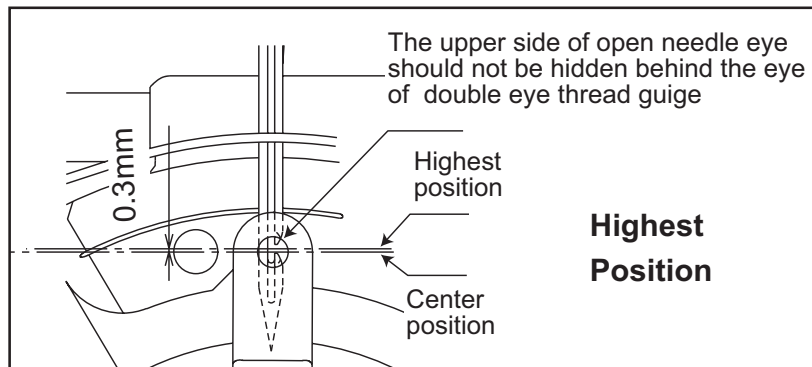
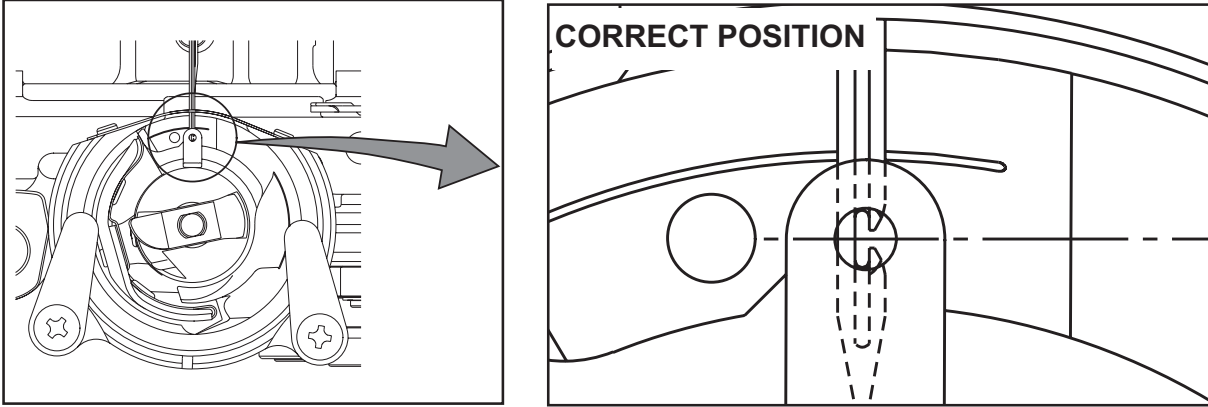
Before remove the front face cover, remove the connector from circuit board located wrong side of front face cover as shown.



3. Adjustment of Needle Bar Height

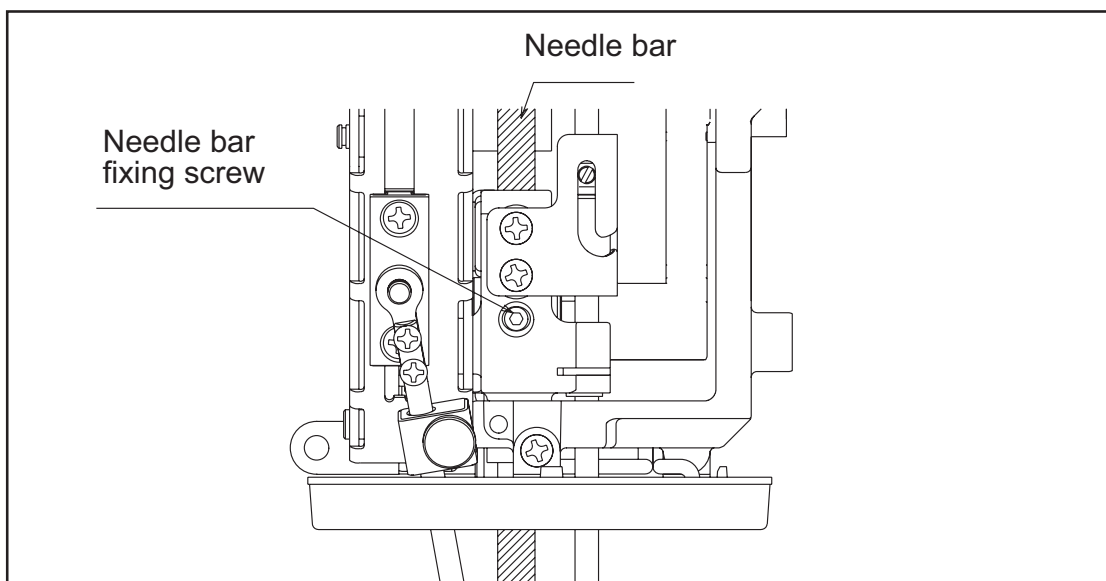
CORRECT POSITION- Open side of needle eye is located center of the bobbin case double eye thread guide.

Turn handwheel and bring the bobbin case double eye to needle center as shown.



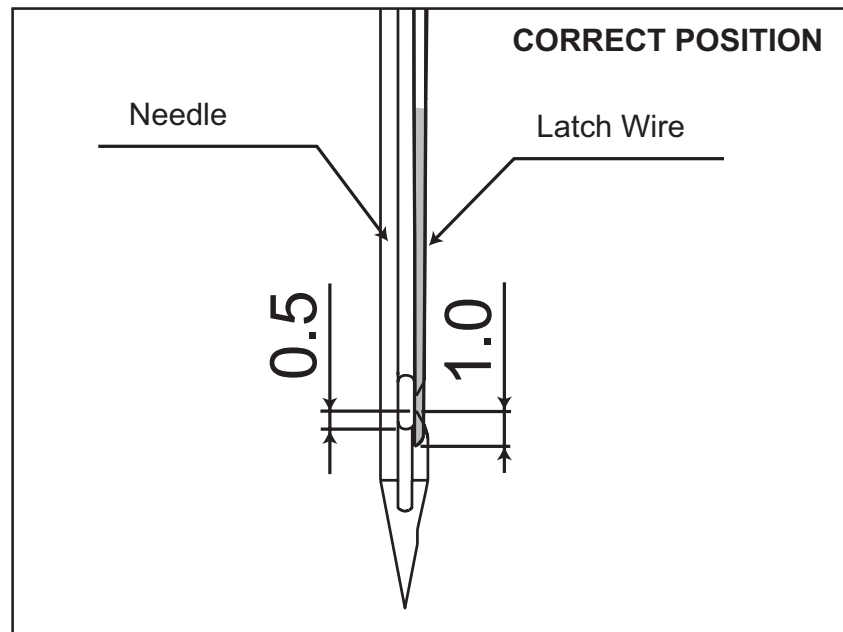
How to adjust:

1. Turn handwheel and bring needle bar to lowest position.
2. Loosen needle bar fixing screw, adjust heightness of needle bar.
3. Make sure the eye of needle is correct position or not.
4. Make sure needle fixing screw located parallel right direction.
5. Make sure #4 Latch Wire is position. (page 5)



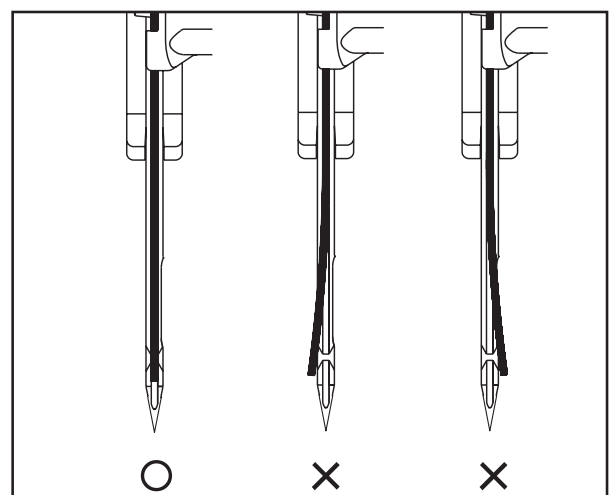
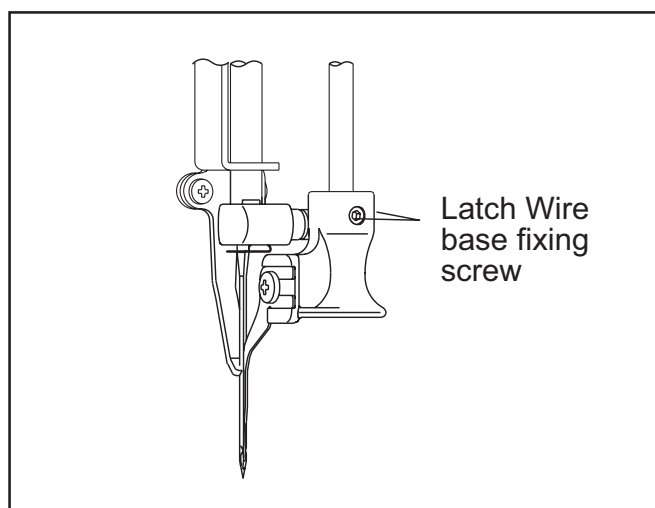
4. Adjustment of Latch Wire position

CORRECT POSITION- Tip of Latch Wire is 1mm lower from lower side tip of needle eye.



How to adjust:

1. Press and hold the positining button for approximately 2 seconds to set the machine to the bobbin loading position.
2. Loosen 2 screws of Latch Wire base.
3. Adjust Latch Wire position.
4. Tighten 2 screws firmly.
5. Make sure Latch wire is in the center channel of needle.

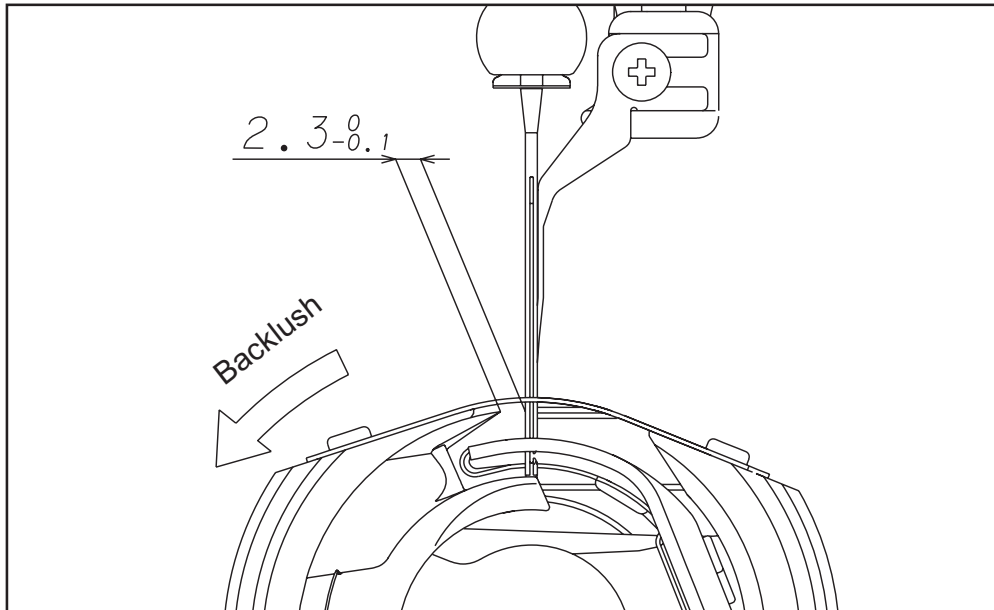


5. Adjustment of Shuttle Hook

Position

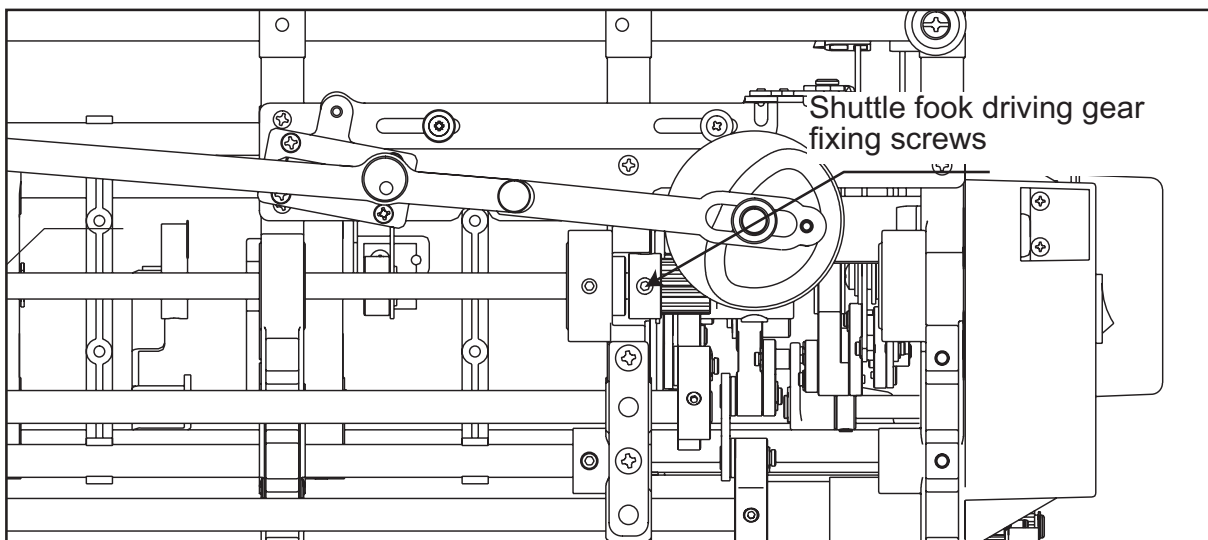
CORRECT POSITION- The gap between left side of needle and tip of shuttle hook is $2.3^{0}_{-0.1}$ mm included counter- clockwise backlash.

How to check: Turn handwheel and bring the shuttle hook to far left position as shown.



How to adjust:

1. Loosen 2 screws of shuttle hook driving gear.
2. Adjust shuttle hook position.
3. Tighten 2 screws firmly.
4. Make sure the position of shuttle hook.

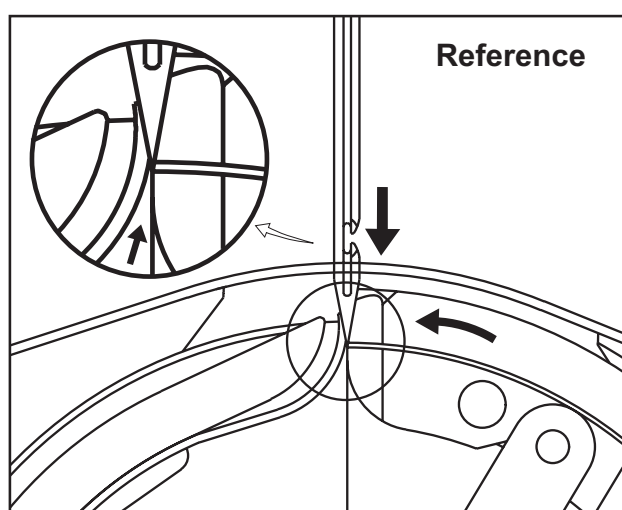
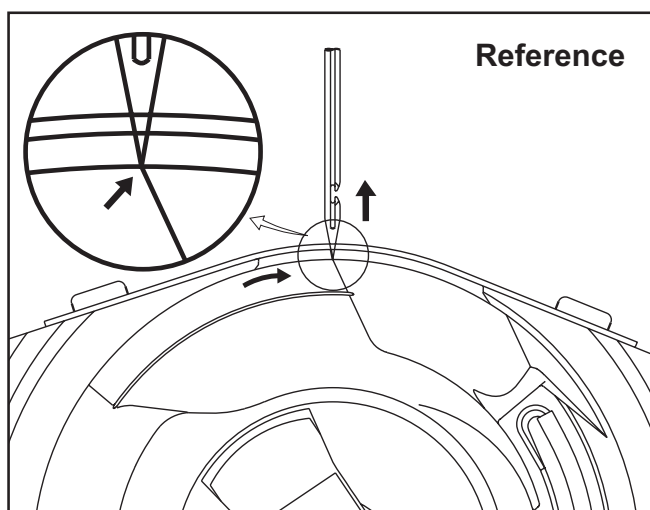
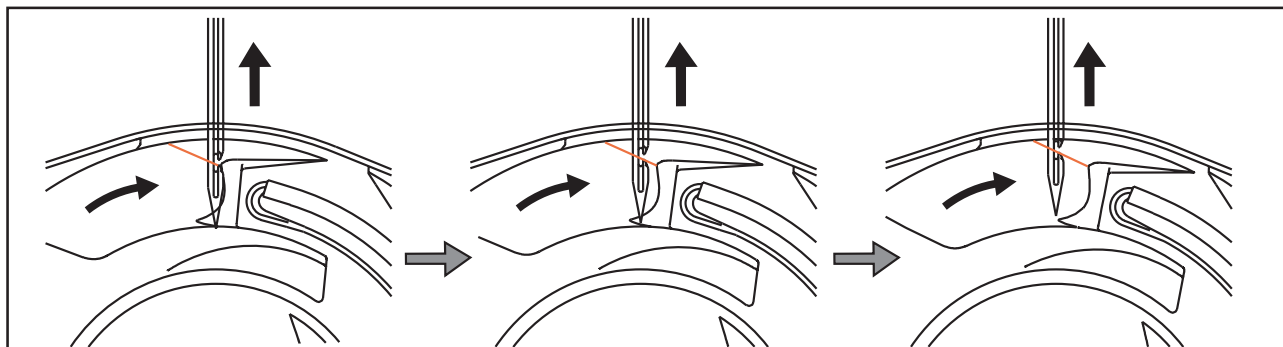


5. Adjustment of Shuttle Hook

Timing

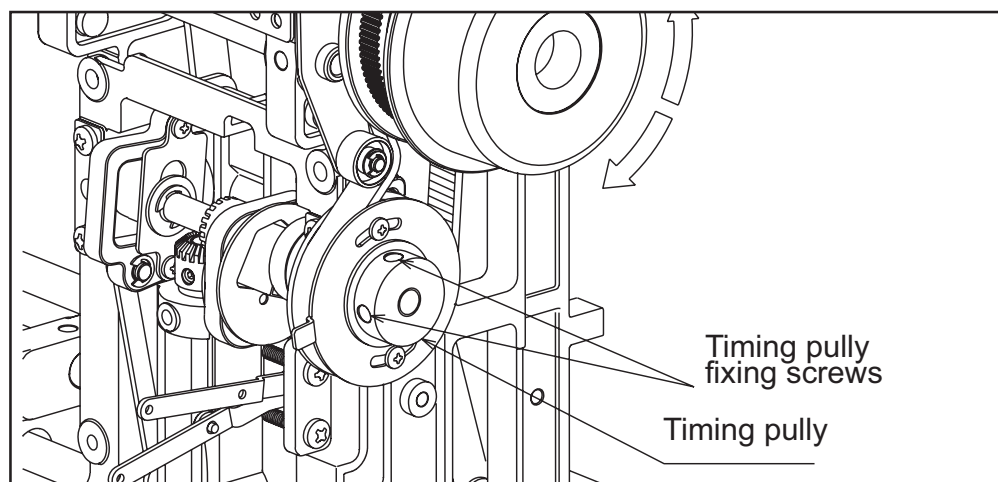
CORRECT TIMING- The eye of needle traces the ridgeline of shuttle hook. (red line)

How to check: Turn handwheel and bring needle to lowest position as shown.
Turn handwheel slowly, check the needle eye tracing.



How to adjust:

1. Loosen 2 timing pulley fixing screws, turn handwheel.
To get shuttle hook faster: Turn handwheel clockwise.
To get shuttle hook slower : Turn handwheel counter clockwise.
2. Tighten 2 screws firmly.
3. Make sure the timing of shuttle hook.



6. Adjustment of Shuttle Hook, Driver and Needle Guard

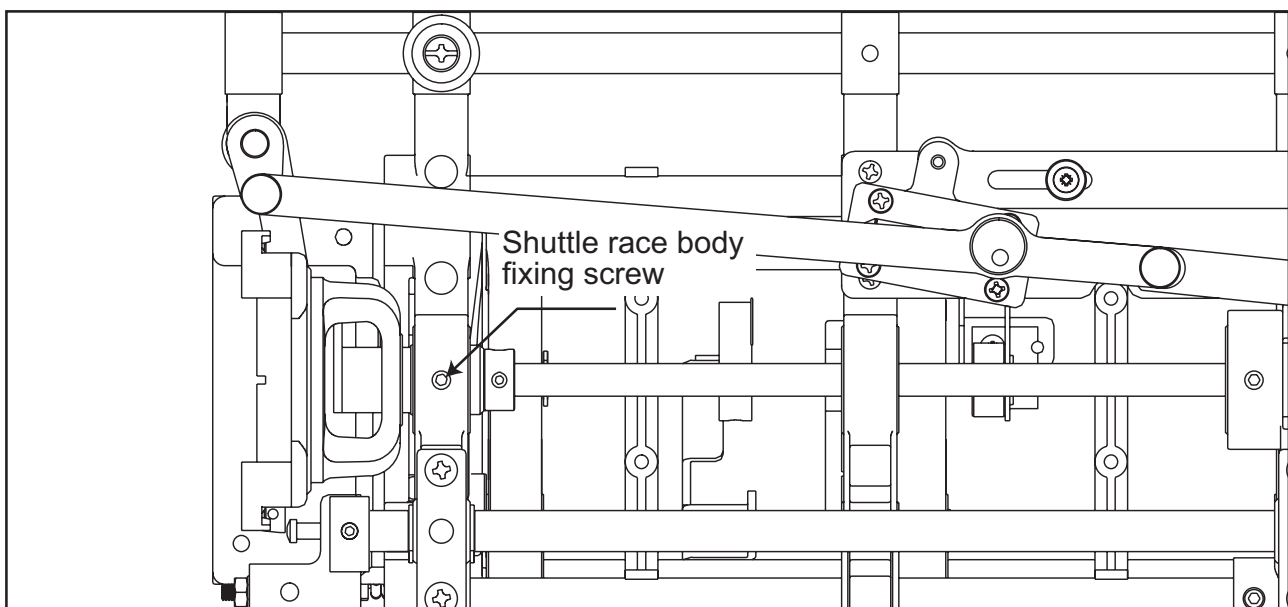
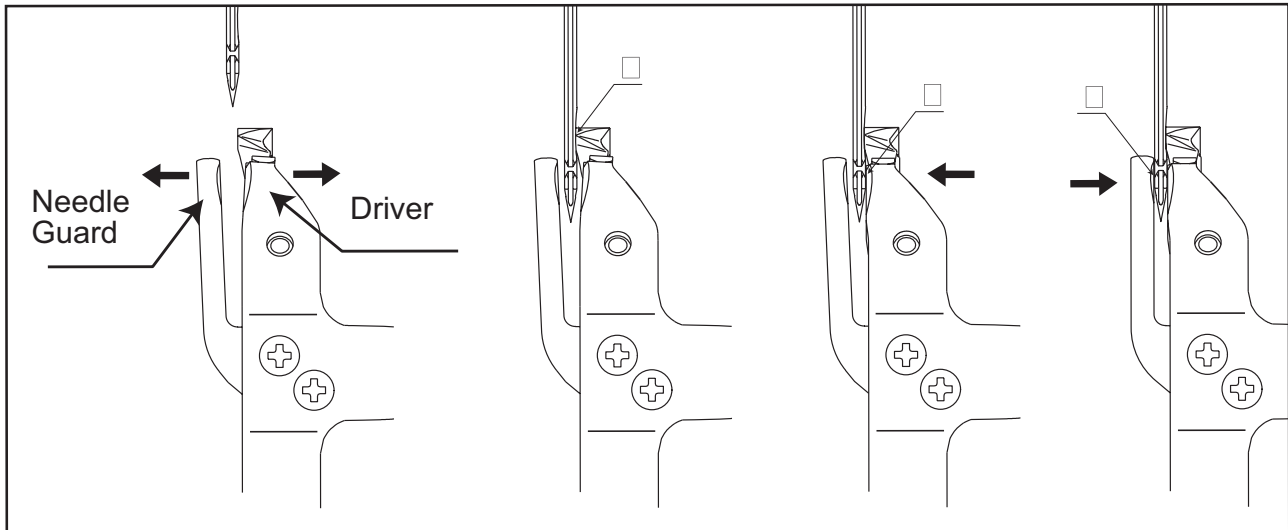
CORRECT POSITION- The gap between Needle and Shuttle hook is 0.

The gap between Needle and Driver is 0.

The gap between Needle and Needle Guard is 0.

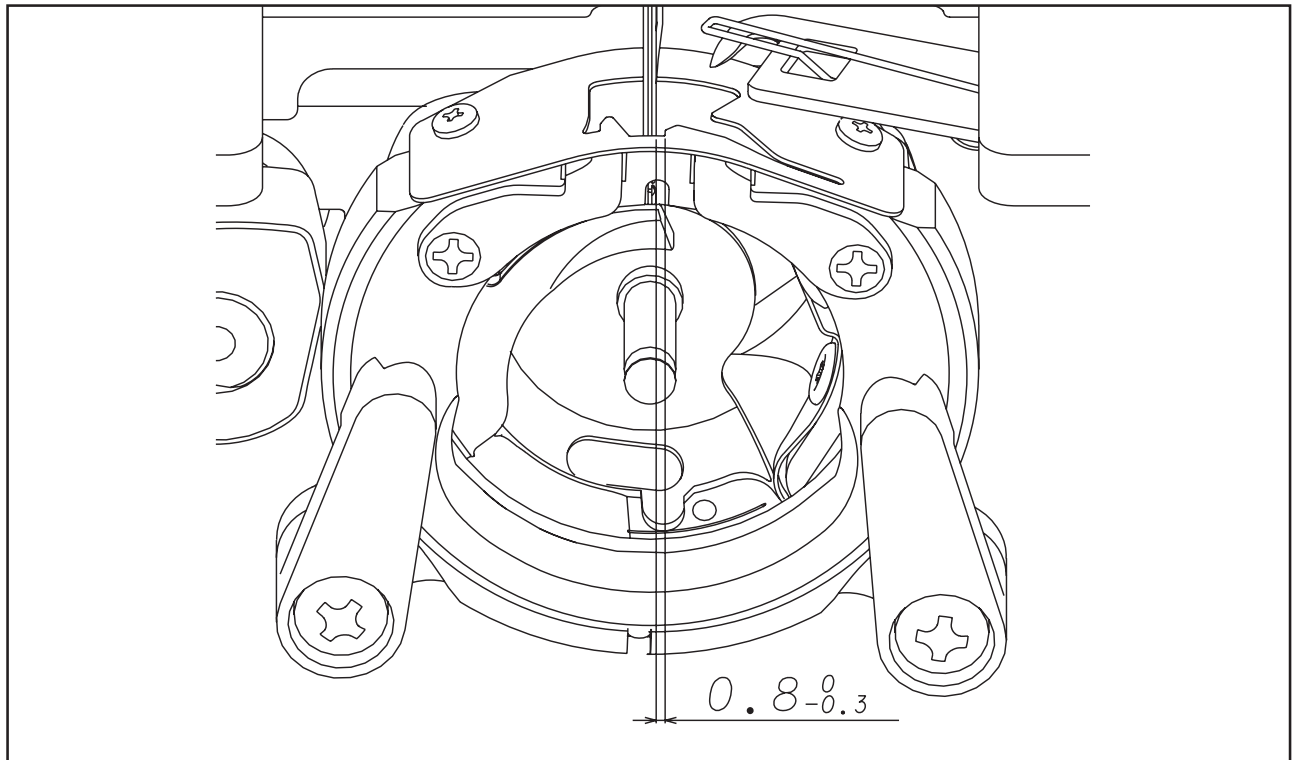
How to adjust:

1. Remove presser foot and needle plate.
2. Remove feed dog unit. (page 13)
3. Slightly bent the driver to make small gap between needle and driver.
4. Slightly bent the needle guard to make small gap between needle and needle guard
5. Loosen fixing screw of shuttle race body, adjust shuttle hook to make the 0 gap.
6. Slightly bent the driver to make 0 gap.
7. Slightly bent the needle guard to make 0 gap.
8. Replace #3, #2 and #1Parts.



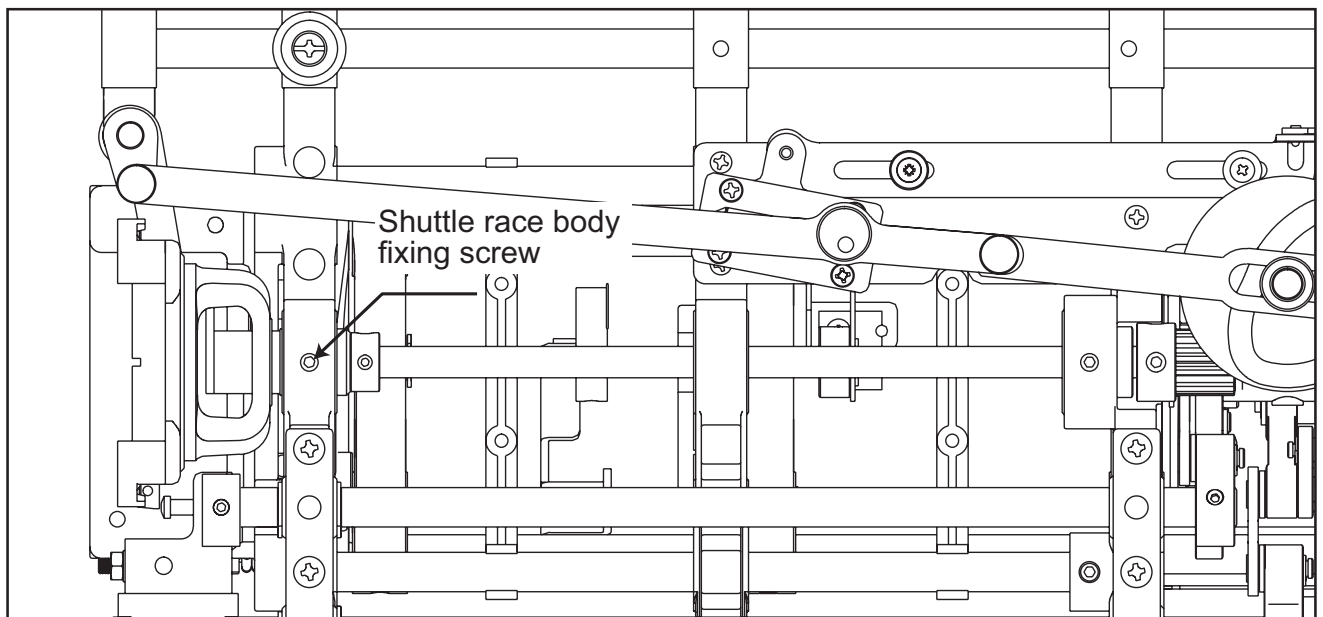
7. Adjustment of Shuttle Race Body spring plate

CORRECT POSITION- The gap between right side of needle and right side of shuttle race body spring plate is $0.8^{+0.3}$ mm.



How to adjust:

1. Loosen fixing screw of shuttle race body.
2. Turn shuttle race body, and adjust position of shuttle race body spring plate.
3. Tighten the screw firmly.
4. You are required to check position of Shuttle hook, Driver and Needle guard. (see page 8)



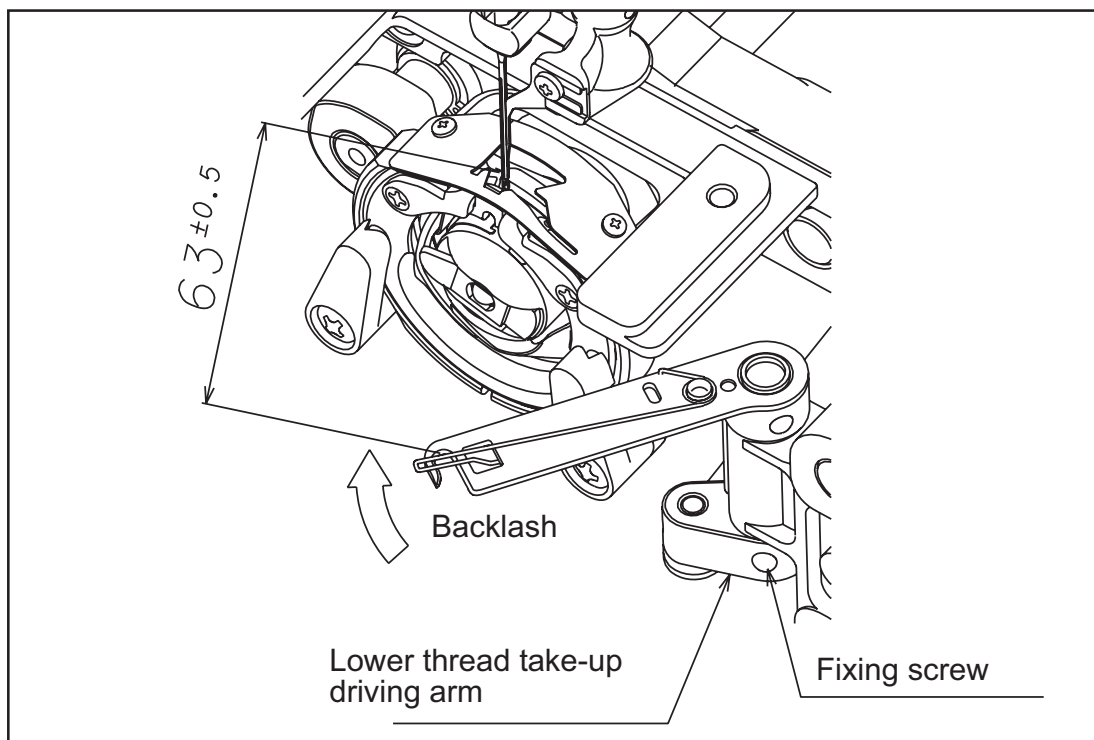
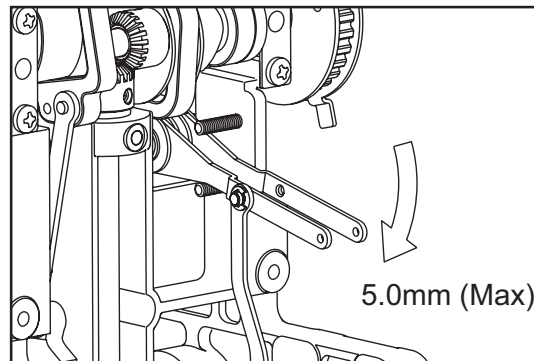
8. Adjustment of Lower Thread Take-up

Position

CORRECT POSITION- The radius between needle surface and thread catch edge of lower thread take-up is $63 \pm 0.5\text{mm}$ including clockwise backlash.

How to check:

1. Set stitch length and spacing 5mm (Max).
2. Turn handwheel and bring the Lower thread take-up to far left position.



How to adjust:

1. Loosen fixing screw of lower thread take-up driving arm.
2. Adjust lower thread take-up position.
3. Tighten the screw firmly.
4. Make sure the position of thread take-up.

8. Adjustment of Lower Thread Take-up

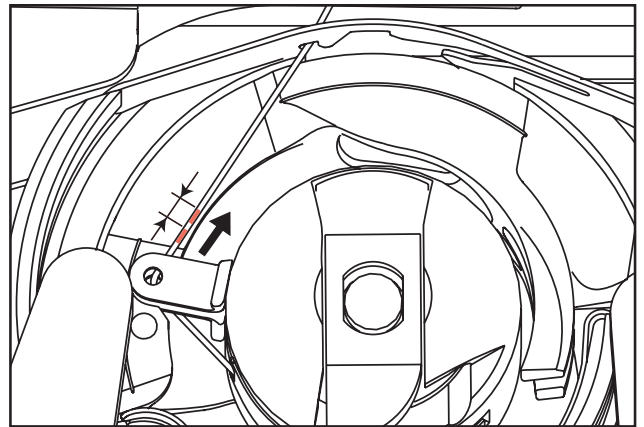
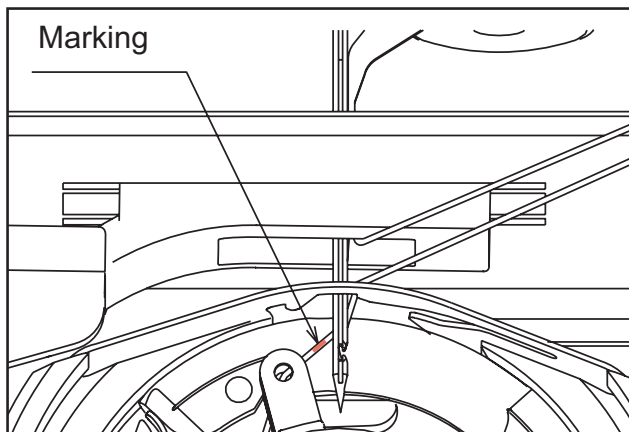
Timing

CORRECT TIMING- The thread moves less than 1mm.

Caution: In case of the timing too early, the thread does not move on.

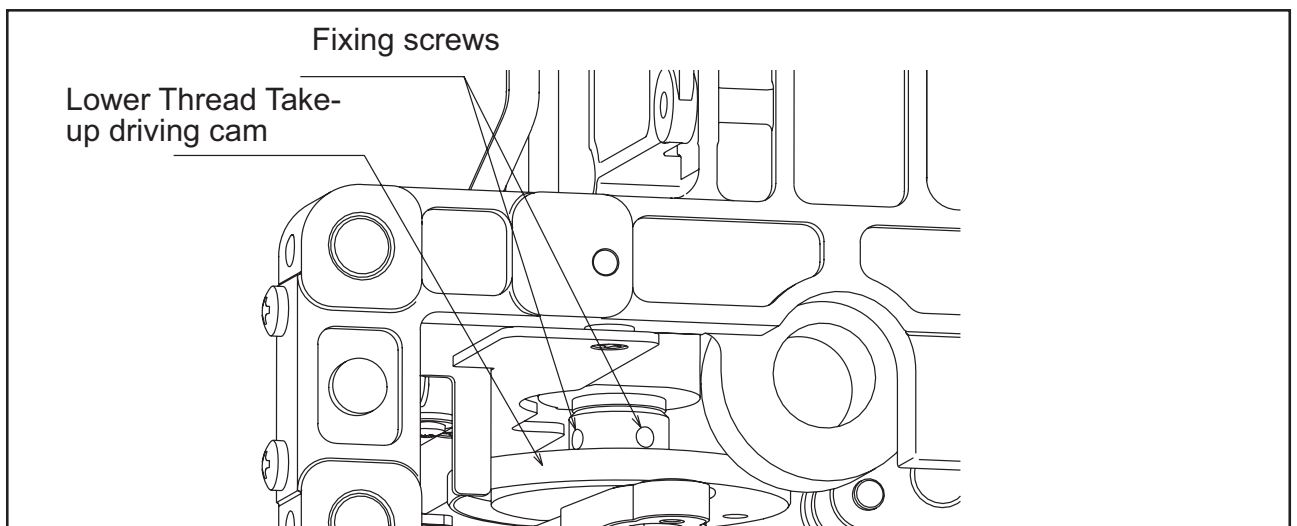
How to check:

1. Set bobbin thread and fabric.
2. Set stitch length and spacing to 2 mm (Min.)
2. Turn handwheel 4 turns.
3. Turn handwheel and bring the bobbin case double eye thread guide to 11 o'clock position on the way of counter-clockwise rotation.
(Needle eye is located just before catch the thread.)
4. Remove shuttle race ring.
5. Put marking on the thread between the bobbin case double eye thread guide and needle.
6. Turn handwheel, bring the bobbin case double eye thread guide to 9 o'clock position.
7. Check the thread movement.



How to adjust:

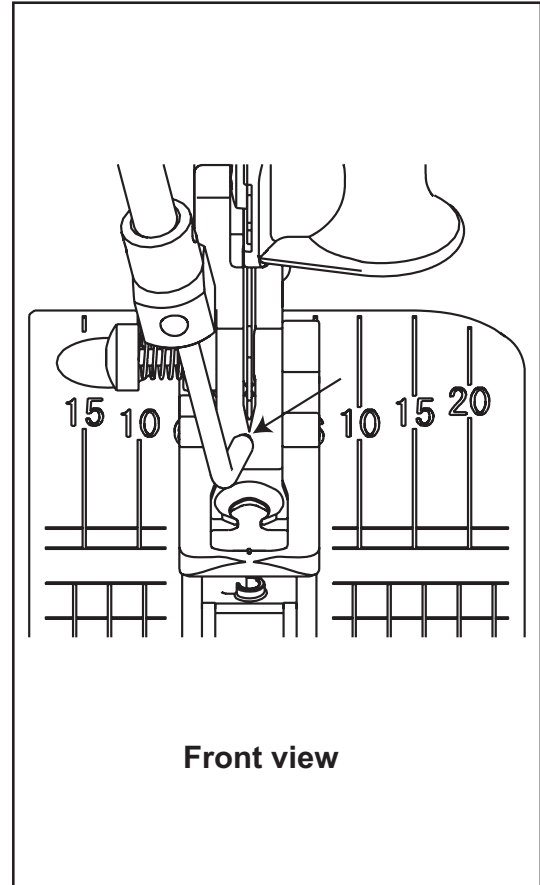
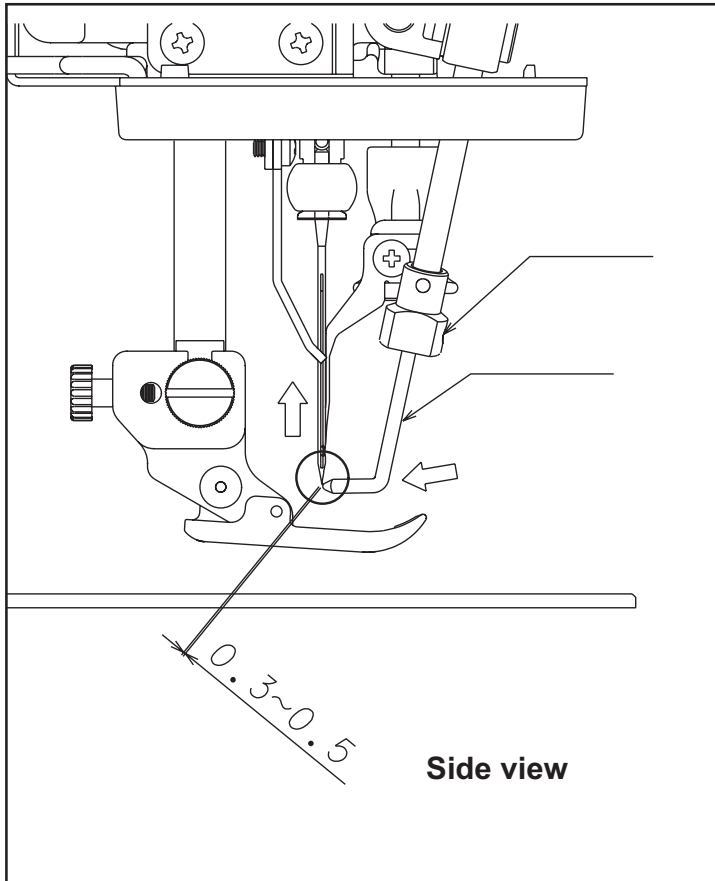
1. Loosen 2 fixing screws of lower thread take-up driving cam.
2. Turn the lower thread take-up driving cam.
To get timing faster: Turn the lower thread take-up cam clockwise see from bottom side.
To get timing slower : Turn the lower thread take-up cam counter-clockwise see from bottom side.
3. Tighten the screws firmly.
4. Make sure the timing is good or not.



9. Adjustment of Upper Thread Take-up

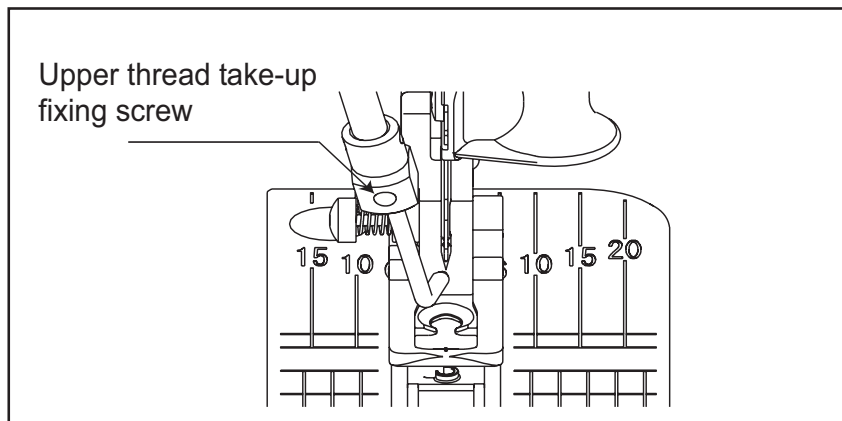
CORRECT POSITION- Side view: The gap between needle and upper thread take-up at closest position. The gap is 0.3-0.5mm.

Front view: Tip of the upper thread take-up is located center of needle



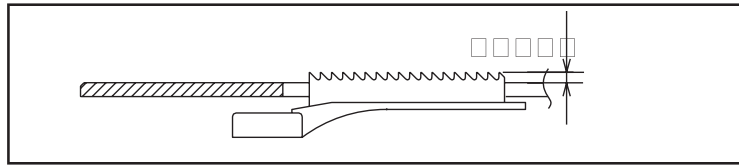
How to adjust:

1. Loosen fixing screw of upper thread take-up.
2. Adjust upper thread take-up.
3. Tighten the screw firmly.
4. Make sure position of upper thread take-up.

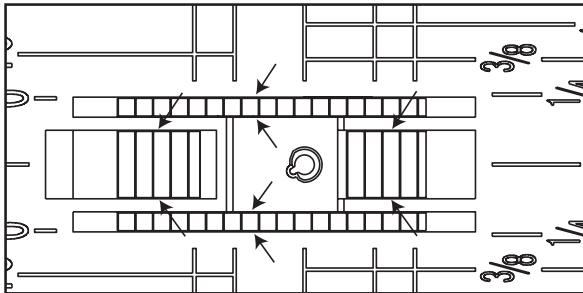


10. Adjustment of Feed Dog

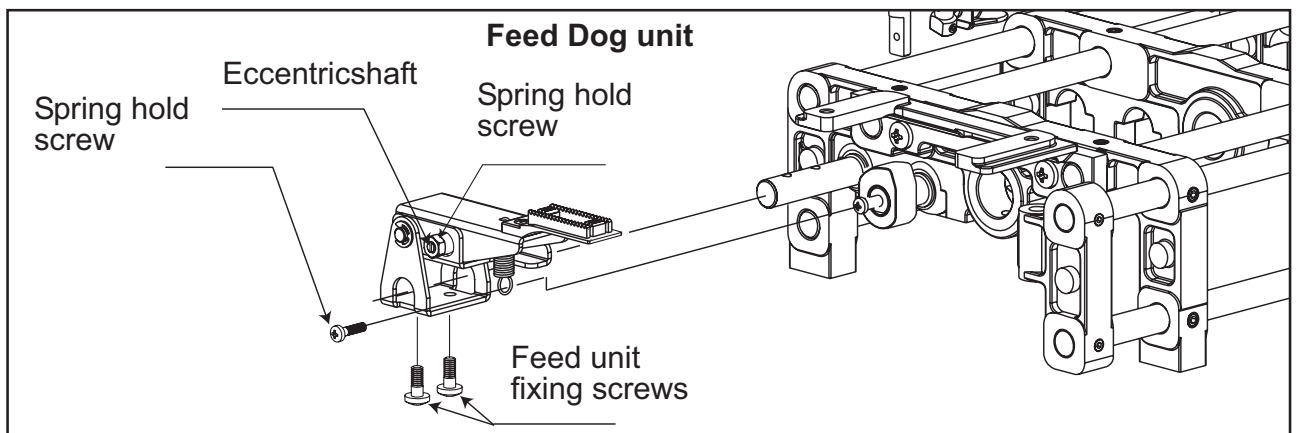
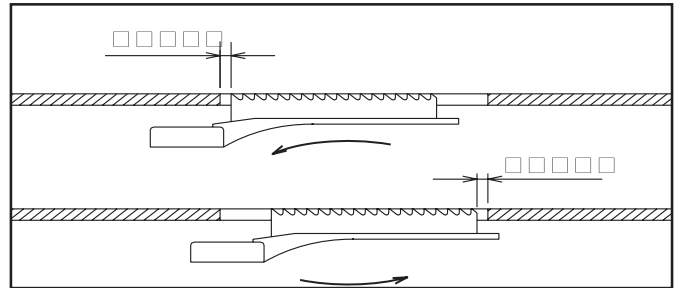
Heightness: Top of feed dog is higher than needle plate surface.



Left and right position:
Feed dog does not touch right and left side of needle plate.



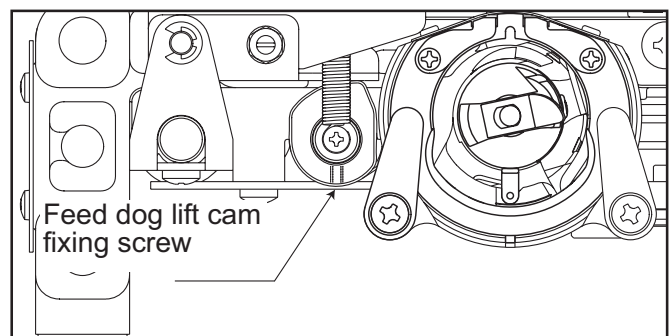
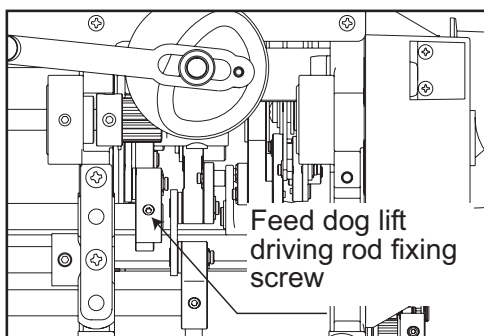
Front and rear gap:
Set stitch length and spacing 5.0mm (Max).
The gap between feed dog and needle plate is approximately 1.5mm.



Timing: When needle is top position, Fixing screw of feed dog lift cam is 6 o'clock position.

How to adjust:

1. Turn handwheel and bring the needle to top position.
1. Loosen fixing screw of feed dog lift driving rod.
2. Adjust feed dog lift cam.
3. Tighten the screw firmly.
4. Make sure feed dog moving.



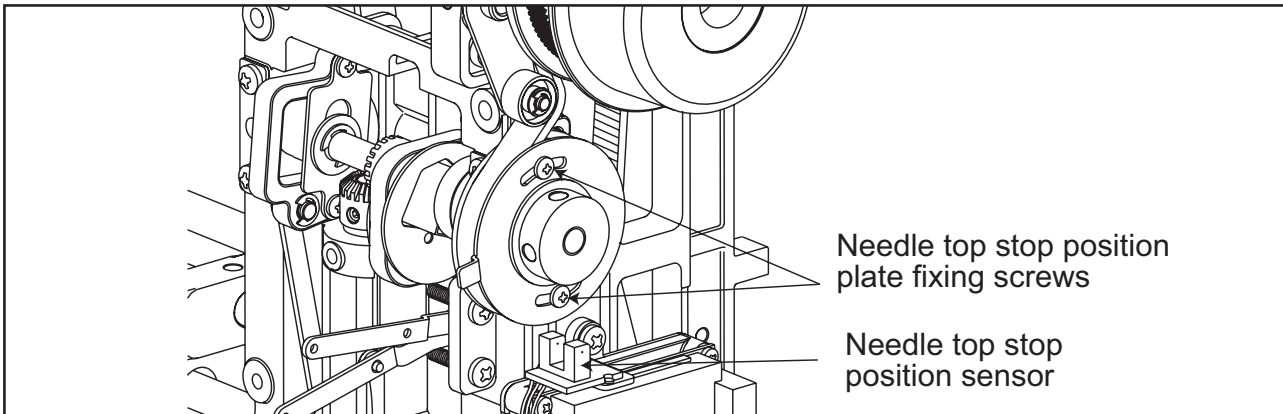
11. Adjustment of Needle Top Stop position

CORRECT POSITION- The needle stops 1mm lower from top position without thread.

How to adjust:

1. Loosen 2 fixing screws of needle top position plate.
2. Adjust needle top position plate.
3. Tighten the screws firmly.
4. Make sure needle stops top position without thread.

Note: After adjustment of Needle Top Stop position, you are required to check #13 Loading position. (page 15)



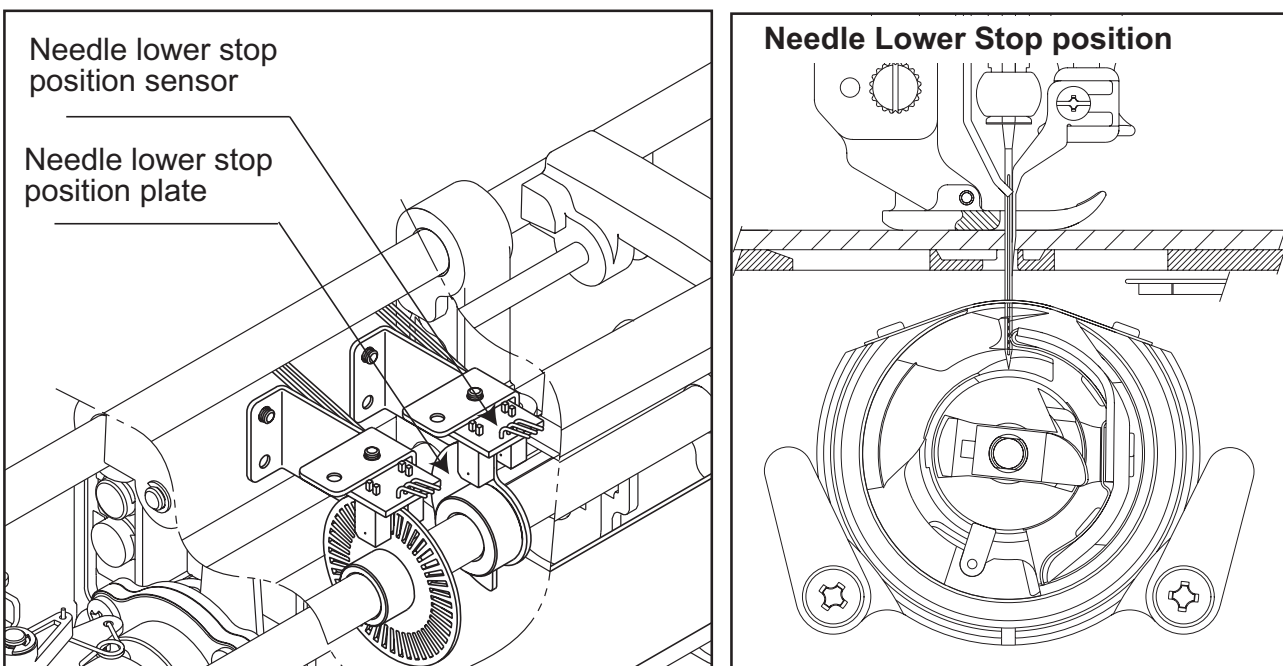
12. Adjustment of Needle Lower Stop position

CORRECT POSITION- The needle stops lowest position.

How to adjust:

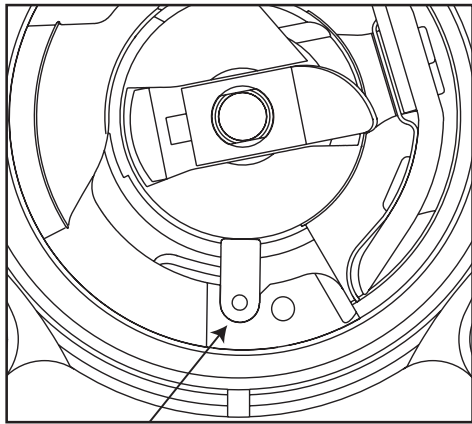
1. Loosen the fixing screw of needle lower stop position plate.
2. Adjust needle lower stop position plate.
3. Tighten the screw firmly.
4. Make sure needle lower stop position as shown.

Note: After adjustment of Needle Lower Stop position, you are required to check #13 Loading position. (page 15)

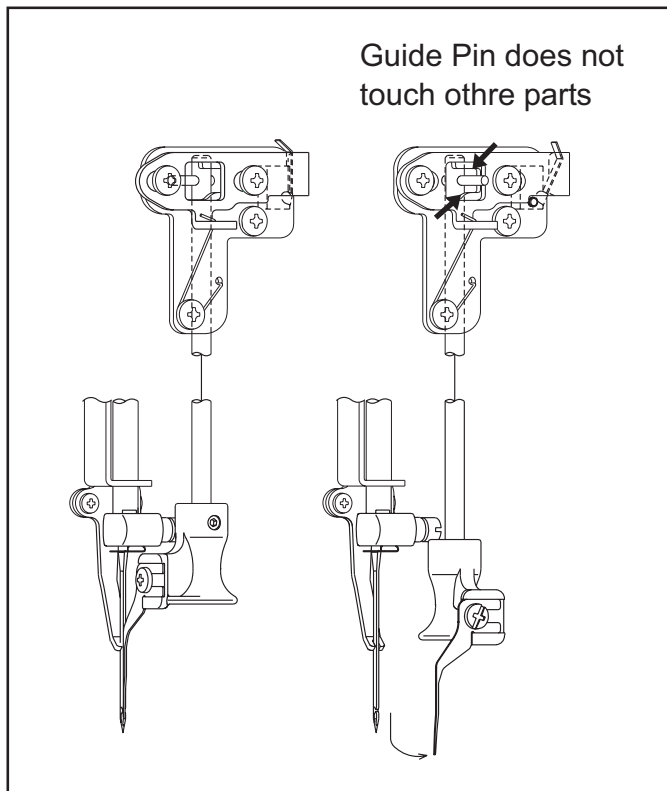


13. Adjustment of Loading position

CORRECT POSITION- Insert or remove the bobbin case
Replace the latch wire



Insert or remove the bobbin case:
The bobbin case double eye thread guide stays lower position.



Replace the latch wire:
Latch wire does not touch Upper Thread Take-up, Presser foot and Guide pin etc.

How to adjust:

Adjust #11. Needle top stop position and #12. lower position. (page 14)
Make sure roading position checking again.

14. Replacement of Driver

To remove:

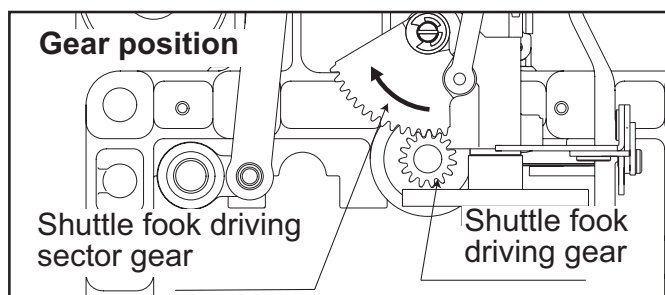
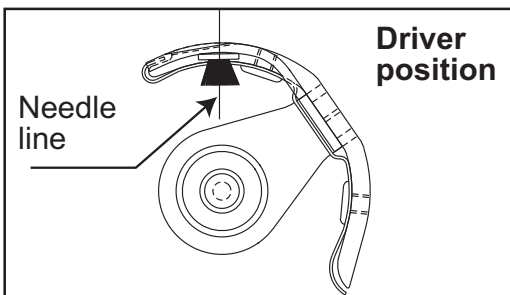
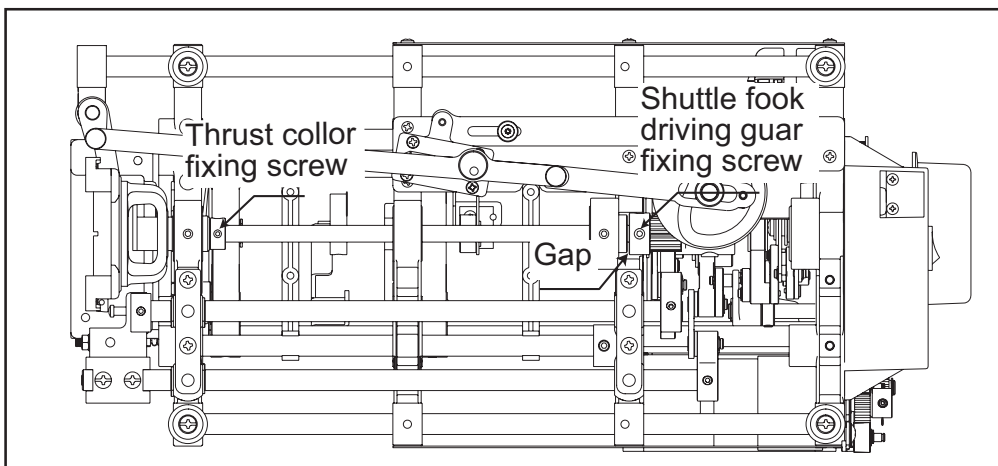
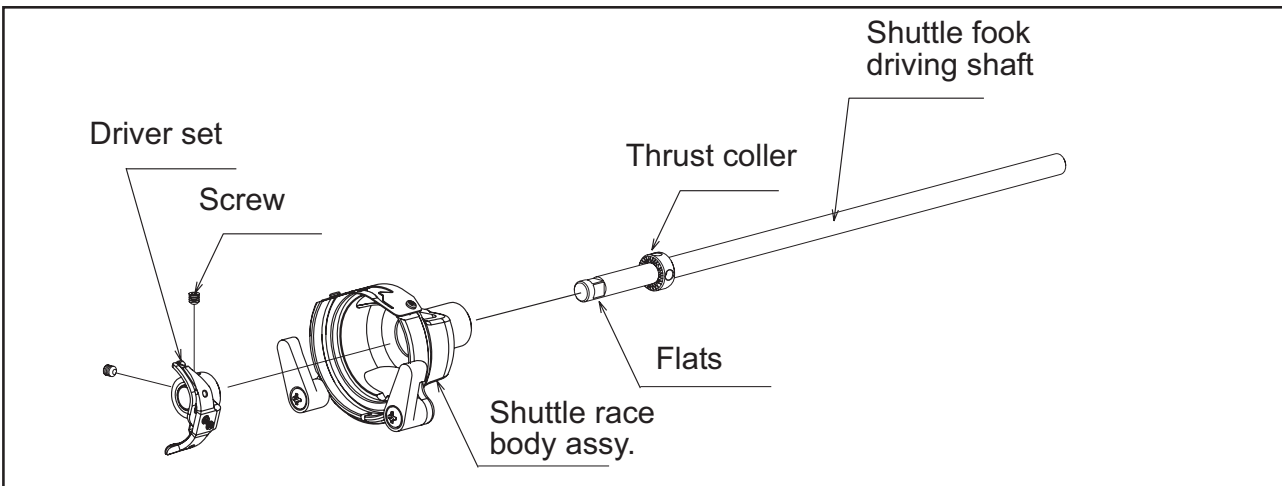
1. Remove bobbin, shuttle race ring and shuttle hook.
2. Remove needle pressor foot, needle plate and feed dog unit. (see page 13)
3. Loosen 2 screws of the driver.

To replace:

1. Replace new driver to shuttle hook driving shaft.
2. Replace shuttle hook driving shaft. Screw holes place correct flats.
3. Make no gap between the driver and the thrust collar.
4. Tighten 2 screws of the driver.

After replaced driver, you are required to check as follows:

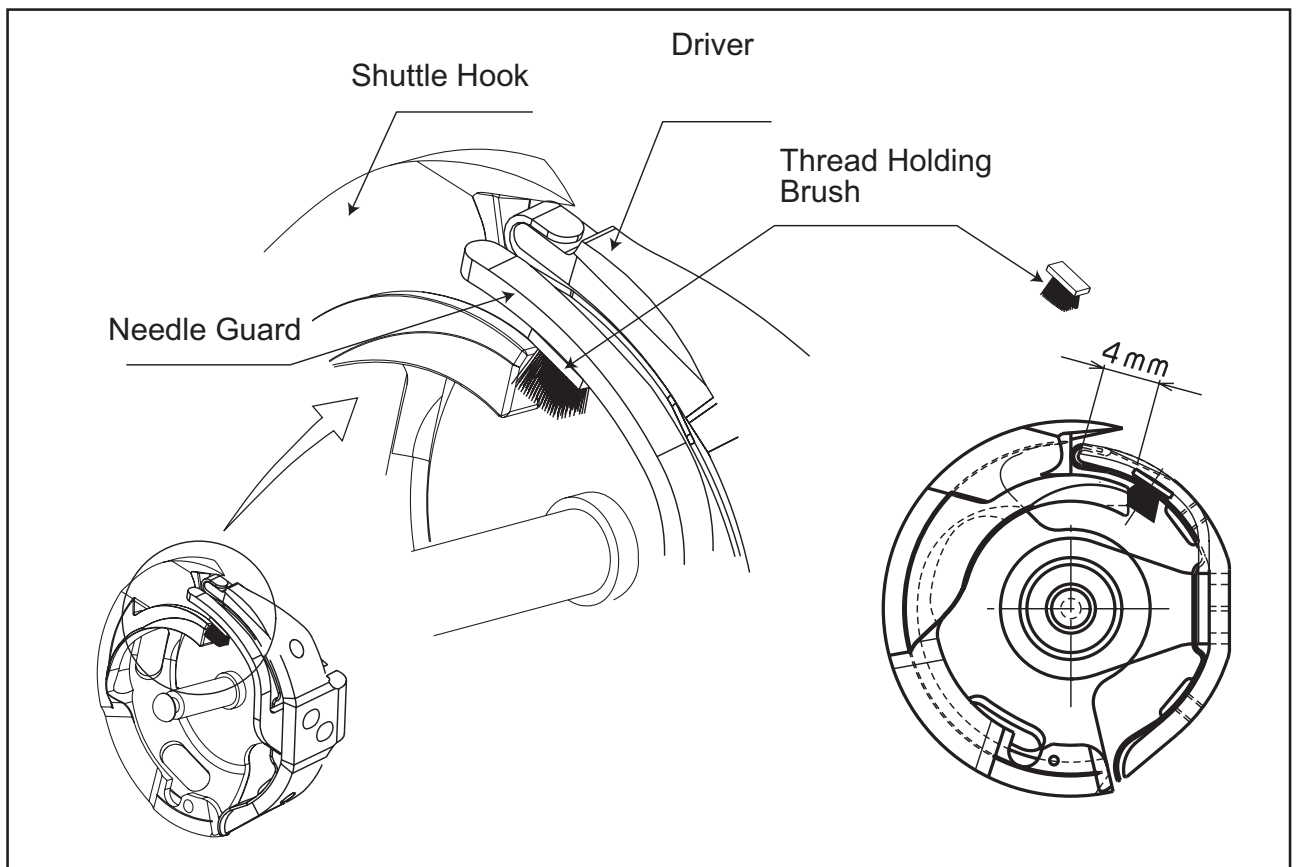
5. Adjustment of shuttle fook position and timing. (page 6/7)
6. Adjustment of shuttle fook, driver and needle guard. (page 8)



15. Replacement of Thread Holding Brush

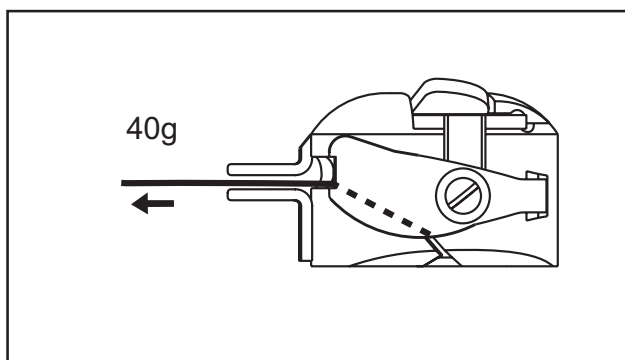
1. Remove previous thread holding brush.
2. Clean up inside surface of the needle guard.
3. Spread epoxy resin glue and leave on 2 hours.
3. Recommended glue is CEMEDINE PPX for Thread Holding Brush.
4. Spread some primer to top of thread holding brush.
5. After 5-10 minuits, spread PPX to needle guard inside.
6. Attach the Thread Holding Brush to correct position of Needle Guard.

Note: In order to get strong adhesived, it takes 30 min.



16. Bobbin Tension

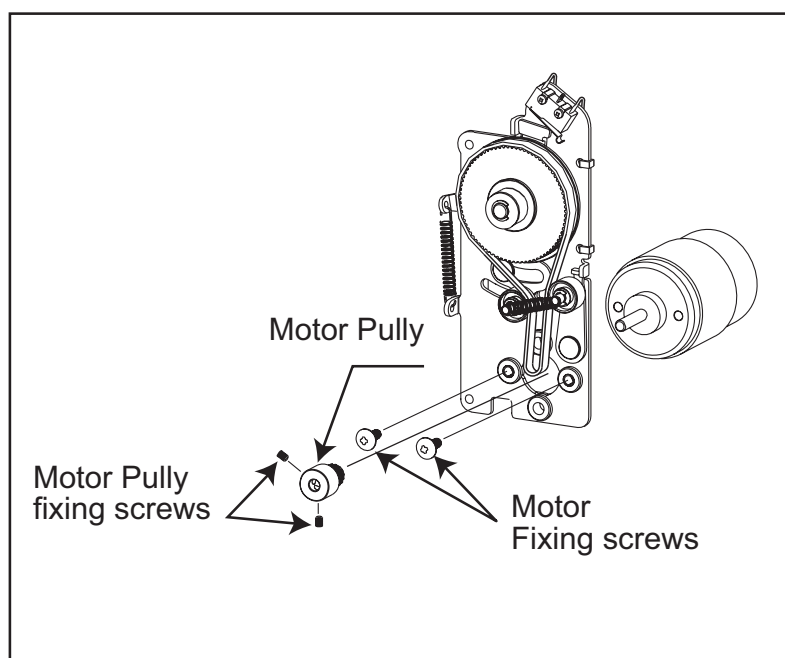
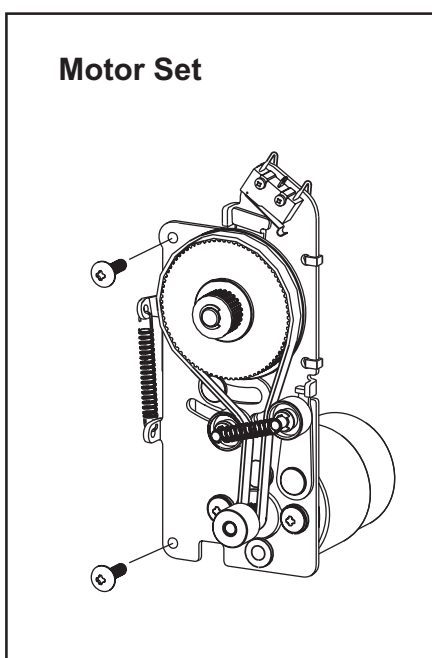
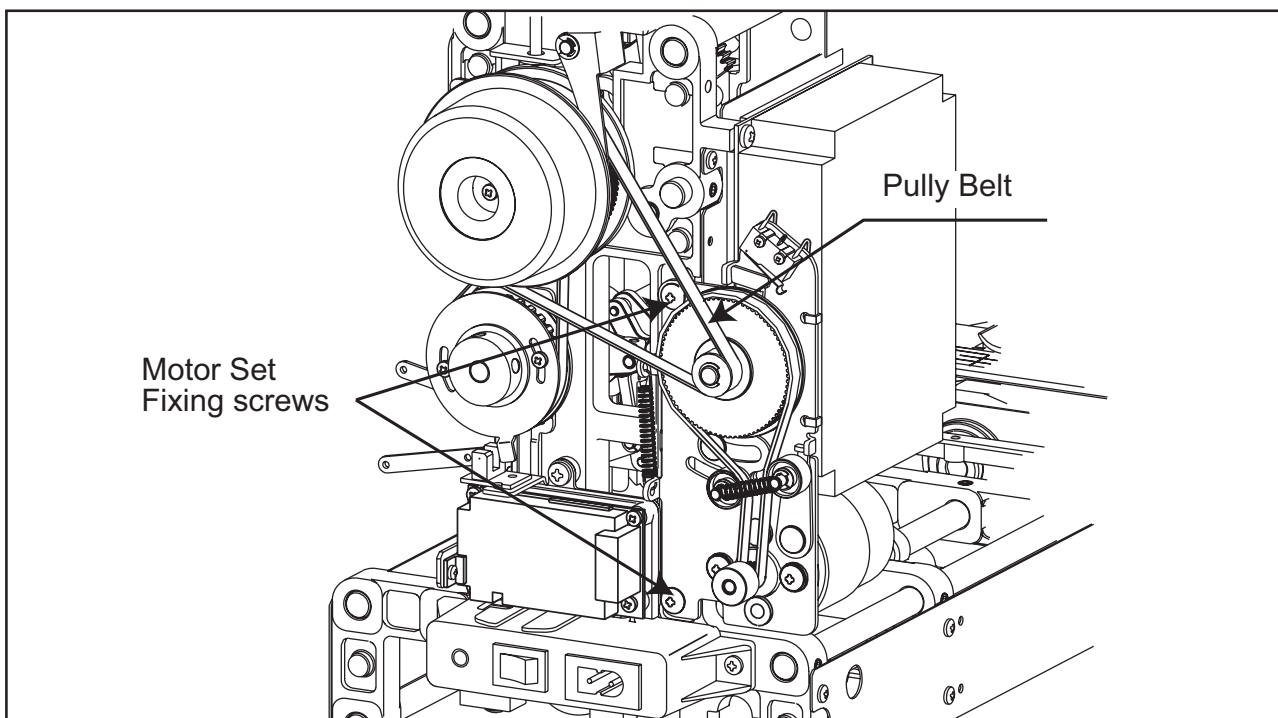
CORRECT TENSION- 40g with #30 polyester thread.



Using #30 polyester thread, without threaded bobbin case double eye thread guide.

17. Replacement of Motor

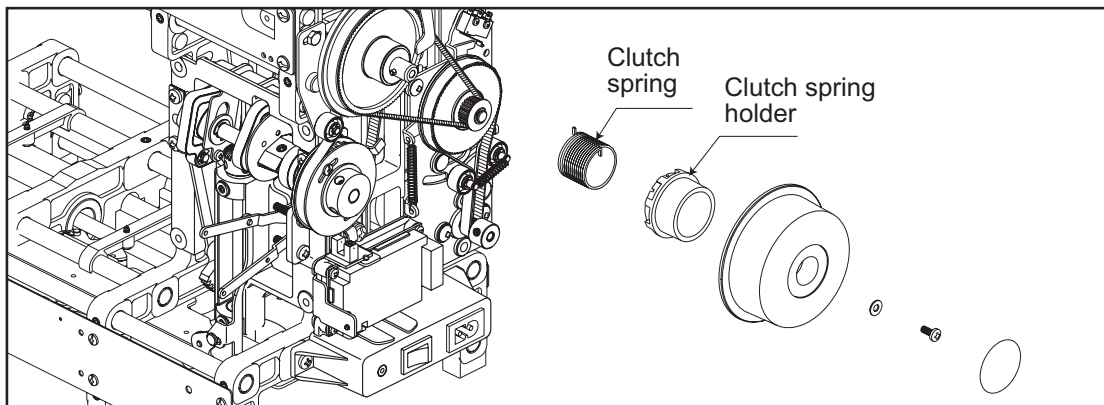
1. Remove Pully Belt.
2. Remove 2 fixing screws of Motor Set.
3. Remove Motor Set with motor bracket.
4. Remove Motor Pully and remove 2 fixing screws of Motor.
5. After replacement of Moter Set, you are required to adjust Pully Belt tension.



18. Replacement of Clutch Spring

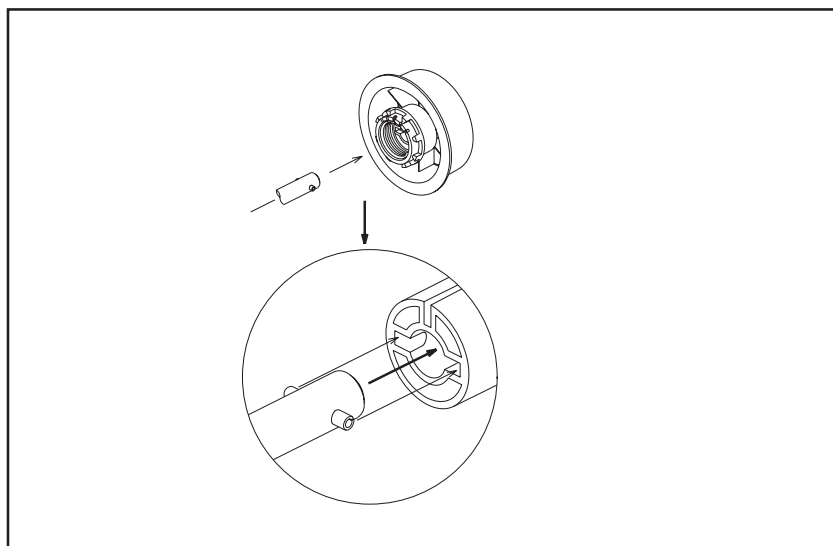
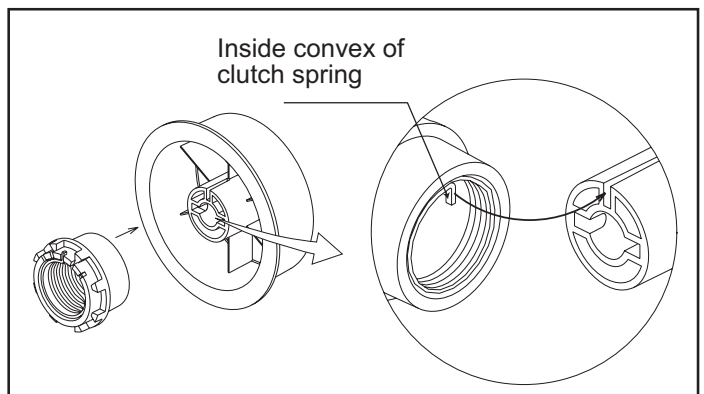
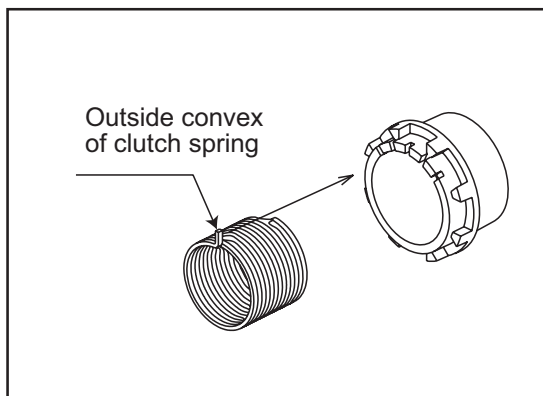
To remove:

1. Remove pulley seal, screw, washer, Handwheel, clutch spring holder and clutch spring.

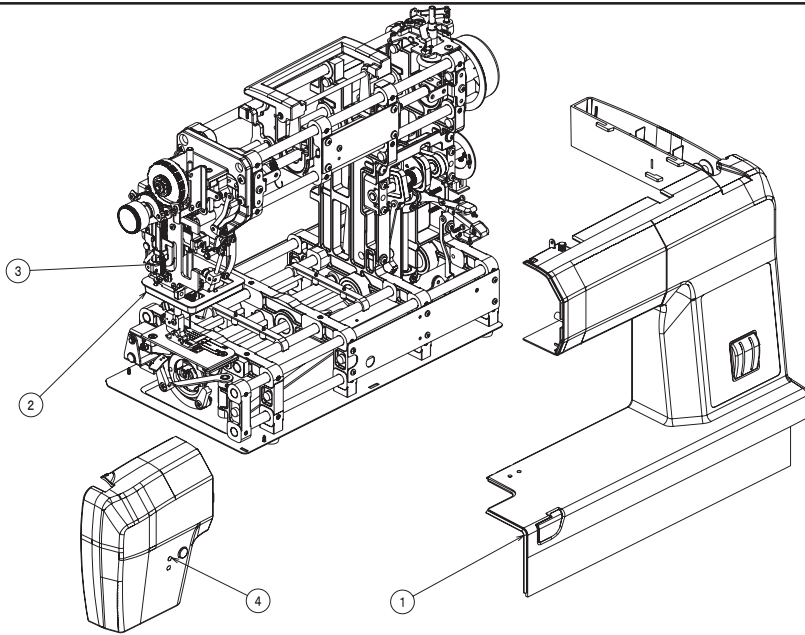


To replace:

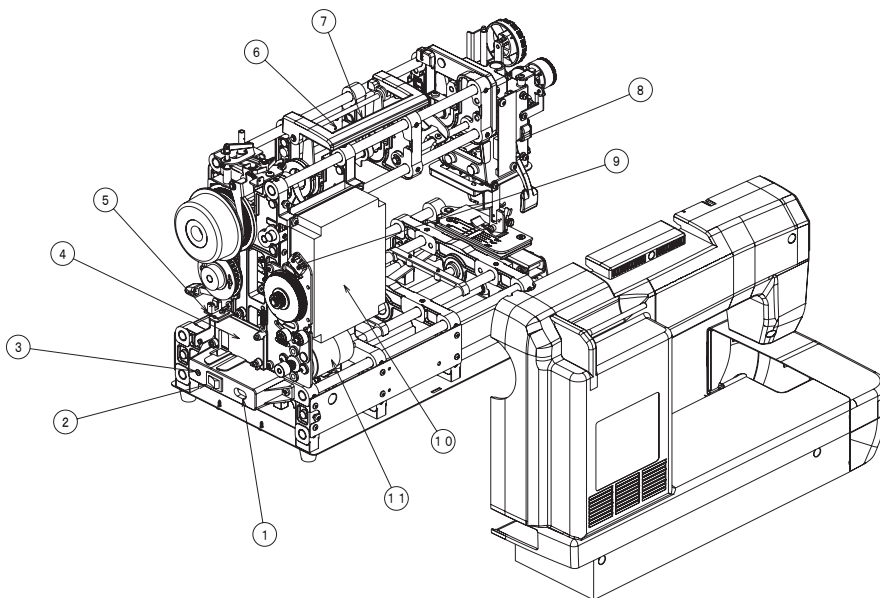
1. Replace new clutch spring and insert the outside convex part of spring into any groove of the holder.
2. Insert the inside convex of spring with holder into the groove of handwheel.
3. Replace handwheel into upper shaft.
4. Replace Washer, screw and pulley seal.
5. Make sure clutch works correctly.



19. Electric Components



| No. | Parts Name | No. | Parts Name |
|-----|----------------|-----|------------|
| 1 | Safety Switch | | |
| 2 | C. C. F. Lamps | | |
| 3 | Safety Switch | | |
| 4 | LED And Switch | | |
| 5 | | | |
| 6 | | | |
| 7 | | | |
| 8 | | | |



| No. | Parts Name | No. | Parts Name |
|-----|-------------------------|-----|------------------------|
| 1 | AC Inlet | 9 | Safety Switch |
| 2 | Power Switch | 10 | Switching Power Supply |
| 3 | Jack | 11 | Motor |
| 4 | Printed Circuit Board | | |
| 5 | Optical Sensor | | |
| 6 | Optical Sensor | | |
| 7 | Optical Sensor | | |
| 8 | C. C. F. Lamps Inverter | | |

20. Electric Block Diagram

