

Service Manual

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Model

HZL-27Z



MODEL: HZL-27Z

JUKI HOUSEHOLD SEWING MACHINE CORPORATION

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1. Disassembling face covers - 1

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(1) Remove face cover

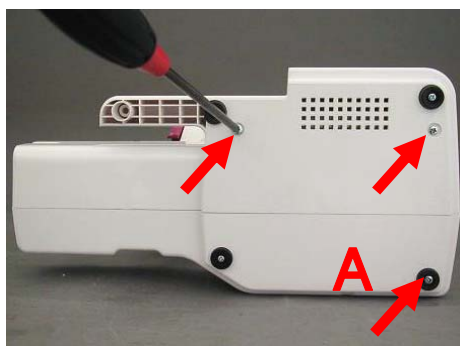
Remove 2 screws and take out face cover.



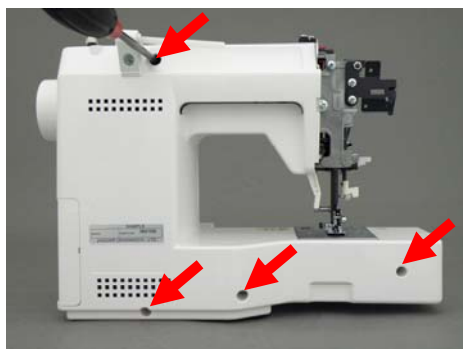
(2) Remove back cover.

1. Remove 3 screws on base cover.

Screw 'A' fixes switch cover. It is released with rubber foot.



2. Remove 4 screws from back cover.



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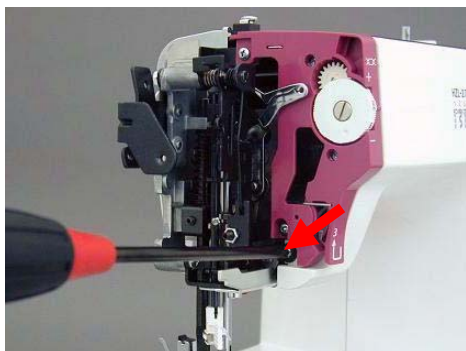
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1. Disassembling Face cover - 2

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3. Remove a screw on front cover.



4. Remove switch cover by small screw driver.



Shape of terminal block is different by destination.

5. Use small driver to remove the connection between front cover and back cover.



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3. Disassembling face cover - 3

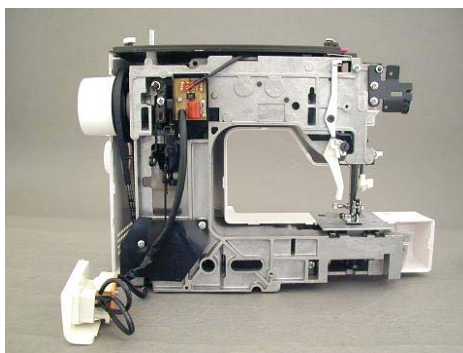
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6. Put your hand inside to disconnect side portions.



7. Insert the switch cover to the inside of machine, lower presser foot and pull up cover near presser foot not to stuck at the lever then pull the back cover behind to remove.



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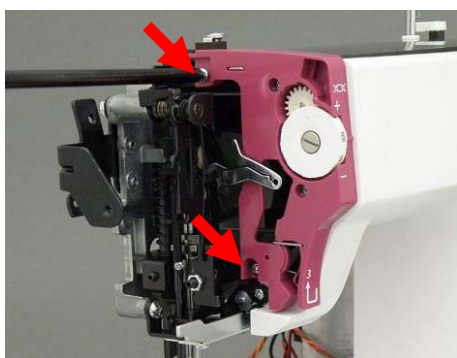
1. Disassembling face cover - 4

(3) Remove front cover and top plate.

1. Pull out stitch length dial and pattern select dial.



2. Loosen 2 screws on thread guide plate and bend it to remove the front cover.



3. Pull up the top plate to complete disassembling outer covers.



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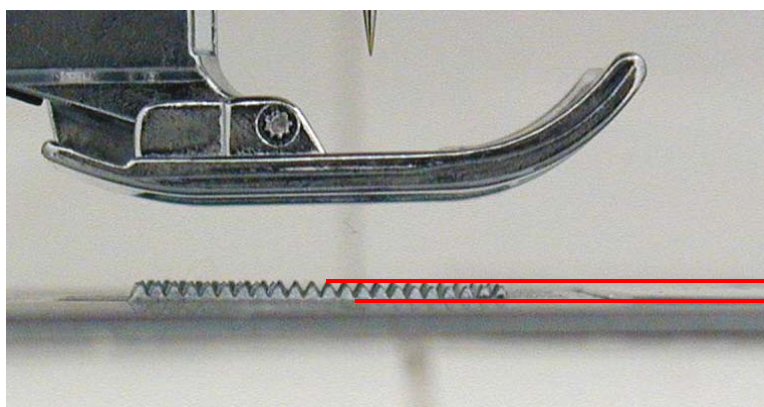
2. Feed dog height

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[Checking]

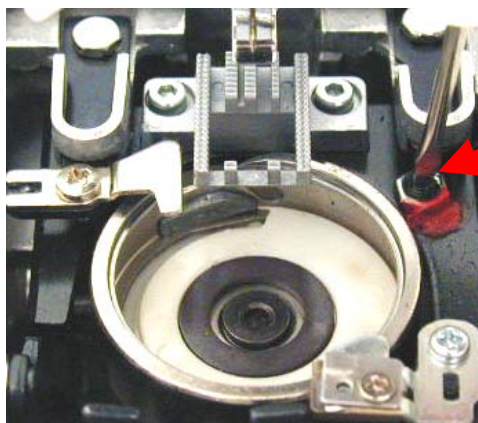
1. Move the feed dog to its highest position by turning hand wheel. Confirm if the feed dog height is 0.89-1.09 mm from needle plate.



0.89~1.09 mm

[Adjustment]

1. Remove needle plate.
2. Turn the screw A to adjust the height.
 - Feed dog is too low. → Turn it clockwise
 - Feed dog is too high. → Turn it counter clockwise.



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3. Needle height

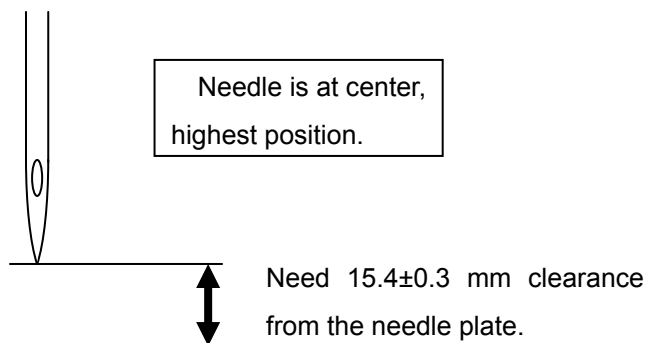
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Attention: Confirm this step before '11. Needle timing to shuttle point'.

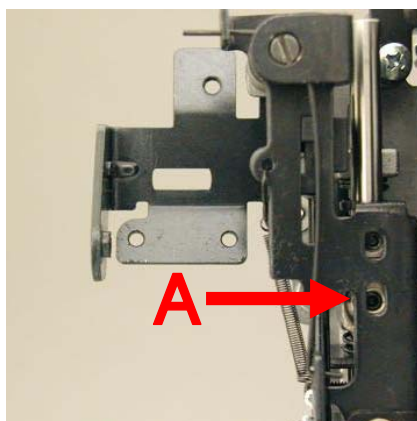
[Checking]

1. Select straight stitching with needle point at the center. (Needle point comes to the center of the needle plate hole.)
Raise the needle to the highest position by turning hand wheel.
2. Check and see if the distance between the highest needle point and needle plate surface is $15.4 \text{ mm} \pm 0.3 \text{ mm}$ as below.



[Adjustment]

1. Remove face cover.
2. Loosen screw 'A' which fixes needle bar, and adjust needle height.



Attention: After adjustment, check "11. Needle timing and shuttle point".

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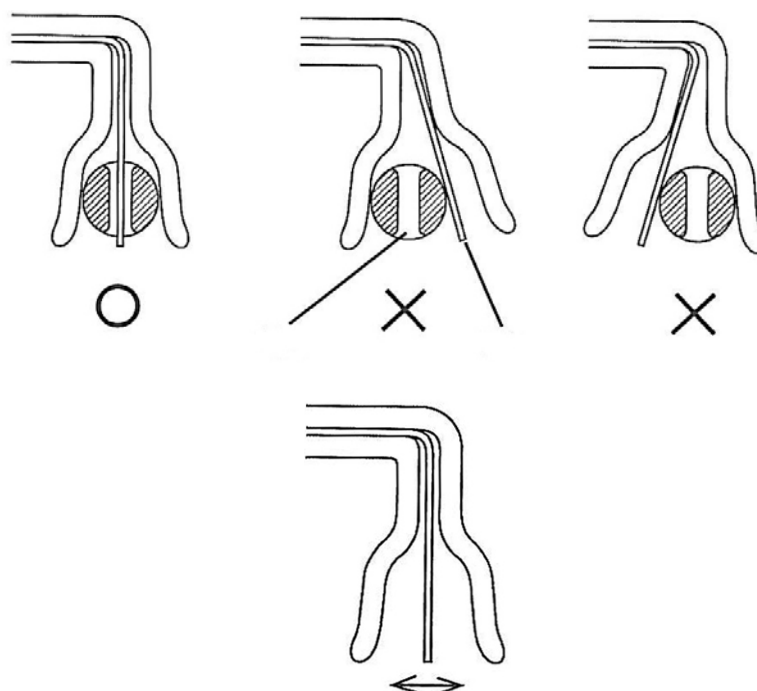
4. Hooking fork position of needle threader

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[Check and adjustment]

If the fork position is wrong, correct the condition using small screw driver in accessory box and adjust the position.



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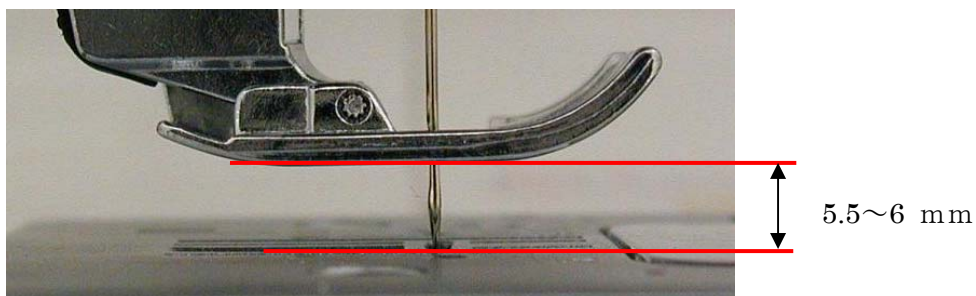
5. Presser foot height

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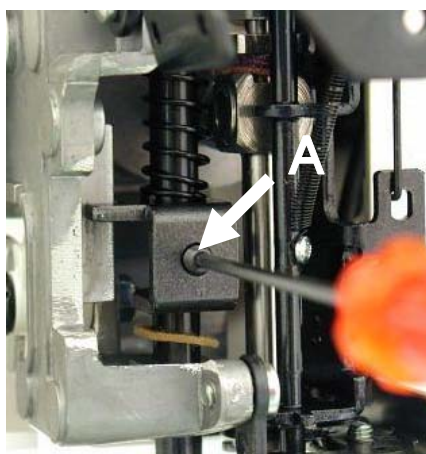
[Checking]

1. Raise the presser foot lever.
2. Lower the feed dog below the needle plate.
3. Check and see if clearance between needle plate and presser foot is about 5.5 to 6 mm.



[Adjustment]

1. Remove face cover and raise the presser foot lever.
2. Loosen screw A of needle bar clamp and adjust the presser foot height by vertically sliding presser bar.
3. Tighten screw after adjustment, keeping alignment of the foot with feed dog.



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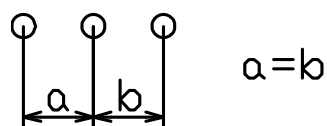
6. Needle position at straight stitching

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[Checking]

Check if the needle point of straight stitching at center needle position comes to the center of the maximum zigzag bight.



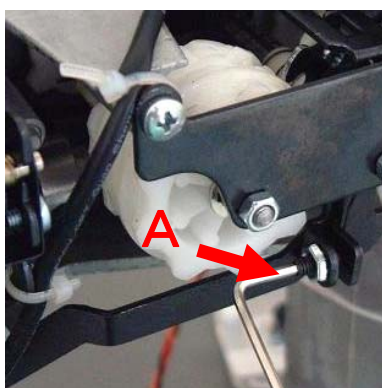
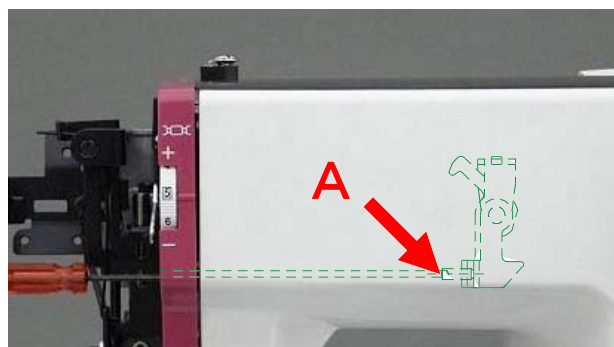
(Notify pinhole on paper for easy checking)

[Adjustment]

1. Remove face cover.
2. Insert hex driver (Dia.-2 mm, length- over 100mm) from thread guide plate hole and turn alignment screw A.

Center needle position is shifted to right. → Turn it clockwise.

Center needle position is shifted to left. → Turn it counter clockwise.



When front cover is removed

Attention : Check "7. M position" after adjustment.

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7. M position

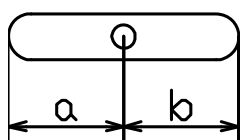
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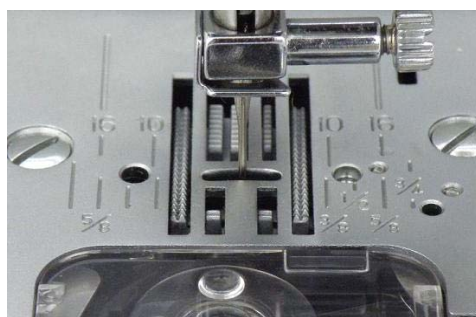
Attention: Confirm "6. Needle position at straight stitching" before this checking.

[Checking]

1. Set machine for straight stitching at center needle position.
2. Turning hand wheel by hand, lower the needle and check if needle point comes to the center of needle plate hole.



$$a=b$$



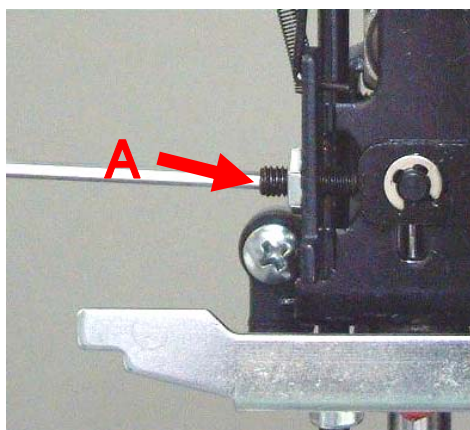
[Adjustment]

1. Remove front cover.

Adjust by turning screw A.

Center needle position is shifted to right. → Turn it clockwise.

Center needle position is shifted to left. → Turn it counter clockwise.



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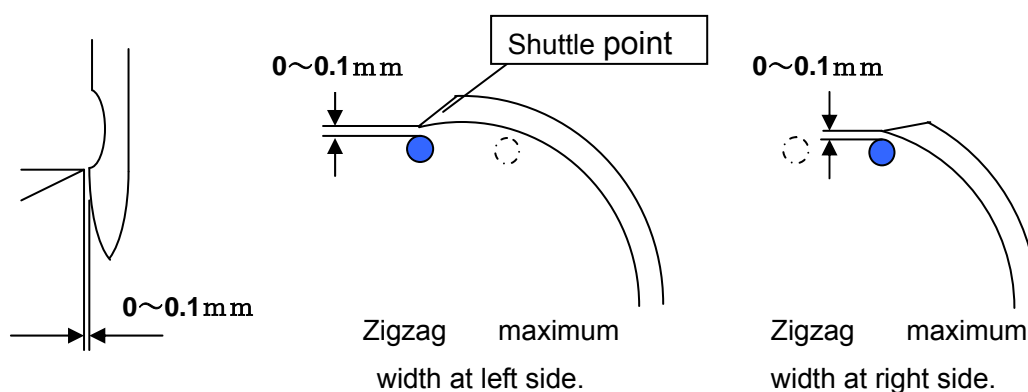
8. Needle clearance to shuttle point - 1

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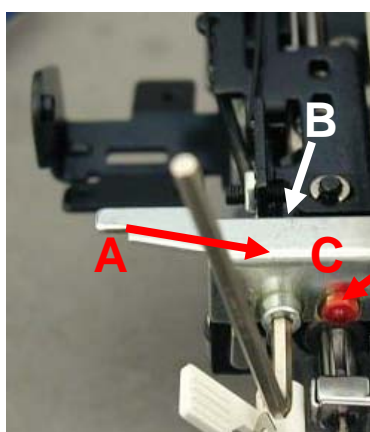
[Checking]

1. Remove needle plate, bobbin case and face cover.
2. Set zigzag stitch width at 'maximum'.
3. Turning hand wheel until needle is moved to right/left and shuttle point to the rear of needle, check if each clearance between needle and shuttle point on right and left is 0 to 0.1 mm (noncontact).



[Adjustment]

1. If the needle point is different on right and left, adjust the support position which swings needle. Loosen bolt A and move support unit B to adjust.



Don't loosen nut C.

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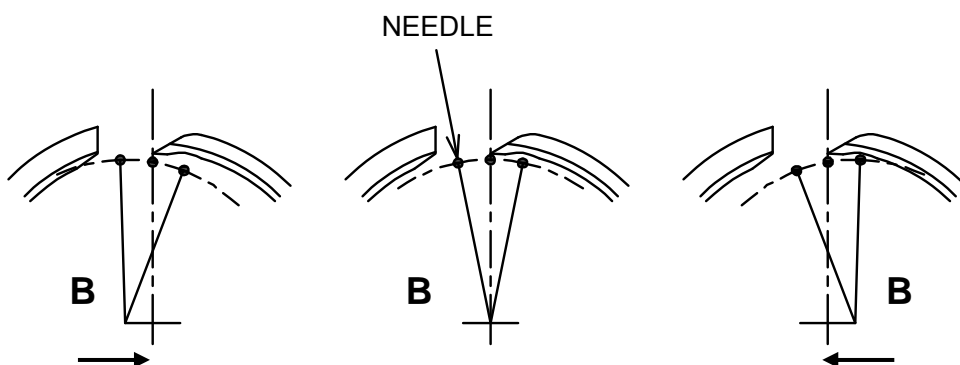
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8. Needle clearance to shuttle point - 2

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If the clearance of needle and shuttle is smaller on left side, adjust support unit (B) toward right.

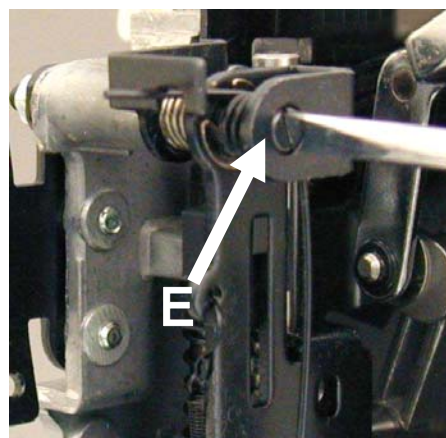
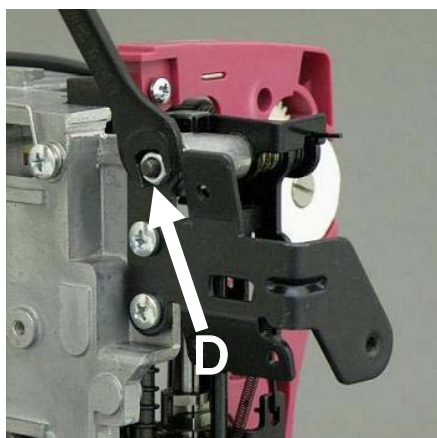
If the clearance of needle and shuttle is smaller on right side, adjust support unit (B) toward left.

Tighten the bolt (A) after adjustment.

1. If the clearance of needle and shuttle point is not 0 to 0.1 mm, loosen a nut (D) on support axis and turn the axis (E) to move it to front or back.

Clearance is too large → Turn it counter clockwise.

Clearance is too small → Turn it clockwise.



Tighten the nut (D) after adjustment.

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9. Timing belt tension

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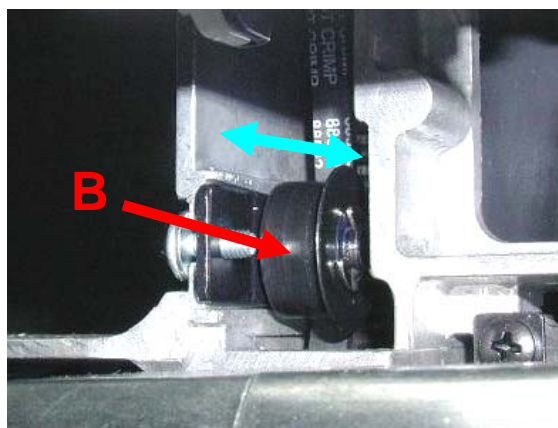
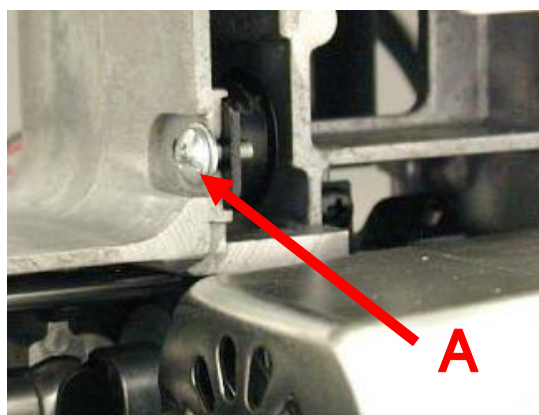
*Timing belt is connecting with upper and lower shafts.

*If the tension is too loose, belt may jump or slip laterally and cause gap on upper and lower shaft

If the tension is too tight, torque is increased and it is unable to keep correct number of revolutions.

[Adjustment]

1. Remove front cover.
2. Loosen screw (A) and adjust position of idler pulley (B).
3. After adjustment, tighten screw (A) securely and confirm the timing of needle and shuttle hook.



Attention : After adjustment, check “10. Feed dog timing” and “11. Needle timing to shuttle point - 1”

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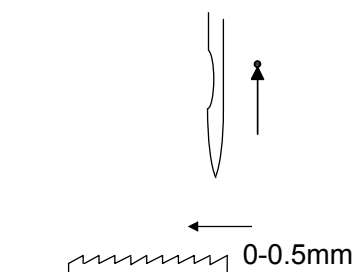
10. Feed dog timing

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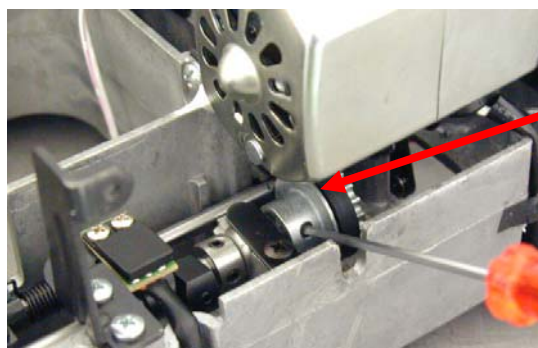
[Checking]

1. Set stitch length at 'maximum'.
2. Turn hand wheel toward you, check whether feed dog starts to move in horizontal direction, when or before needle reaches its highest position.
3. The travel distance of feed dog is 0 to 0.5 mm when needle reaches its highest position.



[Adjustment]

1. Remove front cover.
2. Loosen two screws for timing pulley on lower shaft and release the connection of upper and lower shafts and adjust by turning pulley.
Feed dog moves too fast. → Turn pulley toward front.
Feed dog moves slow → Turn pulley toward back.
3. Tighten one of the screws temporarily and check the feed dog movement.
4. After adjustment, tighten two screws securely.



Timing pulley

Attention: After adjustment, please check "11. Needle timing to shuttle point-1".

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11. Needle timing to shuttle point -1

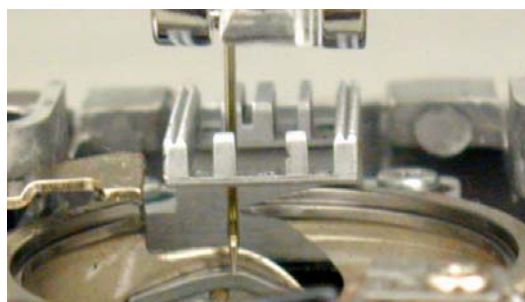
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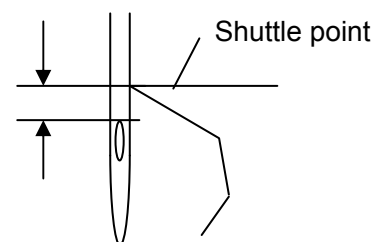
Attention : Check “3. Needle height” and “10. Needle and feed dog timing” beforehand.

[Checking]

1. Set zigzag stitch length at ‘maximum’.
2. Check if needle is not bent and remove needle plate and bobbin case.
3. Move needle to left lowest position. Raise needle from the lowest point. When shuttle point aligns with right side of needle, check whether the clearance of needle and shuttle point within the clearance specified below.

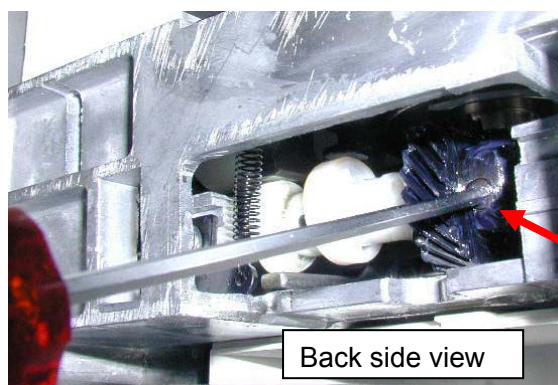


0.5~1.2 mm



[Adjustment]

1. Remove front cover.
2. Loosen two screws on lower shaft and adjust the position.
Firstly tighten one of the screws and check if the position is as specified above.



Lower shaft gear

Back side view

3. Tighten screws securely after adjustment.

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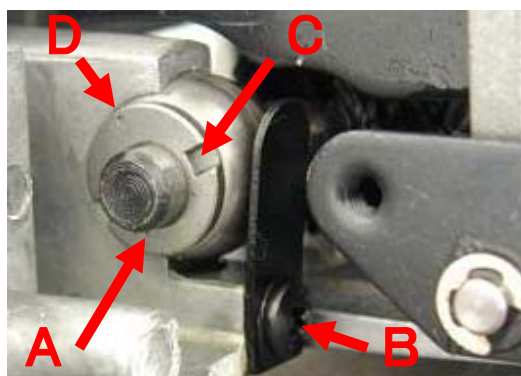
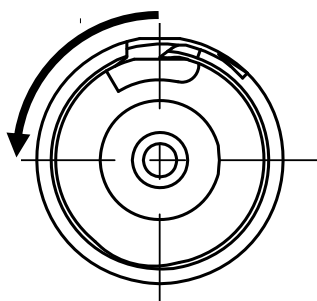
11. Needle timing to shuttle point -2

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<Additional check : check the engagement between shuttle gear and lower shaft gear. >

1. After adjustment, check engagement of the gear.
2. Turn the shuttle by 90 degrees twice and check if there is no big play on gear.



3. Adjust the play between shuttle gear and lower shaft gear by turning eccentric ball metal..

Loosen screw (B) on plate to allow ball metal to rotate.

Turn ball metal (A) by using concavity (C).

There is too little play → turn it clockwise

There is too much play → turn it counter clockwise

* Mark (D) on ball metal (A) should be positioned at upper half (within 180 degrees).

4. Tighten the screw (B) securely after adjustment.

Attention : After the adjustment, please check “11. Needle timing to shuttle point-1”.

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12. Thread tension

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[Checking]

1. Set the dial at '5'.
2. Put the polyester #60 thread between tension discs and pull it to check tension.
3. Recommended dial tension is 40 to 50 g.

*Bobbin case tension is 14 to 18 g.

*Check the balance of upper and lower threads by sewing zigzag stitch.

[Adjustment]

1. Remove front cover.
2. Remember the current dial position.
3. Remove screw and take off the dial.



4. Shift engagement point of gear.

Tension is too weak → Set to larger value.

Tension is too strong → Set to smaller value.



Shift engagement point of gear to change standard value of tension.

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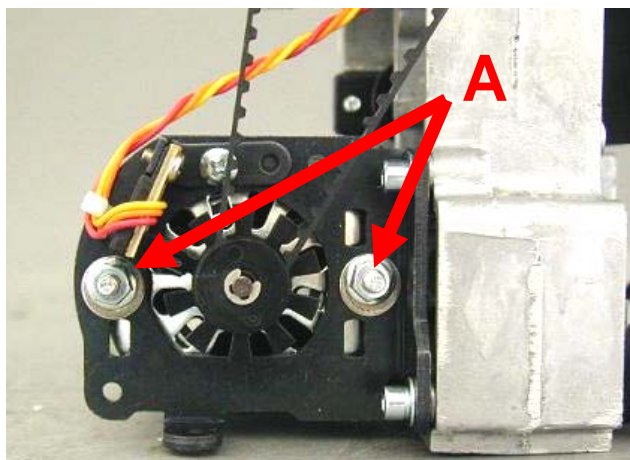
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13. Belt tension

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[Adjustment]

1. Remove outer covers.
2. Loosen and adjust two nuts (A). Belt need to bend about 7mm when it is pushed by pressure of 200g between upper shaft and motor.
3. Tighten two nuts (A) after adjustment.

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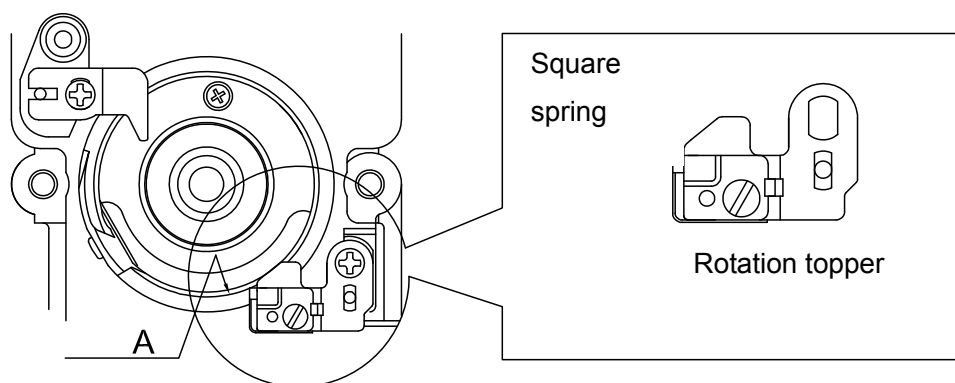
14. Bobbin case rotation stopper -1

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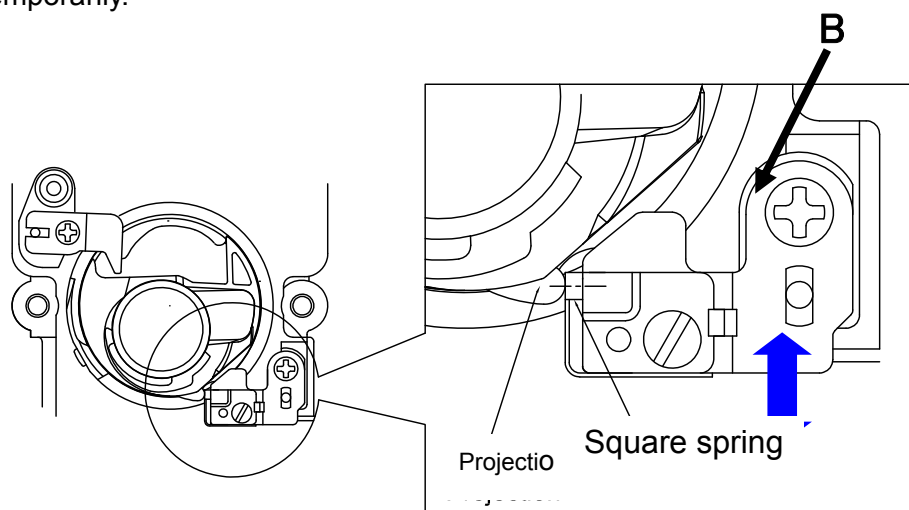
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1. Remove needle plate and take off bobbin case.

2. Check if the corner of square spring come to inside of shuttle frame (A) as illustrated below.



3. Loosen screw (B) and move rotation stopper to arrow direction and tighten screw (B) temporarily.



4. Insert the bobbin case to touch the lug to square spring as illustrated above.

5. Tighten the screw (B) securely.

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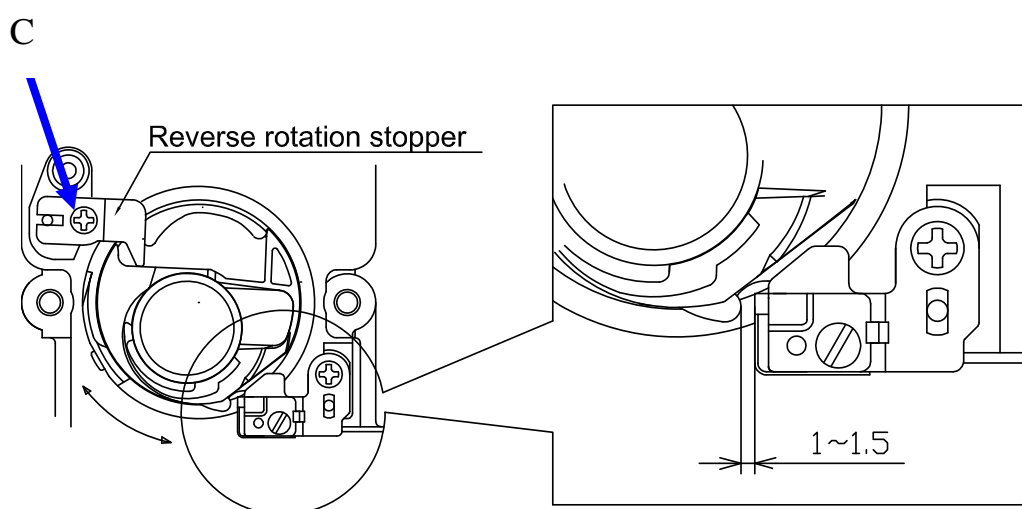
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14. Bobbin case rotation stopper -2

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6. Loosen screw (C) and move the bobbin case front and back to keep the clearance of 1-1.5 mm with square spring when adjusting the reverse rotation stopper position.



7. Tighten the screw (C) securely after adjustment.

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15. Pitch balance of buttonhole sewing

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*There is stitch length adjusting zone on stitch length dial. Adjustment is done on this dial.

* Forward pitch can be changed by Stitch length dial.

*Reverse pitch is fixed.

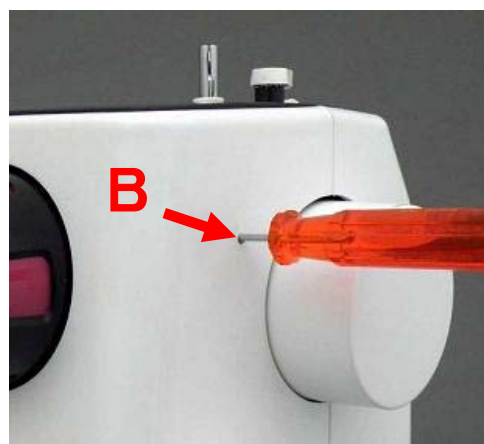
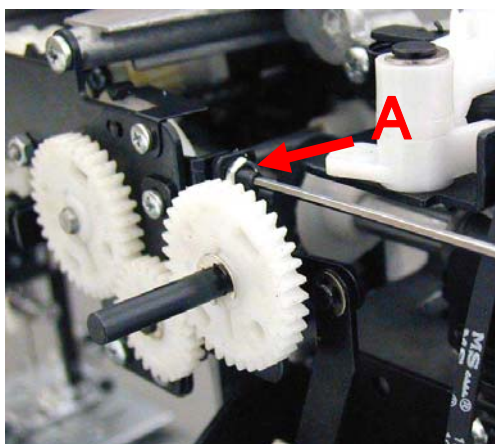
If you need to change reverse pitch, follow the steps below.

1. Adjust reverse pitch by turning screw (A)..

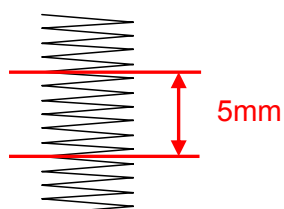
To adjust without taking off the front cover, insert the screw driver from hole (B) on side and turn the screw (A).

Reverse pitch is larger → Turn it clockwise/

Reverse pitch is smaller → Turn it counter clockwise



2. Adjust the reverse pitch as shown below.



Reverse stitch

10 to 15 stitches in 5mm.

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16. Balance of stitch length on stretch stitching

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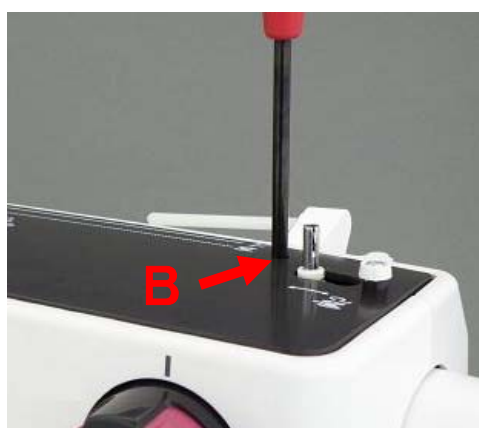
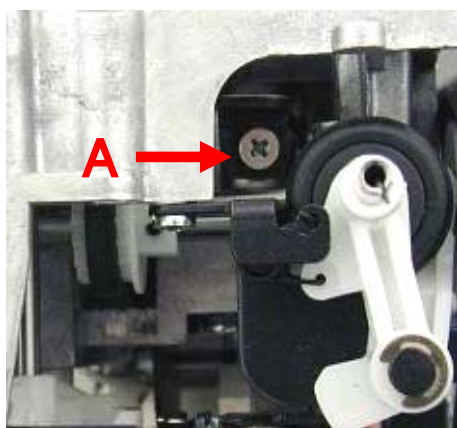
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1. Turn the screw (A) and adjust the stitch length.

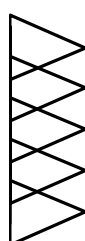
If you don't remove the front cover, insert screw driver into hole (B) on top panel and turn the screw (A).

Forward stitch is small, reverse stitch is large. → Turn it clockwise.

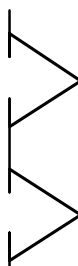
Forward stitch is large, reverse stitch is small. → Turn it counter clockwise.



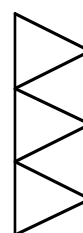
2. Adjust the stitch balance of forward and reverse stitches as below.



Forward is small,
reverse is large.



Forward is large,
reverse is small



Both pitches are
well balanced.