

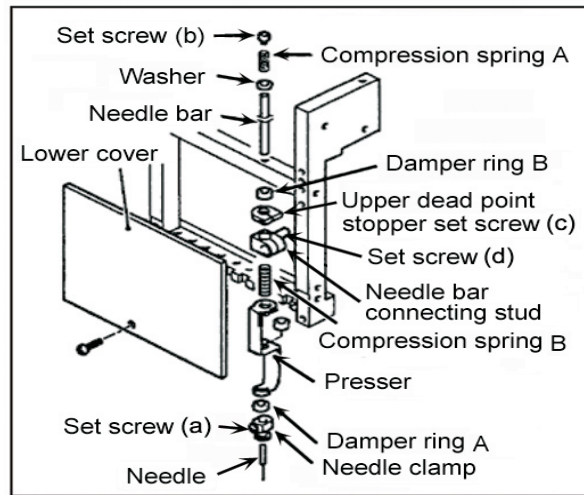
Needle bar adjustment or replacement

[Removal]

Important

? Be careful not to break the TC sensor cord during assembling and reassembling.

2. Loosen the needle stopper screw (a), and remove the needle, needle clamp and damper ring A.
3. Remove the set screw (b), and the compression spring A.
4. Loosen the upper dead point stopper set screw (c) and needle bar connecting stud set screw (d). Take out the needle bar connecting stud, upper dead point stopper, damper ring B and washer drawing out the needle bar upward.



[Reassembling]

1. Insert the needle bar into the needle bar case from above.
2. Set the washer to the needle bar from above.
3. Set the damper ring B (smaller one), the upper dead point stopper and the needle bar connecting stud to the needle bar in this order from beneath.
4. Insert the needle bar into the compression spring B and the presser in this order from above.
5. Set the damper ring A (bigger one) and the needle clamp to the needle bar in this order from beneath.
6. Tighten the needle set screw (a) temporarily, and insert the needle from beneath.
7. Tighten the needle set screw (a).
8. Tighten the set screw (d) temporarily.
9. Set the compression spring A to the needle bar from above, and tighten the set screw (b).
10. Adjust the height of the needle bar, the needle bar connecting stud and the upper dead point stopper at the same height as the adjacent needle bar, and tighten the set screws (c) and (d) temporarily.
11. Move the needle bar case so that the replaced needle bar comes at the center of needle plate hole by turning the change wheel.
12. Remove the 2 set screws, remove the needle plate.
13. Turn the hand wheel, bring the needle bar to the lower dead point.

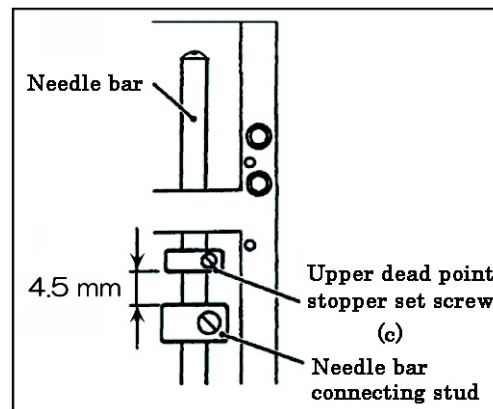
14. Adjust the needle bar height.
(see PDF File [Needle bar height])

Important

- ? Pay attention to the direction of the upper dead point stopper when tightening its set screw. It must have some clearance to the needle bar guide behind it. Confirm the needle bar returns smoothly by the spring force when the needle bar is pushed down by hand and released.
- ? Turn the hand wheel watching the clearance between the needle bar case and the arm from the side. Then, confirm that needle bar driving parts hold the needle bar connecting stud with a click.
- ? The standard distance between the upper dead point stopper lower end and the needle bar connecting stud upper end (about 4.5 mm) is just a rough guide. Confirm that the needle bar connecting stud does not come off the needle bar driving parts by operating the machine at a high speed.

15. Check the timing of needle and rotary hook.
(see PDF File [Rotary Hook Timing])

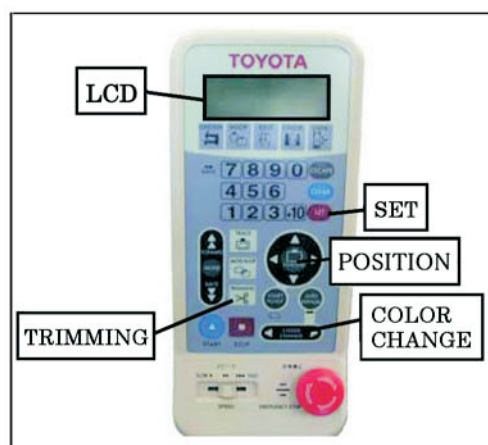
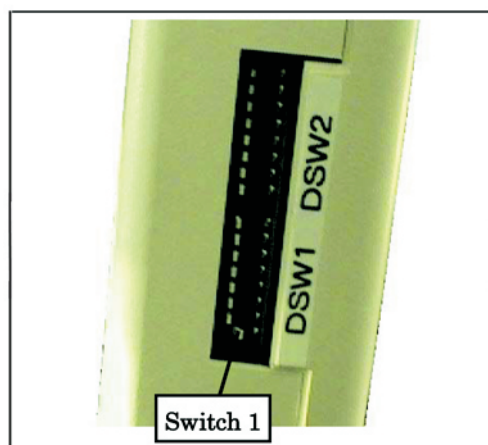
16. Reassemble each cover.



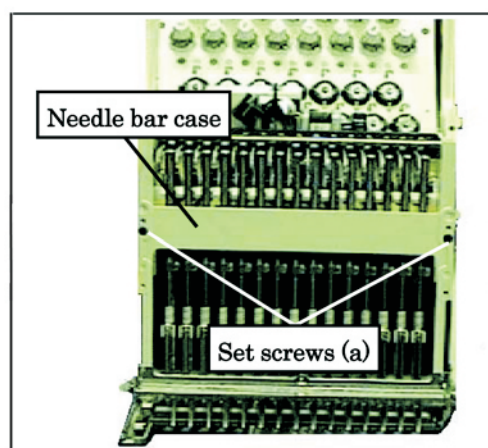
Needle bar driving parts

[Removal]

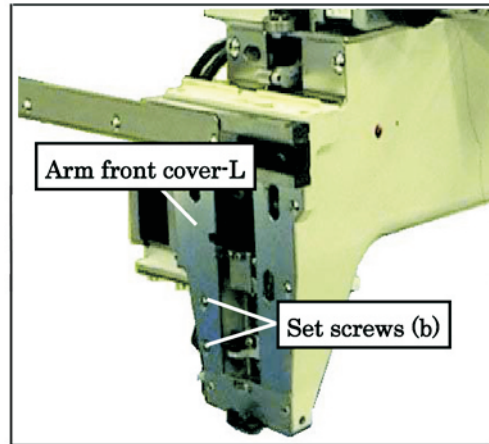
1. Remove the take-up lever cover, the lower cover, the color change cover, the joint circuit board cover, the tension base cover and rotary-type tension base. (See: page.61 and after)
2. Remove the DIP switch cover. Turn ON the DS1-1 switch on the side face of operation panel.
3. Turn ON the power supply.
4. Press the SET key in TEST MODE on the operation panel.
5. Select "<2> main" by POSITION key and then press the SET key.
6. Select the needle No.15, using the COLOR CHANGE key.
7. Pressing the THREAD TRIMMING key to bring the thread take-up at the standby position.
8. Turn OFF the power supply.



9. Remove the 2 set screws (a), bring up the needle bar case and remove by pulling it toward you.

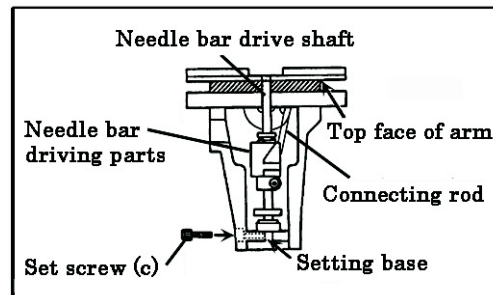


10. Remove the 2 set screws (b), and remove the arm front cover-L.



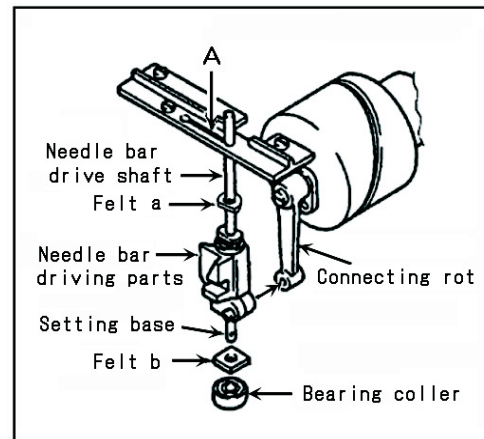
11. Loosen the set screw (c). Bring down the connecting rod to the lower dead point, and pull out the needle bar drive shaft.

12. Slide the connecting rod to left side, and remove the needle bar driving parts.



[Reassembling]

1. Insert the needle bar driving parts into the connecting rod. Insert the needle bar drive shaft into the parts in the order of "felt (a) → needle bar driving parts → felt (b) → bearing collar" in the direction A.
2. Adjust the direction of the setting base of needle bar drive shaft so that it faces the setting screw (c) hole. Tighten the set screw (c) gradually until the setting base surface is perpendicular to the screw. Then tighten securely.
3. Install the arm front cover-L, with the 2 set screws (b).
4. Remove the DIP switch cover. Turn ON the DS1-1 switch on the side face of operation panel.
5. Turn ON the power supply.



6. Press the SET key in TEST MODE on the operation panel.
7. Select "<2> main" by POSITION key and then press the SET key.
8. Set the number at the lower right display to "200" by turning the change wheel.
9. Pressing the THREAD TRIMMING key to bring the thread take-up at the standby position.
10. Turn OFF the power supply.
11. Align the roller pin with the groove of the linear way. Move the linear way to the left until it touches the linear way stopper.
12. Hook the case rail lower on the inside of the guide bracket, Align the take-up lever guide with the take-up lever groove, and insert the lever into the groove.

[Point]

? It makes them fit easier to press the take-up lever downward slightly by hand.

13. Confirm the all take-up lever guides have been inserted in the take-up lever groove. Fix the needle bar case with the 2 set screws (a) while contacting it to the stopper of linear way and holding down from the top.
14. Check the needle location by turning the hand wheel at needle position "1" and "15".

[Note]

? When the needle location is not good, loosen the set screws of color change motor base and move it to right and left to adjust the needle location. Take care to secure a clearance of 0.2 mm or more for the forward and backward position of color change motor base so that it will not interfere with the roller pin.

(see: page.74[Color change stepping motor])

? Confirm the needle bar case is fitted securely without play.

15. Reassemble the rotary-type tension base (assembly).

[Note]

? Check that the sensor arm is inserted into the groove of TC sensor circuit board bracket.

(see: page.98[TC sensor circuit board])

16. Reassemble each cover.

