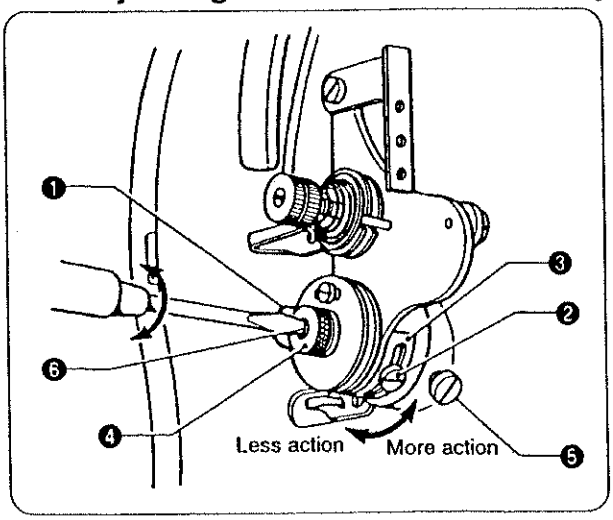
8. STANDARD ADJUSTMENTS

⚠ CAUTION

- Maintenance and inspection of the sewing machine should only be carried out by qualified personnel.
- Ask your SEIKO dealer or a qualified electrician to carry out any maintenance and inspection of the electrical system.
- If any safety devices have been removed, be absolutely sure to re-install them to their original positions and check that they operate correctly before using the machine.
- Turn off the power switch and disconnect the power cord from the wall outlet at the following times, otherwise the machine may operate if the treadle is pressed by mistake, which could result in injury. However, the motor will keep turning even after the power is switched off as a result of the motor's inertia. Wait until the motor stops fully before starting work.
  - When carrying out inspection, adjustment and maintenance
  - When replacing consumable parts such as the rotary hook
- If the power switch needs to be left on when carrying out some adjustment, be extremely careful to observe all safety precautions.

8-1. Adjusting the thread controller spring



■ Operating range of spring

The standard operating range for spring ❶ is 5-10mm.

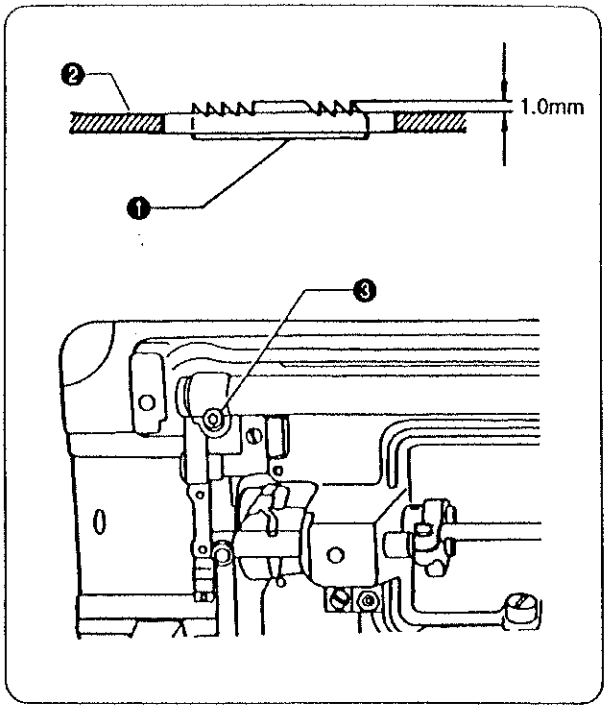
1. Loosen the screw ❷, and then turn the thread controller spring stop ❸ to adjust the operating range.
   - For more operating range, move the spring stop ❸ to the right.
   - For less operating range, move the spring stop ❸ to the left.
2. Tighten the screw ❷.

■ Tension of the spring

The standard tension for spring ❶ is 0.39-0.78 N (40-80g).

1. Loosen the tension thumb nut ❹ and screw ❺.
2. Turn the tension stud ❻ to adjust the tension.
   - To increase the spring tension, slightly turn the tension stud ❻ counterclockwise.
   - To decrease the tension, turn the stud clockwise.
3. After adjustment, tighten the tension thumb nut ❹ and screw ❺.

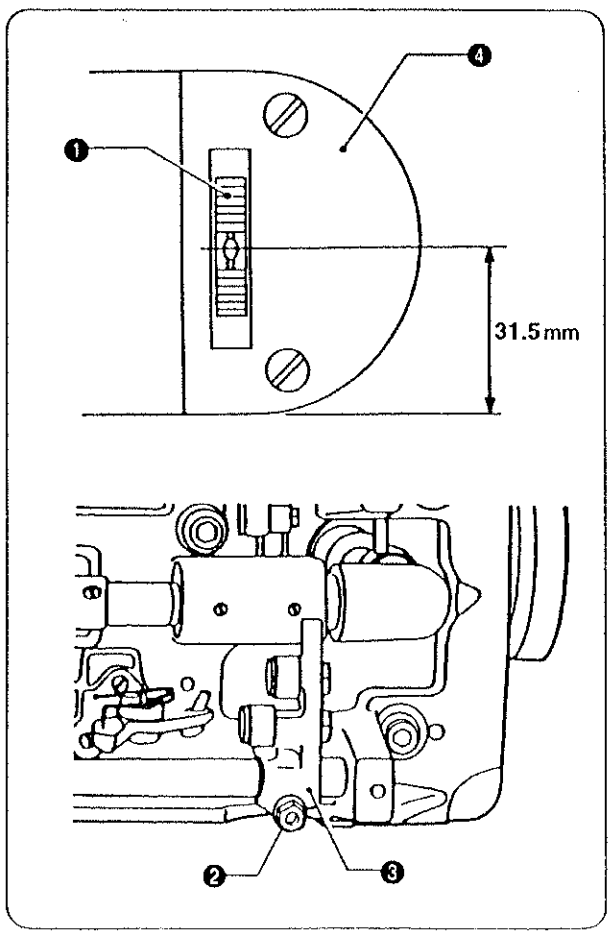
8-2. Adjusting the height of the feed dog



The maximum height of the feed dog ❶ from the surface of the needle plate ❷ is normally 1 mm. To adjust the height of the feed dog:

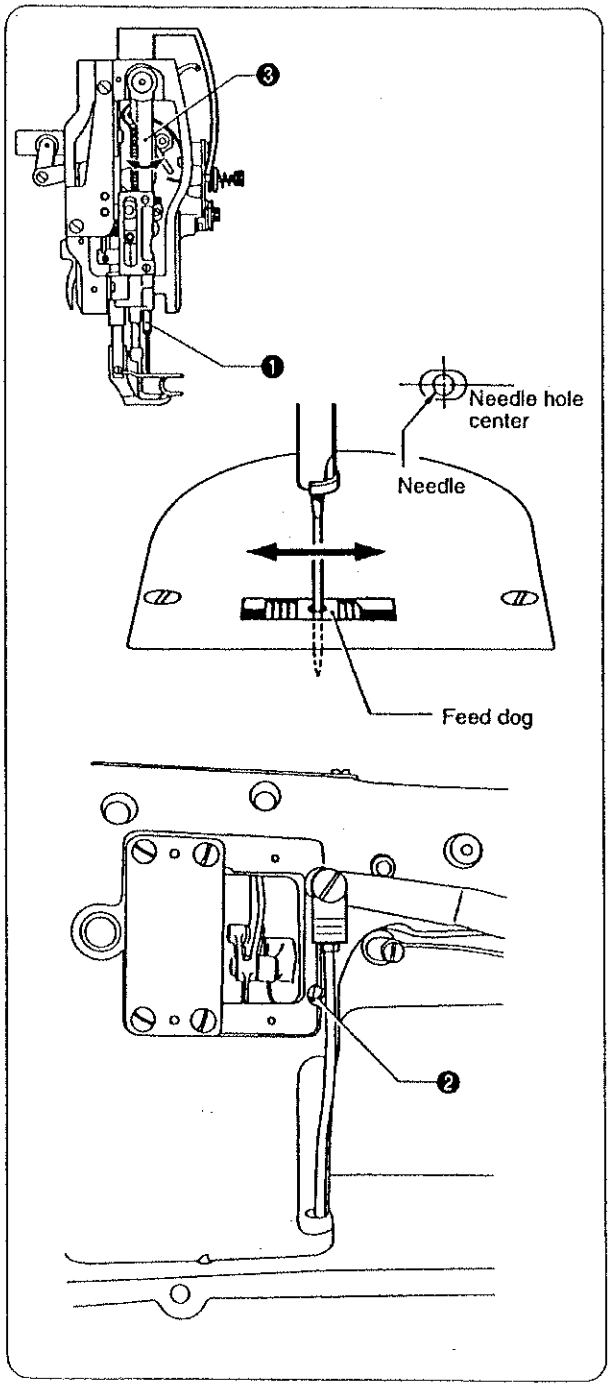
1. Tilt the machine head away from you. Turn the pulley to raise the feed dog ❶ to its highest position.
2. Loosen the screw ❸.
3. Raise or lower the feed dog ❶ as necessary.
4. Tighten the screw ❸.

8-3. Adjusting the feed dog position (longitudinal)



1. Change the feed amount to the smallest possible setting.
2. Turn the pulley to raise the feed dog ❶ to its highest position.
3. Tilt the machine head away from you.
4. Loosen the screw ❷, and then move the feed rock shaft crank ❸ to adjust so that there is a distance of 32.1 mm from the edge of the needle plate ❹ to the center of the needle hole on the feed dog ❶.
5. Securely tighten the screw ❷.

8-4. Adjusting the Positions of the needle and needle hole of the feed dog

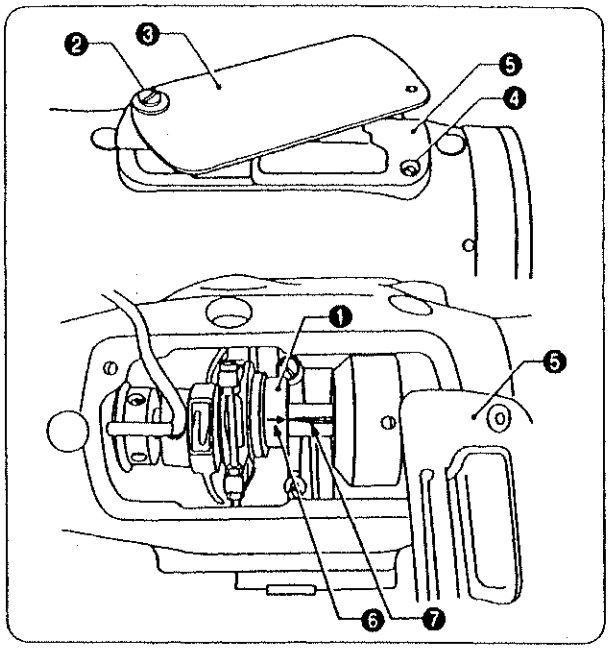


Turning the pulley to lower the needle bar ❶ slowly, check whether the needle descends to the center of the needle hole of the feed dog or not.

If the needle does not enter into the center of the hole:

1. Remove the cover and loosen the screw ❷ slightly.
2. Holding the needle bar rock frame ❸, move it as may be required to get the correct position to the feeder.
3. Tighten the screw ❷ and close the cover.

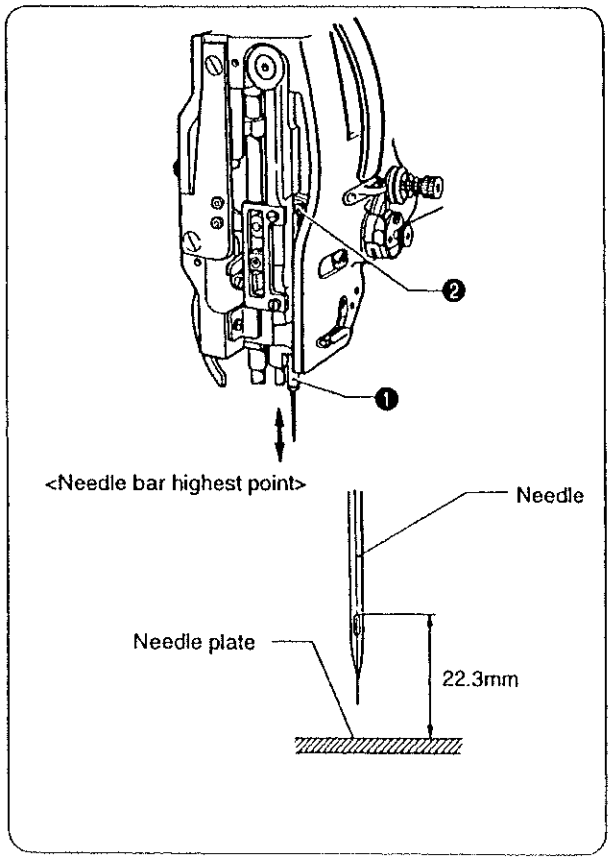
8-5. Adjusting the timing the needle with feed



It is important that the timing relationship between the needle on its downward stroke and the feed dog movement is maintained at all times. When the scart of the needle on the downward stroke reaches the top surface of the feed dog, the feed dog movement must start. When adjustment is required, use the following procedure to change the position of cam ❶.

1. Change the feed amount to the largest possible setting.
2. Loosen the screw ❷ for cover plate ❸ and the screw ❹ for oil reservoir ❺, and then remove the cover plate ❸ and the oil reservoir ❺.
3. Normally put the arrow mark ❻ of the cam ❶ on the V ditch ❼ of arm shaft.
4. Turn the machine pulley to the needle at 1 mm up from its lowest point.
5. And, pushing the reverse lever up and down, turn the cam ❶ and set this at the point both the needle and the feed dog rest.
6. After positioning completed, tighten the each screw securely.

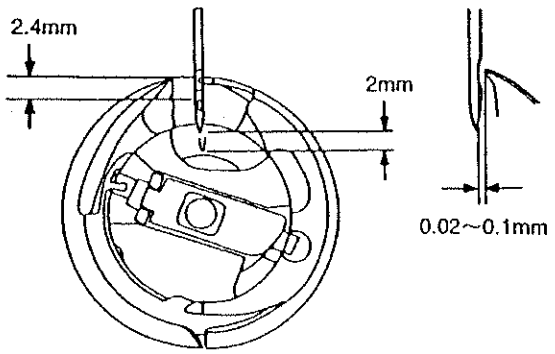
8-6. Adjusting the height of the needle bar



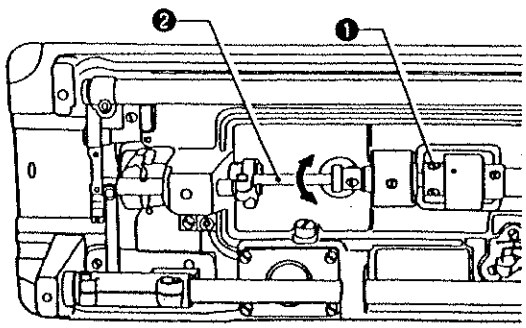
When the needle bar ❶ is at its highest point, normally the measurement between the surface of the needle plate and the upper end of the needle eye is 22.3mm.

1. Loosen the screw ❷ and move the setting position of the needle bar ❶ to get the correct position.
2. Tighten the screw ❷.

8-7. Adjusting the timing between the needle and the hook



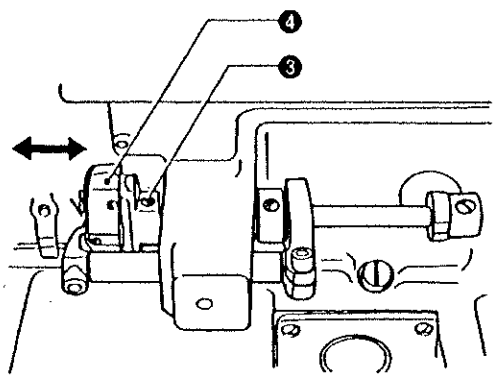
After setting the needle bar height, set stitch length to minimum, turn the machine pulley toward you until the needle bar reaches its lowest point. Continue turning and allow the needle bar to raise about 2mm while on its upward stroke. With needle bar in this position, the point of the sewing hook should be at the center of the needle, and normally,the measurement between the hook point and the upper end of the needle eye should be 2.4mm, further the clearance between the hook point and the needle hollow should be about 0.02 to 0.1mm.



* If they are not measured as above, perform the adjustments below.

■ Adjusting the timing

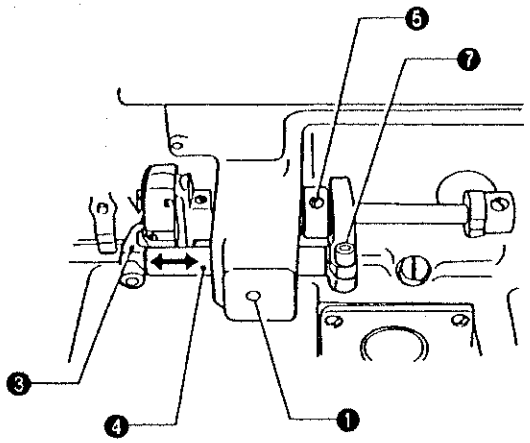
1. Loosen the three set screws ❶.
2. Turn the hook shaft ❷ to align the hook point with the center of the needle.
3. Tighten the three set screws ❶ and re-check the timing of the sewing hook.

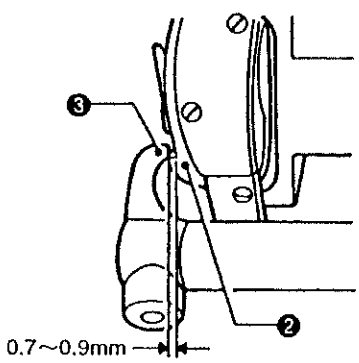


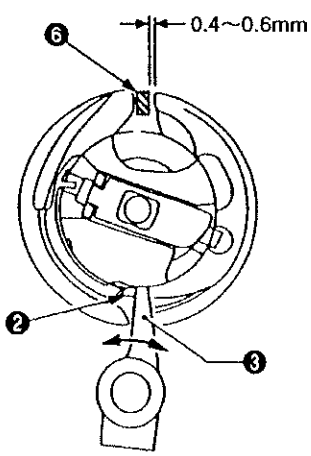
■ Adjusting the clearance

1. Loosen the two screws ❸ slightly.
2. Move the hook ❹ to the right or to the left as may require.
   * Please note one of the two screws ❸ is placed on the V ditch of hook shaft. Therefore, keep the screw on V ditch during adjustment.
3. Tighten the two screws ❸.

8-8. Adjusting the Clearance between rotary hook and opener (Thread release finger)







The opener facilitates the passage of the needle thread loop by slightly nudging the inner hook creating a slight rotating movement of it. This movement at that very instant opens a clearance gap between the notch of the inner hook and the tab of the hook retainer permitting the needle thread loop to be drawn easily through the gap.

■ Clearance between the opener and projection of hook.

1. Loosen the screw ❶.
2. Adjust the clearance between projection of hook ❷, and the opener ❸ by means of movement of thread releasing shaft bushing ❹ to the right or to the left as may be required. The standard clearance between the two parts is 0.7-0.9mm.
3. Tighten the screw ❶ securely.

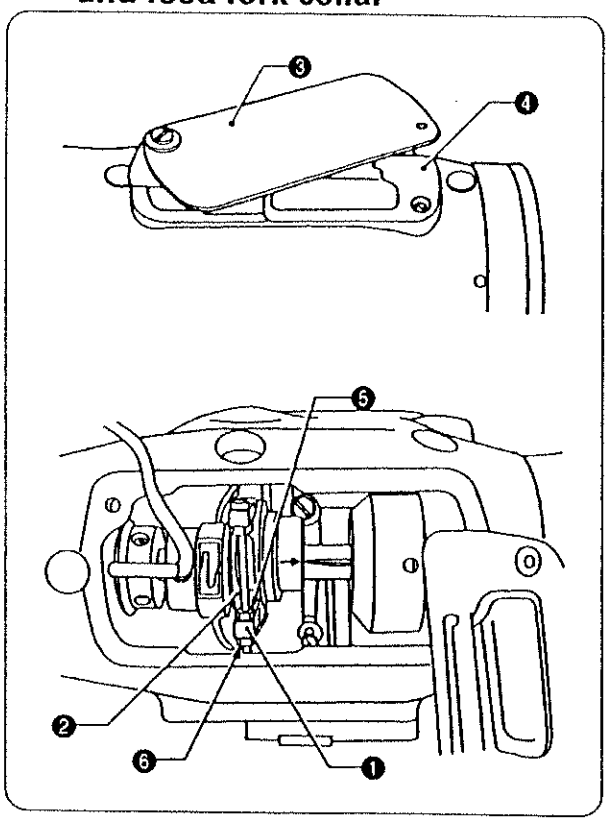
■ Position of the opener cam:

Place the one of screws ❺ which is indicated by "S" on V ditch of the hook shaft.

■ Adjustment of operation:

1. Turn the machine pulley until the opener ❸ presses the projection of hook ❷ extremely on its travel.
2. Press the opener ❸ to the projection of hook ❷ and make the right side clearance between the notch on the bobbin case holder and tab the hook retainer ❻ 0.4-0.6mm.
   This adjustment can be done by loosening the screw ❼.
3. Tighten the screw ❼ securely.

8-9. Adjusting the clearance between feed forked connection and feed fork collar



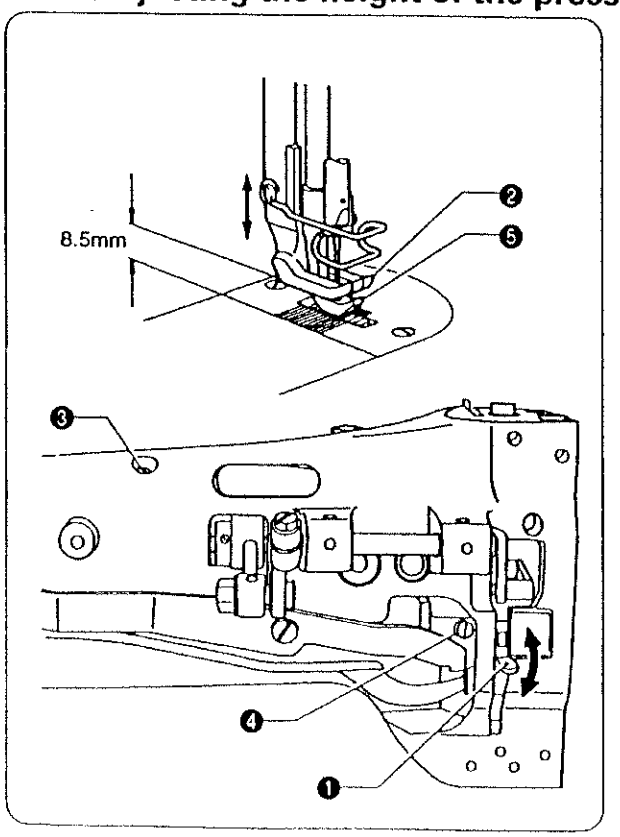
Incorrect clearance between the fork ❶ of feed forked connection and feed fork collar ❷ will bring irregular stitch length or overheating, etc.

1. Remove the cover plate ❸ and the oil reservoir ❹.
2. To increase the clearance, loosen the nut ❺ and turn the nut ❻ to left or counter-clockwise.

* This adjustment should be done with turning the machine pulley toward you to get correct clearance.

3. Upon completion of adjustment, tighten the screw ❻ and screw ❺.

8-10. Adjusting the height of the presser feet

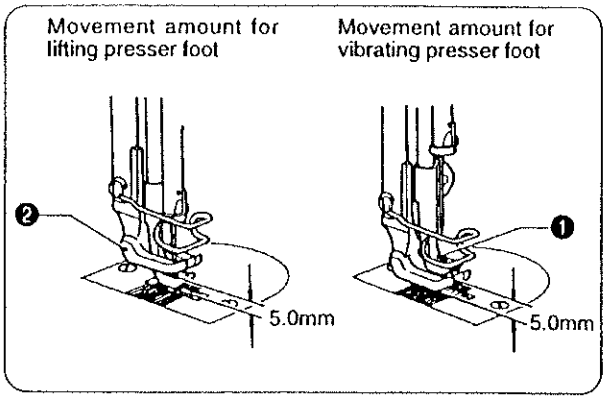


The standard height for the lifting presser foot ❷ is 8.5 mm when the presser foot has been raised by the presser bar lifter ❶.

1. Loosen the screw ❸, raise the presser bar lifter ❶, and then loosen the set screw ❹.
2. Move the lifting presser foot ❷ up or down to adjust its height.
3. Tighten the screw ❹.
4. Tighten the screw ❸ to adjust the presser foot pressure. (Refer to page 13.)

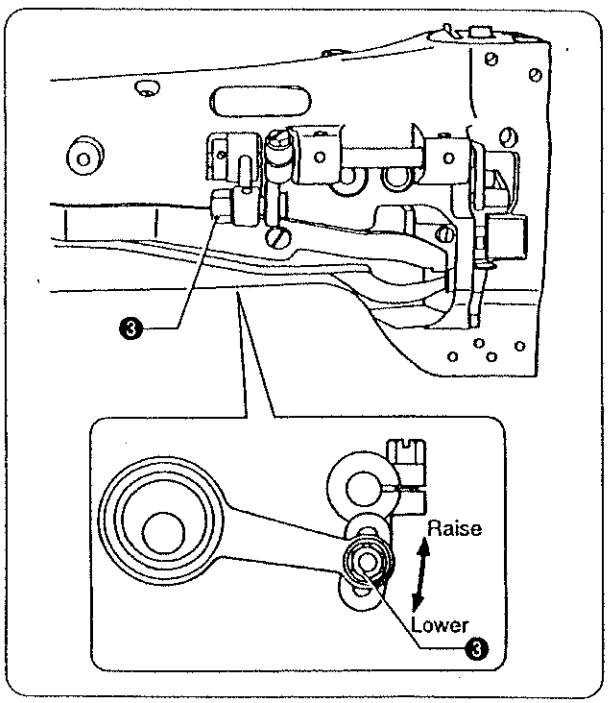
NOTE: If the height of the lifting presser foot ❷ is changed, the movement amount of the lifting presser foot ❷ and vibrating presser foot ❺ will change. Adjust the amount of movement of the vibrating presser foot ❺ so that it matches the movement of the lifting presser foot ❷. (Refer to page 21.)

8-11.Adjusting the presser foot movement amount



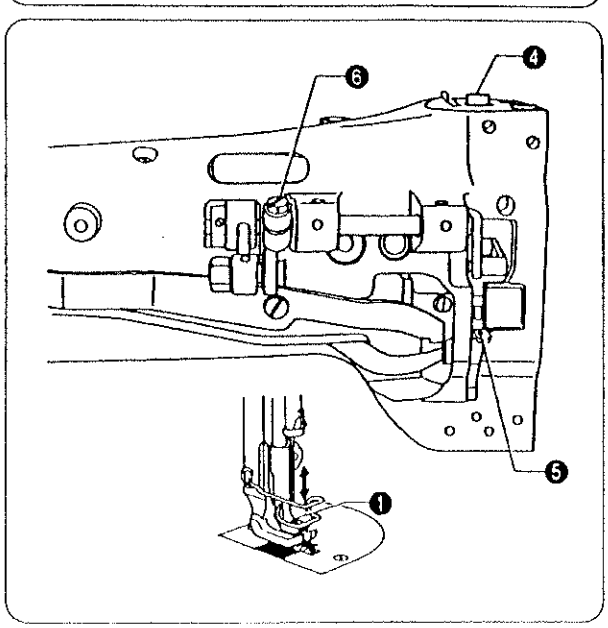
- Vibrating presser foot ❶ and lifting presser foot ❷ move up and down alternately.
- Normally, vibrating presser foot ❶ and lifting presser foot ❷ operate to the same height in their vertical motions.
- The maximum height of vibrating presser foot ❶ and lifting presser foot ❷ is 5.0 mm.

If changing the movement amounts of both the lifting presser foot and vibrating presser foot simultaneously, use method (A); if increasing the movement amount for only one (thereby decreasing the movement of the other), use method (B).



Method (A): Simultaneous adjustment of the movement amount for both the lifting presser foot and vibrating presser foot

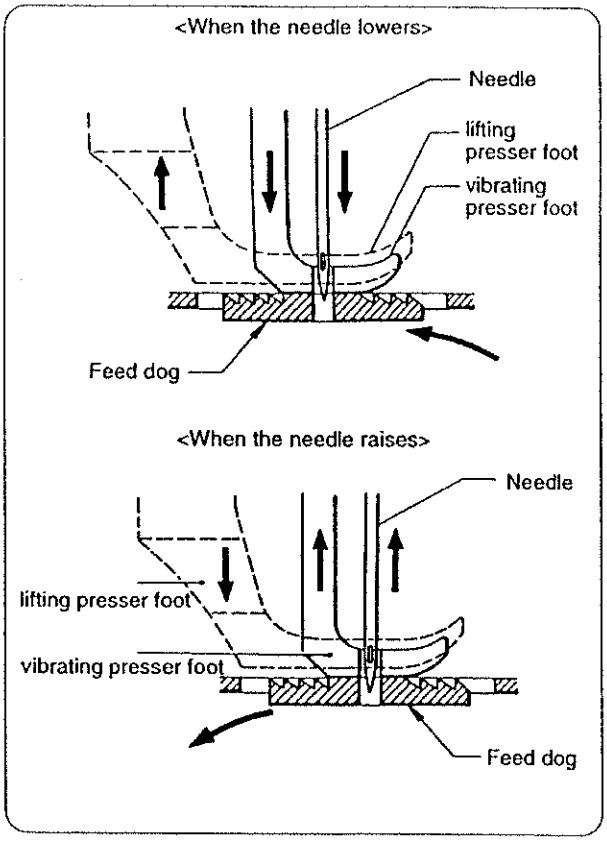
1. Loosen nut ❸.
2. Move nut ❸ up or down as suitable to the work. (Raise the nut ❸ for increasing motion; or lower it for decreasing motion.)
3. Tighten the nut ❸.



Method (B): Adjustment of the movement amount for the vibrating presser foot

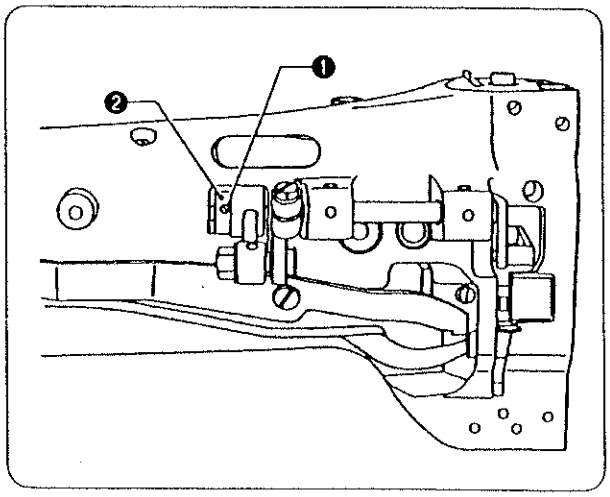
1. Loosen the vibrating presser bar screw ❹ and lower the presser bar lifter ❺.
2. While holding the vibrating presser foot ❶, loosen the bolt ❻ and then move the presser foot ❶ up or down as necessary.
3. After positioning the vibrating presser foot ❶, tighten the bolt ❻.
4. Tighten the vibrating presser bar screw ❹.

8-12. Adjusting the timing of the vibrating presser foot



Check the vibrating presser foot timing as follows:

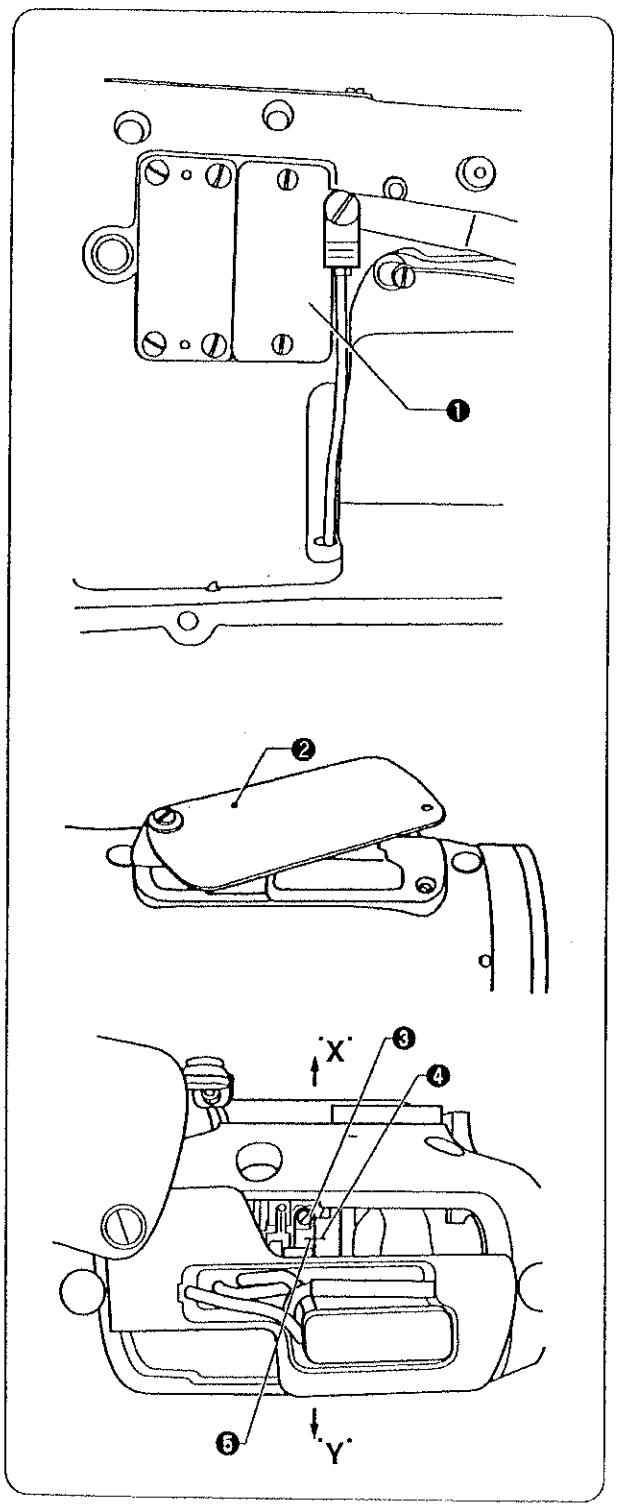
1. Lower the presser bar lifter lever, then turn the pulley toward you. At this time, the vibrating presser foot should reach the feed dog before the needle eye does.
2. When the needle is raised, make sure the vibrating presser foot is still holding the material firmly. If the vibrating presser foot rises while the needle is still penetrating to the material, it may cause skipped stitches, etc.



If the timing is not correct after you make these adjustments:

1. Loosen the two screws ❶.
2. To synchronize the timing of the vibrating presser foot, turn the cam ❷.
3. Tighten the screws ❶.

8-13. Adjusting the feed regulator



If the stitch length of forward and reverse are not same,make adjustment of feed regulator.

1. Remove the arm rear cover plate ❶.
2. Turn the cover plate ❷, loosen the screw ❸ with holding upward the reverse lever.
3. When the mark of feed regulator ❹ and feed regulator rod ❺ are alignment, stitch length of forward and reverse will be same.
4. Turn feed regulator rod ❺ to the arrow "X", stitch length of reverse is bigger and stitch length of forward is smoller.
5. Turn feed regulator rod ❺ to the arrow "Y",stitch length of reverse is smoller and stitch length of forward is bigger.
6. After adjustment,tigthen the screw ❸.