

**SERVICE MANUAL FOR DOMESTIC SEWING MACHINE**

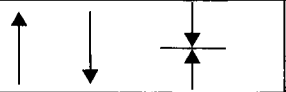

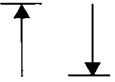
**MODELS VX-1120**  
**VX-1140**  
**VX-1250**  
**VX-1400**

## GENERAL INFORMATION

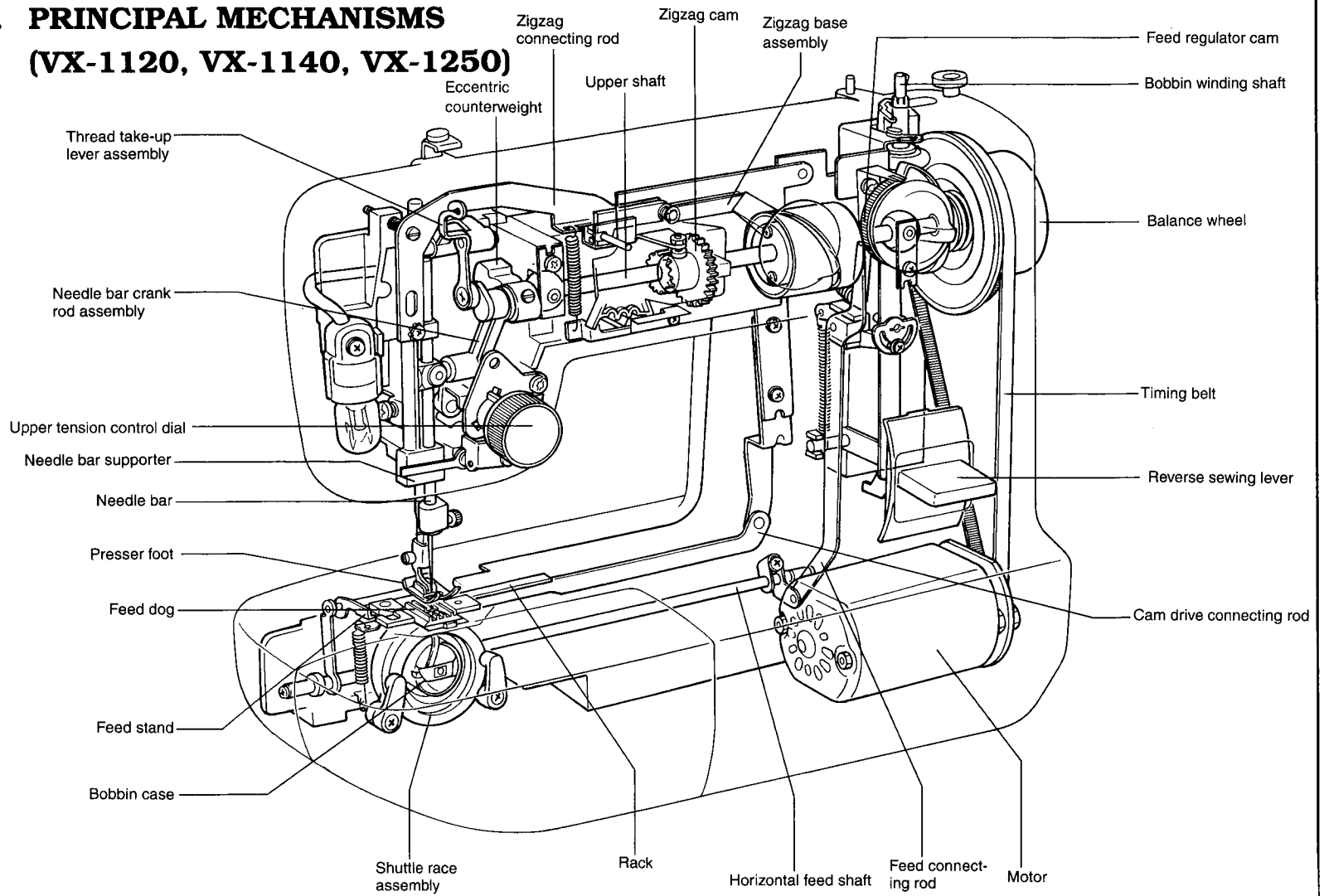
- This service manual was compiled for use when repairing the VX-1120, VX-1140, VX-1250 and VX-1400 Zigzag Stitch Sewing Machines.
- Use this manual, together with the Parts Catalog, when making repairs.
- This manual was written based on the most up-to-date product specifications at the time of printing. Some machine specifications may have been changed to improve the quality of the product. Contact the manufacturer or your local sales representative for information on such changes.

Brother Industries, Ltd.  
Nagoya, Japan

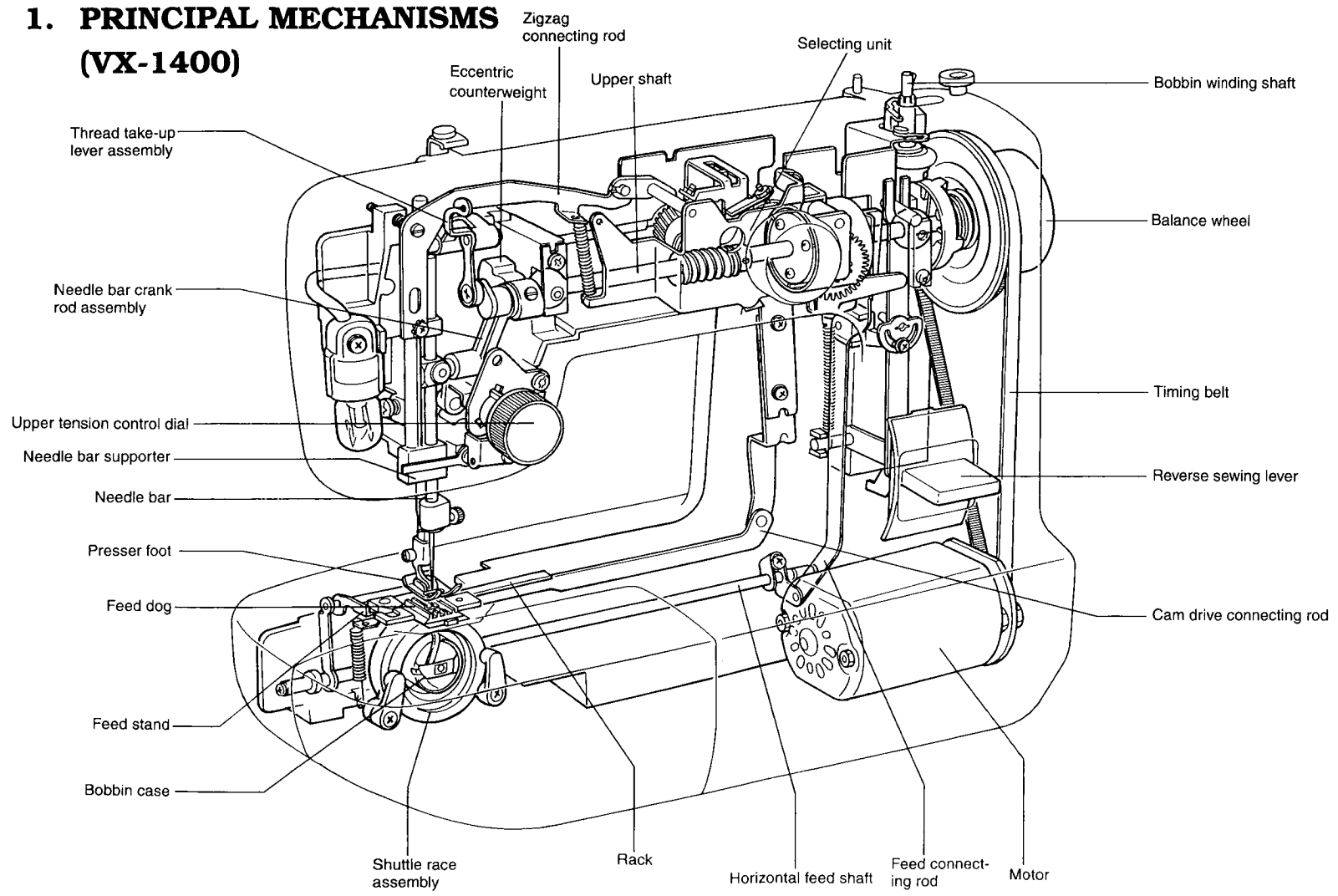
- Symbols used

	Move the part in the direction of the arrow.
	Set the clearance as indicated.
	Move the part to its highest or lowest position.

# 1. PRINCIPAL MECHANISMS (VX-1120, VX-1140, VX-1250)

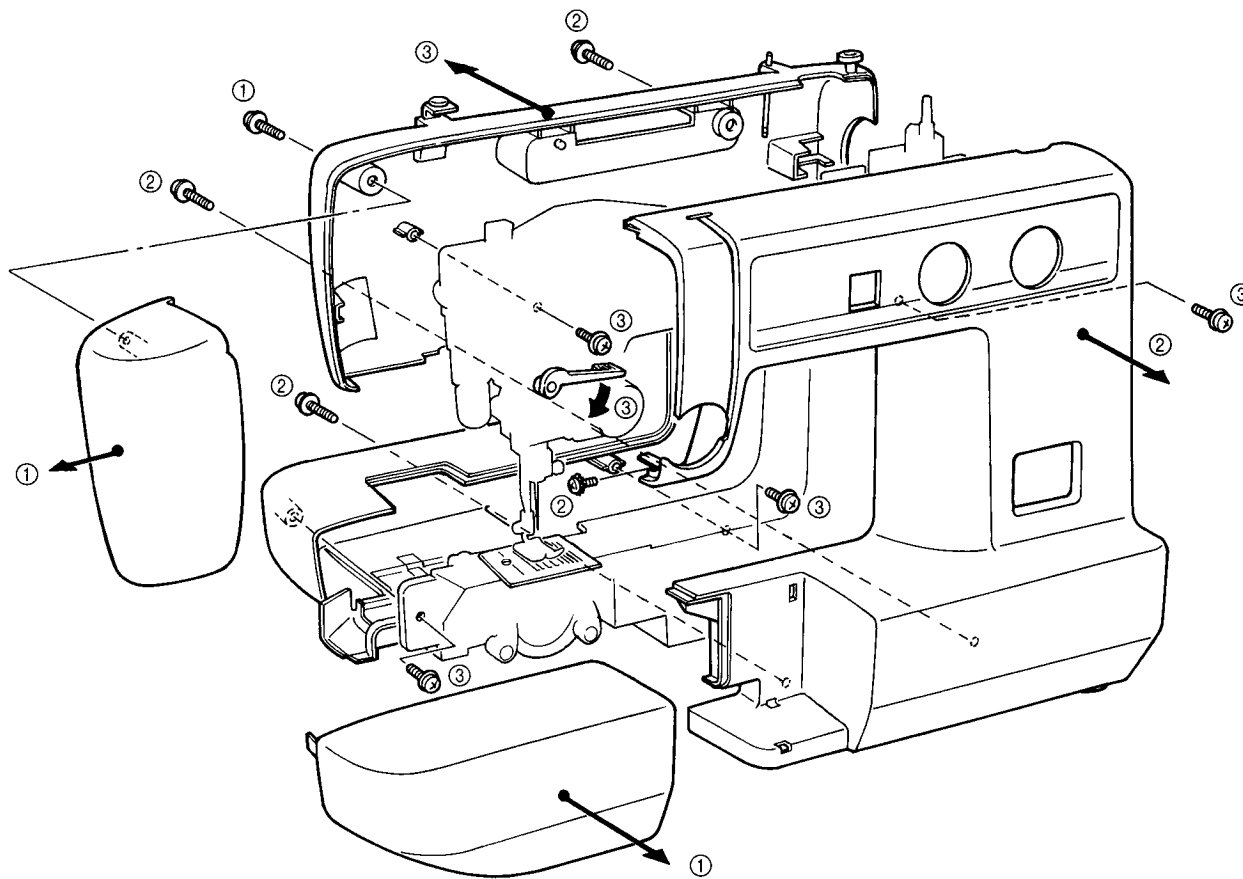


# 1. PRINCIPAL MECHANISMS (VX-1400)



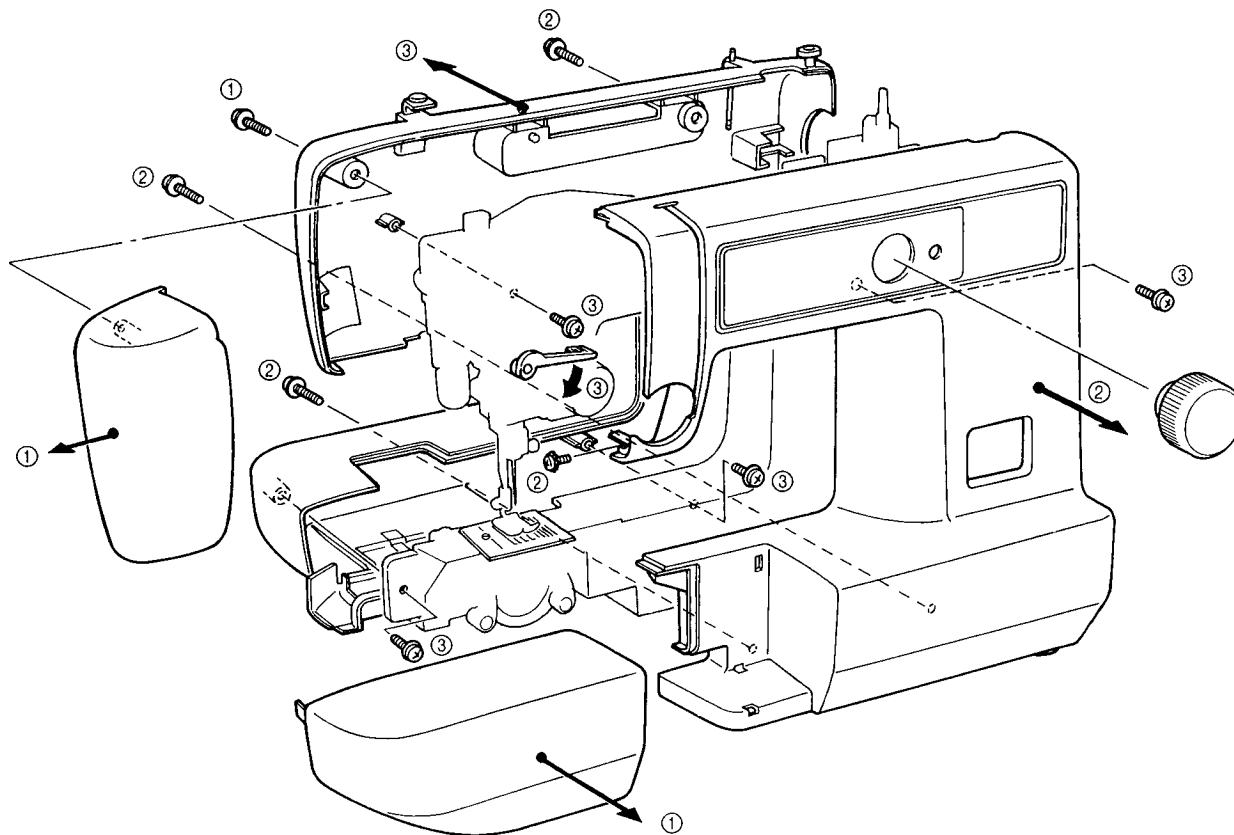
## 2. DISASSEMBLING THE SEWING MACHINE (VX-1120, VX-1140, VX-1250)

1. Remove the screw and the face plate from the left side of the machine.
2. Loosen the three screws attaching the front and rear covers and the screw on the left side. Remove the front cover.
3. Lower the presser foot lifter, remove the four screws indicated and remove the rear cover.



## 2. DISASSEMBLING THE SEWING MACHINE (VX-1400)

1. Remove the screw and the face plate from the left side of the machine.
2. Loosen the three screws attaching the front and rear covers and the screw on the left side. Pull off the pattern selection dial, then remove the front cover.
3. Lower the presser foot lifter, then remove the four screws indicated and the rear cover.



### 3. ADJUSTING THE CLEARANCE BETWEEN THE NEEDLE AND THE SHUTTLE HOOK (SHUTTLE RACE POSITION)

#### STANDARD

1. The clearance between the needle and the shuttle hook should be between 0.02 and 0.1 mm.
2. The shuttle race should be positioned correctly with respect to the turning direction of the shuttle race.

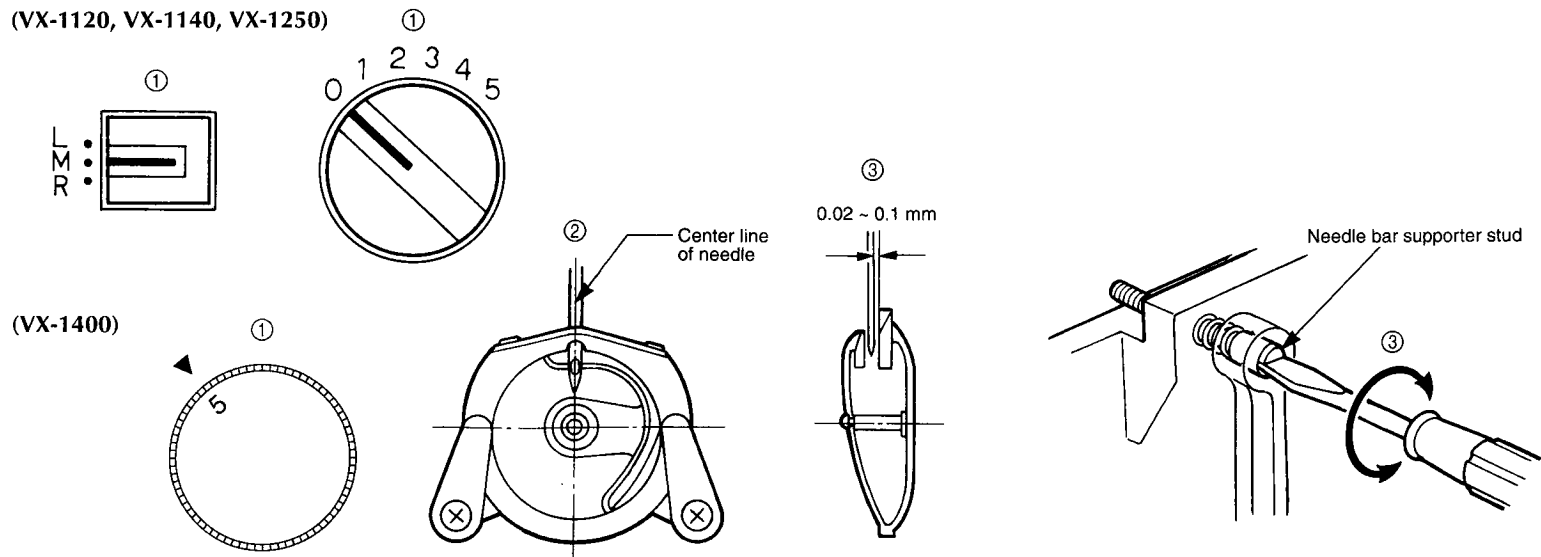
#### ADJUSTMENT

1. Set the needle position selector to M and the stitch width knob to 0. (VX-1120, VX-1140, VX-1125)  
Set the pattern selection dial to 5. (VX-1400)
2. Turn the balance wheel to set the needle and the shuttle hook to the correct timing position.
3. Use a screwdriver to turn the needle bar supporter stud slightly to either the right or left and adjust the clearance between the needle and the shuttle hook.

#### NOTE

The center of the needle should align with the center of the shuttle hook shaft.

(VX-1120, VX-1140, VX-1250)



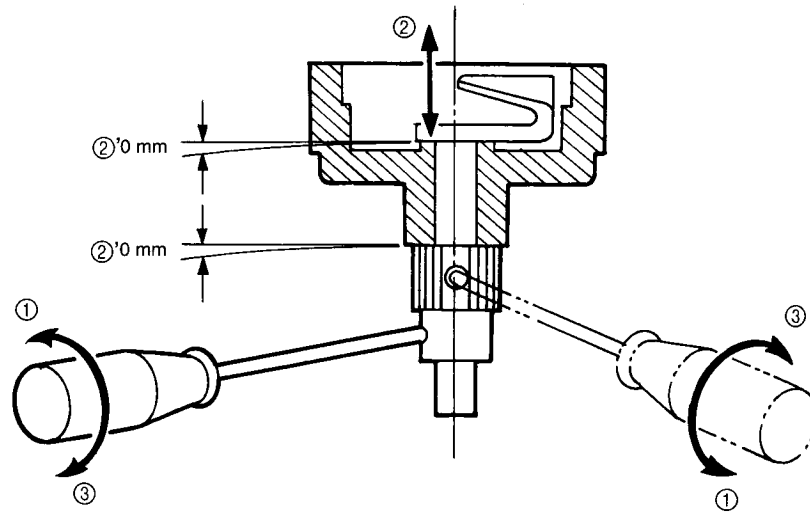
#### 4. ADJUSTING THE CLEARANCE BETWEEN THE SHUTTLE DRIVER AND THE RACE WAY (ALL MODEL)

##### STANDARD

The shuttle driver should rotate smoothly and there should be no clearance between it and the race way.

##### ADJUSTMENT

1. Loosen the two driver shaft gear screws.
2. Adjust the clearance of the driver shaft.
3. Tighten the two driver shaft gear screws.





## 5. ADJUSTING THE NEEDLE SWING (VX-1120, VX-1140, VX-1250)

### STANDARD

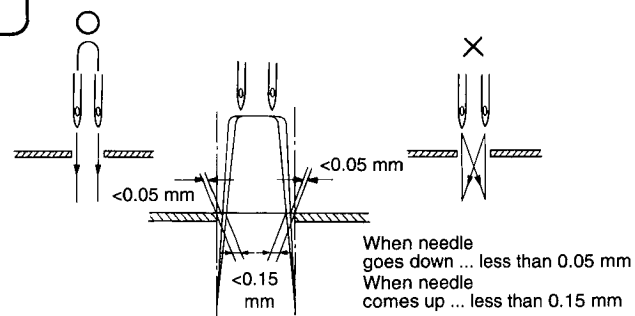
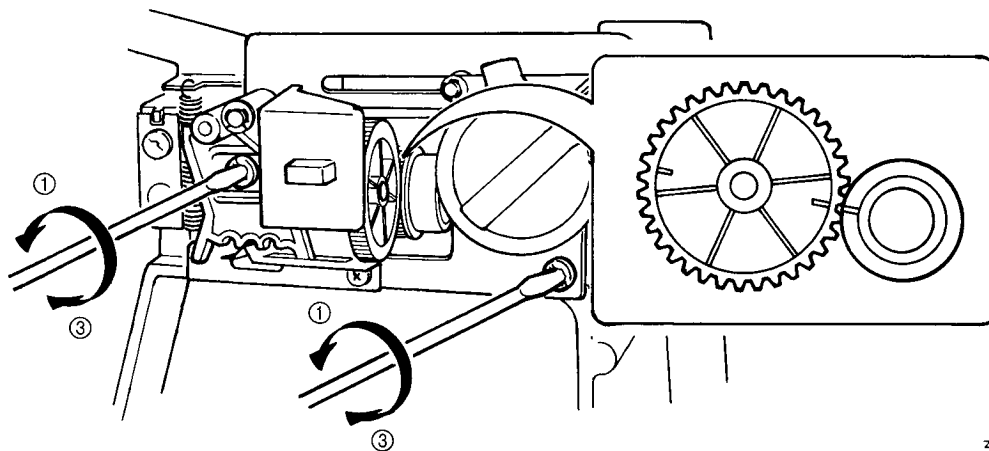
When the stitch width knob is set at 5, the needle swing should be 0.05 mm or less while the needle moves down from the needle plate to its lowest position. While the needle moves up from its lowest position to the needle plate, the needle swing should be 0.15 mm or less. These clearances should be on both sides of the needle plate hole.

### ADJUSTMENT

1. Loosen the two zigzag base assembly screws.
2. Align the upper shaft gear and the zigzag cam gear.
3. Tighten the two zigzag base assembly screws.

### NOTE

To correct the needle swing, align the upper shaft gear and the zigzag cam gear at any two points.



## 5. ADJUSTING THE NEEDLE SWING (VX-1400)

### STANDARD

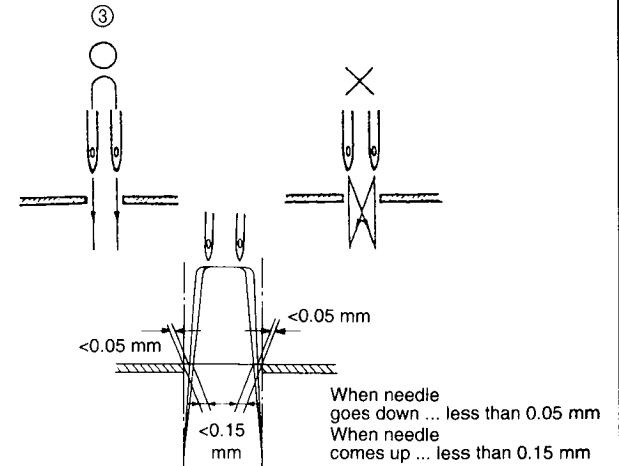
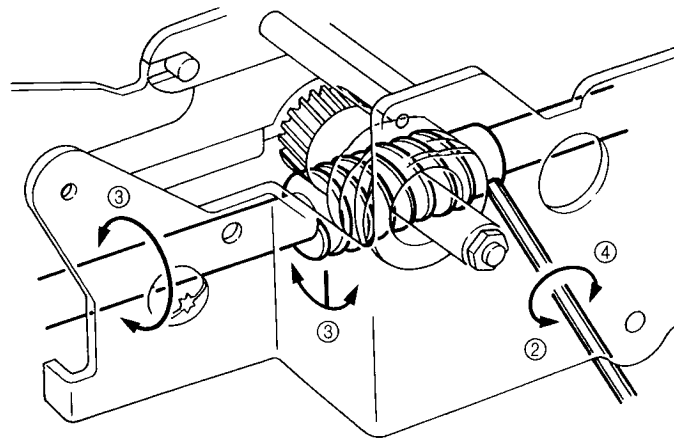
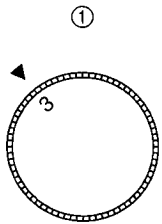
When the pattern selection dial is set at 3 (Zigzag), the needle swing should be 0.05 mm or less while the needle moves down from the needle plate to its lowest position. While the needle moves up from its lowest position to the needle plate, the needle swing should be 0.15 mm or less. These clearances should be on both sides of the needle plate hole.

### ADJUSTMENT

1. Set the pattern selection dial to 3 (Zigzag).
2. Loosen the three set screws on the worm gear.
3. Turn the worm gear to adjust the needle swing.
4. Tighten the three set screws on the worm gear.

### NOTE

Make sure that the biting worm gear aligns with the pattern cam gear.



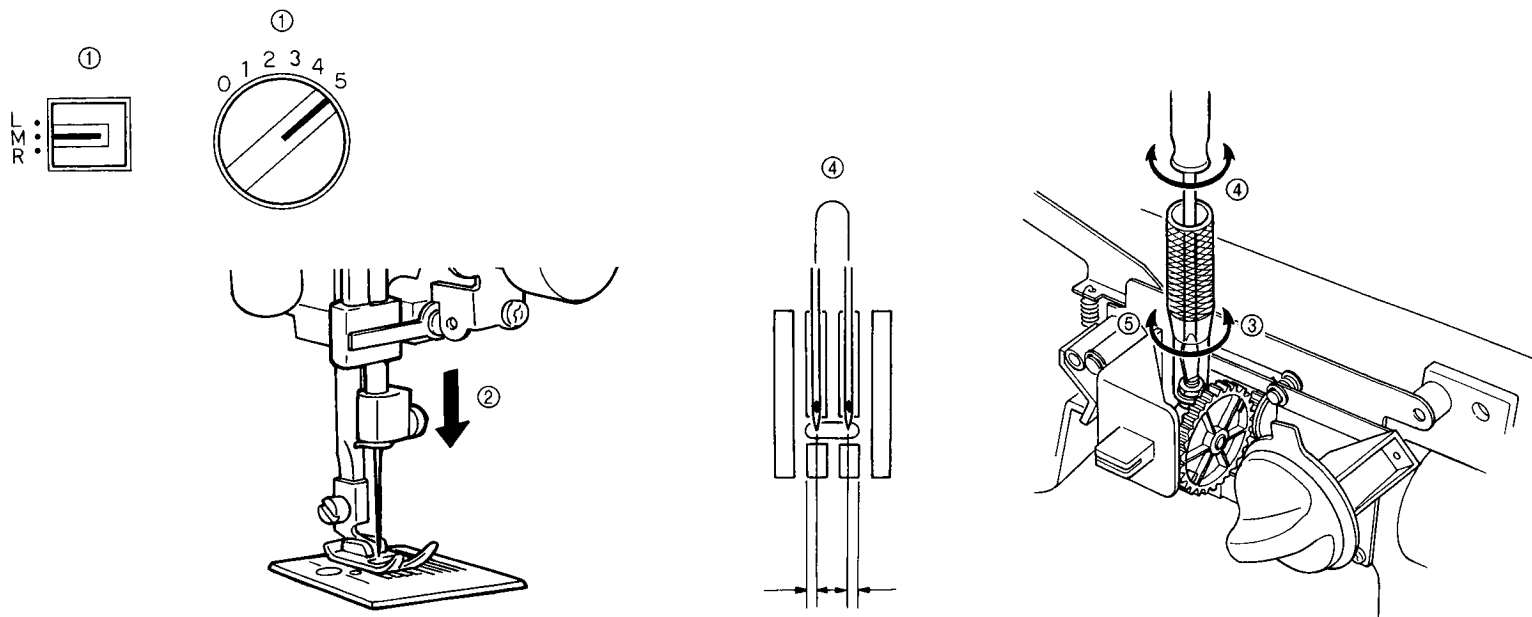
## 6. ADJUSTING THE NEEDLE IN THE DOWN POSITION (VX-1120, VX-1140, VX-1250)

### STANDARD

When the needle position selector is set at M and the stitch width knob is set at 5, the needle should move within a range of 4.6 to 5.0 mm across the needle plate. When the needle is lowered, it should not be too close to either the left or right edge of the needle plate hole.

### ADJUSTMENT

1. Set the needle position selector to M and the stitch width knob to 5.
2. Turn the balance wheel to lower the needle until it is just above the needle plate.
3. Loosen the locknut for the adjusting screw on the zigzag link.
4. Using a screwdriver, turn the screw and adjust the needle movement range with respect to the needle plate hole.
5. Tighten the locknut.



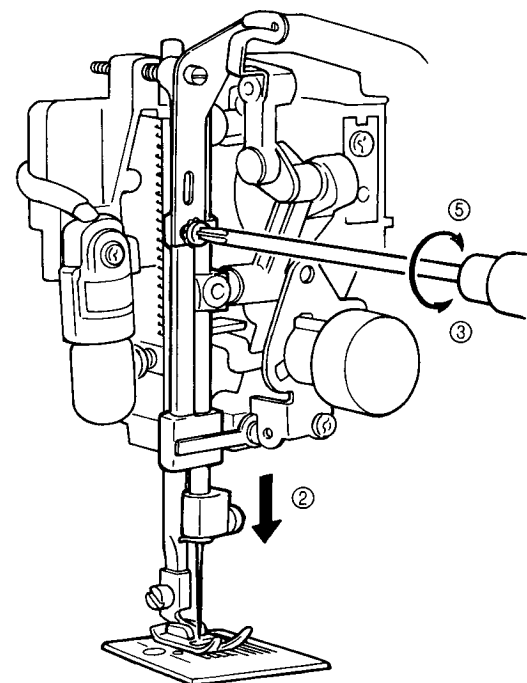
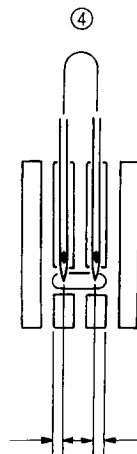
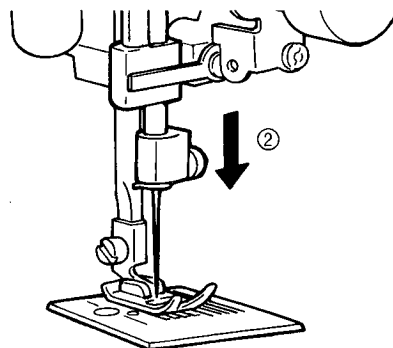
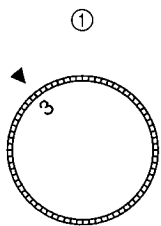
## 6. ADJUSTING THE NEEDLE IN THE DOWN POSITION (VX-1400)

### STANDARD

When the pattern selection dial is set at 3 (zigzag), the needle should move within a range of 4.6 to 5.0 mm across the needle plate. When the needle is lowered, it should not be too close to either the left or right edge of the needle plate hole.

### ADJUSTMENT

1. Set the pattern selection dial to 3.
2. Turn the balance wheel to lower the needle until it is just above the needle plate.
3. Loosen the locknut for the adjusting screw on the zigzag connecting rod.
4. Using a screwdriver, turn the screw and adjust the needle movement range with respect to the needle plate hole.
5. Tighten the locknut.



## 7. ADJUSTING THE TIMING OF THE NEEDLE AND THE SHUTTLE HOOK (SHUTTLE HOOK POSITION)

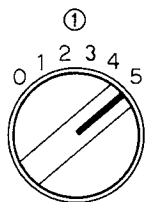
### STANDARD

When the stitch width knob is set at 5 (VX-1120, VX-1140, VX-1125) or the pattern selection dial is set at 3 (Zigzag) (VX-1400) and the needle is raised 1.7 to 2.1 mm from its lowest position on the left side, the shuttle hook point should align with the side of the needle.

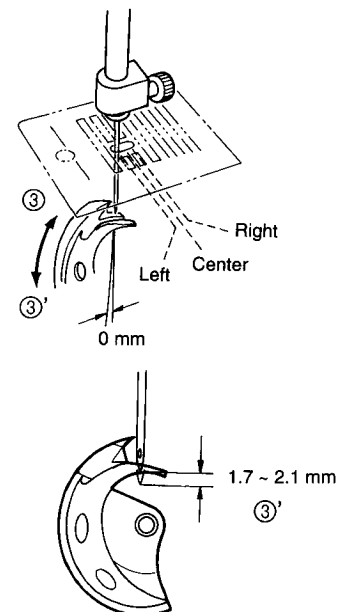
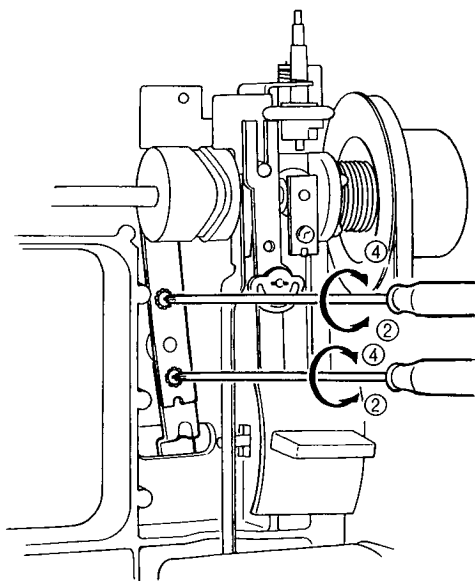
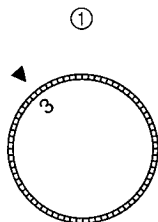
### ADJUSTMENT

1. Set the stitch width knob to 5 (VX-1120, VX-1140, VX-1125) or the pattern selection dial to 3 (Zigzag) (VX-1400), then lower the needle to its lowest position at the left side of the needle plate.
2. Loosen the set screw on the drive connecting rod.
3. Raise the needle between 1.7 and 2.1 mm and align the shuttle hook point with the side of the needle.
4. Tighten the set screw.

(VX-1120, VX-1140, VX-1250)



(VX-1400)



## 8. ADJUSTING THE HEIGHT OF THE NEEDLE BAR

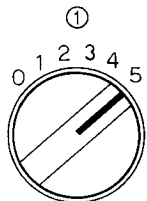
### STANDARD

When the stitch width knob is set at 5 (VX-1120, VX-1140, VX-1125) or the pattern selection dial is set at 3 (Zigzag) (VX-1400), and the needle is on the right side and contacts the shuttle hook, the clearance between the top of the needle eye and shuttle hook point should be within 0.8 and 1.2 mm.

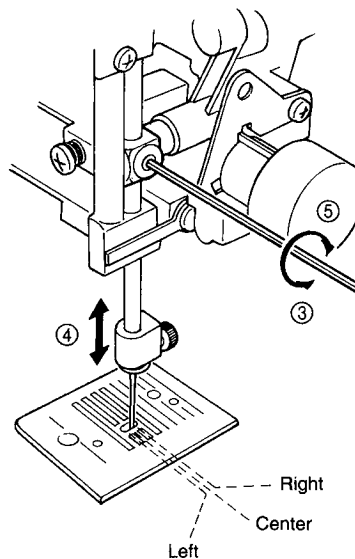
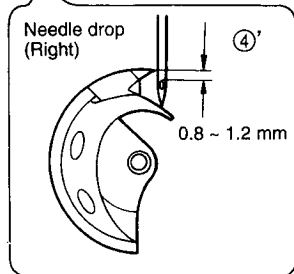
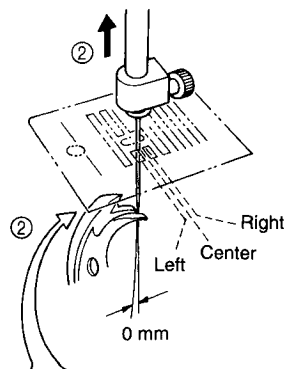
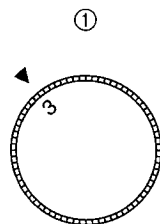
### ADJUSTMENT

1. Set the stitch width knob to 5 (VX-1120, VX-1140, VX-1125) or the pattern selection dial to 3 (Zigzag) (VX-1400), then lower the needle to its lowest position at the right side of the needle plate.
2. Turn the balance wheel until the needle contacts the shuttle hook.
3. Loosen the set screw on the needle bar.
4. Move the needle bar either up or down until the clearance between the top of the needle eye and the shuttle hook point is within 0.8 and 1.2 mm.
5. Tighten the set screw.

(VX-1120, VX-1140, VX-1250)



(VX-1400)



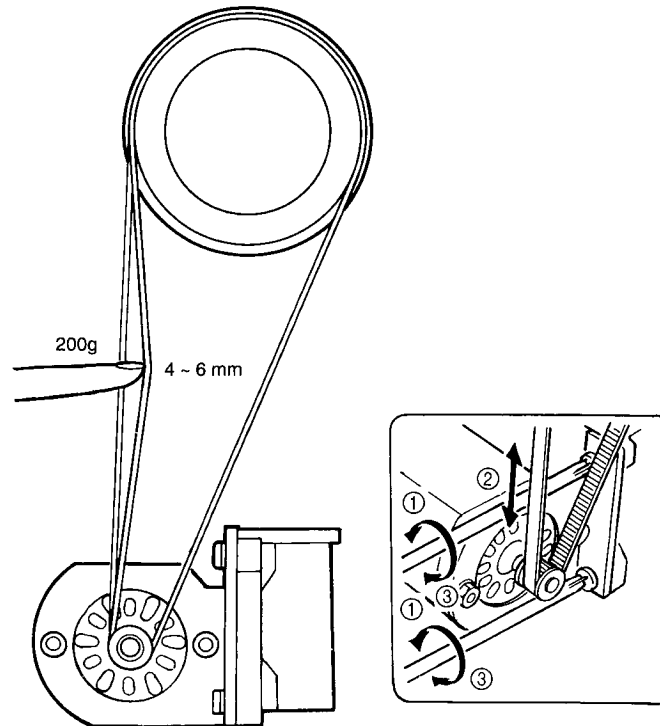
## 9. ADJUSTING THE TENSION OF THE TIMING BELT (ALL MODEL)

### STANDARD

There should be between 4.0 and 6.0 mm of slack in the timing belt when the center of the belt is pushed with approximately 200 g of pressure.

### ADJUSTMENT

1. Loosen the two screws on the motor holder.
2. Move the motor holder to adjust the belt tension so it meets the above standard.
3. Tighten the two screws.



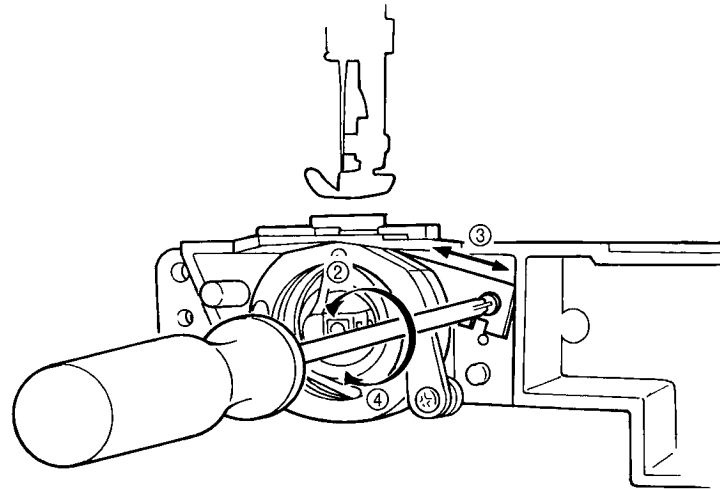
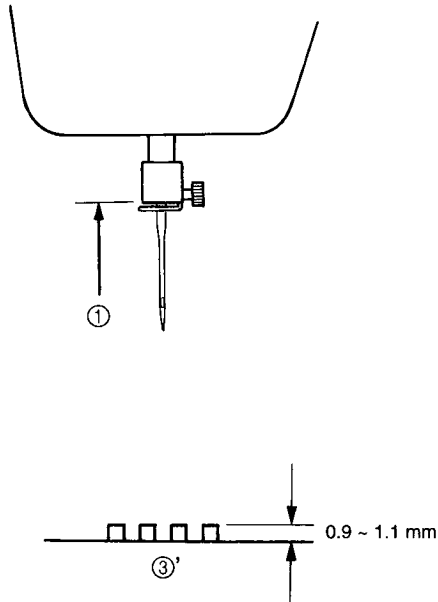
## 10. ADJUSTING THE HEIGHT OF THE FEED DOGS (ALL MODEL)

### STANDARD

When the feed dogs are raised to their highest position, they should be between 0.9 and 1.1 mm higher than the needle plate.

### ADJUSTMENT

1. Turn the balance wheel to raise the needle bar to its highest position.
2. Loosen the screw on the vertical feed arm.
3. Move the vertical feed arm to the left or right to adjust the height of the feed dogs.
4. Tighten the screw.





## 11. ADJUSTING THE HEIGHT OF THE PRESSER BAR (ALL MODEL)

### STANDARD

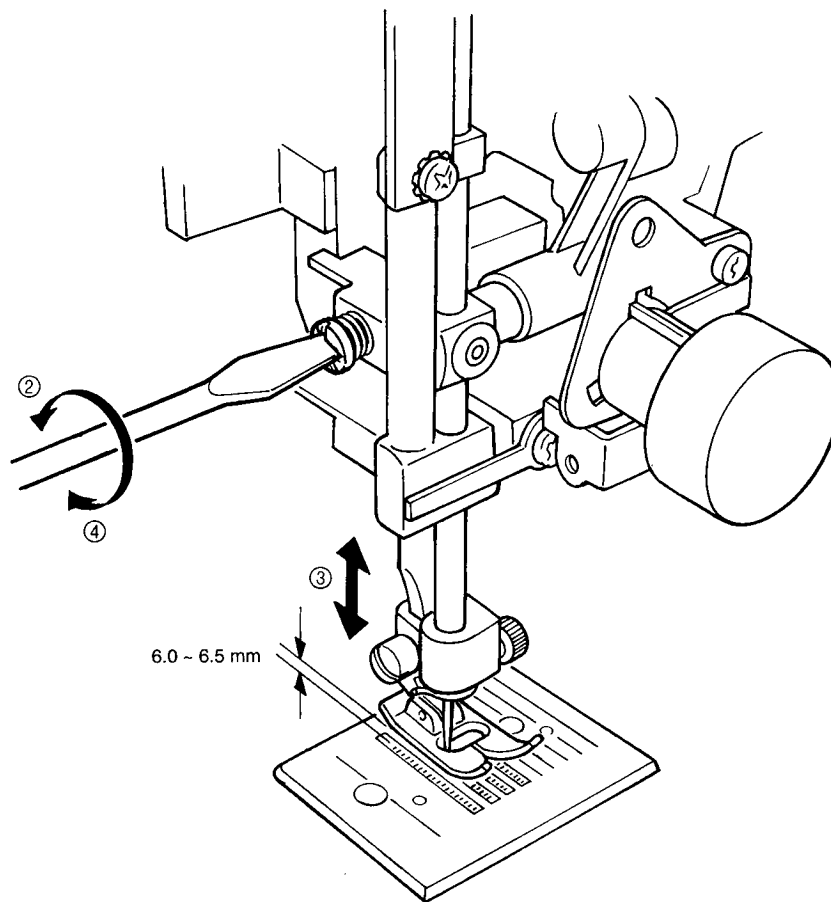
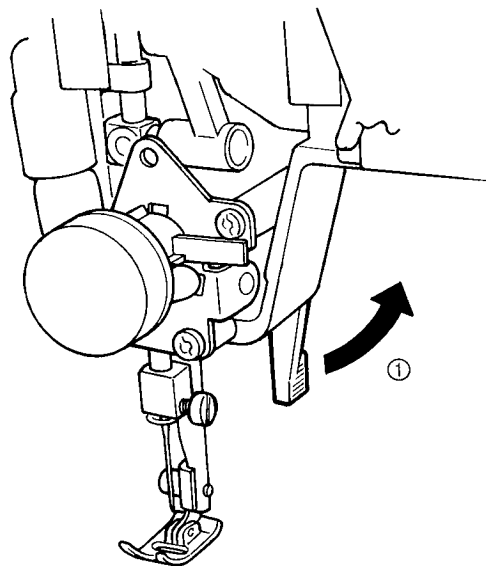
The clearance between the presser foot and the needle plate should be between 6.0 and 6.5 mm.

### ADJUSTMENT

1. Raise the presser foot.
2. Loosen the screw on the presser bar guide bracket.
3. Adjust the height of the presser bar.
4. Tighten the screw.

### NOTE

Check that the presser foot and feed dogs are aligned.



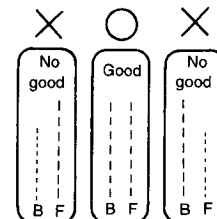
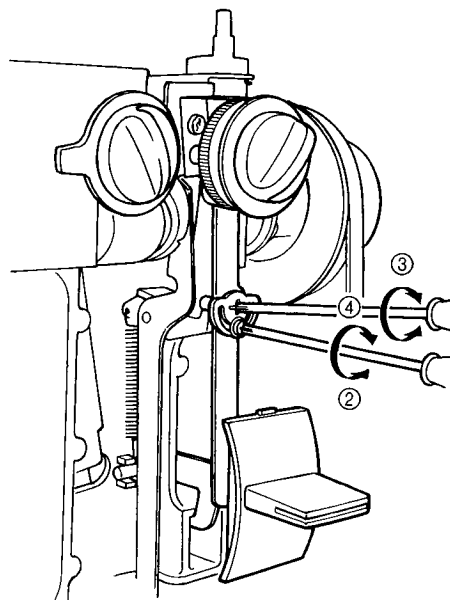
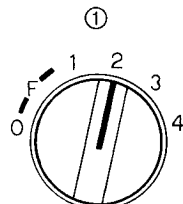
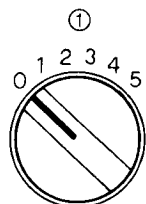
## 12. ADJUSTING THE STITCH LENGTH FOR FORWARD STITCHING AND BACKSTITCHING (VX-1120, VX-1140, VX-1250)

### STANDARD

When the stitch length knob is set at 2, there should be difference of 10% in the lengths of the forward and backward stitching.

### ADJUSTMENT

1. Set the stitch width knob to 0 and the stitch length knob to 2.
2. Loosen the screw on the reverse sewing regulator shaft.
3. Using a screwdriver, turn the reverse sewing regulator shaft to adjust the feed. (The forward and backward stitching feeds should be about the same.)
4. Tighten the screw.



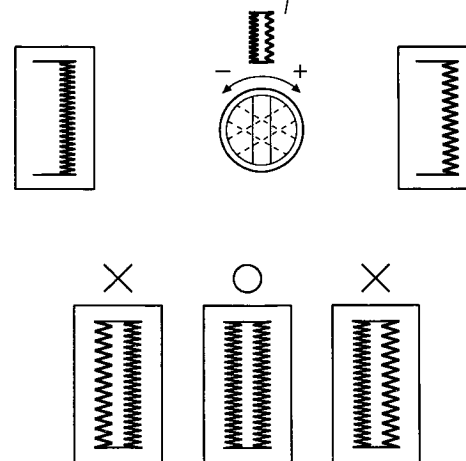
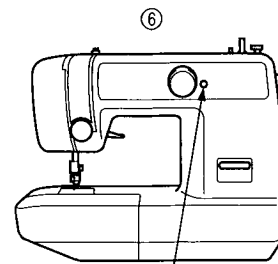
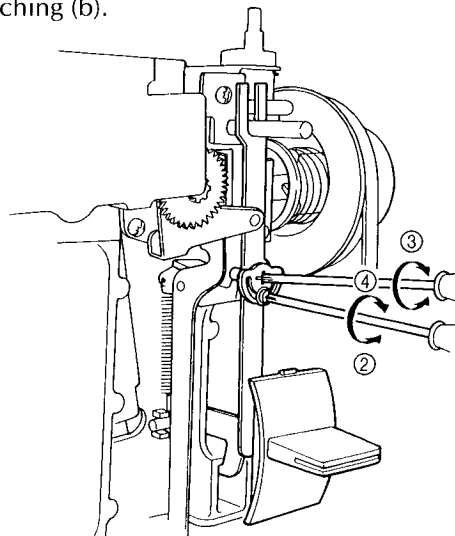
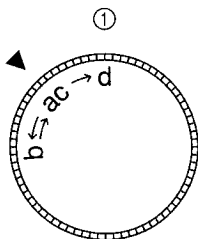
# 13. ADJUSTING THE BUTTONHOLE'S LEFT BACKWARD STITCHING AND RIGHT FORWARD STITCHING (VX-1400)

## STANDARD

When a buttonhole is sewn using the  $b \rightleftharpoons ac \rightarrow d$  setting on the pattern selection dial, the left backward stitching and right forward stitching should appear identical.

## ADJUSTMENT

1. Set the pattern selection dial to b and sew the left side of the buttonhole.
2. Loosen the screw on the reverse sewing regulator shaft.
3. Using a screwdriver, turn the reverse sewing regulator shaft to adjust the left backward stitching (b) until it feeds 35 to 45 stitches/20 mm and appears to feed as if the pattern selection dial was set to 4 (Zigzag (Satin)).
4. Tighten the screw.
5. Set the pattern selection dial to d and sew the right side of the buttonhole.
6. Using a screwdriver, turn the buttonhole fine-adjusting screw until the right forward stitching (d) appears the same as the left backward stitching (b).



## 14. ADJUSTING THE BUTTONHOLE'S RIGHT FORWARD STITCHING WIDTH (VX-1400)

### STANDARD

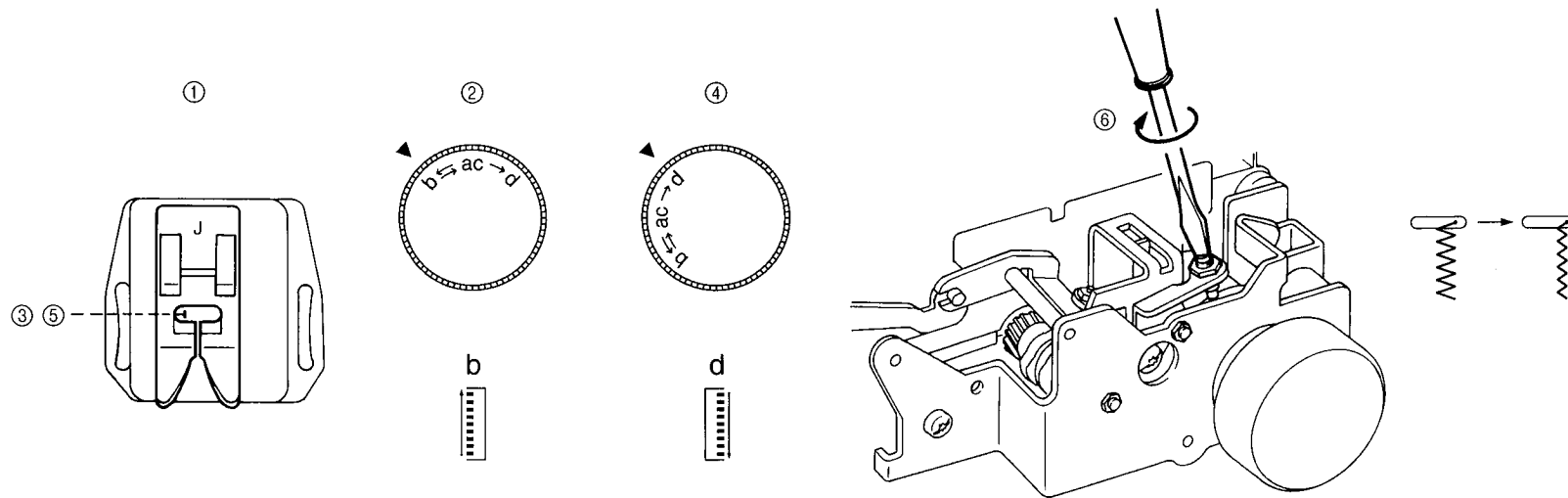
The width of the buttonhole's right forward stitching should appear identical to that of the left backward stitching. (The difference should be less than 0.2 mm.)

### ADJUSTMENT

1. Install the darning plate onto the needle plate and lower the presser foot onto a piece of paper.
2. Set the pattern selection dial to b.
3. Turn the balance wheel until the needle contacts the paper.
4. Set the pattern selection dial to d.
5. Turn the balance wheel until the needle contacts the paper.
6. Using a screwdriver, turn the adjusting screw to change the stitch width of the right side.

### NOTE

Turn the adjusting screw to the right to make the stitch width of the right side more narrow.



## 15. ADJUSTING THE UPPER TENSION CONTROL DIAL (ALL MODEL)

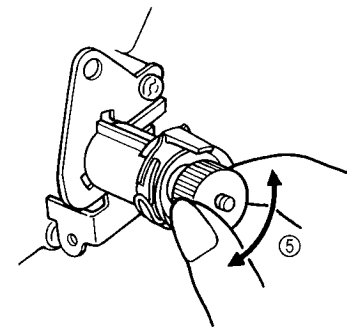
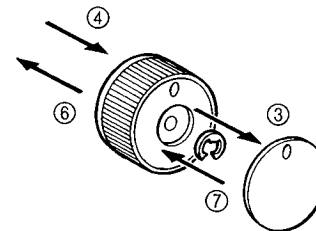
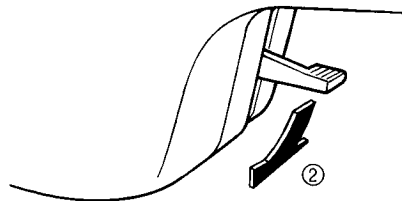
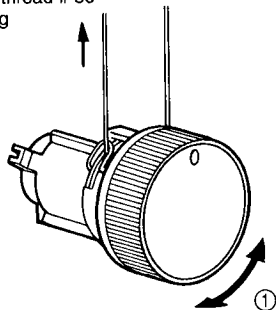
### STANDARD

When the upper tension control dial is set at 0 and the presser foot is lowered, the upper thread tension should be between 5 and 10 g when cotton thread #50 is used.

### ADJUSTMENT

1. Set the upper tension control dial to 0 and pass cotton thread between the tension discs.
2. Lower the presser foot.
3. Remove the upper tension disc and the stop ring.
4. Remove the upper tension control dial.
5. Measure the thread tension using a tension gauge and turn the screw to adjust the tension so it is between 5 and 10 g.
6. Install the upper tension control dial onto the upper tension disc at the 0 position and secure it with the stop ring.
7. Attach the upper tension control dial plate onto the upper tension control dial with their 0 positions aligned.

Cotton thread # 50  
5 ~ 10 g



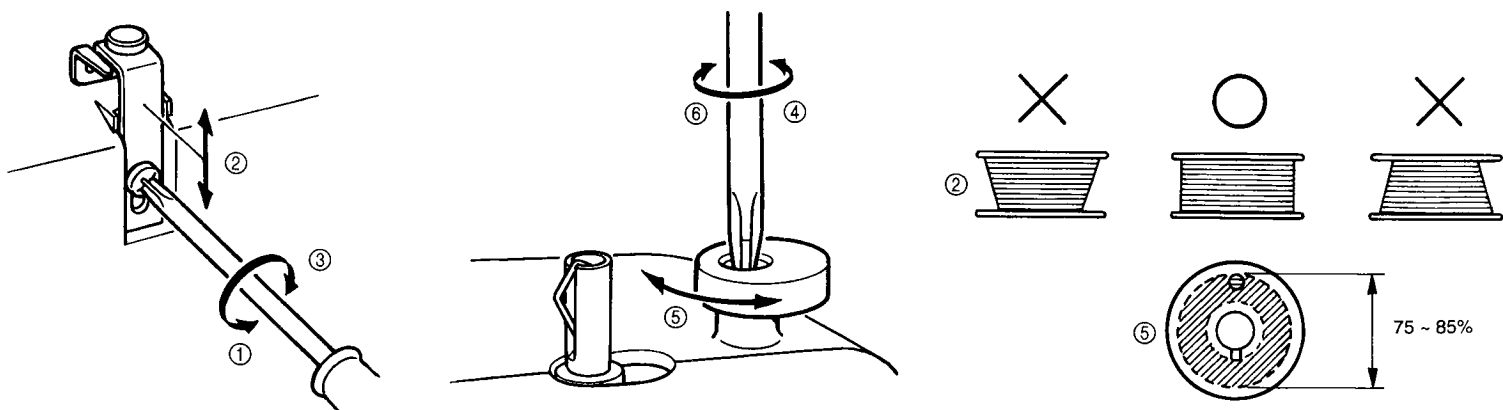
## 16. ADJUSTMENT OF BOBBIN WINDING (ALL MODEL)

### STANDARD

The thread should fill 75 to 85% of the bobbin and be wound evenly.

### ADJUSTMENT

1. If the thread does not wind evenly around the bobbin, slightly loosen the screw on the thread guide/bobbin winding tension disc.
2. Move the thread guide/bobbin winding tension disc vertically so that the thread evenly winds around the bobbin.
3. Tighten the screw on the thread guide/bobbin winding tension disc.
4. Slightly loosen the screw on the bobbin presser.
5. Move the bobbin presser to adjust the amount of thread that winds around the bobbin.
6. Tighten the screw on the bobbin presser.



**NOTE**

VX 1120/1140/1250/1400  
T6020083  
Printed in Taiwan



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