

SERVICING MANUAL

JEM GOLD (660)

CONTENTS

SERVICE ACCESS

FACE COVER	2
BED COVER	3
FRONT COVER	4
REAR COVER	5

MECHANICAL ADJUSTMENT

THREAD TENSION	6
PRESSER BAR HEIGHT AND ALIGNMENT	7
DISTRIBUTION OF NEEDLE SWING	8
NEEDLE DROP	9
NEEDLE BAR HEIGHT	10
HOOKTIMING	11
NEEDLE CLEARANCE TO HOOK	12
BACKLASH (LOWER SHAFT GEAR)	13
FEED DOG HEIGHT	14
STRETCH STITCH BALANCE	15
BUTTONHOLE STITCH BALANCE	16
ADJUSTING THE LINE TACK WIDTH AND DISENGAGEMENT CLEARANCE OF CAM FOLLOWER	17
WIRING OF TERMINAL BLOCK	18

SERVICE ACCESS

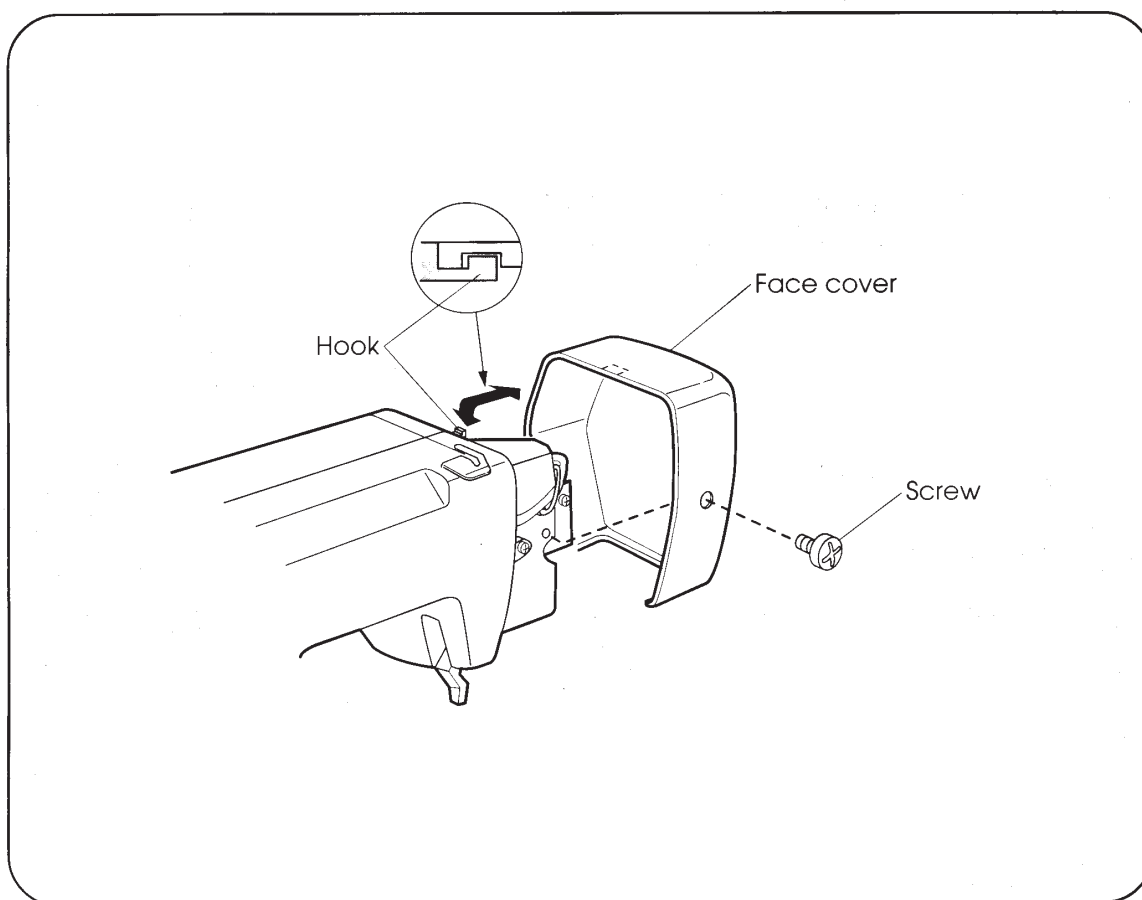
FACE COVER

(To remove)

1. Remove the screw and remove the face cover as shown below.

(To attach)

2. Follow the above procedure in reverse.



SERVICE ACCESS

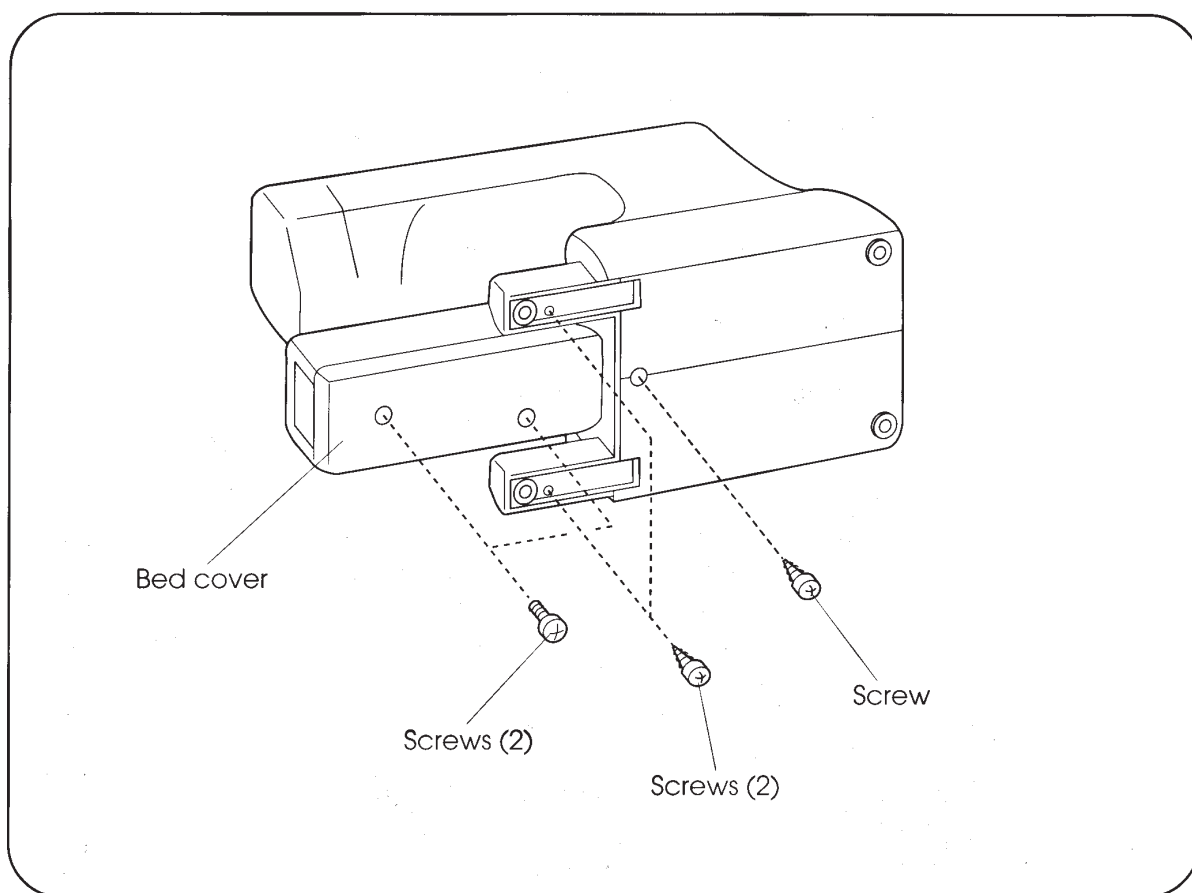
BED COVER

(To remove)

1. Loosen the 5 screws and remove the bed cover.

(To attach)

2. Follow the above procedure in reverse.



SERVICE ACCESS

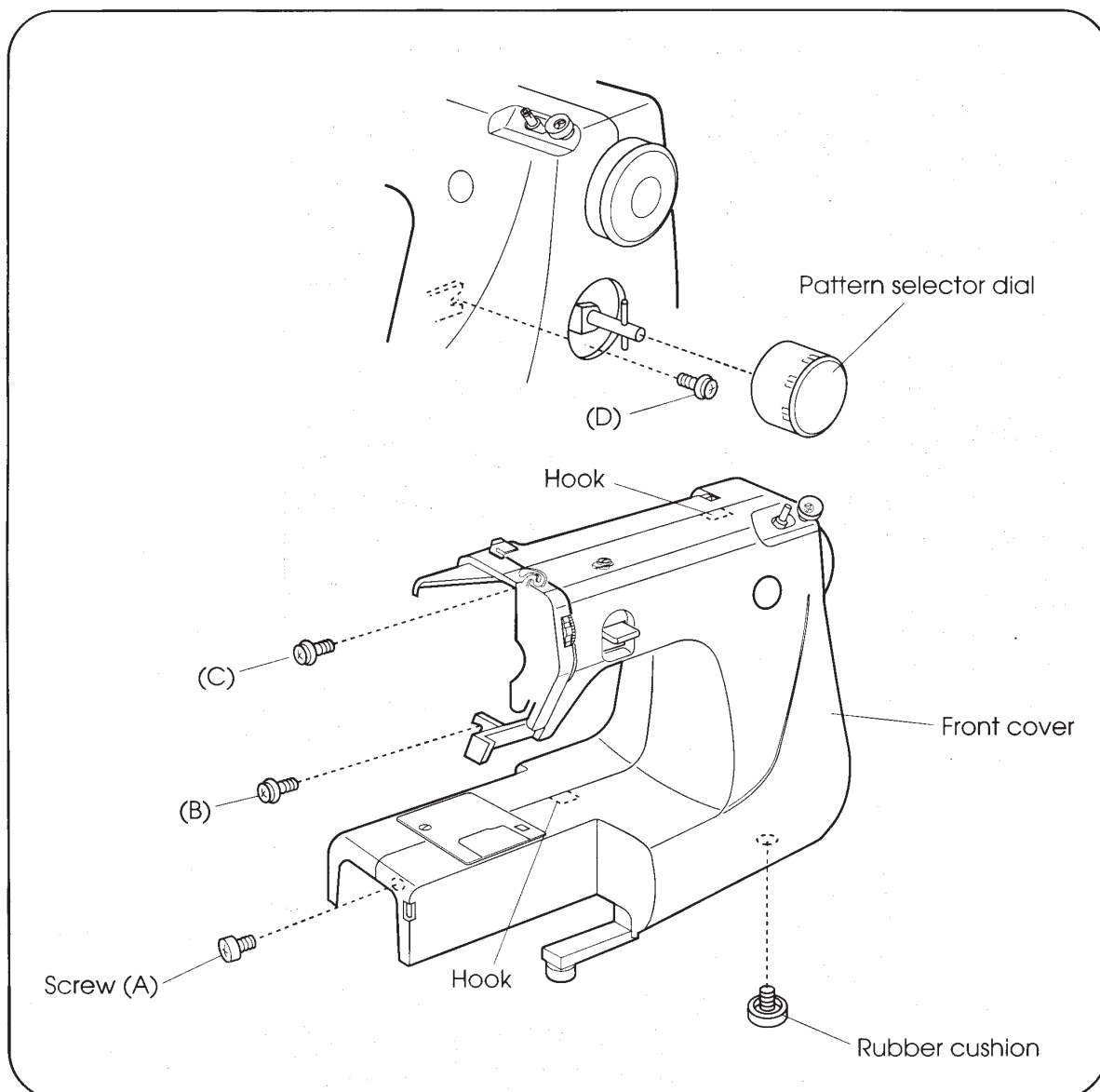
FRONT COVER

(To remove)

1. Remove the face cover and bed cover (see pages 2, 3).
2. Pull out the pattern selector dial.
3. Remove the screw (A) and rubber cushion.
4. Loosen the screws (B), (C), (D) and remove the front cover.

(To attach)

5. Follow the above procedure in reverse.



SERVICE ACCESS

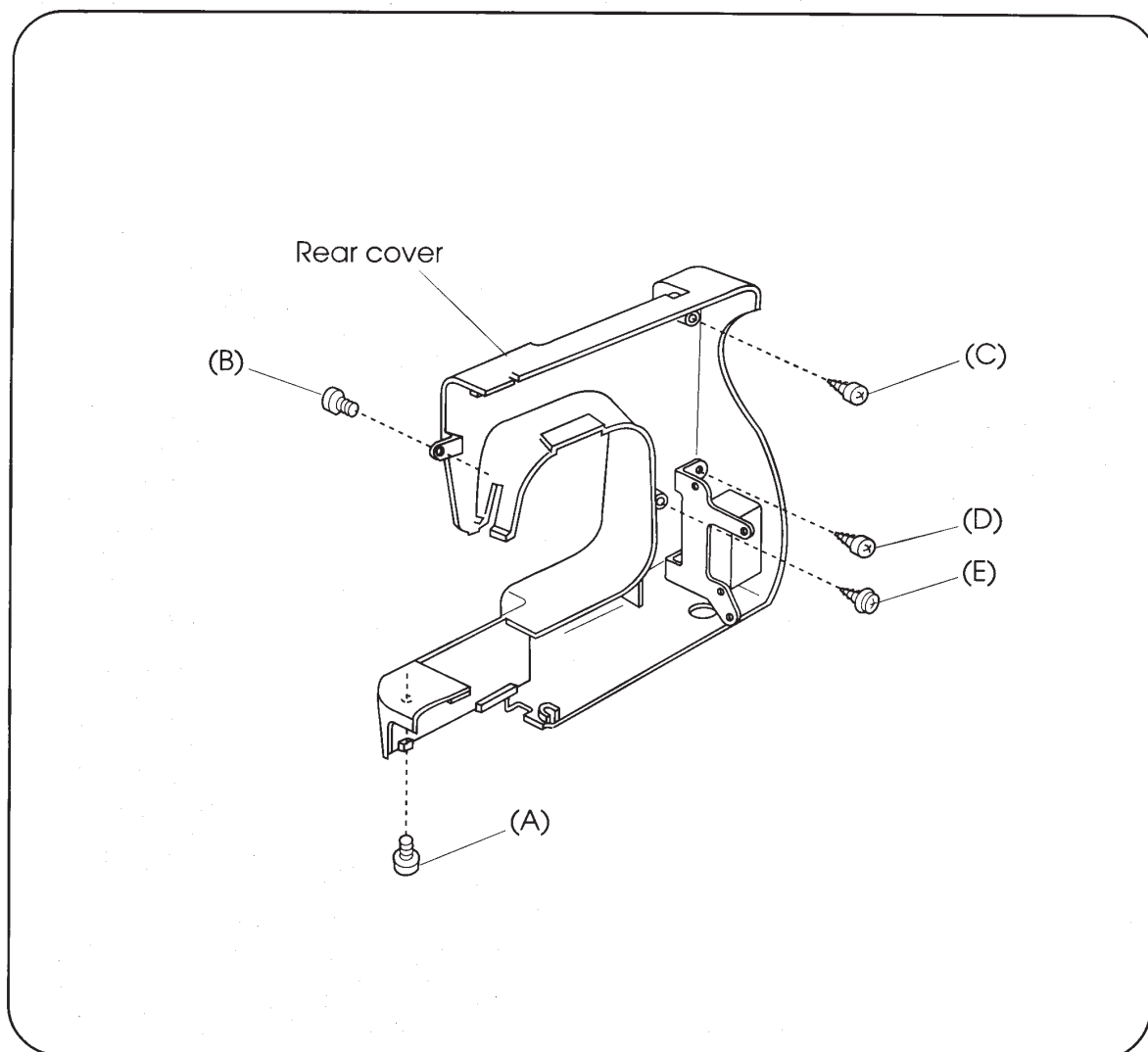
REAR COVER

(To remove)

1. Remove the face cover, bed cover and front cover (see pages 2, 3, 4).
2. Remove the screws (A), (B), (C), (D), (E) and rear cover.

(To attach)

6. Follow the above procedure in reverse.

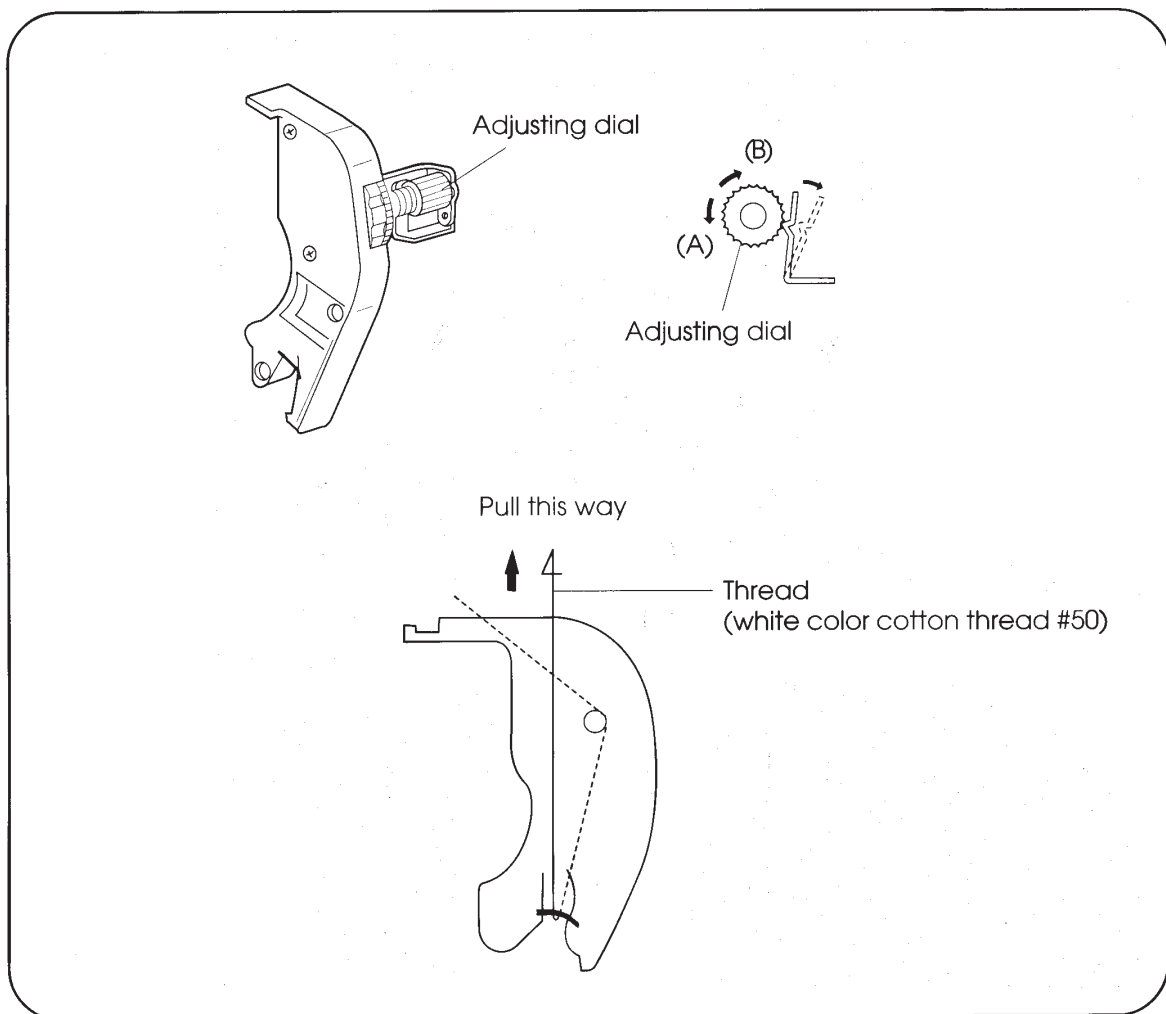


MECHANICAL ADJUSTMENT

THREAD TENSION

The standard upper thread tension should be 75 - 90 g when pulling the thread (white color cotton thread #50) in the direction of the arrow with the tension dial set at 4. (Make sure the presser foot is lowered.) If the tension is out of the standard range, adjust it as follows:

1. Remove the front cover (see page 4).
2. If the thread tension is too tight turn the adjusting dial in the direction of (A).
If the thread tension is too loose turn the adjusting dial in the direction of (B).
3. Check the thread tension and attach the front cover.

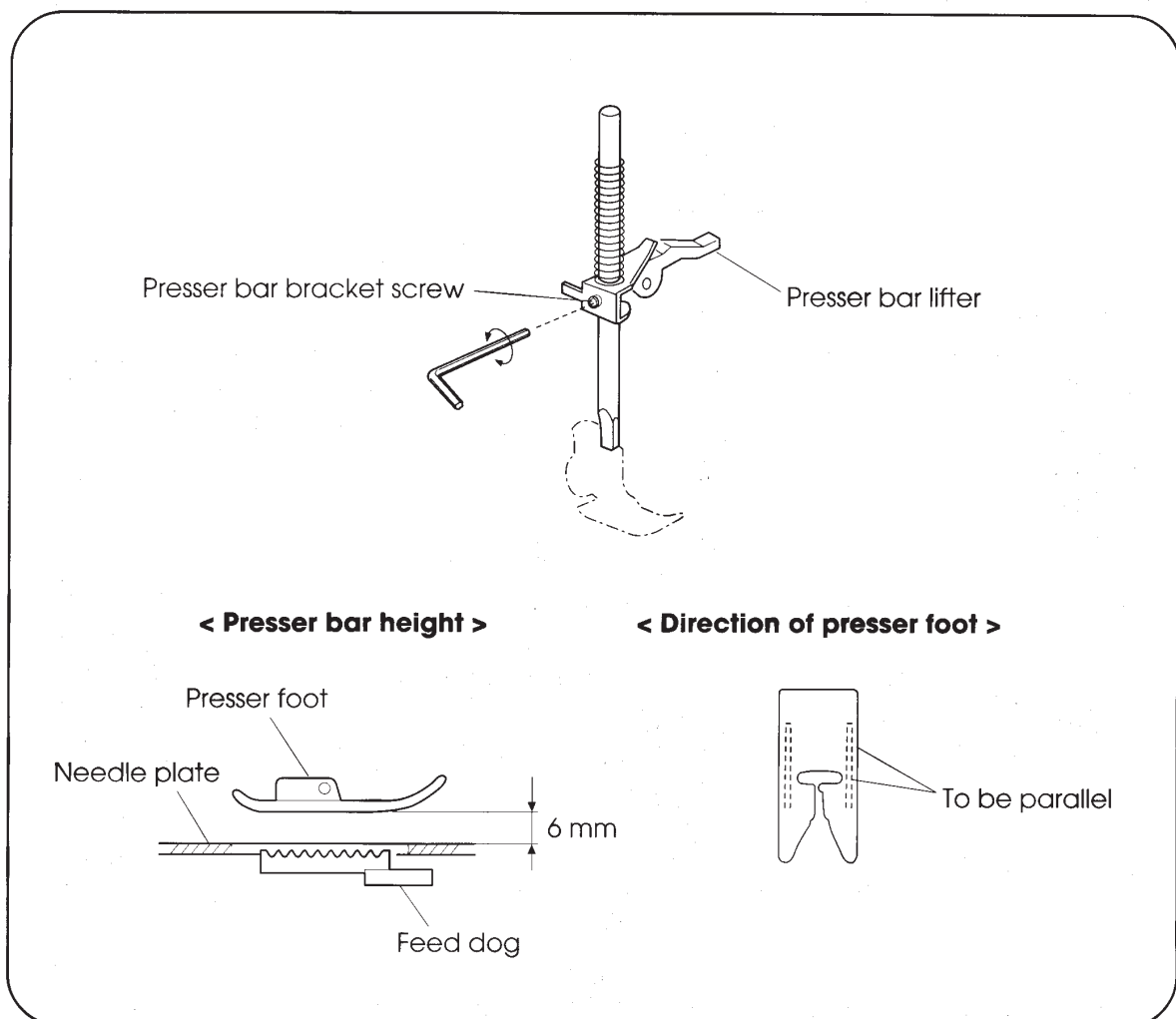


MECHANICAL ADJUSTMENT

PRESSER BAR HEIGHT AND ALIGNMENT

The standard presser bar height is 6.0 mm between the bottom surface of the presser foot and the needle plate when the presser bar lifter is in the up position.

1. Remove the face cover (see page 2).
2. Raise the presser foot and loosen the presser bar bracket screw and adjust the height (6.0 mm).
3. Check to see if the presser foot is parallel to the openings of the feed dog on the needle plate. If not, readjust it.
4. Tighten the presser bar bracket screw while holding the presser bar to keep the foot parallel to the openings.
5. Attach the face cover.

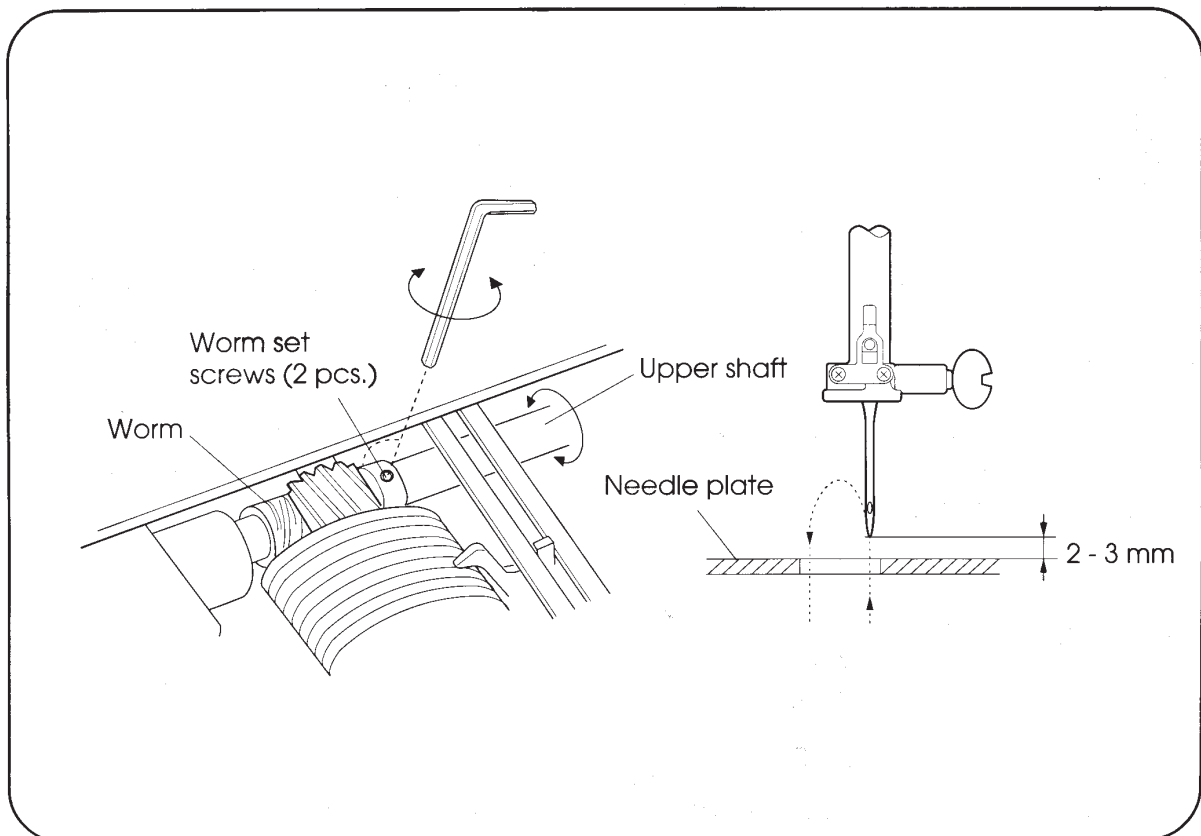


MECHANICAL ADJUSTMENT

DISTRIBUTION OF NEEDLE SWING

If the timing of the needle swing is not correctly adjusted, the needle will move sidewise while it is in the fabric. The needle should start to swing from a position 2-3 mm above the needle plate in its right outflow.

1. Remove the front cover (see page 4).
2. Set the pattern selector dial to maximum zigzag width (stitch length dial at any position).
3. Loosen the worm set screws (2 pcs.).
4. Hold the worm in place with a screwdriver or wrench and turn the hand wheel slightly.
 - a) If the needle starts swinging too soon, turn the hand wheel in the direction of A (clockwise).
 - b) If the needle starts swinging too late, turn the hand wheel in the direction of B (counter-clockwise).
5. Tighten the worm set screws (2 pcs.).
6. Reattach the front cover.



MECHANICAL ADJUSTMENT

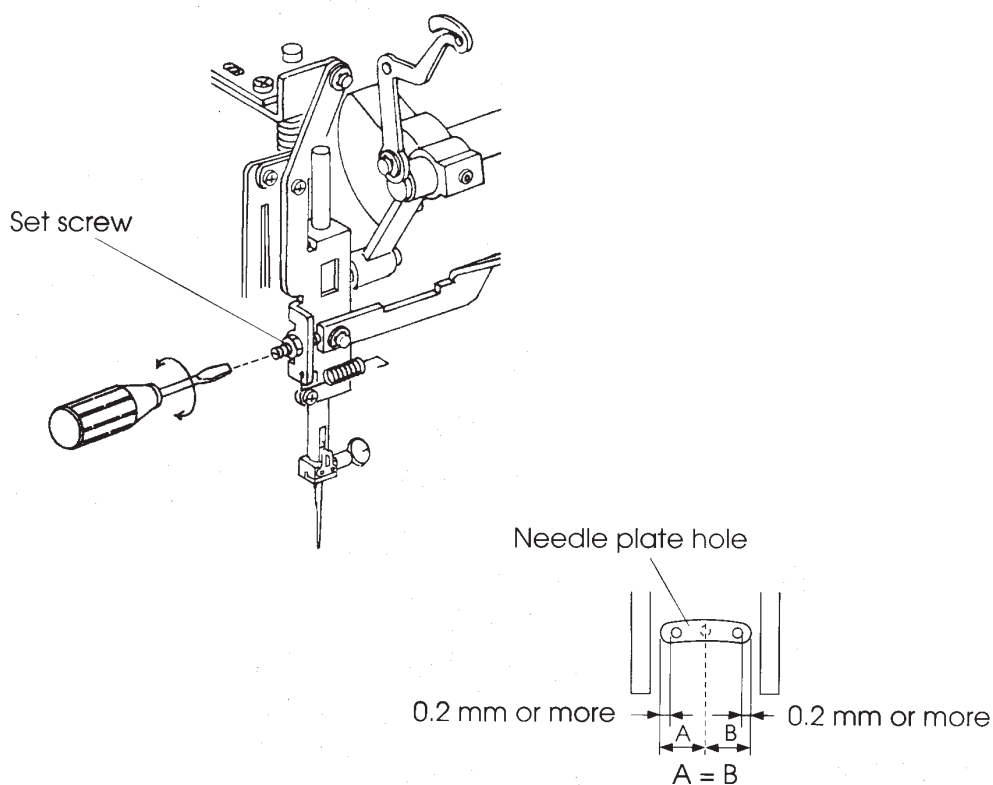
NEEDLE DROP

When the pattern selector dial is set at “straight stitch”, the needle should be positioned at the center of the needle plate hole.

When the pattern selector dial is set at “zigzag stitch”, in maximum zigzag width, the clearance between the needle and the edge of the needle plate hole should be equal, 0.2 mm or more, at the left and right needle drop positions.

If not, make adjustment as follows:

1. Remove the face cover (see page 2).
2. Set the pattern selector dial at maximum zigzag width.
3. Turn the set screw to adjust the needle drop position.
4. Reattach the face cover.



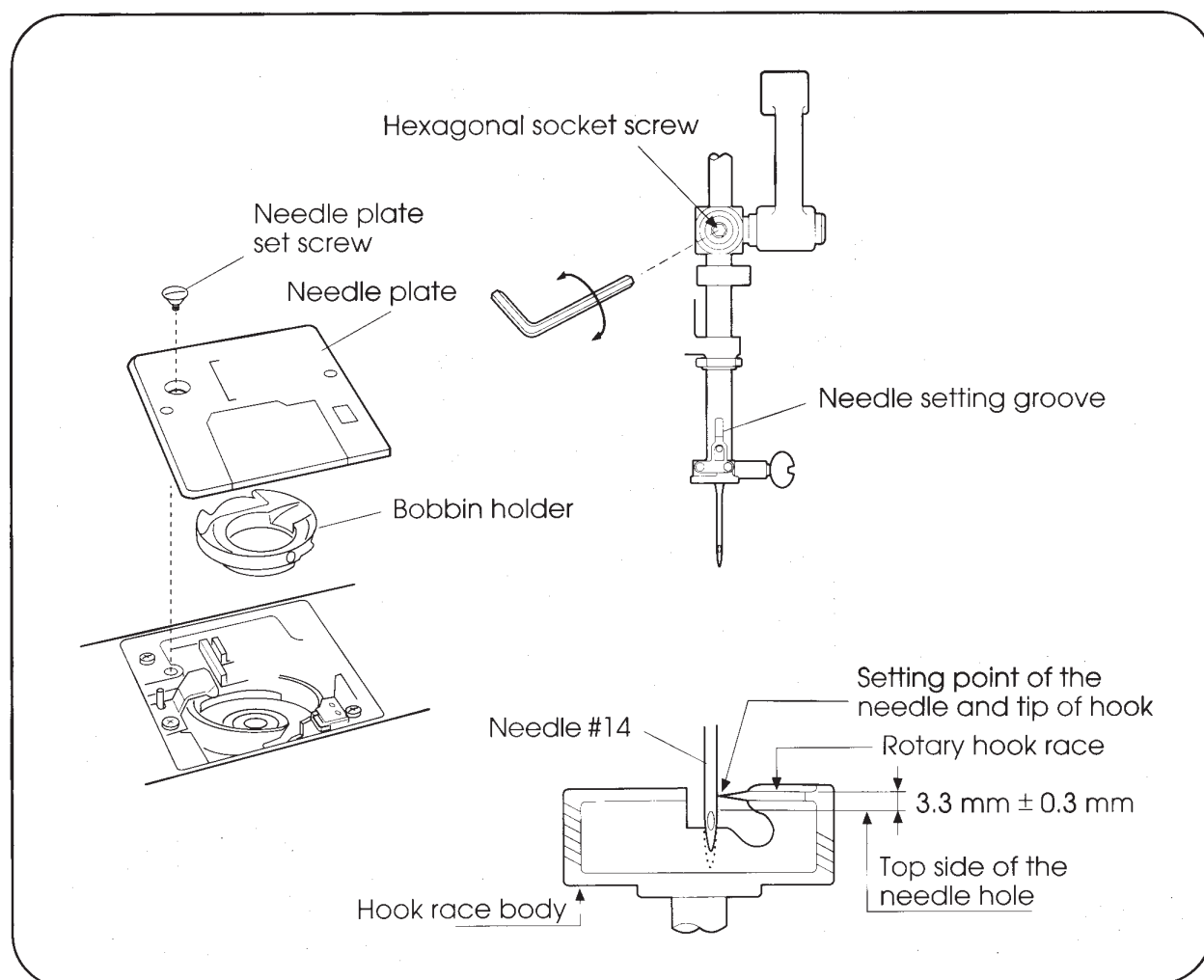
MECHANICAL ADJUSTMENT

NEEDLE BAR HEIGHT

With the pattern selector dial set at maximum zigzag width and when the point of the rotary hook exactly meets the right side of the needle in ascending travel of the needle bar from its lowest position, at the right needle drop position, the distance between the upper edge of the needle eye and the race of the rotary hook should be 3.3 ± 0.3 mm.

1. Set the pattern selector dial at maximum zigzag width and the needle at right needle drop position.
2. Remove the face cover (see page 2).
3. Remove the set screw of the needle plate and pull out the bobbin holder.
4. Turn the hand wheel toward you until the rotary hook point exactly meets the right side of the needle at the right needle drop position.
5. Loosen the hexagonal socket screw of the needle bar connecting stud.
6. Move the needle bar to provide a distance of 3.3 ± 0.3 mm between the upper edge of needle eye and the race of the rotary hook.
7. Tighten the hexagonal socket screw of the needle bar connecting stud.
8. Reattach the bobbin holder and needle plate.

Note: Before adjustment, be sure to check the hook timing.



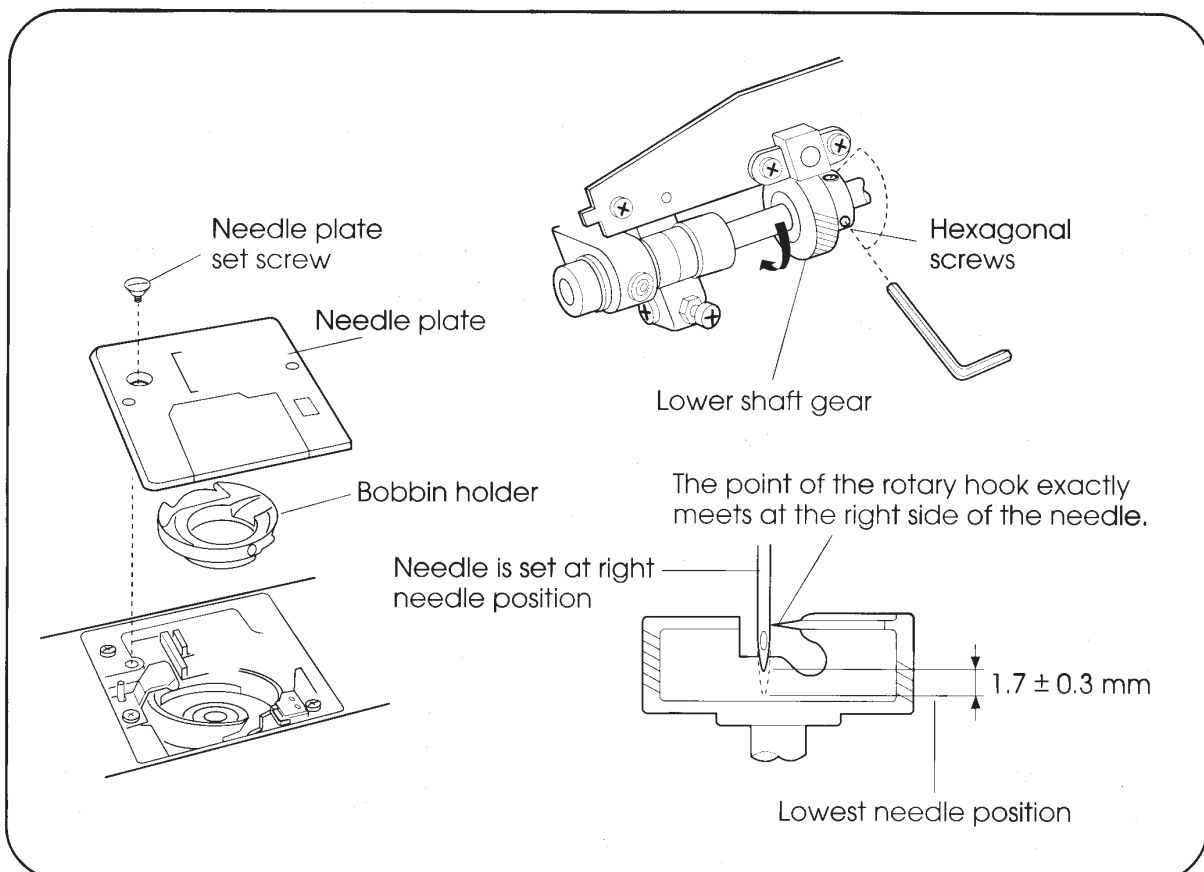
MECHANICAL ADJUSTMENT

HOOK TIMING

With the needle bar swung to the right at the maximum zigzag width, the amount of ascending travel of the needle bar from its lower position to the position where the tip of the rotary hook exactly meets the right side of the needle should be 1.7 ± 0.3 mm.

Note: Before the adjustment, be sure to check the needle bar height.

1. Set the pattern selector dial at maximum zigzag width and the needle at right needle position.
2. Remove the bed cover. (see page 3)
3. Remove the set screw on the needle plate, and remove the needle plate and bobbin holder,
4. Loosen the hexagonal screws on the lower shaft gear,
5. Turn the hand wheel toward you to raise up the needle bar 1.7 ± 0.3 mm from its lowest position with the needle swung to the right.
6. While holding the hand wheel by hand to prevent the needle bar from moving, turn the lower shaft gear in the arrow direction until the tip of the rotary hook exactly meets the right side of the needle.
7. Tighten the hexagonal screws on the lower shaft gear.
8. Attach the bobbin holder, needle plate and bed cover.

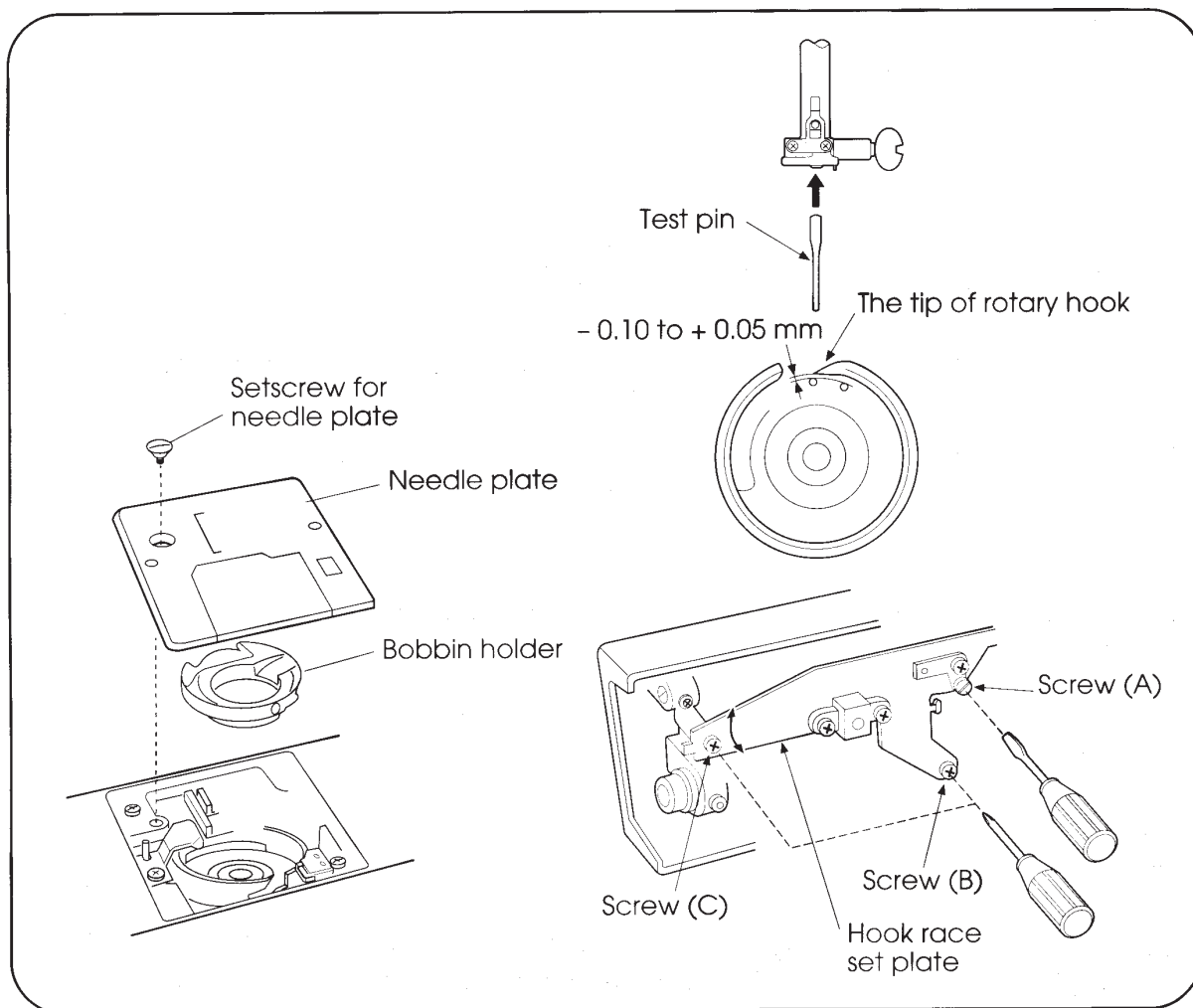


MECHANICAL ADJUSTMENT

NEEDLE CLEARANCE TO HOOK

The clearance between needle and rotary hook should be -0.10 to $+0.05$ mm. If not, make an adjustment as follows:

1. Set the pattern selector dial at maximum zigzag stitch width.
2. Remove the setscrew on the needle plate, and detach the needle plate and bobbin holder.
3. Remove the bed cover (see page 3).
4. Loosen screws (B) and (C) and tighten screw (A) temporarily.
5. Replace the needle with the test pin. Turn the hand wheel toward you slowly by hand until the needle bar reaches its lowest position.
The clearance between the needle and the point of the rotary hook should be between -0.10 and $+0.05$ mm.
6. Tighten set screws (A), (B) and (C).
7. Check the backlash play (see page 13).
8. Attach the bed cover, bobbin holder, needle plate and bed cover.
9. Remove the test pin.



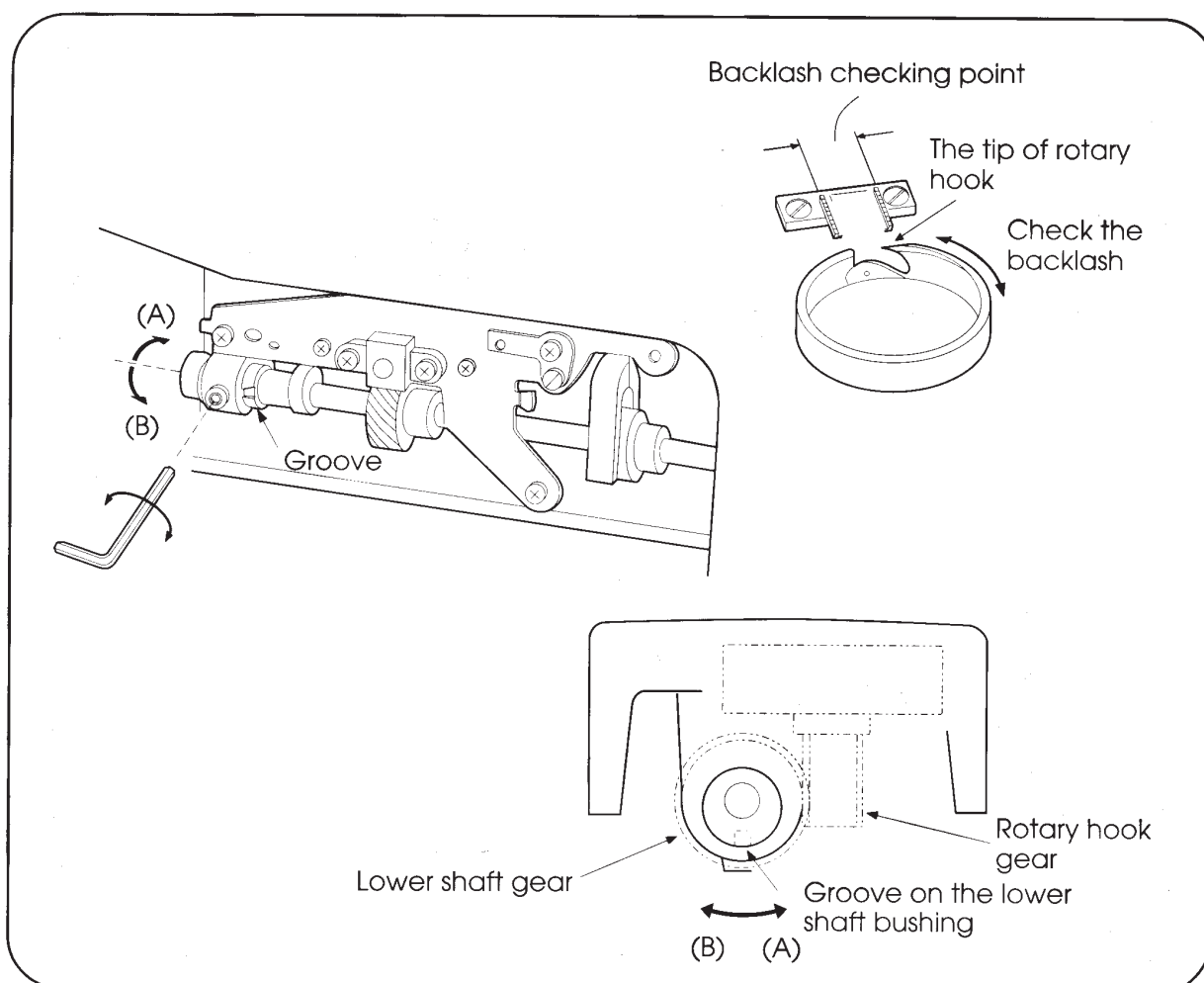
MECHANICAL ADJUSTMENT

BACKLASH (LOWER SHAFT GEAR)

The lower shaft backlash play should be less than 0.8 mm when the point of rotary hook point is in a range between both outer feed dogs. If there is more than 0.8 mm between the gears, adjust as follows:

1. Remove the bed cover (see page 3).
2. Loosen the hexagonal socket screw,
3. Turn the lower shaft bushing in the direction of B when the play at the point of the hook is too large.
Turn the lower shaft bushing in the direction of A when the play at the point of the hook is too small,
4. Tighten the hexagonal socket screw and attach the bed cover.

Note: After the backlash adjustment, check the hook timing and feed dog height adjustment.



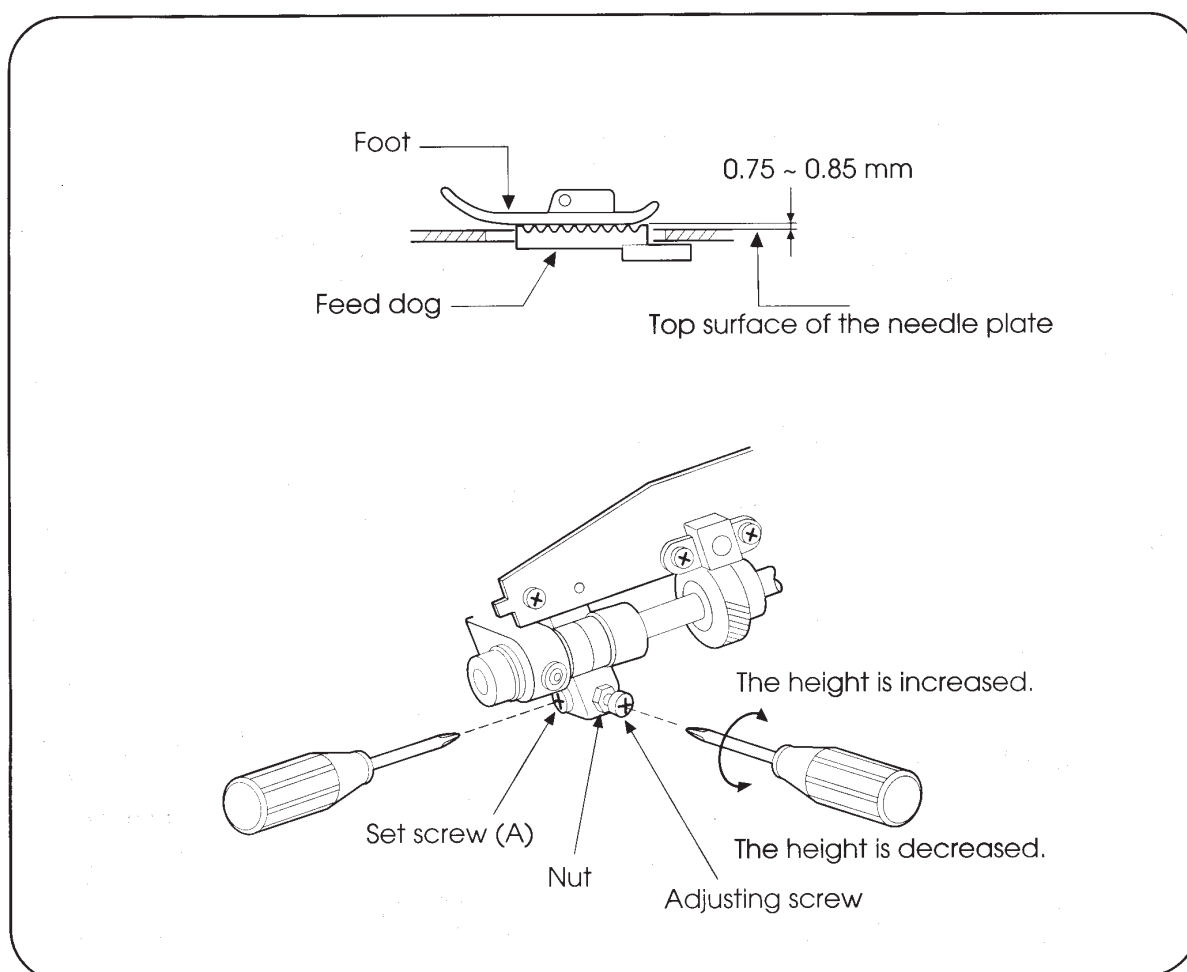
MECHANICAL ADJUSTMENT

FEED DOG HEIGHT

Lower the presser foot and turn the hand wheel toward you until the needle bar comes to the highest point of its travel.

In this condition, the height of the feed dog above the needle plate should be 0.75 to 0.85 mm if not, adjust as follows:

1. Set the stitch length dial at "4", and lower the presser foot.
2. Turn the hand wheel toward you until the feed dog comes to its highest position.
3. Remove the bed cover (see page 3).
4. Loosen set screw (A) and nut.
5. Turn the adjusting screw so that the feed dog height is 0.75 to 0.85 mm above the surface of the needle plate.
6. Tighten nut and screw (A).
7. Attach the bed cover.

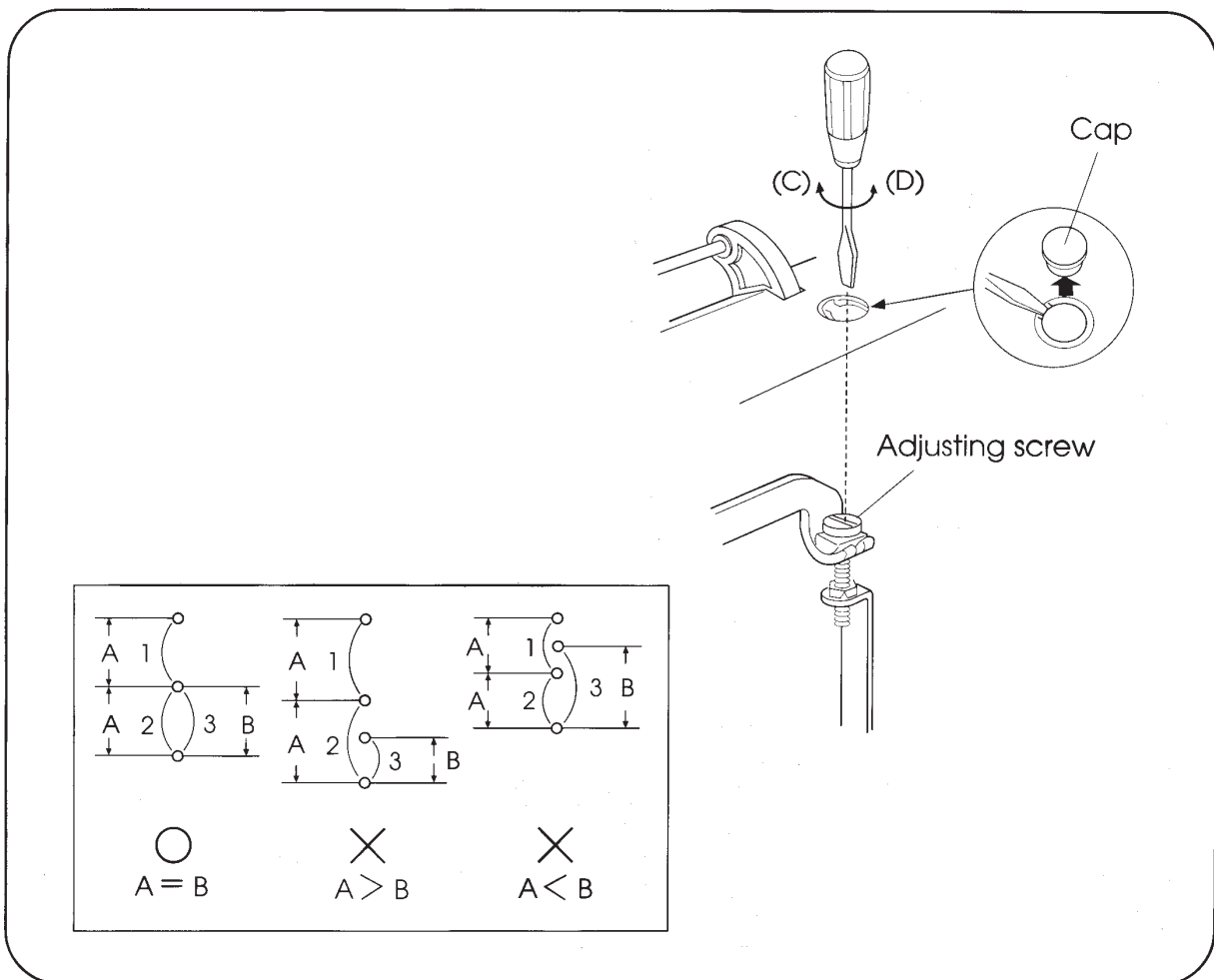


MECHANICAL ADJUSTMENT

STRETCH STITCH BALANCE

When a stretch stitch pattern () is sewn with the feed balancing dial at the standard setting mark "▷", the pattern should be formed as shown in the figure below. If not, (If there is unbalance between forward feeding and reverse feeding) then make an adjustment as follows:

1. Set the pattern selector dial at ().
2. Place a piece of paper under the presser foot and turn the hand wheel toward you to check the forward (A) and backward (B) needle drop positions.
3. Remove the cap.
4. If the reverse stitch length (B) is shorter than the forward stitch length (A), turn the adjusting screw in the direction of (C).
5. If the reverse stitch length (B) is longer than the forward stitch length (A), turn the adjusting screw in the direction of (D).
6. Attach the cap.

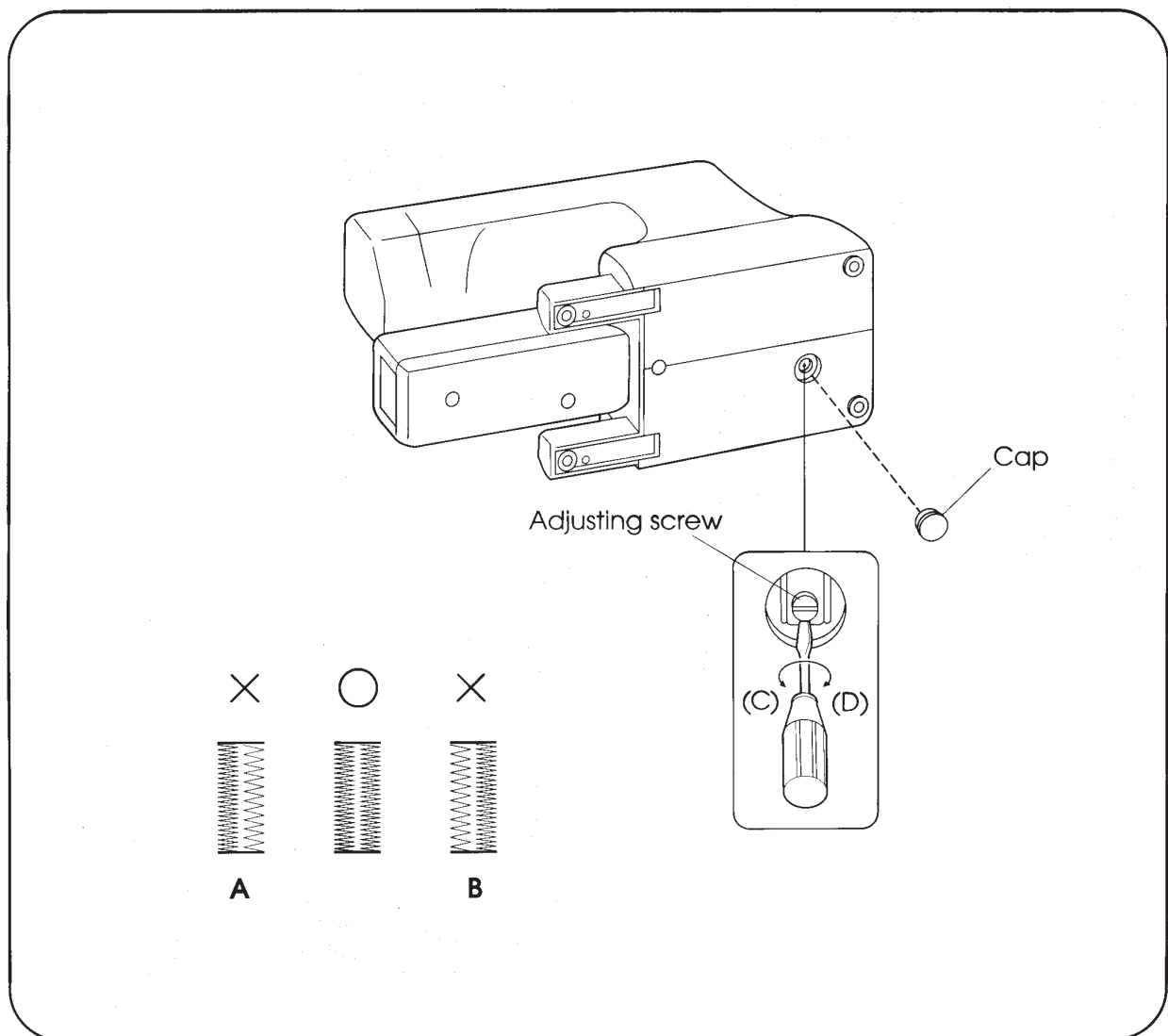


MECHANICAL ADJUSTMENT

BUTTONHOLE STITCH BALANCE

When sewing buttonholes, the stitches on each side of the buttonhole should have the same stitch density. The range of 9 - 11 stitches in the right side row against 10 stitches in the left side row is considered acceptable.

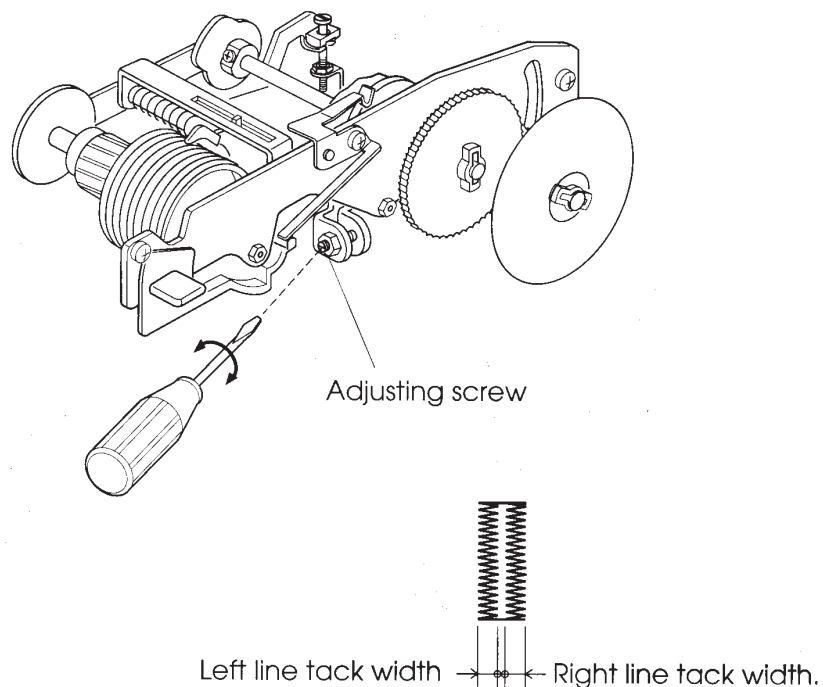
1. Sew a buttonhole and check both right and left row stitch densities.
2. Remove the cap.
3. If the left side row is denser than the right side row (A), turn the adjusting screw counter-clockwise (in the direction of C).
- If the right side row is denser than the left side row (B), turn the adjusting screw clockwise (in the direction of D).
3. Attach the cap.



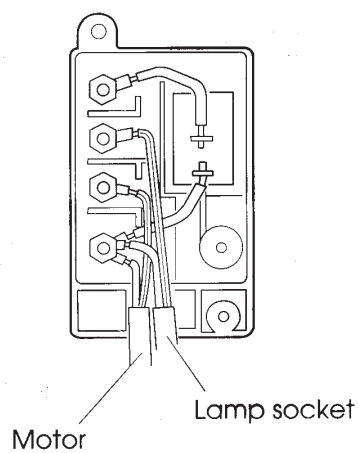
ADJUSTING THE LINE TACK WIDTH AND DISENGAGEMENT CLEARANCE OF CAM FOLLOWER

For the line tack width on buttonhole sewing, both right and left stitch widths should be even. In an uneven setting, the zigzag width claw will touch the cam when the pattern selector is turned.

1. Remove the front cover (see page 4).
2. Adjust the line tack by turning the adjusting screw.
(Adjust the left side of the line tack to make it even with the right side tack.)
3. Attach the front cover.



(110 to 120 V)



(220 to 240 V)

