

SERVICE MANUAL

2030DC, XL601

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What to do when

Condition	Cause	How to fix	Reference
<p>1. Skipping Stitches</p>	<p>1. Needle is not inserted properly.</p> <p>2. Needle is bent or worn.</p> <p>3. Incorrectly threaded.</p> <p>4. Needle or thread are inappropriate for the fabric being sewn.</p> <p>5. Sewing on stretch fabric.</p> <p>6. Inappropriate needle bar height.</p> <p>7. Inappropriate needle to hook timing.</p> <p>8. Inappropriate needle to hook clearance.</p>	<p>Insert the needle properly.</p> <p>Change the needle.</p> <p>Rethread.</p> <p>Use the recommended sewing needle and thread.</p> <p>Use a HA x #11 blue tip needle.</p> <p>See mechanical adjustment "Needle bar height".</p> <p>See mechanical adjustment "Adjustment of hook timing".</p> <p>See mechanical adjustment "Clearance between needle and tip of the rotary hook".</p>	<p>P. 12</p> <p>P. 11</p> <p>P. 13</p>
<p>2. Fabric not moving</p>	<p>1. Incorrect feed dog height.</p> <p>2. Feed dog is in down position.</p> <p>3. Thread on bottom side of fabric is jammed up.</p> <p>4. Feed dog teeth are worn.</p>	<p>Adjust the presser bar level to make the pressure stronger. See mechanical adjustment "Feed dog height".</p> <p>Raise the feed dog.</p> <p>Make sure to bring both needle and bobbin threads under the foot when start sewing.</p> <p>Change the feed dog.</p>	<p>P. 14</p>

Condition	Cause	How to Fix	Reference
3. Breaking upper thread.	<ol style="list-style-type: none"> 1. Initial sewing speed is too fast. 2. Thread path is incorrect. 3. Needle is bent or dull. 4. Top tension is too strong. 5. Needle size is inappropriate for fabric. 6. Needle eye is worn. 7. Needle hole in needle plate is worn or burred. 	<p>Start with medium speed.</p> <p>Use the proper thread path.</p> <p>Replace with a new needle.</p> <p>Adjust top tension correctly.</p> <p>Use appropriate needle for fabric and thread in use.</p> <p>Change the needle.</p> <p>Repair the hole or replace the needle plate.</p>	
4. Breaking bobbin thread.	<ol style="list-style-type: none"> 1. Bobbin holder is incorrectly threaded. 2. Too much thread is wound on the bobbin. 3. Lint is stuck inside the bobbin holder. 4. Thread quality is too low. 5. Thread is jamming around the bobbin holder. 	<p>Set the bobbin thread correctly.</p> <p>Adjust the position of bobbin winder stopper.</p> <p>Clean the bobbin holder.</p> <p>Change to a high quality sewing thread.</p> <p>Clear out the jamming thread.</p>	
5. Needle breakes	<ol style="list-style-type: none"> 1. Needle is hitting the needle plate. 2. Needle is bent or worn. 3. Needle is hitting the hook. 4. Fabric is being pulled too strongly while sewing. 	<p>See mechanical adjustment "Needle drop position".</p> <p>Change the needle.</p> <p>See mechanical adjustment "Clearance between needle and tiip of the rotary hook".</p> <p>Guide the fabric gently while sewing.</p>	<p>P. 10</p> <p>P. 13</p>

Condition	Cause	How to fix	Reference
6. Noisy operation	1. Backlash between hook gear and lower shaft gear is too great. 2. Lower shaft gear is loose. 3. Inappropriate belt tension. 4. Not enough oil. 5. Upper shaft gear is loose.	Eliminate the backlash. Eliminate the looseness. See part removal and replacement "driving motor (DC motor)". Oil all moving parts. Eliminate the looseness.	P. 25
7. Deformation pattern	1. Inappropriate feed balance. 2. Top tension is too strong.	Adjust the feed balancing screw. See mechanical adjustment "Top tension".	P. 16

Changing External Parts

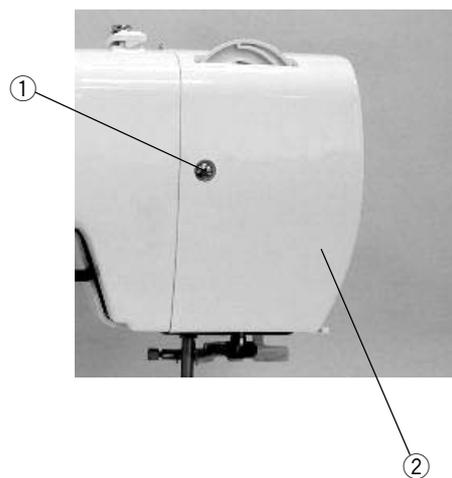
Face cover

To remove:

1. Loosen the setscrew ① and lift the face cover to disengage the rib on the inside. Remove the face cover ②.

To attach:

2. Follow the above procedures in reverse.



Changing External Parts

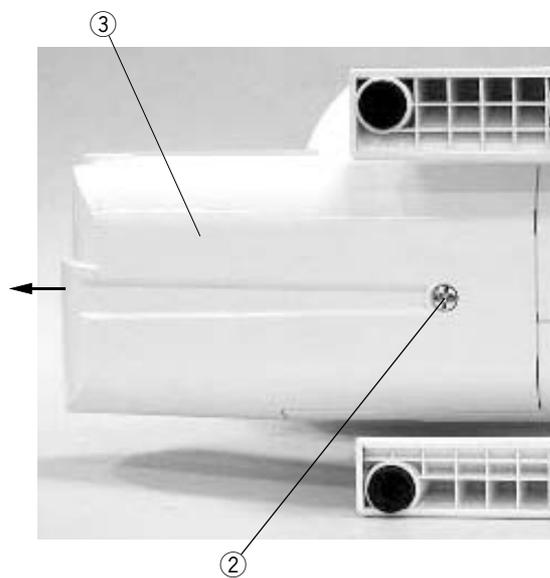
Free-arm cover

To remove:

1. Loosen the setscrew ① and ②. Move the free-arm cover to the left. Remove the free-arm cover.

To attach:

Follow the above procedures in reverse.



Changing External Parts

Front cover (1)

To remove:

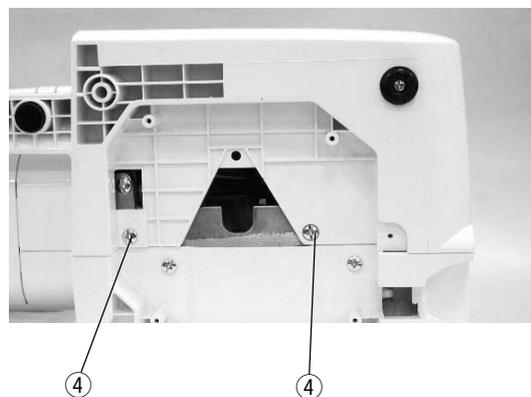
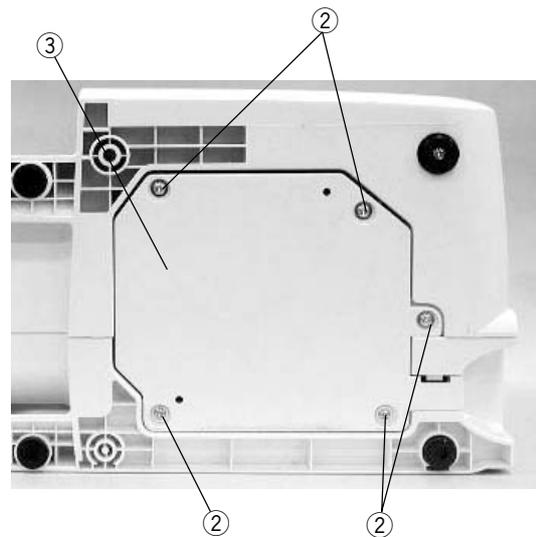
1. Remove the face cover and free-arm cover (See page 4 and 5).
2. Remove the setscrews (A) ① (2 pcs.).
3. Remove the setscrews (B) ② (5 pcs.), back cover ③.
4. Remove the setscrews (C) ④ (2 pcs.).
5. Disconnect all the connectors from the circuit board A.

NOTE:

Do not disconnect the connectors by pulling on cord.
To disconnect, grasp the connector, not the cord.

To attach:

6. Follow the above procedures in reverse.



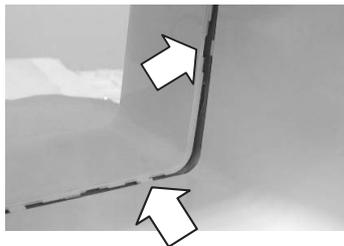
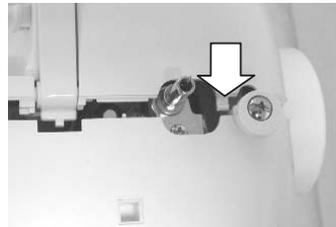
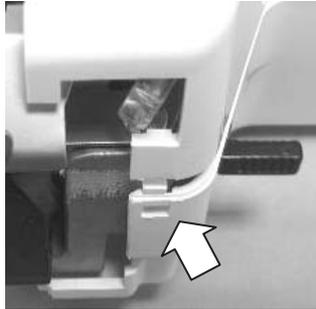
Changing External Parts

Front cover (2)

4. Disengage the front cover and rear cover hooks.
5. Remove the front cover.

To attach:

Follow the above procedures in reverse.



Changing External Parts

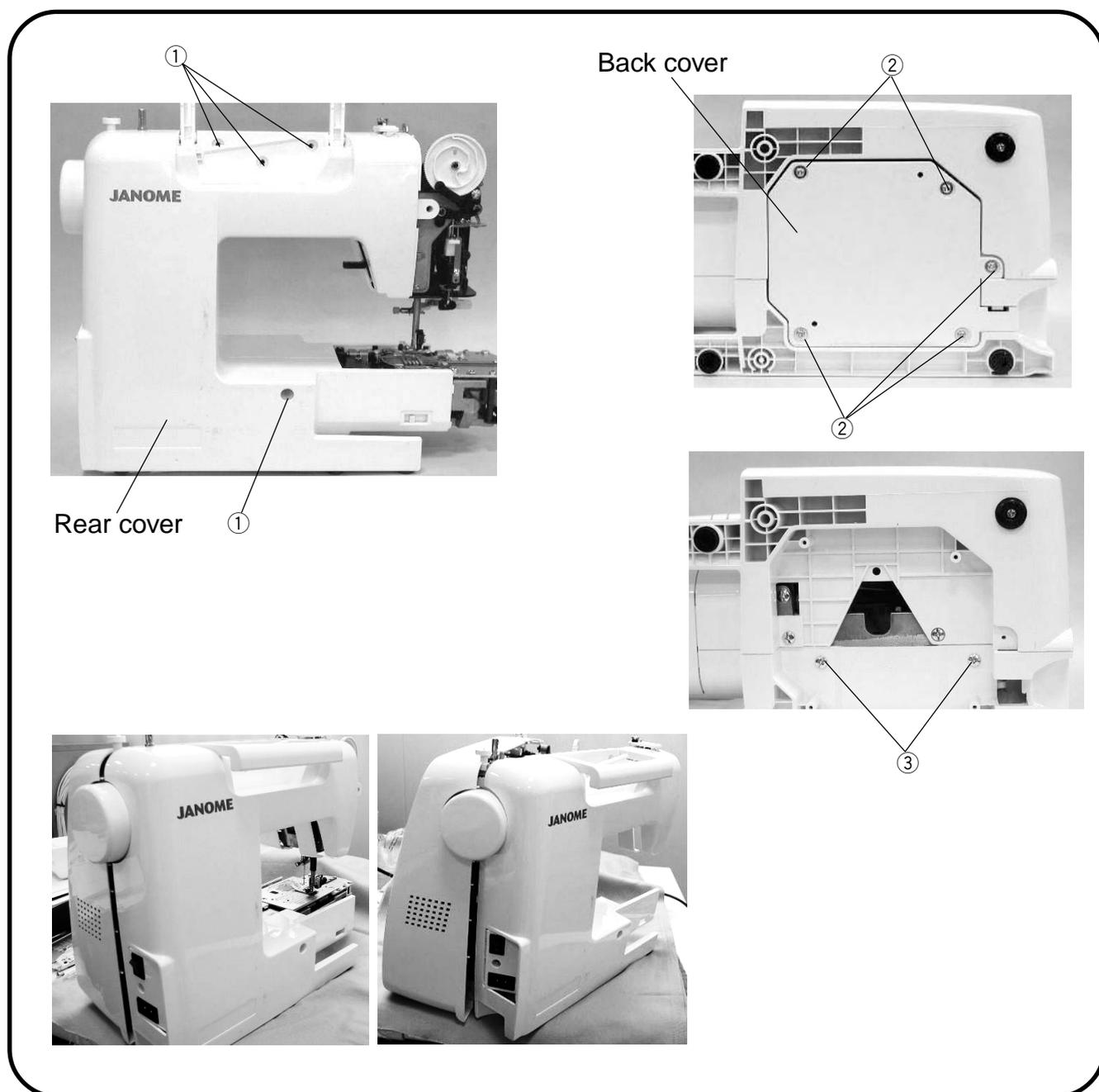
Rear cover

To remove:

1. Remove the face cover and free-arm cover (See page 4 and 5).
2. Remove the setscrews (A) ① (4 pcs.).
3. Remove the setscrews (B) ② (5 pcs.) and back cover.
4. Remove the setscrews (C) ③ (2 pcs.). Remove the rear cover.

To attach:

5. Follow the above procedures in reverse.



Mechanical Adjustment

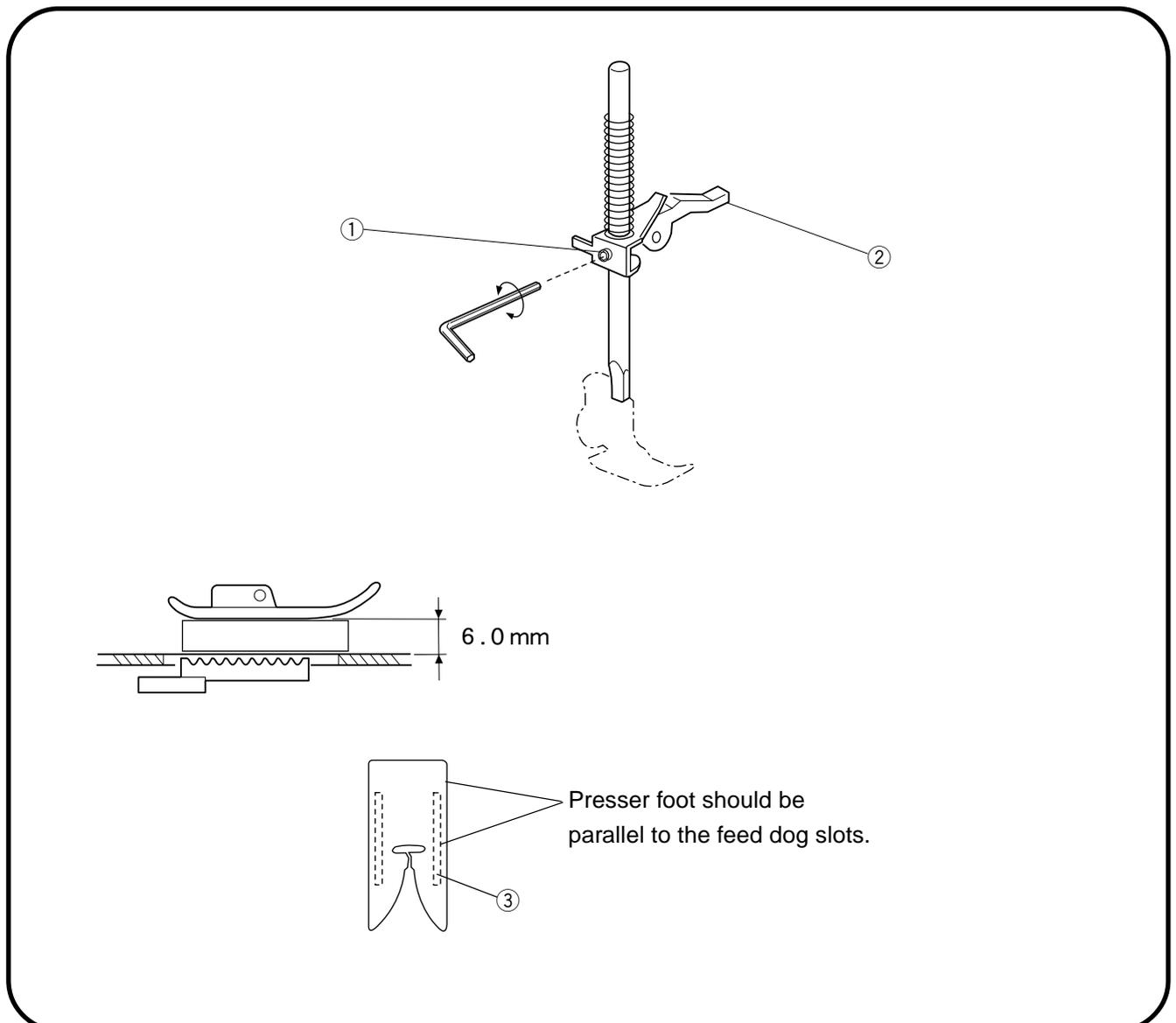
Presser bar height

The distance between the bottom of the presser foot in up position and the needle plate should be 6.0 mm.

1. Remove the face plate and needle.
2. Lower the feed dog below the needle plate. Place a block 6 mm thick under the presser foot and lower the presser foot lifter ②.
3. Loosen the setscrew ①. Raise the presser foot lifter and tighten the setscrew ① firmly.
Attach the needle and face plate.

NOTE:

Make sure that the presser foot should be parallel to the feed dog slots in the needle plate.



Mechanical Adjustment

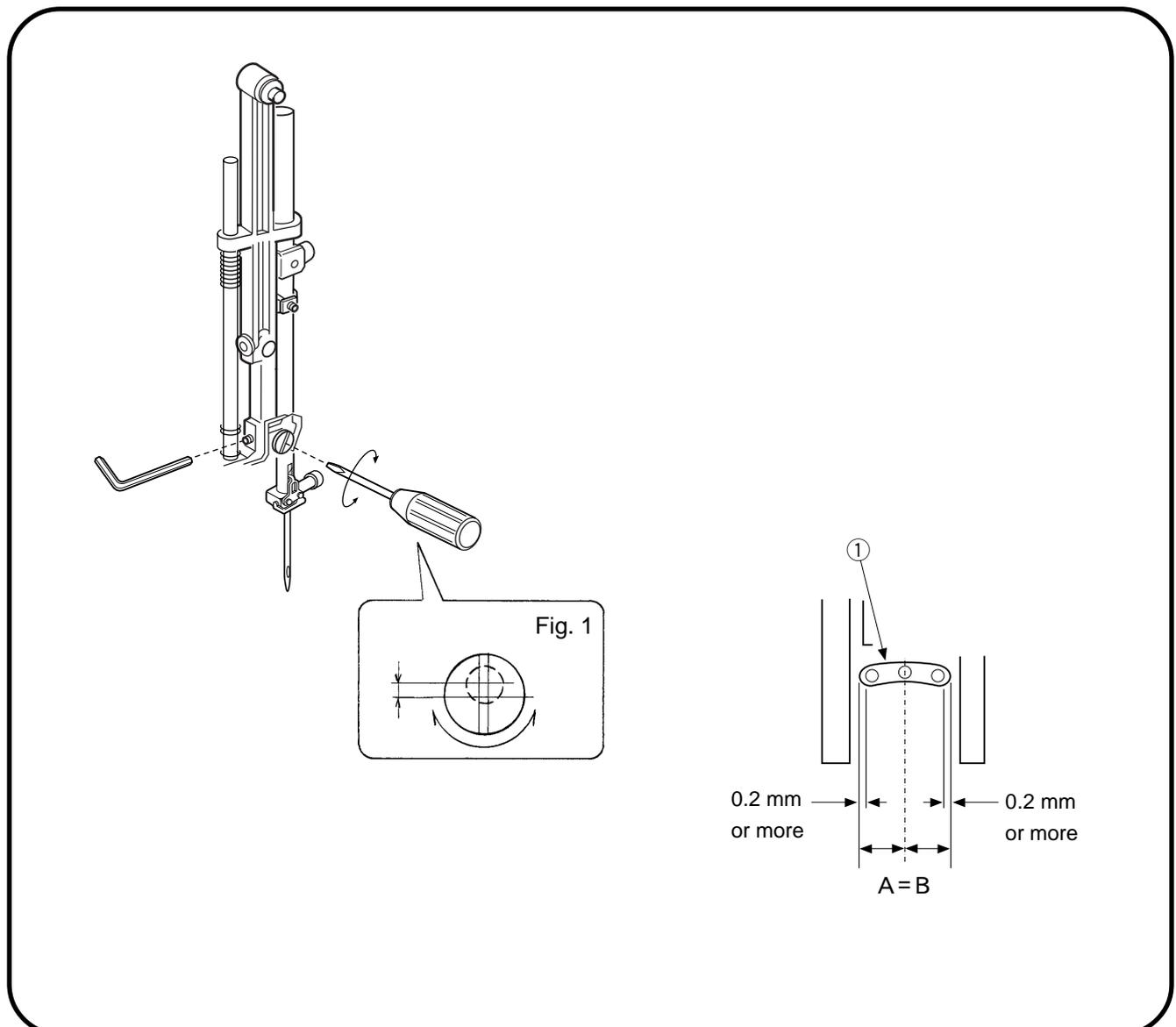
Needle drop position

Set the stitch pattern to “ \oplus ”. The standard needle drop position should be at center of the needle plate hole ①. Select zigzag stitch “ \approx ”, and set the stitch width at “5.0”. The clearance between the needle and the edge of the needle hole in the needle plate should be at least 0.2 mm on either side. If not, adjust as follows:

1. Turn the power switch off. Remove the face cover. (See page 4.)
2. Loosen the hexagonal socket screw 3 x 4 ②. Adjust the needle drop position by turning the eccentric pin ③. The direction of eccentric pin should be as shown in Fig. 1.
3. Attach the face cover.

NOTE:

Check the hook timing after this adjustment.



Mechanical Adjustment

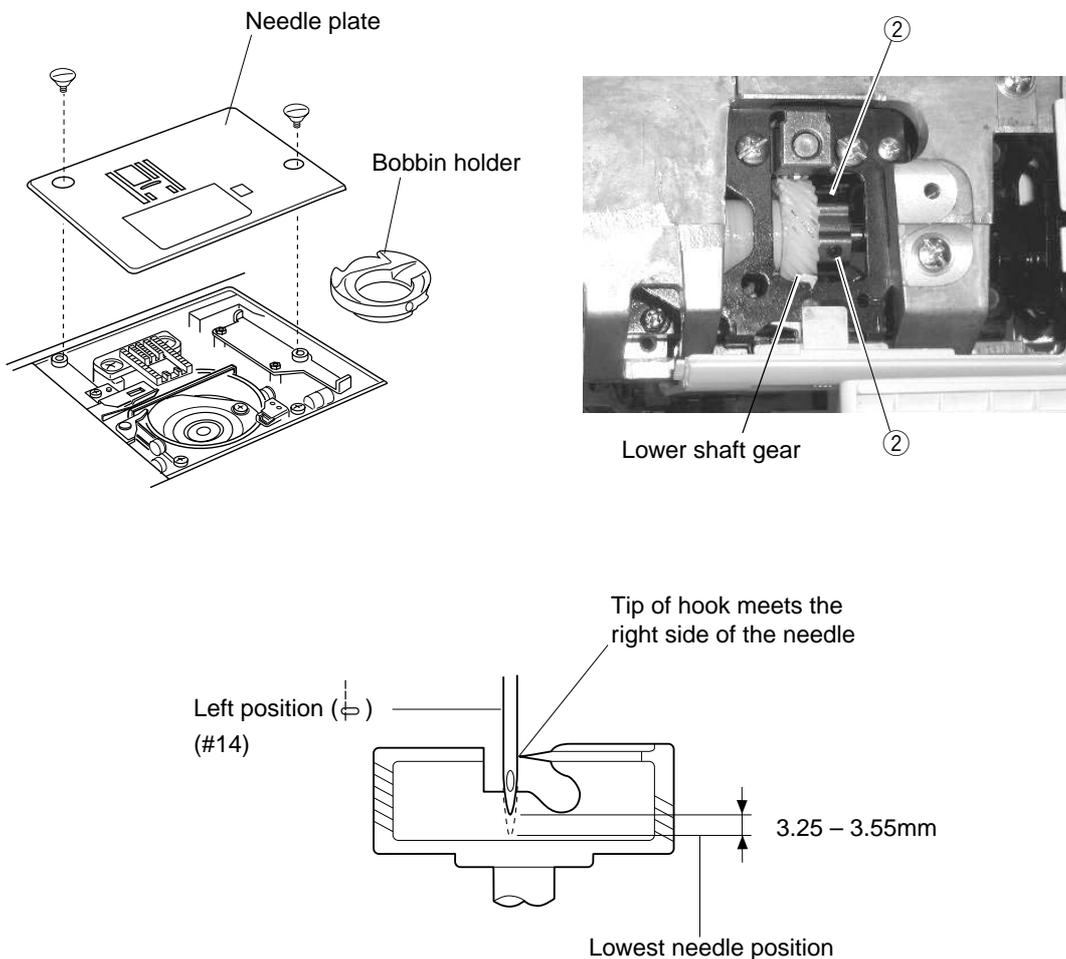
Adjustment of hook timing

The amount of ascending travel of the needle bar from its lowest position to the position () where the tip of the rotary hook exactly meets the right side of the needle should be 3.25 to 3.55 mm.

1. Remove the needle plate and bobbin holder.
2. Turn the power switch on.
3. Select the pattern  (left position). Set the zigzag width at 0.
4. Remove the free-arm cover.

Turn the handwheel toward you to lower the needle at its lowest position.

5. Loosen the hexagonal socket screw ② (2 pcs.).
6. Move the needle bar 3.4 mm from the lowest position.
7. Turn the lower shaft gear until the tip of hook meets the right side of the needle while holding the handwheel.
8. Tighten the hexagonal socket screw ② (2 pcs.).
9. Attach the free-arm cover, bobbin holder and needle plate.

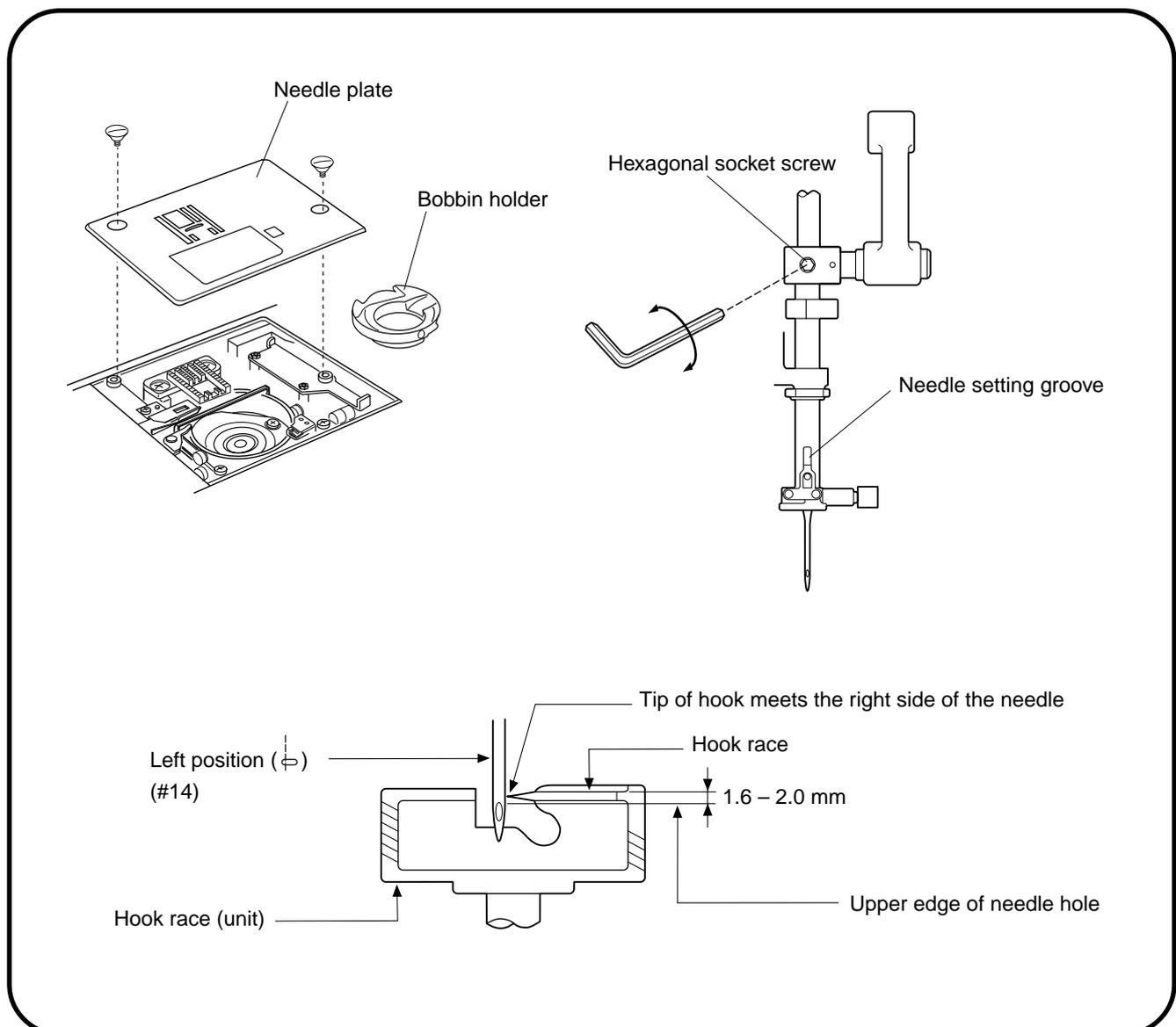


Mechanical Adjustment

Adjustment of needle bar height

Before proceeding with this adjustment, check the hook timing (refer to page 11). The distance between the upper edge of the needle eye and the tip of the hook should be in the range of 1.6 to 2.0 mm when the tip of the hook timing meets right side of the needle in the left needle position (\leftarrow) as the needle ascends from its lowest position.

1. Remove the needle plate, bobbin holder and face plate.
2. Turn the power switch on.
3. Select the pattern \leftarrow (left position). Set the zigzag width at 0.
4. Turn the handwheel toward you until the tip of hook meets the right side of the needle.
5. Loosen the hexagonal socket screw ①.
6. Move the needle bar to adjust the needle bar height, and tighten the hexagonal socket screw ①.
Be careful not to turn the needle bar.
7. Attach the bobbin holder, needle plate and face cover.



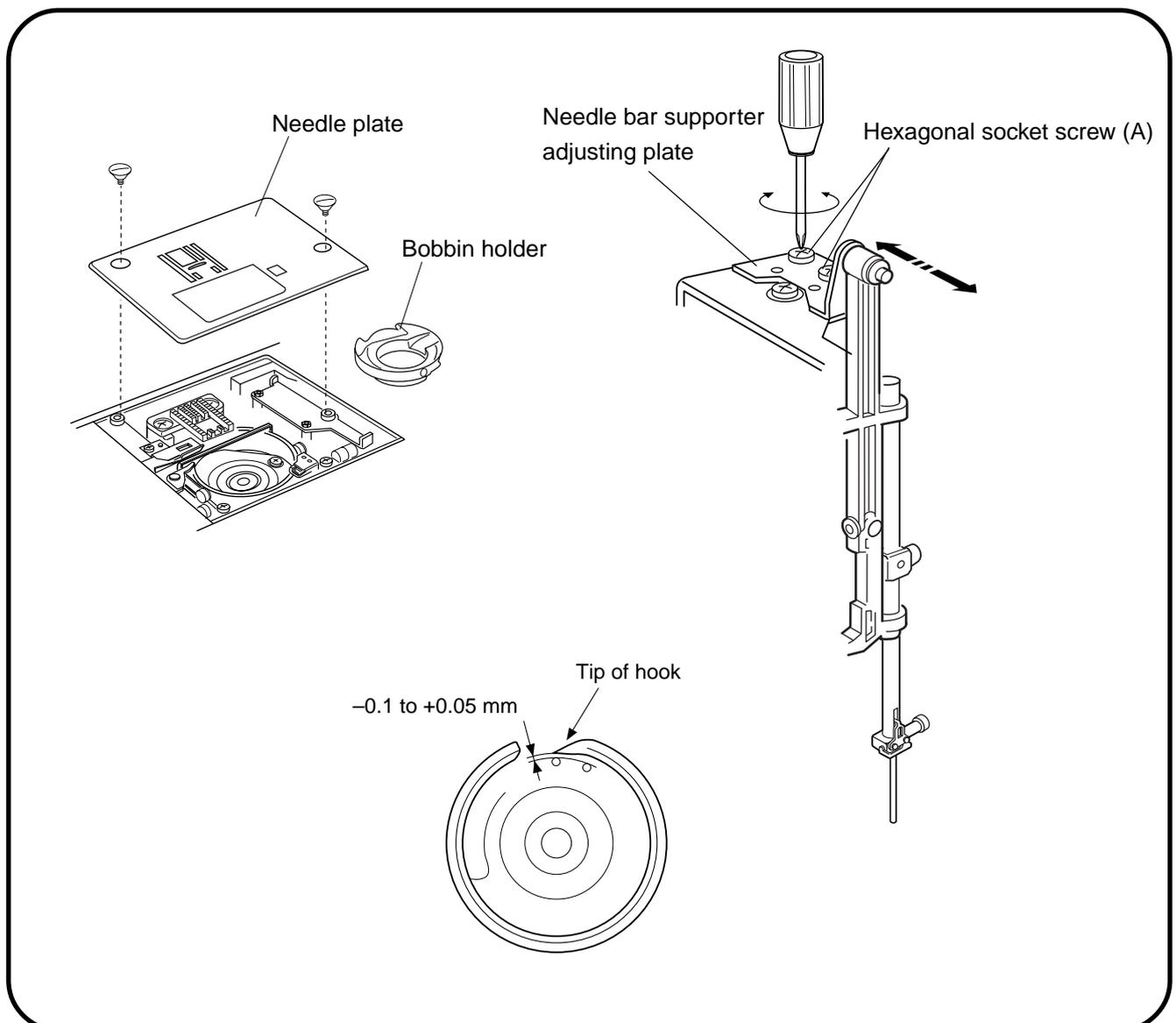
Mechanical Adjustment

Clearance between needle and tip of the rotary hook

* The clearance between the needle and the point of hook should be -0.1 to $+0.05$ mm.

Adjustment procedure:

1. Remove the needle plate and bobbin holder. Attach the master needle. Turn the power switch on and set the zigzag width at maximum.
2. Remove the face cover.
3. Loosen the setscrew A (2 pcs.).
4. Turn the handwheel toward you. Adjust the clearance between the needle and the tip of the rotary hook, by moving the hook base plate up or down, to within -0.1 to $+0.05$ mm at the left and right needle position.
5. Tighten the setscrew A (2 pcs.).
6. Attach the face cover. Remove the master needle. Attach the bobbin holder and needle plate.
7. Check the clearance between the needle and the edge of the needle hole in the needle plate (see page 10).

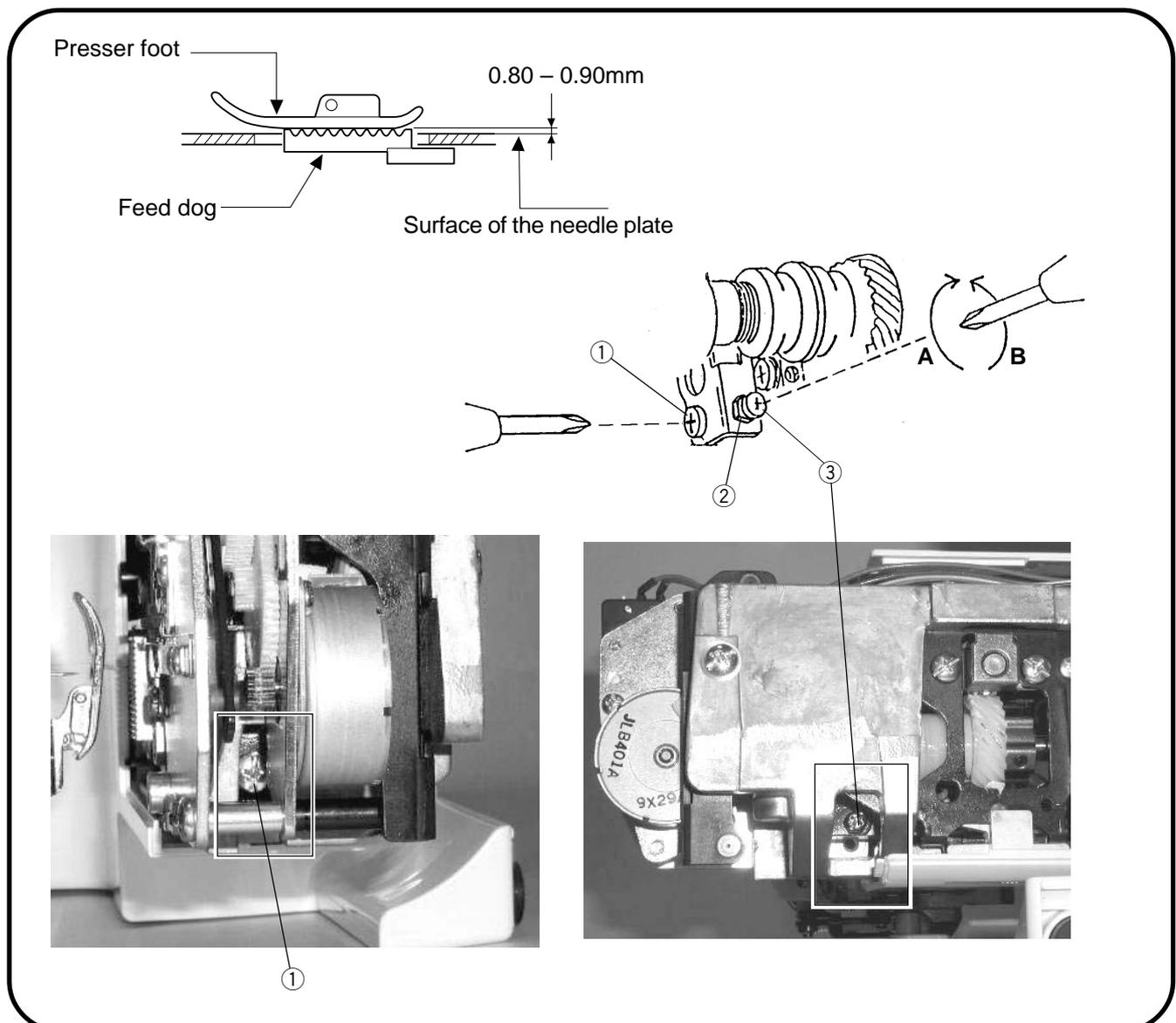


Mechanical Adjustment

Feed dog height

The highest position of the feed dog should be between 0.80 and 0.90 mm from the surface of the needle plate.

1. Lower the presser foot and turn the power switch on.
2. Turn the handwheel toward you to set the feed dog at the highest position.
3. Remove the free-arm cover.
4. Loosen the setscrew (A) ① and nut ②.
5. Adjust the feed dog height by turning the adjusting screw ③. The highest position of the feed dog should be between 0.80 and 0.90 from the surface of the needle plate.
6. Tighten the nut ② and setscrew (A) ①.
7. Attach the free-arm cover.

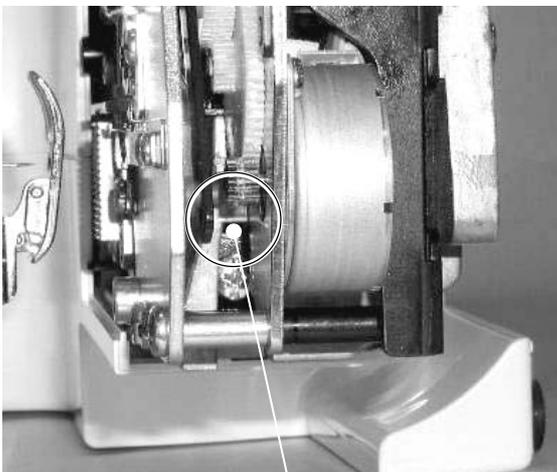
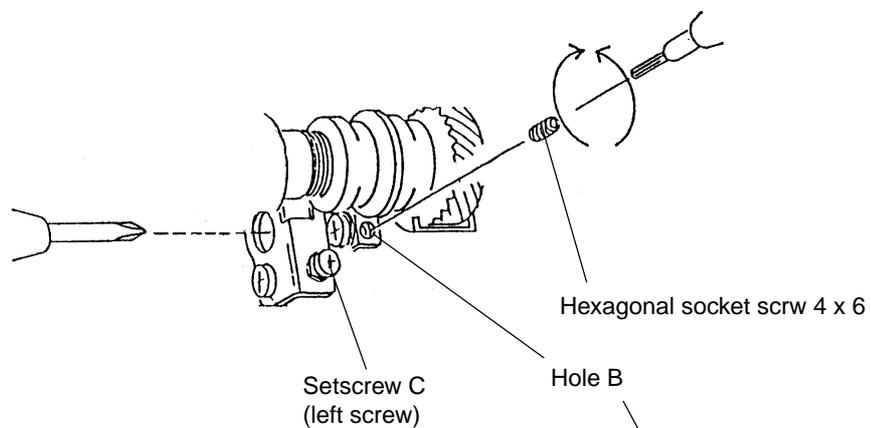


Mechanical Adjustment

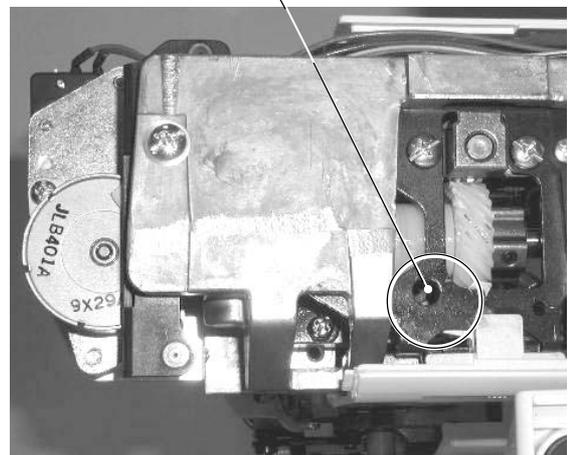
Feed dog adjustment (Only for model 3160QDC)

The highest position of the feed dog should be parallel to the surface of the needle plate. If not, adjust as follows.

1. Use a hexagonal socket screw (4 x 6).
Insert the screw to the hole B. Tighten the hexagonal socket screw as far as it goes.
2. Loosen the setscrew C.(left screw)
3. Turn hexagonal socket screw to adjust the feed dog (should be parallel to the surface of the needle plate).
4. Tighten the setscrew C.(left screw)
5. Loosen the hexagonal socket screw and remove it.



Setscrew C



Mechanical Adjustment

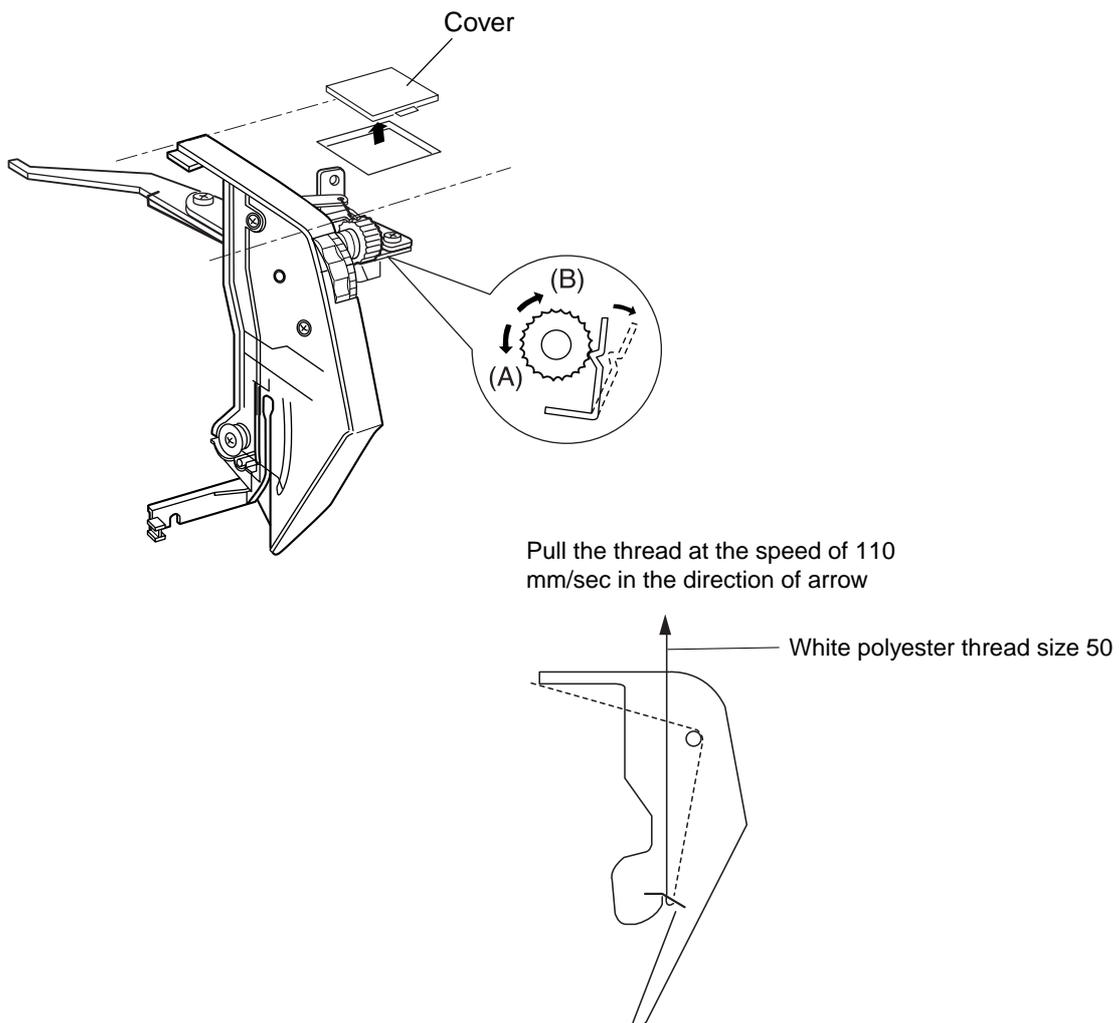
Top tension

The top tension should be between 65 and 80g when pulling the thread ① up in the direction of C.

* Use polyester sewing thread #50 (White).

* If it is not within the above limit, adjust as follows.

1. Set the tension dial "Auto".
2. Remove the cover.
3. Lower the presser foot.
 - If the top tension is too loose, turn the lead screw in the direction (A).
 - If the top tension is too tight, turn the lead screw in the direction (B).
4. Check the top tension and attach the cover.



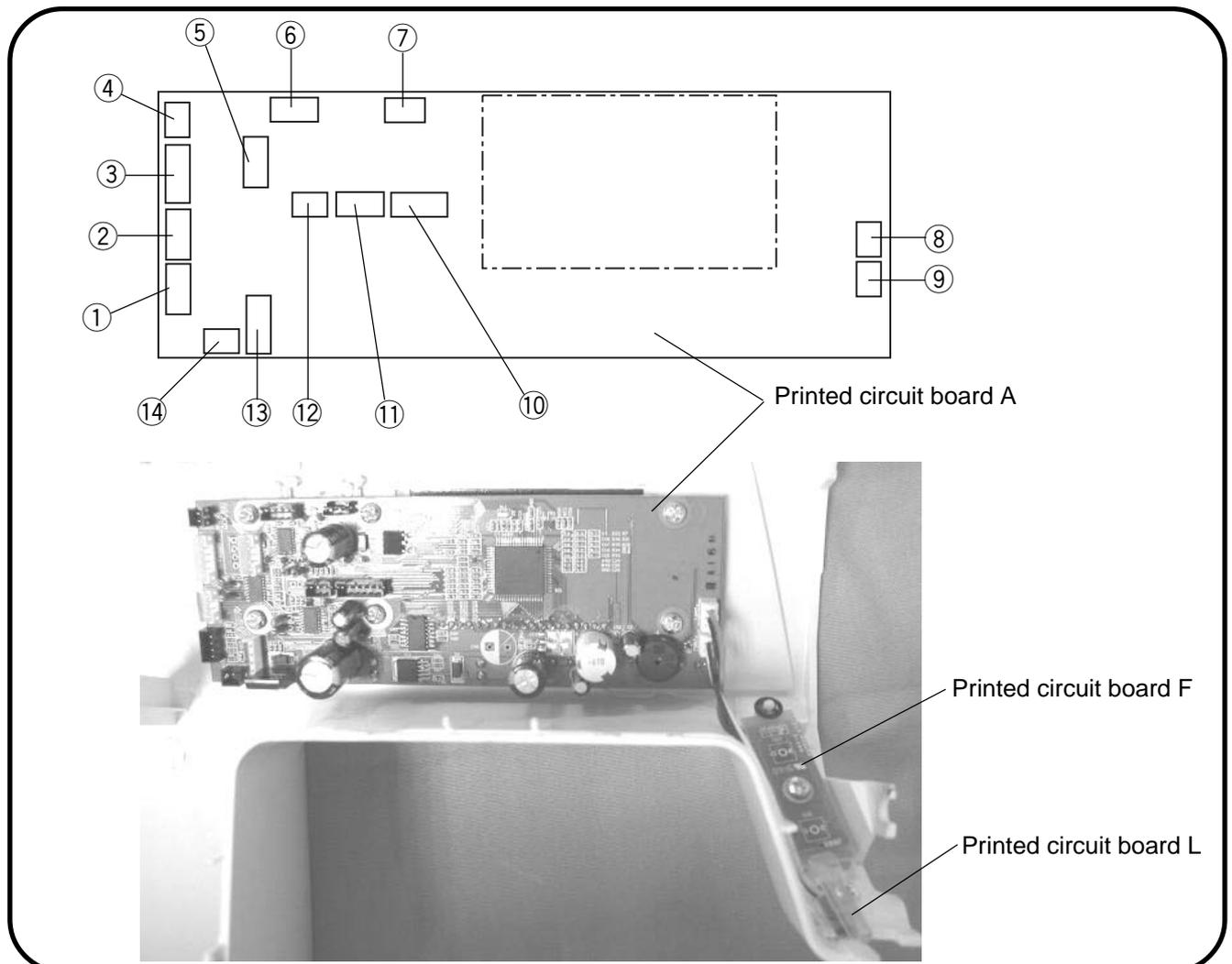
Replacing the Electronic Components

Circuit board-A Connection

NOTE:

Do not disconnect the connectors by pulling on cord.
To disconnect, grasp the connector, not the cord.

- | | | |
|---|-----------------------------------|--------------------------------------|
| ① Printed circuit board P (Black) | ⑥ Zigzag width motor (Green) | ⑪ Buttonhole sensor program (Red) |
| ② Feed motor (White) | ⑦ Solenoid | ⑫ Presser foot lifter switch (Green) |
| ③ Thread cutter motor (3160QDC exclusive) (White) | ⑧ Printed circuit board F (White) | ⑬ DC motor (White) |
| ④ Bobbin winding switch (Blue) | ⑨ Printed circuit board L (White) | ⑭ Controller (Black) |
| ⑤ Power switch (White) | ⑩ Program (Red) | |



Self-diagnostic Test

Preparation:

1. Turn the power switch off.
2. Move the bobbin winder spindle to the left.
3. Raise the feed dog.
4. Set the speed control lever to the left.
5. Remove the presser foot and raise the presser foot lifter.
6. Turn the hand wheel toward you to raise the needle to its highest position.

Notes:

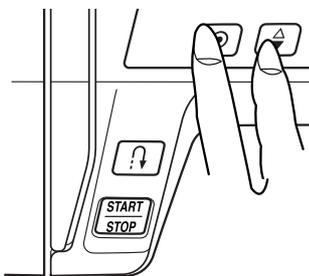
- Be careful: the sewing machine may start running in its own while in test mode.
- Turn off the power switch before replacing any parts.
- Repeat the diagnostic test until the problem has been resolved.
- You can skip steps in the diagnostic procedure and go directly to the test you want to perform.
(Enter self-diagnostic mode, then select the step number of the diagnostic test you require by pressing the start/stop button)

To begin:

Turn on the switch, if any of the following problems occur, take the recommended actions in the order they are shown.

1. The machine does not respond when the power switch is turned on:
 - Check each connector connection
 - Replace the machine socket
 - Replace the Switching regulator.
 - Replace the A-board
2. The sewing machine lamp does not light up:
 - Replace the light bulb
 - Replace the A-board

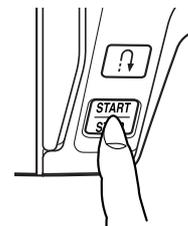
To enter self-diagnostic mode:



Turn the power switch on while simultaneously pressing needle up/down button and the locking stitch button.

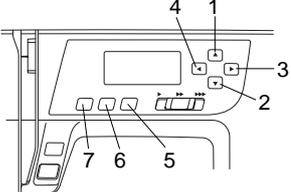
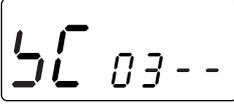
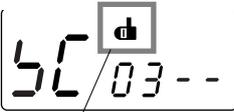


The LCD display will indicate "01".

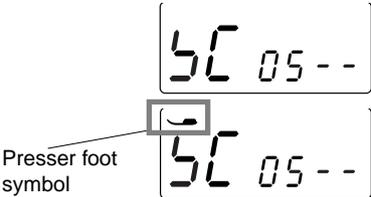
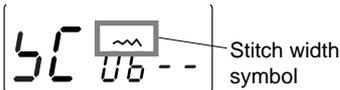
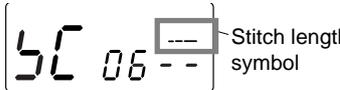
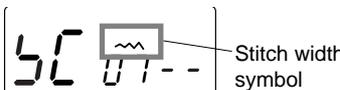
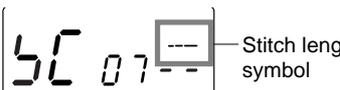


Press the start/stop button to enter the self-diagnostic mode.

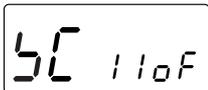
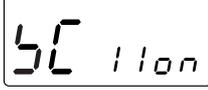
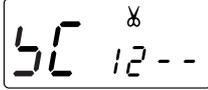
Self-diagnostic Test

Step and items to check	Procedure	Correct Condition	Defective Condition
01) Function of LCD, buzzer and lamp	Turn on the power switch while simultaneously pressing the start/stop button and locking stitch button. Press the start/stop button. If the result is correct condition, press the start/stop button to proceed the next step. If the result is defective condition, press the reverse stitch button to proceed the next step.	Sewing lamp and LCD backlight lits. LCD displays "01".  Buzzer sounds. LCD displays symbols and numbers in order. LCD repeats displaying after all symbols and numbers are shown. 	Sewing lamp does not lit. LCD backlight does not lit. LCD does not display "01". Buzzer does not sound. LCD does not turned on. LCD does not display any symbols or not in order. –REMEDY– Replace the circuit board A.
02) Button	Press buttons 1– 7.  If the result is correct condition, press the start/stop button to proceed the next step. If the result is defective condition, press the reverse stitch button to proceed the next step.	LCD displays "SC 02". Buzzer sounds when button is pressed. Button number is displayed when the button is pressed.   LCD displays "S3" when button 1 is pressed. LCD displays "S4" when button 2 is pressed. LCD displays "S5" when button 3 is pressed. LCD displays "S6" when button 4 is pressed. LCD displays "S7" when button 5 is pressed. LCD displays "S8" when button 6 is pressed. LCD displays "S9" when button 7 is pressed.	Buzzer does not sound. LCD does not display the number correctly. –REMEDY– Replace the circuit board A. Replace the circuit board F.
03) Buttonhole Sensor	Lower the buttonhole lever. Move the buttonhole lever back and forth. If the result is correct condition, press the start/stop button to proceed the next step. If the result is defective condition, press the reverse stitch button to proceed the next step.	LCD displays "SC 03". When the buttonhole lever is pulled, buzzer sounds and LCD displays BH symbol. When the buttonhole lever is pushed, buzzer sounds and LCD displays BH symbol.   BH symbol	Buzzer does not sound. BH symbol does not appear. –REMEDY– Replace the circuit board A. Replace the circuit board F.
04) Bobbin winder switch	Move the bobbin winder spindle to the right. Return it to the left. If the result is correct condition, press the start/stop button to proceed the next step. If the result is defective condition, press the reverse stitch button to proceed the next step.	LCD displays "SC 04". When the bobbin winder spindle is moved to the left, buzzer sounds. When the bobbin winder spindle is moved to the right, buzzer sounds and LCD displays the bobbin symbol.   Bobbin symbol	Buzzer does not sound. Bobbin symbol is not displayed. –REMEDY– Replace the circuit board A. Replace the circuit board F.

Self-diagnostic Test

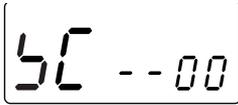
Step and items to check	Procedure	Correct Condition	Defective Condition
<p>05) Presser foot lifter switch</p>	<p>Raise or lower the presser foot lifter.</p> <p>If the result is correct condition, press the start/stop button to proceed the next step.</p> <p>If the result is defective condition, press the reverse stitch button to proceed the next step.</p>	<p>LCD displays "SC 05".</p> <p>Buzzer sounds when presser foot lifter is raised or lowered.</p> <p>The presser foot symbol appears when the foot lifter is lowered.</p> 	<p>Buzzer does not sound.</p> <p>The presser foot symbol does not appear when the presser foot is lowered, or does not disappear when the presser foot is raised.</p> <p>–REMEDY– Replace the circuit board A. Replace the presser foot lifter switch. Adjust the presser foot lifter switch position.</p>
<p>06) Upper shaft positioning sensor</p>	<p>Turn the handwheel toward you.</p> <p>Lower the needle bar from its highest to its lowest position.</p> <p>Raise the needle bar from its lowest position to its highest position.</p> <p>If the result is correct condition, press the start/stop button to proceed the next step.</p> <p>If the result is defective condition, press the reverse stitch button to proceed the next step.</p>	<p>LCD displays "SC 06".</p>  <p>Turn the handwheel.</p> <p>LCD displays stitch width symbol when the needle bar is at zigzag phase.</p>  <p>LCD displays stitch length symbol when the needle bar is at feed phase.</p> 	<p>Buzzer does not sound.</p> <p>Stitch width or length symbol does not appear.</p> <p>–REMEDY– Replace the circuit board A. Replace the circuit board P.</p>
<p>07) Zigzag motor (Step motor) Feed motor</p>	<p>Turn the handwheel toward you.</p> <p>Lower the needle bar from its highest to its lowest position.</p> <p>Raise the needle bar from its lowest position to its highest position.</p> <p>If the result is correct condition, press the start/stop button to proceed the next step.</p> <p>If the result is defective condition, press the reverse stitch button to proceed the next step.</p>	<p>LCD displays "SC 07".</p>  <p>LCD displays stitch width symbol when the needle bar is at middle position. (Zigzag motor get default position.)</p>  <p>LCD displays stitch length symbol when feed motor gets default position.</p>  <p>Bobbin symbol</p>	<p>Zigzag motor does not get default position.</p> <p>–REMEDY– Replace the zigzag motor. Replace the circuit board A.</p> <p>Feed motor does not get default position.</p> <p>–REMEDY– Replace the feed motor. Replace the circuit board A.</p>

Self-diagnostic Test

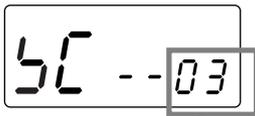
Step and items to check	Procedure	Correct Condition	Defective Condition
08) Foot control	<p>Attach the foot control to the sewing machine. Depress the foot control as far as it goes, then release it.</p> <p>If the result is correct condition, press the start/stop button to proceed the next step.</p> <p>If the result is defective condition, press the reverse stitch button to proceed the next step.</p>	<p>LCD displays "SC 08".</p>  <p>The foot control symbol appears when the foot control is attached.</p>  <p>Buzzer sounds when the foot control is deeply depressed. Buzzer sounds when the foot control is released.</p>	<p>The foot control symbol does not appear. Buzzer does not sound.</p> <p>–REMEDY– Replace the foot control. Replace the machine socket. Replace the circuit board A.</p>
09) Slide volume	<p>Shift the slide volume from left to right, then return to the left.</p> <p>If the result is correct condition, press the start/stop button to proceed the next step.</p> <p>If the result is defective condition, press the reverse stitch button to proceed the next step.</p>	<p>LCD displays "SC 09".</p>  <p>Buzzer sounds at right or left position.</p>	<p>Buzzer does not sound.</p> <p>–REMEDY– Replace the circuit board A.</p>
10) DC motor	<p>Press the needle up/down button.</p> <p>If the result is correct condition, press the start/stop button to proceed the next step.</p> <p>If the result is defective condition, press the reverse stitch button to proceed the next step.</p>	<p>LCD displays "SC 10".</p>  <p>Machine runs slow, then fast, and the needle bar stops at its highest position.</p>	<p>The machine motor does not start. The motor stops immediately. The motor runs unstable.</p> <p>–REMEDY– Replace the DC motor. Replace the circuit board A.</p>
11) Solenoid (Applicable for only model 3160QDC)	<p>Lower the presser foot. Press the needle up/down button.</p> <p>If the result is correct condition, press the start/stop button to proceed the next step.</p> <p>If the result is defective condition, press the reverse stitch button to proceed the next step.</p>	<p>LCD displays "SC 11".</p> <p>Press the needle up/down position button to display "on" or "of"(off). Thread tension disc opens while the LCD displays "on".</p>  	<p>The thread tension disc does not open.</p> <p>–REMEDY– Replace the solenoid Replace the circuit board A.</p>
12) Thread cutter motor, Thread cutter button (Applicable for only model 3160QDC)	<p>Turn the handwheel toward you to raise the needle bar at its highest position. Press the needle up/down button.</p> <p>If the result is correct condition, press the start/stop button to proceed the next step.</p> <p>If the result is defective condition, press the reverse stitch button to proceed the next step.</p>	<p>LCD display "12". Thread cutter motor will be initialized. Press the thread cutter button. The thread cutter icon will appear and blink as long as the thread cutter button is pressed.</p> 	<p>The thread cutter motor does not work. Thread cutter symbol does not appear when the thread cutter button is pressed. Thread cutter symbol appears when the thread cutter button is not pressed.</p> <p>–REMEDY– Replace the thread cutter motor. Replace the thread cutter switch. Replace the circuit board A.</p>

Self-diagnostic Test

Buzzer sounds after few seconds when the self-diagnostic test has been finished. The test result has been determined.



Correct:
Buzzer sounds and LCD displays "00"



Defective:
Caution buzzer sounds and LCD displays the defective part number. Refer to page 19-21 and fix the defective part.

The defective part number. See page 19-21 "Steps and items" section.

Turn the power switch off when the self-diagnostic test is finished.

To display the version of the program

Turn the power switch on while simultaneously pressing needle up/down button and the locking stitch button.

The LCD display will indicate "01".

Press the cursor button "▲" twice to display the "03".

Press the start/stop button to display the version of the program.

Replacing the Electronic Components

Circuit board-A (1)

To remove:

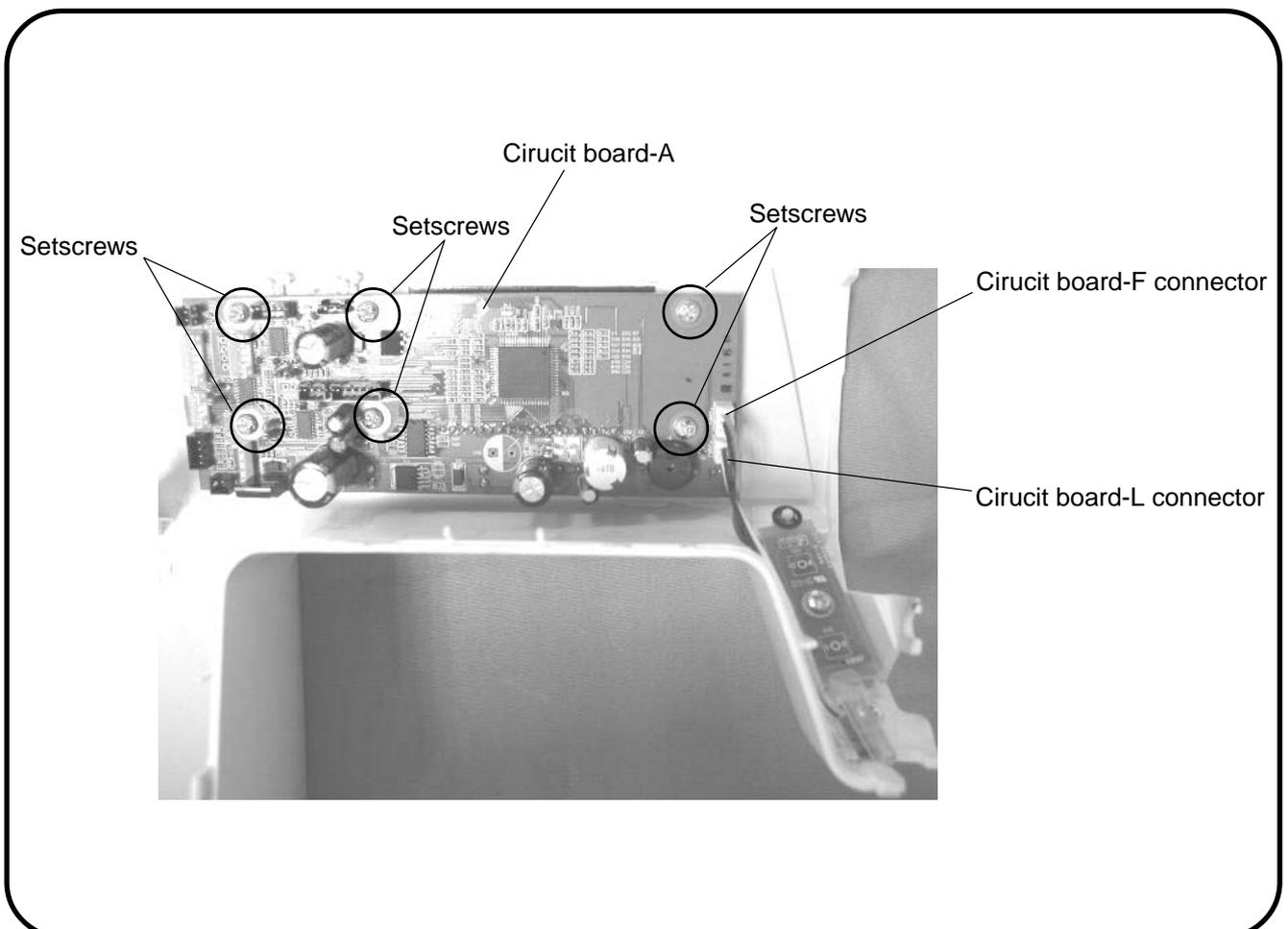
1. Remove the front cover. (See pages 6 – 7)
2. Pull out connectors from the circuit board-A.
3. Remove the screws (6pcs.) and the circuit board-A.

To attach:

1. Follow the above procedures in reverse.

NOTE:

Do not disconnect the connectors by pulling on cord.
To disconnect, grasp the connector, not the cord.



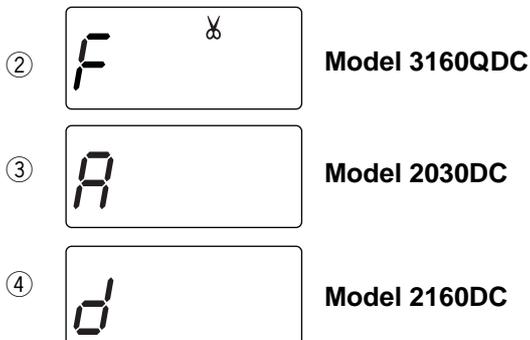
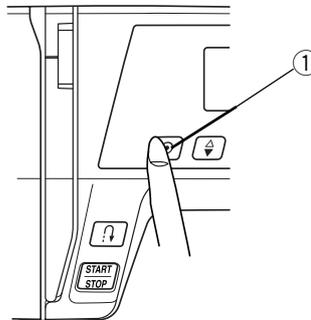
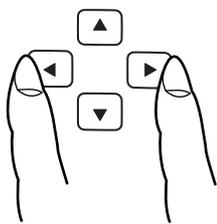
Replacing the Electronic Components

Circuit board-A(2)

Setting the Circuit board A

After install the circuit board A, select the appropriate setting of the circuit board A.

1. Turn the power switch on while simultaneously pressing left cursor button “◀” and the right cursor button “▶” button.
2. After the buzzer sounds, press the locking stitch button ① within 2.5 seconds.
The LCD displays “F”, “A” or “d”.
3. Press the locking stitch button to select the appropriate setting of the circuit board A:
 - Model 3160QDC: Press locking stitch button to select “F” ②.
 - Model 2030DC, XL601: Press locking stitch button to select “A” ③.
 - Model 2160QDC, 2160DC, DXL603: Press locking stitch button to select “d” ④.
4. Press the start/stop button to determine the setting.
A long buzzer sounds when the setting correctly finished.
5. Turn the power switch off.



Replacing the Electronic Components

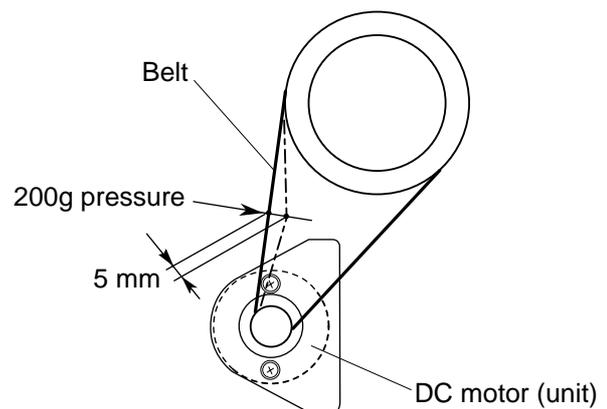
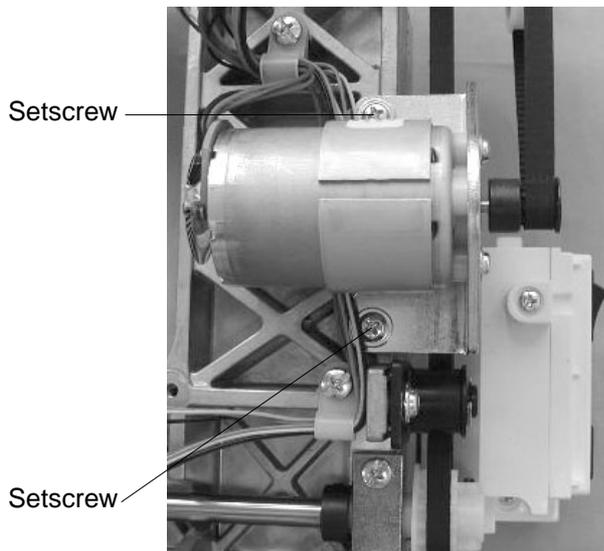
Driving motor

To remove:

1. Remove the front cover.
2. Remove the setscrews (2pcs.) and the driving motor and the belt.

To attach:

1. Install the driving motor and the motor belt. Tighten them with setscrews (2pcs.) lightly.
2. Move the motor up or down to adjust the motor belt tension.
The belt should deflect 5 mm when applying 200 grams of load to the middle of the belt.
Tighten the setscrews (2pcs.) firmly.
3. Attach the rear cover and the front cover.



Replacing the Electronic Components

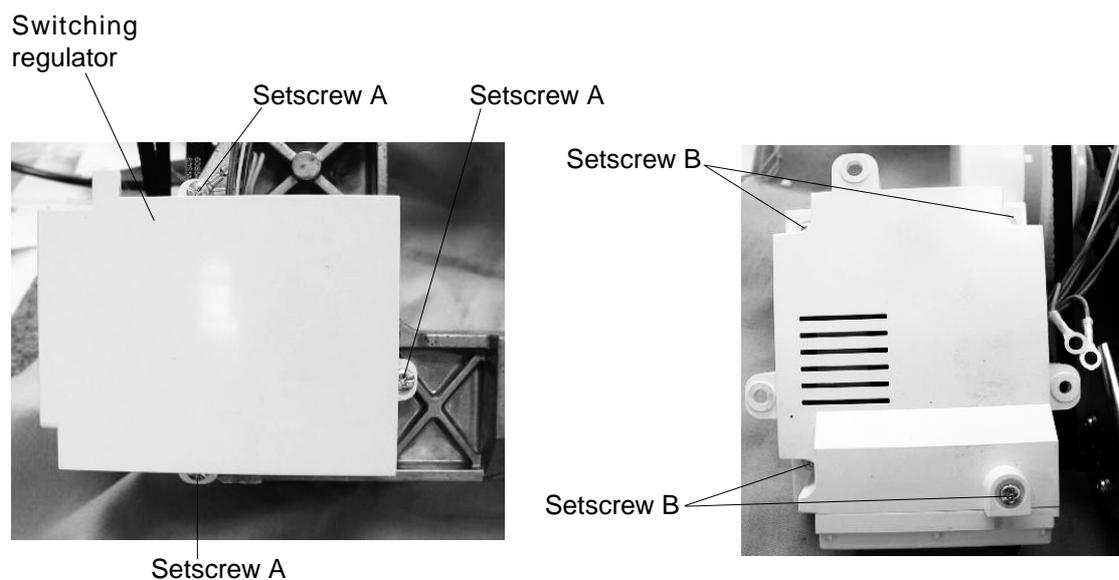
Switching regulator unit

To remove:

1. Remove the front cover and the rear cover.
2. Remove the setscrews A (3 pcs.) and the switching regulator.
3. Remove the setscrews B (4 pcs.).

To attach:

4. Follow the above procedures in reverse.



Mechanical Adjustment

Adjusting buttonhole lever position

To adjust the buttonhole lever guide:

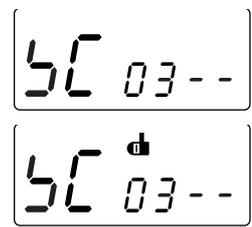
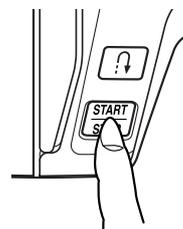
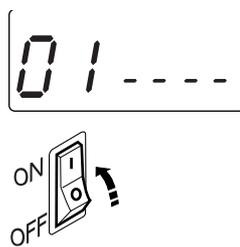
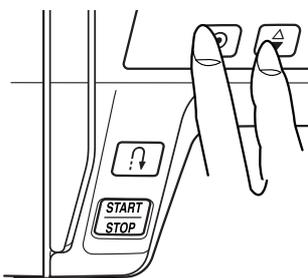
1. Enter the buttonhole sensor adjusting mode. (See below. The LCD should display BH symbol.)
2. Remove the face cover (see page 4) and loosen the setscrew (A) ①.
3. Move the buttonhole lever guide ② so the BH symbol disappears when the buttonhole lever ④ is lowered. Tighten the setscrew .

To adjust the buttonhole sensor position.

4. Attach the buttonhole foot (R) ③.
5. Lower the buttonhole lever ④ to its lowest position and open a 1.6 mm gap between the slider and the buttonhole foot.
6. Turn the adjusting screw ⑤ to the left until the LCD display BH symbol.
7. Next, turn the adjusting screw to the right until the BH symbol disappears.
8. Turn off the power switch.
9. Attach the face cover.

Note: If there is any lint or dust in the buttonhole sensor slit, loosen the 2 screws (B) ⑥ and clean it out with a swab.

To enter adjusting mode



Turn the power switch ON while pressing the needle up/down button and locking stitch button simultaneously.

Press the start/stop button to select the step "SC 03".

