SERVICING MANUAL

JP720 & JP760

INDEX

What to do when

Condition	Cause	How to fix	Reference
1. Skipping Stitches	1. Needle is not inserted properly.	Insert the needle properly.	
	2. Needle is bent or worn.	Change the needle.	
	3. Incorrectly threaded.	Rethread.	
	4. Needle or thread are inappropriate for fabric being sewn.	Use the recommended sewing needle and thread.	
	5. Sewing on stretch fabric.	Use a HA x #11 blue tip needle.	
	6. Presser foot pressure is too weak.	Adjust the presser bar level to make the pressure stronger.	
	7. In appropriate needle bar height.	See mechanical adjustment " Needle bar height ".	P. 11
	8. Inappropriate needle to hook timing.	See mechanical adjustment " Needle to hook timing ".	P. 12
	9. Inappropriate needle to hook clearance.	See mechanical adjustment " Clearance between needle and hook ".	P. 13
2. Fabric not moving	1. Foot pressure foot is too weak.	Adjust the presser bar level to make the pressure stronger.	
	2. Incorrect feed dog height.	See mechanical adjustment " Feed dog height ".	P. 15
	3. Feed dog is in down position.	Raise the feed dog.	
	4.Thread on bottom side of fabric is jammed up.	Make sure to bring both needle and bobbin threads under the foot when starting sewing.	
	5. Feed dog teeth are worn.	Change the feed dog.	

Condition	Cause	How to Fix	Reference
3. Breaking uper thread.	1. Initial sewing speed is too fast.	Start with medium speed.	
	2. Thread path is incorrect.	Use the proper thread path.	
	3. Needle is bent or dull.	Replace with a new needle.	
	4. Top tension is too strong.	Adjust top tension correctly.	P. 17
	5. Needle size is inappropriate for fabric.	Use appropriate needle for fabric and thread in use.	
	6. Needle eye is worn.	Change the needle.	
	7. Needle hole in needle plate is worn or burred.	Repair the hole or replace the needle plate.	
4. Breaking bobbin thread.	1. Bobbin holder is incorrectly threaded.	Set the bobbin thread correctly.	
	2. Too much thread is wound on the bobbin,	Adjust the position of bobbin winder stopper.	
	3. Lint is stuck inside the bobbin holder.	Clean the bobbin holder.	
	4. Thread quality is too low.	Change to a high quality sewing thread.	
	5. Thread is jamming around the bobbin holder.	Clear out the jamming thread.	
5. Needle breakes	1. Needle is hitting the needle plate.	See mechanical adjustment " Needle drop position ".	P. 10
	2. Needle is bent or worn.	Change the needle.	
	3. Needle is hitting the hook.	See mechanical adjustment " Clearance between needle and hook ".	P. 13
	4. The fabric moves while the needle is piercing it, or the needle zigzags while in fabric.	See mechanical adjustment " Needle swing timing ".	P. 16
	5. Fabric is being pulled too strongly while sewing.	Guide the fabric gently while sewing.	

Condition	Cause	How to fix	Reference
6. Noisy operation	1. Backlash between hook gear and lower shaft gear is too great.	See mechanical adjustment “backlash (lower shaft gear)”.	P. 14
	2. Lower shaft gear is loose.	Eliminate the looseness.	
	3. Inappropriatte belt tension.	See part removal and replacement “driving motor (dc motor)”.	P. 26
	4. Not enough oil	Oil all moving parts.	P. 34
7. Deformation pattern	1. Inappropriate feed balance.	See mechanical adjustment “stretch stitch feed balance”.	P. 18
	2. Inappropriate needle swing timing.	See mechanical adjustment “Needle swing timing”.	P. 16
	3. Top tension is too strong.	See mechanical adjustment “Top tension”.	P. 17

Changing External Parts

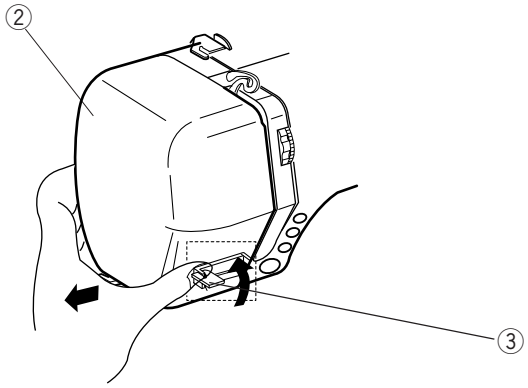
Face cover

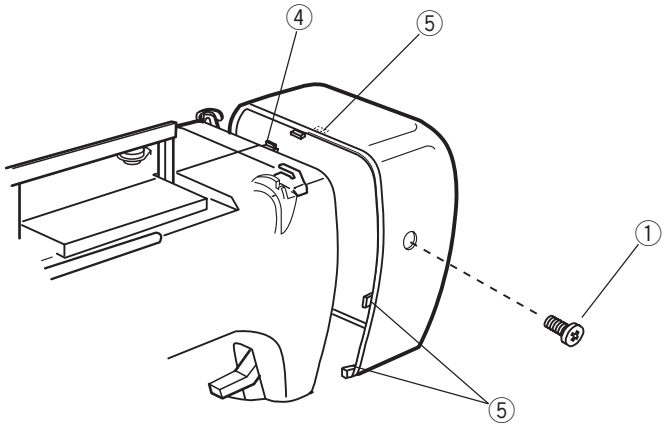
To remove:

1. Loosen the screw ① and lift the face cover to disengage the rib ③ on the inside. Remove the face cover ②.

To attach:

2. Attach the face cover ② ,engaging the hook ④ and the rib ⑤ with the rear cover and tighten screw ①.





Changing External Parts

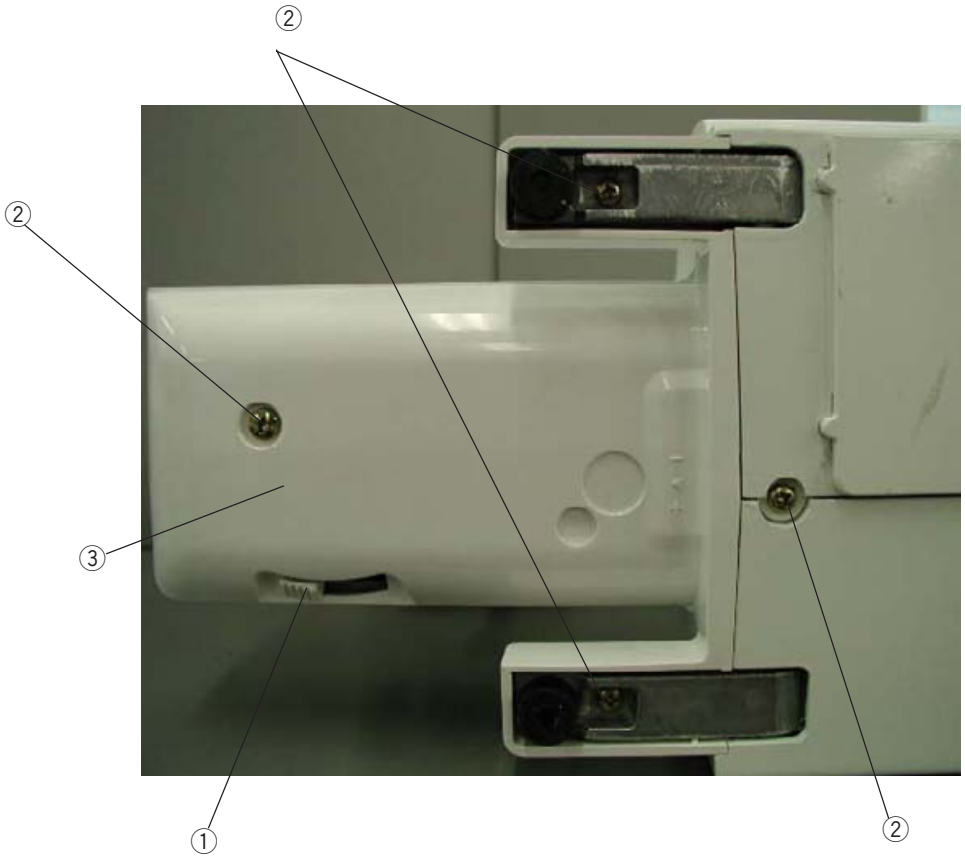
Bed cover

To remove:

1. Shift the drop lever to the left ①.
2. Loosen 4 screws ② and remove the bed cover ③.

To attach:

Follow the above procedures in reverse.



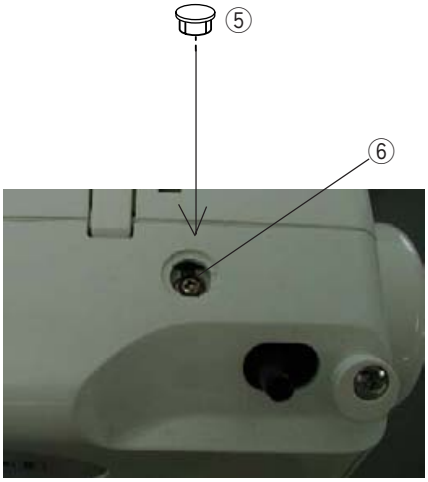
Changing External Parts

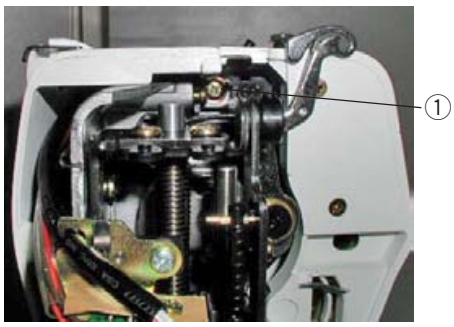
Front cover

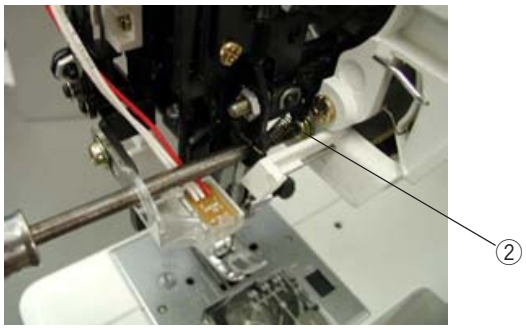
1. Remove the face cover. (See page 4)
2. Loosen the set screw ① and ② then remove the set screw ③ and ④.
3. Remove the cap ⑤ and loosen set screw ⑥.
4. Disconnect all the connectors from the circuit board-A.

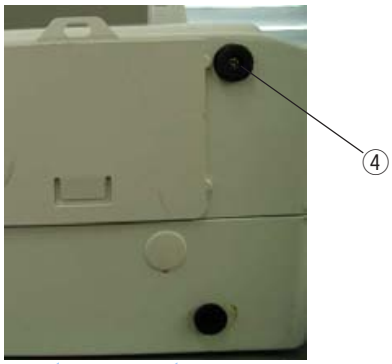
NOTE:
Do not disconnect the connectors by pulling on cord.
To disconnect, grasp the connector, not the cord.

(To be continued)







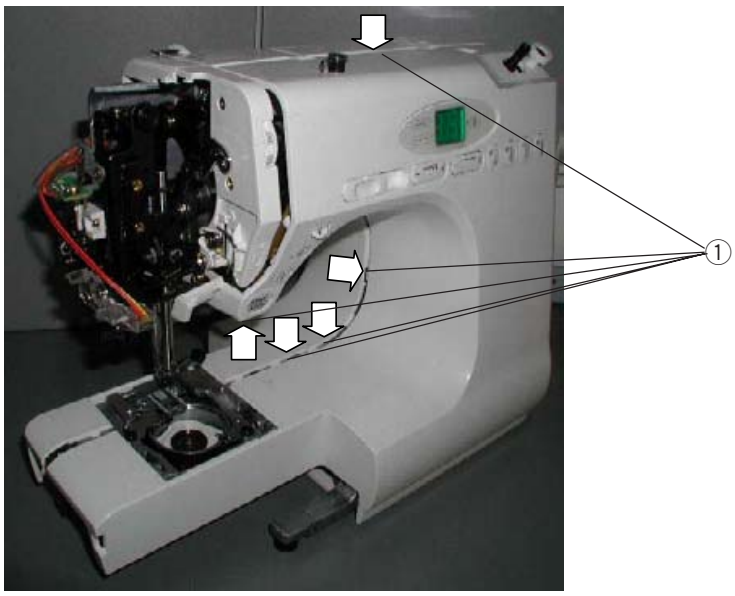


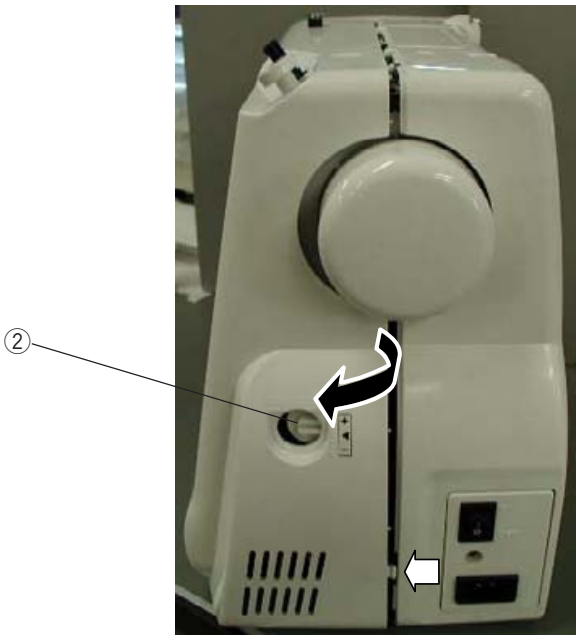
Changing External Parts

Front cover

4. Disengage the hooks ① and stitch balance adjustment knob ② .
5. Remove the front cover.

To attach:
Follow the above procedures in reverse.





Changing External Parts

Rear cover

To remove:

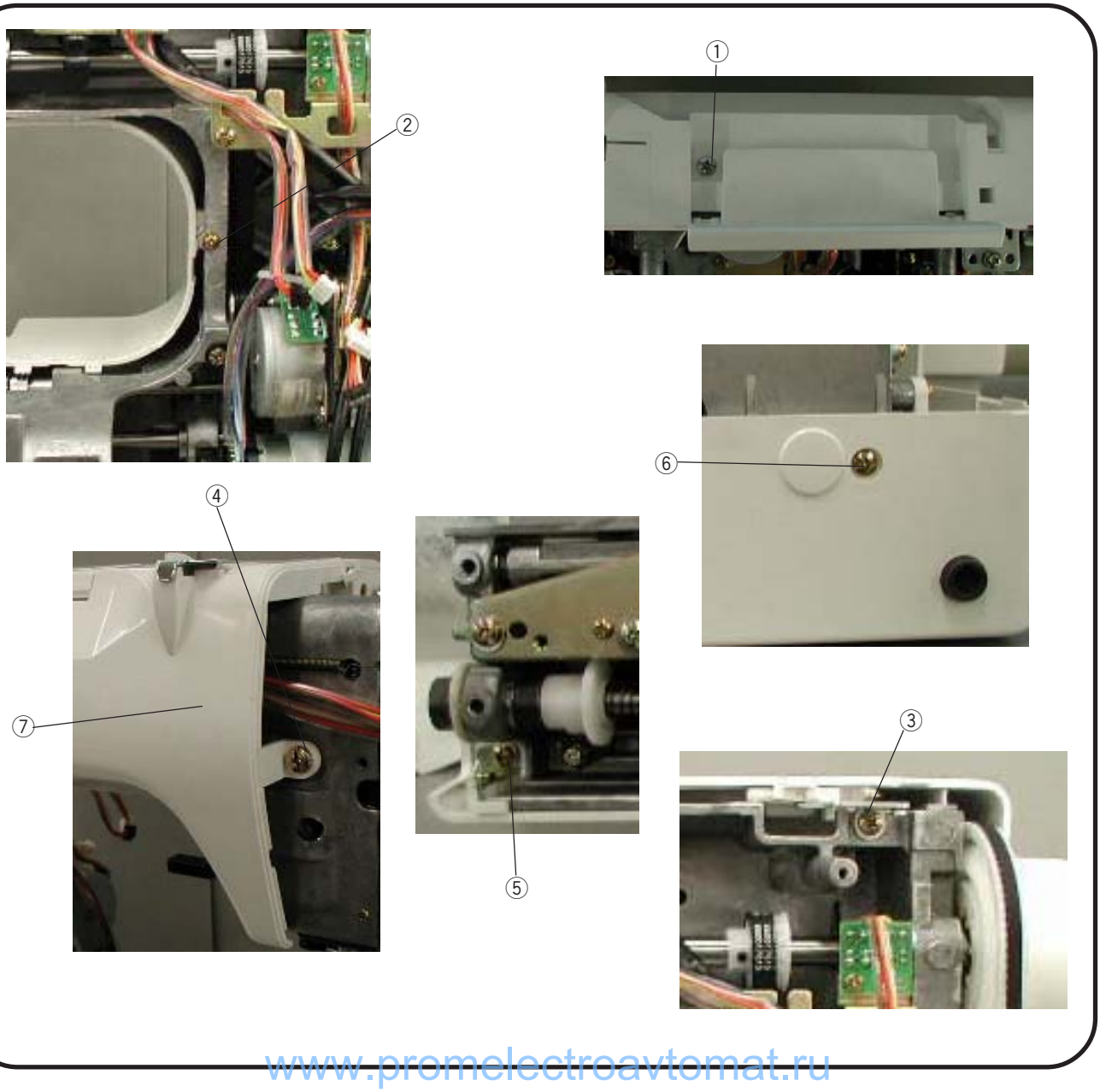
1. Remove the front cover. (See pages. 6, 7)
2. Loosen set screws ①, ②, ③, ④, ⑤ ,and ⑥, then remove the rear cover ⑦.

NOTE:

Remove the presser lifter from the rear cover first while presser lifter lowered.

To attach:

Follow the above procedures in reverse.



Mechanical Adjustment

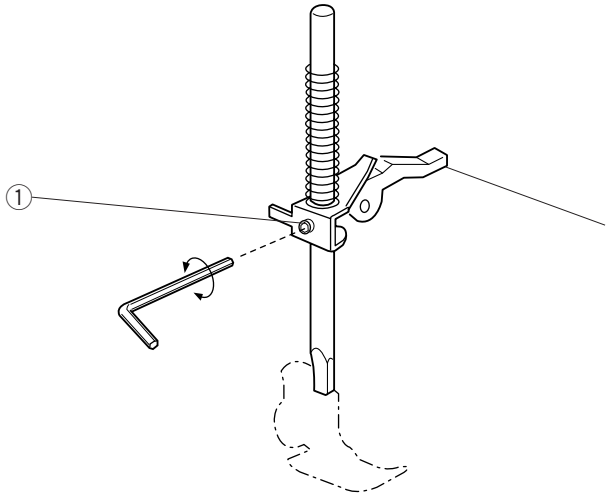
Presser bar height

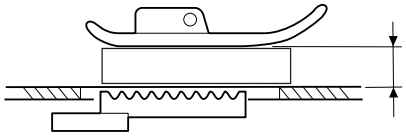
The distance between the bottom of the presser foot in up position and the needle plate should be 6.0 mm.

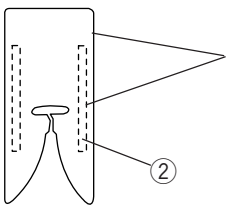
1. Remove the face plate and needle.
2. Lower the feed dog below the needle plate. Place a block 6 mm thick under the presser foot and lower the presser foot lifter.
3. Loosen the setscrew ①. Raise the presser foot lifter and tighten the setscrew ① firmly. Attach the needle and face plate.

NOTE:

Make sure that the presser foot should be parallel to the feed dog slots ② in the needle plate.







Presser foot should be parallel to the feed dog slots.

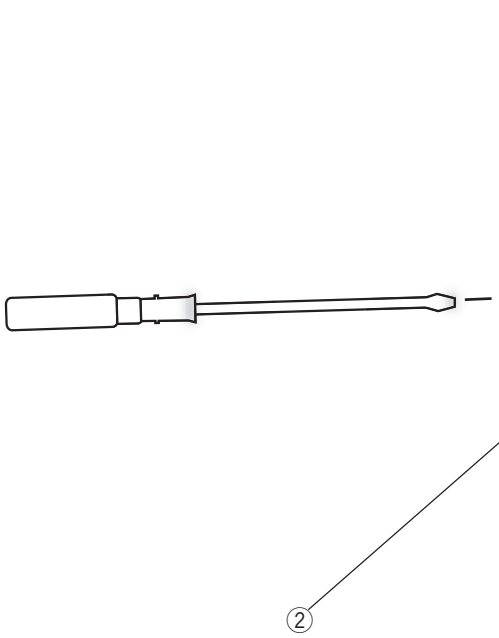
Mechanical Adjustment

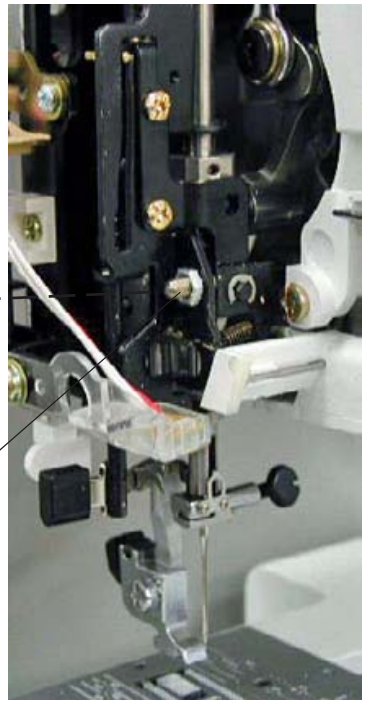
Needle drop position

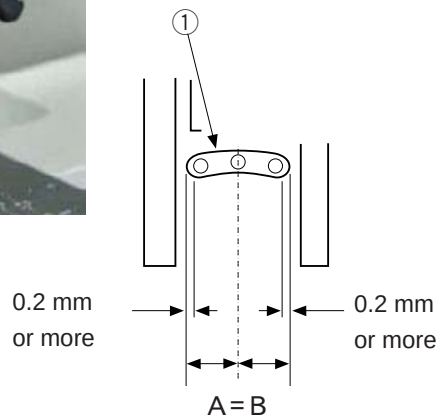
Set the stitch pattern to " ". The standard needle drop position should be at center of the needle plate hole ①. Select zigzag stitch " ", and set the stitch width at " 5.0 ". The clearance between the needle and the edge of the needle hole in the needle plate should be at least 0.2 mm on either side.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

1. Remove the face cover. (See page 4.)
2. Turn the power switch on and check the needle drop position.
3. If the needle drop is out of position, adjust it to propper position by turning the adjusting screw ② " so that the needle is in the center of the needle hole when the straight stitch " " is selected.
4. Check the needle drop position of the zigzag stitch " " with the maximum width.
4. Attach the face cover.

NOTE:
Check the hook timing after this adjustment.





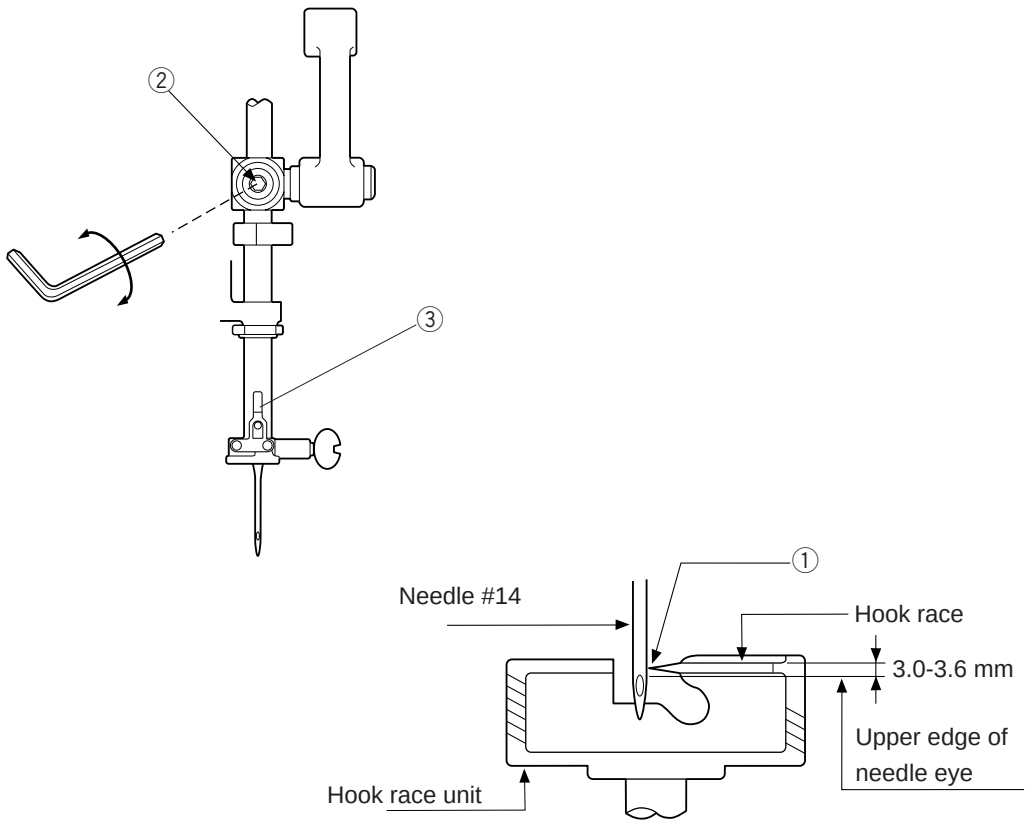


Mechanical Adjustment

Needle bar height

When the tip of the hook meets the left side of the needle in ascending travel of the needle from its left and lowest position, the distance between the top of the needle eye and the tip of the hook should be in the range of 3.0 to 3.6 mm.

1. Remove the face cover, needle plate and bobbin holder.
2. Turn on the power switch.
3. Select the pattern (simple zigzag). (maximum zigzag width)
4. Turn the handwheel toward you until the tip of hook ① meets the right side of the needle.
5. Loosen the setscrew ②.
6. Adjust the height of the needle bar by moving the needle bar upward or downward without turning it. (Make sure that the needle setting groove ③ of the needle bar is in the front).
7. Tighten the setscrew ②.
8. Insert the bobbin holder, then attach the needle plate and face cover.

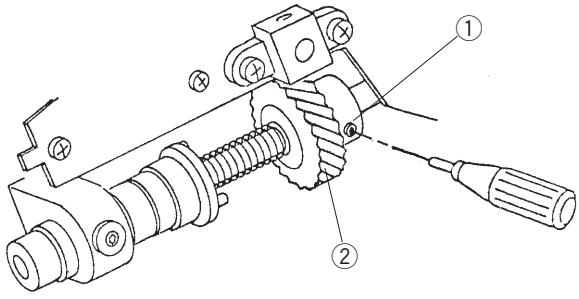


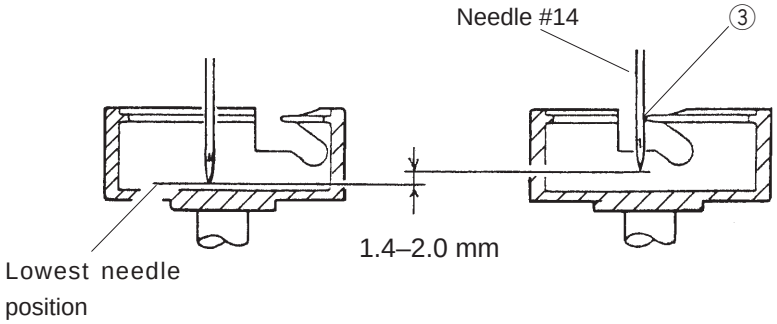
Mechanical Adjustment

Needle to hook timing

When the machine is set for zigzag stitch (maximum zigzzag width) at the right needle position, the amount of ascending travel of the needle bar from its lowest position at the right needle drop to the position where the tip of the hook meets the right side of the needle should be 1.4 – 2.0mm.

1.Remove the needle plate and bobbin holder.
2.Turn on the power switch, select the pattern (simple zigzag). (maximum zigzag width)
3.Remove the bed cover.
4.Turn the handwheel toward you, and set the needle bar at the lowest position.
5.Loosen the setscrews ① on the lower shaft timing gear ②.
6.Raise the needle bar 1.6 mm from the lowest position of the needle bar.
7.Turn the lower shaft timing gear until the tip of hook ③ meets with the right side of needle.
8.Tighten the setscrews on lower shaft timing gear.
9.Attach the bed cover, bobbin holder and needle plate.





Mechanical Adjustment

Clearance between Needle and Hook Point

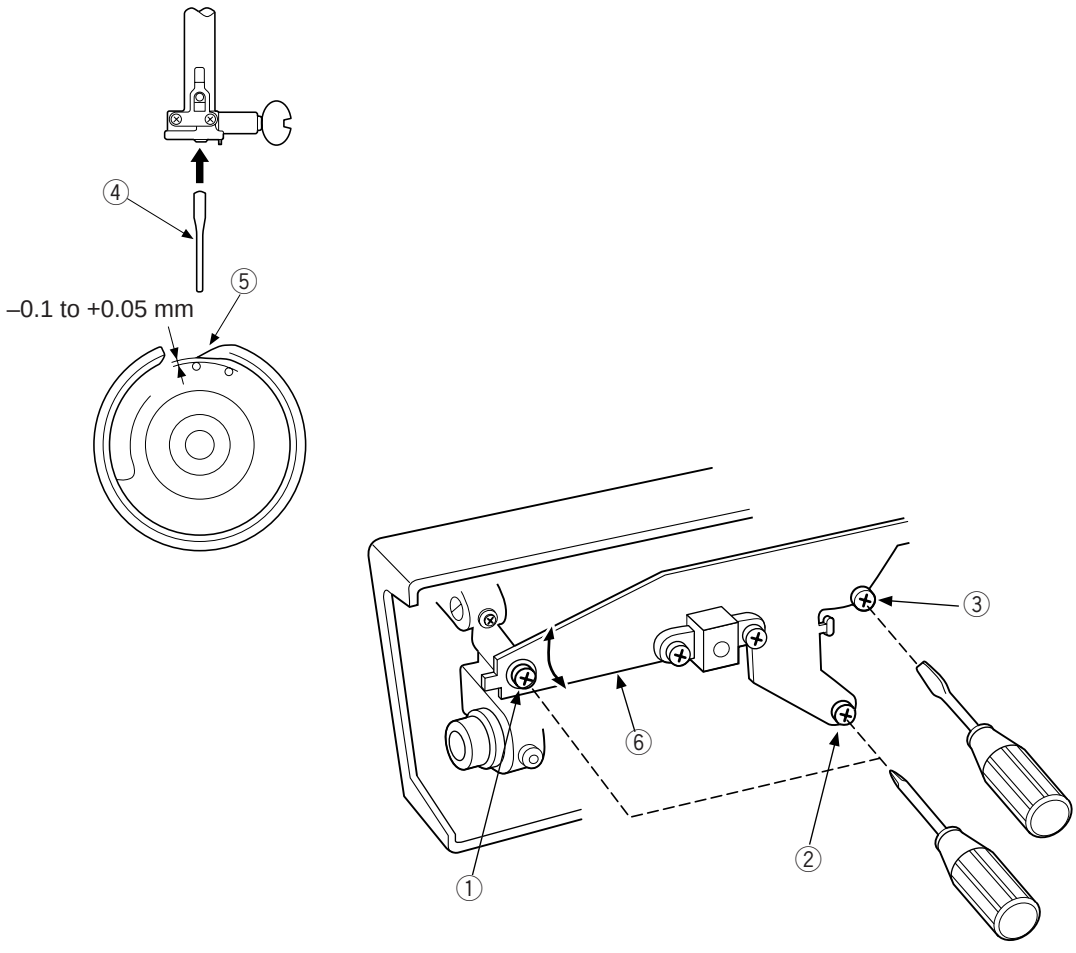
* The clearance between the needle and the point of hook should be –0.1 to +0.05 mm.

Preparation:

1. Remove the needle plate, bobbin holder, and bed cover, and replace the needle with the test pin ④.
2. Turn the power switch on, and select pattern (simple zigzag). (maximum zigzag width)

Adjustment procedure:

1. Loosen the screws ①, ②, ③, then slightly tighten the hinge screw ③.
2. Turn the handwheel toward you to bring the hook point behind the needle. Adjust the clearance between the test pin ④ and the point of the hook ⑤ in the left and right needle position to –0.1 to +0.05 mm by moving the hook set plate ⑥ up or down.
3. Tighten the setscrews ①, ②, ③.
4. Check the backlash of the hook, gear and lower shaft gear. (See. page 14).
5. Attach the bed cover, needle plate and bobbin holder, and remove the test pin.



Mechanical Adjustment

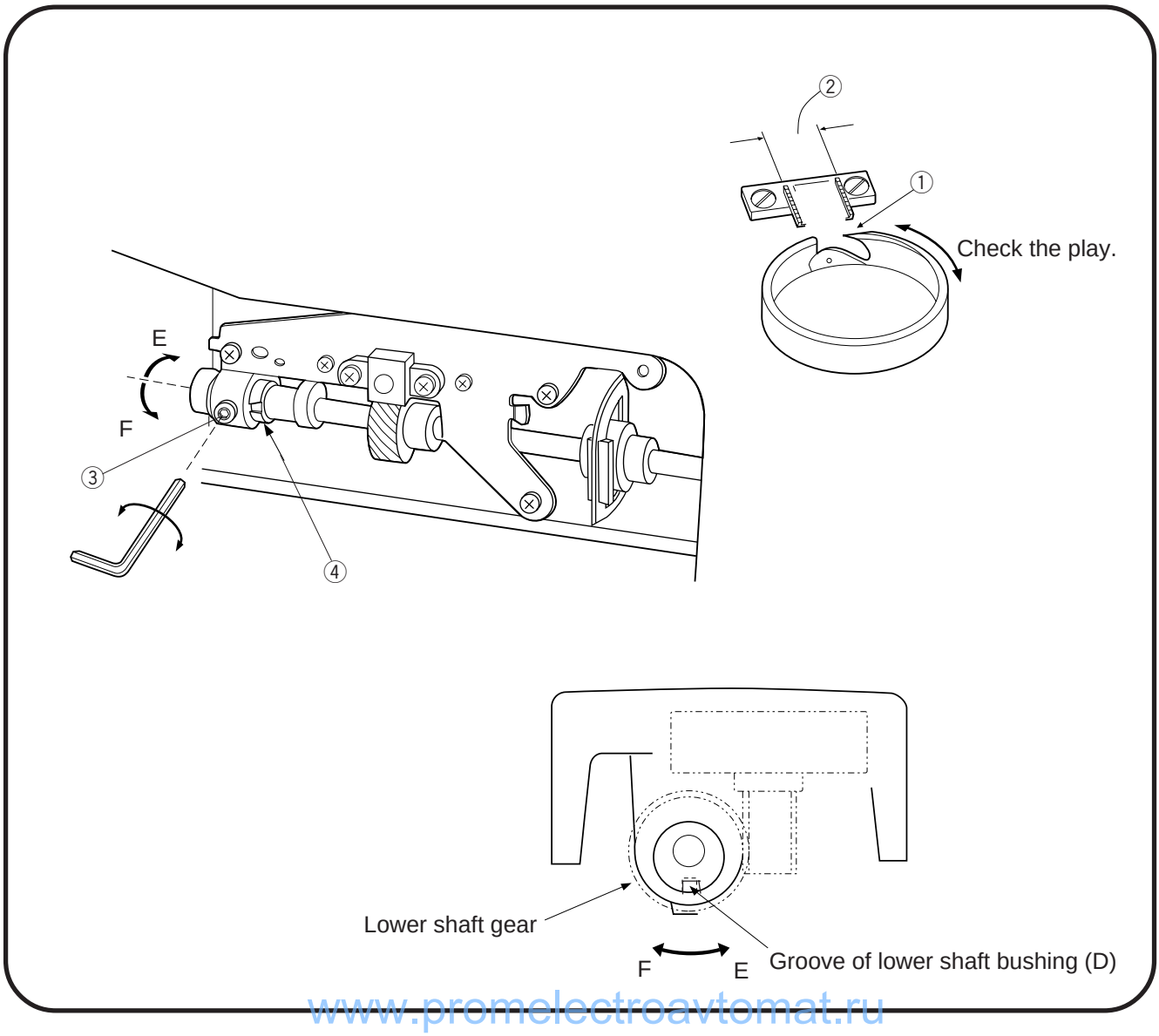
Backlash (Lower shaft gear)

To check

1. Turn the power switch off.
2. Remove the needle plate and bobbin holder.
3. Turn the handwheel slowly toward you until the tip of the hook ① is between both ends of feed dog ②.
4. Rock the hook race with fingers to check the rotary play. It should be within 0.8 mm.
   *If there is more than 0.8 mm play, adjust as follows.

Adjustment procedure:

1. Remove the bed cover and loosen the setscrew ③.
2. Turn the lower shaft bushing (eccentric) ④, in the direction " E " when the play at hook tip is too small.
3. Turn the lower shaft bushing (eccentric) ④, in the direction " F " when the play at hook tip is too large.
4. Tighten setscrew ③ securely after adjustment.

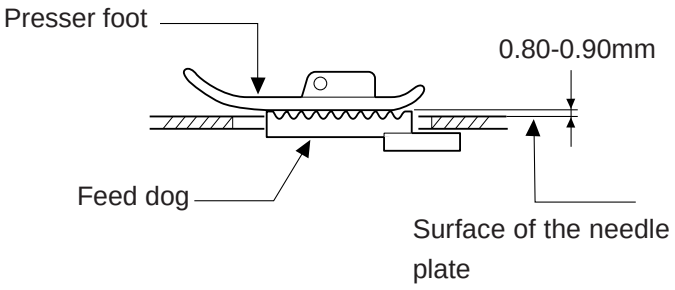


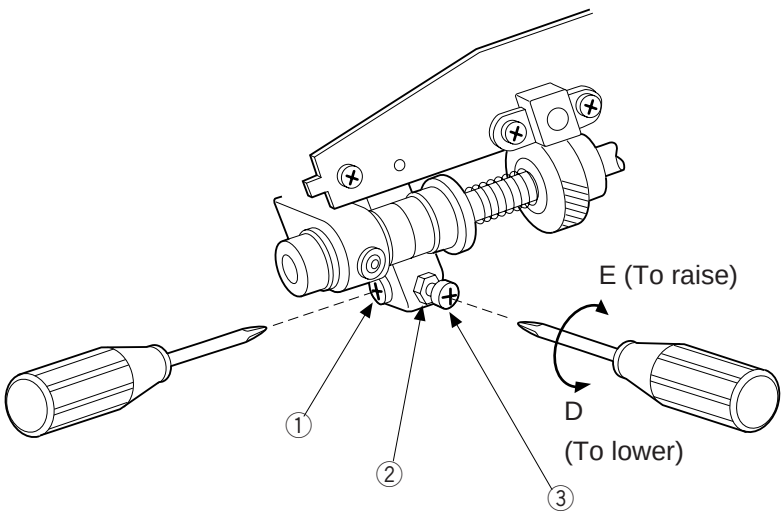
Mechanical Adjustment

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. Remove the bed cover.
2. Turn the power switch on.
3. Select the straight stitch pattern with maximum length.
4. Turn the handwheel toward you to set the feed dog at the highest position.
5. Loosen the setscrew① and nut②.
6. Adjust the feed dog height by turning the adjusting screw③.
7. Tighten the nut② and setscrew①.



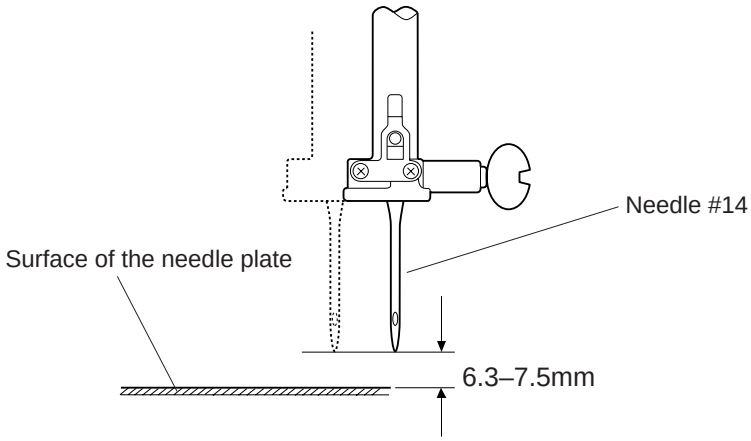


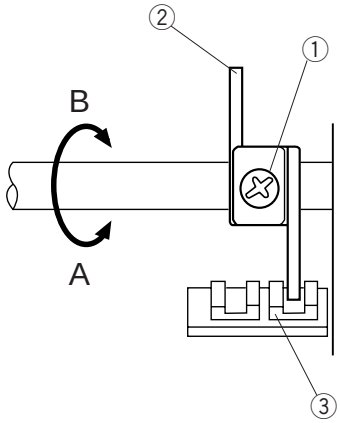
Mechanical Adjustment

Needle swing timing

The needle should start to swing between 6.3 and 7.5 mm above the surface of the needle plate when the machine is set for zigzag stitching.

1. Remove the front cover (Refer to page 6-7).
2. Turn on the power switch, select the pattern " ", and set the machine at the maximum zigzag width.
3. Turn the handwheel toward you slowly with your hand until the needle start to swing. Loosen the setscrew ① and turn the upper shaft shield plate ② in the direction of:
   A: If the swing point is higher than 7.5 mm.
   B: If the swing point is lower than 6.3 mm.
4. Shift the upper shaft shield plate to the left as close to the upper shaft sensor as possible. (It should not touch the upper shaft sensor ③).
5. Check the swing point by turning the handwheel, then tighten the setscrew.
6. Attach the front cover.





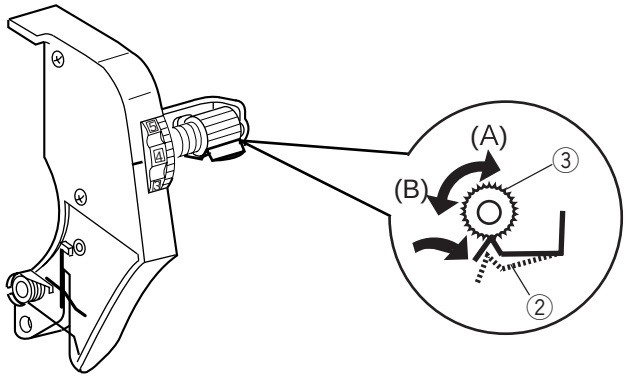
Mechanical Adjustment

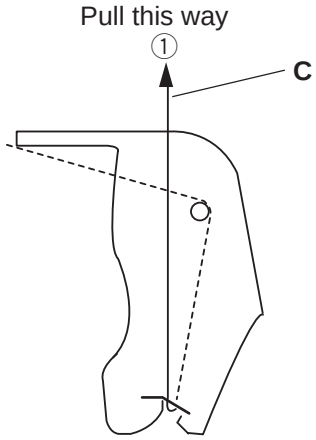
Top tension

The top tension should be between 75 and 90g 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 at "4".
2. Lower the presser foot.
3. Remove the front cover unit (See P.6 – 7).
2. Pull the spring ② away from the lead screw ③.
3. If the top tension is too loose, turn the lead screw ③ in the direction (A).
4. If the top tension is too tight, turn the lead screw ③ in the direction (B).





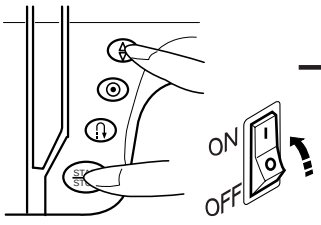
Mechanical Adjustment

Stretch stitch feed balance

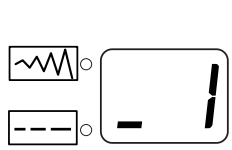
When a stretch pattern is sewn with the feed balancing dial① set at the standard setting mark " ▶"②, The pattern should be as indicated with the "◯" mark in the figure below. (If the stitch feed is not balanced, adjust it as follows:

1. Set the machine to the adjustment mode (See illustration below).
2. Set the slit of the feed balancing dial① at the standard setting mark " ▶"② on the front cover.
3. Enter the adjusting mode. Sew the stitch pattern "8" until the machine stop automatically, and check the stitch length.
   * Standard length of five "8" characters: 32 mm – 40 mm
4. Remove the base cap③.
5. If the length is too short, turn the adjusting screw④ in the direction of (D).
6. If the length is too long, turn the adjusting screw④ in the direction of (C).
7. Attach the base cap.

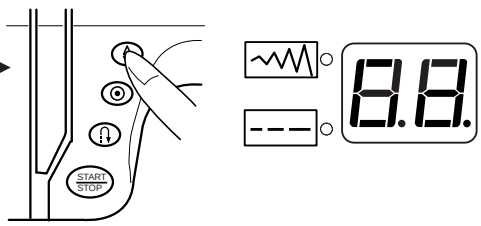
(Enter the adjustment mode)



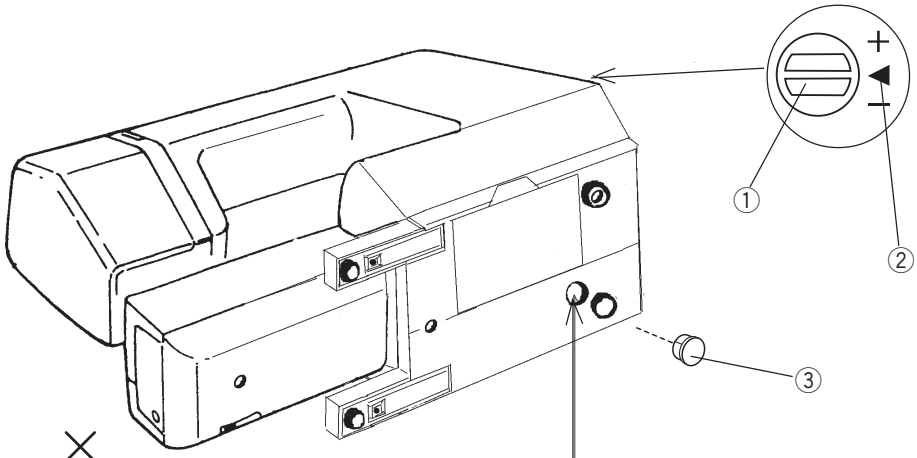
Turn the power switch on while pressing the Up/Down button and S/S button at the same time.

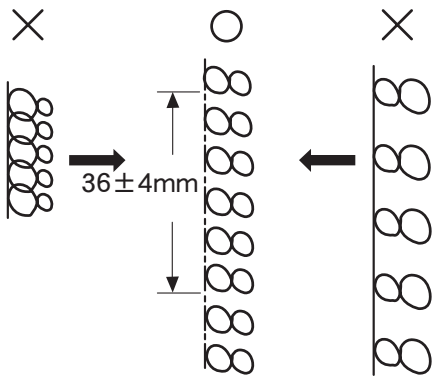


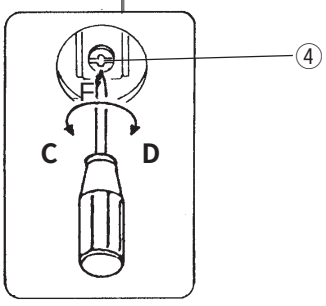
The LED display indicates "1".



Press the needle Up/Down button.







Mechanical Adjustment

Thread plate

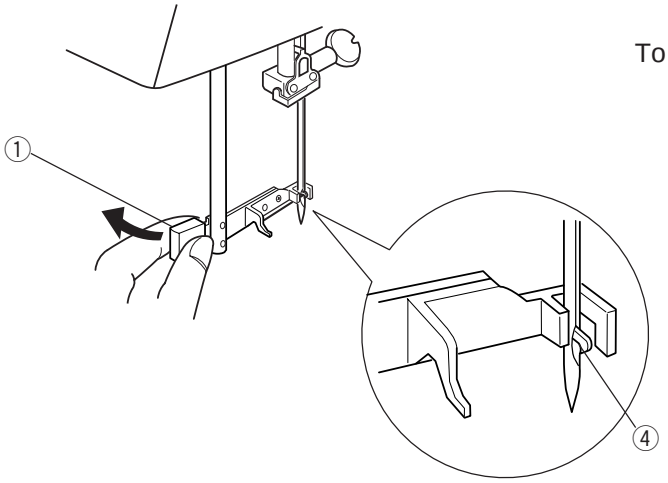
When the hook of the threader plate is damaged, change or adjust the part as follows.

To change the threader plate:

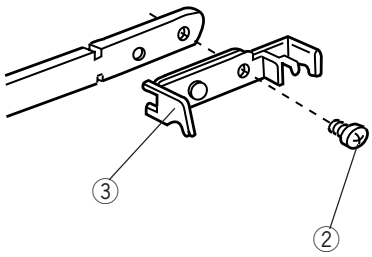
1. Raise the needle to its highest position and lower the threader knob① to its lowest position.
2. Loosen the screw② and remove the threader plate ③(Fig. A).

To adjust the needle threader:

1. If the hook④ of the threader plate slashes or hits against the left or right side of the needle eye, loosen the screw and adjust the hook position (Fig. B).
2. If th hook of the threader plate③ slashes or hits against the top or bottom side of the needle eye, loosen the screw⑤ and move the position setting plate up pr down to adjust the hook position (Fig. C).

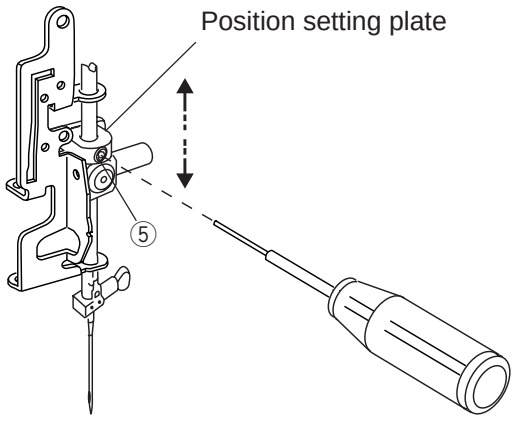


To change the threader plate (Fig. A)

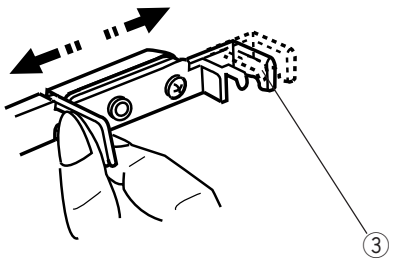


Adjust the direction of up or down (Fig. C)

Position setting plate



Adjust the direction of left or right (Fig. B)

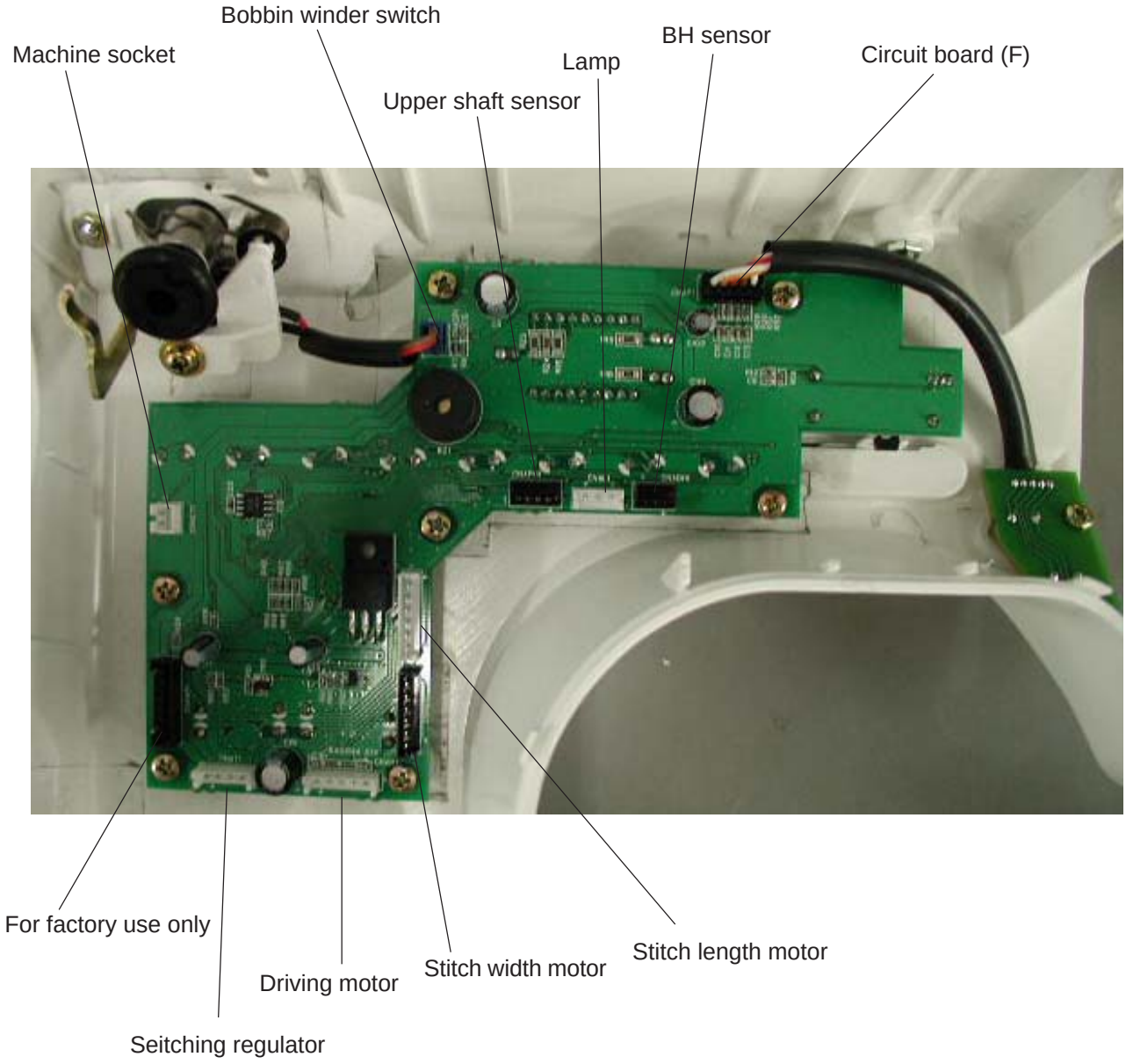


Replacing the Electronic Components

Location of the connectors

NOTE:

* Do not disconnect the connectors by pulling on the cord.
* To disconnect, grasp the connector, not the cord.
* Connect the connector to the connector post of the same color on the circuit board.



Self-diagnostic Test

Preparation:

1. Turn the power switch.
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.
7. Connect the foot control to the machine.

Notes:

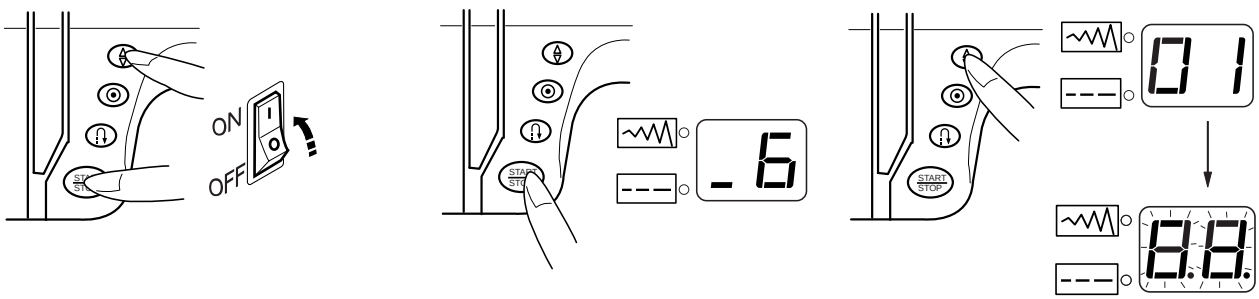
- Be careful: the sewing machine may start running in its own while in test mode.
- Turn off the power switch before replacing any parts.
- Repeat the diagnostic test until the problem has been resolved.
- You can skip steps in the diagnostic procedure and go directly to the test you want to perform.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

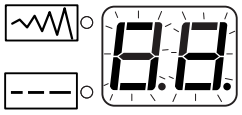
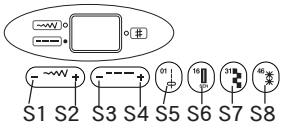
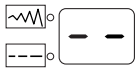
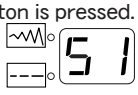
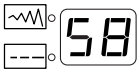
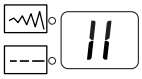
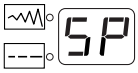
To begin:

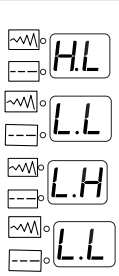
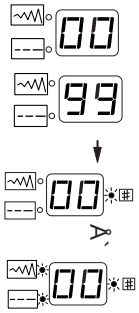
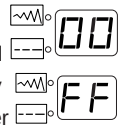
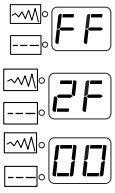
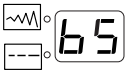
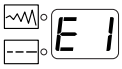
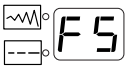
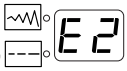
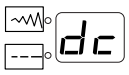
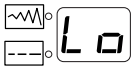
Turn on the switch, if any of the following problems occur, take the recommended actions in the order they are shown.

1. The machine does not respond when the power switch is turned on:
   Check each connector connection
   Replace the machine socket
   Replace the A-board
   Replace the power transformer
2. The sewing machine lamp does not light up:
   Replace the light bulb
   Replace the A-board
3. The LED display shows "E3" to "E8":
   Replace the A-board

To enter self-diagnostic mode:
Turn the power switch on while simultaneously pressing needle up/down button and the start/stop button.
Press the start/stop button five times to select menu item "6".
Press the needle up/down button.
If the interval between each step is longer than 2.5 seconds, the machine will revert to normal sewing mode.
Should this occur, start over again from the step 1.



Step and items to check	Procedure	Correct Condition	Defective condition
01) 7-segmentLED	Turn on the power switch while simultaneously pressing the needle up/down button and start/stop button. Press the start/stop button five times to select menu item "6" . Press needle up/down button: The LED indicate "01" for one second. If you do not press the needle up/down button within 2.5 seconds, the machine automatically revert to the normal sewing mode.	Beeping sound when the button pressed. LED display "8.8". And it blinks in one second intervals. LED 	No beep sound Does not enter self-diagnostic mode. LED does not blink on or off. 1. Replace A-board.
02) Mode LED	Press needle uo/down button, LED displays "02" for one second.	7-segment LED displays "Ld" and 3 mode LEDs blink in one second intervals. LED 	LED does not blink on or off. 1. Replace A-board.
03) Button	Press needle up/down button, LED displays "03" for one second. Press buttons S1 - S8.  S1 S2 S3 S4 S5 S6 S7 S8	LED display  Button number is displayed when the button is pressed.   S1 S2	LED display is different from that shown to the left. 1. Replace A-board.
04) Bobbin winder switch	Press needle up/down button, LED display "04" for one second. Move the bobbin winder spindle to the right. Return it to the left.	LED displays "11".  (Left)  (Right)	LED display is different from that shown to the left. 1. Adjust bobbin winder switch position. 2.Replace the bobbin winder switch. 3. Replace A-board.
05) Presser foot lifter switch (Not applicable to this model)	———	———	———
06) Buttonhole Sensor	Press needle up/down button, LED displays "06" for one second. Lower the buttonhole lever. Move the buttonhole lever back and forth.	LED displays "L" or "H".  When the buttonhole lever is pulle, LED displays "H".  When the buttonhole lever is free (positioned in the center), LED displays "L".  When the buttonhole lever is pushed, LED displays "H". 	LED display is different from that shown to the left. 1. Adjust buttonhole sensor position. 2. Replace buttonhole sensor. 3. Replace A-board.

Step and items to check	Procedure	Correct Condition	Defective condition
07) Upper shaft sensor	Press the needle up/down button, LED dispays "07" for one second. Turn the handwheel toward you to raise and lower the needle to its highest and lowest position.	When the needle is at the highest position, LED displays "H.L". When the needle is at the lowestposition, LED displays "L.L". When the needle is halfway, LED displays "L.L". 	LED display is different from that shown to the left. 1. Adjust upper shaft shield plate. 2. Replace upper shaft sensor. 3. Replace A-board.
08) Sewing speed sensor	Press the needle up/down button, LED displays "08" for one second. Turn the handwheel clockwise by hand and check the counter value on the LED. (The LED blinks to indicate a counter value of 100.)	LED displays "00" first and the indicated value increases as you turn the handwheel. (When the value reaches 100, it will return to "00" and one mode LED light up. For example, 2 mode LEDs and "78" means "278".) The maximum value should be 370 to 390. 	LED display is different from that shown to the left. 1. Replace DC motor. 2. Replace A-board.
09) Slide volume	Press the needle up/down button, LED displays "09" for one second. Slide the speed control lever from left to the right, then return it to left.	When the speed control lever is at the left, LED displays "00". The indicated value (hexadecimal) increase as you move the speed control lever to the right, and finally it shows "FF" when the lever reaches the right-most position. 	LED display is different from that shown to the left. 1. Replace the slide volume. 2. Replace A-board.
10) Foot control	Press the needle up/down button, LED displays "10" for one second. Depress the foot control down all the way and releases it.	When the foot control is not depressed, LED should display "F0" to "FF" (hexadecimal value). When the foot control is fully depressed, LED should disply "05" to "2F". When the foot control is disconnected, LED should show "00" to "04". 	LED display is different from that shown to the left. 1. Replace the foot control. 2. Replace machine socket. 3.Replace A-board.
11) Zigzag motor	Press the needle up/down button, LED displays "11" for one second. Press the start/stop button.	LED displays "bS". Zigzag motor is set to the initial position. (Needle centered) 	LED display is different from that shown to the left. If LED displays "E1", replace the zigzag motor or A-board. 
Feed motor	Turn the handwheel toward you to lower the needle to its lowest position, then press the start/stop button.	LED displays "FS". Feed motor is set to the initial position. (Stitch length: 0) 	LED display is different from that shown to the left. If LED displays "E2", replace the feed motor or A-board. 
11) DC motor	Press the needle up/down button, LED displays "12" for one second. Press foot control.	LED displays "bc".  Machine runs at the speed set by the speed control lever. Full left: 70 - 90 spm. Full right: 630 - 670 spm.	LED display is different from that shown to the left. Machine does not run, LED displays "Lo".  1. Replace DC motor. 2. Replace A-board.

After all tests have been completed, turn the power switch off.

Replacing the Electronic Components

Circuit board-A

To remove:

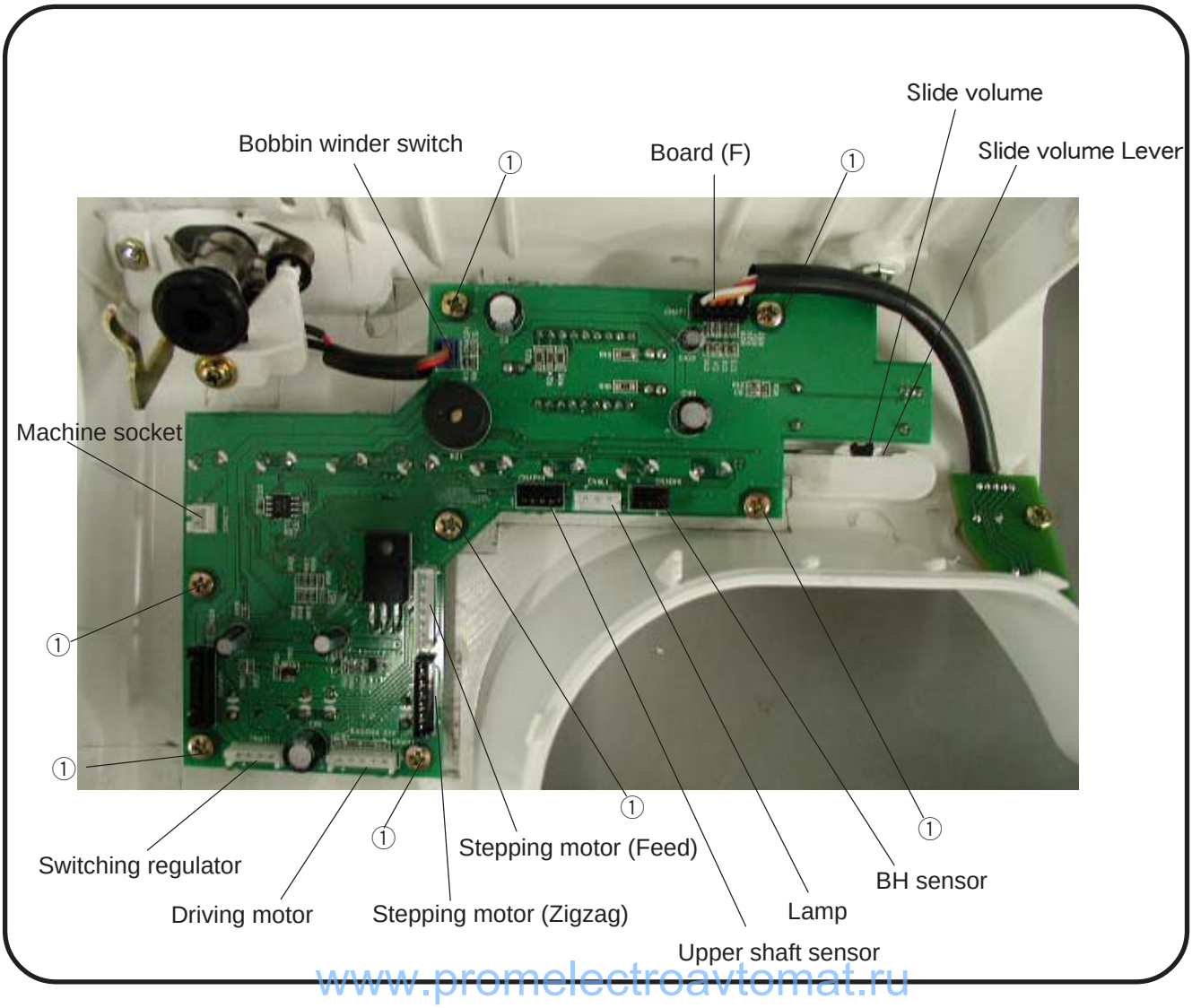
1. Remove the front cover. (See pages 6 – 7)
2. Pull out connectors from the circuit board-A.
3. Loosen 7 screws ① and remove the circuit board-A.

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-F

To remove:

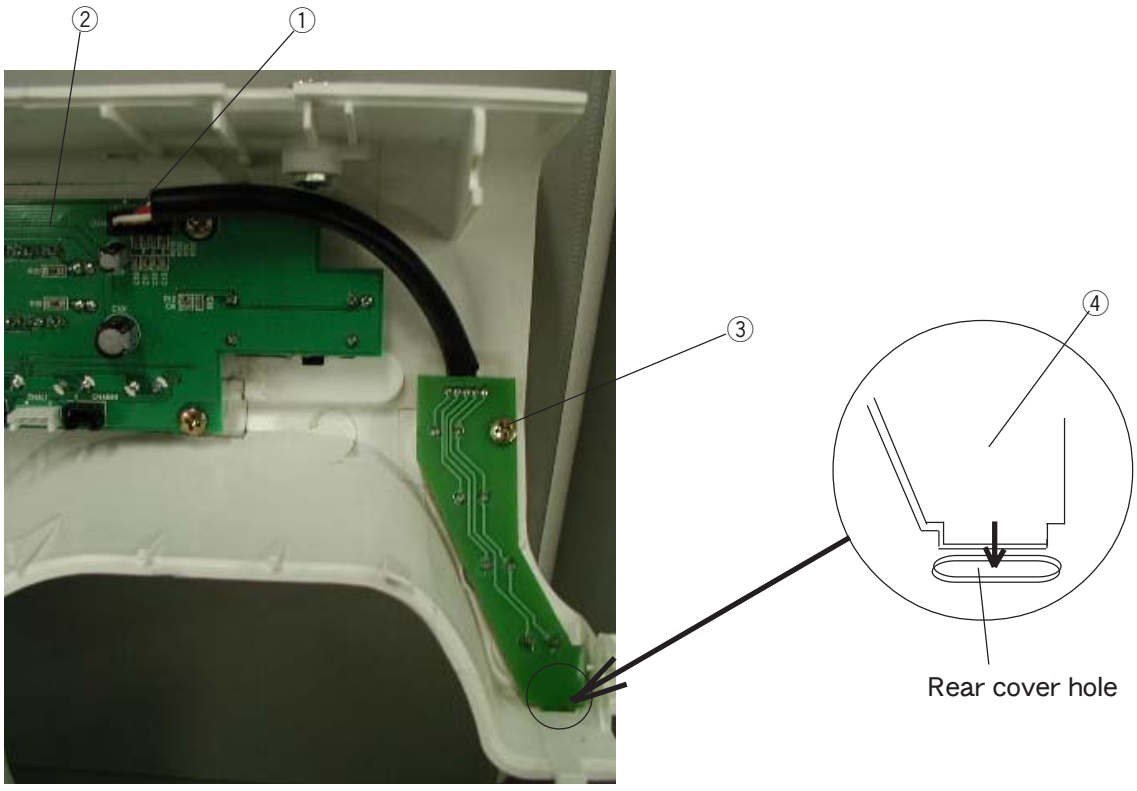
1. Removed the front cover.
2. Pull out the circuit board-F connector①, from the circuit board-A②.
3. Loosen the set screw③and remove the board-F④.

To attach:

1. Follow the above procedures in reverse.

NOTE:

* Insert the lower part of the board-F into the hole of rear cover when attaching the board-F.
* Check function of the each buttons (needle up/down, reverse button, start/stop button) after replacement.



Replacing the Electronic Components

Driving motor

To remove:

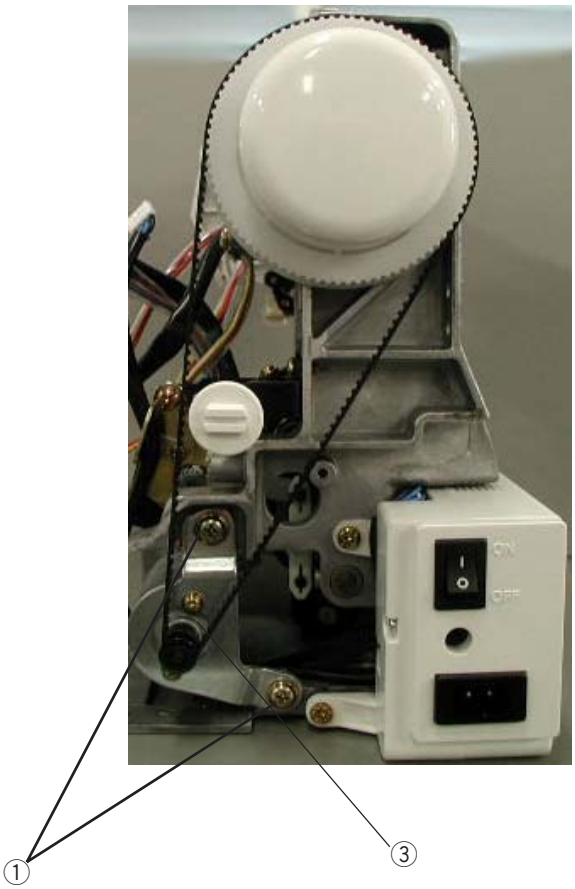
1. Remove the front cover and the rear cover.
2. Loosen 2 screws ① and remove the driving motor and the belt ②.

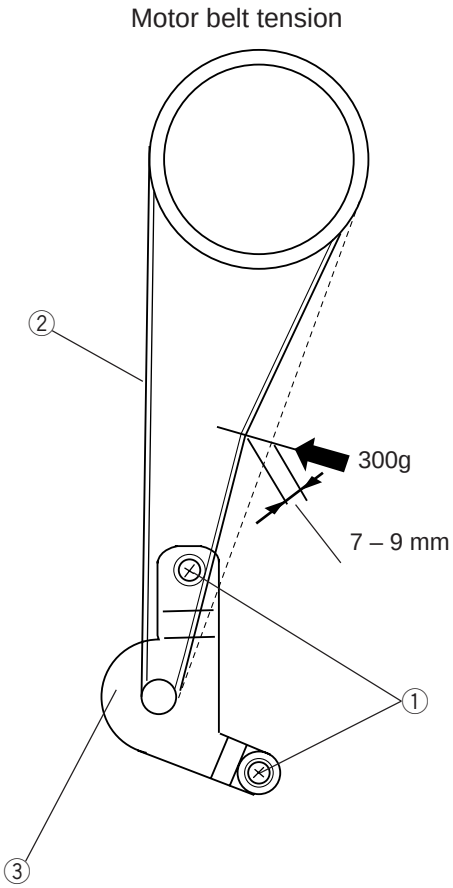
To attach:

1. Install the driving motor ③ and the motor belt ②with 2 screws ①.

2. Loosen the set screws slightly and move the motor up or down to adjust the motor belt tension.
   The belt should deflect 7–9 mm when applying 300 grams of load to the middle of the belt.
   Tighten the setscrews ① firmly.

3. Attach the rear cover and the front cover.





Replacing the Electronic Components

Switching regulator unit

To remove:

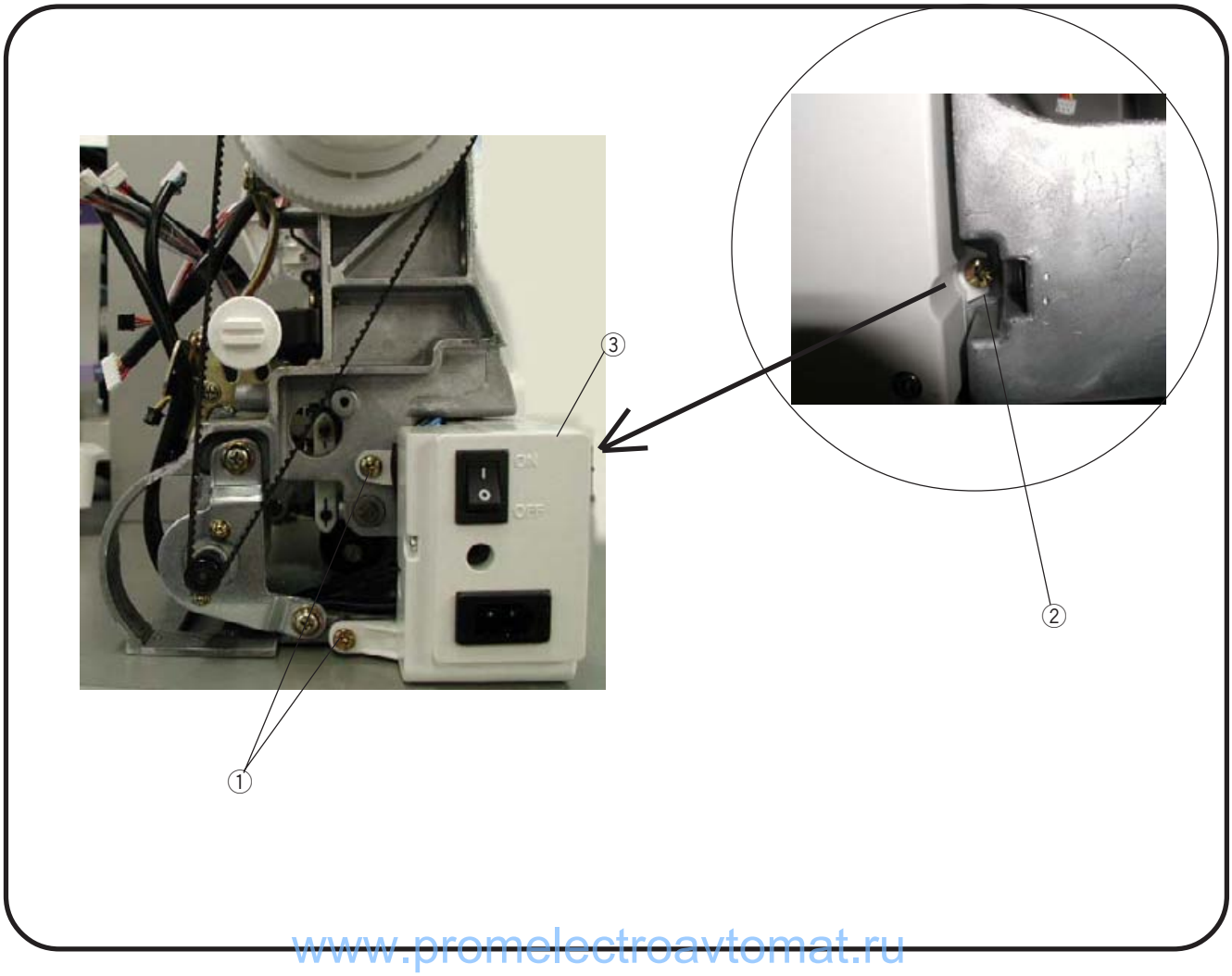
1. Remove the front cover and the rear cover.
2. Loosen 2 screws ① and a screw ②, then remove the switching regulator ③.

To attach:

3. Follow the above procedures in reverse.

NOTE:

* Cords should not contact the lower shaft, motor belt etc.



Replacing the Electronic Components

Stepping motor (Zigzag)

To remove:

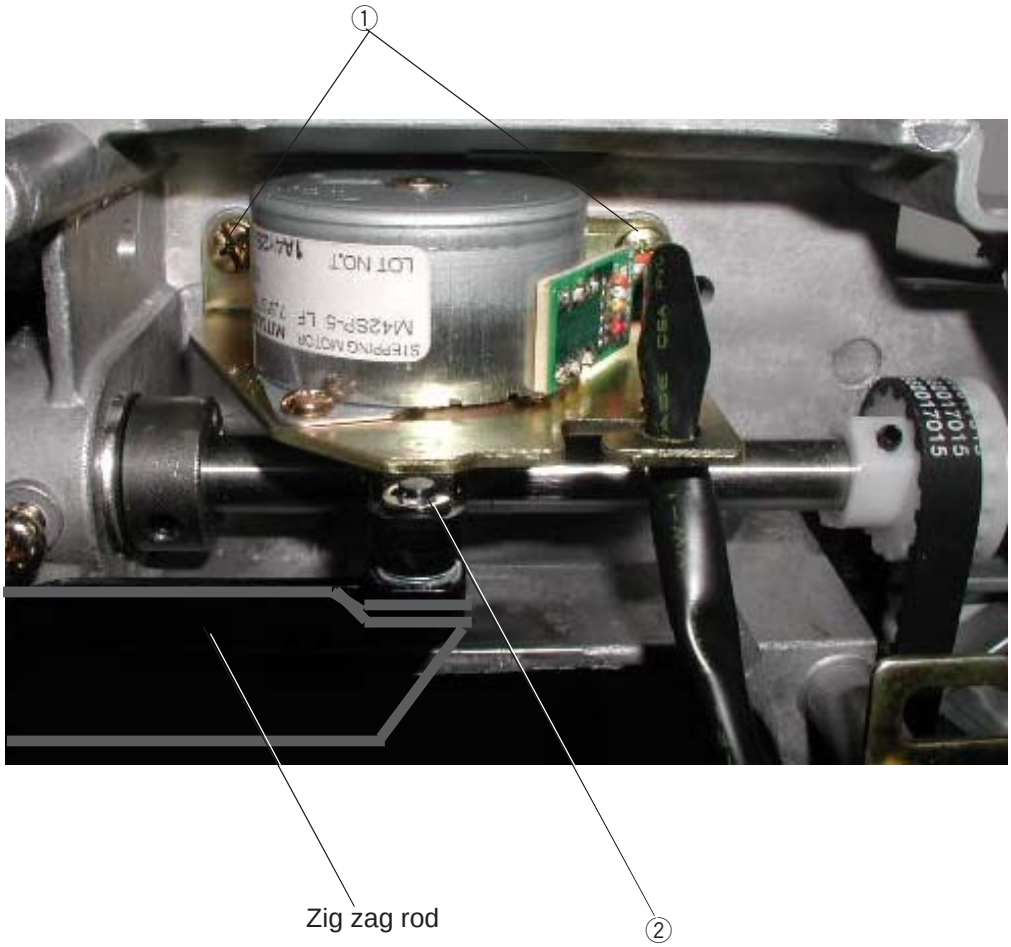
1. Remove the front cover and the rear cover.
2. Remove 2 screws ①.
3. Remove E-ring ②.
4. Remove stepping motor (Zigzag).

To attach:

1. Follow the above procedures in reverse.

NOTE:

* Check the needle drop position after replacing the stepping motor.



Replacing the Electronic Components

Stepping motor (Feed)

To remove:

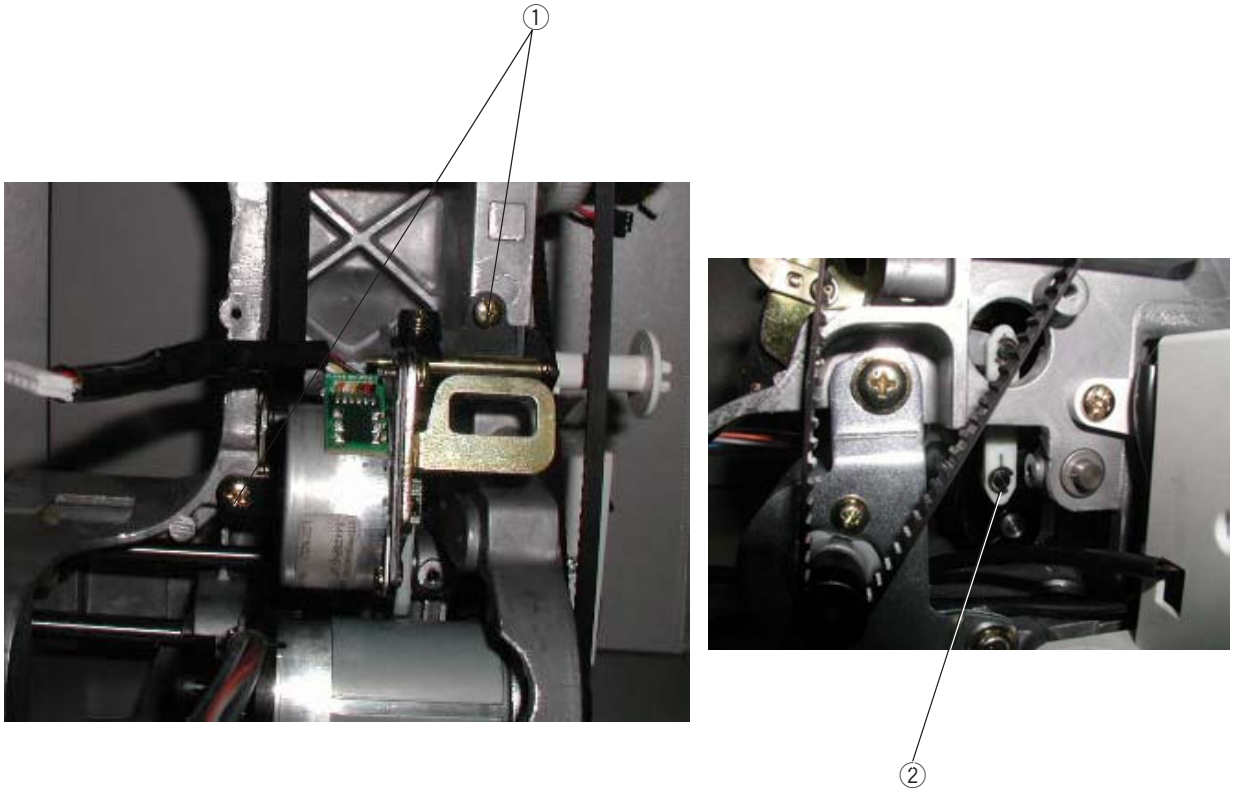
1. Remove the front cover and the rear cover.
2. Remove 2 screws ①
3. Remove E-ring ②
4. Remove stepping motor (Feed).

To attach:

1. Follow the above procedures in reverse.

NOTE:

* Check the stretch stitch balance after replacing the stepping motor.



Mechanical Adjustment

Adjusting buttonhole lever position

To adjust the buttonhole lever guide:

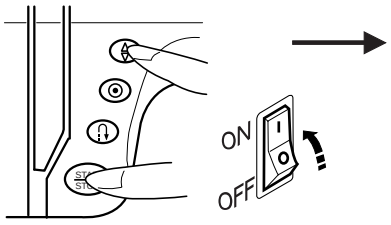
1. Enter the buttonhole sensor adjusting mode. (See below. The LED should display " H " or " L ".)
2. Remove the face cover (see page 4) and loosen set screw ①.
3. Move the buttonhole lever guide ② so the LED displays " L " when the buttonhole lever is lowered. Tighten set screw ①.

To adjust the buttonhole sensor position.

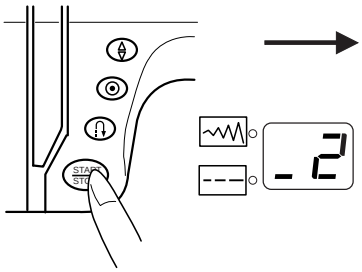
4. Attach the buttohole foot (R) ③.
5. Lower the buttonhole lever ④ to its lowest position and open a 1,6 mm gap between the slider and the buttonhole foot.
6. Turn the adjusting screw ⑤ to the left until the LED display changes from " L " to " H ".
7. Next, turn the adjusting screw right until the LED display changes from " H " to " L ".
8. When the gap of the buttonhole foot is 1.4 mm, LED should display " H ". When the gap is 1.8 mm, the LED should display " L ".
9. Turn off the power switch.
10. Attach the face cover.

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

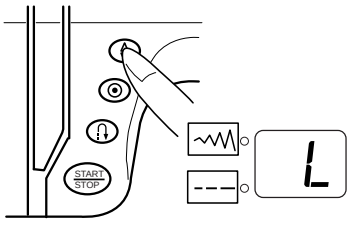
To enter adjusting mode



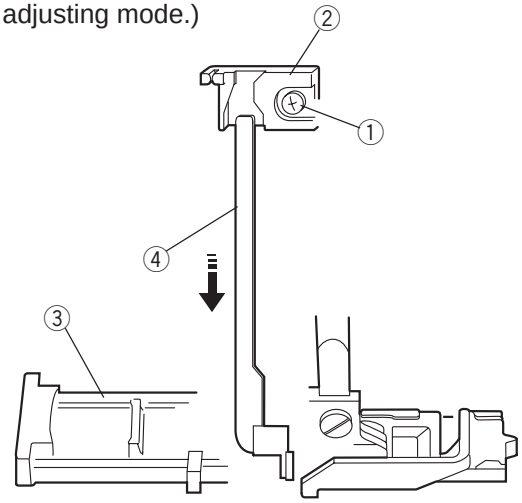
Turn the power swith ON while pressing the needle up/down button and start/ stop button simultaneously. (Hold both buttons down until the LED displays the adjusting mode.)

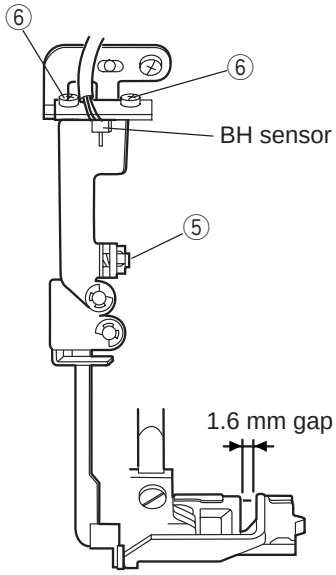


Press the start/stop button to select step number " _2 ".



Press the needle up/down button.





Oiling

Factory lubricated parts will provide years of household sewing without routine oiling. However, whenever the machine is being serviced, check to see if any parts need to be luburicated.

OIL:

Use good quality sewing machine oil at the points (A, B, C, D, E, F, G, H, J, K) indicated by black arrows.

Grease

White grease is recommended for use on gears and cam surfaces. It is an improved grease, and it can be used on the metal and plastic parts which points are indicated by the white arrows (I & L).