SERVICE MANUAL
FOR
ELECTRONIC SEWING MACHINE WITH LCD
BL2150/BL6150/BL3150/BL6600

SMBL6150

GENERAL INFORMATION

- This service manual is compiled for repairing service of SEWING MACHINE MODEL BL2150/BL6150/BL3150/BL6600.
- Use this manual with Parts Catalogue for fault findings when you make a repair.
- This machine is manufactured based on up-to-date product specifications at the time of this issue, but there may be changes of specifications for improvements. Contact manufacturer or local sales company for such changes.
- The illustration in this service manual is drawn based on BL2150/BL6150. Therefore other models have some different illustrations or manuals from them in this service manual due to difference of pattern cam and of thread guide. Also how to adjust the motor is changeable under the spec.

- Symbols used are:

Move the part this way	
Set the clearance as indicated	
Move the part to its highest or lowest position	

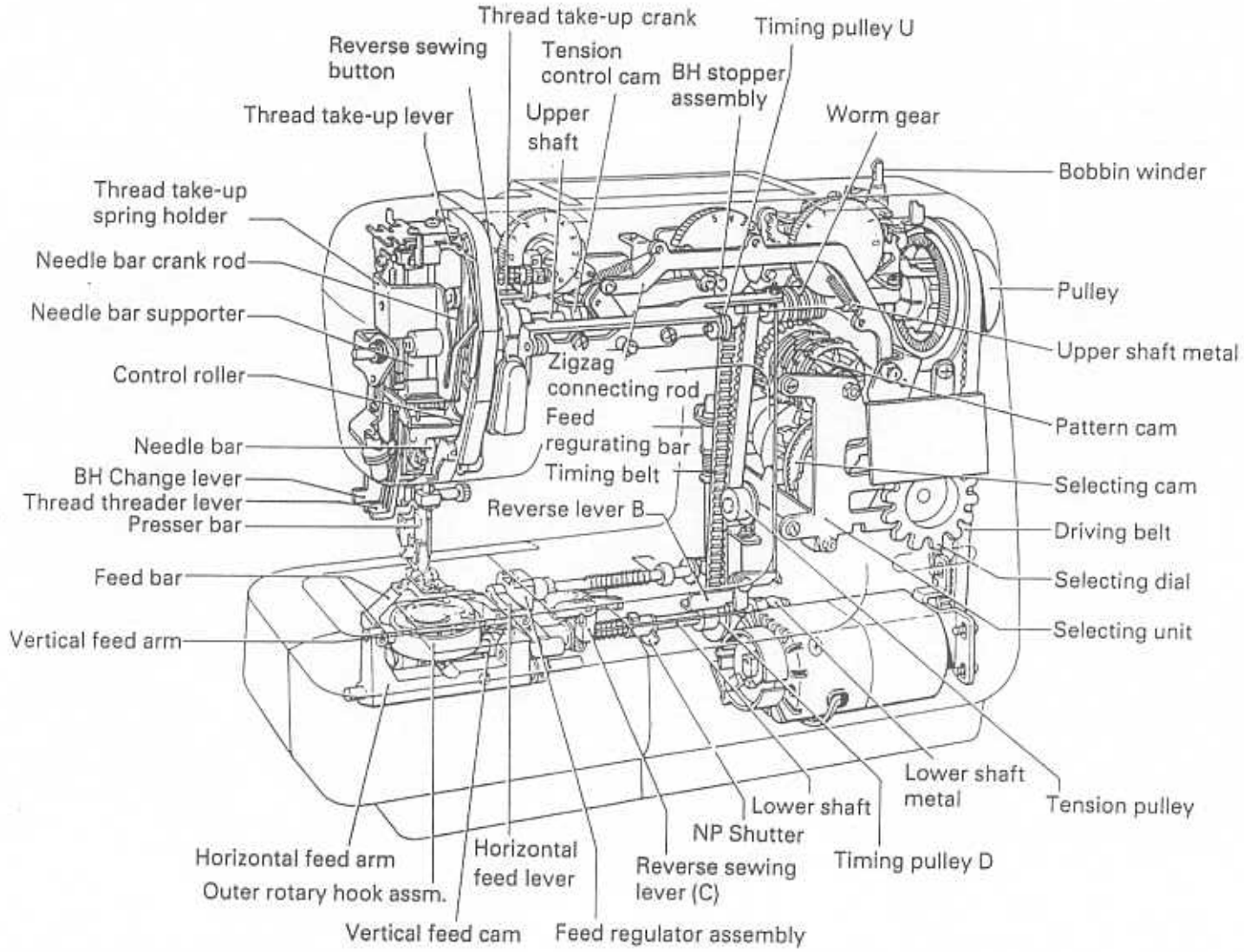
CONTENTS

CAUTION

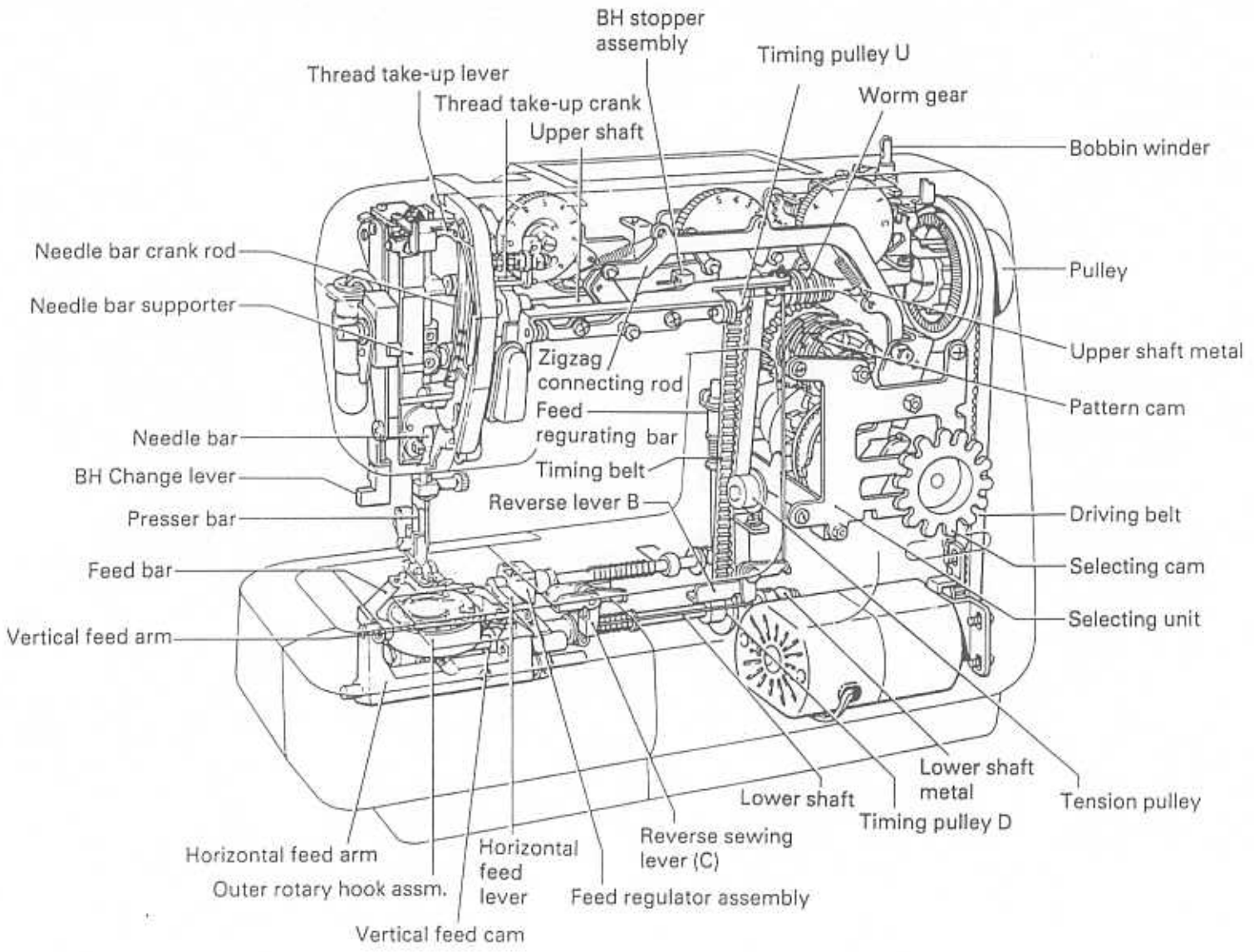
1. Always use rubber gloves when handling printed a circuit board, and do not touch the metal portion of printed the circuit board with bare hands.
2. Keep the human body earthed to avoid generating static electricity.
3. Pack a printed circuit board with aluminium foil and avoid impact with it while storing or transporting.
4. Do not touch or damage the metal portion of a printed circuit board with a screw driver or any other tools during reparing.

I. PRINCIPAL MECHANISMS

1. MECHANICAL CHART (BL3150, BL6600)

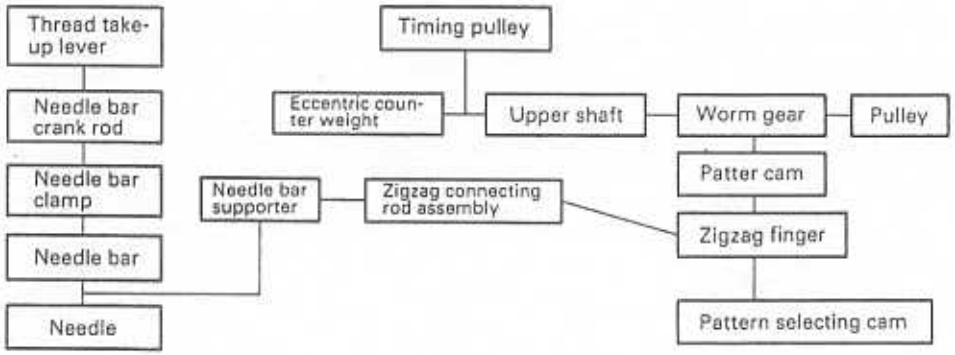


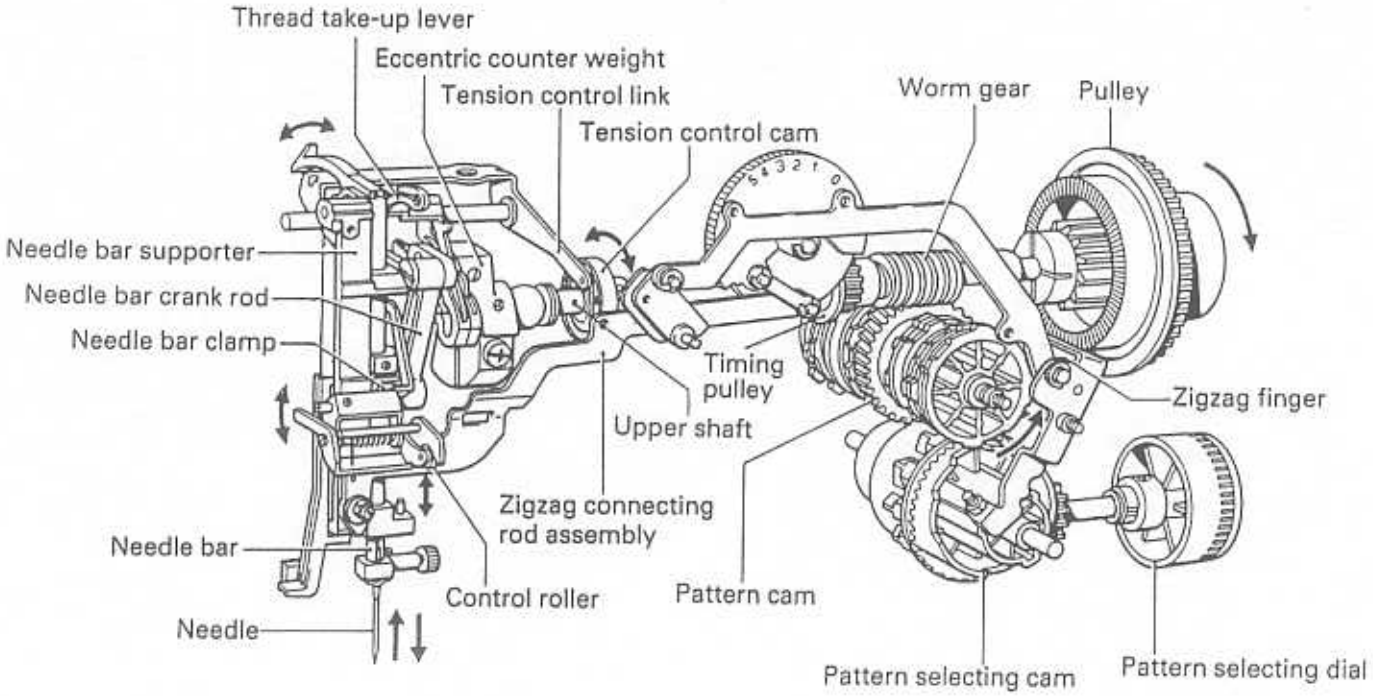
1. MECHANICAL CHART (BL2150, BL6150)



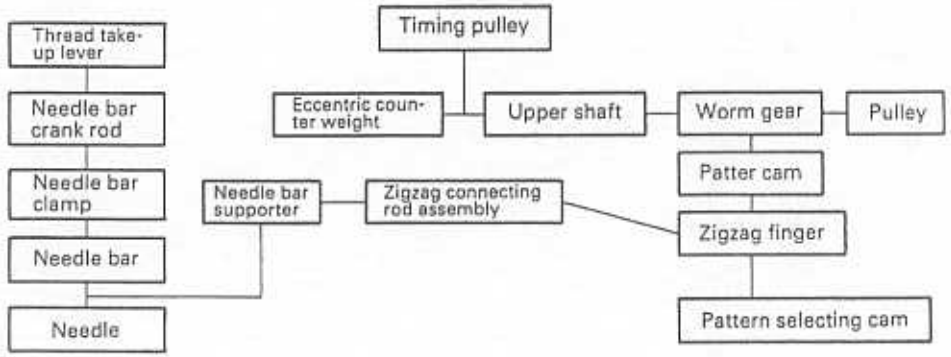
2. POWER TRANSMISSION CHART

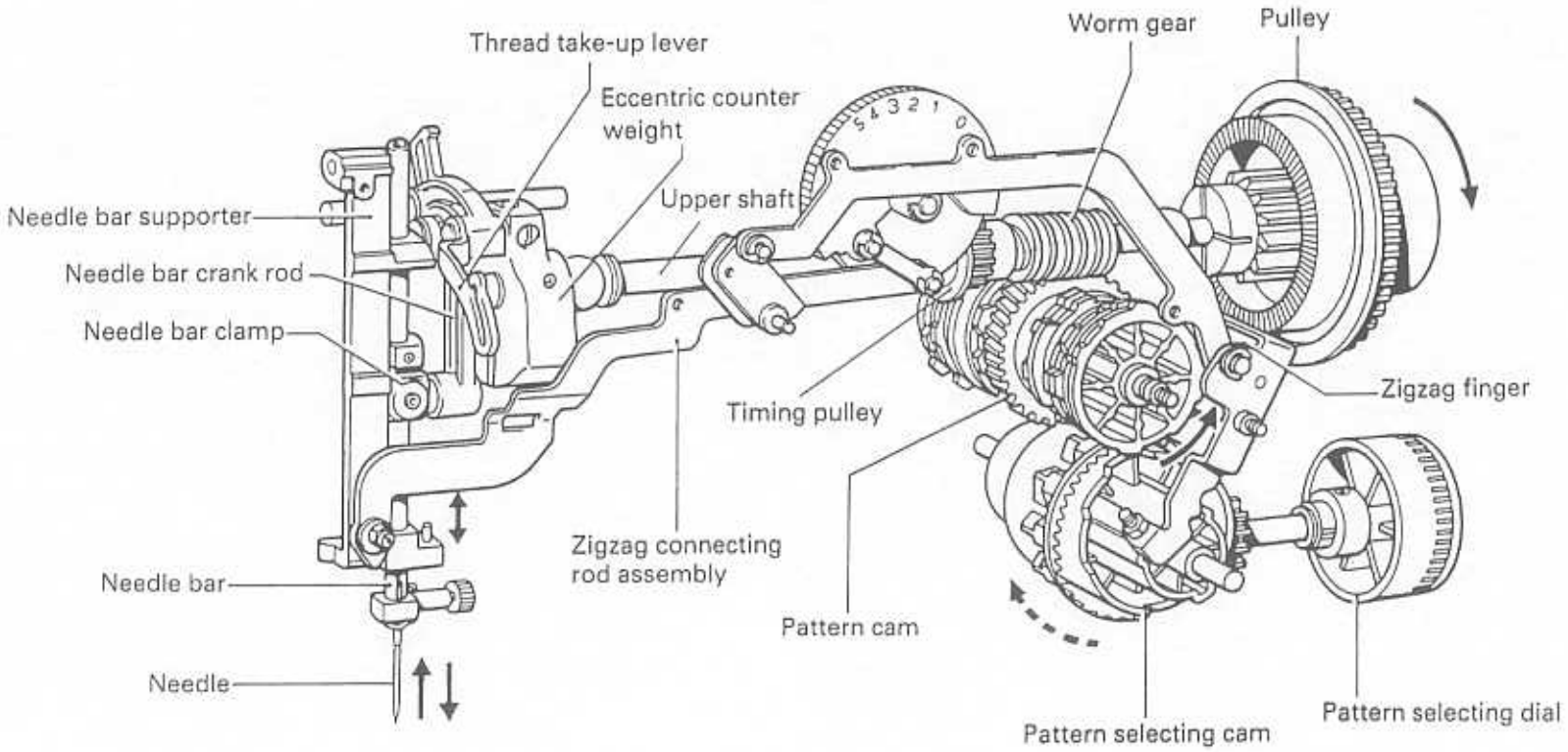
(A) Generating mechanism of needle bar, thread take-up lever and zigzag movements (BL6600)



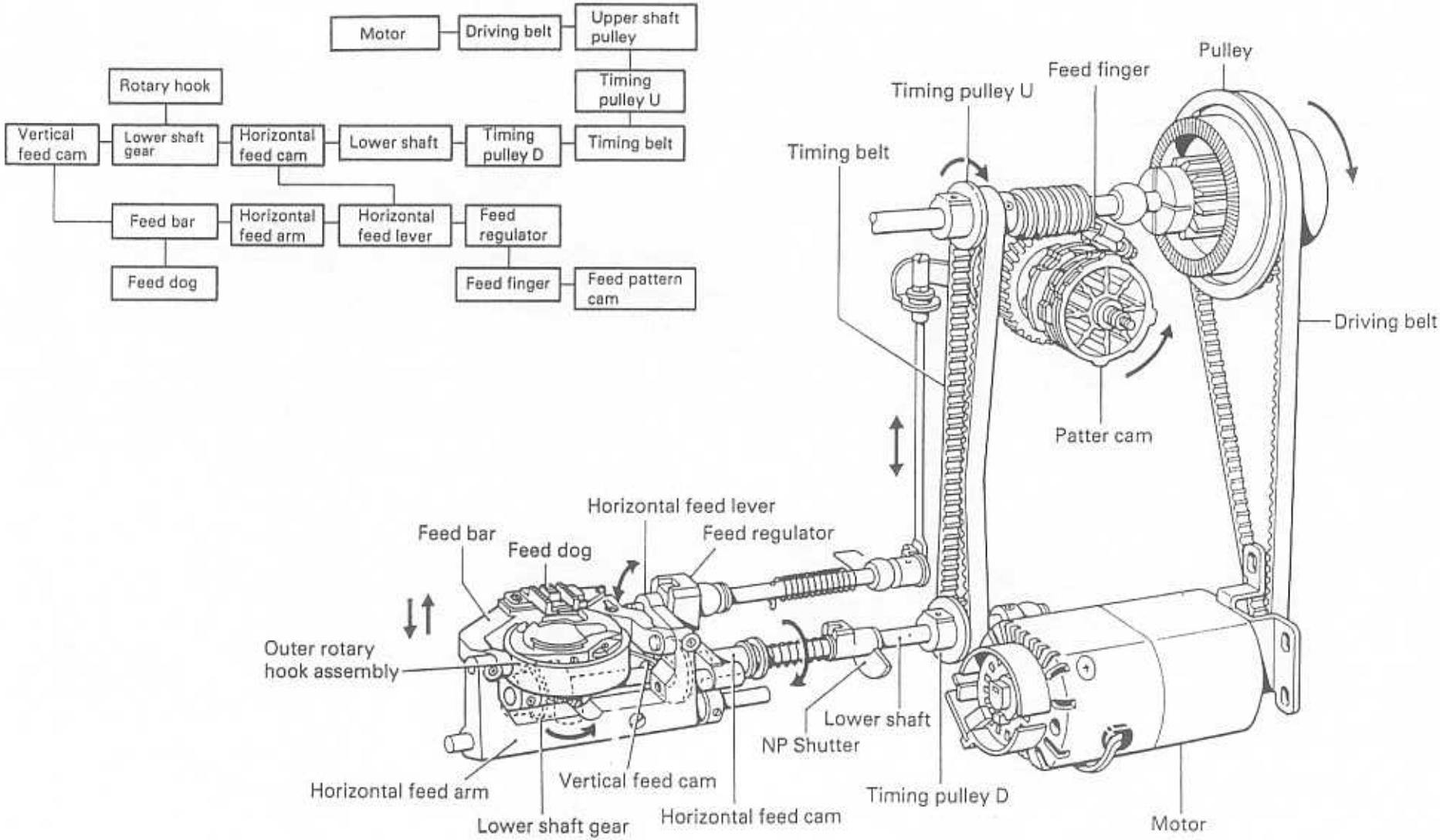


(A) Generating mechanism of needle bar, thread take-up lever and zigzag movements (EXCEPT BL6600)

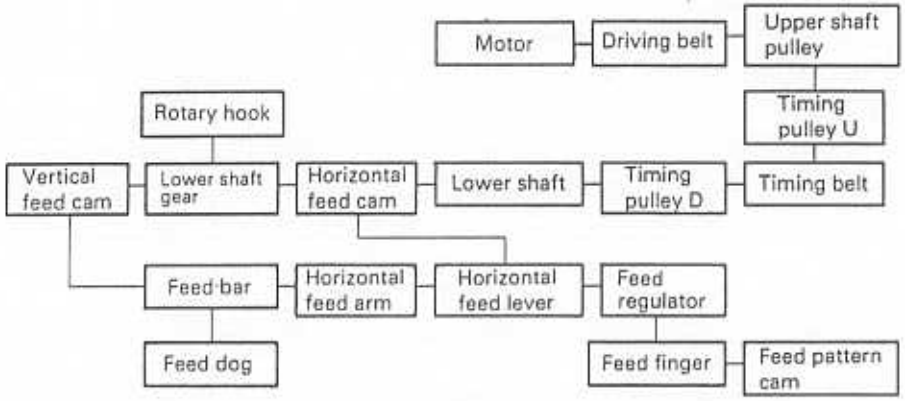


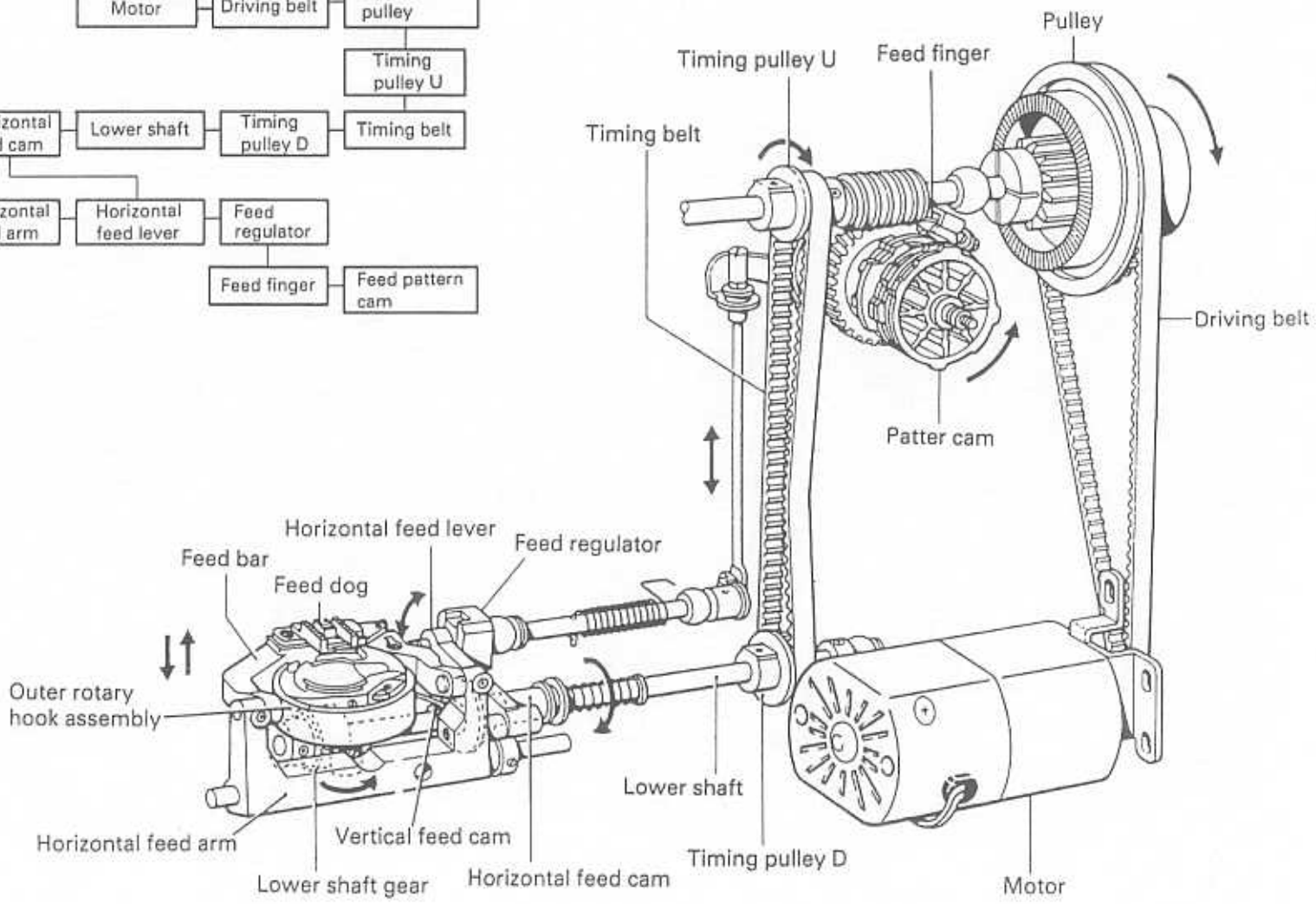


(B) Mechanism of feed dog and rotary hook movement (BL3150, BL6600)

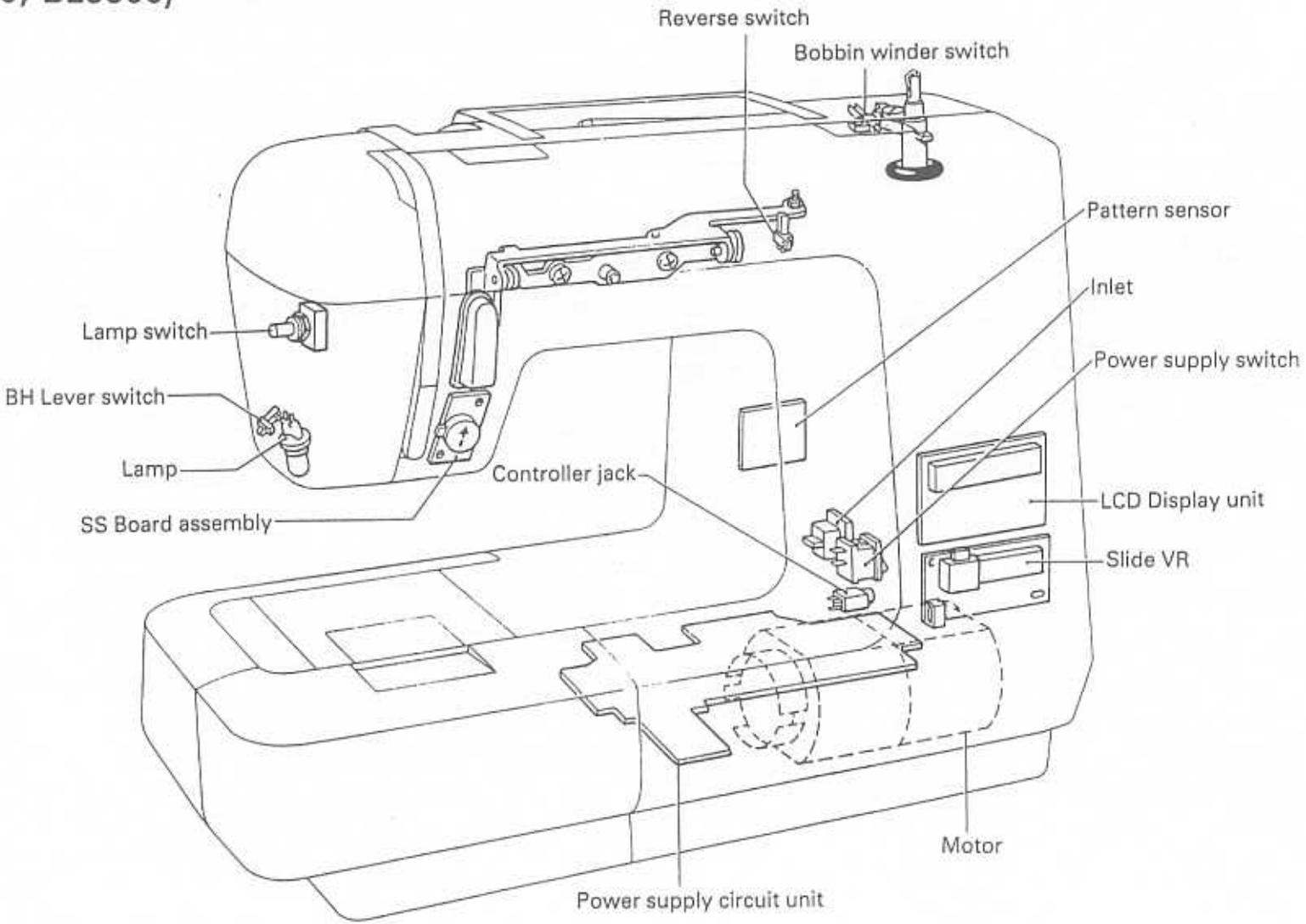


(B) Mechanism of feed dog and rotary hook movement (BL2150, BL6150)





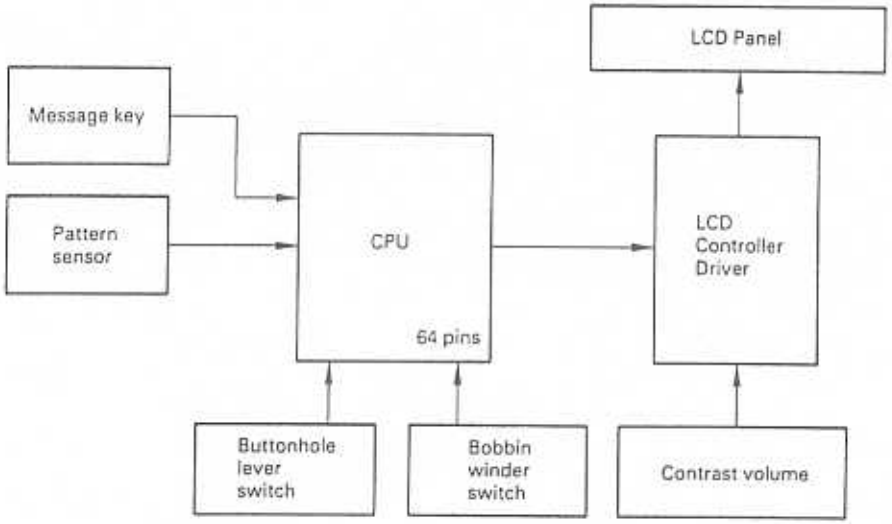
3. POSITION OF ELECTRONIC PARTS (BL3150, BL6600)



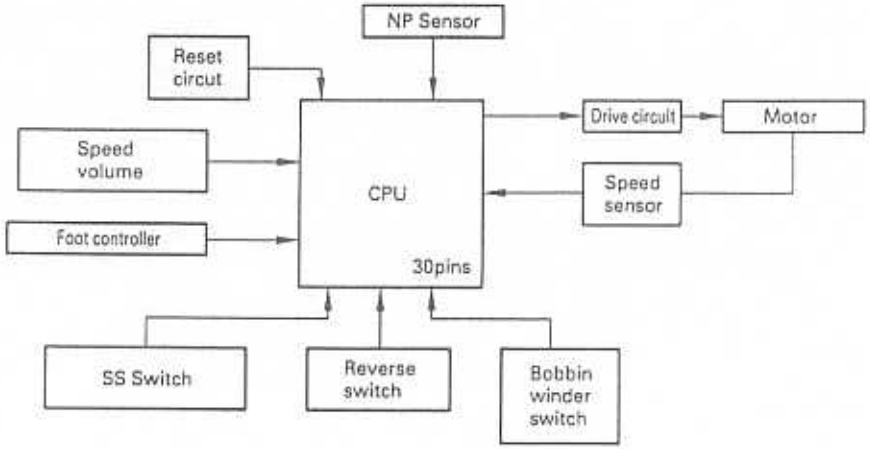
4. DISPLAY SYSTEM BY MICRO-COMPUTER

The display device on BL3150, BL6600 contains a LCD (Liquid crystal display). 8 bit micro-computer memorizes the name, usage and characters of each pattern, and displays letter, numbers and sentences by controlling LCD controller driver.

BL3150, BL6600



Message Display Control

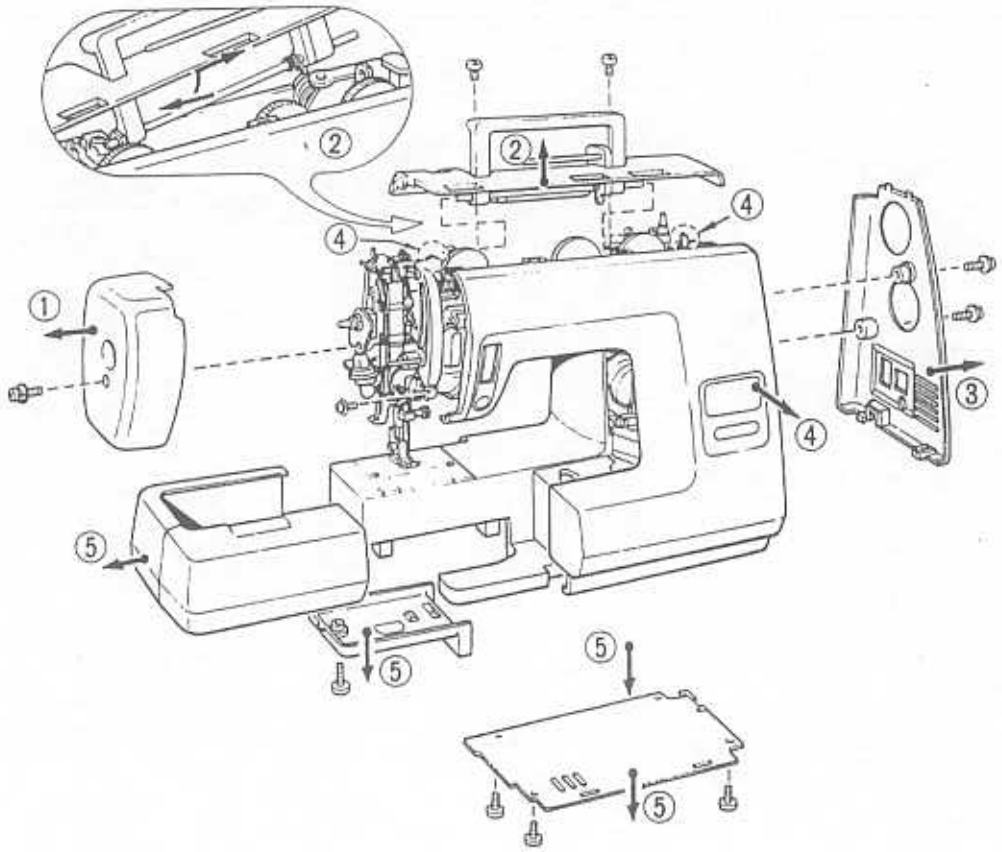


Main Motor Control

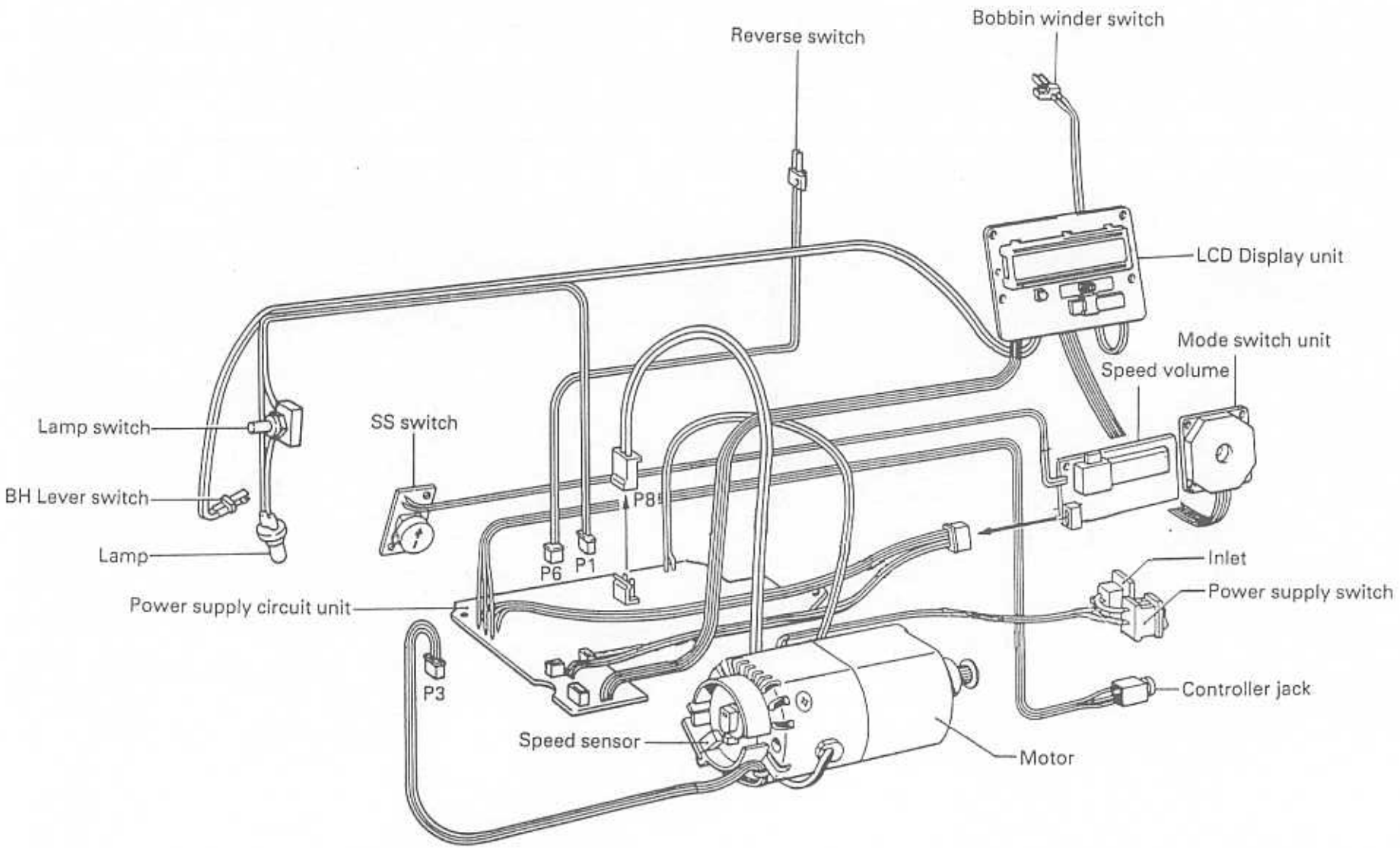
II. DISASSEMBLING

1. Outer Parts

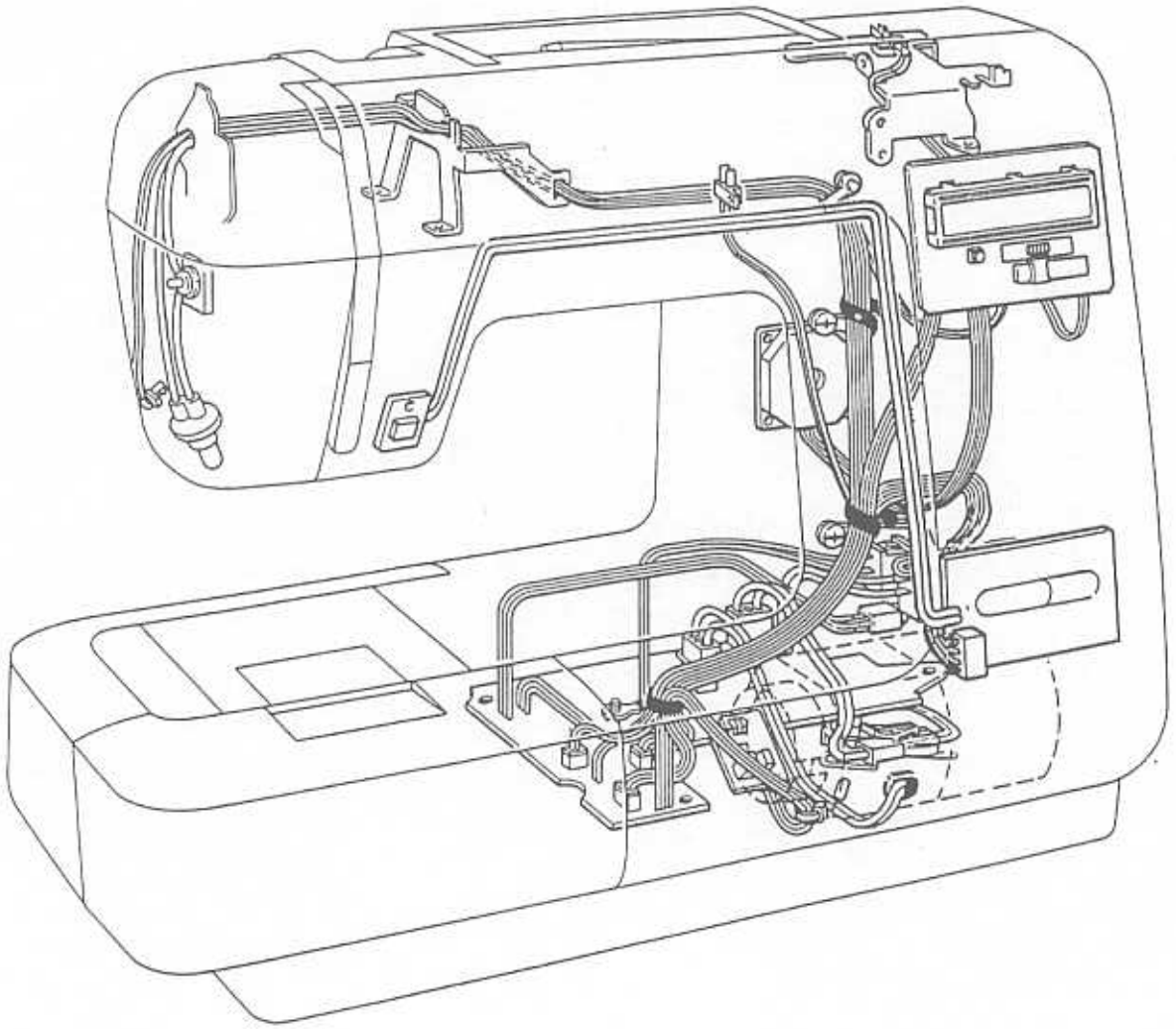
1 Remove the face plate by loosening one screw.
2 Remove the top cover upwards by loosening two screws and remove handle shaft by pulling out from right-hand holder.
3 Remove the belt cover by loosening two screws.
4 Remove the front cover by loosening one screw at left side and releasing the two hook at the top.
※ BL3150/BL6600 need pulling out four connectors inserted in LCD before remove the front cover.
5 Remove base plate downwards by loosening four screws and remove bed cover by loosening a screw.



2. Printed circuit boards (BL3150, BL6150)

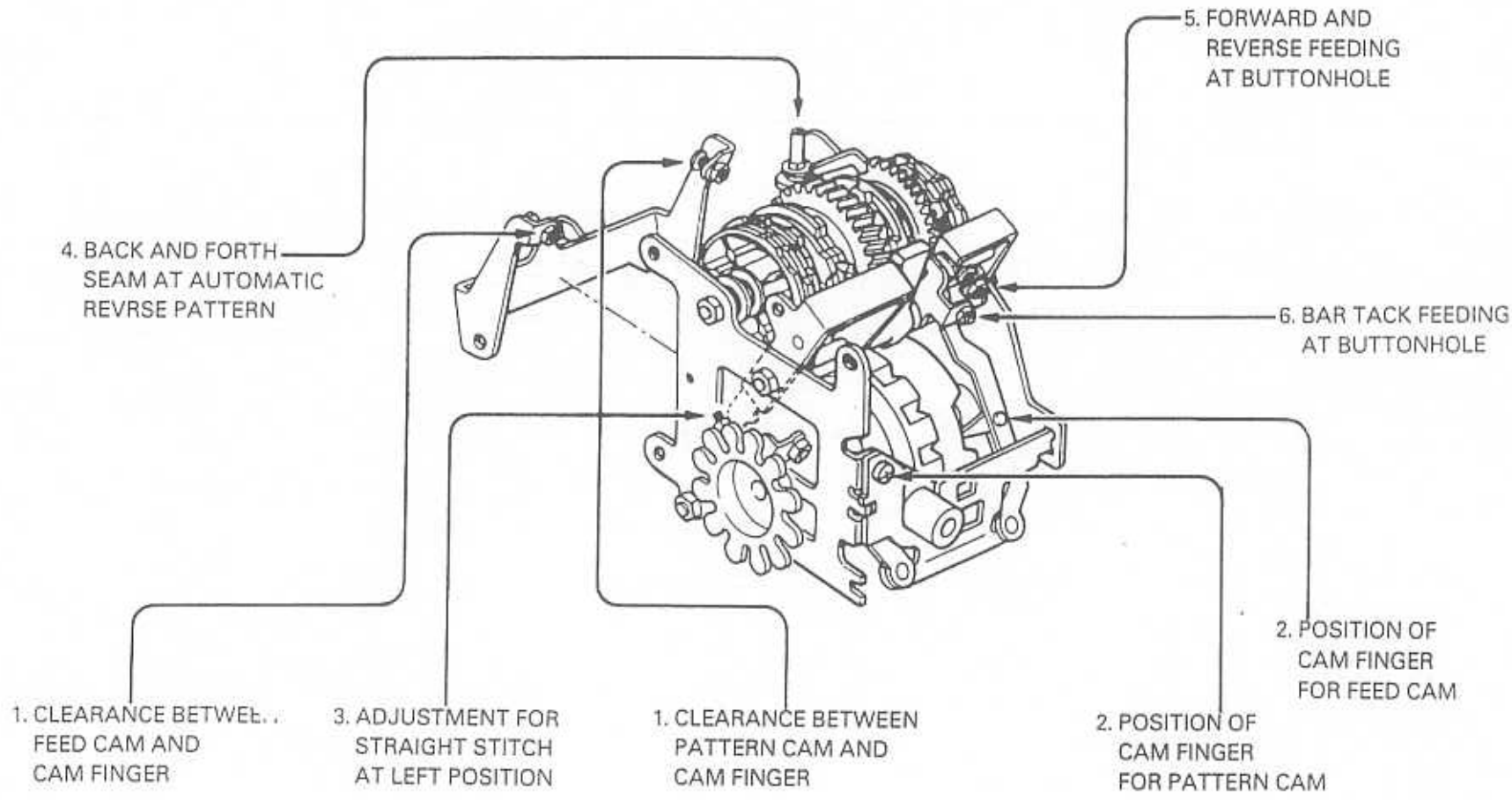


3. Lead wires (BL3150, BL6600)



III. HOW TO ADJUST THE ELEMENTS

1. ADJUSTMENT OF EACH CONTROL UNITS



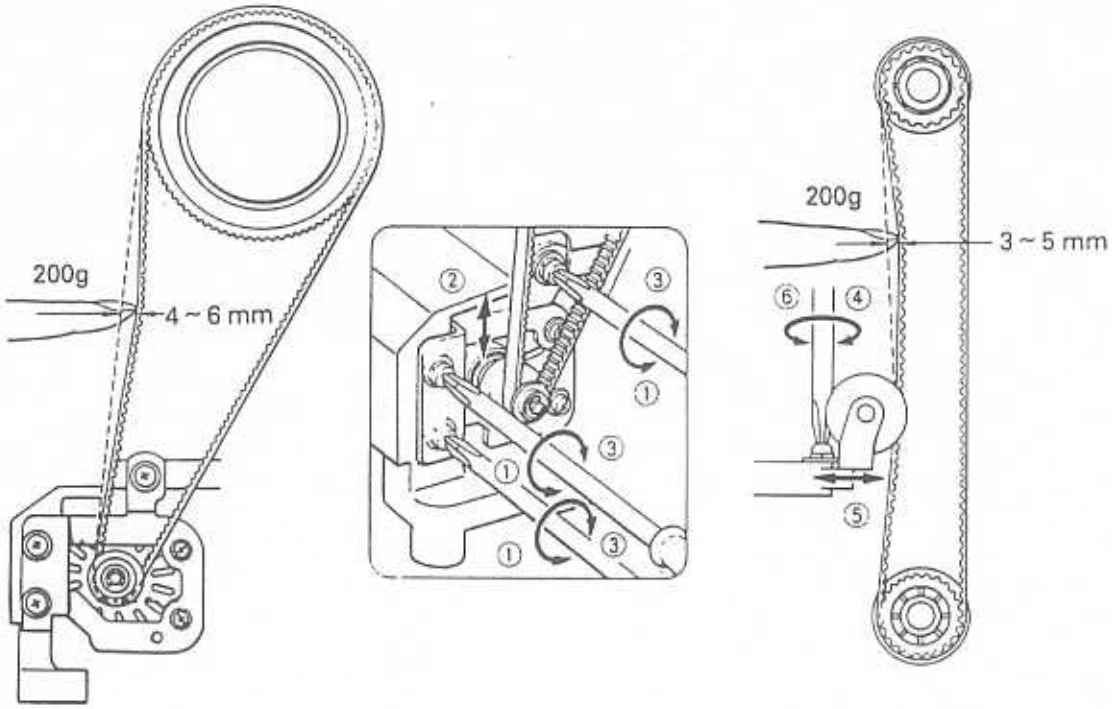
2. TENSION ON MOTOR BELT AND TIMING BELT

STANDARD

There should be 4 ~ 6 mm of slack on the motor belt, 3 ~ 5 mm of slack on timing belt, when the center of each belt is just pushed with about 200g pressure.

ADJUSTMENT

1. Loosen the 3 screws on the motor holder.
2. Adjust belt tension by moving motor holder to meet with above standard.
3. Tighten the three screws.
4. Loosen the screw on tension pulley.
5. Adjust tension on timing belt by moving tension pulley back and forth.
6. Tighten the screw.



3. TIMING OF NEEDLE BAR AND FEED

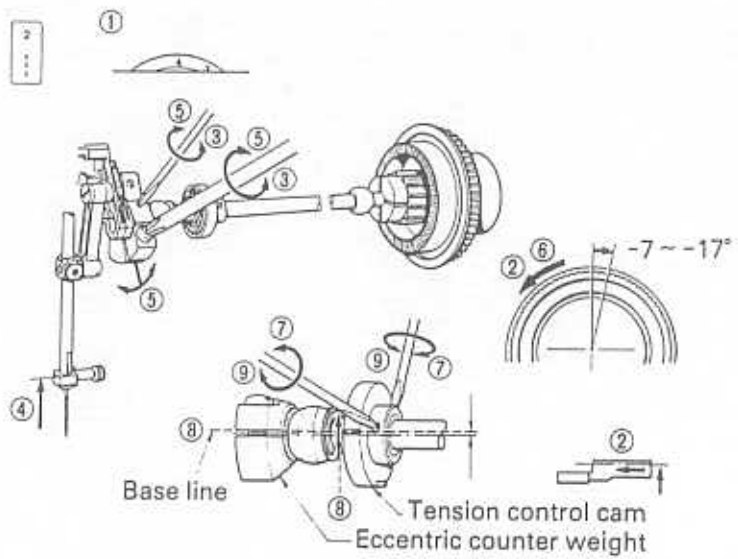
STANDARD

Horizontal feed should start when needle bar reaches at the position of -7 ~ -17° from its highest position.
(Turn the pulley counterclockwise.)

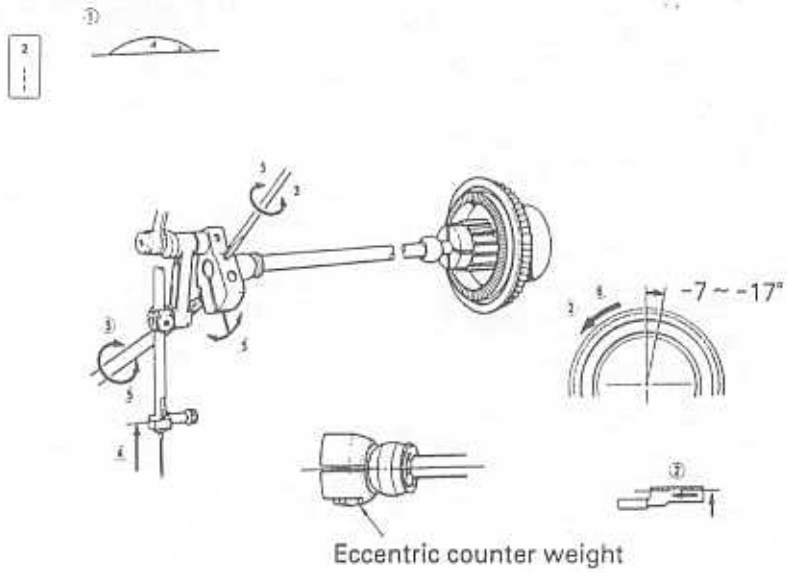
ADJUSTMENT

1. Set pattern dial to 2 "Straight stitch" and set stitch length to 4 "Maximum stitch length".
2. Set feed dog at starting position of horizontal feed by turning the pulley counterclockwise.
3. Loosen 2 screws on eccentric counter weight.
4. Hold the pulley by hand and turn eccentric counter weight so that height of needle bar is -7 ~ -17° from its highest position.
5. Tighten 2 screws on eccentric counter weight.
6. Make sure that timing was adjusted correctly by turning the pulley counterclockwise.
7. Loosen two screws of thread control cam.
8. Fit the both marks of thread control cam and thread take-up by turning the thread control cam.
9. Tighten two screws of thread control cam.

(BL6600)



(EXCEPT BL6600)



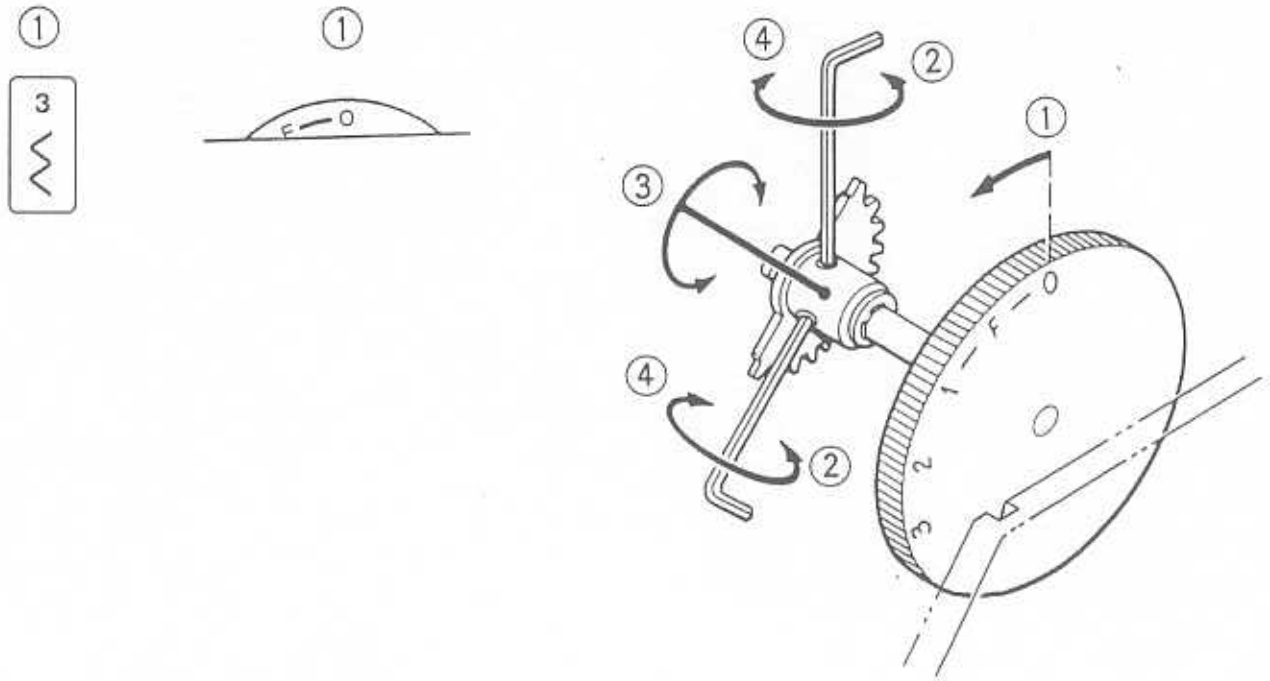
4. ADJUSTMENT OF FEED

STANDARD

When stitch length is set at "0", stitch length should be 0 mm.

ADJUSTMENT

1. Set pattern dial to "3" (Zigzag) and set stitch length to "0".
2. Loosen 2 hexagonal screws on feed dial gear.
3. Turn feed dial gear slightly so that stitch length become 0 mm.
4. Tighten 2 screws on feed dial gear.



5. POSITION OF ZIGZAG NEEDLE SWING

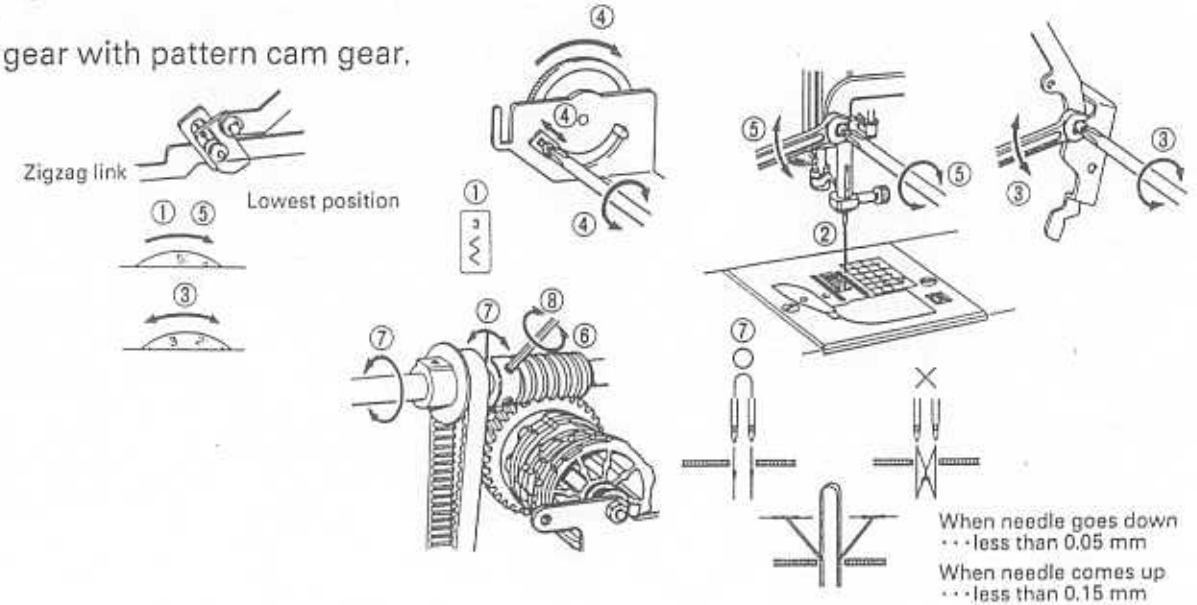
STANDARD

Set pattern dial to "3" (ZIGZAG)
The needle should drop in the needle hole balanced.
When zigzag width is set to "5" and full turn the zigzag width dial from 0 to 5 in the right position of needle, horizontal movement of the needle should be less than 0.1 mm.
Needle swing on the way up from lowest position to needle plate should be less than 0.15 mm and that on the way down from needle plate to lowest position should be less than 0.05 mm.

ADJUSTMENT

1. Set pattern dial to "3" (ZIGZAG) and stitch width dial to "5".
2. Set the right position of needle by turning the wheel.
3. Turning stitch width dial from 0 to 5 and adjust eccentric nut so that the needle does not swing.
4. Turn the zigzag dial to "0" and adjusting plate should be touched dial stopper.
5. Turning stitch width dial to "5" and adjust eccentric nut so that the needle drops in the needle hole balanced.
6. Loosen three set screws on worm gear.
7. Adjust needle swing by turning worm gear.
8. Tighten three screws on worm gear.

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



6. POSITION OF ROTARY HOOK

STANDARD

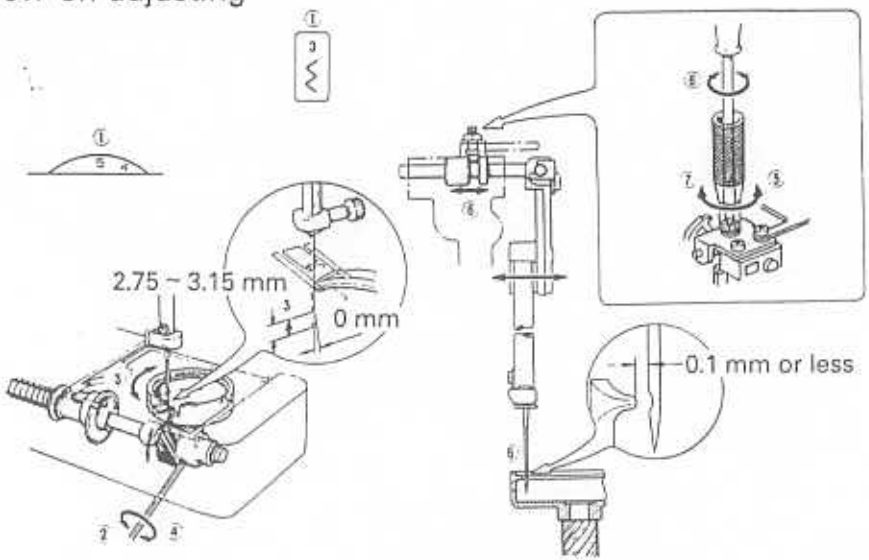
When pattern dial is set to "3" zigzag stitch at left position and needle raises from its lowest position by 2.75 ~ 3.15 mm, the pointed end of rotary hook should meet with right side of the needle.
Under this condition, clearance between the hook and the needle should be less than 0.1 mm and the hook should not hit the needle.

ADJUSTMENT

1. Set pattern dial to "3" and zigzag width to "5" (zigzag stitch at left position).
2. Loosen three screws on lower shaft gear.
3. Adjust position of rotary hook. (When needle raises from its lowest position by 2.75 ~ 3.15 mm, the pointed end of rotary hook should meet with right side of the needle.)
4. Tighten three screws on lower shaft gear.
5. Loosen the nut for clearance adjusting eccentric screw.
6. Adjust clearance by turning clearance adjusting eccentric screw.
7. Tighten the nut.

NOTE

In case clearance can not be adjusted by above, loosen set screw on adjusting collar and adjust the clearance by moving collar back and forth.



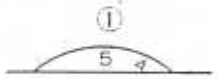
7. HEIGHT OF NEEDLE BAR

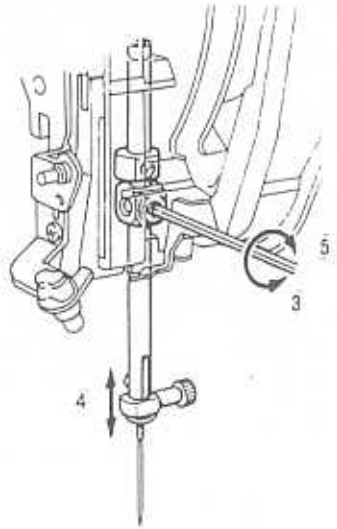
STANDARD

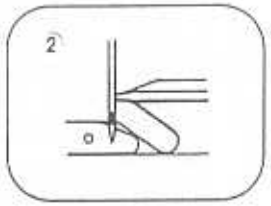
When pattern dial is set to "3" zigzag stitch at left position and the pointed end of rotary hook meet with right side of needle, clearance between upper top of needle eye and hook point should be 1.0 ± 0.2 mm.

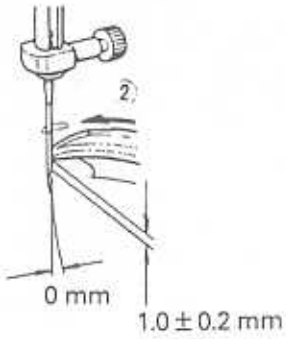
ADJUSTMENT

1. Set pattern dial to "3" and zigzag width to "5" (zigzag stitch at left position).
2. Set position so that hook point meet with right side of the needle by turning the pulley.
3. Loosen the screw on needle bar holder.
4. Adjust the position of needle bar.
5. Tighten the screw.









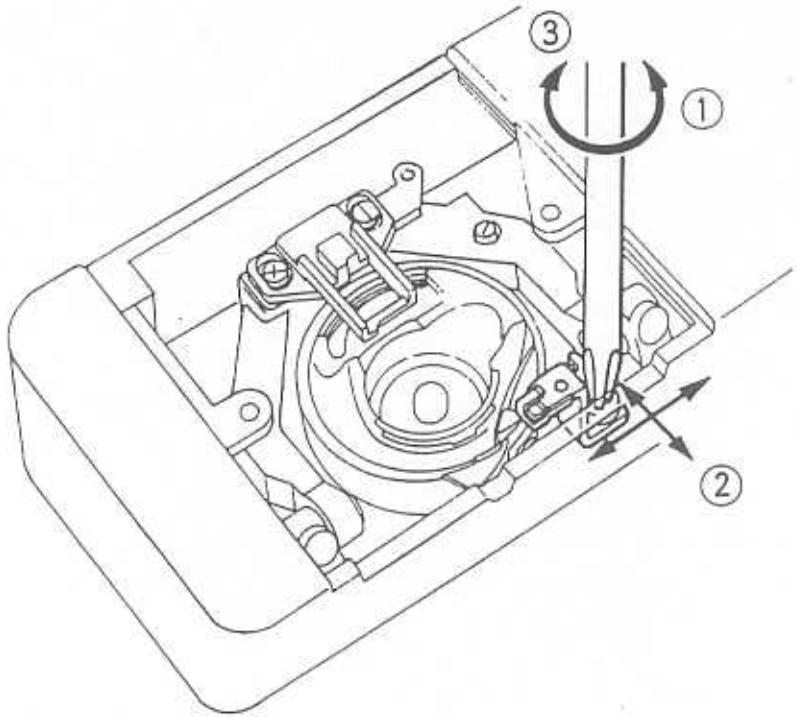
8. POSITON OF INNER ROTARY HOOK STOPPER

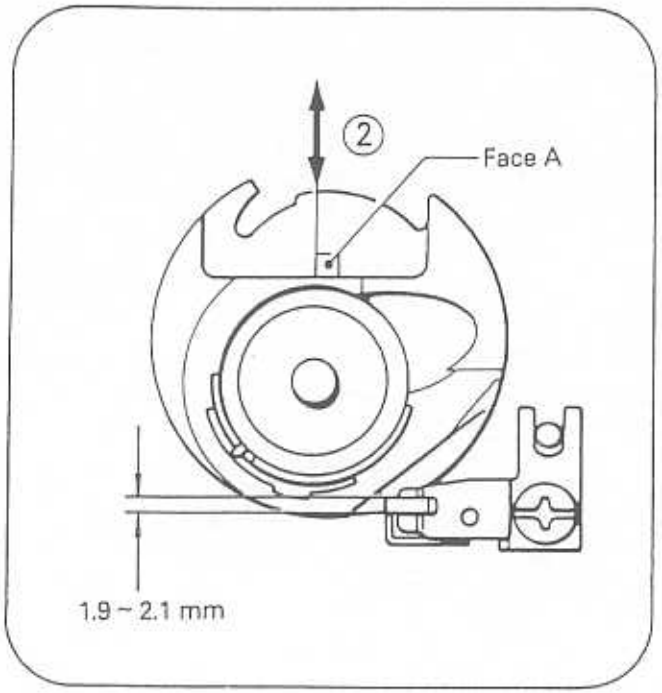
STANDARD

Inner rotary hook stopper should hold inner rotary hook by 1.9 ~ 2.1 mm as shown in drawing.

ADJUSTMENT

1. Loosen the screw on inner rotary hook stopper.
2. Adjust the position of inner rotary hook stopper.
   (Face A on inner rotary hook and feed direction should be at right angles.)
3. Tighten the screw.





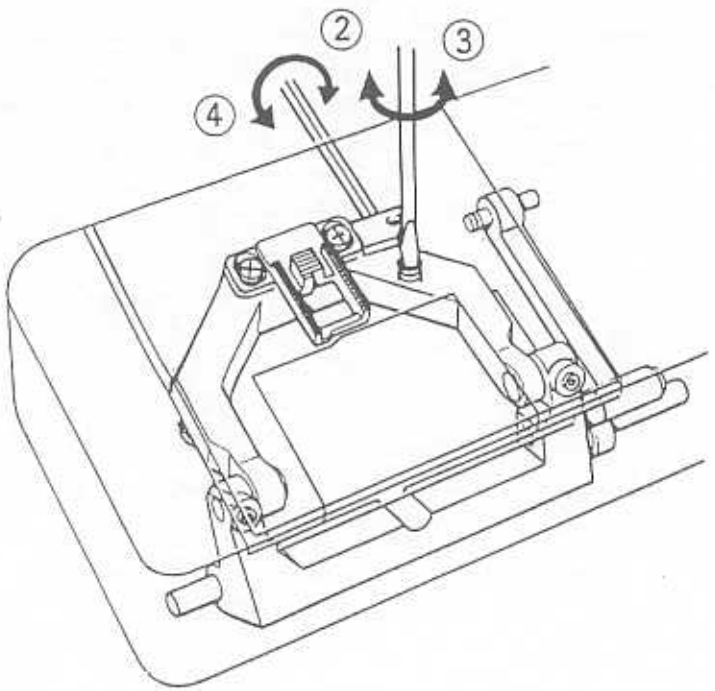
9. HEIGHT OF FEED DOG

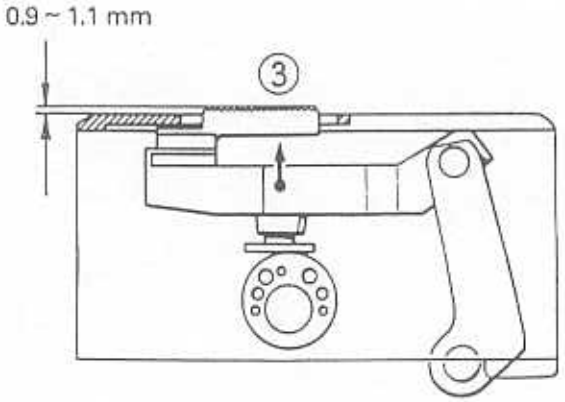
STANDARD

Feed dog should be higher than needle plate by 0.9 ~ 1.1 mm when feed dog is raised to its highest position.

ADJUSTMENT

1. Raise feed dog to its highest position by turning balance wheel.
2. Loosen set screw for vertical feed finger.
3. Adjust the height of feed dog by turning vertical feed finger.
4. Tighten set screw.





10. HEIGHT OF PRESSER BAR

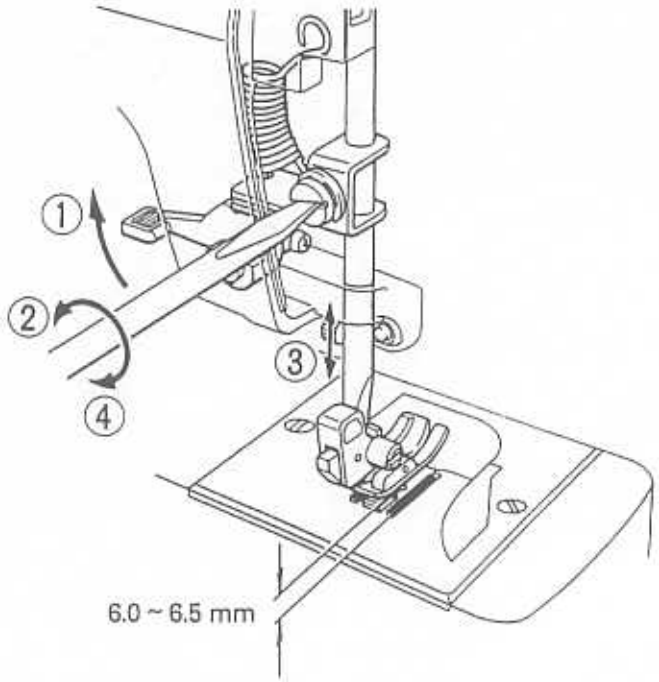
STANDARD

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

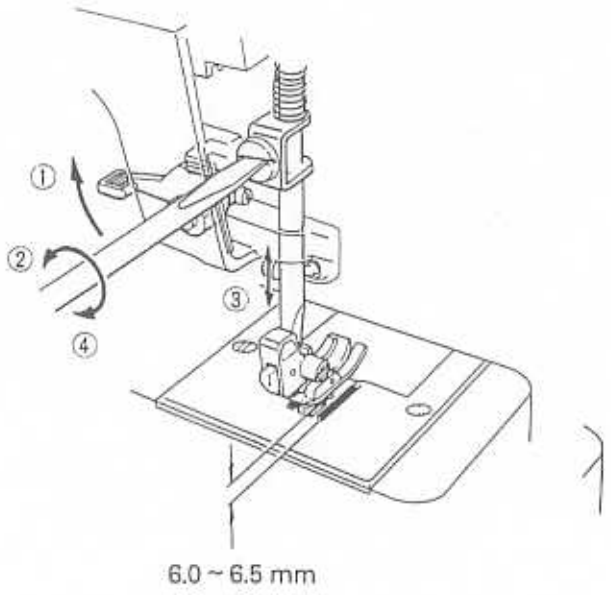
ADJUSTMENT

1. Raise presser foot.
2. Loosen the screw on presser bar guide bracket.
3. Adjust height of presser bar.
   (Presser foot should be parallel to feed dog.)
4. Tighten the screw.

(BL6600)



(EXCEPT BL6600)



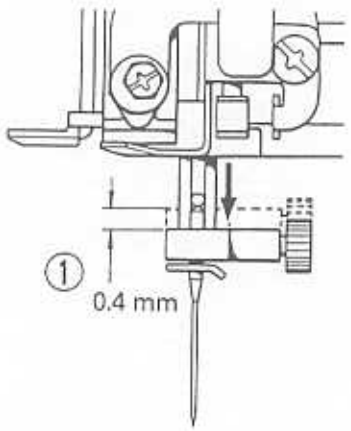
11. POSITION OF N.P. (NEEDLE POSITION) SHUTTER (BL3150, BL6600)

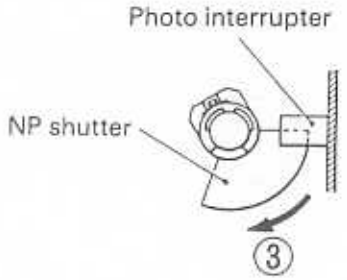
STANDARD

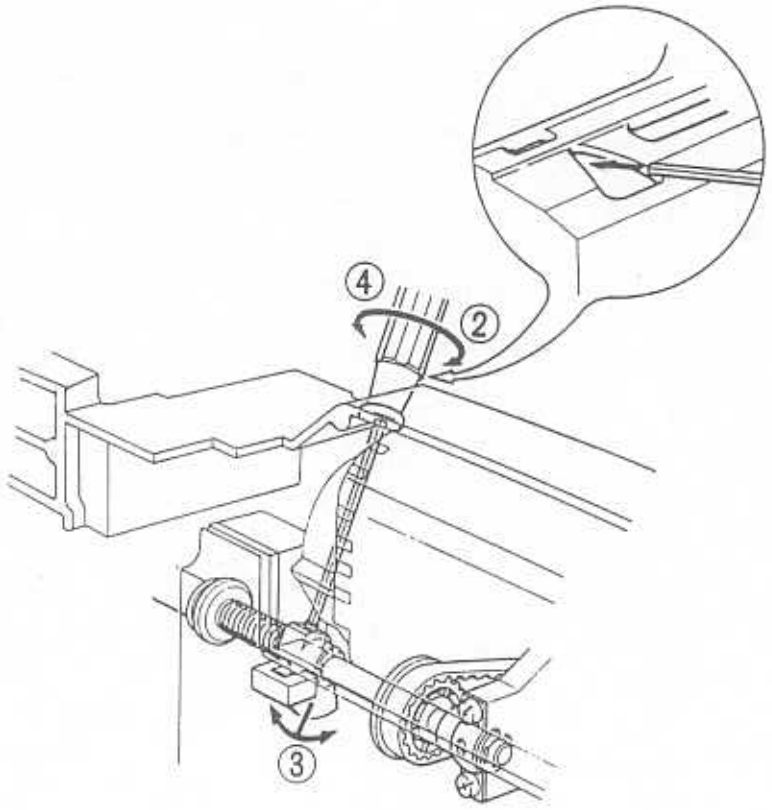
Needle position shutter works when the needle reaches at the position of 0.4 mm lower than its highest position.

ADJUSTMENT

1. Turn the balance wheel to correct direction and set the needle at the position of 0.4 mm lower than its highest position.
2. Loosen the hexagonal screw of the rotary shutter.
3. Turn the rotary shutter to correct direction slowly and adjust it to be at the center of N.P. shutter and photo interrupter.
4. Tighten the screw of the rotary shutter.







12. ADJUSTMENT OF THREAD TENSION DIAL

(BL6600)

STANDARD

When thread tension dial is set at "AUTO" and presser foot is lowered, upper thread tension should be 10 ~ 13g using polyester thread #50.

ADJUSTMENT

1. Set thread tension dial at "AUTO", put polyester thread between tension discs and lower presser foot.
2. Loosen the set screw for thread tension control screw.
3. Measure thread tension using tension gauge and adjust tension to 10 ~ 13g by turning thread tension screw.
4. Tighten set screw.

(EXCEPT BL6600)

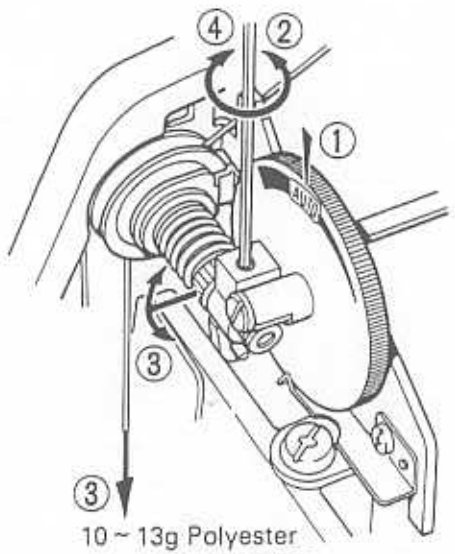
STANDARD

When thread tension dial is set at "5" and presser foot is lowered, upper thread tension should be 40 ~ 50g using polyester thread #50.

ADJUSTMENT

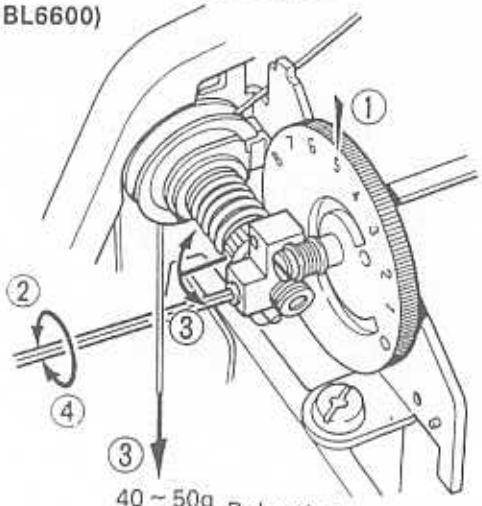
1. Set thread tension dial at "5", put polyester thread between tension discs and lower presser foot.
2. Loosen the set screw for thread tension control screw.
3. Measure thread tension using tension gauge and adjust tension to 40 ~ 50g by turning thread tension screw.
4. Tighten set screw.

(BL6600)



10 ~ 13g Polyester thread #50

(EXCEPT BL6600)



40 ~ 50g Polyester thread #50

13. POSITION OF PATTERN INDICATION PLATE

STANDARD

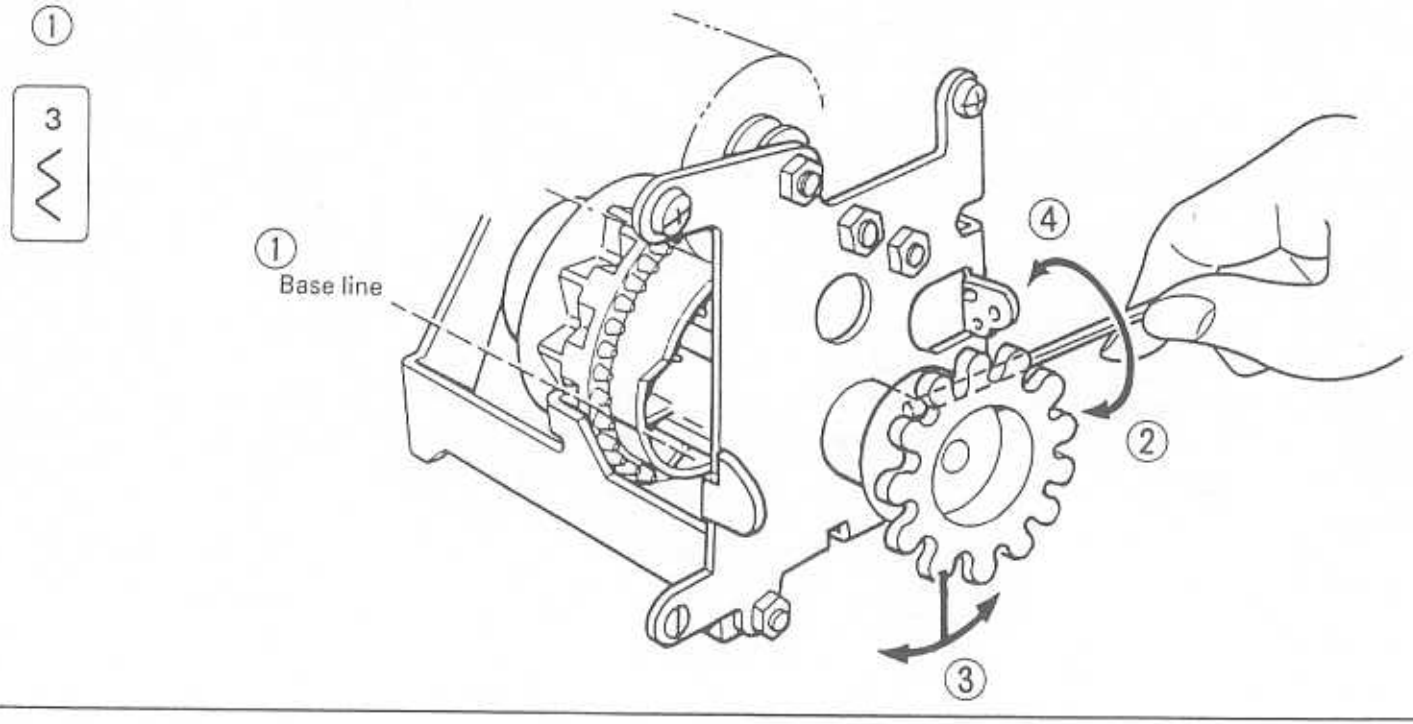
Each pattern on indication plate should be indicated at the center of the indication window.

ADJUSTMENT

1. Set pattern dial to "3" (zigzag stitch) and check baseline on selecting cam meet with upper end of release lever.
2. Loosen the screw on indication gear collar.
3. Set the symbol of zigzag stitch at the center of the indication window, or at right below the mark on the arm, by turning indication gear.
4. Tighten the screw.

NOTE

After adjustment, make sure each pattern is indicated at the center of the window by turning pattern selecting dial.



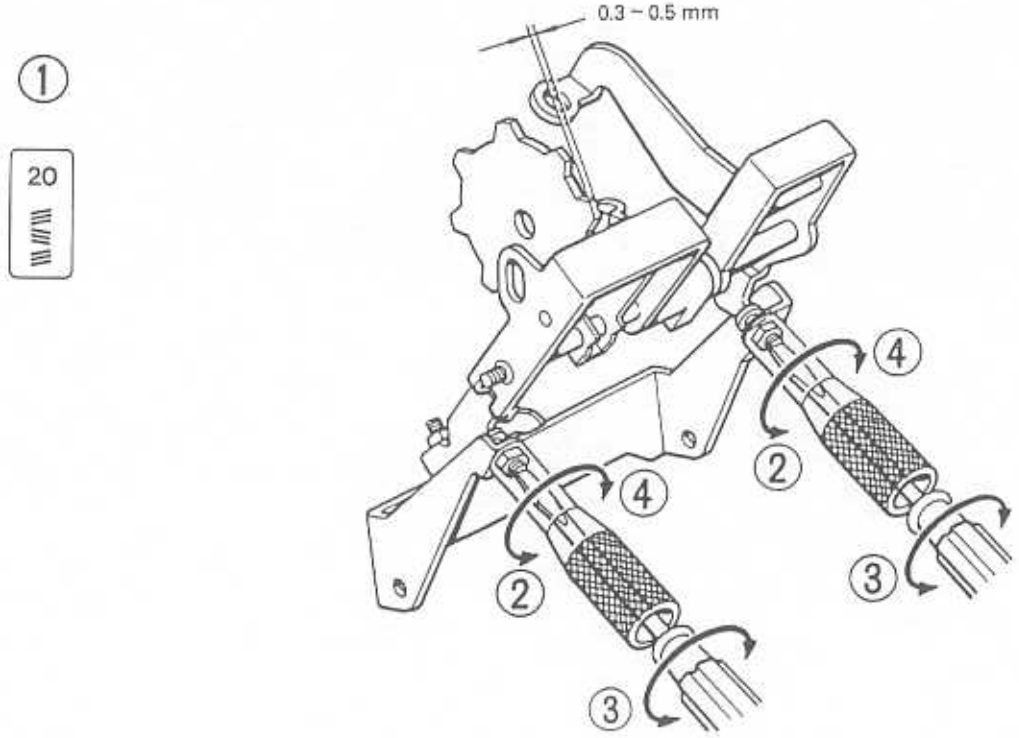
14. CLEARANCE BETWEEN CAM FINGER AND CAM

STANDARD

When pattern dial is set to "20"※ (Rick-rack stitch) and cam finger is released, clearance between cam finger and pattern cam & feed cam should be 0.3 ~ 0.5 mm.

ADJUSTMENT

1. By turning pattern selecting dial, select "20"※ (Rick-rack sttich) and release cam finger from pattern and feed cam.
2. Loosen the nut for release adjustment screw.
3. Adjust clearance by turning release adjustment screw.
4. Tighten the nut.



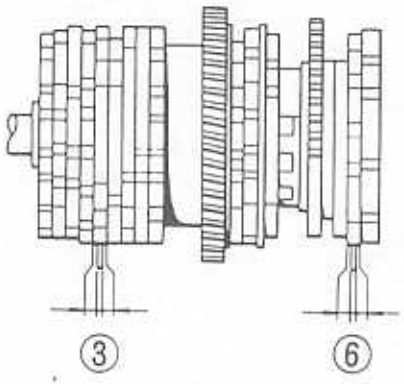
15. POSITION OF CAM FINGER FOR FEED CAM AND PATTERN CAM

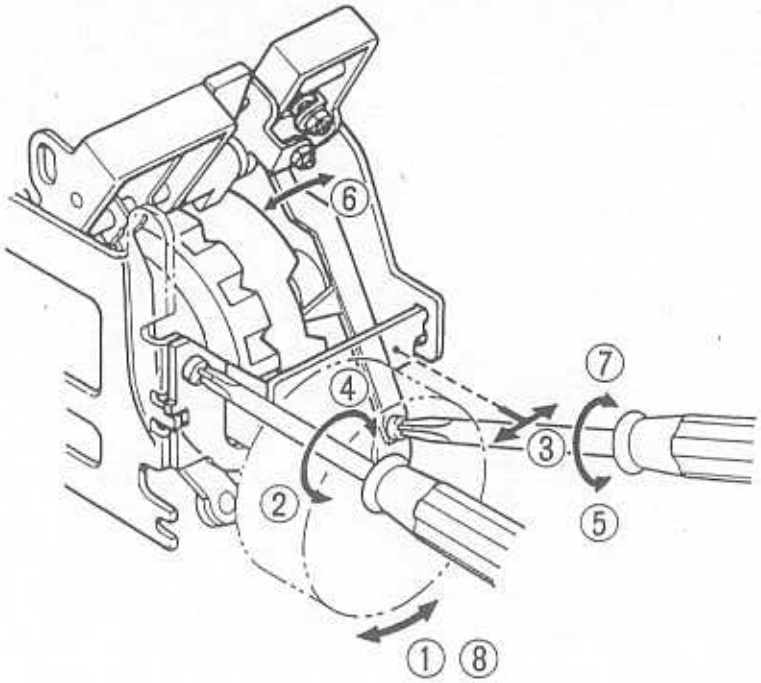
STANDARD

Feed cam finger and zigzag cam finger should be center position of each cam.

ADJUSTMENT

1. Check the position of feed cam finger and zigzag cam finger by turning pattern selecting dial.
2. Loosen the screw on selecting lever holder.
3. Set the Z cam finger to the center position of each cam by adjust selecting lever holder.
4. Tighten the screw.
5. Loosen teh screw on F selecting lever.
6. Set the F cam finger to the center position of each cam by adjust F selecting lever.
7. Tighten the screw.
8. Make sure cam finger is located at the center position of each cam by turning pattern selecting dial.





16. ADJUSTMENT OF AUTO TENSION (BL6600) (ADJUSTMENT OF ROLLER FOR THREAD TENSION CONTROL)

STANDARD

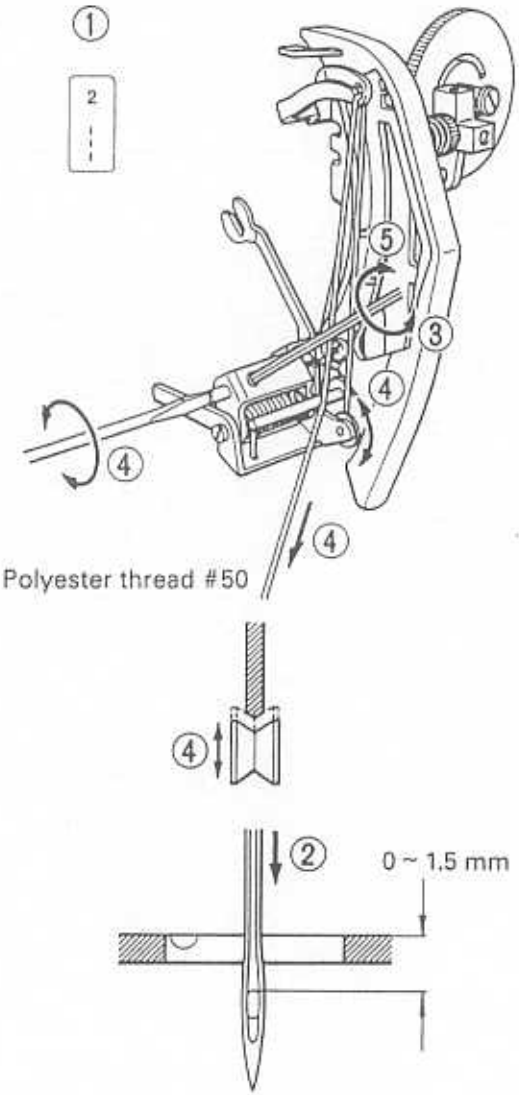
Thread polyester thread #50 between roller and thread holder.
Turn the pully by hand toward you. the thread should be locked when the top of the needle eye comes down 0 ~ 1.5 mm down from the surface of needle plate. (Remove presser foot and lower presser foot bar.)

ADJUSTMENT

1. Set pattern dial at "2" straight stitch and lower the presser foot after thread polyester thread #50 properly.
2. Turn the pulley toward you and adjust needle position at the top of needle eye 0 ~ 1.5 mm down from the surface of needle plate.
3. Loosen the set screw for roller adjusting shaft.
4. Turn the roller adjusting shaft by screw driver and adjust the roller position inbetween lock and release condition with drawing thread.
5. Tighten the set screw for roller adjusting shaft. (Adjust the roller position within one cycle of the set screw for roller adjusting shaft.)

NOTE

Turn pulley toward you 2 ~ 3 times. Check if the roller should lock thread when top of needle eye 0 ~ 1.5 mm down from the surface of needle plate. Also check if thread tension is proper on 2 pcs of broad with needle #14 (No. 90), polyester thread #50.



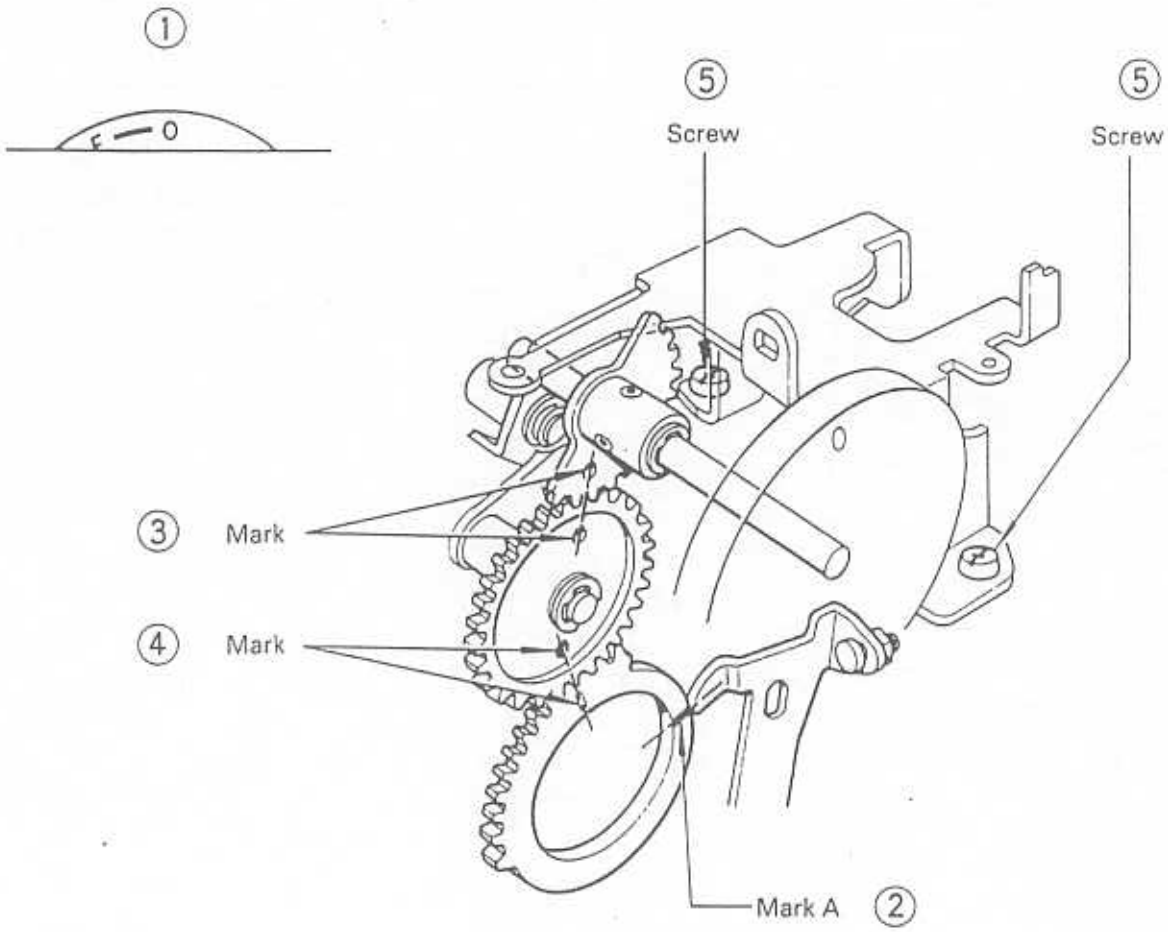
17. SETTING OF FEED BRACKET

STANDARD

When feed dial is set at "0", each marks on feed dial gear, feed gear, feed cam and feed finger should meet in line.

ADJUSTMENT

1. Set feed dial at "0".
2. Set the mark on the feed cam to feed finger.
3. Set the mark on the feed gear to the mark on feed cam.
4. Set the mark on the feed dial gear to the mark on feed gear.
5. Fix the feed bracket by tightening two screws.



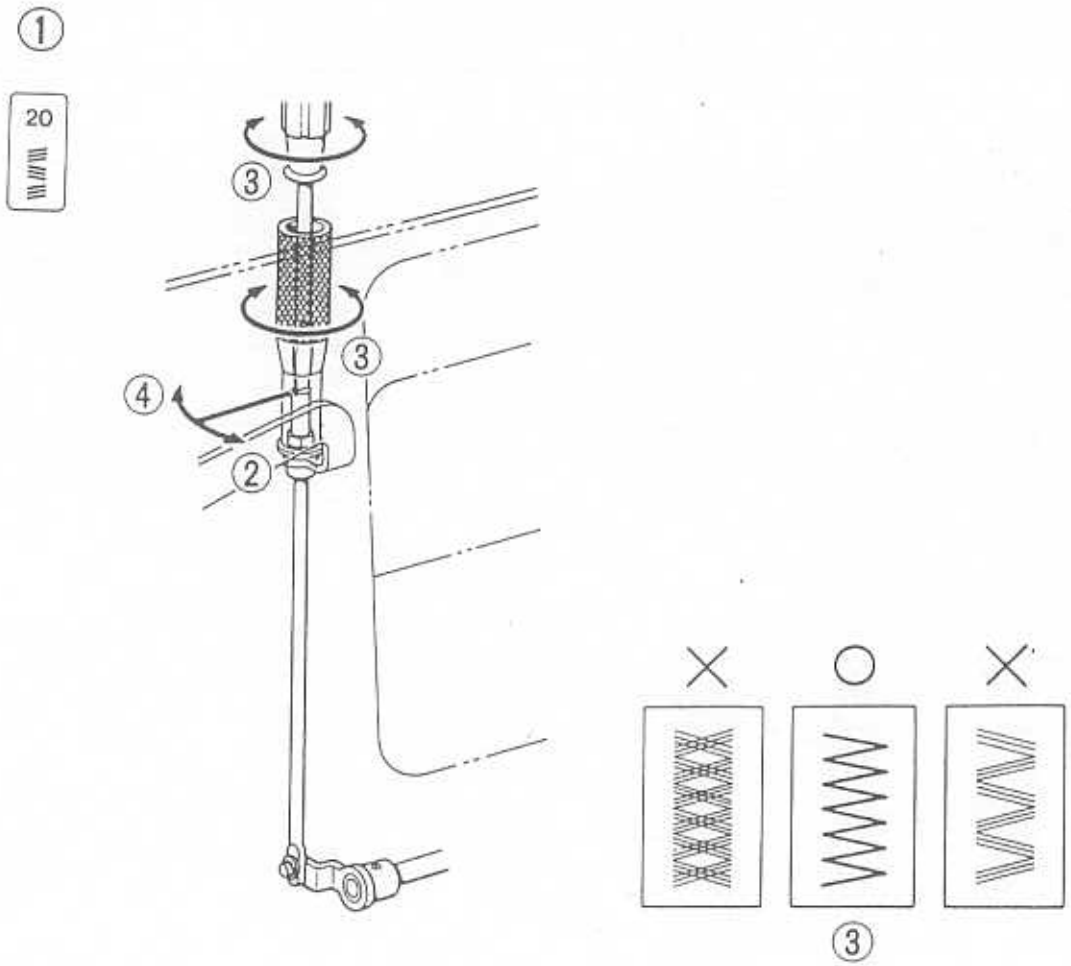
18. FORWARD AND REVERSE FEEDING

STANDARD

When pattern dial is set to "20"※ (Rick-rack stitch), there should be no difference between forward and reverse feed.

ADJUSTMENT

1. Set pattern dial to "20"※ (Rick-rack stitch).
2. Loosen the nut for adjustment screw.
3. Adjust forward and reverse feeding by turning screw.
4. Tighten the nut.



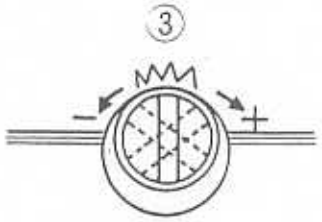
19. BUTTONHOLE ADJUSTMENT (FORWARD AND REVERSE FEEDING)

STANDARD

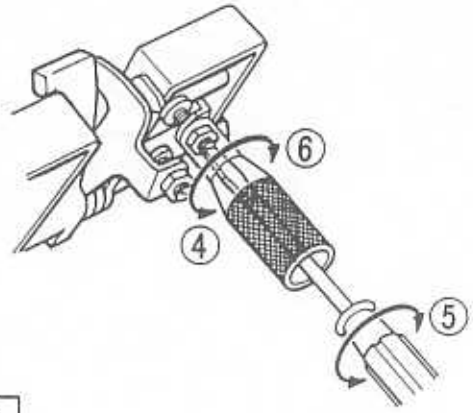
When pattern is set "1" (Buttonhole), there should be no difference between left and right legs.

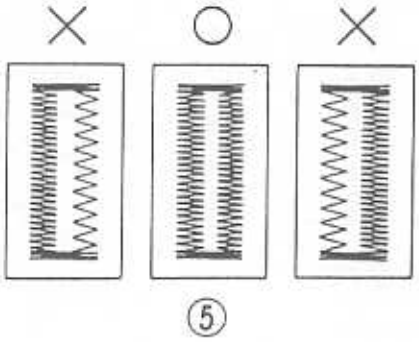
ADJUSTMENT

1. Set pattern dial "1" (Buttonhole).
2. Set feed dial between F ~ 1 and lower the B.H. lever. After that, get the trial buttonhole stitch.
3. Set BH adjusting eccentric stud to fig. ③.
4. Loosen the nut for buttonhole feed adjusting screw.
5. Adjust forward and reverse feeding by turning the screw.
6. Tightne the nut.



BH adjusting
eccentric stud





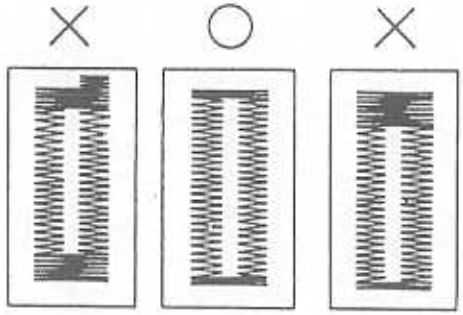
20. BUTTONHOLE ADJUSTMENT (BAR TACK FEEDING)

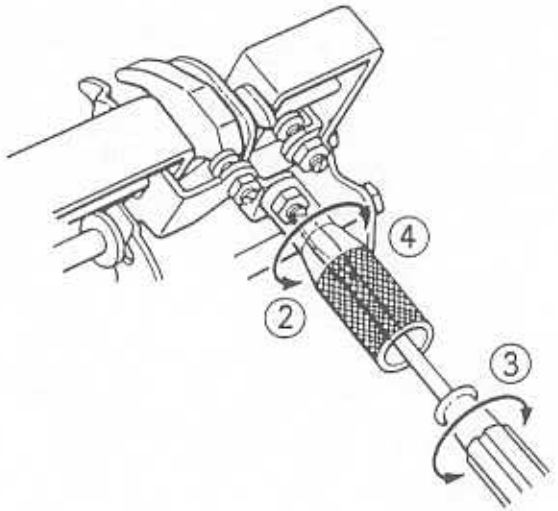
STANDARD

The feeding of bar tack should be less than 1 mm/10 feedings.

ADJUSTMENT

1. Set pattern dial to "1" (Buttonhole).
2. Loosen the nut for bar tack feeding adjusting screw.
3. Adjust the screw.
   If forward feeding is obtained ..... Turn screw counterclockwise.
   If back feeding is obtained ..... Turn screw clockwise.
4. Tighten the nut.





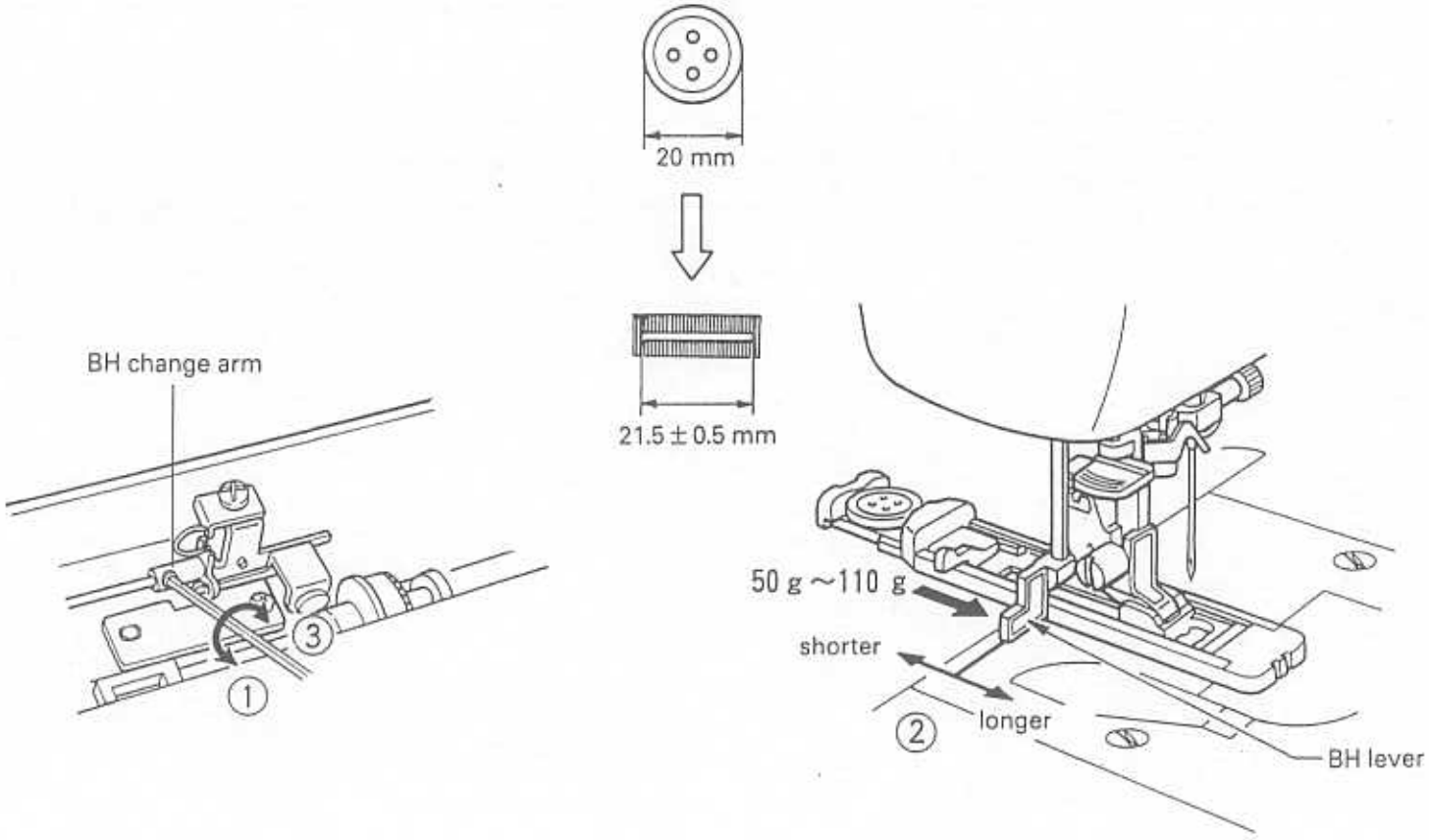
21. BUTTONHOLE ADJUSTMENT (THE LENGTH OF BUTTONHOLE)

STANDARD

The length of buttonhole should be the diameter of button plus 1.5 ± 0.5 mm.

ADJUSTMENT

1. Loosen the screw on B.H. change shaft.
2. Adjust the position of B.H. lever according to below drawings.
3. Tighten the screw.



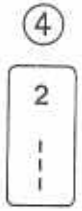
22. MAXIMUM STITCH WIDTH WHEN SET AT STRAIGHT (LEFT) AND ZIGZAG STITCH

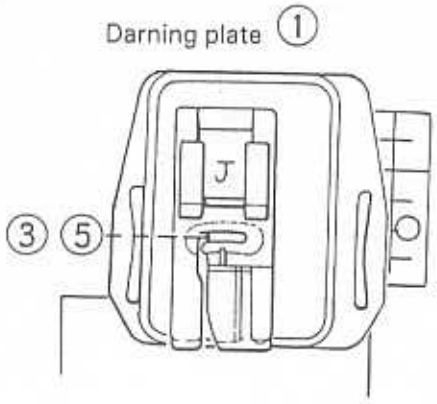
STANDARD

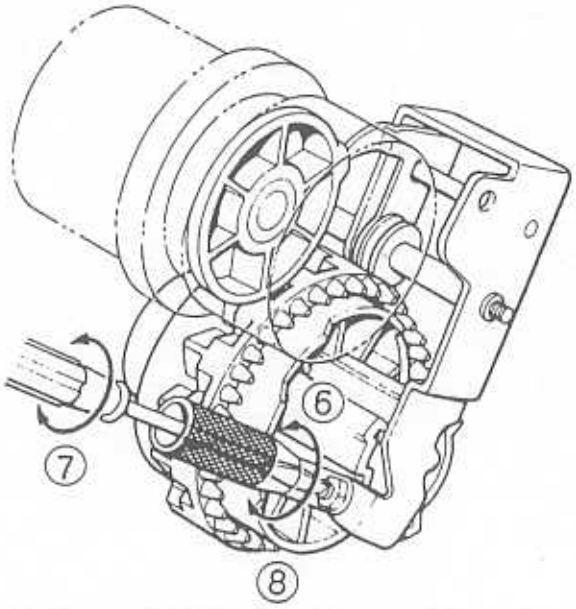
Left end of straight stitch should be same position as left end of zigzag stitch.

ADJUSTMENT

1. Set darning plate to needle plate, and put a piece of paper under the presser foot.
2. Set pattern dial to "3" (zigzag stitch at maximum width).
3. Drop the needle into the paper by turning the pulley.
4. Set pattern dial to "2" (left straight stitch).
5. Drop the needle into the paper by turning screw.
6. Insert the box driver by pushing the reverse button and loosen the nut for adjusting screw.
7. Adjust left straight needle position by turning screw.
   (Turn the screw to the righter, needle position is moved to the righter.)
8. Tighten the nut.







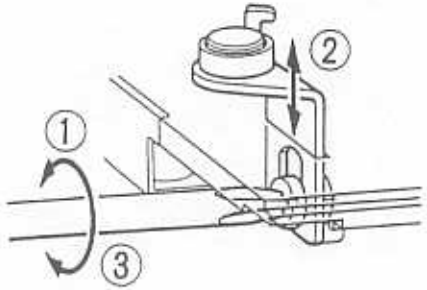
23. BOBBIN WINDER ADJUSTMENT

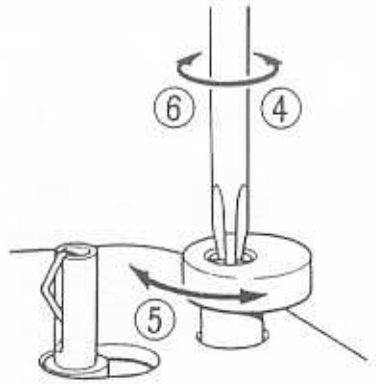
STANDARD

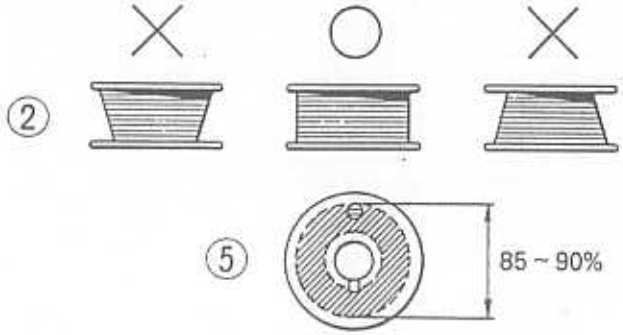
Thread should be winded paralleled to the bobbin and be winded 85 ~ 90% for outer-diameter of bobbin.

ADJUSTMENT

1. In case bobbin thread is winded unbalanced, loosen the screw for bobbin winder thread guide slightly.
2. Move bobbin winder thread guide vertically owing to bobbin thread is winded balanced.
3. Tighten the screw for bobbin winder thread guide.
4. Loosen the screw for bobbin presser slightly.
5. Adjust bobbin thread amount moving the screw for bobbin presser.
6. Tighten the screw for bobbin presser.







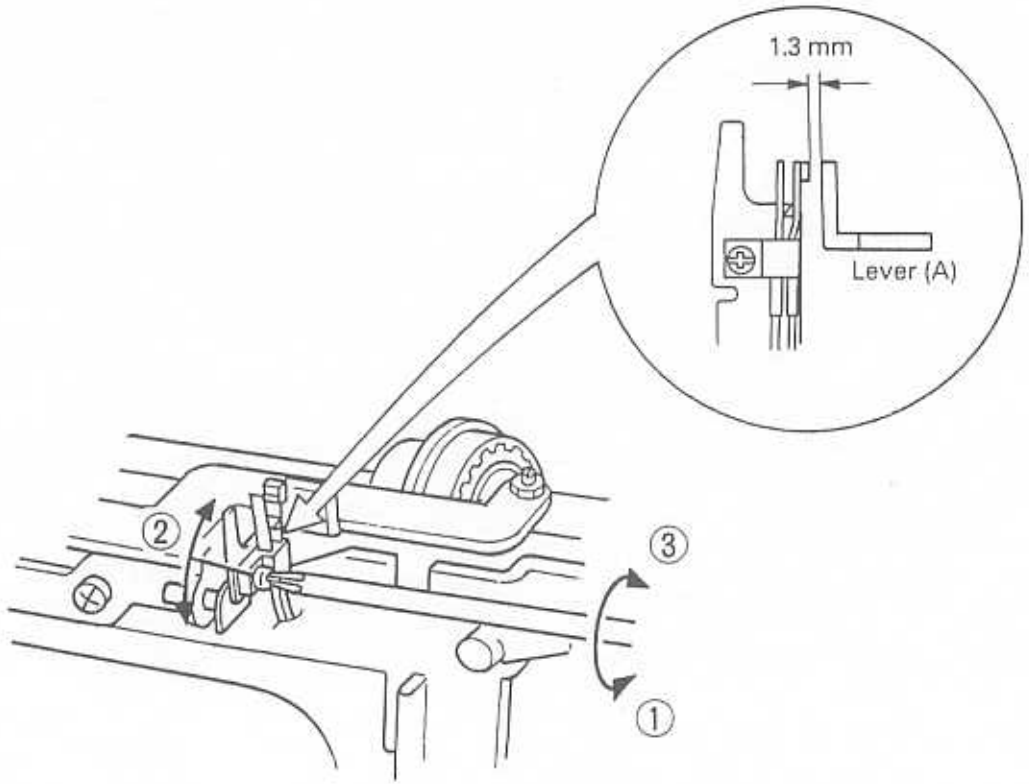
24. ADJUSTMENT OF REVERSE SEWING STITCH (BL3150, BL6600)

STANDARD

The clearance between BT switch and lever (A) for reverse should be 1.3 mm.

ADJUSTMENT

1. Loosen the screw for BT switch holder slightly.
2. Adjust the clearance between BT switch and lever (A) for reverse sewing, moving the top of the switch up and down.
3. Tighten the screw of BT switch holder.



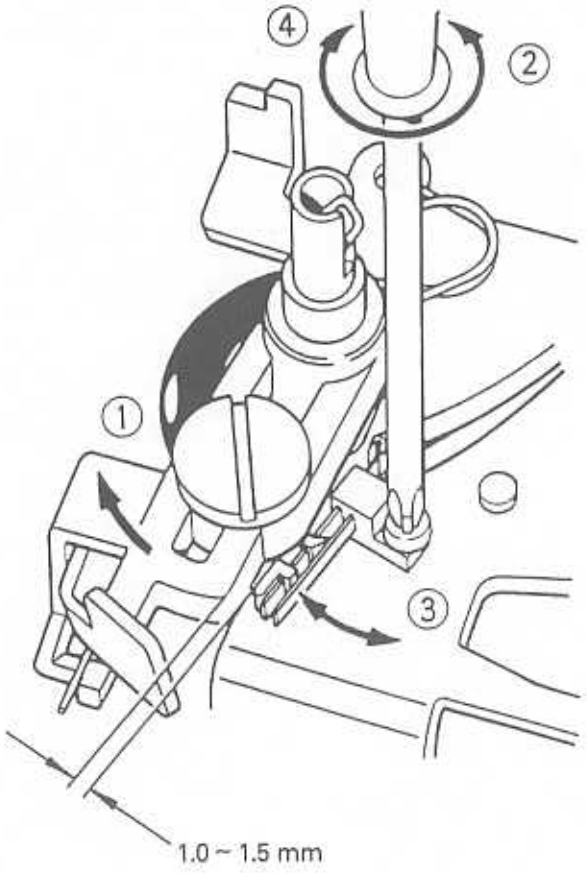
25. ADJUSTMENT OF BOBBIN WINDING SWITCH (BL3150, BL6600)

STANDARD

When bobbin winder is moved to bobbin presser, bobbin winding switch should be on. When bobbin winder is returned, there should be clearance betwen spring and switch.

ADJUSTMENT

1. Remove top cover.
2. Loosen screw.
3. Adjust the switch by moving it left to right.
4. Tighten screw.



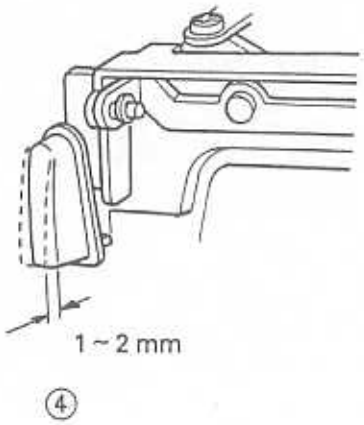
26. REVERSE SEWING ADJUSTMENT

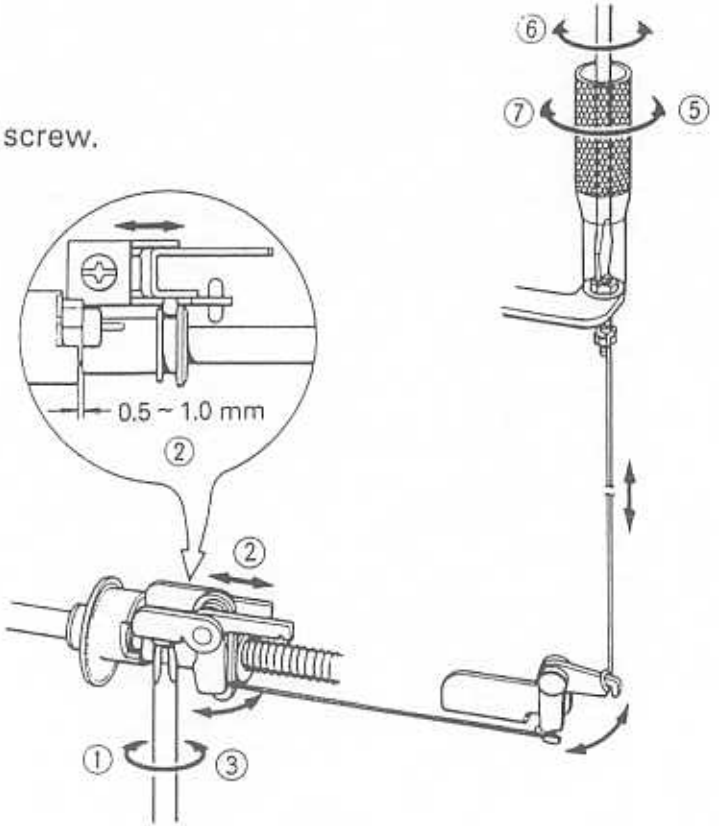
STANDARD

When push reverse sewing lever as far as it goes, reverse sewing change stopper should come off horizontal feed cam, and the space should be 0.5 ~ 1.0 mm. When push reverse sewing lever 1 ~ 2 mm, reverse sewing change stopper should begin sewing.

ADJUSTMENT

1. Loosen the screw for reverse sewing lever C.
2. Adjust the space between reverse sewing change stopper and horizontal feed cam by moving reverse sewing lever C pushing.
3. Tighten the screw for reverse sewing lever C.
4. Push reverse sewing lever 1 ~ 2 mm.
5. Loosen a nut.
6. Adjust begining to move of reverse sewing change stopper by moving a screw.
7. Tighten a nut.





27. ADJUSTMENT OF INNER ROTARY HOOK TENSION

(BL6600)

STANDARD

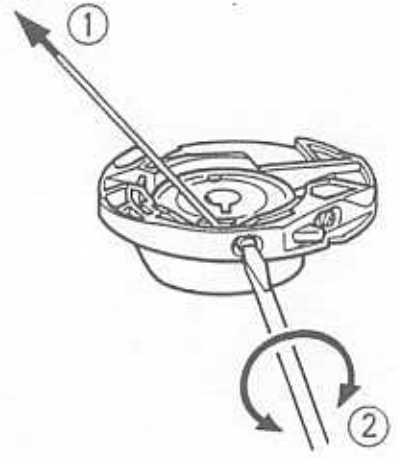
When pull polyester thread #50 slowly, inner rotary hook tension should be 8 ~ 10g.

ADJUSTMENT

1. Thread polyester thread to inner rotary hook correctly and pull it slowly by using tension gauge.
2. Adjust thread tension by moving a screw by using screwdriver.

Polyester thread #50

8 ~ 10g



(EXCEPT 6600)

STANDARD

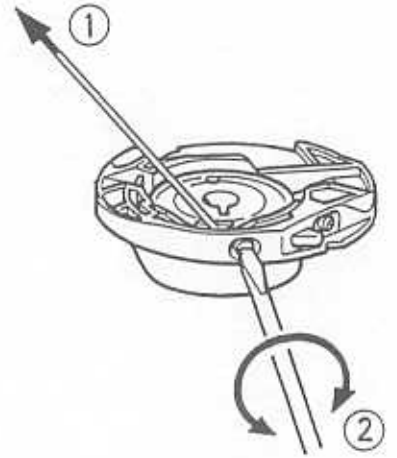
When pull polyester thread #50 slowly, inner rotary hook tension should be 11 ~ 13g.

ADJUSTMENT

1. Thread polyester thread to inner rotary hook correctly and pull it slowly by using tension gauge.
2. Adjust thread tension by moving a screw by using screwdriver.

Polyester thread #50

11 ~ 13g



28. NEEDLE THREADER

CAUTION

1. Needle threader accept only circle marked needle and thread conbinations.
2. * marked combinations is not recommended since it might lead to the breakage of needle threader imperfect performance.
3. Lower the presser foot when you use needle threader.
4. Nylon transparent thread is applicable in needle #14 ~ 16.
5. Do not turn the balance wheel when you use needle threader.
6. Do not touch needle threader when machine is running.
7. Needle #9 might be hard to threading.
8. Needle should be located above needle plate for more than 8 mm for threading.

Thread / Needle	#30	#50	#60	#80	#100	#120
#9	×	×	×	○	○	○
#11	×	×	○	○	○	*
#14	×	○	○	○	*	*
#16	*	○	○	*	*	*
#18	*	*	*	*	*	*

29. NEEDLE THREADER
(CHECKING THE HOOK POSITION IN HORIZONTAL DIRECTION)

STANDARD
The mesure from inside of the hook guard to the center point of hook is 0.42 mm.

CHECK
As sewing needle HA^ 1 (#14) is standard, so prepare 5 pcs. of brand-new sewing HA^ 1 (#14) and check by changing all of these.

After Checking

A. In case that, hook gets through eyelet of all needles	Nothing is the matter.
B. In case that, hook does not get through eyelet of all needles	Adjust by bending hook.
C. In case that, hook does not get through eyelet of some needles	Needles through which the hook does not get, are bad.

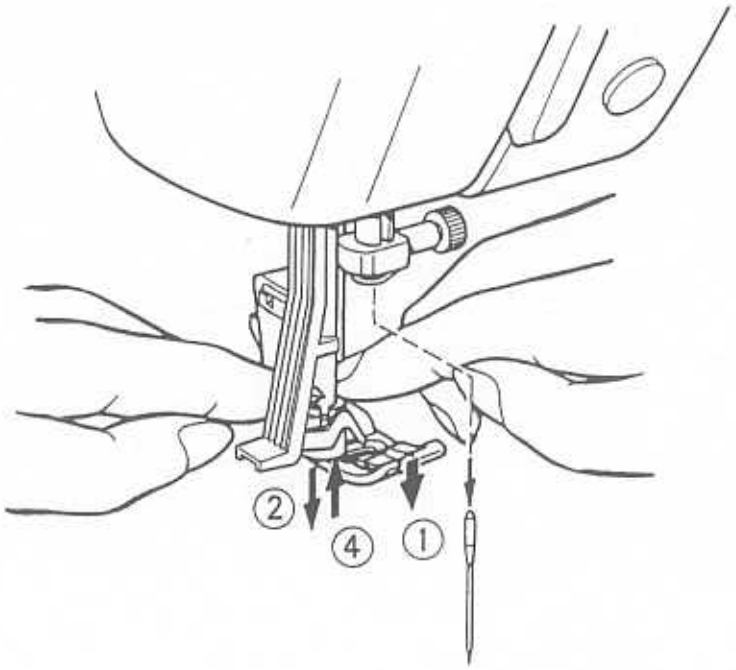
Example for checking
When you check 5 pcs. of brand-new sewing needle, HA^ 1 (#9) on condition that it acheves A, if the hook does not get through eyelet of all of these needle, all of 5 needles are bad and you judge the hook position is not bad.

ADJUSTMENT
In case the hook is bad after above checking, adjust the hook by banding with pryer. In this time, do not bend hook guard absolutey.

30. NEEDLE THREADER (EXCHANGE)

HOW TO EXCHANGE NEEDLE THREADER

1. Remove needle and lower the presser foot.
2. Push down needle threader to take out.
3. Place new one so that guide is immediately under the guide pin as shown figure A.
4. Push needle threader all the way up so that guide is placed int he pin.



③ Figure A

31. NEEDLE THREADER (CHECKING THE HOOK POSITION IN VERTICAL DIRECTION)

STANDARD

1. The clearance between the top of hook and the top of needle eye is zero.
2. Threading is capable when needle is located higher than 8 mm from the needle plate.

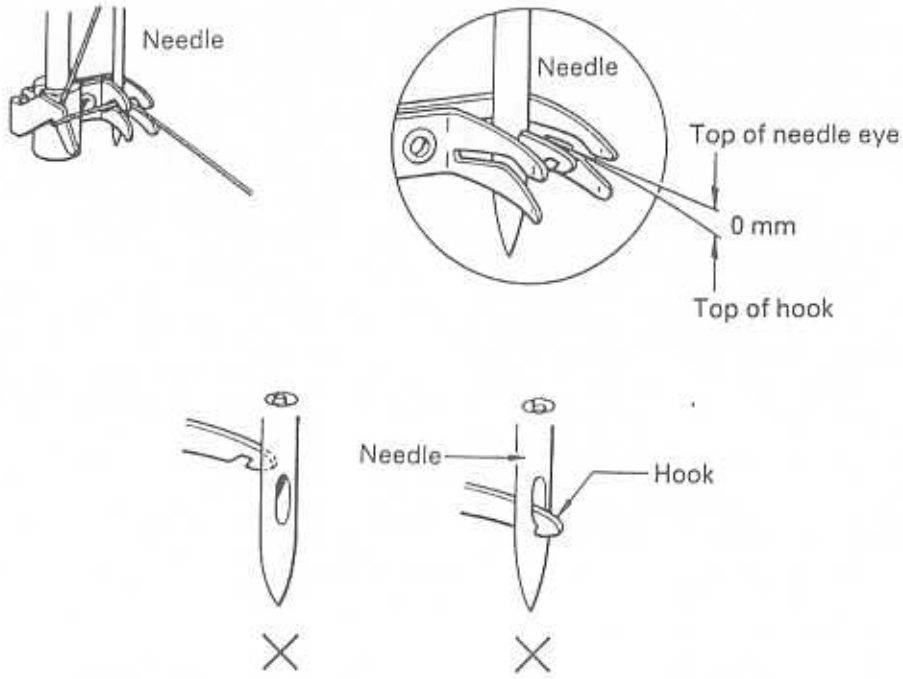
CHECK (Refer to illustration)

Case A

Hook position is too high. (Hook hits needle and cann't get through needle eye.)

Case B

Hook position is too low (Hook gets through needle eye but it catches bottom part of needle.)

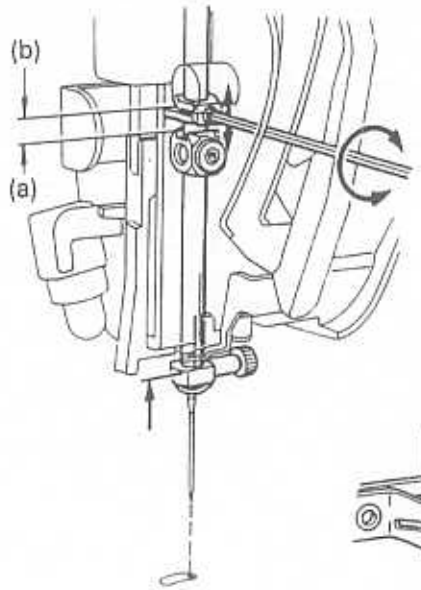


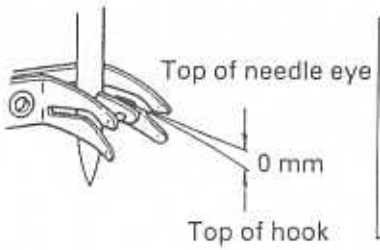
32. NEEDLE THREADER
(ADJUSTMENT THE HOOK POSIITION IN VERTICAL DIRECTION)

CASE A (Hook point is too high)
1. Set the needle position at right and loosen the screw.
2. Adjust needle threader slightly down and check the clerance between the top of hook and top of needle eye is zero.
3. Check if part (a) and part (b) is parallel.

CASE B (Hook point is too low)
1. Set the needle position at right and loosen the screw.
2. Adjust needle threader slightly up and check the clerance between the top of hook and top of needle eye is zero.
3. Check if part (a) and part (b) is parallel.

NOTE: Unless part (a) and part (b) is parallel, hook does not work.





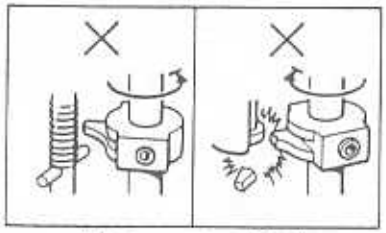


Fig a Fig b

IV. HOW TO ADJUST ELECTRONIC ELEMENTS

HOW TO ADJUST ELECTRONIC ELEMENT

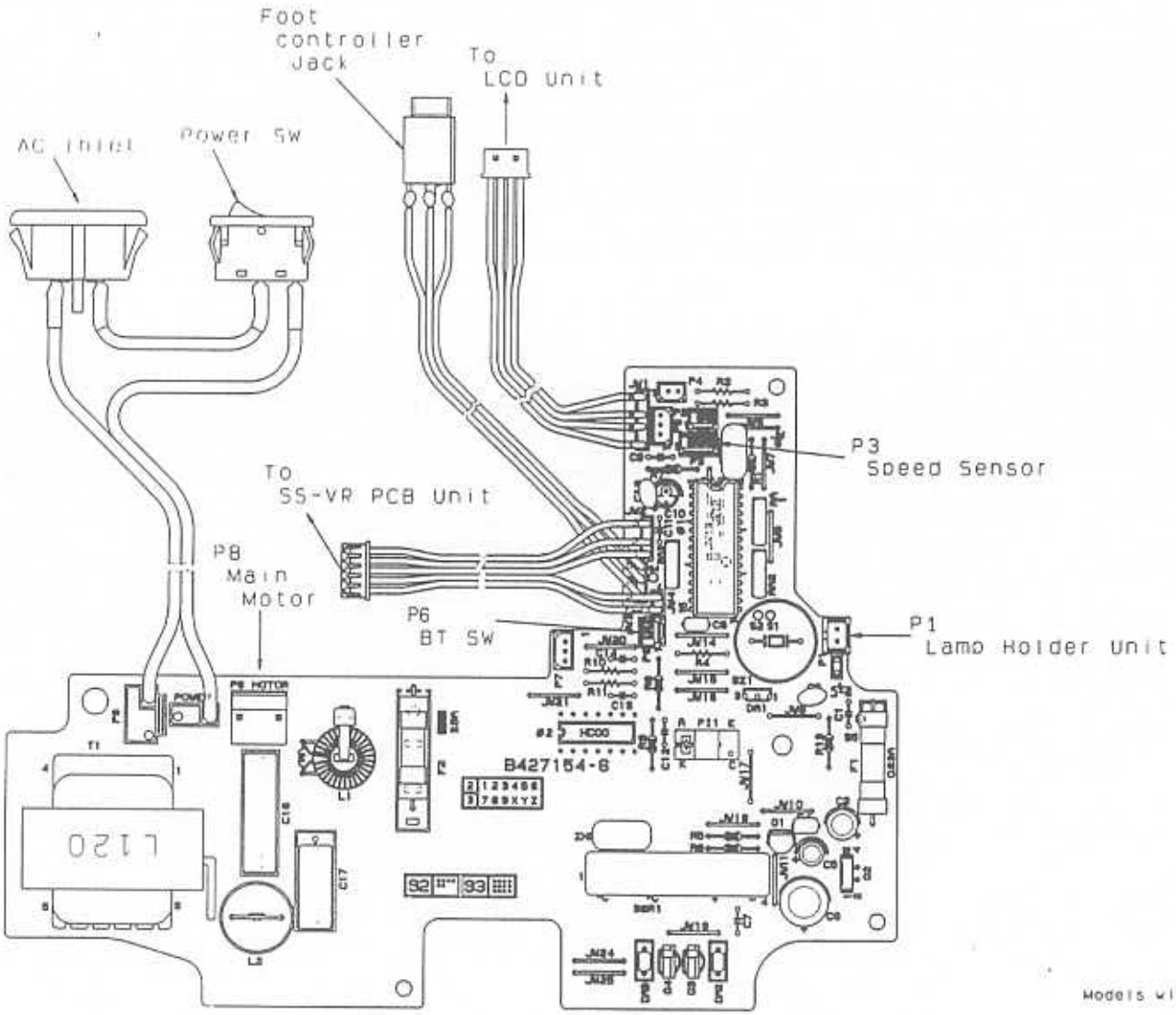
* When you measure resistance, you should turn the power supply switch off and disconnect the connectors switch which you measure from circuit board.

CONDITION	INSPECTION	COUNTER-MEASURES
1. When power supply switch is on, the lamp does not light.	1) Remove the lamp and check the resistance of both ends of it less than 3 Ω 2) Is the wire of AC code broken? 3) Does the fuse blow? 4) When the AC code is connected and power supply switch is ON, the voltage between pins (1) and (4) of transformer should be 120V. 5) When the connector (P1) is disconnected, the voltage between 1 and 2 should be AC 10V. 6) Check lamp unit the resistance of both ends of the connector (P1) should be, Lamp switch "ON" · · · Less than 3 Ω Lamp switch "OFF" · · · ∞ 7) Others	1) Change the lamp. 2) Change the AC code. 3) Change the power supply board. 4) Change the power supply board. 5) Exchange the power supply board. 6) Change the lamp unit. 7) Change the power supply board.
2. Main motor does not run.	1) Does the balance wheel turns smoothly? 2) Check the resistance of both ends of main motor connector P8 should be 30-50Ω. 3) Check the start/stop switch the resistance of the connector between 4 and 5 should be Start/Stop switch "ON" · · · Less than 3 Ω Start/Stop switch "OFF" · · · ∞ 4) Check BT swich the resistance of the (P6) (Red) between 1 and 2 should be BT switch "ON" · · · Less than 1 Ω BT switch "OFF" · · · ∞ 5) Others	1) Adjust mechanical portions to reduce the heavy turque. 2) Exchange the main motor. 3) Exchange SS-VR P.C. board ass. 4) Exchange BT switch ass. 5) Exchange the power supply board.

CONDITION	INSPECTION	COUNTER-MEASURES
3. Revolution of main motor is not stable, or main motor does not run with maximum speed.	1) Can balance wheel be turned by hand smoothly? 2) The power supply switch is ON and slide speed range control lever. Does the voltage between ⊖1 and ⊕2 vary from DC 0 to 5V? 3) When turning the balance wheel slowly does the voltage between ⊖1 and ⊕2 of the connector P3 for speed sensor vary from DC 0V to 5V. 4) Others	1) Adjust mechanical portion. 2) Exhange SS-VR P.C. board ass. 3) Exchange the main motor.
4. Main motor stops shortly.	1) The power supply switch is ON and turn the balance wheel by hand slowly, does the voltage between ⊖1 and ⊕2 of the connector P3 for speed sensor vary from DC 0V to 5V. 2) Others	1) Exchange the main motor. 2) Exchange the power supply board.
5. Revolution of main motor can not be controlled.	1) The power supply switch is ON and slide speed range control lever, does the voltage between ⊖1 and ⊕2 of the connector vary from DC 0V to 5V. 2) Others	1) Exchange SS-VR P.C. board ass. 2) Exchange the power supply board.
6. The needle does not stop at upper position.	1) Check the position of NP shutter. 2) Check BW switch the resistance between 1 and 2 of the connector should be BW switch "ON" less than 1Ω BW switch "OFF", ∞ 3) Others	1) Adjust the position. 2) Exchange BT switch ass. 3) Exchange power supply board.

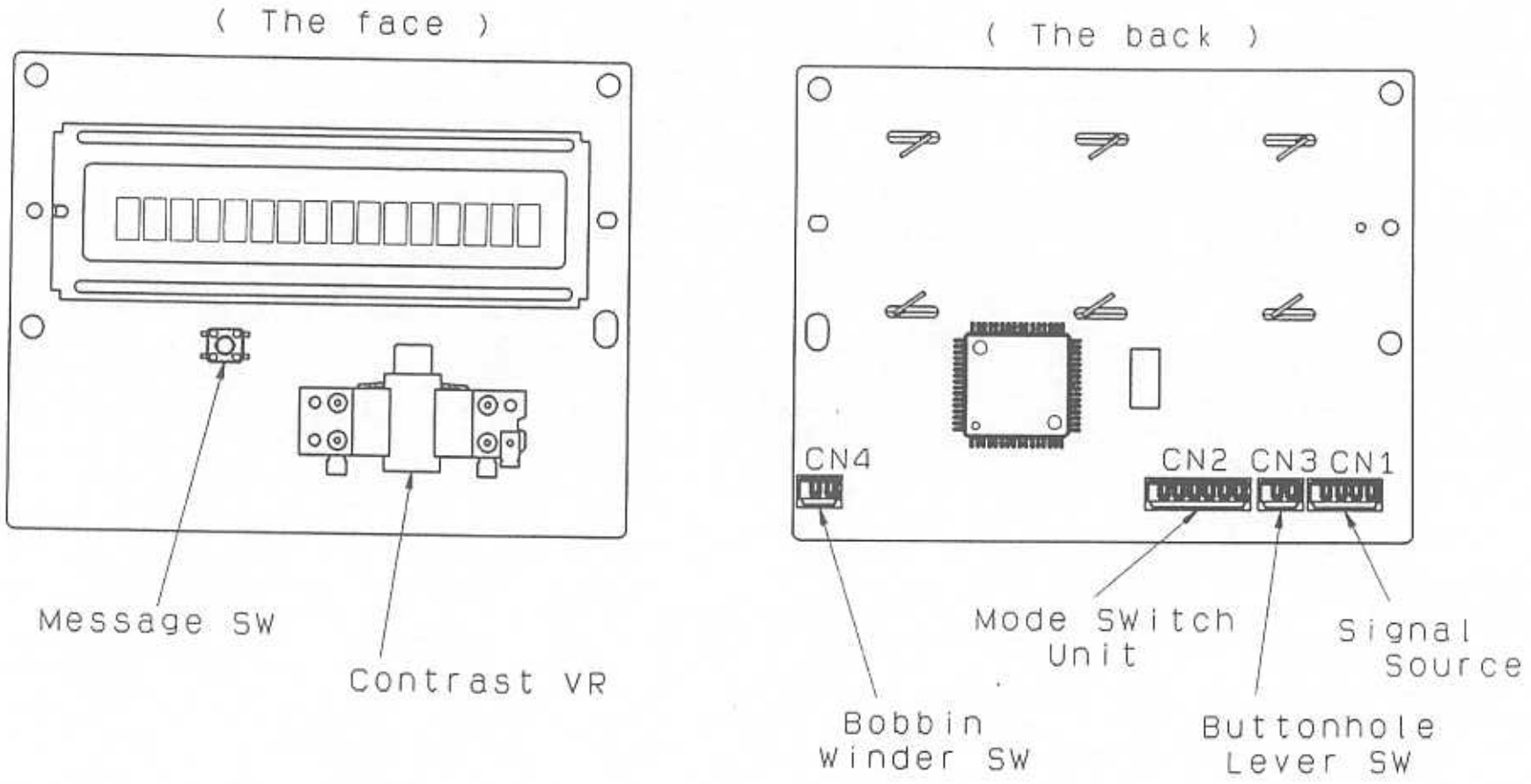
CONDITION	INSPECTION	COUNTER-MEASURES
7. When pushing revrese sewing button, main motor does not rotate, or when pshing it during sewing, the speed is not reduced.	1) Check BT switch function? 2) Check BT switch? The resistance between 1 and 2 of connector (P6) black should be, BT switch "ON" less than 1Ω BT switch "OFF", ∞ 3) Others	1) Adjust the switch. 2) Exchange BT switch ass. 3) Exchange power supply board.
8. Bobbin winder does not work.	1) Check bobbin winding function. 2) Check BW switch resistance between 1 and 2 of the connector should be BW switch "ON" less than 1Ω BW switch "OFF", ∞ 3) Others	1) Adjust the switch. 2) Exchange bobbin winding switch ass. 3) Exchange the power supply board.
9. Foot controller does not work correctly.	1) Check foot controller? Resistance of both end of controller plug vary from 0Ω to 10KΩ. 2) Check the controller jack resistance between 2 and 5 of jack wire should be With the plug, less than 1Ω Without the plug, ∞ 3) Others	1) Exchange foot controller. 2) Exchange power supply board. 3) Exchange power supply board.
10.Pattern indication does not appear or appears differently on LCD.	1) Are connector CN1, CN2 and CN4 on LCD connected correctly? 2) Check the function of pattern sensor. (*)Resistance between 2-1 ~ 5 on CN2 should be Switch "ON" less than 1Ω Switch "OFF",∞ 3) Others	1) Connect them correctly. 2) Exchange pattern sensor. 3) Change the main printed circuit board for LCD or the power supply board.

[POWER SUPPLY UNIT] 120V

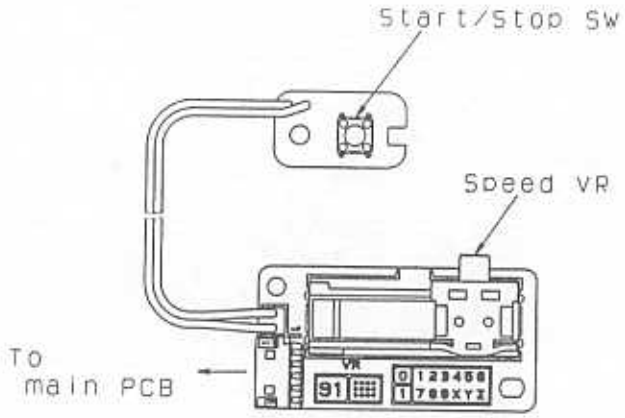


Models with LCD Unit

[LCD UNIT] BL6600, BL3150

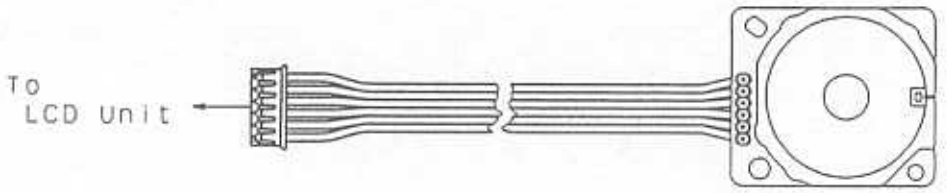


[SS-VR PCB UNIT] BL6600, BL3150



SS-VR PCB Unit

[MODE SWITCH UNIT] BL6600, BL3150



Mode Switch Unit
(Only Start series)