

SERVICING MANUAL

MODEL **RX22**
RX18

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TROUBLESHOOTING

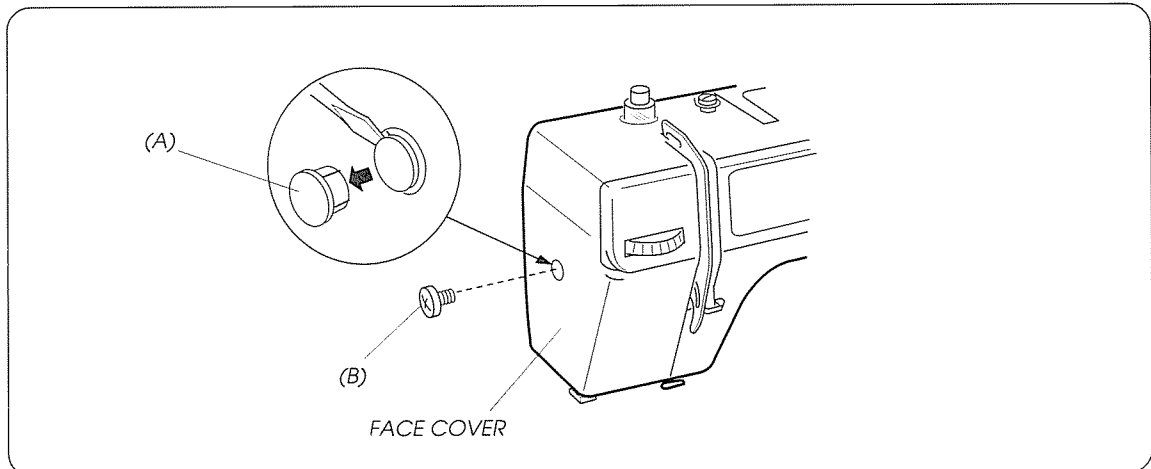
PROBLEM	CAUSE	REMEDY	REFERENCE
1. SKIPPING STITCHES	1. NEEDLE IS NOT INSERTED PROPERLY.	INSERT THE NEEDLE PROPERLY.	P. 17 P. 18 P. 14, 15
	2. NEEDLE IS BENT OR WORN.	CHANGE THE NEEDLE.	
	3. INCORRECTLY THREADED.	RETHREAD.	
	4. NEEDLE OR THREAD ARE INAPPROPRIATE FOR FABRIC BEING SEWN.	USE THE RECOMMENDED SEWING NEEDLE AND THREAD.	
	5. SEWING ON STRETCH FABRIC.	USE A #11 BLUE TIP NEEDLE.	
	6. INAPPROPRIATE NEEDLE BAR HEIGHT.	SEE MECHANICAL ADJUSTMENT "NEEDLE BAR HEIGHT".	
	7. INAPPROPRIATE NEEDLE TO HOOK TIMING.	SEE MECHANICAL ADJUSTMENT "NEEDLE TIMING TO SHUTTLE".	
	8. INAPPROPRIATE NEEDLE TO HOOK CLEARANCE.	SEE MECHANICAL ADJUSTMENT "CLEARANCE BETWEEN NEEDLE AND HOOK".	
2. FABRIC NOT MOVING	1. INCORRECT FEED DOG HEIGHT.	SEE MECHANICAL ADJUSTMENT "FEED DOG HEIGHT".	P. 16
	2. THREAD ON BOTTOM SIDE OF FABRIC IS JAMMED UP.	MAKE SURE TO BRING BOTH NEEDLE AND BOBBIN THREAD UNDER THE FOOT WHEN STARTING SEWING.	
	3. FEED DOG TEETH ARE WORN.	CHANGE THE FEED DOG.	

PROBLEM	CAUSE	REMEDY	REFERENCE
3. BREAKING UPPER THREAD	1. INITIAL SEWING SPEED IS TOO FAST. 2. THREAD PATH IS INCORRECT. 3. NEEDLE IS BENT OR DULL. 4. UPPER THREAD 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.	START WITH MEDIUM SPEED. USE THE PROPER THREAD PATH. REPLACE WITH A NEW NEEDLE. ADJUST UPPER THREAD TENSION CORRECTLY. USE APPROPRIATE NEEDLE AND THREAD FOR FABRIC IN USE. CHANGE THE NEEDLE. REPAIR THE HOLE OR REPLACE THE NEEDLE PLATE.	P. 9
4. BREAKING BOBBIN THREAD	1. INCORRECTLY THREADED BOBBIN CASE. 2. TOO MUCH THREAD IS AROUND ON THE BOBBIN. 3. LINT IS STUCK INSIDE THE BOBBIN HOLDER. 4. THREAD QUALITY IS TOO LOW. 5. THREAD IS JAMMING AROUND THE BOBBIN. 6. BOBBIN THREAD TENSION IS TOO STRONG.	THREAD BOBBIN CASE CORRECTLY. ADJUST THE POSITION OF STOPPER. CLEAN THE HOOK RACE. CHANGE TO A HIGH QUALITY SEWING THREAD. CLEAR OUT THE JAMMING THREAD. ADJUST BOBBIN THREAD TENSION CORRECTLY.	P. 10
5. NEEDLE BREAKS	1. NEEDLE IS HITTING THE NEEDLE PLATE. 2. NEEDLE IS BENT OR WORN. 3. NEEDLE IS HITTING THE HOOK RACE. 4. THE FABRIC MOVES WHILE THE NEEDLE IS PIERCING IT, OR THE NEEDLE ZIGZAGS WHILE IN FABRIC. 5. FABRIC IS BEING PULLED TOO STRONGLY WHILE SEWING.	SEE MECHANICAL ADJUSTMENT "NEEDLE DROP". CHANGE THE NEEDLE. SEE MECHANICAL ADJUSTMENT "CLEARANCE BETWEEN NEEDLE AND HOOK". SEE MECHANICAL ADJUSTMENT "NEEDLE SWING". GUIDE THE FABRIC GENTLY WHILE SEWING.	P. 13 P. 14, 15 P. 12

PROBLEM	CAUSE	REMEDY	REFERENCE
6. NOISY OPERATION	1. BACKLASH BETWEEN SHUTTLE HOOK GEAR AND LOWER SHAFT GEAR IS TOO GREAT.	SEE MECHANICAL ADJUSTMENT "CLEARANCE BETWEEN NEEDLE AND HOOK (NO. 2)".	P. 15
	2. LOWER SHAFT GEAR IS LOOSE.	ELIMINATE THE LOOSENESS.	
	3. INAPPROPRIATE BELT TENSION.	SEE MECHANICAL ADJUSTMENT "MOTOR BELT TENSION".	P. 25
	4. UPPER SHAFT GEAR IS LOOSE.	ELIMINATE THE LOOSENESS.	
	5. NOT ENOUGH OIL.	OIL ALL MOVING PARTS.	
7. DEFORMATION OF PATTERN	1. INAPPROPRIATE ZIGZAG SYNCHRONIZATION.	SEE MECHANICAL ADJUSTMENT "NEEDLE SWING".	P. 12
	2. INAPPROPRIATE DISENGAGEMENT OF CAM FOLLOWER.	SEE MECHANICAL ADJUSTMENT "DISENGAGEMENT OF CAM FOLLOWER".	P. 22, 24
	3. UPPER THREAD TENSION IS TOO STRONG.	ADJUST UPPER THREAD TENSION CORRECTLY.	P. 9
	4. INAPPROPRIATE FEED BALANCE.	SEE MECHANICAL ADJUSTMENT "FEED BALANCE ON STRETCH STITCH".	P. 20

SERVICE ACCESS

FACE COVER



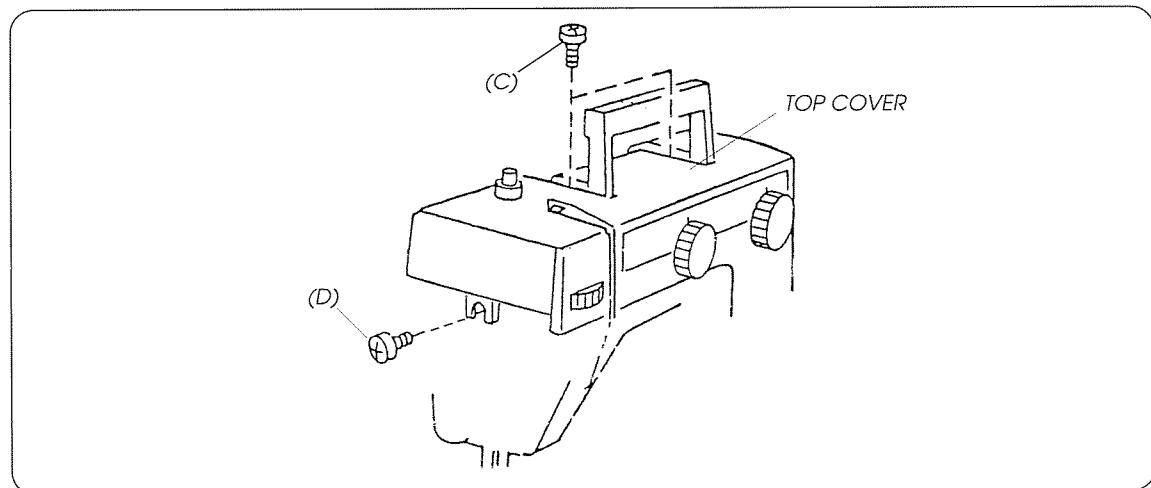
(TO REMOVE)

1. REMOVE THE FACE COVER BY REMOVING THE CAP (A) AND SCREW (B).

(TO ATTACH)

2. ATTACH THE FACE COVER WITH THE SCREW, AND THEN, REPLACE THE CAP.

TOP COVER



(TO REMOVE)

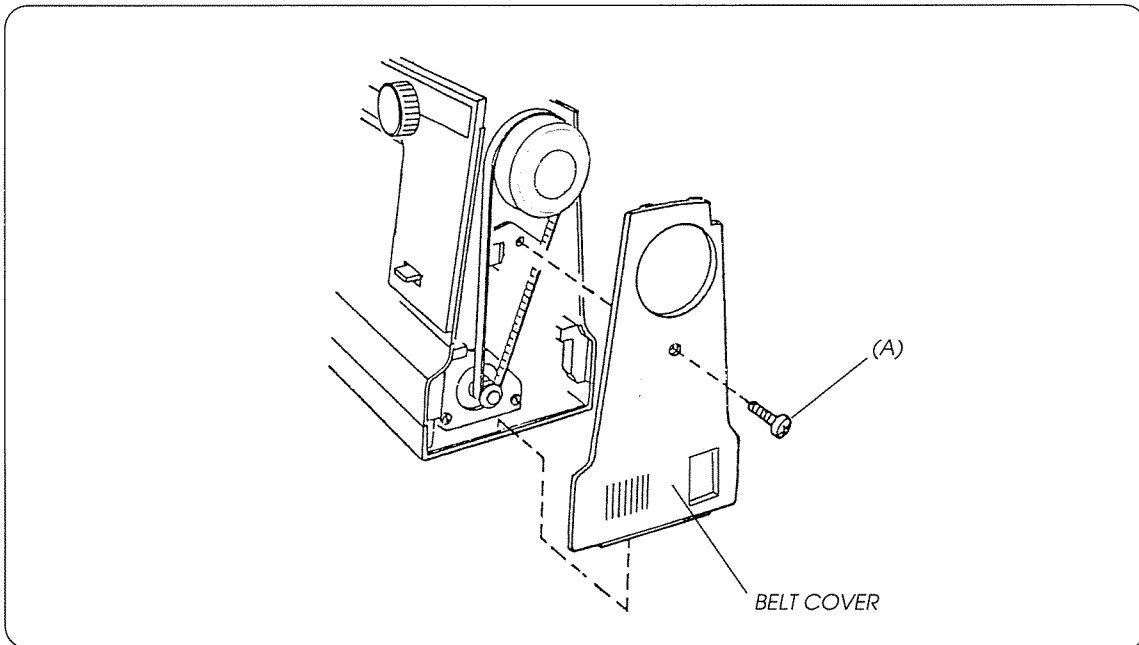
1. REMOVE THE FACE COVER.
2. REMOVE SCREWS (C) AND (D).
3. REMOVE THE TOP COVER.

(TO ATTACH)

4. FOLLOW THE ABOVE PROCEDURE IN REVERSE.

SERVICE ACCESS

BELT COVER



(TO REMOVE)

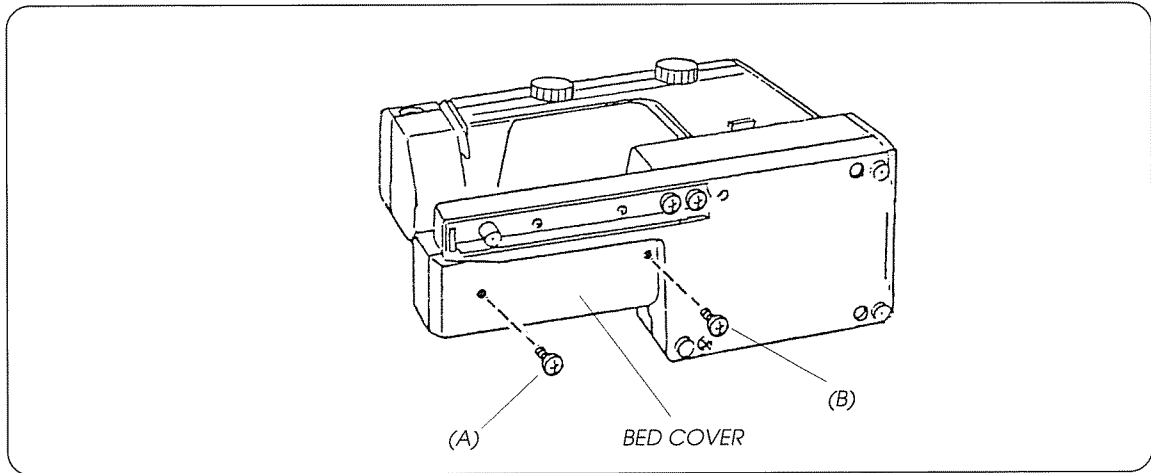
1. REMOVE THE FACE COVER AND TOP COVER (SEE PAGE 5).
2. REMOVE SCREW (A).
3. REMOVE THE BELT COVER.

(TO ATTACH)

4. FOLLOW THE ABOVE PROCEDURE IN REVERSE.

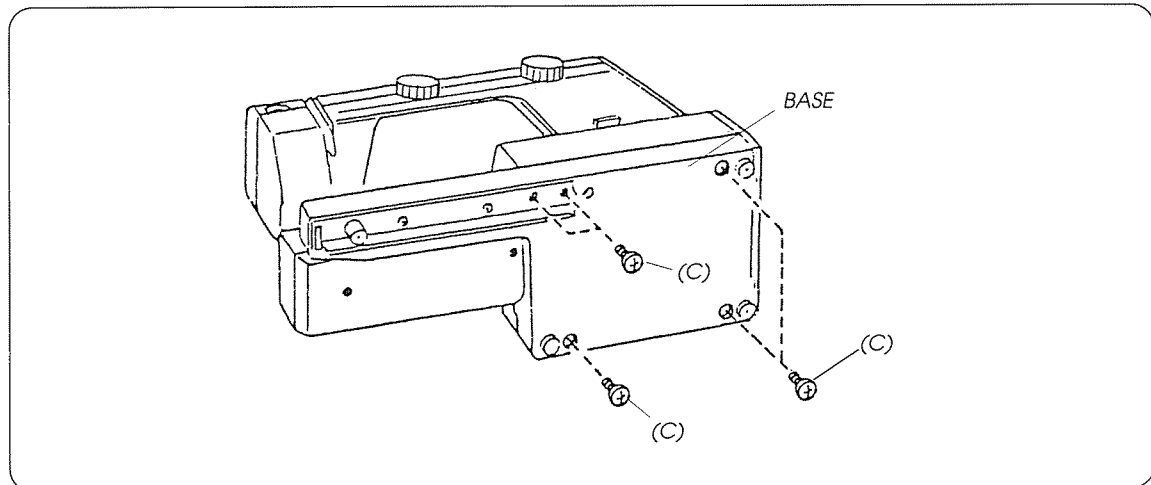
SERVICE ACCESS

BED COVER



1. REMOVE SCREWS (A) AND (B).
2. REMOVE THE BED COVER.

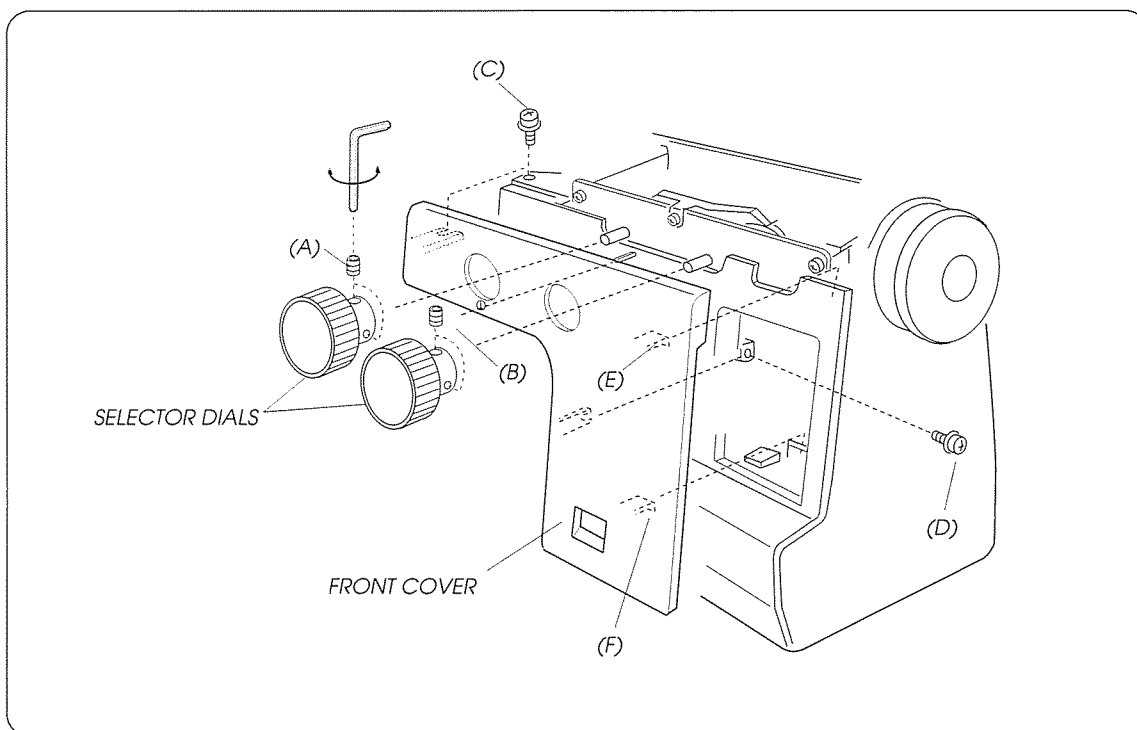
BASE



1. REMOVE 5 SCREWS (C).
2. REMOVE THE BASE.

SERVICE ACCESS

FRONT COVER



(TO REMOVE)

1. REMOVE THE FACE COVER, TOP COVER AND BELT COVER (SEE PAGES 5, 6).
2. LOOSEN SET SCREWS (A) AND (B).
3. TAKEOFF THE PATTERN AND STITCH LENGTH SELECTOR DIALS.
NOTE : MODEL RX22.....3DIALS.
4. LOOSEN SET SCREWS (C) AND (D).
5. LIFT THE FRONT COVER OFF HOOKS (E) AND (F) AND PULL IT OFF.

(TO ATTACH)

6. FOLLOW THE ABOVE PROCEDURE IN REVERSE.

MECHANICAL ADJUSTMENT

TOP TENSION

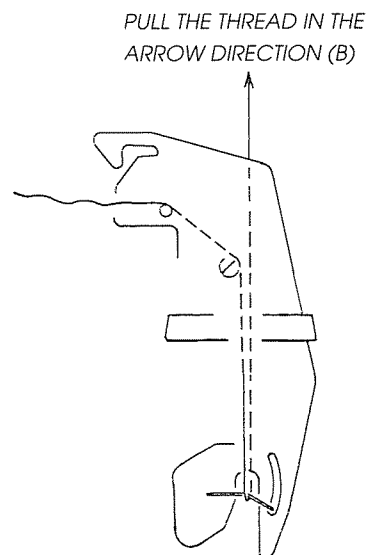
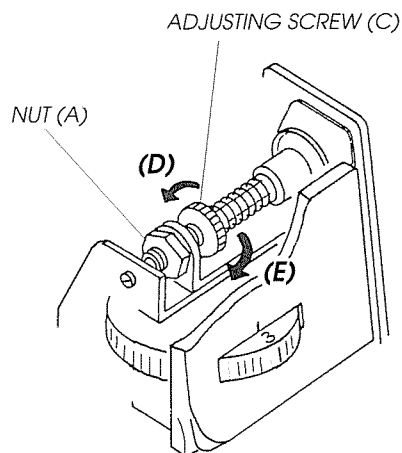
TO CHECK:

THE STANDARD UPPER THREAD TENSION SHOULD BE 70-100 g WHEN PULLING THE THREAD (COTTON THREAD #50) IN THE DIRECTION OF (B) WITH THE TENSION DIAL AT "3". (MAKE SURE THE FOOT IS LOWERED.)

IF THE TENSION IS OUT OF THE STANDARD RANGE, ADJUST IT AS FOLLOWS:

ADJUSTMENT PROCEDURE:

1. REMOVE THE TOP COVER (SEE PAGE 5).
2. SET THE THREAD TENSION DIAL AT "3", AND PASS THE THREAD AS SHOWN.
3. LOOSEN NUT (A).
4. IF THE UPPER THREAD TENSION IS TOO TIGHT, TURN THE ADJUSTING SCREW (C) IN THE DIRECTION OF (D).
IF THE UPPER THREAD TENSION IS TOO LOOSE, TURN THE ADJUSTING SCREW (C) IN THE DIRECTION OF (E).
5. TIGHTEN THE NUT.
6. ATTACH THE TOP COVER.



MECHANICAL ADJUSTMENT

BOBBIN TENSION

TO CHECK:

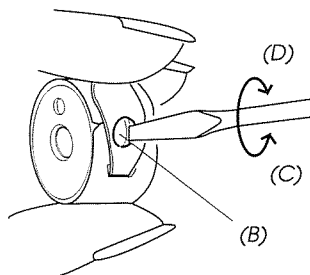
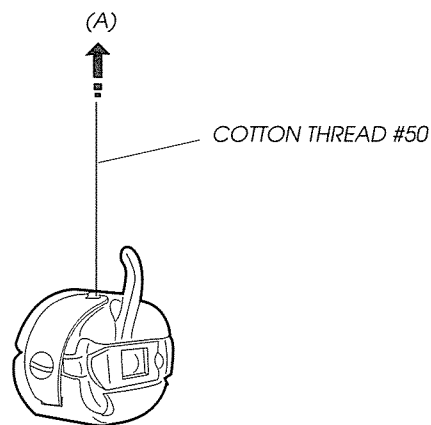
SET THE BOBBIN IN THE BOBBIN CASE AND PASS THE THREAD (COTTON #50) THROUGH THE TENSION SPRING.

THE BOBBIN THREAD TENSION SHOULD BE 45–55g WHEN PULLING THE THREAD IN THE DIRECTION OF (A).

IF THE TENSION IS OUT OF THIS RANGE, ADJUST IT AS FOLLOWS:

ADJUSTMENT PROCEDURE:

1. IF THE BOBBIN THREAD TENSION IS TOO TIGHT, TURN THE ADJUSTING SCREW (B) IN THE DIRECTION OF (C).
2. IF THE BOBBIN THREAD TENSION IS TOO LOOSE, TURN THE ADJUSTING SCREW (B) IN THE DIRECTION OF (D).



MECHANICAL ADJUSTMENT

PRESSER BAR HEIGHT AND ALIGNMENT

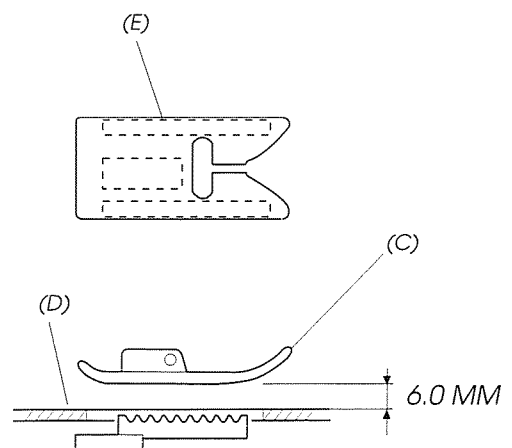
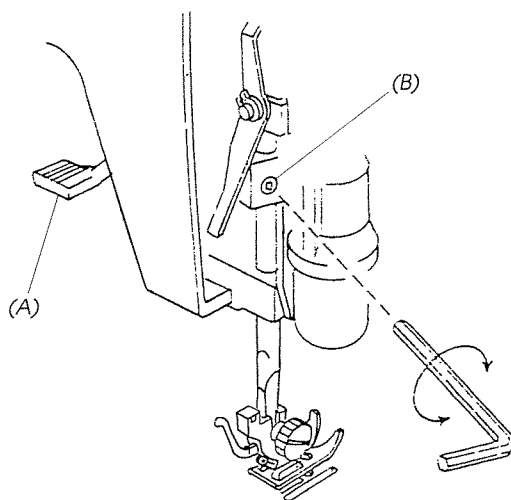
TO CHECK:

1. RAISE THE PRESSER FOOT LEVER (A).
2. THE DISTANCE BETWEEN THE PRESSER FOOT (C) AND THE NEEDLE PLATE (D) SHOULD BE 6.0 MM (0.24"). IF THE DISTANCE IS OUT OF THIS RANGE, ADJUST IT AS FOLLOWS:

ADJUSTMENT PROCEDURE:

1. REMOVE THE FACE COVER (SEE PAGE 5).
2. RAISE THE PRESSER FOOT LEVER AND LOOSEN THE SCREW (B) ON THE PRESSER BAR HOLDER.
ADJUST THE DISTANCE BETWEEN THE PRESSER FOOT (C) AND THE NEEDLE PLATE (D) TO 6.0 MM (0.24").
3. TIGHTEN THE SCREW (B) SECURELY.
4. ATTACH THE FACE COVER.

NOTE: WHEN YOU TIGHTEN THE SCREW (B), MAKE SURE THAT BOTH SIDES OF THE PRESSER FOOT ARE PARALLEL TO THE FEED DOG SLOTS (E) ON THE NEEDLE PLATE.



MECHANICAL ADJUSTMENT

NEEDLE SWING

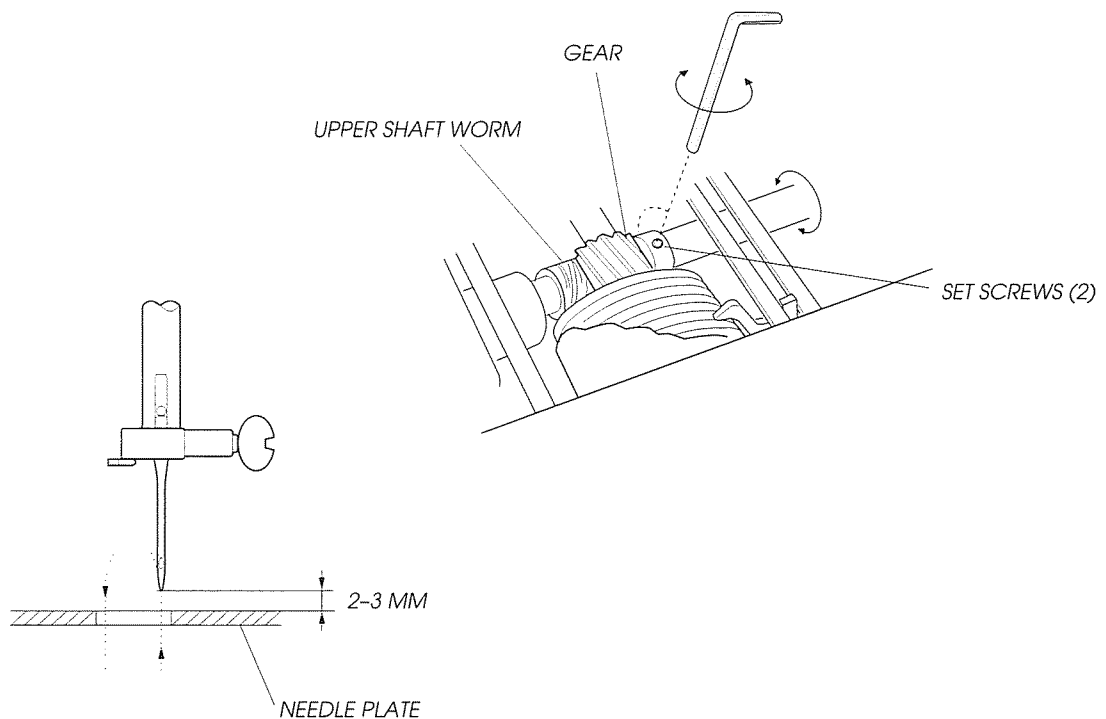
TO CHECK:

WHEN SEWING THE ZIGZAG PATTERN (WITH MAXIMUM ZIGZAG WIDTH), IF THE NEEDLE BAR STARTS MOVING SIDeways WHILE THE NEEDLE IS IN THE FABRIC, ADJUST THE NEEDLE SWING ACCORDING TO THE FOLLOWING PROCEDURE.

ADJUSTMENT PROCEDURE:

1. REMOVE THE TOP COVER (SEE PAGE 5).
2. LOOSEN THE TWO SET SCREWS.
3. ADJUST THE NEEDLE SWING BY TURNING THE HANDWHEEL, WHILE PRESSING THE UPPER SHAFT WORM SO AS NOT TO ROTATE IT, UNTIL THE NEEDLE SWING STARTS AT 2-3 MM ON THE NEEDLE PLATE AFTER THE NEEDLE HAS COME OUT OF THE RIGHT SIDE OF THE NEEDLE PLATE HOLE.
4. TIGHTEN THE TWO SET SCREWS.
5. ATTACH THE TOP COVER.

NOTE: AFTER ADJUSTING THE NEEDLE SWING, CHECK THAT THE UPPER SHAFT WORM AND GEAR ROTATE SMOOTHLY WITHOUT ANY BACKLASH BETWEEN THEM.



MECHANICAL ADJUSTMENT

NEEDLE DROP

TO CHECK:

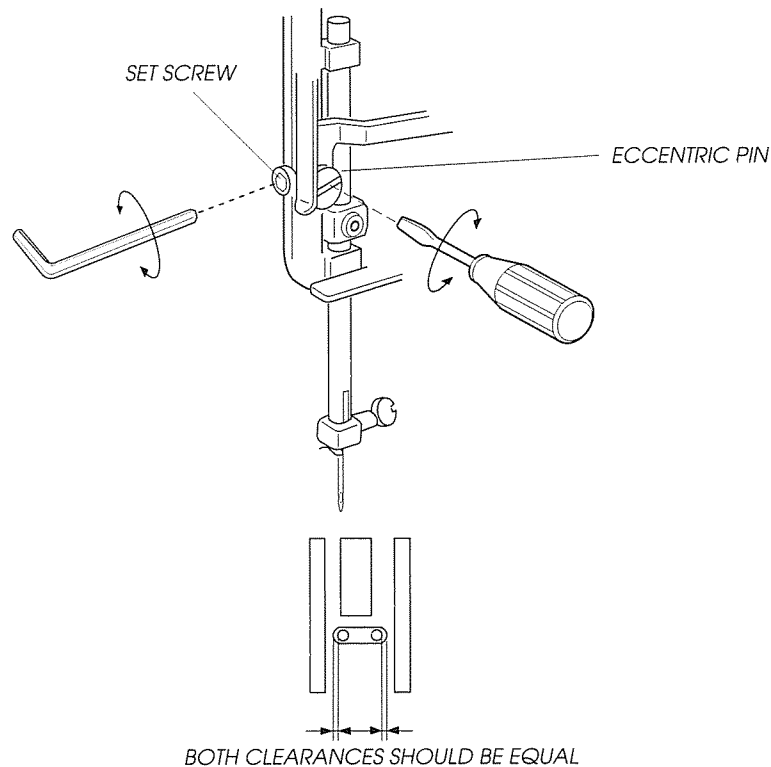
WHEN THE NEEDLE SWINGS IN MAXIMUM ZIGZAG WIDTH, THE DISTANCE BETWEEN BOTH ENDS OF THE NEEDLE HOLE ON THE NEEDLE PLATE AND THE NEEDLE DROP POSITIONS SHOULD BE EQUAL.

IF NOT, ADJUST AS FOLLOWS:

ADJUSTMENT PROCEDURE:

1. REMOVE THE FACE COVER (SEE PAGE 5).
2. SET THE PATTERN SELECTOR DIAL AT MAXIMUM ZIGZAG WIDTH.
3. LOOSEN THE SET SCREW.
4. TURN THE ECCENTRIC PIN TO ADJUST THE NEEDLE DROP.
5. TIGHTEN THE SET SCREW.
6. ATTACH THE FACE COVER.

NOTE: CHECK THE HOOK TIMING AFTER THIS ADJUSTMENT.



MECHANICAL ADJUSTMENT

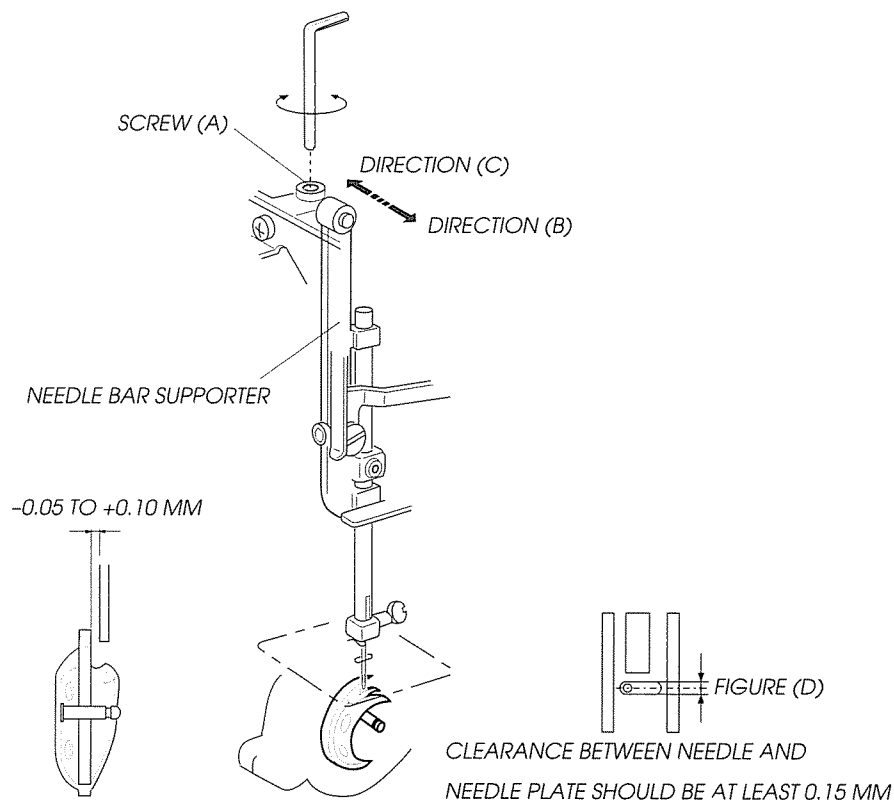
CLEARANCE BETWEEN NEEDLE AND HOOK (ADJUSTMENT METHOD NO. 1)

TO CHECK:

THE CLEARANCE BETWEEN THE NEEDLE AND SHUTTLE RACE SHOULD BE -0.05 TO $+0.10$ MM.
IF NOT, ADJUST AS FOLLOWS:

ADJUSTMENT PROCEDURE:

1. REMOVE THE TOP COVER (SEE PAGE 5).
 2. SET THE PATTERN SELECTOR DIAL AT "B" (C ).
NOTE : FOR MODEL RX22.....PATTERN SELECTOR DIAL AT "A", STITCH WIDTH DIAL AT "0".
 3. LOOSEN SCREW (A), AND MOVE THE NEEDLE BAR SUPPORTER IN THE DIRECTION OF THE ARROWS TO GET A CLEARANCE BETWEEN -0.05 TO $+0.10$ MM.
 - * IF CLEARANCE IS TOO WIDE, MOVE THE NEEDLE BAR SUPPORTER TO DIRECTION (B).
 - * IF CLEARANCE IS TOO NARROW, MOVE THE NEEDLE BAR SUPPORTER TO DIRECTION (C).
- NOTE: AFTER THIS ADJUSTMENT, CHECK THAT THE CLEARANCE BETWEEN THE NEEDLE AND NEEDLE PLATE IS MORE THAN 0.15 MM AS SHOWN IN FIGURE (D).
IF NOT, ADJUST THE CLEARANCE BETWEEN NEEDLE AND SHUTTLE RACE BY USING ADJUSTMENT METHOD ABOVE. AFTER READJUST THE CLEARANCE BETWEEN NEEDLE AND NEEDLE PLATE MORE THAN 0.15 MM.
4. ATTACH THE TOP COVER.



MECHANICAL ADJUSTMENT

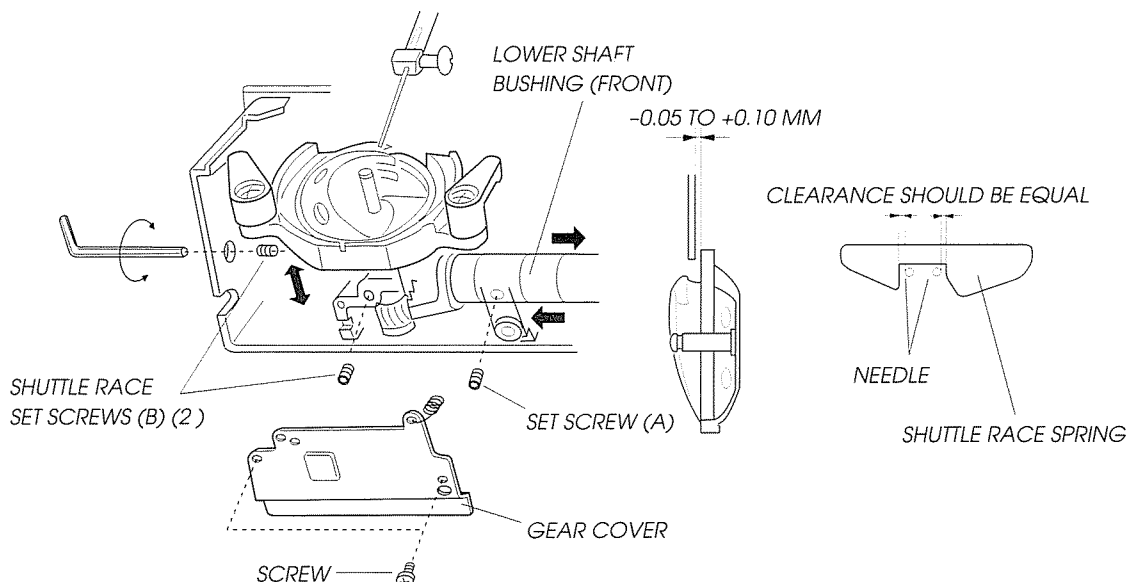
CLEARANCE BETWEEN NEEDLE AND HOOK (ADJUSTMENT METHOD NO.2)

TO CHECK:

USE THIS ADJUSTMENT METHOD NO. 2 WHEN METHOD NO.1 CANNOT BE USED.
THE CLEARANCE BETWEEN THE NEEDLE AND SHUTTLE RACE SHOULD BE -0.05 TO $+0.10$ MM.
IF NOT, ADJUST AS FOLLOWS:

ADJUSTMENT PROCEDURE:

1. SET THE PATTERN SELECTOR DIAL AT "B" (C: D).
NOTE: FOR MODEL RX22.....PATTERN SELECTOR DIAL AT "A", WIDTH SELECTOR DIAL AT "0".
 2. REMOVE THE BED COVER (SEE PAGE 7) AND THE GEAR COVER.
 3. LOOSEN THE SCREW (A) ON THE LOWER SHAFT BUSHING AND SLIDE THE GEAR ABOUT 0.5 MM TO THE RIGHT TO CREATE SOME SLACK BETWEEN THE GEARS.
 4. LOWER THE NEEDLE AND LOOSEN THE TWO SHUTTLE RACE SET SCREWS (B).
MOVE THE SHUTTLE RACE UNIT AXIALLY EITHER FORWARD OR BACKWARD TO ADJUST THE CLEARANCE BETWEEN THE NEEDLE AND THE SHUTTLE RACE IN THE RANGE OF -0.05 TO $+0.10$ MM.
 5. SET THE PATTERN SELECTOR DIAL AT "C" (E), TURN THE HANDWHEEL TO CHECK IF THE CLEARANCE BETWEEN THE NEEDLE AND INNER EDGES OF THE SHUTTLE RACE SPRING AT THE LEFT AND RIGHT NEEDLE DROPS ARE EQUAL.
IF NOT, ADJUST BY TURNING THE SHUTTLE RACE UNIT.
NOTE: FOR MODEL RX22.....PATTERN SELECTOR DIAL AT "A", STITCH WIDTH DIAL AT "5".
 6. TIGHTEN THE TWO SHUTTLE RACE SET SCREWS (B).
 7. LOOSEN THE SET SCREW (A) ON THE LOWER SHAFT BUSHING AND SLIDE THE GEAR BACK TO THE ORIGINAL POSITION WHILE ADJUSTING THE BACKLASH.
 8. TIGHTEN SCREW (A) FIRMLY.
 9. ATTACH THE GEAR COVER AND BED COVER.
- NOTE: THE BACKLASH PLAY SHOULD BE LESS THAN 0.3 MM AND THE LOWER SHAFT SHOULD TURN SMOOTHLY. AFTER THE ADJUSTMENT, CHECK THE HOOK TIMING.



MECHANICAL ADJUSTMENT

FEED DOG HEIGHT

TO CHECK:

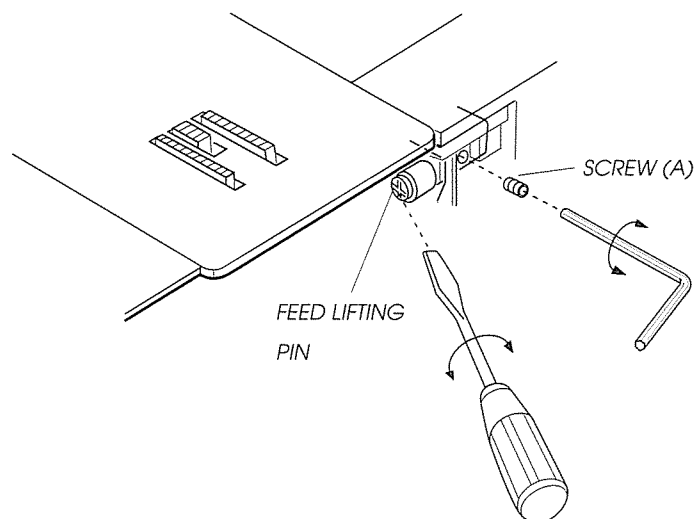
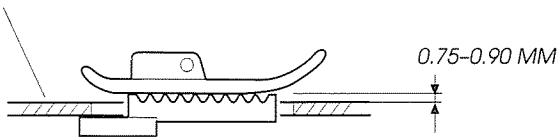
1. LOWER THE PRESSER FOOT.
2. TURN THE HANDWHEEL TOWARD YOU UNTIL THE PRESSER FOOT COMES TO THE FEED DOG. THE DISTANCE THE FEED DOG IS ABOVE THE NEEDLE PLATE SHOULD BE 0.75–0.90 MM.

IF IT IS NOT IN THIS RANGE, ADJUST AS FOLLOWS:

ADJUSTMENT PROCEDURE:

1. OPEN THE SHUTTLE COVER.
2. LOWER THE PRESSER FOOT AND TURN THE HANDWHEEL TOWARD YOU UNTIL THE FEED DOG COMES TO ITS HIGHEST POINT.
3. LOOSEN THE SCREW (A) .
4. TURN THE FEED LIFTING PIN TO ADJUST THE HEIGHT OF FEED DOG (0.75–0.90 MM).
5. TIGHTEN THE SCREW (A).
6. TURN THE HANDWHEEL TOWARD YOU TO RECHECK THE HEIGHT OF THE FEED DOG.

NEEDLE PLATE



MECHANICAL ADJUSTMENT

NEEDLE BAR HEIGHT

TO CHECK:

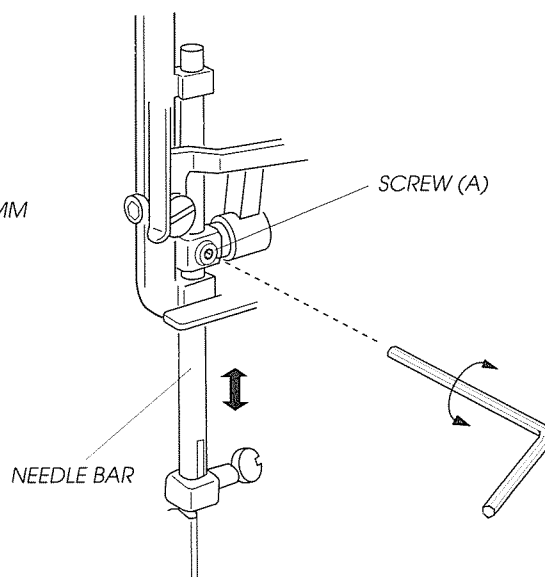
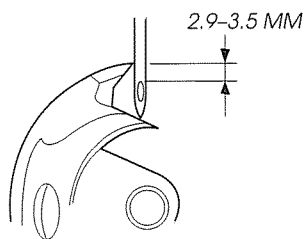
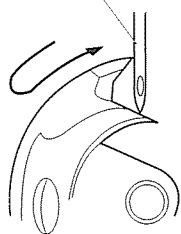
WHEN THE TIP OF SHUTTLE HOOK MEETS THE LEFT SIDE OF THE NEEDLE IN ASCENDING TRAVEL OF THE NEEDLE FROM ITS LEFT AND LOWEST POSITION, THE DISTANCE BETWEEN THE TOP OF THE NEEDLE EYE AND THE TIP OF THE SHUTTLE HOOK SHOULD BE IN THE RANGE OF 2.9-3.5 MM.

IF IT IS NOT IN THIS RANGE, ADJUST AS FOLLOWS:

ADJUSTMENT PROCEDURE:

1. REMOVE THE FACE COVER (SEE PAGE 5).
2. SET THE PATTERN SELECTOR DIAL AT "B" (C: D).
NOTE: FOR MODEL RX22.....PATTERN SELECTOR DIAL AT "A", STITCH WIDTH DIAL AT "0".
3. OPEN THE SHUTTLE COVER.
4. REMOVE THE SHUTTLE RACE RING.
5. TURN THE HANDWHEEL TOWARD YOU UNTIL THE TIP OF THE SHUTTLE HOOK MEETS THE LEFT SIDE OF THE NEEDLE.
6. LOOSEN THE NEEDLE BAR CONNECTING STUD SCREW (A).
7. ADJUST THE HEIGHT OF THE NEEDLE BAR BY MOVING THE NEEDLE BAR UPWARD OR DOWNWARD WITHOUT TURNING IT.
8. TIGHTEN THE SCREW (A).
9. ATTACH THE SHUTTLE RACE RING.
10. ATTACH THE FACE COVER.

TIP OF SHUTTLE HOOK MEETS
LEFT SIDE OF NEEDLE



MECHANICAL ADJUSTMENT

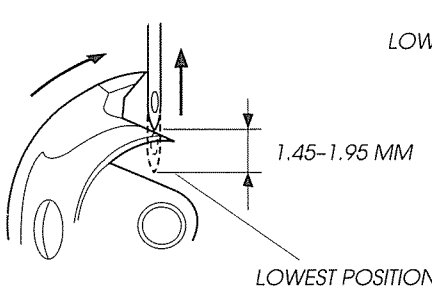
NEEDLE TIMING TO SHUTTLE

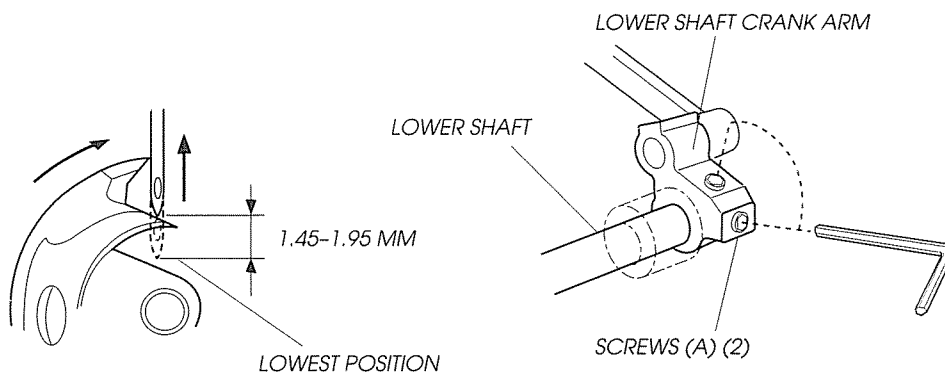
TO CHECK:

THE HEIGHT OF THE NEEDLE POINT FROM ITS LOWEST POINT OF TRAVEL SHOULD BE IN THE RANGE OF 1.45–1.95 MM WHEN THE TIP OF THE SHUTTLE HOOK JUST MEETS THE LEFT SIDE OF THE NEEDLE AT THE LEFT NEEDLE POSITION.

IF IT IS NOT IN THIS RANGE, ADJUST AS FOLLOWS:

ADJUSTMENT PROCEDURE:

1. SET THE PATTERN SELECTOR DIAL AT "B" (C ).
- NOTE: FOR MODEL RX22.....PATTERN SELECT DIAL AT "A", STITCH WIDTH DIAL AT "0".
2. REMOVE THE BASE (SEE PAGE 7).
3. OPEN THE SHUTTLE COVER.
4. REMOVE THE SHUTTLE RACE RING.
5. TURN THE HANDWHEEL TOWARD YOU UNTIL THE TIP OF THE SHUTTLE HOOK MEETS THE LEFT SIDE OF THE NEEDLE.
6. LOOSEN THE LOWER SHAFT CRANK ARM SCREWS (A).
7. WHILE HOLDING THE SHUTTLE HOOK SO IT DOESN'T TURN, TURN THE HANDWHEEL TOWARD YOU UNTIL THE NEEDLE COMES TO ITS LOWEST POSITION.
THEN, FURTHER TURN THE HANDWHEEL TO RAISE THE NEEDLE ABOUT 1.7 MM FROM ITS LOWEST POSITION.
8. TIGHTEN THE SCREWS (A).
9. TURN THE HANDWHEEL TOWARD YOU TO CHECK IF THE HEIGHT IS IN THE RANGE OF 1.45–1.95 MM.
IF IT IS NOT IN THIS RANGE, REPEAT THE ABOVE PROCEDURE.
10. ATTACH THE SHUTTLE RACE RING.
11. ATTACH THE BASE.



MECHANICAL ADJUSTMENT

BUTTONHOLE FEED BALANCE

TO CHECK:

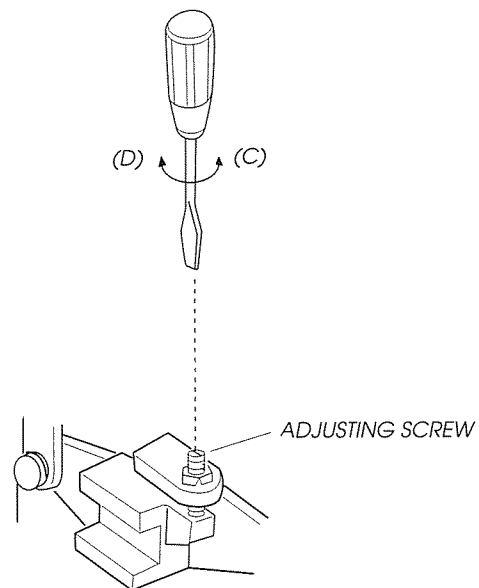
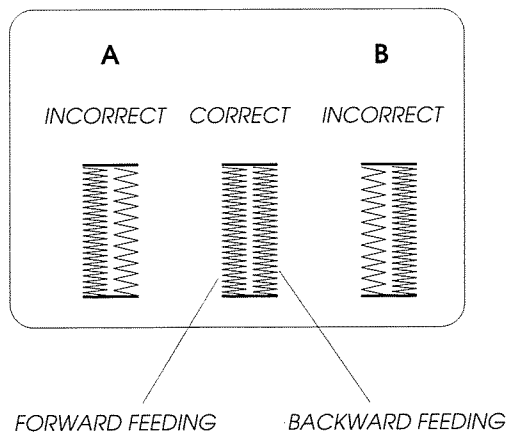
WHEN SEWING A BUTTONHOLE, THE STITCHES ON EACH SIDE OF THE BUTTONHOLE SHOULD BE OF THE SAME STITCH DENSITY.

A RANGE OF 9-12 STITCHES IN THE "BACKWARD FEEDING" RIGHT SIDE ROW PAIRED WITH 10 STITCHES IN THE "FORWARD FEEDING" LEFT SIDE ROW IS CONSIDERED ACCEPTABLE.

IF IT IS NOT IN THIS RANGE, ADJUST AS FOLLOWS:

ADJUSTMENT PROCEDURE:

1. CONFIRM THE STITCH DENSITY BY SEWING BUTTONHOLES.
2. REMOVE THE TOP COVER (SEE PAGE 5).
3. TURN THE ADJUSTING SCREW IN THE DIRECTION OF (C) IN THE CASE OF (A) (RIGHT STITCHES ARE SPARSE), OR IN THE DIRECTION OF (D) IN CASE OF (B) (LEFT STITCHES ARE SPARSE).
4. ATTACH THE TOP COVER.



MECHANICAL ADJUSTMENT

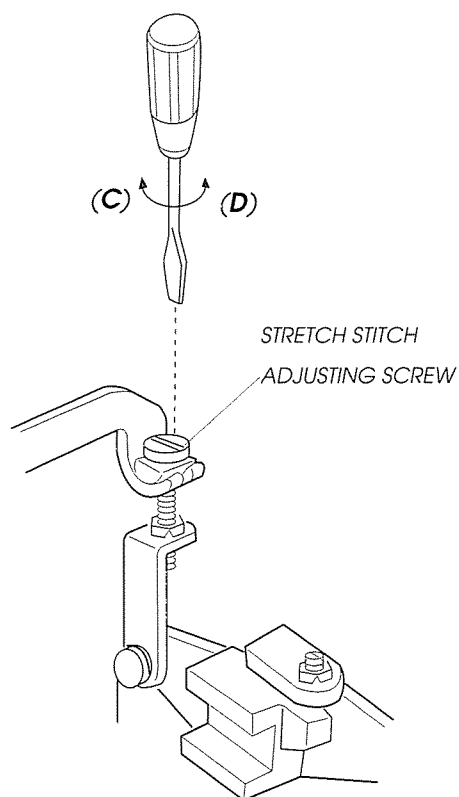
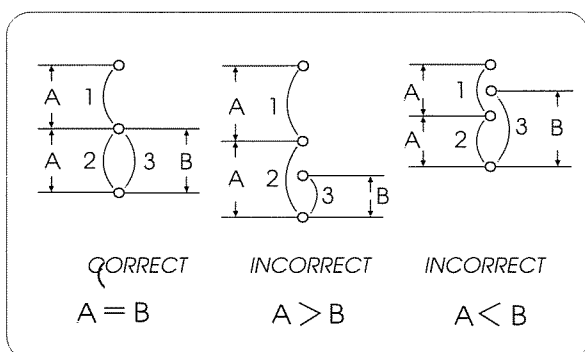
FEED BALANCE ON STRETCH STITCH

TO CHECK:

IF THE STRETCH STITCH PATTERNS ARE DISTORTED WHEN SETTING THE STITCH LENGTH DIAL AT "S.S." (THERE IS A DIFFERENCE BETWEEN FORWARD FEEDING AND BACKWARD FEEDING DURING STRETCH STITCH PATTERNS), ADJUST AS FOLLOWS:

ADJUSTMENT PROCEDURE:

1. REMOVE THE TOP COVER (SEE PAGE 5).
2. SET THE PATTERN SELECTOR DIAL AT "A" (, AND THE STITCH LENGTH DIAL AT "S.S."
NOTE: FOR MODEL RX22...PATTERN SELECTOR DIAL AT "A", STITCH WIDTH DIAL AT "5".
3. TURN THE STRETCH STITCH ADJUSTING SCREW IN THE DIRECTION OF (C) WHEN $A > B$, OR IN THE DIRECTION OF (D) WHEN $A < B$.
4. ATTACH THE TOP COVER.



MECHANICAL ADJUSTMENT

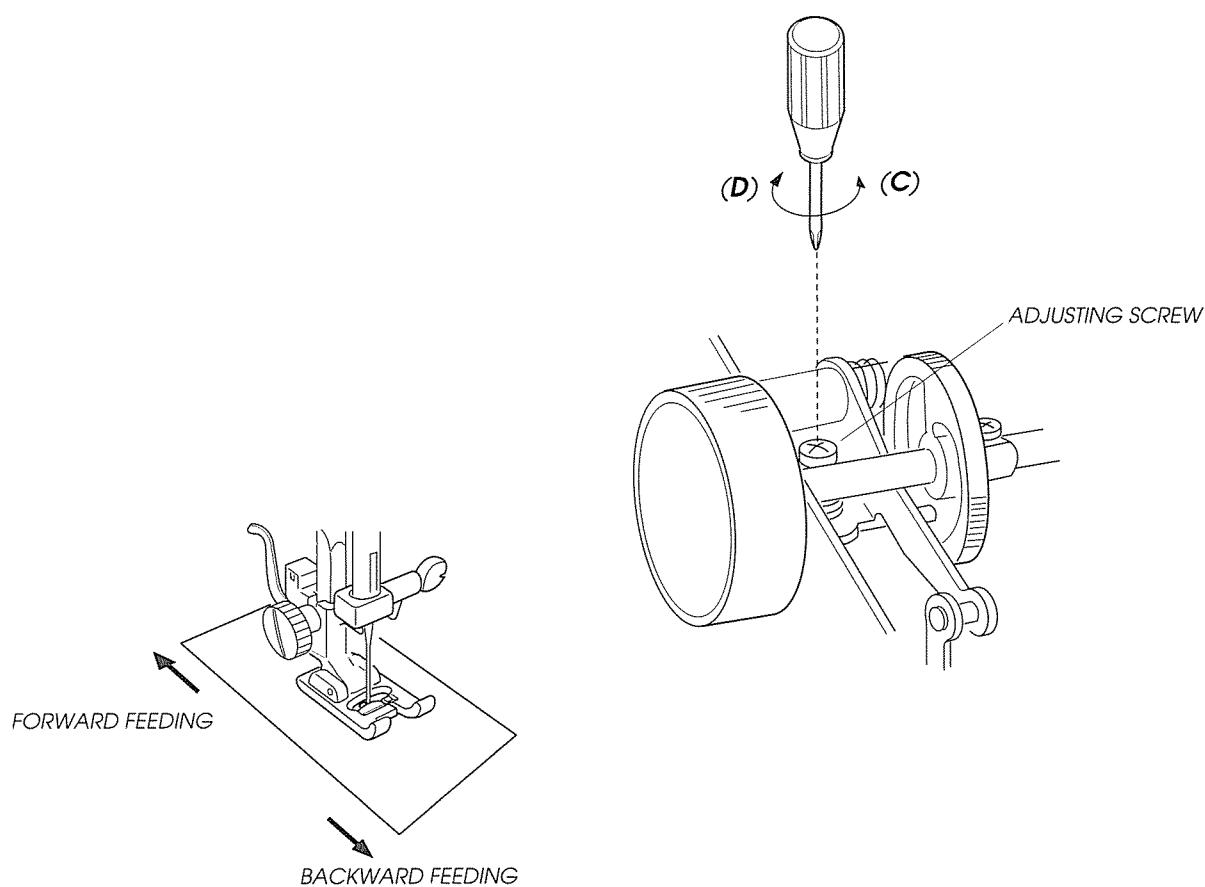
BARTACK FEED OF BUTTONHOLE

TO CHECK:

IF THE MATERIAL IS FED FORWARD OR BACKWARD WHEN SEWING THE BARTACK ON A BUTTONHOLE, ADJUST AS FOLLOWS:

ADJUSTMENT PROCEDURE:

1. SET THE PATTERN SELECTOR DIAL AT "BH" ($\frac{4}{2}$) AND THE STITCH LENGTH DIAL AT "4".
2. REMOVE THE TOP COVER (SEE PAGE 5).
3. PLACE A PIECE OF PAPER UNDER THE FOOT AND TURN THE HANDWHEEL.
IF THE PAPER IS FED FORWARD, TURN THE ADJUSTING SCREW IN THE DIRECTION OF (C).
IF THE PAPER IS FED BACKWARD, TURN THE ADJUSTING SCREW IN THE DIRECTION OF (D).
4. ATTACH THE TOP COVER.



MECHANICAL ADJUSTMENT

(FOR MODEL RX22)

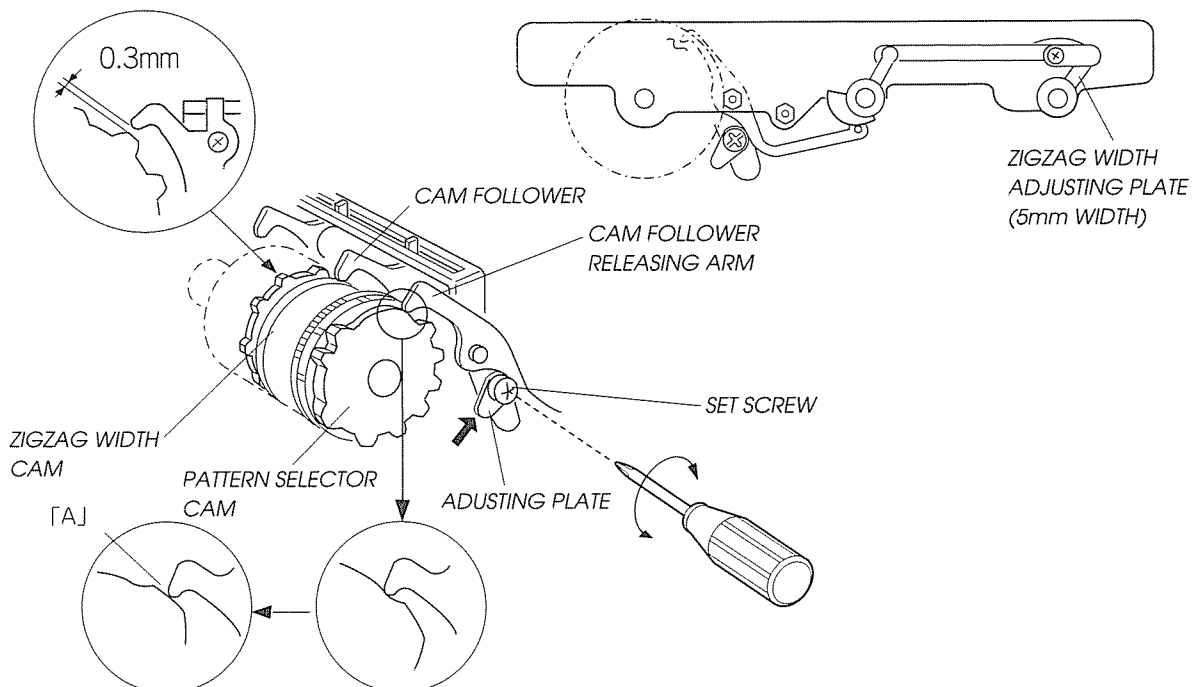
DISENGAGEMENT OF CAM FOLLOWER

TO CHECK:

TOO NARROW OF A CLEARANCE BETWEEN THE CAM FOLLOWER AND THE TOP CONVEX OF THE ZIGZAG CAM MAY MAKE IT DIFFICULT TO TURN THE PATTERN SELECTOR DIAL OR TO SELECT THE CORRECT PATTERN OR MAY CAUSE ZIGZAGING IN STRAIGHT STITCH SETTING.
ADJUST AS FOLLOWS:

ADJUSTMENT PROCEDURE:

1. REMOVE THE PATTERN SELECTOR DIAL AND REMOVE THE FRONT COVER (SEE PAGE 8). REATTACH THE PATTERN SELECTOR DIAL.
 2. SET THE PATTERN SELECTOR DIAL AT "A" () FOR THE CAM FOLLOWER POSITION. MOVE THE ZIGZAG WIDTH ADJUSTING PLATE TO THE RIGHT TO THE MAXIMUM WIDTH POSITION AT "5".
 3. TURN THE HANDWHEEL TOWARD YOU TO PUT THE CAM FOLLOWER ONTO THE TOP OF THE CONVEX OF THE ZIGZAG CAM AND PLACE THE CAM FOLLOWER RELEASING ARM ON THE PATTERN SELECTOR CAM.
 4. LOOSEN THE SET SCREW.
 5. PUSH THE CONVEX PART OF THE FOLLOWER RELEASING ARM IN THE DIRECTION OF THE ARROW UNTIL THE CAM FOLLOWER RELEASING ARM TOUCHES TO POSITION "A" OF THE PATTERN SELECT CAM, AND THEN TIGHTEN THE SET SCREW.
- NOTE: AFTER THIS ADJUSTMENT, CHECK THAT THE CLEARANCE BETWEEN THE ZIGZAG CAM AND THE CAM FOLLOWER IS 0.3MM WHEN THE CAM FOLLOWER RELEASING ARM HAS BEEN MOVED TO POSITION "B" BY TURNING THE PATTERN SELECTOR DIAL COUNTERCLOCKWISE.
6. REMOVE THE PATTERN SELECTOR DIAL, MOUNT THE FRONT COVER AND REATTACH THE PATTERN SELECTOR DIAL.



MECHANICAL ADJUSTMENT

(FOR MODEL RX22)

NEEDLE MOVEMENT FOR STRAIGHT STITCH

TO CHECK:

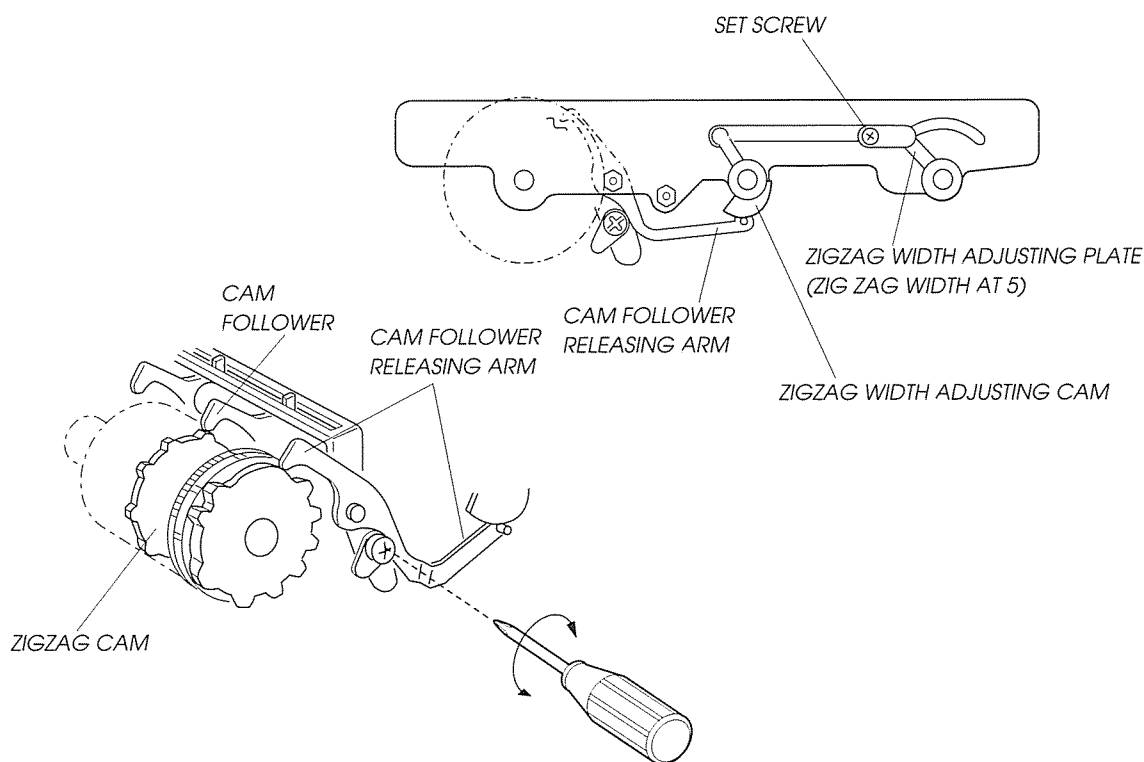
IF THE NEEDLE SWINGS SLIGHTLY WHEN THE PATTERN SELECTOR DIAL IS SET AT "C" ($\approx$) AND THE STITCH WIDTH DIAL IS SET AT "0", ADJUST AS FOLLOWS:

ADJUSTMENT PROCEDURE:

1. SET THE PATTERN SELECTOR DIAL AT "C" ($\approx$) AND THE STITCH WIDTH DIAL AT "0".
2. REMOVE THE FRONT COVER (SEE PAGE 8)
3. LOOSEN THE SCREW.
4. TURN THE HANDWHEEL TOWARD YOU TO PUT THE CAM FOLLOWER ONTO THE TOP OF THE CONVEX OF THE ZIGZAG CAM (ZZ CAM), SET THE CAM FOLLOWER RELEASING ARM TO LIGHTLY TOUCH THE ZIGZAG WIDTH ADJUSTING PLATE AND TIGHTEN THE SET SCREW.

NOTE: AFTER THIS ADJUSTMENT, MAKE SURE THE NEEDLE DOES NOT SWING, THE CLEARANCE BETWEEN THE NEEDLE AND THE NEEDLE PLATE HOLE SHOULD BE MORE THAN 0.2 MM AND THE NEEDLE SHOULD DROP IN THE CORRECT SETTING POSITION.

5. ATTACH THE FRONT COVER.



MECHANICAL ADJUSTMENT

(FOR MODEL RX18)

DISENGAGEMENT OF CAM FOLLOWER

TO CHECK:

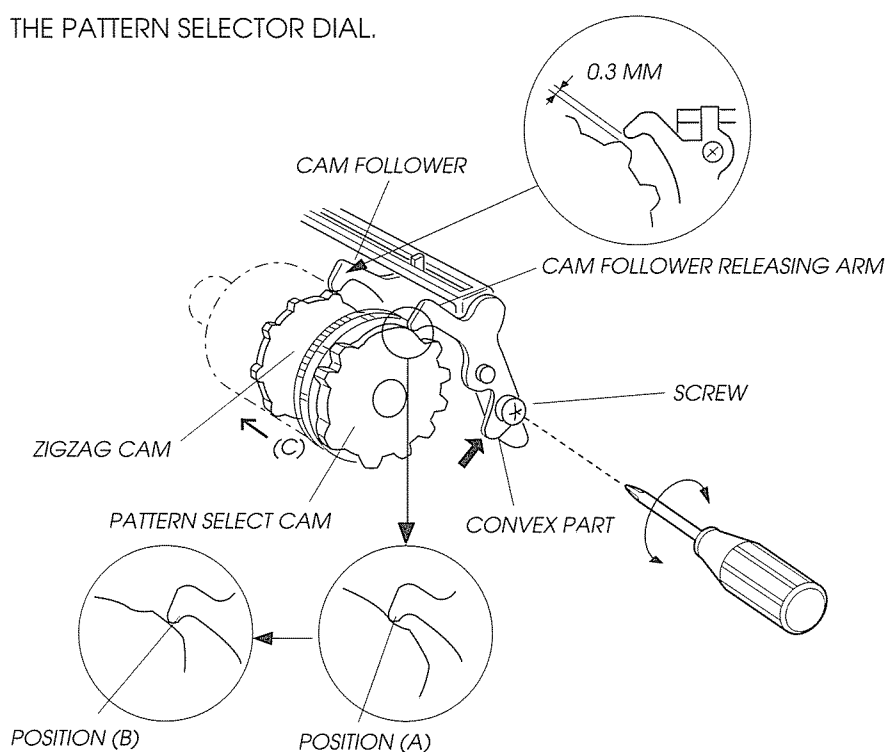
TOO NARROW OF A CLEARANCE BETWEEN THE CAM FOLLOWER AND THE TOP CONVEX OF THE ZIGZAG CAM MAY MAKE IT DIFFICULT TO TURN THE PATTERN SELECTOR DIAL OR TO SELECT THE CORRECT PATTERN OR MAY CAUSE ZIGZAGING IN STRAIGHT STITCH SETTING. ADJUST AS FOLLOWS:

ADJUSTMENT PROCEDURE:

1. REMOVE THE FRONT COVER (SEE PAGE 8).
2. MOUNT THE PATTERN SELECTOR DIAL, AND SET IT AT PATTERN "B" (C: D). (5TH CAM AS VIEWED FROM C.)
3. TURN THE HANDWHEEL TO PUT THE CAM FOLLOWER ONTO THE TOP CONVEX OF THE ZIGZAG CAM.
4. LOOSEN THE SCREW.
5. PUSH THE CONVEX PART OF THE CAM FOLLOWER RELEASING ARM IN THE DIRECTION OF THE ARROW UNTIL THE CAM FOLLOWER RELEASING ARM TOUCHES POSITION (A) OF THE PATTERN SELECT CAM, AND THEN, TIGHTEN THE SCREW.

NOTE: AFTER THIS ADJUSTMENT, CHECK THAT THE CLEARANCE BETWEEN THE ZIGZAG CAM AND THE CAM FOLLOWER IS 0.3 MM WHEN THE CAM FOLLOWER RELEASING ARM HAS MOVED TO POSITION (B) BY TURNING THE PATTERN SELECTOR DIAL COUNTERCLOCKWISE, AND ALSO THAT THE CLEARANCE BETWEEN THE CAM FOLLOWER AND THE ZIGZAG CAM IS 0.3 MM.

6. REMOVE THE PATTERN SELECTOR DIAL, REPLACE THE FRONT COVER AND REATTACH THE PATTERN SELECTOR DIAL.



MECHANICAL ADJUSTMENT

MOTOR BELT TENSION

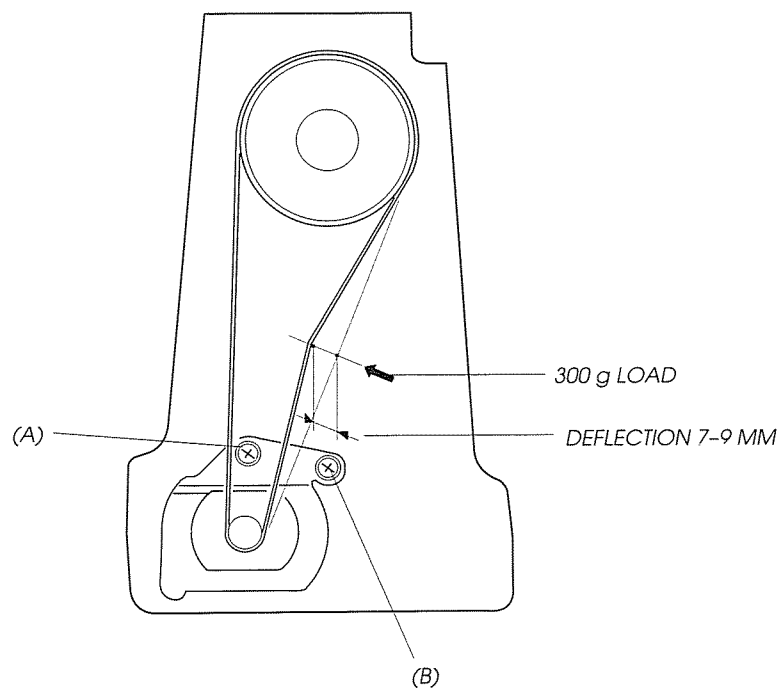
TO CHECK:

1. TOO TIGHT OR TOO LOOSE OF A MOTOR BELT TENSION MAY CREATE BELT NOISE AND TOO TIGHT OF A MOTOR BELT TENSION CAN CAUSE THE MACHINE TO RUN SLOWLY AND OVERLOAD THE MOTOR.
TOO LOOSE OF A MOTOR BELT TENSION MAY CAUSE JUMPING OF THE BELT TEETH ON THE MOTOR PULLEY.
2. THE CORRECT MOTOR BELT TENSION IS WHEN THE DEFLECTION OF THE MOTOR BELT IS ABOUT 7 MM (0.28")-9 MM (0.36") WHEN PUSHING THE MOTOR BELT WITH A FINGER AT ABOUT 300 GRAMS LOAD.

ADJUST AS FOLLOWS:

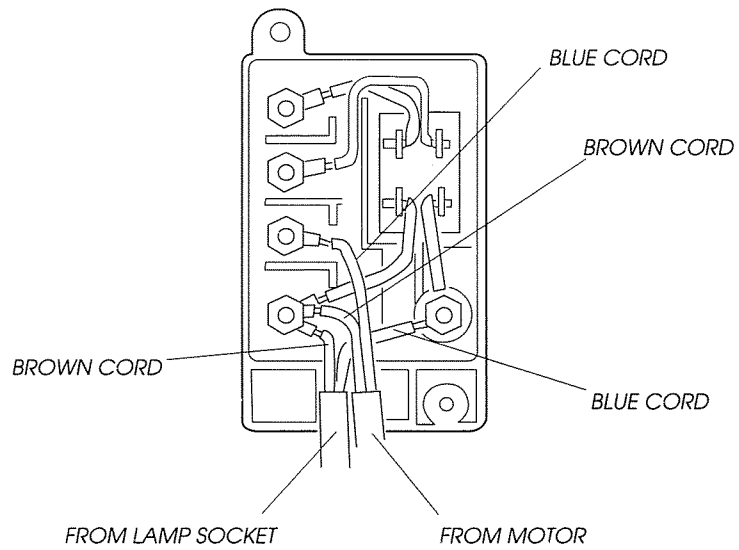
ADJUSTMENT PROCEDURE:

1. REMOVE THE BELT COVER (SEE PAGE 6).
2. LOOSEN THE SCREWS (A) AND (B).
3. MOVE THE MOTOR UP OR DOWN TO ADJUST THE DEFLECTION TO ABOUT 7 MM (0.28") - 9 MM (0.36").
4. TIGHTEN THE SCREWS (A) AND (B).
5. ATTACH THE BELT COVER.



WIRING

(FOR 220-240V)



(FOR 110-120V)

