

Adjuster Manual

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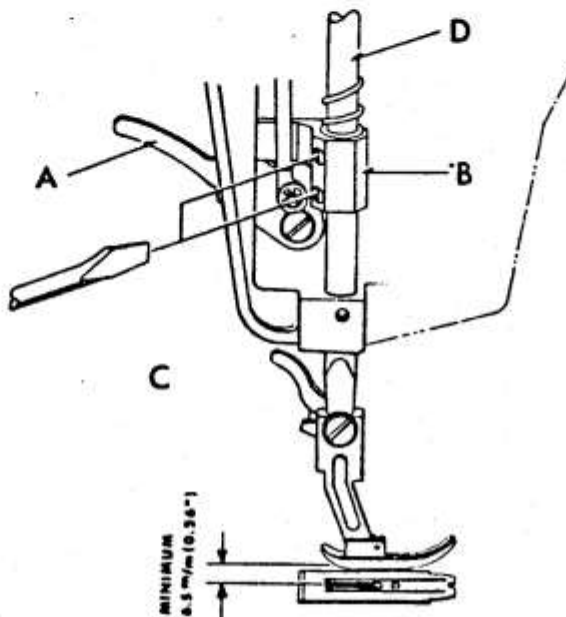
SERVICE ADJUSTMENTS

MODEL 17820
17810
*17811

(A) Presser Foot Height	A-3
(C) Distribution of Needle Swing	C-25
(D) Needle Position	D-7
(E) Feed Dog Height	E-3
(F) O-Feeding	F-17
(G) Needle Timing to Shuttle	G-9,11
(H) Zigzag Synchronization	H-1
(J) Automatic Reverse Stitch	J-35
(K) Automatic Mechanism	K-24
(M) Cam Selector Guide Plate Setting	M-9
(N) Straight Stitch	I-8

PRESSER FOOT HEIGHT

A - 3



1. CHECKING PRESSER FOOT HEIGHT

- 1) Place zigzag presser foot in position.
- 2) Raise presser bar lifter (A).
- 3) Turning handwheel, check to see if needle clamp doesn't hit the presser foot. (If the needle clamp hits presser foot, presser bar is placed too high.)
- 4) Check to see if the height of presser foot from needle plate is 6.5 m/m (=0.26 inch) at the minimum. (If this height is less than 6.5 m/m (=0.26 inch), presser bar is placed too low.)

2. ADJUSTMENT

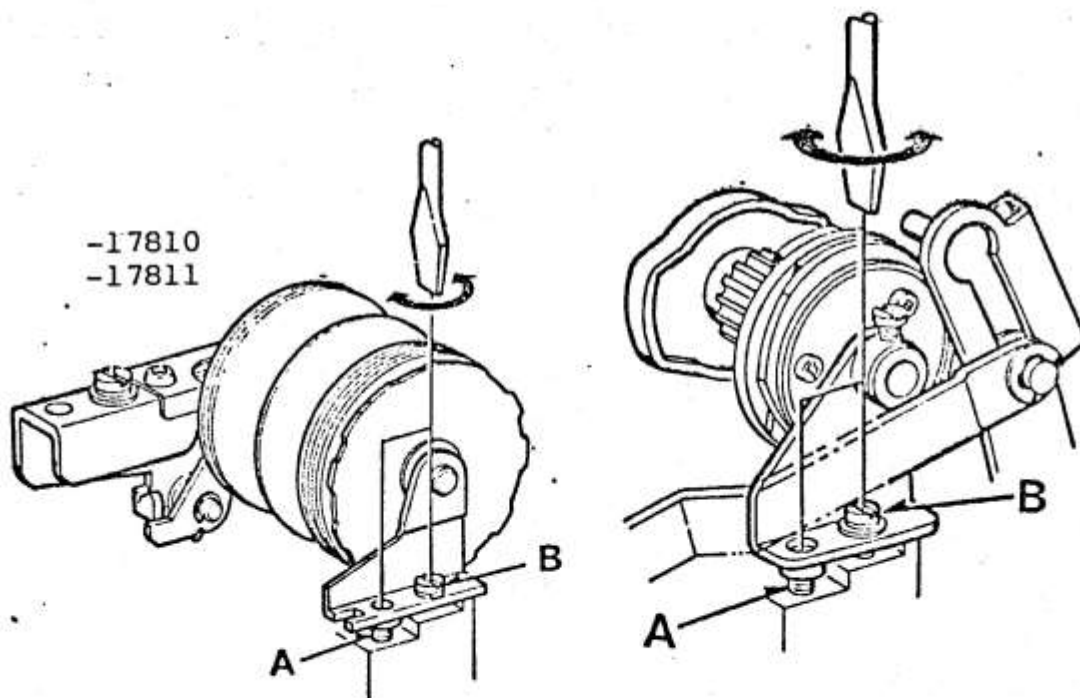
- 5) Bring down needle bar to its lowest position by turning handwheel by hand.
- 6) Set pressure regulator at 0.
- 7) Loosen two set screws (C) on presser guide bracket (B).
- 8) Moving presser bar (D) by hand, adjust the height of presser foot so that there is a clearance 6.5 m/m (=0.26 inch) at the minimum between needle plate and presser foot, and needle clamp doesn't touch the presser foot.
- 9) Tighten two set screws (C) securely.

DISTRIBUTION OF NEEDLE SWING

Check needle position at straight stitching before checking distribution of needle swing mentioned below. Set the special stitch selector dial at zigzag position and stitch width control at " 4 ". Turning the handwheel, check and see if the needle goes through the needle slot at points in equal distance from each end of the needle slot.

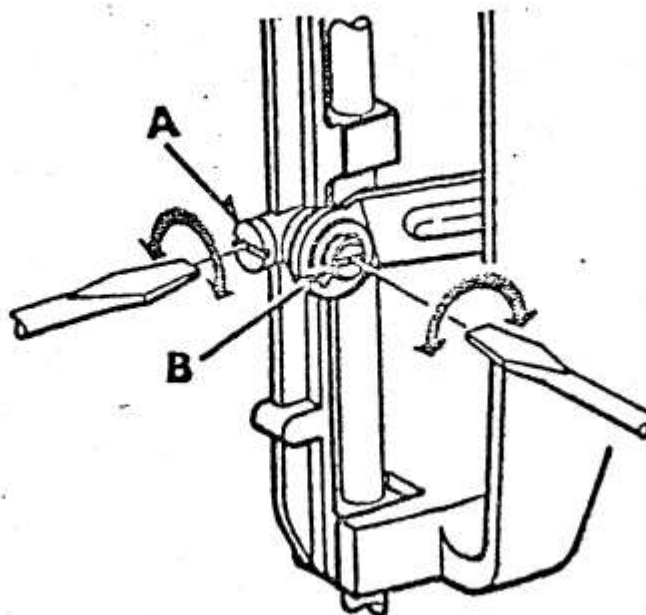
If not, loosen the set screw " B " slightly and adjust screw " A " to get correct needle swing.

After adjustment, tighten the set screw " B " securely.



NEEDLE POSITION


Set stitch width control at 0 and use straight stitch needle plate. Turning the hand wheel, check and see if needle goes through the center of needle hole. If not, loosen the screw A and adjust eccentric pin B for correct needle position. Tighten screw A securely after adjustment.



FEED MECHANISM

FEEDDOG HEIGHT

1. CHECKING FEEDDOG HEIGHT

- Set the machine as follows:
 - Special stitch selector — 
 - Stitch width control — 0
 - Stitch length control — 6
 - Special stitch modifier — red dot
- Place the feeddog height gauge (Figure 3) with go-side facing needle plate (red on top) at the back of needle slot (Figure 2). Lower presser foot.
- Turning handwheel, check feeddog height:

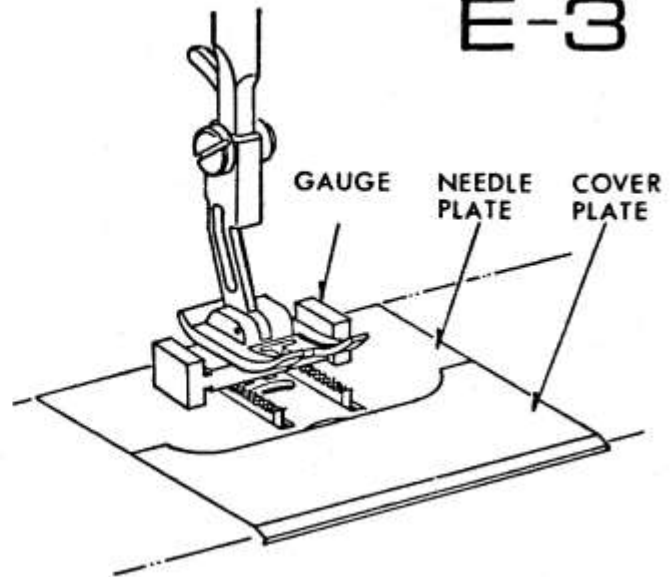


FIGURE 2

FEEDDOG HEIGHT	GO SIDE	NO-GO SIDE
	Facing needle plate 1.09 mm (0.0044 inch)	Facing needle plate 0.89 mm (0.0035 inch)
Correct	Not moving	Moving
Low	Not moving	Not moving
High	Moving	Moving

2. ADJUSTMENT

- Turning handwheel, align center of roller (C) on feed lifting link (B) with indicator line on feed lifting cam (A) (Figure 1).
- Loosen screw (D) slightly.
- Turn eccentric screw (E) so that feeddog touches the gauge slightly. When adjusting, turn eccentric screw (E) with eccentric portion facing toward the feeddog (to the left) (Figure 4).
- Tighten screw (D) securely.

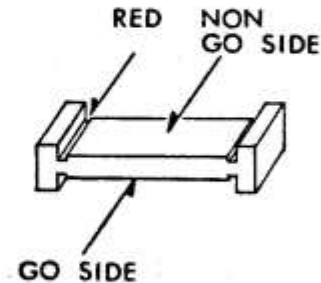


FIGURE 3

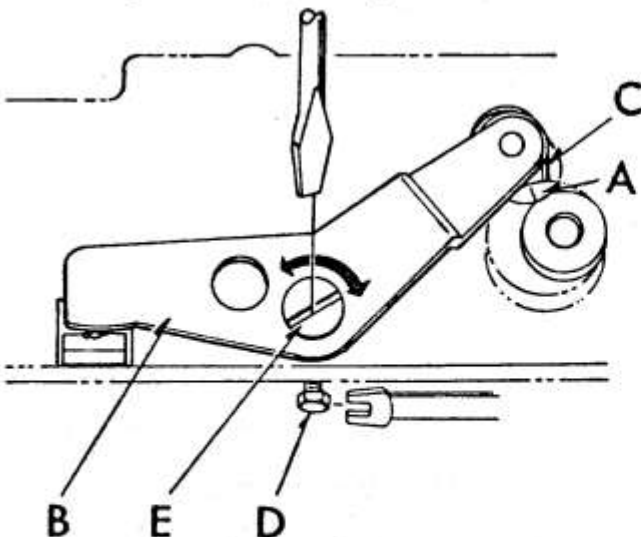


FIGURE 1

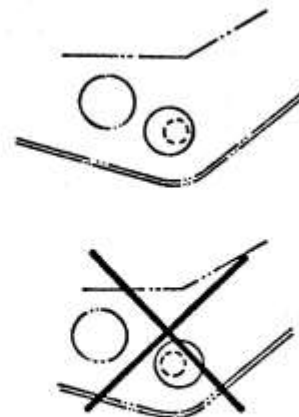
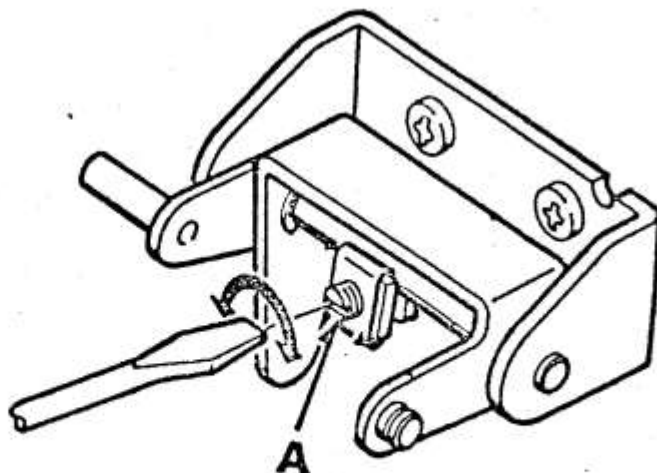


FIGURE 4

O-FEEDING

Set stitch length control at "0". Turning the handwheel, check and see if the feed dog moves horizontally. At "0" position the feed dog should not move. If moves, turn screw A in either way to eliminate movement of the feed dog.



NOTE: Remove front belt cover plate for access.

NEEDLE TIMING TO SHUTTLE

17810

C-POSITION

S-POSITION

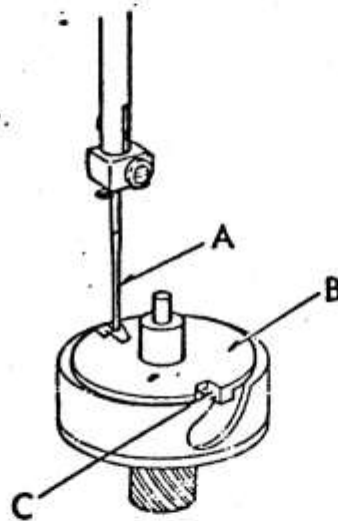


FIGURE 1A

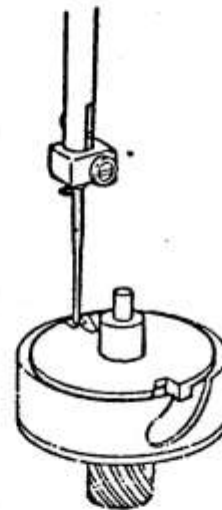


FIGURE 2A

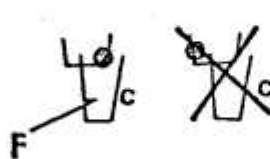


FIGURE 1B

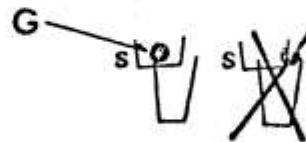


FIGURE 2B

Check needle bar height (B-2)(19810 model information) and needle position at straight stitching (D-7) before checking needle timing to shuttle.

CHECKING NEEDLE TIMING TO SHUTTLE

- 1) Set the machine as follows:
 - Special stitch selector - straight stitch position
 - Stitch width control - 0 or red dot
 - Stitch length control - any number
 - Special stitch modifier - red dot
- 2) Remove needle, presser foot, cover plate and needle plate.
- 3) Remove bobbin case.
- 4) Holding test pin (A) with flat side away from you, slip it into the needle bar and tighten the needle clamp screw.
- 5) Insert radial timing gauge (B) into the shuttle.
- 6) Turn gauge (B) so that the ear (C) of the gauge touches the pointed hook of shuttle.
- 7) Turn handwheel slowly until test pin (A) touches the surface of radial timing gauge (B).
- 8) Check to see if the point of test pin (A) is within mark (F) (mark (G) in case of S-position models).
- 9) If this check indicates machine is out of time, the machine should be returned to special repair centre.

NEEDLE CLEARANCE TO SHUTTLE

1) CHECKING NEEDLE CLEARANCE TO SHUTTLE

1) Set the machine as follows:

Special stitch selector ...zigzag stitch position
Stitch width control.....4
Stitch length control.....any number
Special stitch modifier....red dot

- 2) Remove needle plate, needle, presser foot.
- 3) Remove bobbin case.
- 4) Holding test pin flat side away from you, slip it into needle bar all the way up and tighten the needle cramp screw.

Note: At the first stroke of needle bar, observe carefully needle (test pin) clearance to pointed hook of shuttle turning the hand wheel very slowly, as it is very delicate. If the test pin should contact tightly with the pointed hook, stop the machine and proceed for adjustment. Tight contact will result in damage to pointed hook and test pin. At factory, this clearance is closely controlled to the extent you may hear a feasible clicking sound when handwheel is turned quickly back and forth. This is the maximum you can do. Do not over-do.

- 5) Turing the handwheel slowly, check to see if the needle (test pin) clearance to the pointed hook of shuttle is within standard at right and left side stroke of needle bar.

Minimum clearance - Pointed hook does not contact with #14 needle but contacts slightly with test pin.

Maximum clearance - Up to 0.05 m/m (0.002 inch)

ADJUSTMENT PROCEDURE FOR BOBBIN CASE SETTING PLATE

Bobbin case setting plate is provided to retain bobbin case in position against the clockwise rotation when handwheel is turned away from you.

GENERAL DIAGNOSIS

With all other elements of machine normal, any of following conditions may be observed if alignment of bobbin case setting plate is off.

1. Machine locks up as a consequence of the bobbin case turning clockwise and jamming under shuttle retainer arm.
2. Vibration on bobbin case.
3. Clicking noise.
4. Thread rubbing noise or pinging noise.
5. Thread jamming or tangling.
6. Thread tension off.
7. Bad stitch formation.
8. Bottom side of needle plate touches setting plate and is forced up, resulting in feed problem.

CHECKING CLEARANCE

1. Turn handwheel toward you until the left guide on the flange of bobbin case touches the retainer as shown in the inset in Figure 2.
2. Holding bobbin case with retainer touching left guide, check to see if clearance A, B and C are as follows:

A. 0.6 to 1.2 mm (0.9 mm engineering standard)

B. 1.2 to 1.8 (1.5 " ")

C. 0.5 to 1.5 (0.8 " ")

Remarks: It is recommended to use wires of suitable sizes as a gauge.

ADJUSTMENT

1. Make sure shuttle retainer arm is in position as shown in the inset of Fig. 2
2. To adjust clearances A, B, loosen the setting plate screw slightly and adjust these clearances. Tighten the screw carefully without moving setting plate.

3. To adjust clearance C, take off the setting plate and bend it slightly to achieve proper clearance. Check carefully to be sure there are no burrs on edge of setting plate.

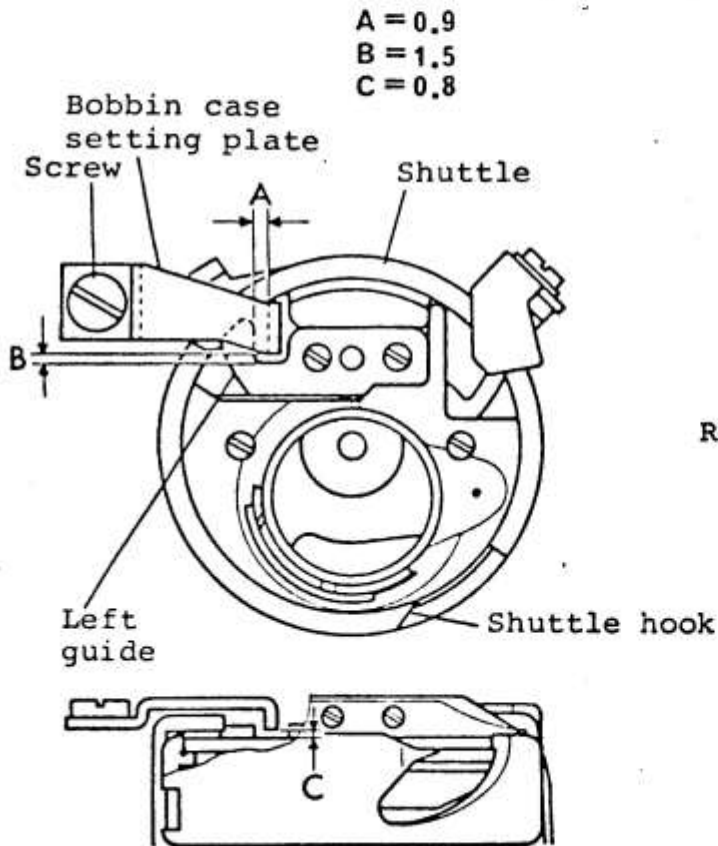


FIG-1

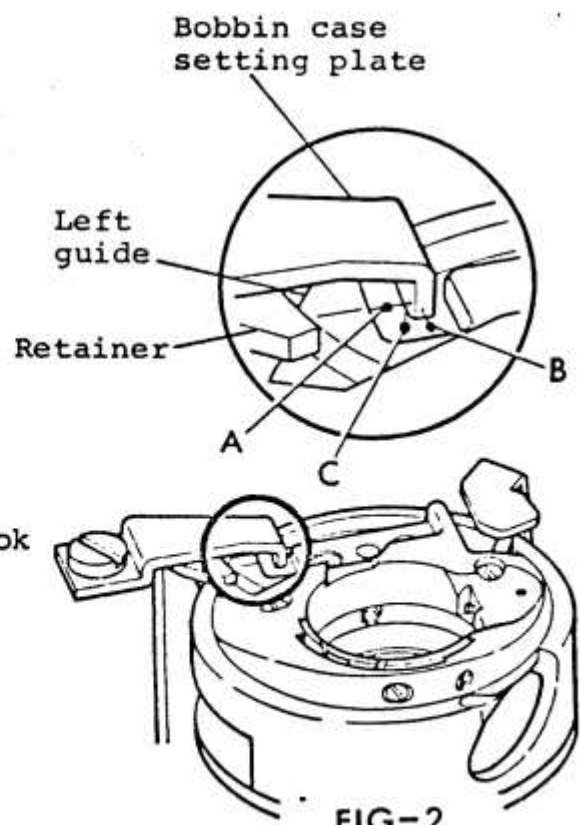


FIG-2

ADJUSTMENT

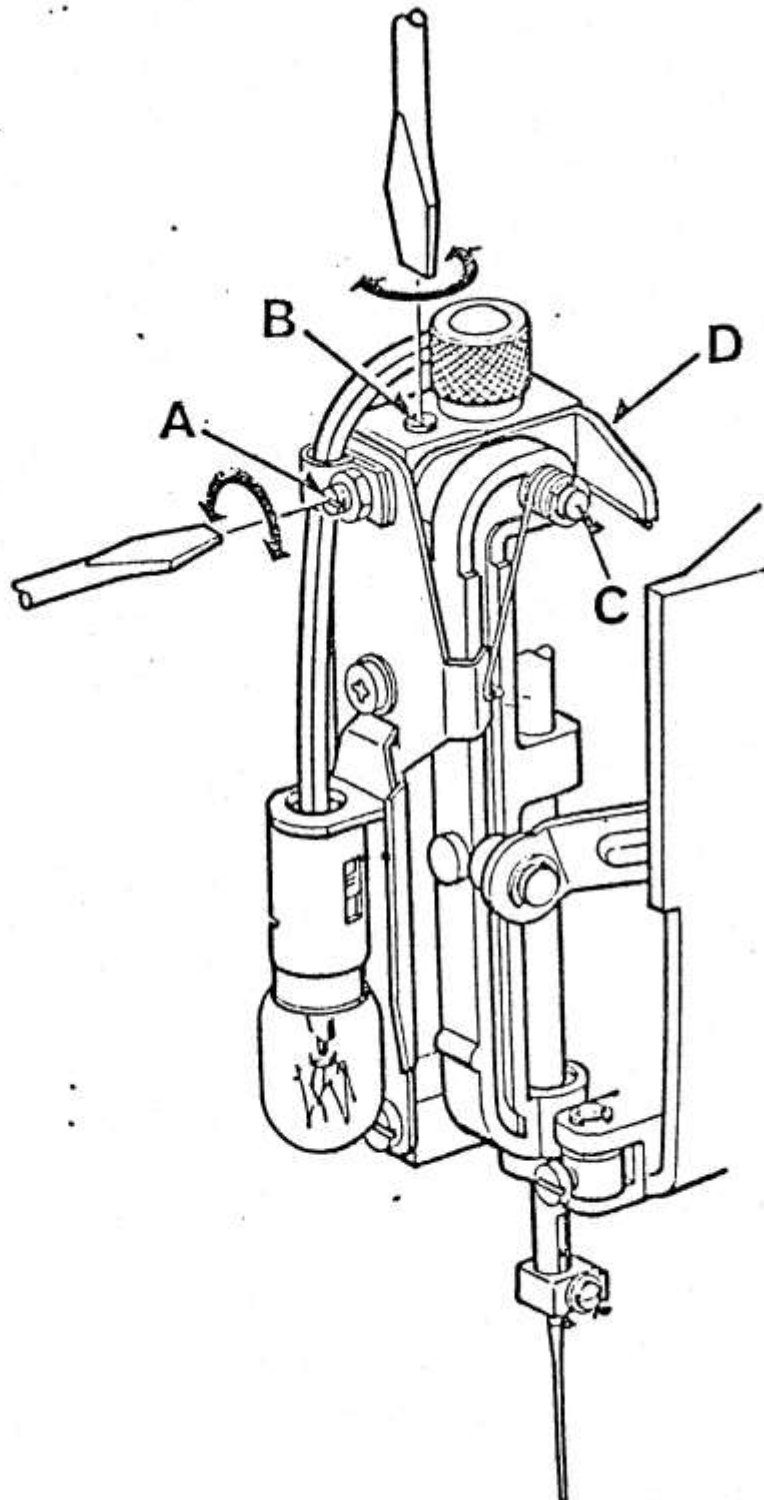
1. To adjust clearances A and B, slightly loosen the screw with which the bobbin case setting plate is secured in position and adjust these clearances. Tighten the screw after adjustment.
2. To adjust clearance C, take off the setting plate by removing the screw and adjust the height of the beak on the plate by tapping the centre of the plate with a hammer. Replace the plate in position and Recheck clearances A, B and C.

2. ADJUSTMENT

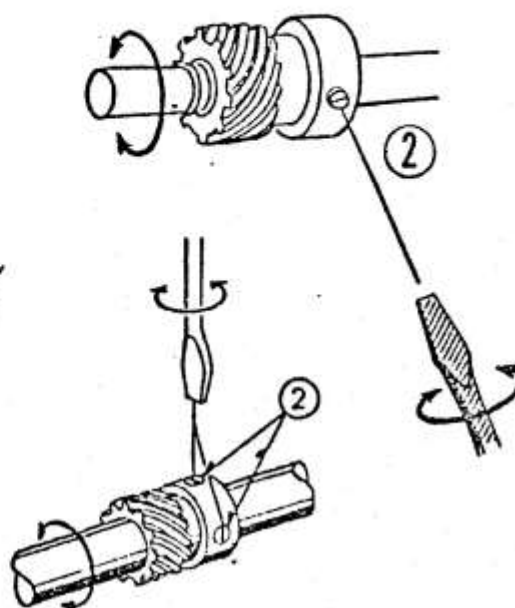
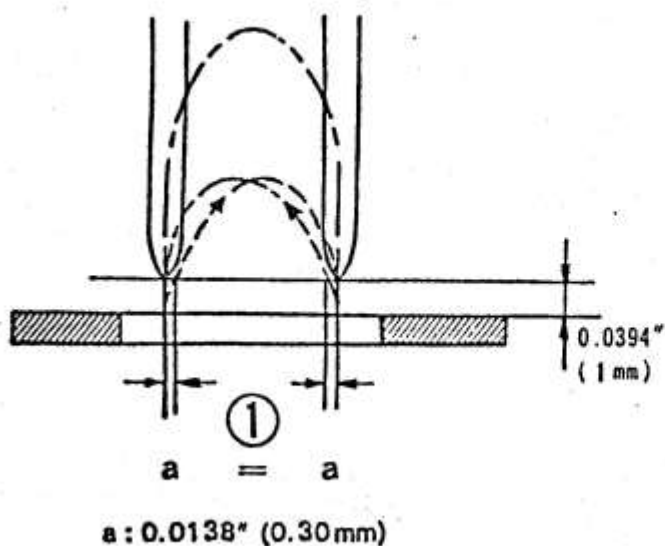
Loosening the screws A and B, adjust pin C back and forth to get correct needle clearance to shuttle.

While adjusting, plate D may rotate. It should be adjusted in such a way that needle bar support will move smoothly at zigzag maximum setting.

Tighten the screw A and B after adjustment.



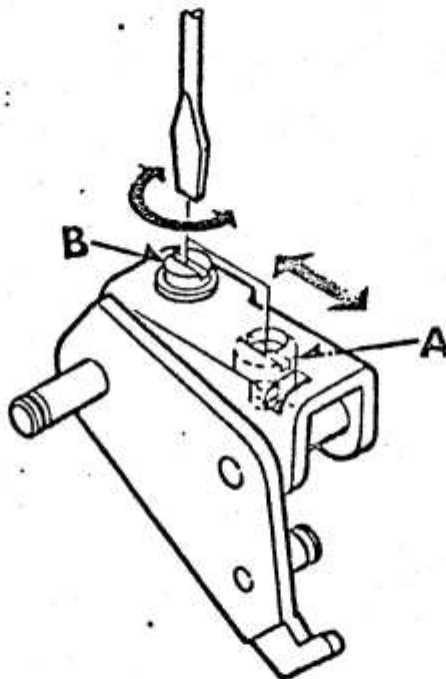
ZIGZAG SYNCHRONIZATION



Set stitch width control at maximum. Turning the handwheel, check and see if the needle side motion on the standard plane (0.0394 inch above the upper surface of the needle plate) at the both needle positions come within the engineering limit of 0.0138 inch. If not, loosen set screw (2) on the worm gear either direction. Tighten the screw (2) securely after adjustment.

AUTOMATIC REVERSE STITCH (STRETCH STITCH)

Set special stitch selector at zigzag position, modifier between L and S, stitch length control dial at 6 and zigzag dial at 4. Place a piece of paper (folded in two) over the feed dog. Turning the handwheel, check and see if forward stitch and reverse stitch length are equal. If not, loosen the screw B slightly and adjust screw A. Tighten screw B securely after adjustment.



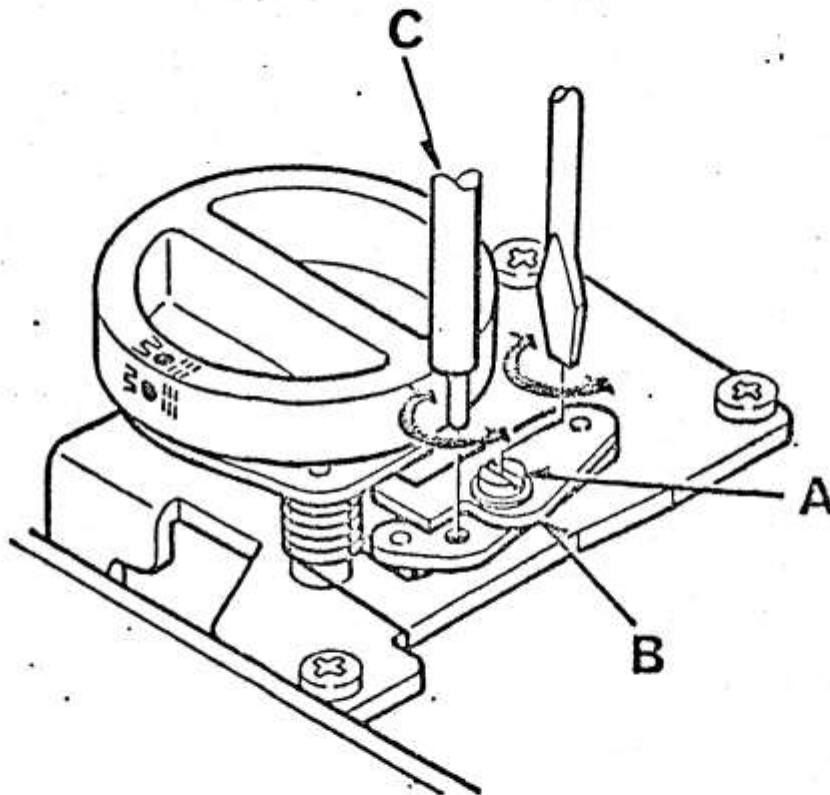
AUTOMATIC MECHANISM (CLEARANCE BETWEEN CAM AND CAM FOLLOWER)

If the special stitch selector dial can not be turned smoothly, it may be due to insufficient clearance between cam and cam follower. Excessive clearance, however, will result in an irregular pattern.

To adjust the clearance, set the stitch width control at 4, and special stitch selector dial between two of any pattern. Loosen the screw A slightly, adjust the plate B by inserting the special tool into the hole of plate B so that you can get the correct clearance * (0.006 inch) between cam follower and cam at its maximum diameter portion.

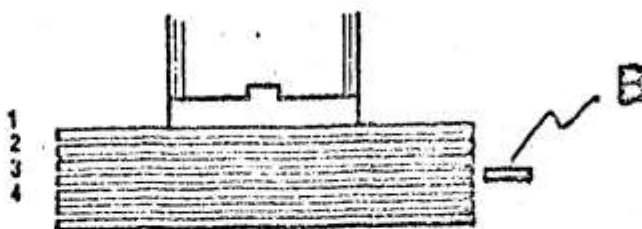
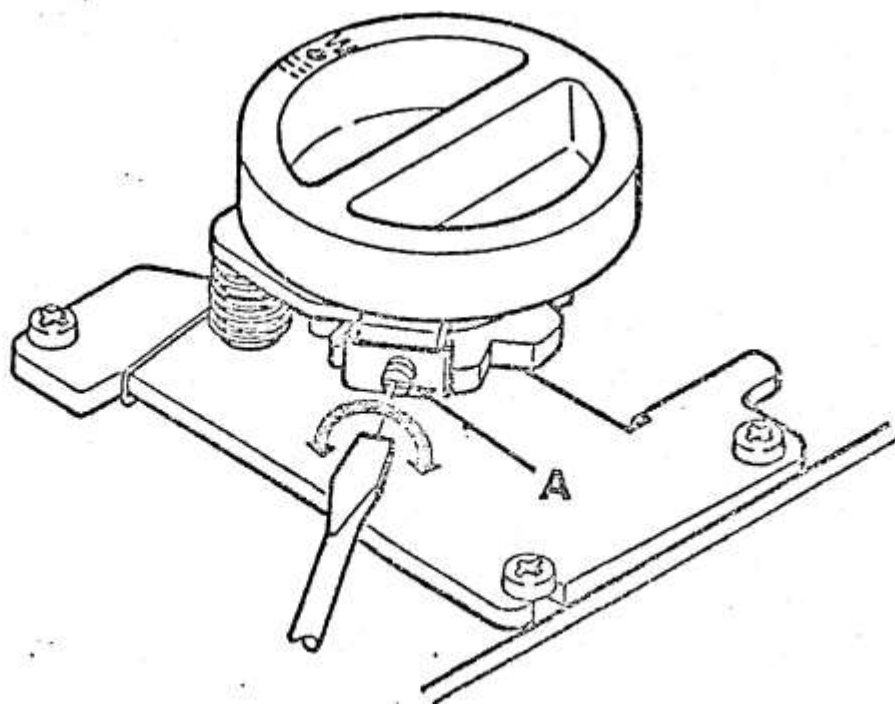
Tighten the screw A after adjustment.

* .01524 mm



CAM SELECTOR GUIDE PLATE SETTING

Check and see if each pattern of stitches selected can be sewn. If not, set special stitch selector at zigzag position and adjust screw A so that cam follower B aligns with 4th cam as illustrated.



STRAIGHT STITCH

I-8

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