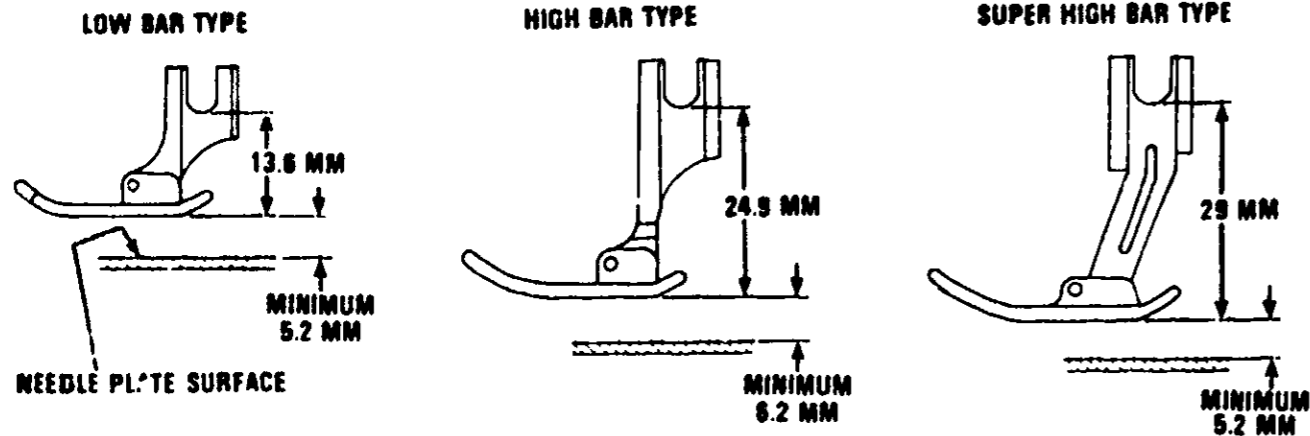


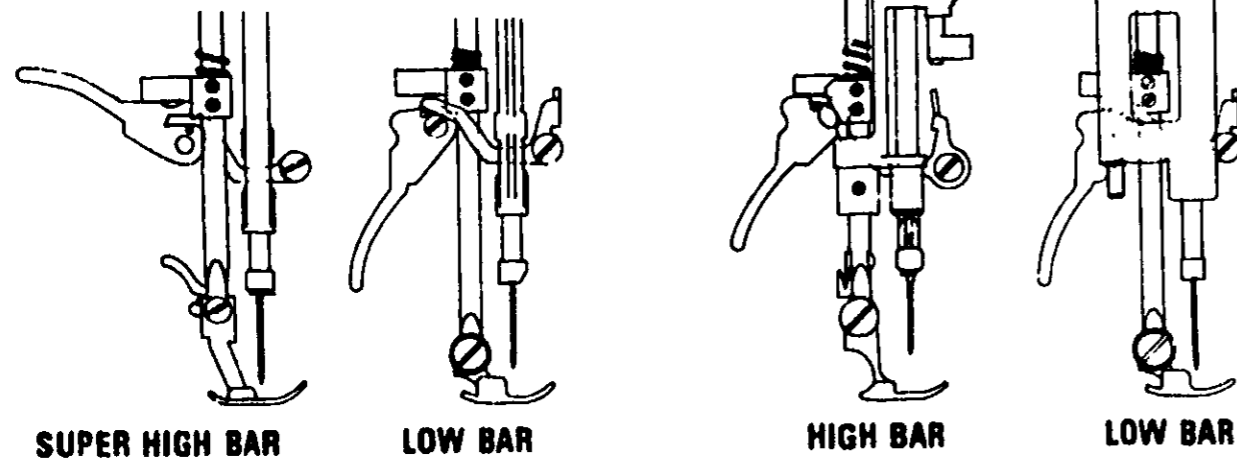
STRAIGHT STITCH POSITION	ATTACHMENT DIMENSION	ZIGZAG BITE	FOOT CONTROL
CENTER	LOW BAR	5.8	6813

PRESSER FOOT HEIGHT



FRONT FACING SHUTTLE

SIDE FACING SHUTTLE



Distribution of Needle Swing

Bring the needle to its lowest position by turning the handwheel. At this needle position, turn the stitch width control from 0 to maximum and back to 0, and note the distance needle travels from its center position towards one side.

Turn the handwheel one complete turn, and bring the needle to its lowest position again. Now this time, the needle travels to the opposite side from its center position, as you turn the stitch width control from 0 to maximum, and back to 0. Note the distance needle travels.

If the needle travels uneven distances from its center position, loosen set screw (1), and adjust position of follower rocker pin by turning eccentric pin (2), until you obtain an even distribution of the needle swing as illustrated (3). Tighten the set screws securely after adjustment.

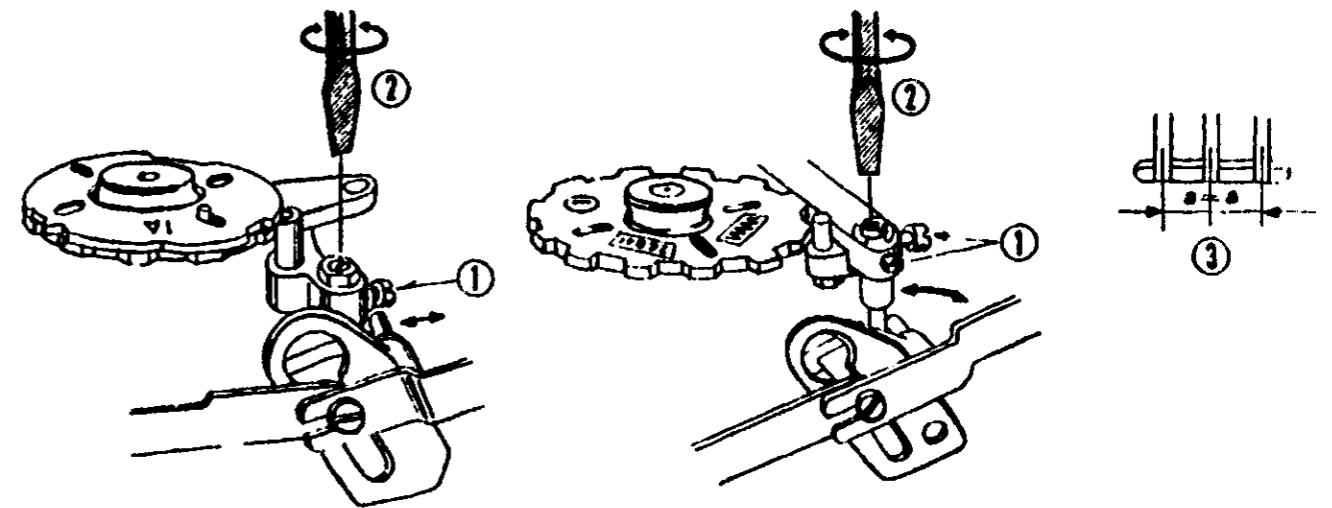


FIGURE C-4

Drop feed dog. Press down pressure regulator to the maximum pressure. Lower pressure foot lever. Loosen thumb screw and be sure presser foot is seated properly. Tighten thumb screw.

If adjustment is necessary, raise presser foot lever and loosen screws on presser bar holder. Adjust the height of presser foot from needle plate as specified. Confirm the height of presser foot by a complete turn of the handwheel. Tighten the screws securely after adjustment.

FIGURE A-1

Needle Position

Set stitch width control at 0. Prepare the needle plate for straight stitching by reversing or sliding the center plate (See Figures 1 & 2) or place the needle plate insert for straight stitch onto the needle plate (See Figure 3). Turning handwheel, check and see if the needle goes through the needle hole at its center. If not, loosen nut (1) and adjust needle position by slightly turning the eccentric roller pin (2). Tighten the nut securely after adjustment.

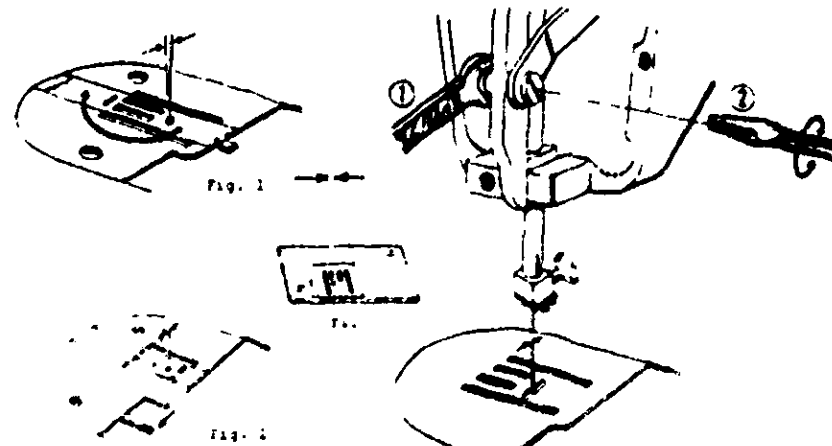


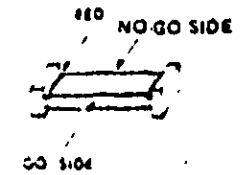
FIGURE D-2

Feed Dog Height

FOR FRONT FACING SHUTTLE MODELS, PLACE GAUGE AT POSITION AS ILLUSTRATED WITH THE NO-GO-SIDE OF THE GAUGE FACING THE NEEDLE PLATE. LOWER PRESSER FOOT. WHILE TURNING THE HANDWHEEL SLOWLY BY HAND, THE GAUGE SHOULD BE MOVED BY THE FEEDDOG TEETH. IF NOT, FEEDDOG TEETH ARE TOO LOW. THEN PLACE THE GAUGE UP-SIDE-DOWN WITH THE GO-SIDE FACING THE NEEDLE PLATE. REPEAT THE SAME PROCEDURE. THE GAUGE SHOULD NOT BE MOVED. IF THE GAUGE IS MOVED, THE FEEDDOG TEETH ARE TOO HIGH.

IN CHART FORM IT LOOKS LIKE THIS:

Feed Dog Height Gauge	Go-Side (Facing Needle Plate)	No-Go-Side (Facing Needle Plate)
Correct	Not Moving	Moving
Low	Not Moving	Not Moving
High	Moving	Moving



IF ADJUSTMENTS ARE NECESSARY, LOOSEN SCREW (1) ON DROP FEED CENTER BLOCK AND ADJUST THE FEEDDOG HEIGHT AS SPECIFIED. TIGHTEN THE SCREW SECURELY AFTER ADJUSTMENT.

CAUTION: FOR SIDE FACING SHUTTLE MODEL BE SURE THE GAUGE IS PLACED ON THE SURFACE OF NEEDLE PLATE. BE SURE ONE END IS NOT RESTING ON THE HANDHOLE COVER PLATE.

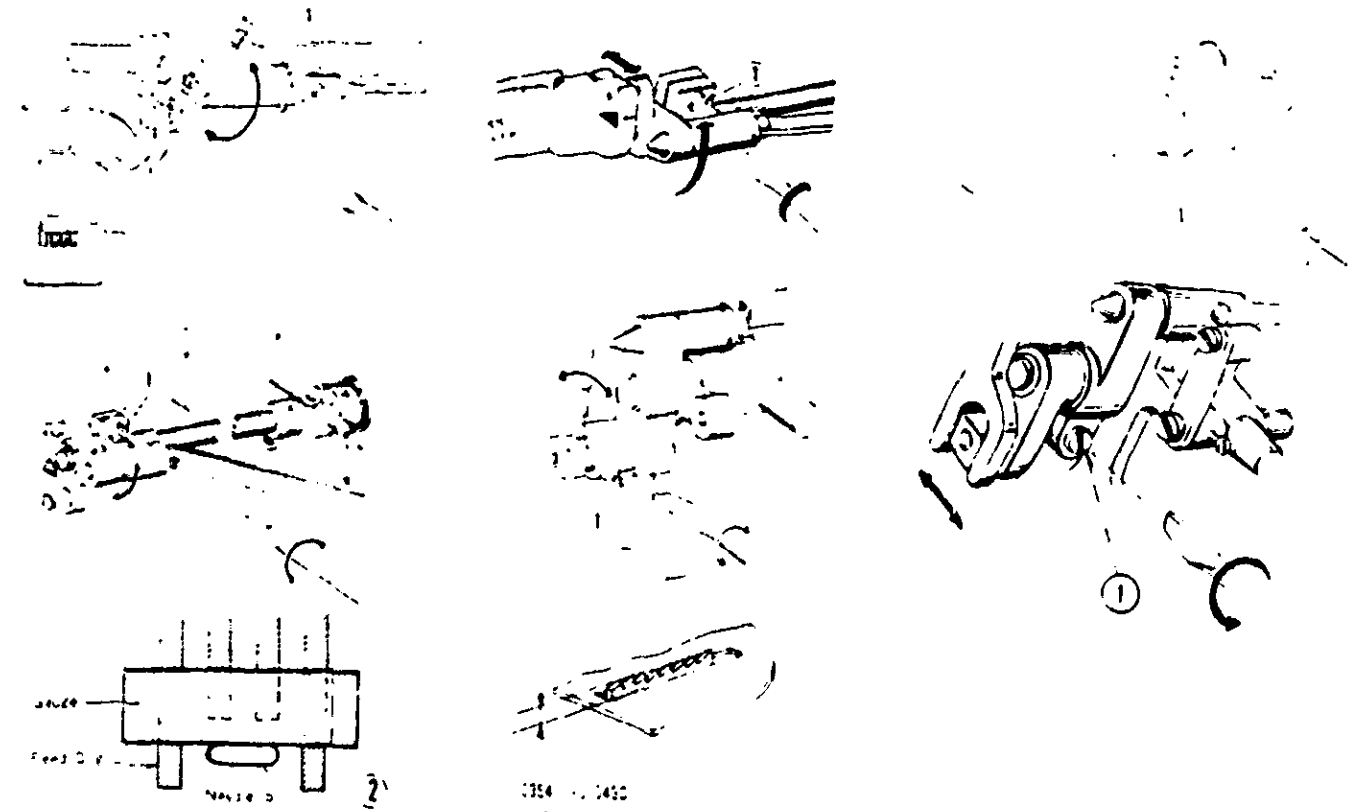


FIGURE E-1

Zero-Feeding

SET STITCH LENGTH CONTROL AT 0. TURNING HANDWHEEL, CHECK TO SEE IF THE FEED DOG MOVES HORIZONTALLY. AT 0 POSITION THE FEED DOG SHOULD NOT MOVE. IF FEED DOG MOVES, LOOSEN THE NUT (2) HOLDING SCREW (1). TURN SCREW EITHER WAY TO ELIMINATE MOVEMENT OF THE FEED DOG. AFTER ADJUSTMENT, TIGHTEN NUT (2) SECURELY.

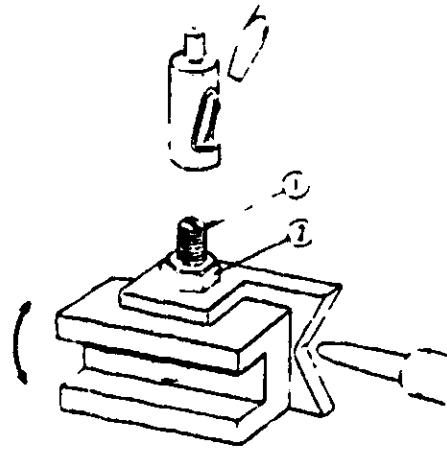


FIGURE F-6

Zero-Feeding

SET SPECIAL STITCH DIAL AT "S", STITCH WIDTH CONTROL AT "S" AND STITCH LENGTH CONTROL AT "0". TURNING HANDWHEEL, CHECK TO SEE IF THE FEED DOG MOVES HORIZONTALLY. AT THIS POSITION THE FEED DOG SHOULD NOT MOVE. IF FEED DOG MOVES, LOOSEN SCREW (1) SLIGHTLY. TURN ECCENTRIC SCREW (2) EITHER CLOCKWISE OR COUNTERCLOCKWISE UNTIL MACHINE DOES NOT FEED ON THE "0" SETTING. TIGHTEN SCREW (2) SECURELY AFTER ADJUSTMENT.

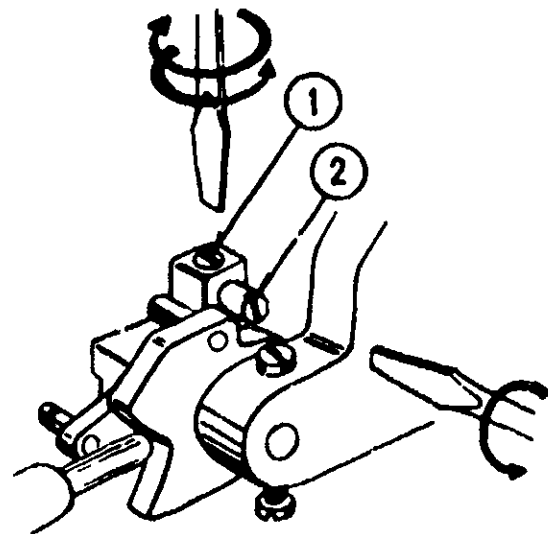


FIGURE F-7

NEEDLE TIMING TO SHUTTLE NEEDLE BAR HEIGHT

THE RADIAL TIMING GAUGES AND TEST PINS, AS ILLUSTRATED BELOW, ARE AVAILABLE FROM DIVISION 92, SOURCE 192. THE KIT IS IDENTIFIED AS #69659. EACH GAUGE AND TEST PIN CAN ALSO BE ORDERED INDIVIDUALLY.

THIS KIT IS USED FOR SOURCE 148 AND 158 VERTICAL BOBBIN SEWING MACHINES.

RADIAL
TIMING GAUGE
#69894



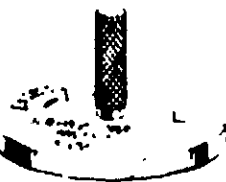
RADIAL
TIMING GAUGE
#69892



RADIAL
TIMING GAUGE
#69893



TEST PIN
#69873



RADIAL
TIMING GAUGE
#69895

FIGURE G-1

The clearance "a," "b," "c," and the angle "d" are very critical points in relation to the needle timing to shuttle. However, these points are visually determined by using the Radial Timing Gauges.

NOTE:

No adjustment is allowed for "Dimension C" for the front-facing shuttle models. For adjustment for side-shuttle models, please refer to Figure G-3.

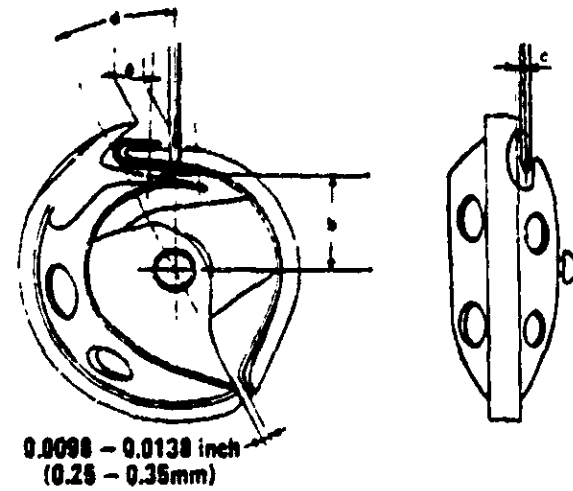
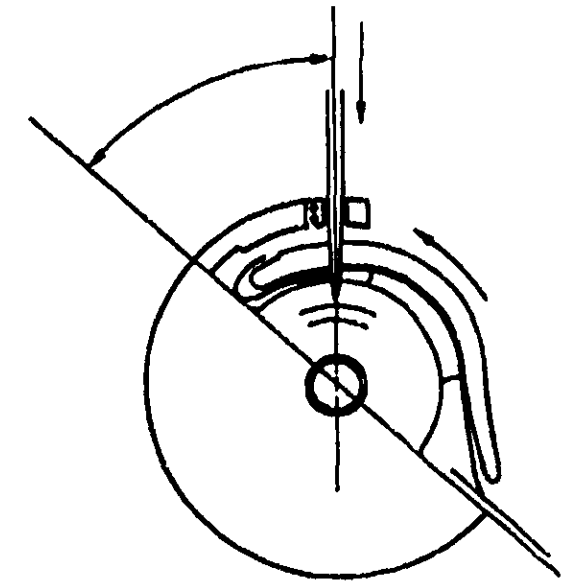


FIGURE G-2

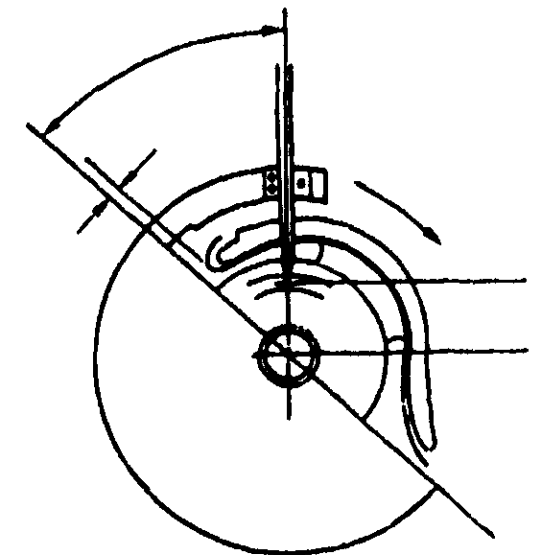
Do not attempt adjustments other than those specified in this manual. If, by following the prescribed procedures, it is determined that a machine is out of radial time, handle per Bulletin S-820

Radial Timing Gauge Instructions

- 1 Remove needle and replace it with test pin which has a blunt tip
- 2 Remove bobbin case and shuttle hook. Insert correct radial timing gauge into shuttle driver.
For this model(s) use gauge marked
Source 158 FRONT 58 FRONT 40
Use FRONT 58 marking
- 3 Set stitch control at "0" or "S" (depending on model involved)
- 4 Set needle position control at center for models which have this control
- 5 Rotate handwheel slowly by hand (See Figure G-3a) The test pin should come between the correct two vertical lines at the end of the counterclockwise rotation of the gauge. For this model(s) use vertical lines identified with one dot
- 6 To check needle bar height, continue to rotate handwheel slowly by hand (See Figure G-3b) At the lowest position of the needle bar, the end of the test pin should come between two horizontal lines on the gauge.
If necessary, adjust needle bar height. Loosen screw on needle bar holder and adjust height on the test pin



DIMENSION A



DIMENSION B

FIGURE G-3

Figure G-3 gives a general idea of the use of the radial timing gauge. Follow the instructions at the left which pertain to this model(s).

Zigzag Synchronization

Set stitch width control at maximum. Turning the handwheel, check and see if the needle side motion on the standard plane (0.0304 inch above the upper surface of the needle plate) at 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.

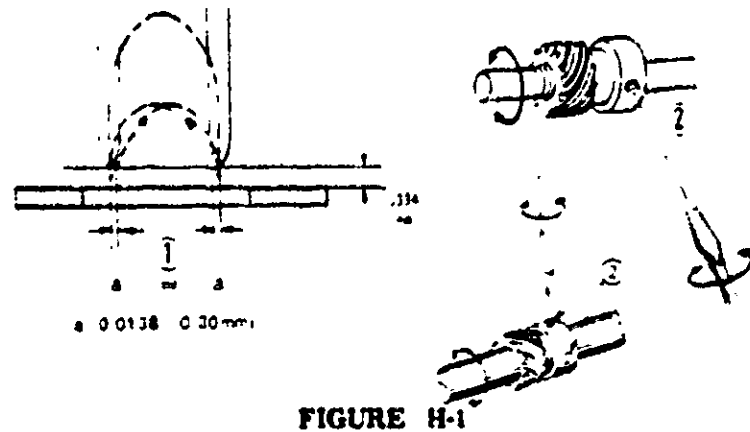



FIGURE H-1

Automatic Reverse Stitching Buttonhole

If the length of reverse stitches is shorter or longer than that of forward stitches, the adjustment is made by the following procedure:

Loosen the set screw (1), and pull off the knob (2). Adjust the dial shaft (3) by turning either way until you can obtain the correct pattern. After adjustment, place the knob (2) onto the shaft correctly directing it upward as illustrated. Tighten the screw (1) securely. It is necessary to have a slight gap between the knob surface and arm side. After this adjustment the automatic mechanism must also be checked as described for Figure K-9.


Example of forward and reverse stitches equal in length

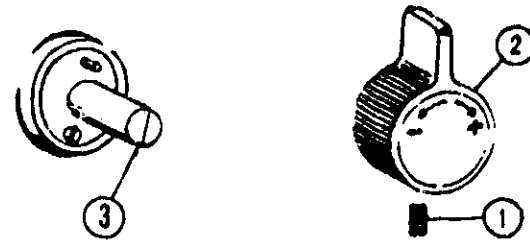


FIGURE J-6

If the machine produces an irregular pattern as illustrated (A), adjust the machine in the following way. Insert pattern disc number 1 onto the cam shaft, and check for a clearance of 0.020 inches between cam surface of pattern disc at its shortest diameter and cam follower rocker pin. If incorrect, loosen the screw (1) and adjust screw (2) turning either way. Tighten screw (1) securely after adjustment.

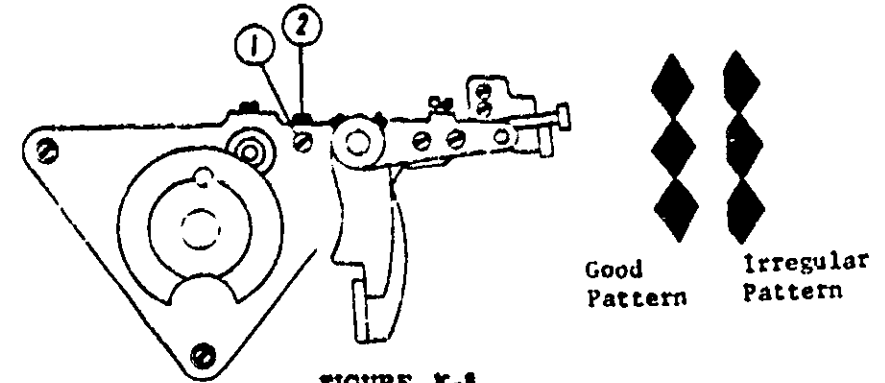


FIGURE K-8

Automatic Mechanism Cam and Cam Follower Mechanism

If a super pattern disc (containing automatic reverse stitching) produces an incorrect pattern as illustrated, the machine can be adjusted as below. Set stitch width control at maximum, and buttonhole reverse stitch length control in upright position. Loosen the set screws (1) and nut (2) slightly and adjust the screw (3) turning in either direction while running the machine with a super cam, until you obtain the correct pattern. If the length of forward stitches is longer or shorter than that of reverse stitches, turn the screw (3) clockwise or counter-clockwise respectively. After adjustment, tighten the screws (1) and nut (2), holding screw (3) securely.

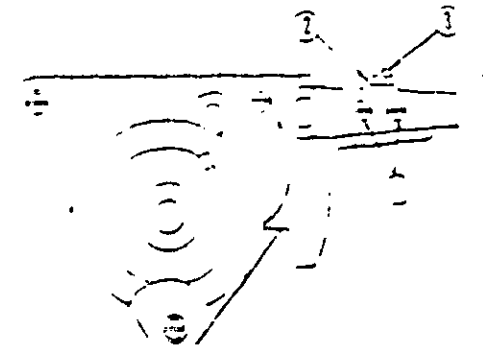
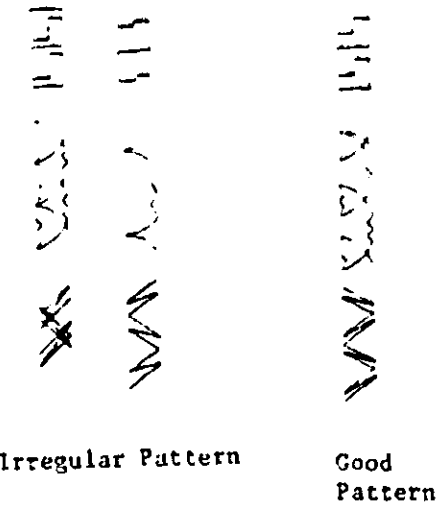


FIGURE K-9