

SERVICING MANUAL

MODEL
692

CONTENTS

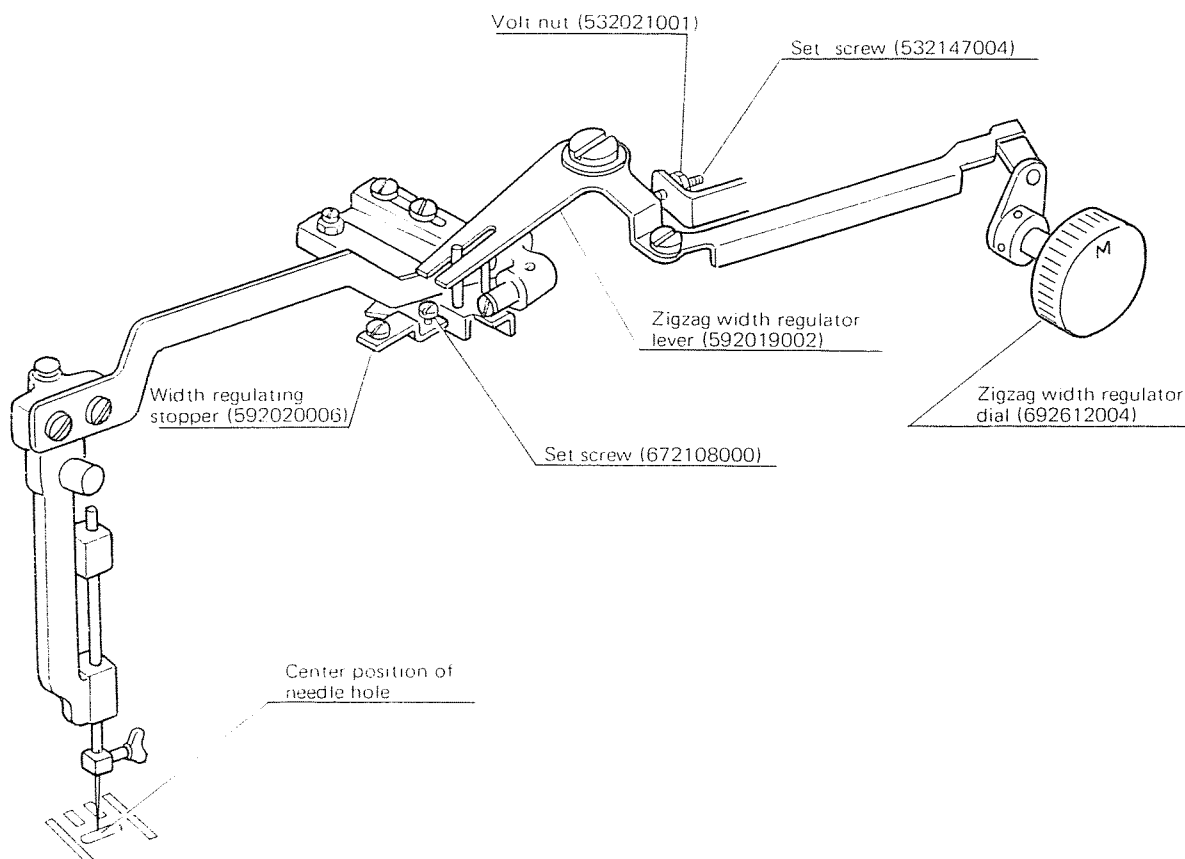
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ADJUSTMENT OF "M" NEEDLE POSITION

When zigzag width regulator dial is set at "M", needle does not point in the center of needle hole.

In this case, the following adjustment should be made.



1. Set the zigzag width regulator dial at "M"
2. First loosen set screw (532147004) and volt nut (532021001)
3. Fix the nut (532021001) after letting the zigzag width regulator lever (592019002) touch the top of set screw (532147004)
(Remarks. The nut should be tightened so that the regulator lever does not move.)
4. Turn set screw (672108000) of width regulating stopper (592020006) to make adjustment so that needle can position in the center of needle hole.



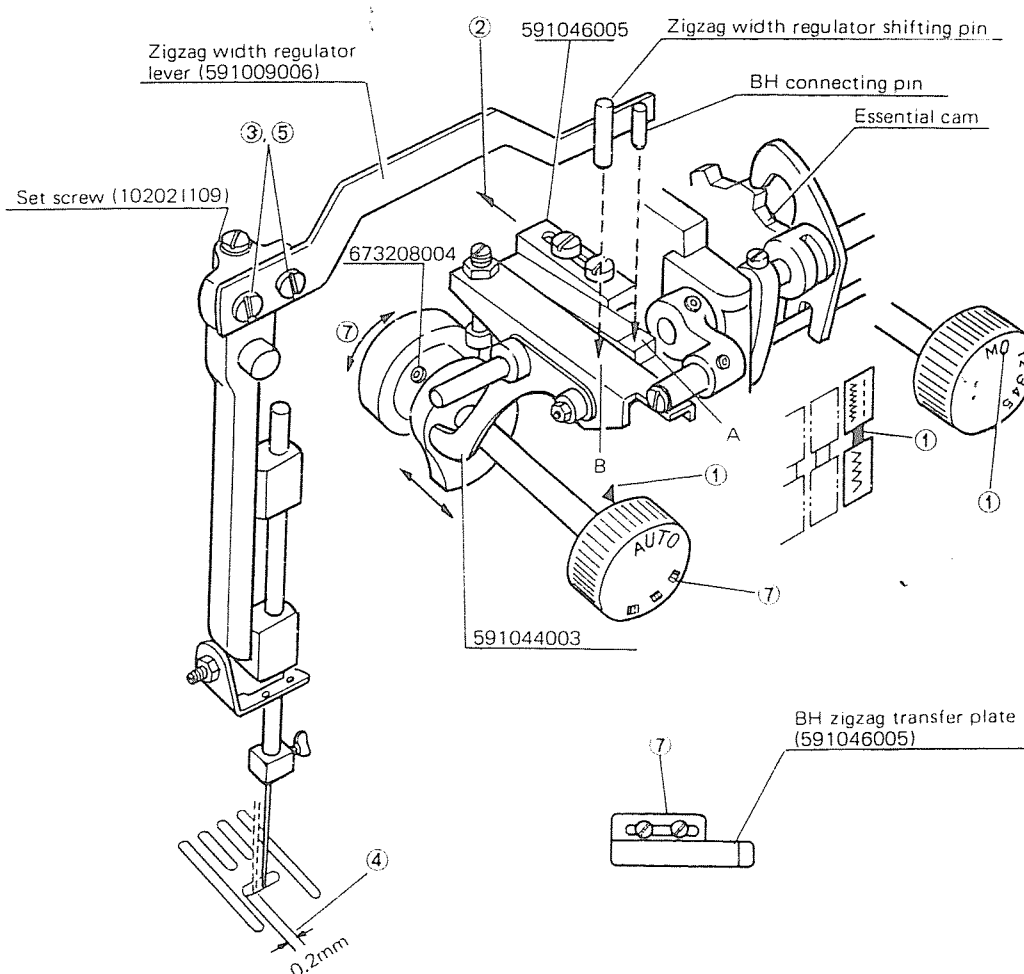
ADJUSTMENT OF NEEDLE DROP

If the needle does not fall into needle hole correctly,


Make adjustments as follows:

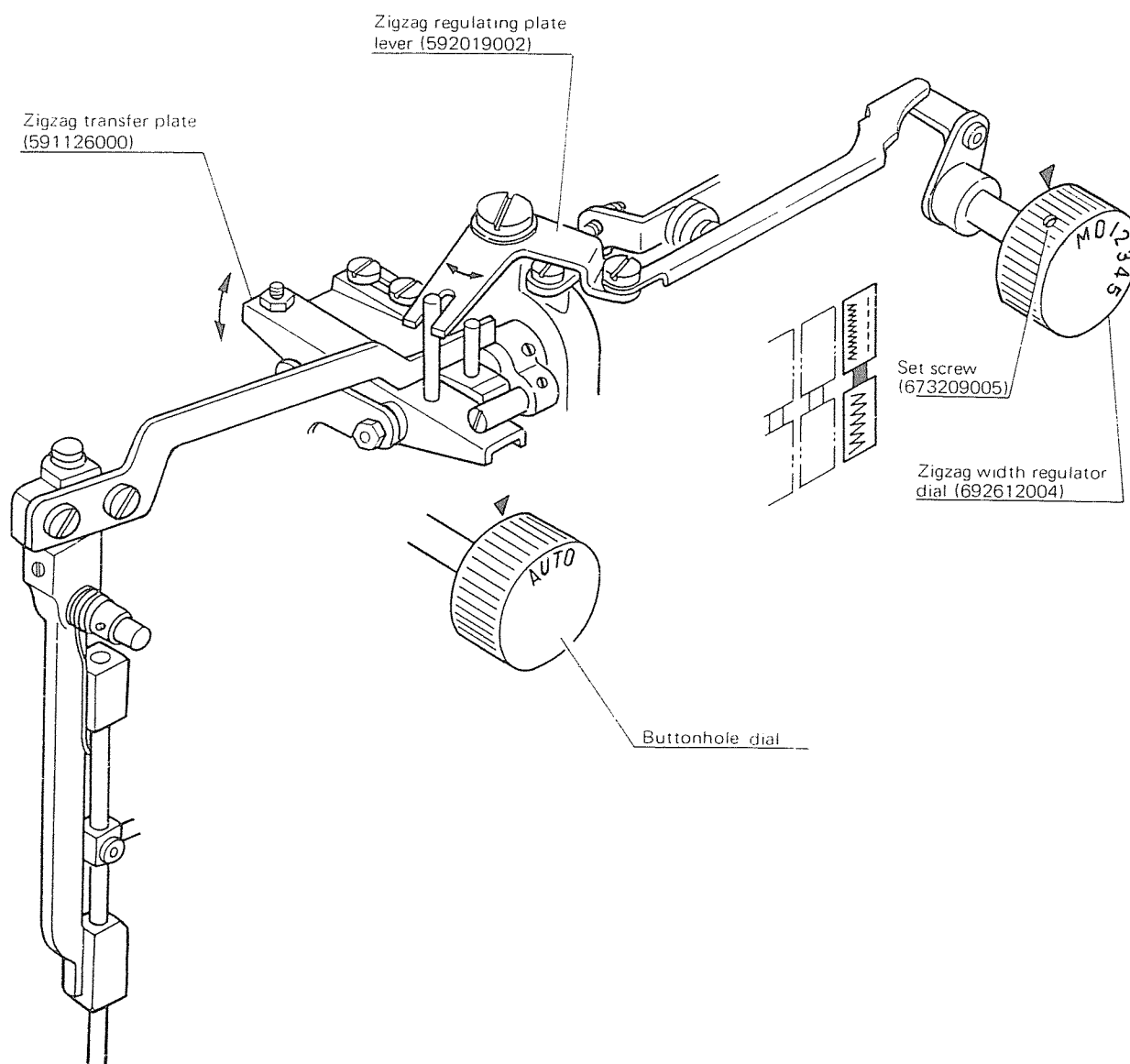
1. Set zigzag width regulator dial at "O", buttonhole dial at "AUTO" and pattern indicator at the mark of ().
2. Tentatively tighten set screws at the stage where BH zigzag transfer plate (591046005) comes to the end of the arrow (←) direction.
*The BH zigzag transfer plate shall be fixed with adjustment of buttonhole.
3. Loosen set screw (102021109).
4. Make BH connecting pin touch the A face of BH zigzag transfer plate, and slide zigzag width regulator lever and needle bar supporter so that a clearance between needle and the left side of needle hole should be kept within 0.2 mm.
5. Tighten set screws of zigzag width regulator lever (591009006).
6. Make BH adjusting cam move forward and backward in the direction of its shaft and tentatively tighten cam set screw (673208004) at the position where zigzag width regulator shifting pin touches the B face.
7. When Buttonhole dial is set at () position turn the cam slightly so that zigzag transfer regulating crank (591044003) may come onto the concave of the cam. After confirming it, tighten cam set screw. Then, get #591046005 back to the center.

Remarks: Adjustment of basic needle position and its deflection, and buttonhole etc. should be made after completion of above adjustment.




ADJUSTMENT OF UNEVEN STRAIGHT STITCHING

1. Set zigzag width regulator dial (692612004) at "O", buttonhole dial at "AUTO" position and pattern indicator at the mark of () as described in the following illustration.
2. Make the following adjustment when needle swings sideways in case of the top of zigzag transfer plate (591126000) up and down.
3. Loosen set screw (673209005) of zigzag width regulator dial.
4. Adjust the position of zigzag regulating plate (592019002) so that needle bar supporter can not move even if zigzag transfer plate (591126000) up and down.
5. Set zigzag width regulator dial (692612004) at "O" and tighten the set screw (673209005).

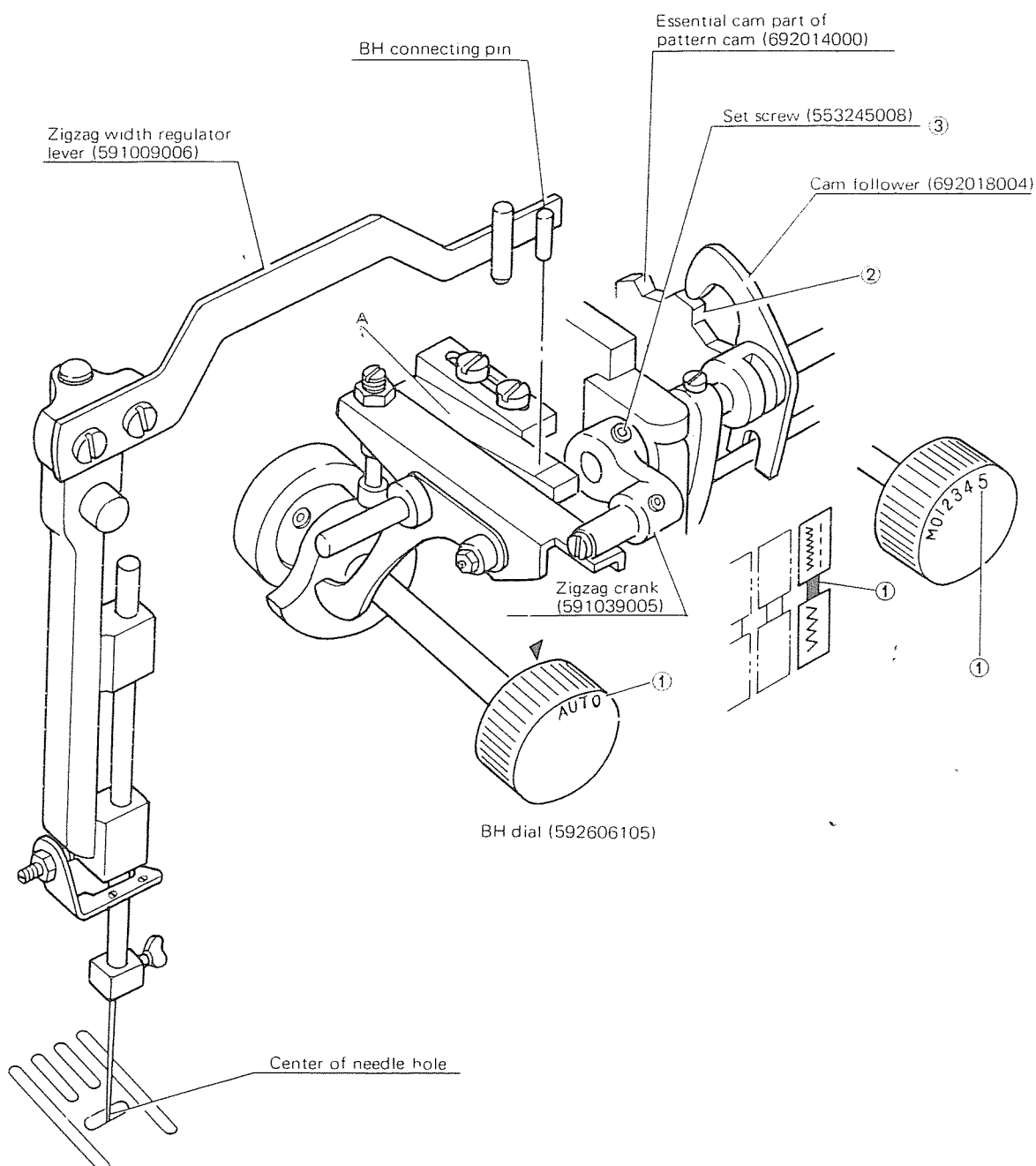


ADJUSTMENT OF PHASE OF CAM FOLLOWER AND ZIGZAG CRANK

- 1 First set zigzag width regulator dial (692612004) at "5", pattern indicator at () position and BH dial (592606105) at (AUTO)
2. Turn balance wheel to see if cam follower (692018004) comes at the top of a convex of essential cam part of pattern cam (692014000).
3. Loosen two set screws (553245008) of zigzag crank (591039005), correct the crank (591039005) that needle can drop into the center of needle hole and then tighten the screws again.


*Remarks: When this adjustment is made, the following re-check and re-adjustment should be necessary:

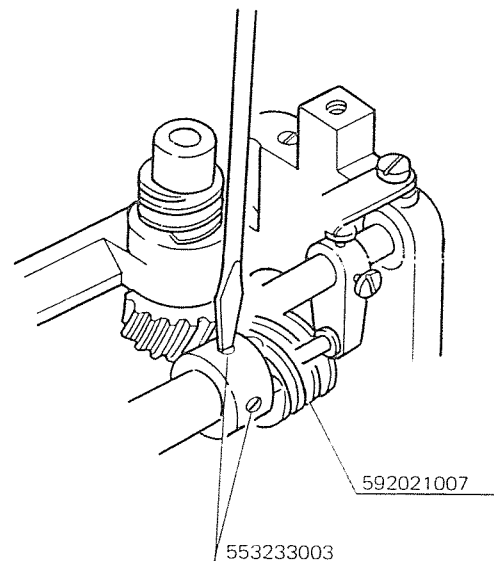
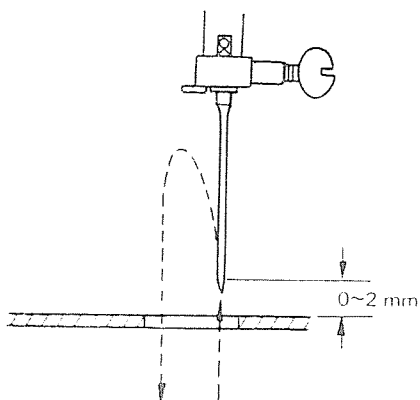
- (1) Basic needle position and its deflection.
- (2) Left and right width in buttonhole.



ADJUSTMENT OF NEEDLE DEVIATION

When the zigzag width is set at maximum and balance wheel is turned, and if, the up and down movement of the needle between the upper surface of the needle plate and lower dead point of the needle bar is deteriorated not perpendicular to the needle plate surface, there exists so-called "the needle deviation" or "the deviation of the needle".

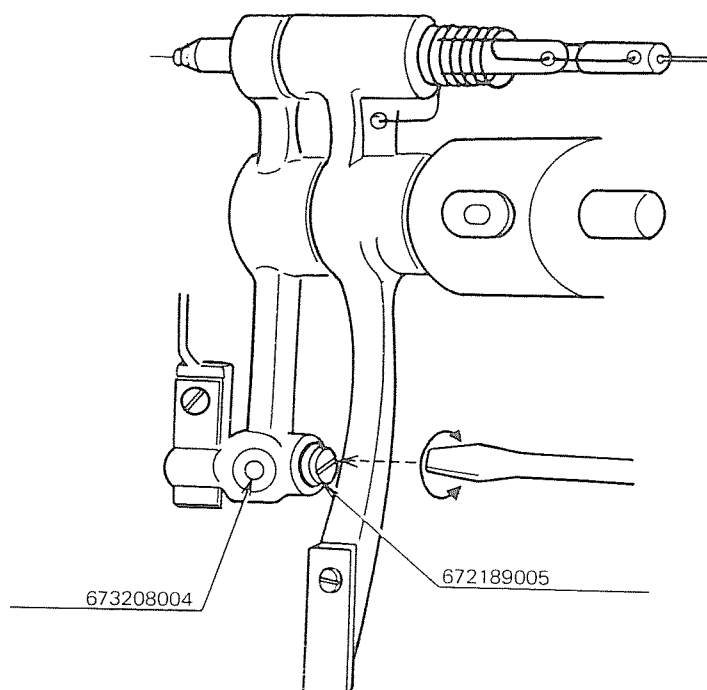
1. Set zigzag width regulator dial (692612004) at "5", buttonhole dial (592606105) at "AUTO" and pattern indicator at the mark of (, respectively.
2. Turn balance wheel slowly to see the position from which needle's point starts to flow out of a cloth to the right. It is the most ideal when the needle's right outflow starts from the position 0 – 2 mm above needle plate. When anything abnormal is discovered, the following adjustment should be made.
3. Loosen two clamp screws (553233003) of upper shaft worm gear moderately.
4. Hold upper shaft worm gear (592021007) with a screw driver in order to keep the gear unmoved, and turn balance wheel to make the adjustment.
* Please turn the balance wheel toward you when the needle flow is too fast.
5. Tighten the two set screws (553233003) correctly



ADJUSTMENT OF HEIGHT OF FEED DOG


The standard height of feed dog is 0.7 to 0.8 mm above the surface of needle plate when presser foot has lowered with the maximum feed and strongest pressure force at the pressure regulator.

1. Set stitch length regulator dial at "4", pressure regulator is at the strongest pressure position, raise the needle bar to the highest position and then lower presser foot.
2. Loosen the set screw (673208004) of feed lifting roller shaft.
3. Turn feed lifting rock shaft crank roller stud (672189005) with a screw driver to make adjustment.
4. Tighten the set screw (673208004) after the standard height of feed dog has been obtained.





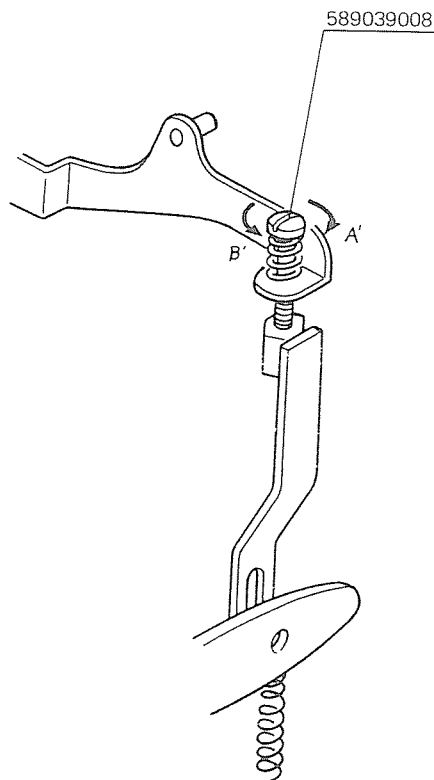
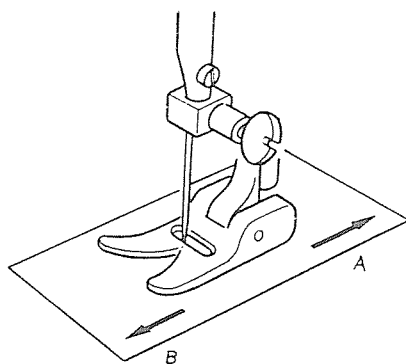
ADJUSTMENT OF BUTTONHOLE FEED

* To obtain no-feed condition when machine is set for bartack

With machine set for bartack sewing (), adjustment should be made in such a way the fabric is not fed.





ADJUSTMENT

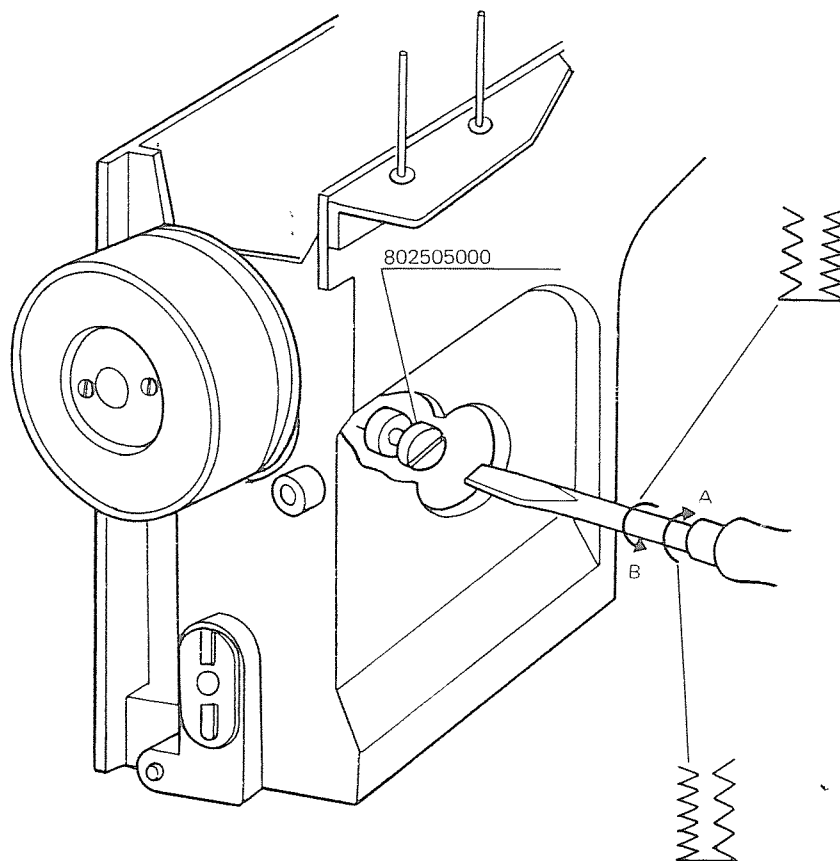
1. Set stitch length regulator dial at "4", zigzag width regulator dial at "5", buttonhole dial at the mark of () and pattern indicator at the mark of (), respectively.
2. Place a piece of paper under the presser foot and turn balance wheel towards you to make the following adjustment:
 - a. turn button hole feed adjusting rod set screw (589039008) to the right when the paper moves forward (in the (A) direction).
 - b. turn the set screw to the left when the paper moves backward (in the (B) direction).








ADJUSTMENT OF PITCH DIFFERENCE IN BUTTONHOLE

The pitch difference between the left and right rows in buttonhole stitching is 10 to 14 stitches in the right side against 10 stitches in the left. This is the standard ratio.

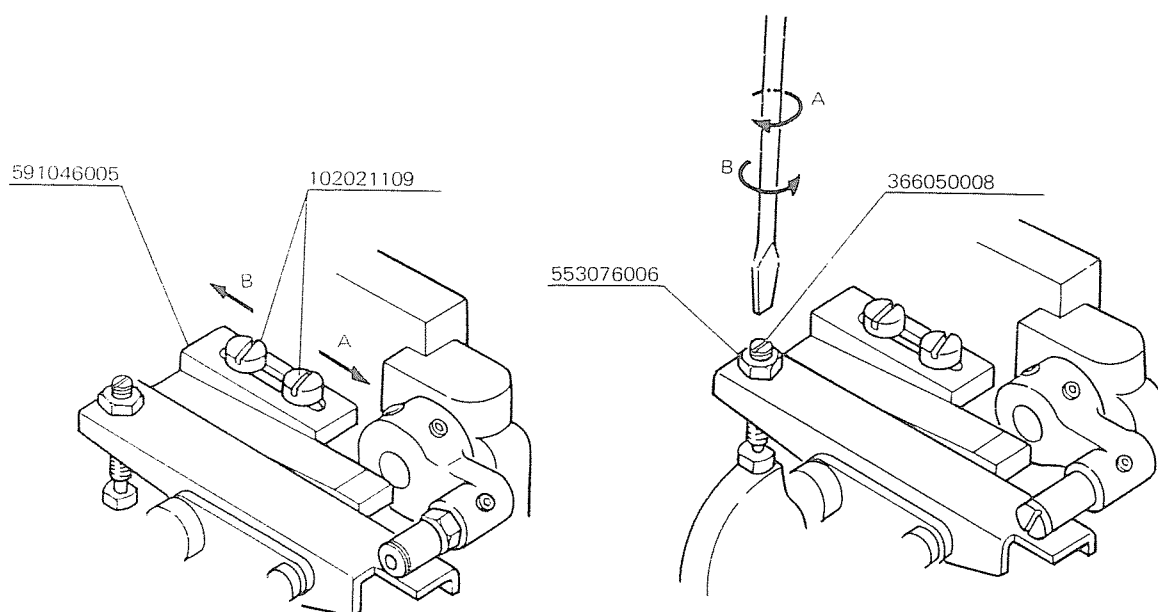
1. Set stitch length regulator dial (592004107) at around "0.5," zigzag width regulator dial (692612004) at "5", and pattern indicator at ().
2. Remove belt cover (591107xxx), motor cover (591109xxx) and motor.
3. Turn buttonhole dial in order of ()—()—() while sewing buttonhole slowly and examine whether the pitch difference shall be within the standard range.
If not, make adjustments as follows.
4. When the left row is coarse, turn leading screw (802505000) to the left.(B)
5. When the right row is coarse, turn to the right.(A)



ADJUSTMENT OF RIGHT AND LEFT WIDTH OF BUTTONHOLE

The adjustment should be made in the following way when the right and left width of buttonholes is uneven or the center width is too narrow or too broad. First set zigzag width regulator dial at about "5", stitch length regulator dial at about "0.5" and pattern indicator at the mark of (), and turn buttonhole dial in the order of ()→()→()→().


1. In case of altering the left width.
 - (1) Loosen set screws (102021109) of buttonhole's width regulating plate.
 - (2) Adjust the position of the plate (591046005).
 - a. move in the (B) direction to broaden the left width.
 - b. move in the (A) direction to narrow the left width.
 - (3) tighten the two set screw firmly.
2. In case of changing right width:
 - (1) Loosen the clamping screw nut (553076006) of buttonhole stopper.
 - (2) Turn the adjusting set screw (366050008) of the stopper with a screw driver to control the width.
 - a. turn to the (B) direction to broaden the right width.
 - b. turn to the (A) direction to narrow it.
 - (3) Tighten the nut (553076006) firmly.

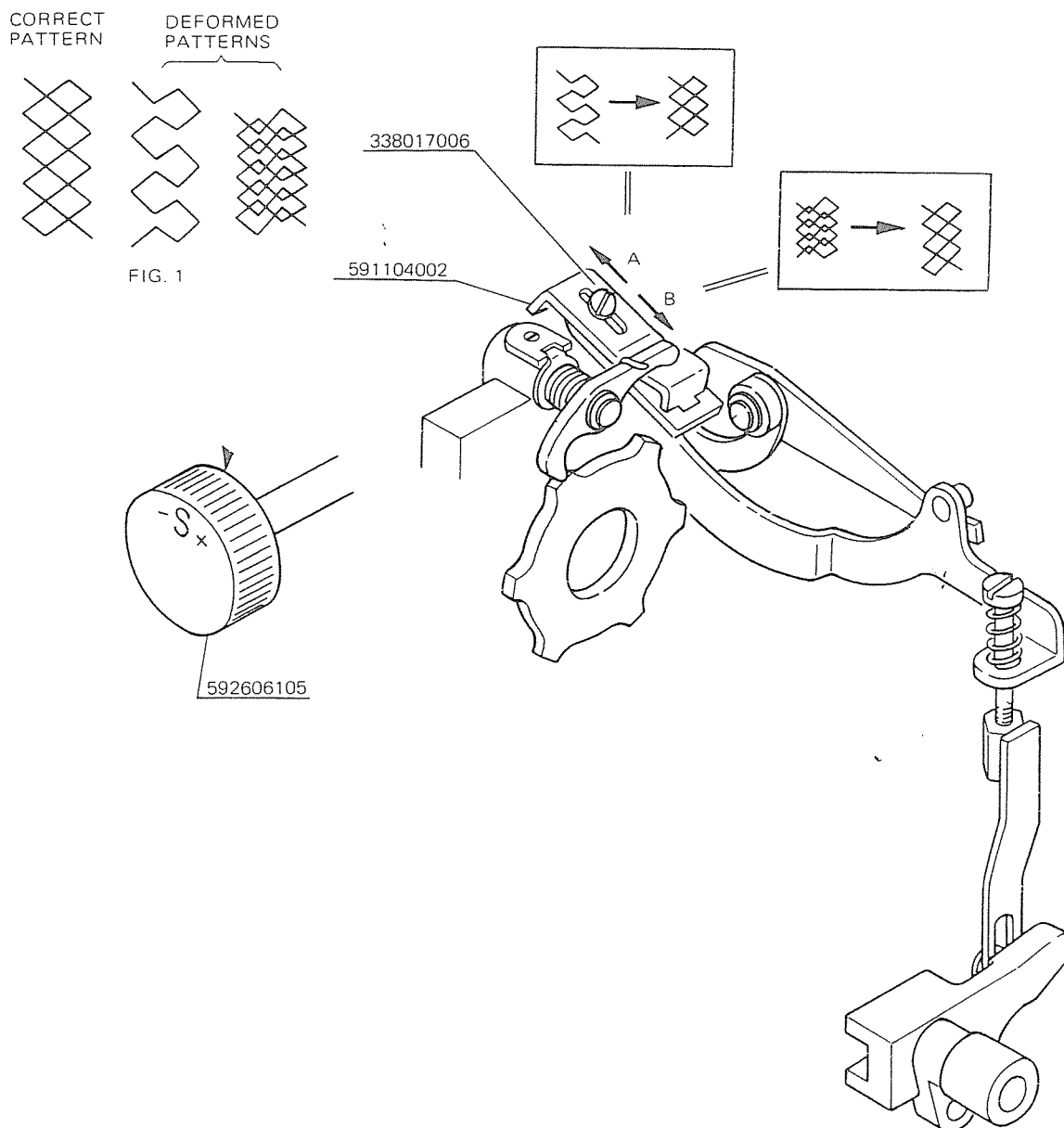


ADJUSTMENT OF SUPER PATTERN FEED

If there is a difference between forward and backward feeds in the super pattern stitching, it may cause the deformed pattern in finishing.

The adjustment should be conducted in the following way when you want to change the forward or backward feed.

1. Set buttonhole dial (592606105) at "S" position, and pattern indicator at ().
2. Try to sew in the super pattern stitches with the zigzag width dial set at "5" and stitch length regulator at "4" to see the feed volume.
3. Make the following adjustment when corners of diamond shapes are separated or overlapped as illustrated in the Fig. 1.
4. Loosen set screw (338017006) and move pattern feed arm plate (591104002).
 - a) Move to the (A) direction when the pattern corners are separated.
 - b) Move to the (B) direction when the pattern corners are overlapped.
5. Tighten the set screw (338017006) firmly.



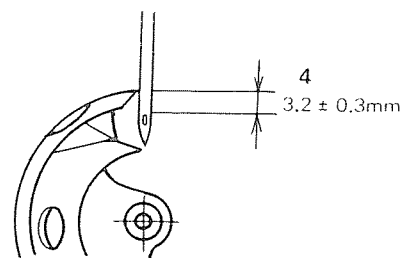
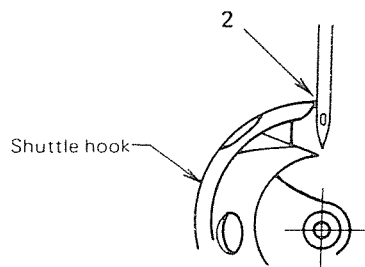
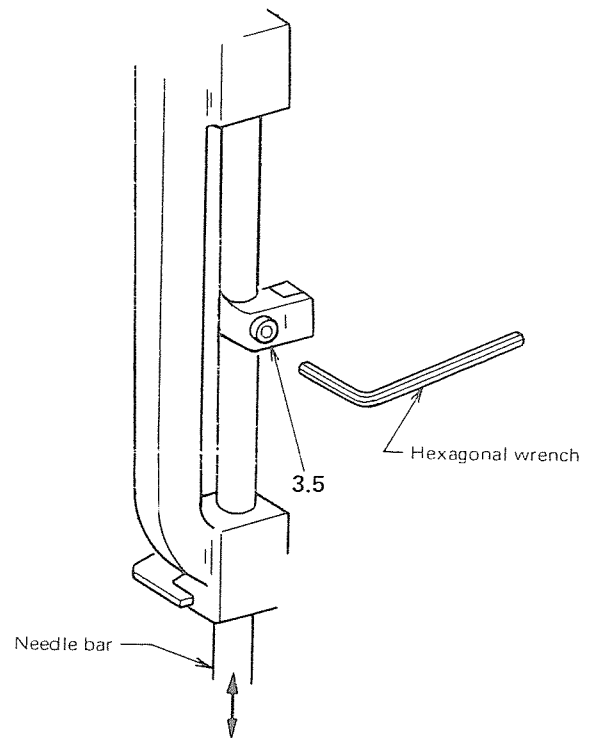
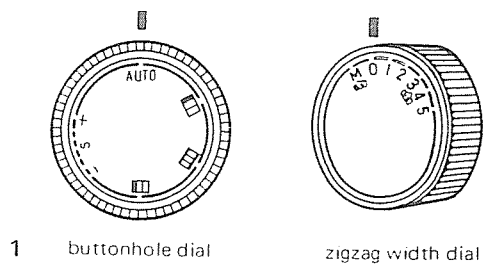
ADJUSTMENT OF HEIGHT OF NEEDLE BAR

Turn balance wheel toward you until needle bar comes to its lowest point. Then again turn balance wheel until the tip of shuttle hook meets the left side of the needle.

The distance between the tip of the needle eye and the tip of shuttle hook should be about $3.2\text{mm} \pm 0.3\text{mm}$.

If not, make adjustment as follows:

1. Set zigzag width dial at "O", and buttonhole dial at "AUTO".
2. Turn balance wheel toward you until the tip of shuttle hook comes to the left side of the needle.
3. Loosen needle bar connecting stud set screw.
4. Move needle bar to adjust the height of needle bar.
5. Tighten needle bar connecting stud set screw.



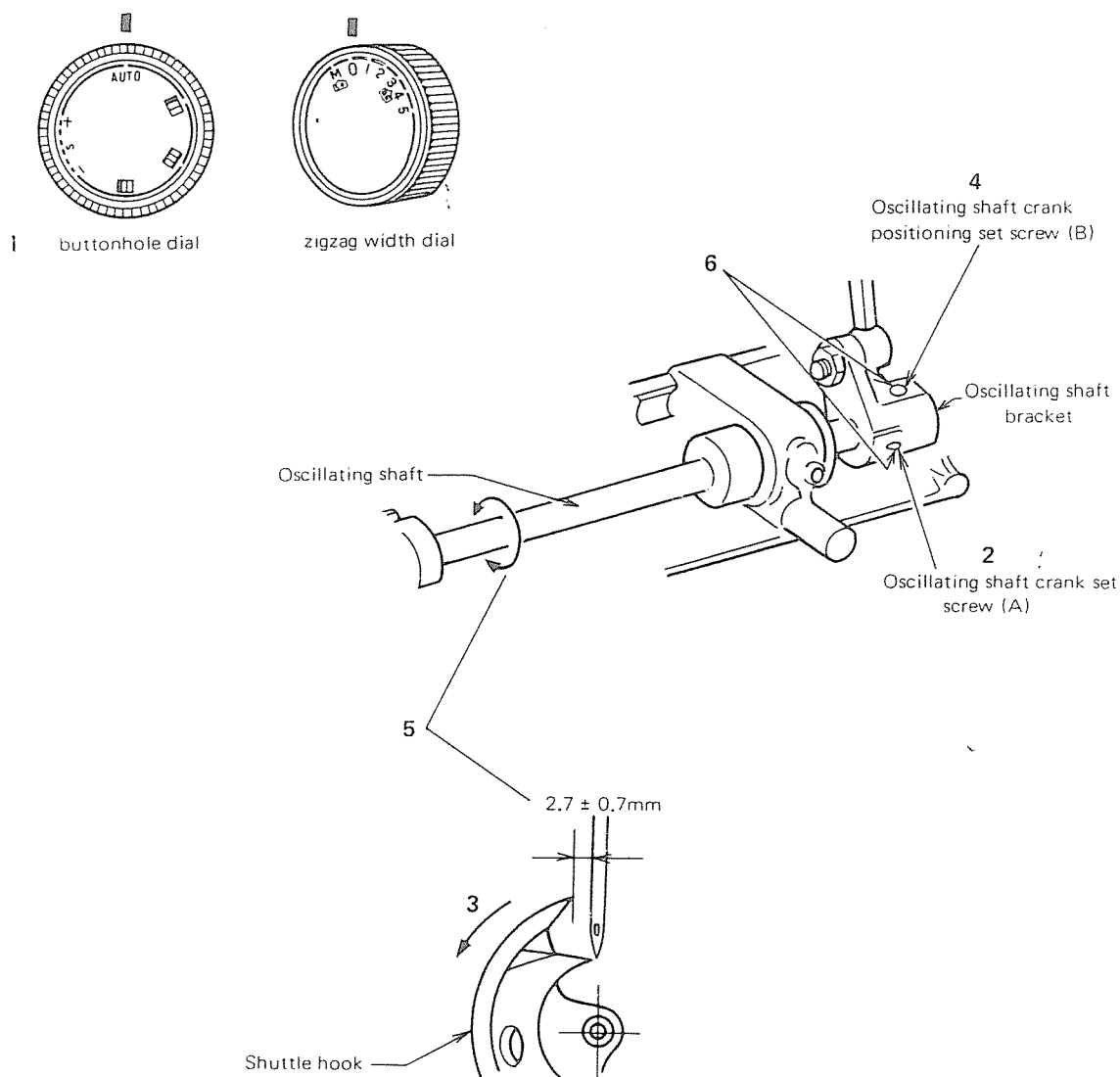
HOOK TIMING

Set buttonhole dial at "AUTO" and zigzag width dial at "0". Then turn balance wheel toward you until shuttle hook comes to the extreme left.

The distance between the tip of shuttle hook and the left side of needle should be about $2.7\text{mm} \pm 0.7\text{mm}$.

If not, make adjustment as follows:

1. Set zigzag width dial at "0" and buttonhole dial at "AUTO".
2. Loosen oscillating shaft crank set screw (A).
3. Turn balance wheel toward you until shuttle hook comes to the extreme left.
4. Loosen oscillating shaft crank positioning set screw (B).
5. Turn oscillating shaft either way until the proper distance is obtained.
6. When the adjustments are completed, tighten the screws (B) and (A).

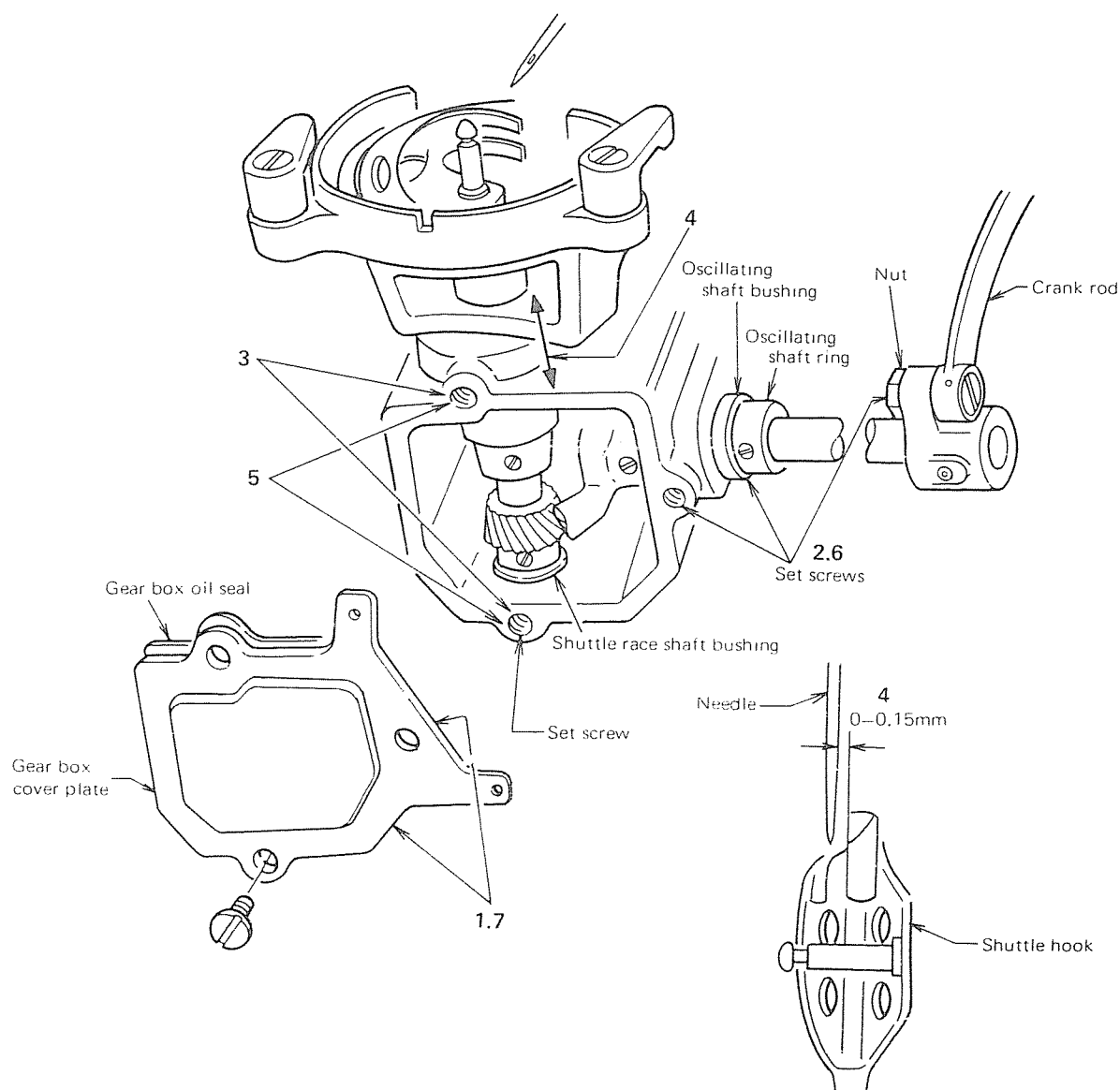


ADJUSTMENT OF CLEARANCE BETWEEN NEEDLE AND SHUTTLE HOOK

The clearance between needle and shuttle hook should be less than 0.15mm.

To obtain correct clearance:

1. Loosen gear box cover plate set screws and remove gear box cover plate, gear box oil seal and grease.
2. Loosen oscillating shaft bushing set screw, oscillating shaft ring set screws and crank connecting rod tapered screw nut.
3. Loosen shuttle race body unit set screw and shuttle race shaft bushing set screw.
4. Move shuttle body and adjust the clearance between needle and shuttle hook.
5. Clamp up set screws. In this case, shuttle race shaft bushing set screw shall be tightened in the state where the bushing is kept lightly in touch with bevel gear.
6. Adjust the gearings of worm gear and tighten set screws.
(Ring shall be kept lightly in touch with bushing.)
7. Paste grease again, fit gear box cover plate and tighten set screws firmly.

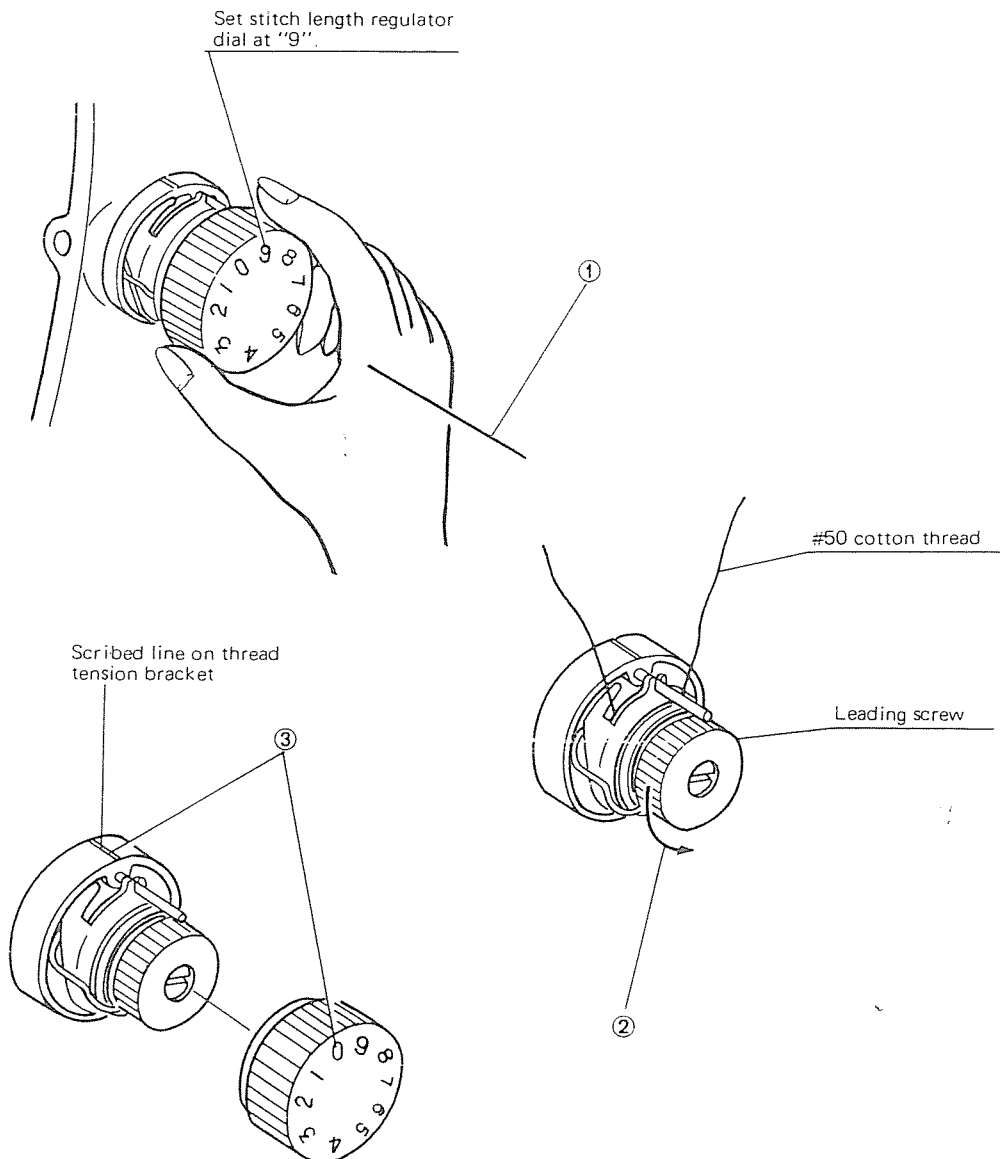


ADJUSTMENT OF THREAD TENSION


To check proper thread tension, set thread tension regulator dial at "0" and lower the presser bar lifter.

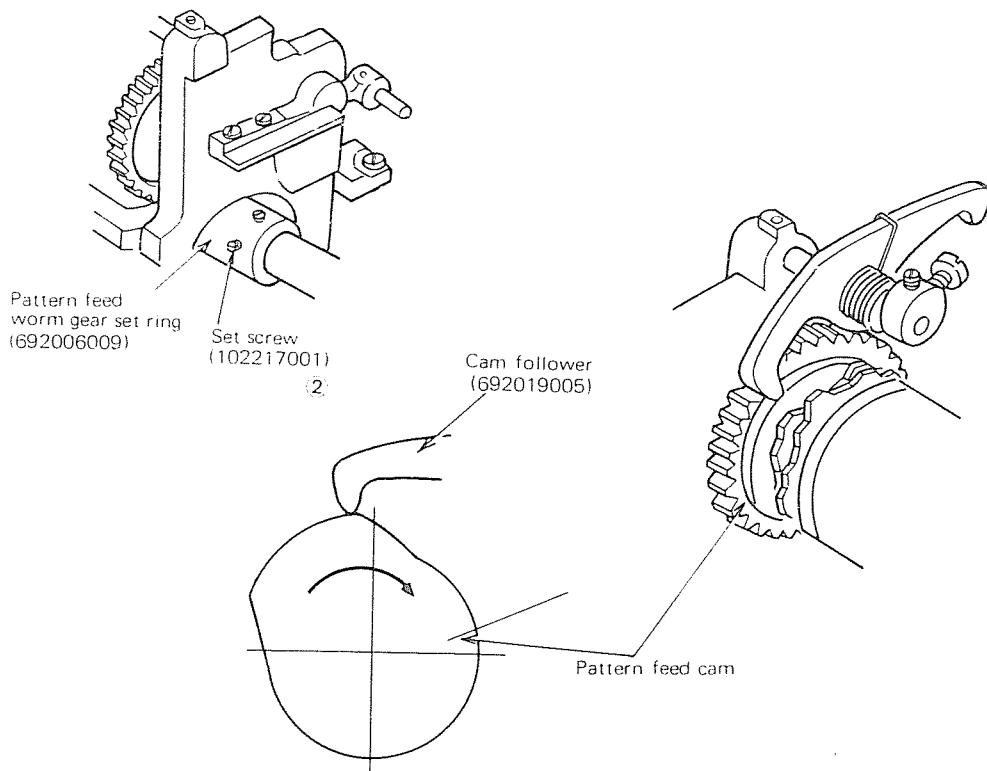
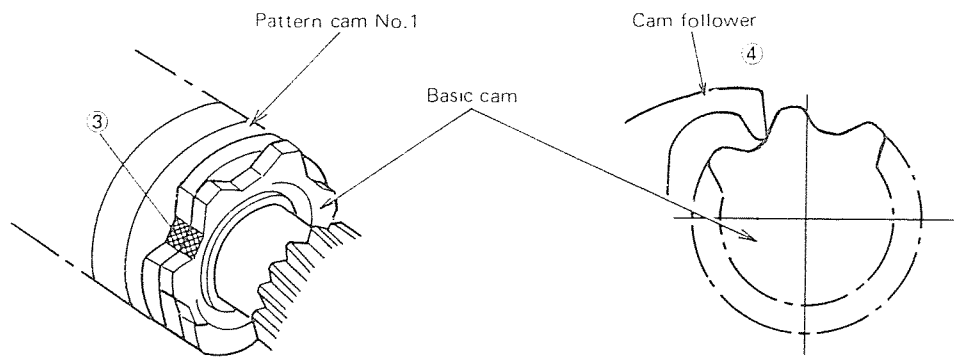
It is the most desirable when thread can get through without resistance with thread tension regulator dial being set at "0" and a little resistance can be felt with the dial at "1".

1. Pull out the thread tension regulator dial from the dial unit.
2. Loosen the leading screw until thread can be pulled out without resistance.
3. Set the dial "0" on thread tension regulator dial at the scribed line on thread tension bracket and push them to the end.




ADJUSTMENT OF PHASE OF SUPER DEVICE

1. Set buttonhole dial at "AUTO", zigzag width dial at "5" and pattern indicator at the mark of "  "
2. Loosen pattern feed worm gear set screw (102217001)
3. Turn balance wheel toward you and set cam follower (692019005) at the position where the concave part of basic cam coincides with the concave part of pattern cam No. 1.
4. Then turn balance wheel toward you again until the claw moves to the foot of the convex part of basic cam.
5. Turn pattern feed worm gear set ring (692006009) and set cam follower at the top of the convex part of basic cam
6. Tighten set screw (102217001)
7. Check the positions of pattern feed cam and cam follower.



ADJUSTMENT OF BASIC NEEDLE POSITION AND ITS DEFLECTION

* Adjustment of defective needle position.

1. Set pattern indicator at the mark of () and buttonhole dial at "AUTO"
2. Turn balance wheel to place claw (692018004) in the concave of essential cam part (see p.16), which has the dot mark (•)
3. Loosen the set screw of zigzag crank roller shaft (553245008) so that the needle can slightly move 0.1 mm to the left when width regulator dial gets turned from 0 to 5, and then adjust the roller shaft (591041000) with a screw driver.
4. Tighten the set screw (553245008) after adjustment is finished.

* Correction of defective needle position after its adjustment.

1. Set claw (692018004) at the (•) of concave of essential cam part and set zigzag width regulator dial at "5"
2. Make stopper set screw (553072002) lightly touch needle bar supporter and fix it with nut (553088001).

Remarks: Please confirm the left and right width of buttonhole after adjustment of defective needle position is completed.

