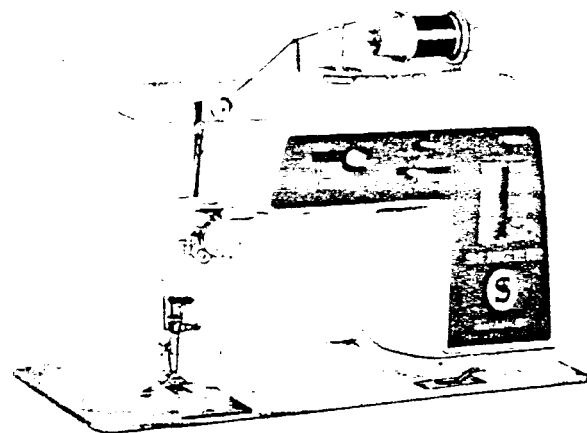
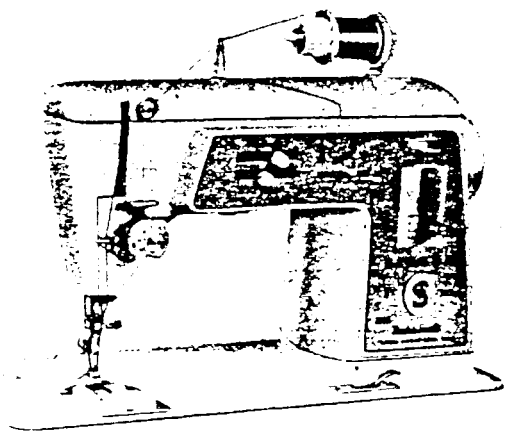


**SINGER**  
**CLASSES 620, 625, 626 AND 628**

Supplement to  
Form 20732  
Machines 620, 625, 626 and 628  
(1066)

# SINGER<sup>\*</sup> SERVICE MANUAL

## MACHINES OF CLASSES 620, 625, 626 AND 628



Instructions appearing in the Service Manual for Machines of Class 600 generally apply to Machines of Classes 620, 625 and 626. Instructions for Class 603 Machines generally apply to those of Class 628. This supplement provides instructions which apply only to Class 620, 625, 626 and 628 Machines.

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Insert in Form 20732, Swing Needle Service Manual

Printed in U. S. A.

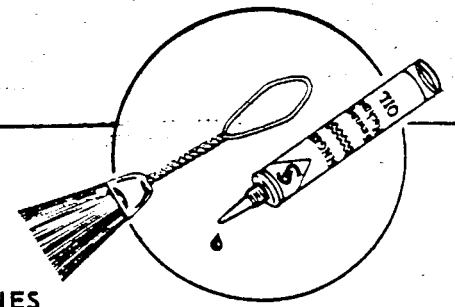
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# INSPECTION AND LUBRICATION



Before any extensive inspection is undertaken to find causes of faulty operation, the machine should be thoroughly cleaned and lubricated.

Remove lint, fluff, dust or other foreign particles from the hook, feed dog, and bobbin case.

Remove bobbin case and clean in varsol. Open face plate and clean out lint or waste collected around needle bar, presser bar, and pressure regulator.

## CLASS 620, 625 and 628 MACHINES

Remove arm top cover by opening stitch chart, removing screw, and sliding top cover toward left and off the machine.

## CLASS 626 MACHINES

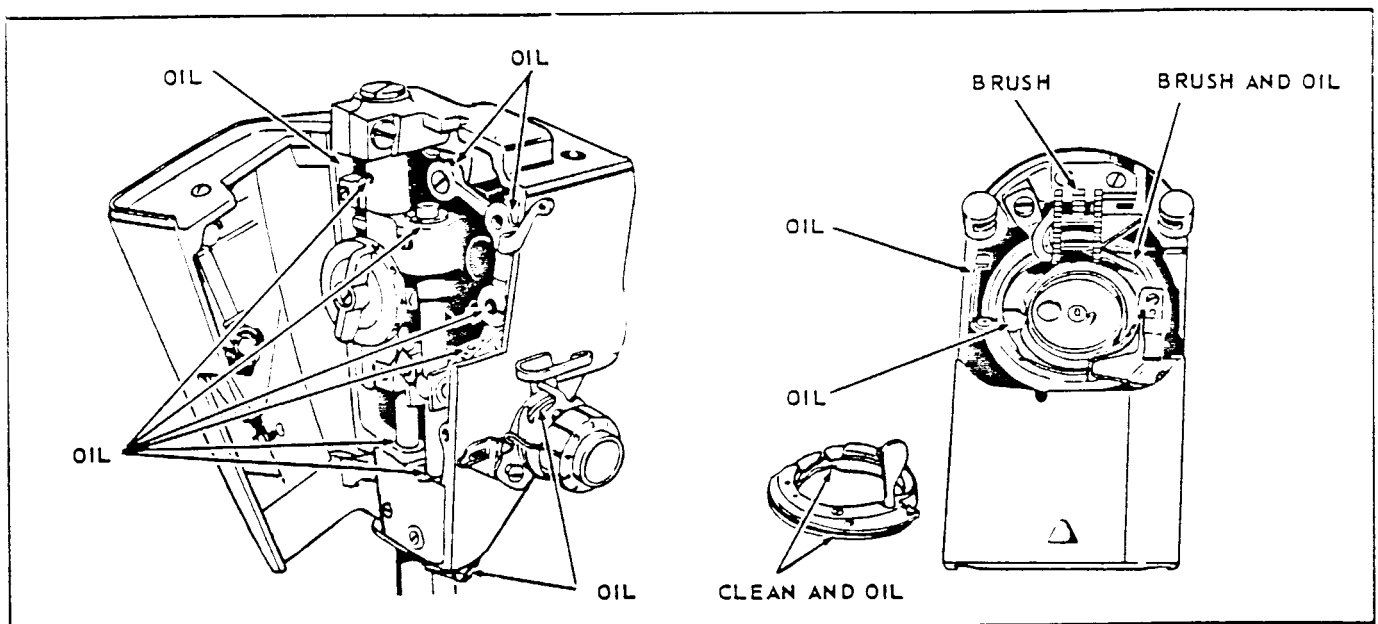
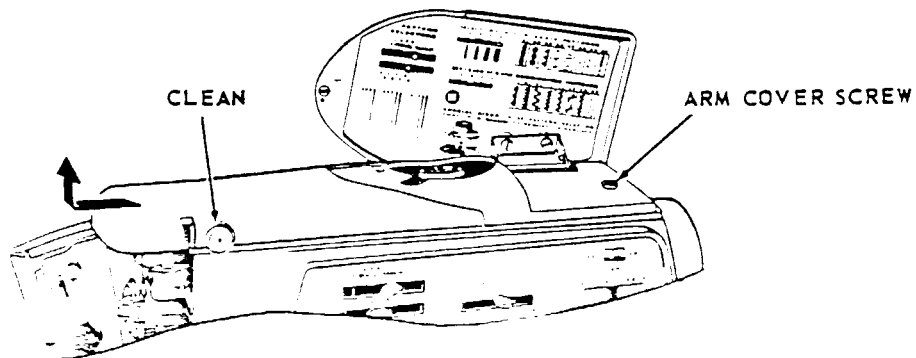
Remove arm top cover by removing the two screws and lifting cover from machine.

Lay machine on back, loosen screws from the four corners of the machine-bed cover, and remove cover from underside of machine.

Wipe out any oil or grease accumulated inside arm-top and bed covers.

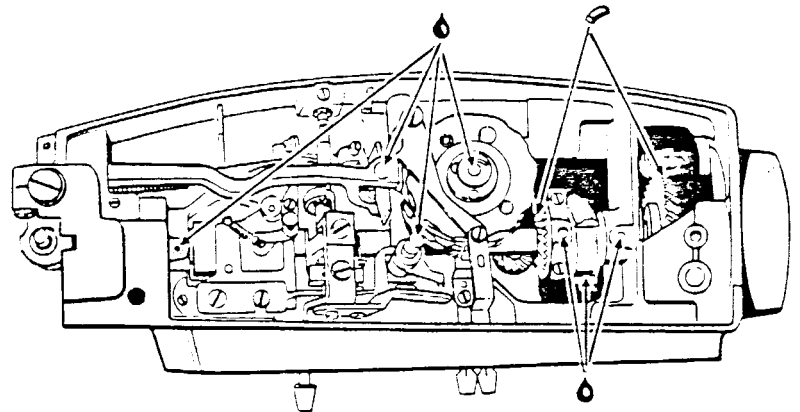
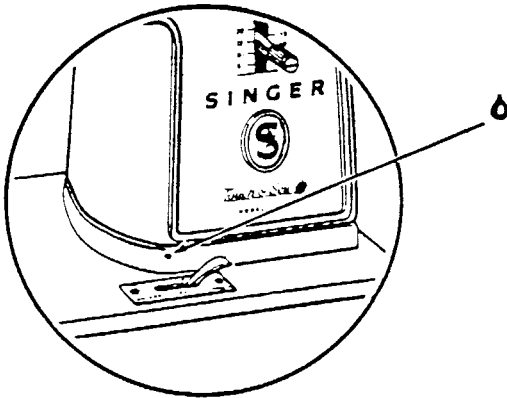
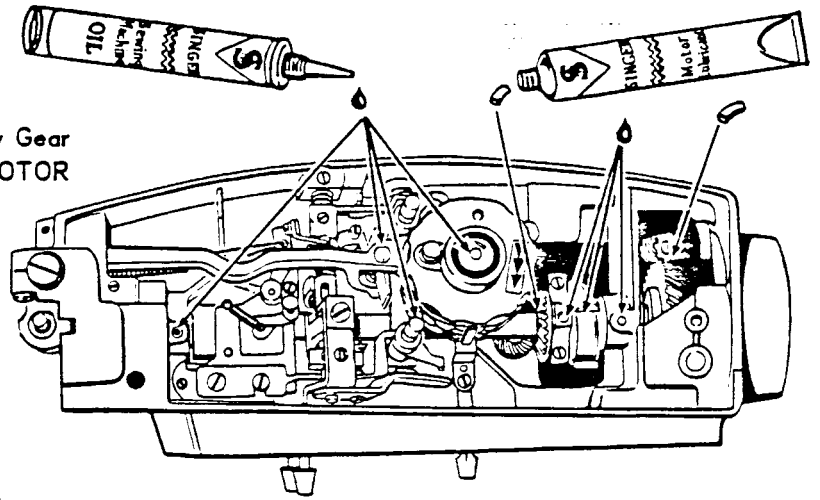
Oil machine as indicated below, and on pages 3, 4 and 5 for specific class of machine.

Apply one drop of oil between the casting and the bobbin push-button release lever.

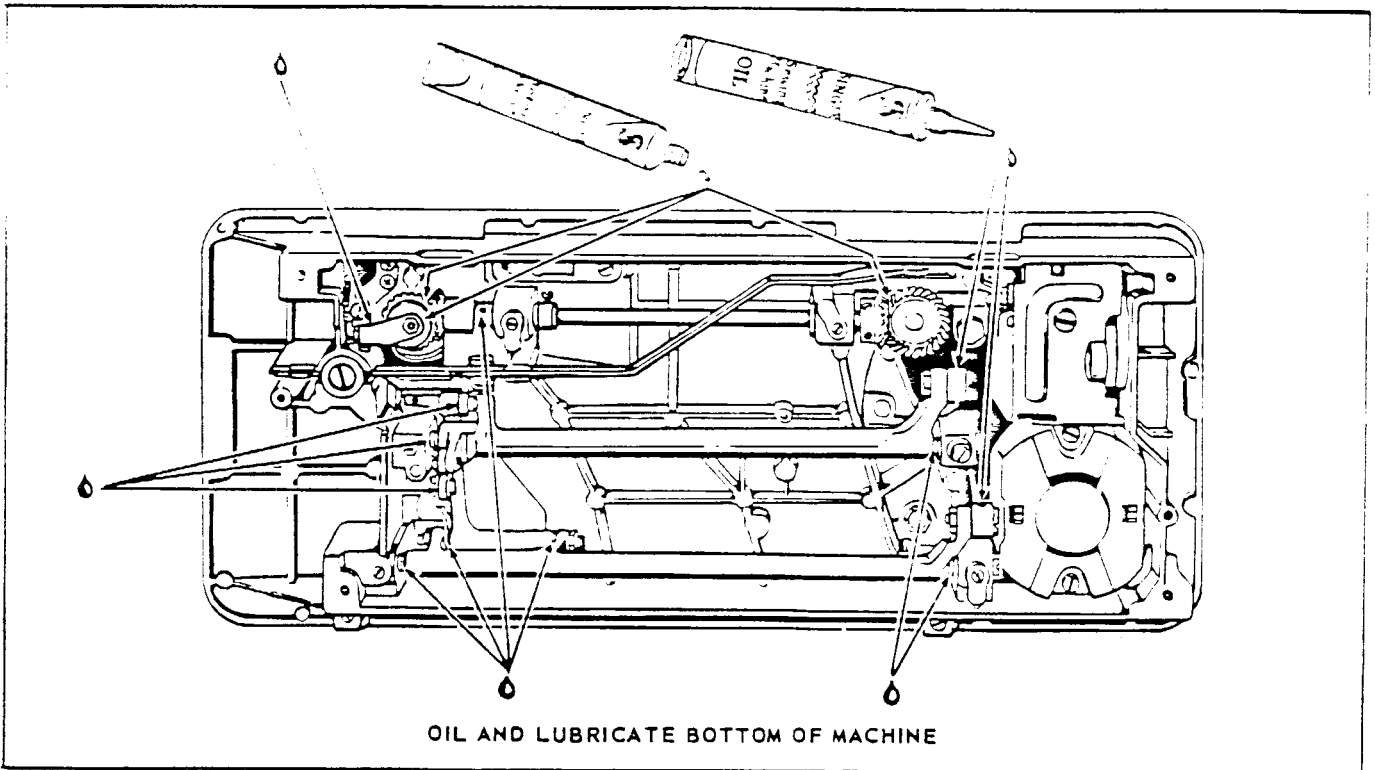


Oil each of the places indicated, and apply Gear Lubricant to all of the indicated gears. THE MOTOR REQUIRES NO LUBRICATION.

Replace arm-top cover and bed cover.

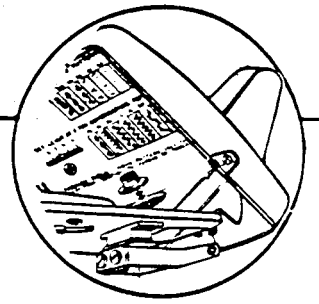


OIL AND LUBRICATE TOP OF MACHINE



OIL AND LUBRICATE BOTTOM OF MACHINE

## ARM TOP COVER HINGE ASSEMBLY



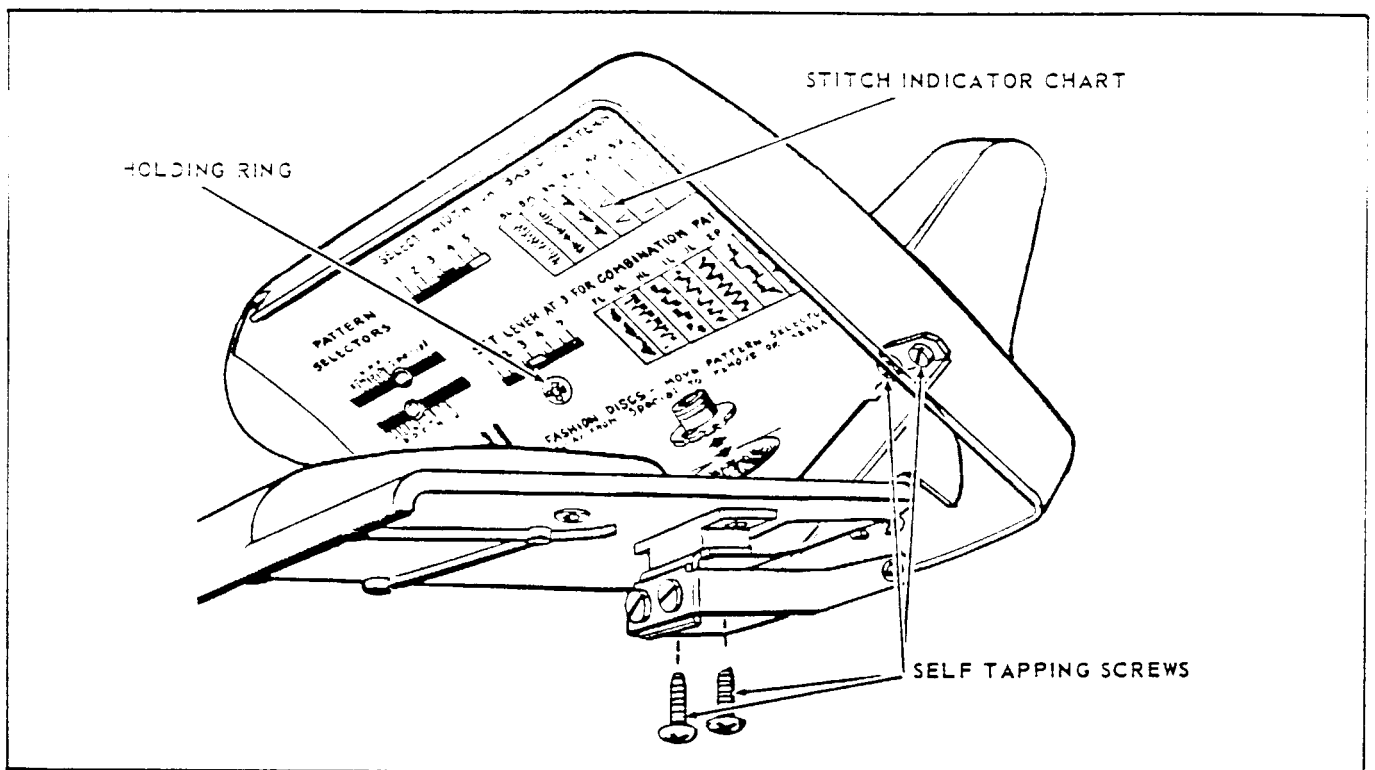
**CLASS 626 MACHINES:** This class of machine, supplied only for use with the standard cam stack, does not require the access means provided by the hinged top cover. Accordingly, the following instructions do not apply to Class 626 Machines.

### Removal

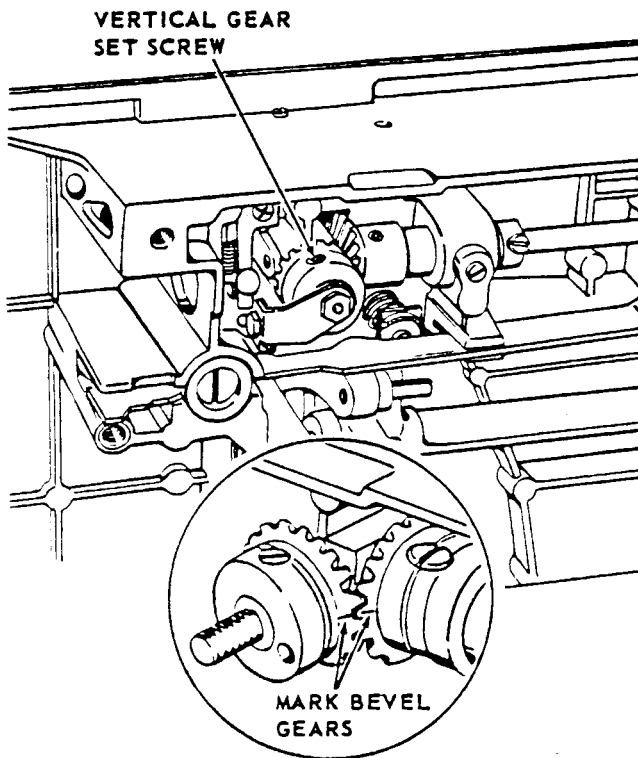
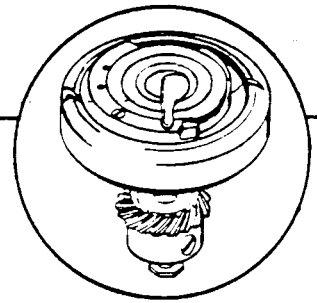
Remove top cover from machine as described on page 3.  
Remove the two self-tapping screws on underside of cover holding bracket to cover.  
Remove holding ring from top lid.  
Remove stitch indicator chart from lid.  
Remove self-tapping screws in lid, disengaging hinge.

### Replacement

Fasten new hinge in lid with self-tapping screws. Replace stitch indicator in top lid and secure it with the holding ring.  
Replace self-tapping screws through bracket. Do NOT tighten securely.  
Loosen adjustment screws in bracket.  
Adjust lid so that it is flush with top cover. (This is done by raising and lowering the lid on the slots provided in the bracket while the adjustment screws are loose, and by adjusting it to the left or right while the self-tapping screws are loose in the oversized holes.)  
When lid is correctly fitted, tighten the self-tapping screws and the adjustment screws in the bracket.  
Replace cover and secure it with two cover screws.



## THE ROTATING HOOK



### Removal

**CAUTION:** Hook-shaft gears and hand-wheel gear may be removed to facilitate adjustments. **DO NOT DISTURB THE MESH OF ANY OTHER GEAR IN THIS MACHINE.** All other gears are mated and correctly timed. Replacements should be made only at the factory.

Remove needle, presser foot, throat plate, bed slide, bobbin case, feed dog, cushion-spring bracket, and position finger.

Remove bed cover.

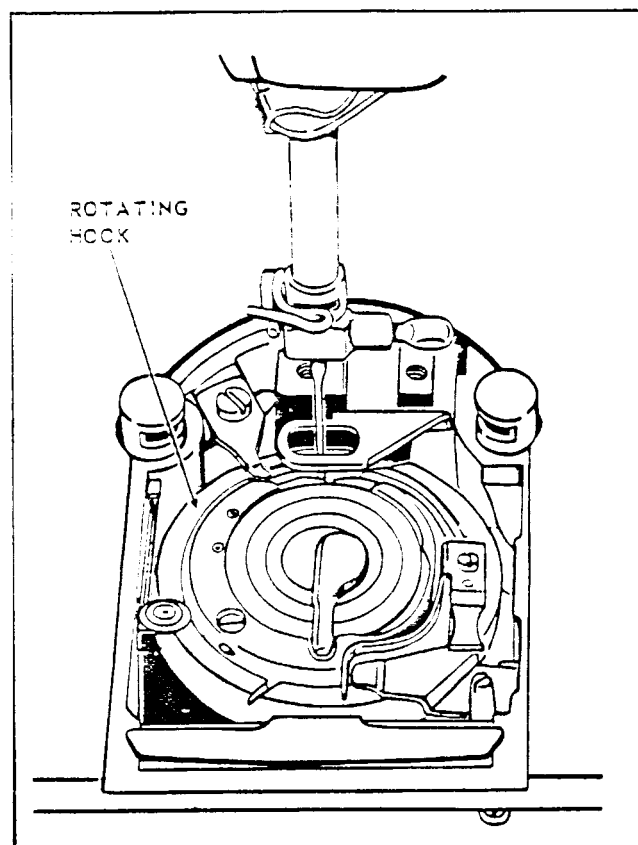
Remove feed-lifting rock-shaft and feed rock-shaft with pull-off finger as instructed on page 25, Service Manual for Classes 600 and 603 Machines.

Remove actuating lever and bobbin driver as instructed on page 9.

With chalk or crayon, mark the two bevel gears as illustrated. (Mark one tooth of one gear, and the corresponding space for that tooth in the other gear.) This assures proper mesh when replacing.

Loosen set screw in vertical bevel gear, and remove gear from hook shaft.

Lift rotating hook assembly from machine.



### Replacement

Install rotating-hook assembly into machine. Using the guide marks previously made, mesh vertical bevel gear with horizontal bevel gear. Turn vertical hook-shaft until flat side of shaft is under set screw in bevel gear, and tighten set screw securely.

Replace bobbin driver and actuating lever, as instructed on page 9.

Insert pull-off finger into machine and replace feed rock-shaft and feed-lifting rock-shaft as instructed on page 25, Service Manual for Classes 600 and 603 Machines.

Check and adjust hook as instructed on pages 7 and 8.

Replace all other parts previously instructed for removal, except in reverse order.

## To Time the Hook

Set needle bar at correct height, and time the needle-bar vibrating mechanism as instructed on pages 7 and 8, Service Manual for Classes 600 and 603 Machines.

Insert a Size 18 needle up into the needle clamp.

Remove throat plate, bed slide, bobbin case, and bottom cover. It is not necessary to remove the feed dog to time the hook.

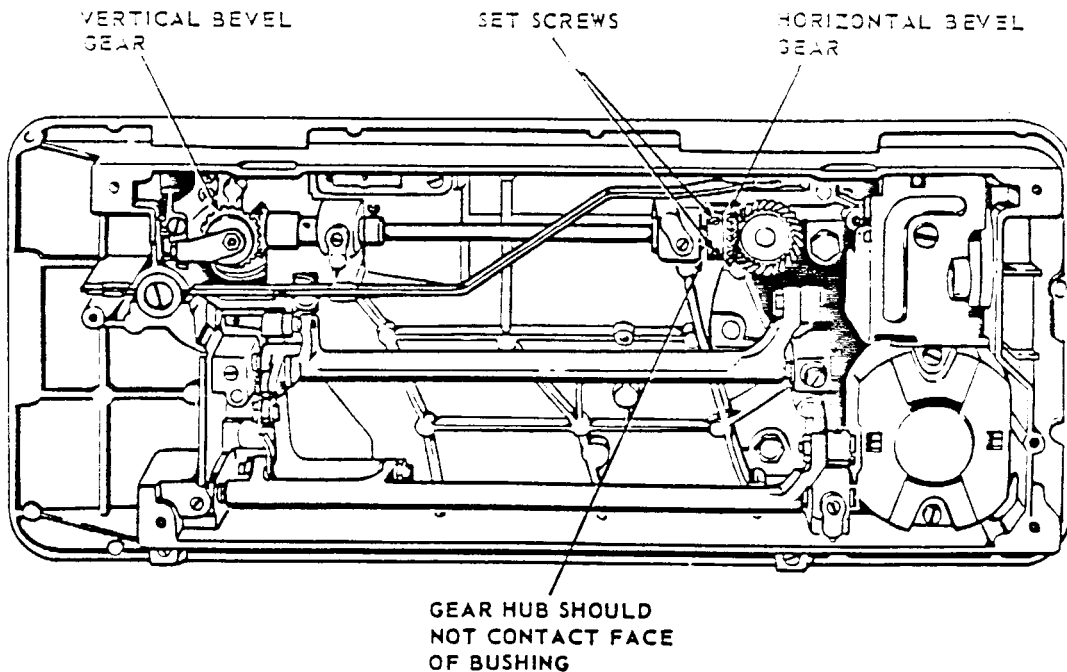
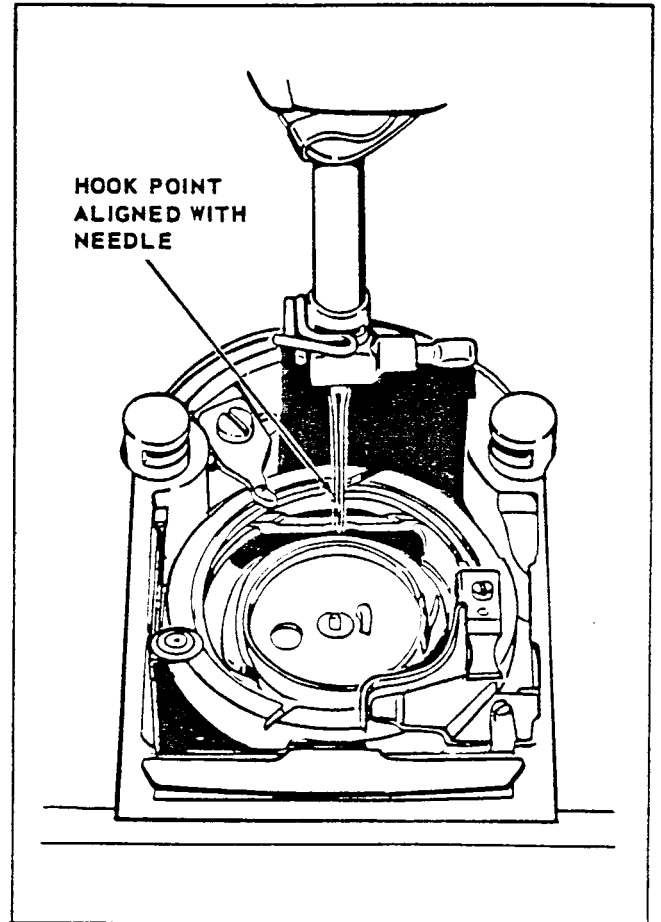
Adjust machine for straight stitching in center needle position.

Turn hand wheel over toward operator until lower timing mark is aligned with lower edge of needle-bar bushing on UPWARD STROKE of needle bar. At this position, point of hook should be at center of needle as illustrated.

To adjust, loosen the two set screws in horizontal bevel gear. While maintaining position of needle bar, turn vertical bevel gear at hook-end of shaft until point of hook is in correct position. Then tighten the two bevel-gear set screws securely, making certain that gears are correctly meshed without binding.

**CAUTION:** Hub of horizontal bevel gear should not contact face of bushing.

Replace throat plate, slide plate, bobbin case, and bottom cover.

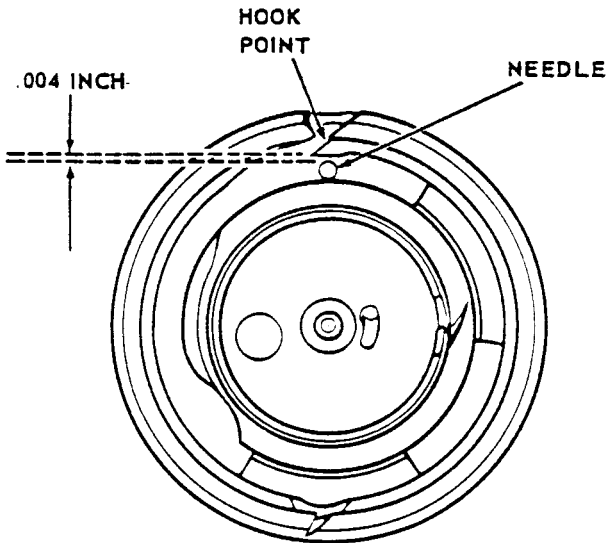




## To Position Hook to or from Needle

Set needle bar at correct height, and time the hook as previously instructed.

Turn hand wheel until point of hook is directly behind needle. When correctly set, the distance between the needle and hook-point should be approximately 0.004 inch, as illustrated.



**SETTING:** With bobbin push-button in winding position, remove locator nut by turning in a **CLOCK-WISE** direction. Remove bobbin push-button assembly (see instructions on page 9), and remove locator.

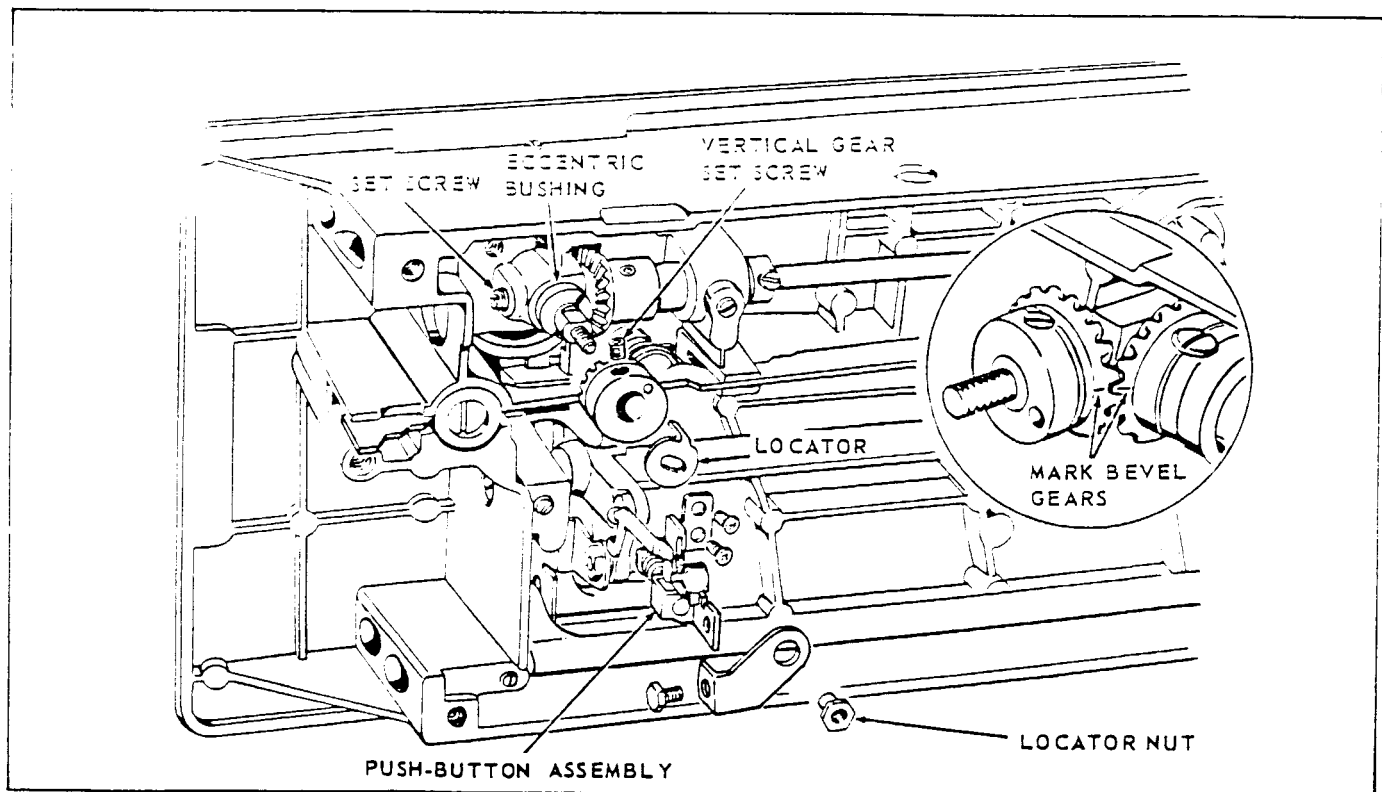
Carefully mark the two bevel gears, as illustrated, to assure proper meshing of gears when replacing. Then loosen set screw in vertical hook-shaft bevel-gear and remove gear from shaft.

Loosen set screw holding the eccentric bushing. Turn the eccentric bushing while maintaining position of hook, until correct distance between needle and point of hook is attained.

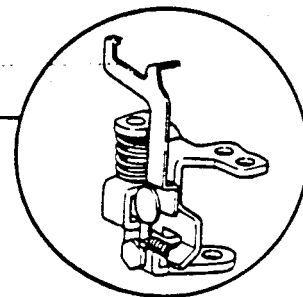
Replace bevel-gear using the previously-made guide marks to assure correct meshing of gears.

Replace all other parts in reverse order instructed for removal. Set winding mechanism as instructed on page 9.

**CAUTION:** Check for binding or end play in hook driving-shaft. For adjustment and removal, see page 24 of Service Manual for 600 and 603 Machines, and page 6 of this supplement for removal of hook.



## WINDING MECHANISM

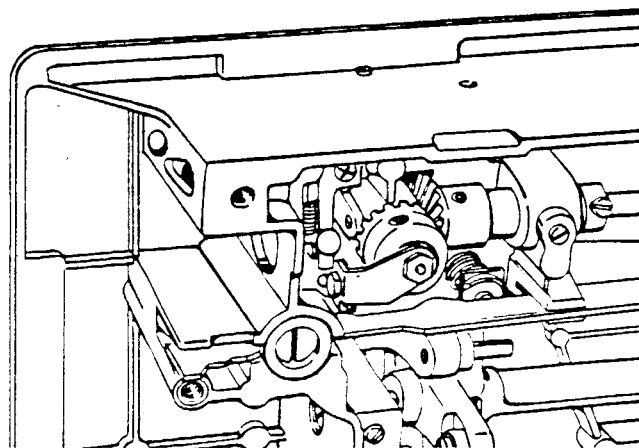


### Bobbin Push-Button Assembly

#### Removal and Replacement

Open slide plate. Place push-button in winding position. Lay machine on back and remove bed cover from machine. Remove locator nut from bobbin driver by turning in a CLOCKWISE direction. Then remove the two screws fastening the push-button assembly to the underside of the bed. Slide assembly out as a complete unit, being careful not to bend the push-button release lever.

To replace, follow the same directions as for removal, except in reverse order.



### Bobbin Driver

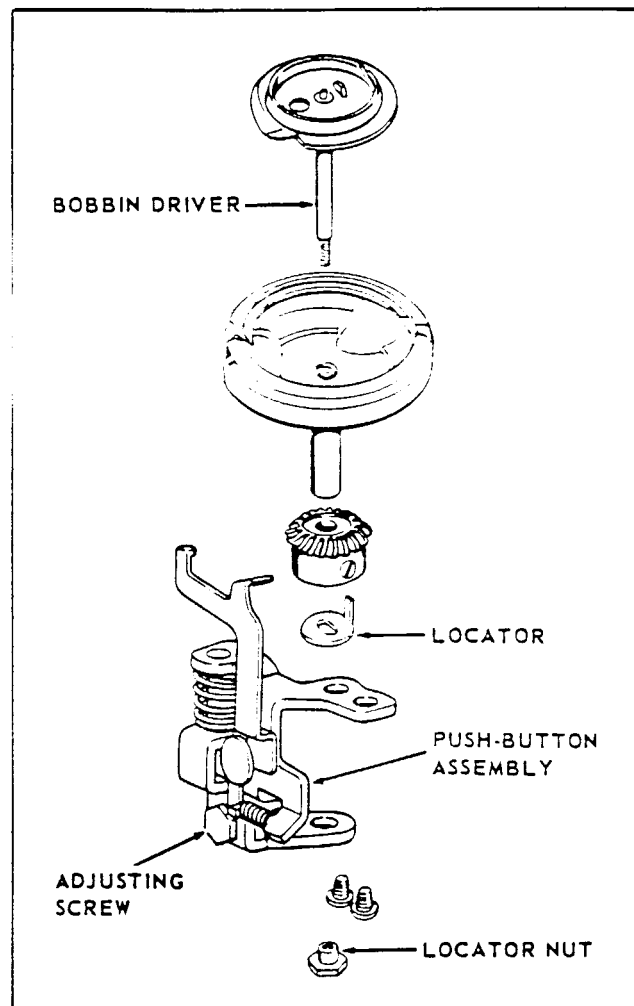
#### Removal and Replacement

Open slide plate. Remove throat plate, bobbin case, and bed cover. Set stitch length selector at 0 stitches per inch, and turn hand wheel until feed dog is in its extreme rear position. Remove locator nut, push-button assembly, and locator. Then slide bobbin driver up, rotate until apron is opposite feed dog, and lift out of machine.

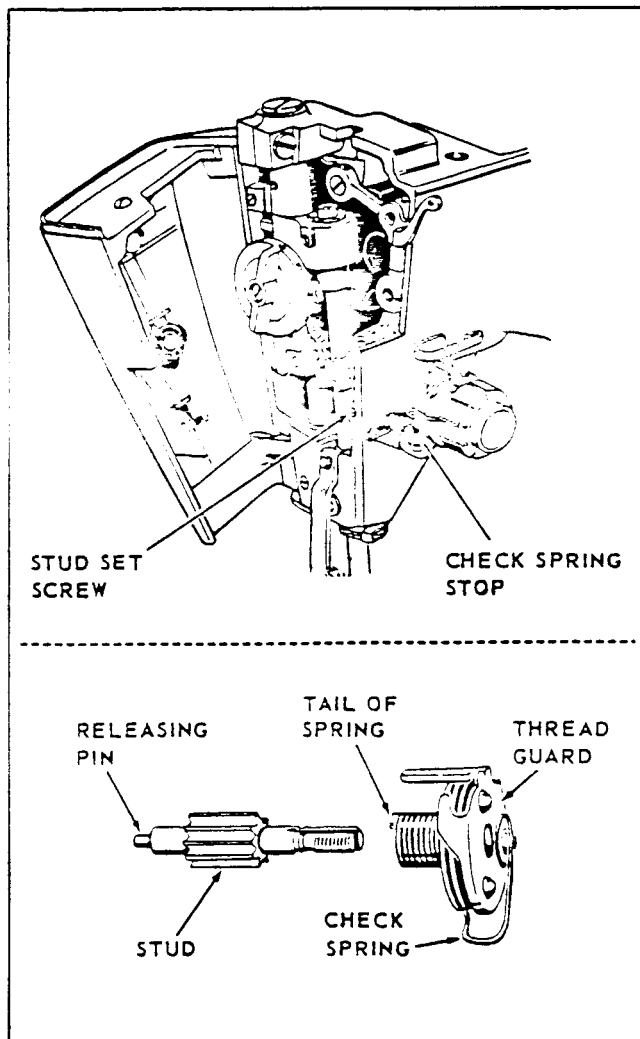
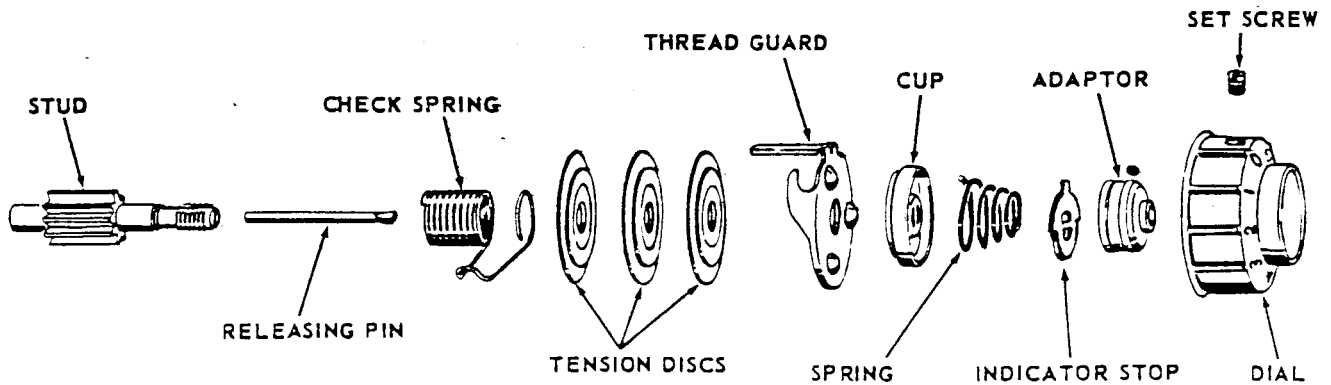
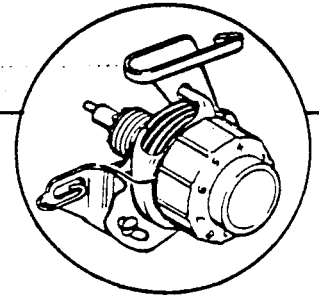
To replace, install bobbin driver in machine, rotating it until it seats firmly into place. Then replace locator, push-button assembly, locator nut, throat plate, and bobbin case.

#### Adjustment

To adjust the height of the bobbin driver, place push-button in winding position and loosen adjustable extension screw at end of lifting bracket. Press upward on bracket until bobbin rises slightly above top of bobbin case. Then release upward pressure slightly, allowing bobbin to seat correctly into bobbin case. Without disturbing this setting, tighten extension screw securely.



# NEEDLE-THREAD TENSION ASSEMBLY



## Removal and Disassembly

Open face plate, loosen stud set-screw and remove entire tension assembly, as illustrated. Loosen set screw in dial and remove dial. Turn adaptor to left until it is free from the stud. Remove indicator stop, spring, cup, and tension releasing-pin. The check spring, tension discs, and thread guard should be removed from the stud as a unit.

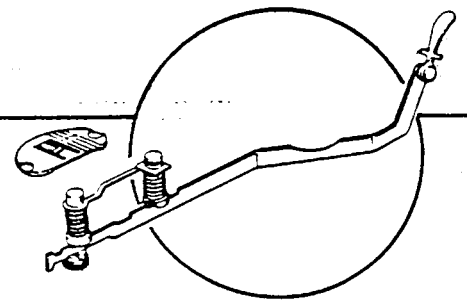
## Reassembly and Replacement

Replace releasing-pin in stud. Place tension discs on the thread guard, align coil of check spring with holes in tension discs and thread guard, and place assembly on stud with tail of check spring entering top groove of sprocket on stud. Replace cup, spring, indicator stop (with tab at bottom position), and adaptor. Replace dial, making certain that stop on inside of dial is in contact with left side of indicator-stop tab when dial is set at zero (0) tension. Tighten set screw and place entire assembly onto machine, with check spring resting on the top surface of the check-spring stop.

## Adjustments

For adjustments of the needle-thread tension, check-spring stroke, check-spring tension, and bobbin-case latch tension, refer to pages 21 and 22 in the Service Manual for Classes 600 and 603 Machines.

# THROAT-PLATE POSITION BRACKET



## Removal and Replacement

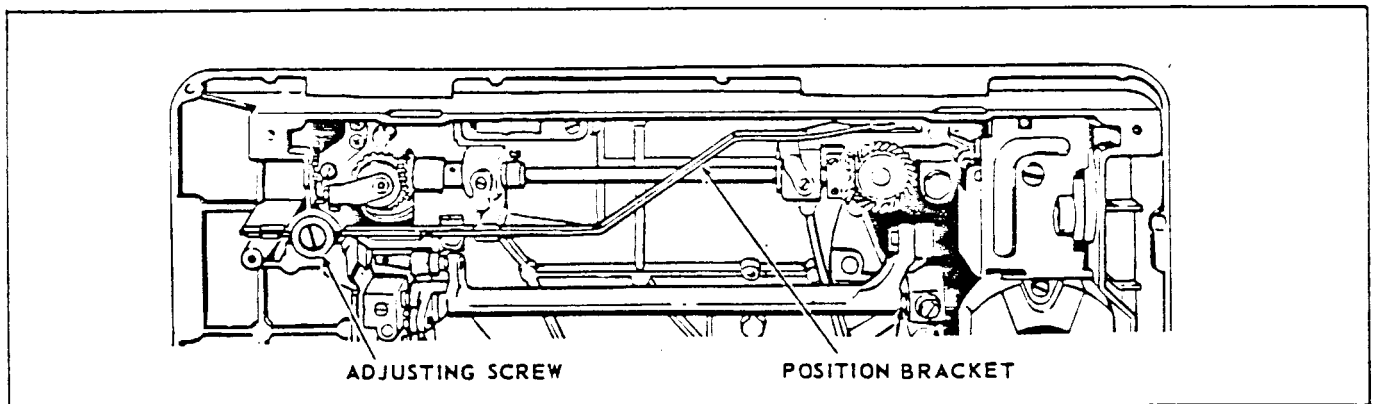
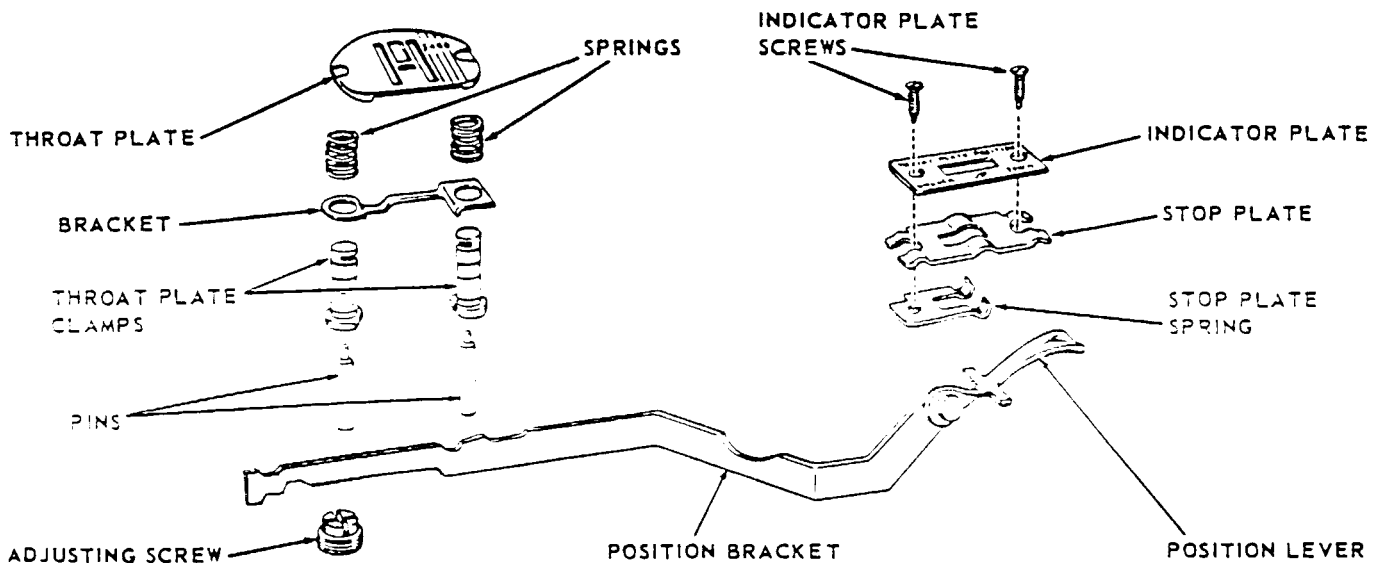
Remove throat plate, and set throat-plate position lever in REGULAR position. Press left end of position bracket toward underside of machine bed as far as possible, and remove adjusting screw. Swing left end of bracket away from machine bed and remove the two throat-plate clamps with brackets, pins, and springs. Set position lever in DARN position and remove screws from indicator plate. Lift indicator plate, stop plate, and stop-plate spring from machine bed, and remove position bracket from underside of machine.

Replace throat plate position bracket in reverse order of its removal, but observe the following:

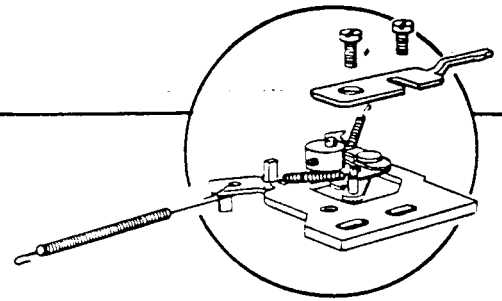
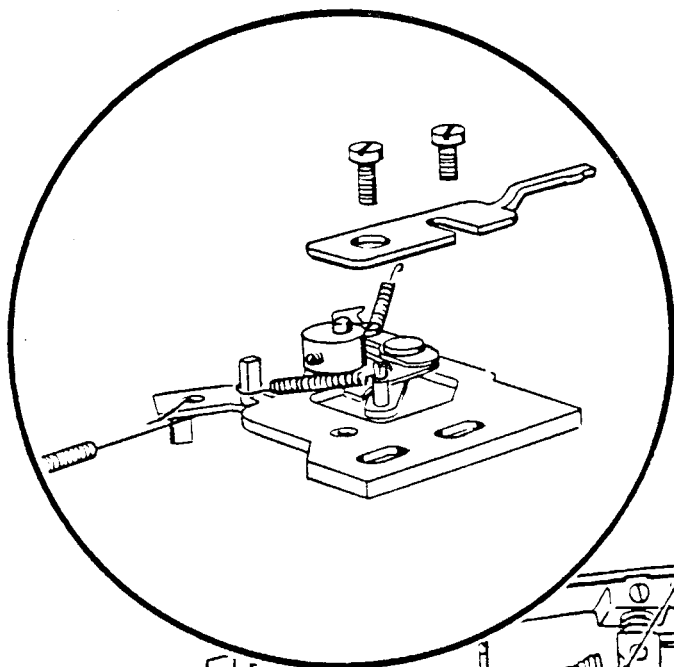
Stop plate spring should be replaced with the curved portions of spring under cross-piece of lever. Remainder of spring should extend toward left.

Position bracket must be inserted in grooves under machine bed.

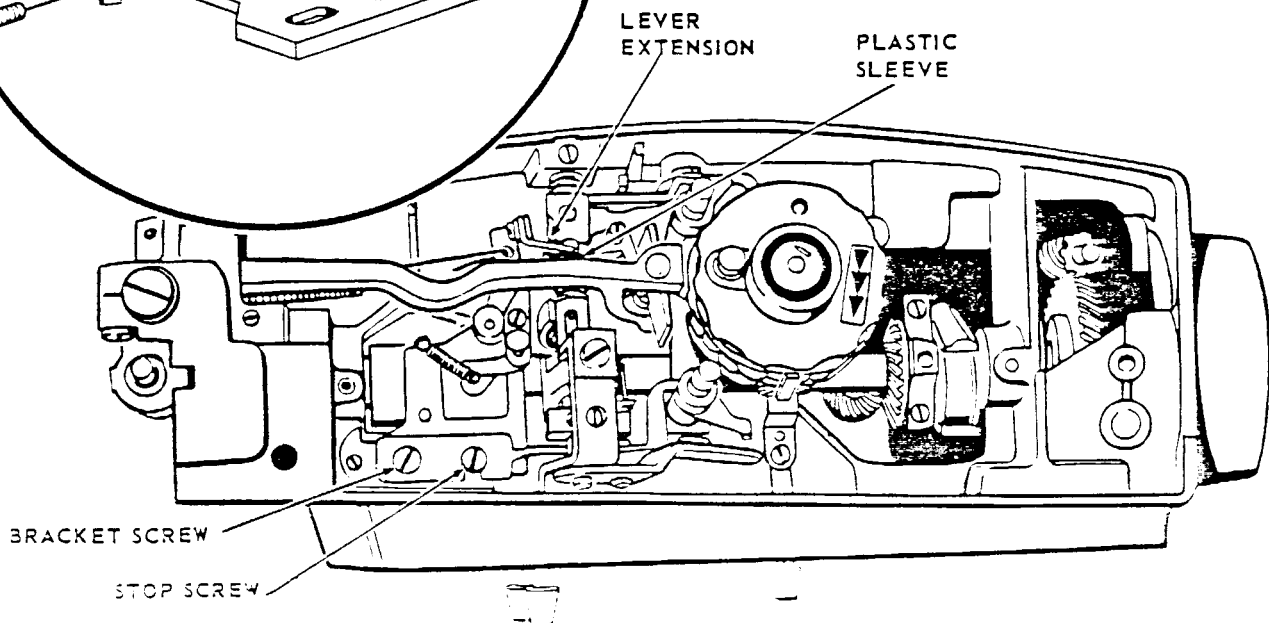
Adjusting screw should be turned in flush with bottom of casting while pressing left end of bracket toward underside of bed.



## THE RELEASE MECHANISM



**CLASS 628 MACHINES:** This class of machine is not provided with a release mechanism, as such. Disengagement from the stitch pattern provided by the replaceable cam used in this machine is accomplished through neutralization of the stitch by the Bight Amplitude Selector, as described on page 19. Accordingly, the following instructions do not apply to Class 628 Machines.



### Removal

- Remove top cover.
- Remove tension stud.
- Remove two screws holding front stop, and selector mechanism assembly.
- Remove the front stop.
- Disengage tension-arm spring from selector mechanism.
- Remove selector mechanism assembly.

### Replacement

- Replace selector mechanism assembly in the machine, fastening it in place with the left screw.
- Place the front stop on top of the mounting bracket, and fasten it with the right screw.
- Place tension arm over stud hole, being sure that the arm is behind the arm plate.

Insert tension stud.

Loosen the left and right screws (which were tightened previously on selector assembly and front stop), and set the bracket parallel with the cross shaft until the right edge of the bracket is approximately  $1/16''$  to  $3/32''$  from the cast boss for the cross-shaft bearing.

Then re-tighten screws.

Engage driving spring, being sure that tail of spring is up when put into place on release lever.

Again, loosen right screw of mounting bracket and set stop to limit travel of selector arm (This is done to prevent disengagement of the selector arm and the follower, and yet give free movement to the selector arm when selecting patterns.)

Replace top cover.

## THE RELEASE MECHANISM (Cont'd)

### Adjustments

#### Setting the Release Mechanism

Remove arm top cover.

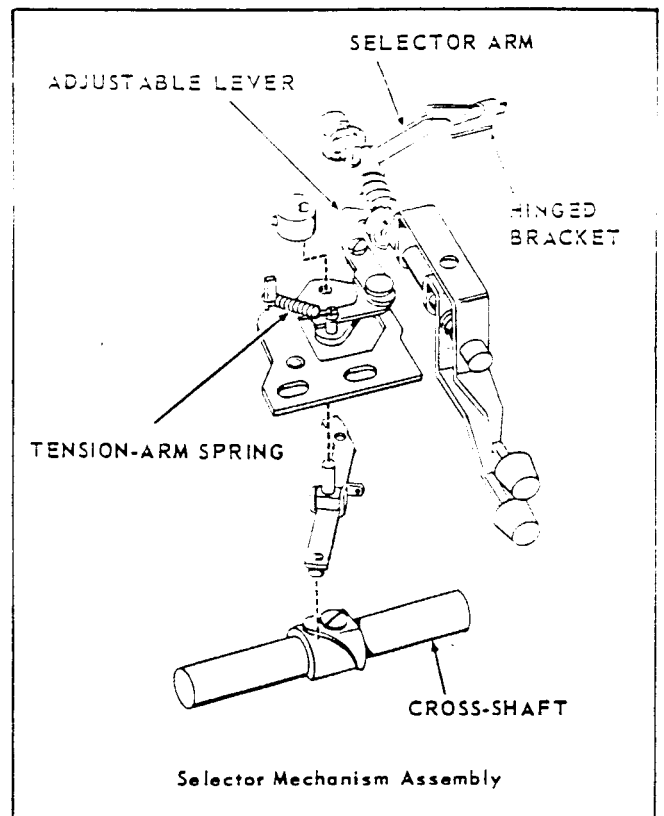
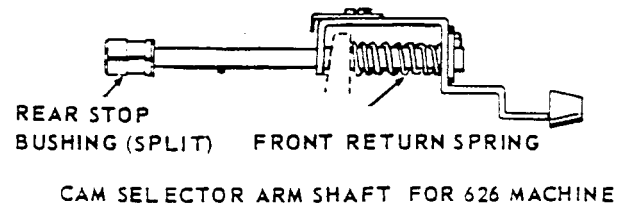
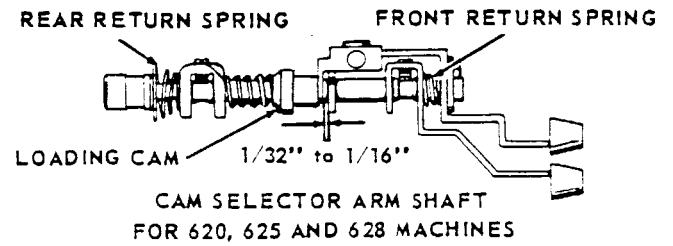
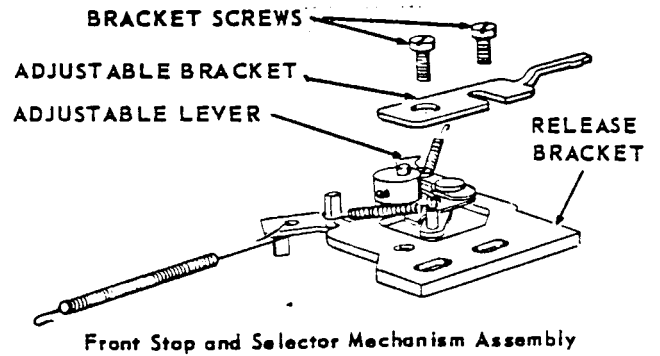
Be sure stitch pattern selectors are properly engaged. Otherwise, machine will not engage when in operation. If machine does not engage after selectors are engaged, the releasing mechanism requires adjustment as follows:

Loosen bracket screw in adjustable bracket and engage release mechanism by swinging the bracket to the right by hand until it engages. Tighten screw.

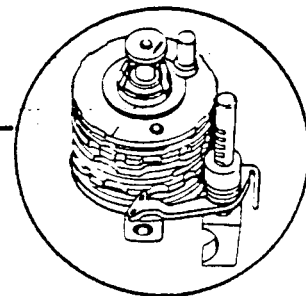
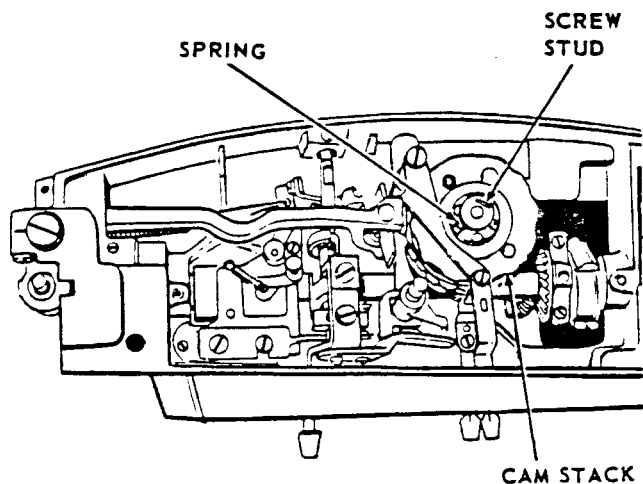
Loosen screw on adjustable lever and move the lever until it makes contact with the plastic sleeves. Turn hand wheel to insure engagement of releasing lever. Re-tighten screw securely.

#### Setting the Loading Cam

The Loading Cam should be pre-set to within  $1/32$  to  $1/16$  inch from cross-shaft boss, as shown.

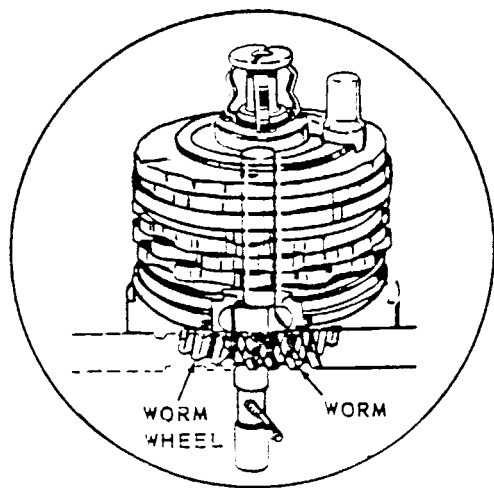


## CAM STACK



**CLASS 626 MACHINES:** This class of machine is designed for use only with the factory-installed standard cam stack, and is provided only with a Front Cam Selector Arm. Accordingly, removal and replacement of cams in this machine should be performed only by authorized servicemen during regular maintenance periods, and those instructions referring to Rear Cam Selector Arm do not apply to Class 626 Machines.

**CLASS 628 MACHINES:** This class of machine is designed for use only with one replaceable Fashion Disc stitch-pattern cam during any one sewing operation, and is provided only with a Front Cam Follower. Accordingly, those instructions referring to Cam Stack Removal and Replacement, Adjustments, and Stops do not apply to Class 628 Machines.



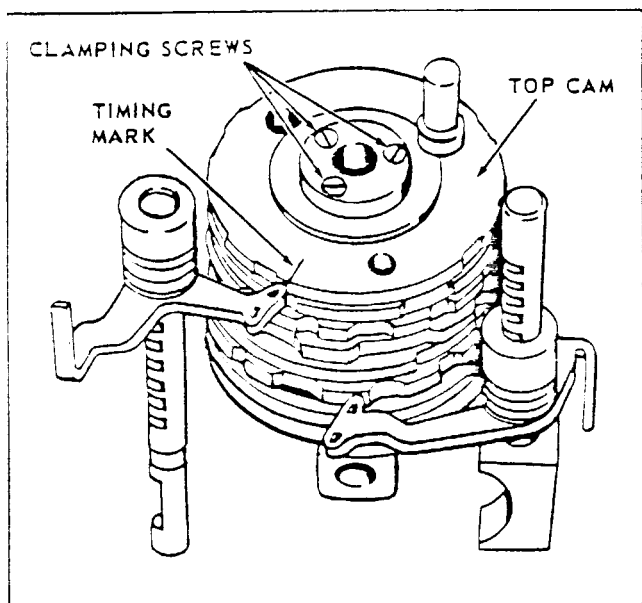
### Removal and Replacement

- Set stitch pattern selector at "A - K".
- Remove arm top cover and removable Fashion Disc (stitch-pattern cam).
- Remove large screw-stud with its spring.
- Remove cam stack.
- Replace cam stack, meshing worm wheel of cam stack with worm of arm shaft.
- Replace screw-stud with its spring.
- Replace Fashion Disc and arm top cover.

### Adjustments

#### Timing the Cam Stack

- Remove arm top cover and Fashion Disc, and large screw-stud with its spring.
- Using stitch-pattern selector, bring rear follower in contact with edge of top cam of cam stack.
- Turn hand wheel over toward operator until timing mark is at point of contact with rear follower, as shown.
- At this setting, the needle bar should be at its lowest position.
- Loosen each of the three clamping screws on top of cam stack.
- While holding needle bar at its lowest position, manually rotate entire cam stack clockwise until timing mark reaches point of contact with rear follower, as shown.
- Tighten the three clamping screws.
- Replace stud with its spring. Tighten stud.
- Replace Fashion Disc and arm top cover.



## THE CAM STACK (Cont'd)

### Removal and Replacement

Remove arm top cover and control panel.

Remove cam stack as previously instructed on page 14.

Loosen the clamping screw in lower selector arm by inserting screwdriver through hole in upper arm. Remove locating screw from plastic cam.

Remove the screw in rear follower arm.

Loosen the rear-stop-bushing set-screw.

Withdraw selector-arm shaft from rear of machine arm, releasing front selector-arm and return-spring, plastic cam, spring, rear selector-arm, and rear selector-arm return-spring.

Remove selector arms from machine.

Remove two followers from index pins.

Replace two followers, and replace selector arms with cam and return-springs in position, making certain that hinged brackets fit into slots in followers.

Replace selector-arm shaft through follower arms.

Replace rear follower-arm screw making certain that it clamps down on flat part of shaft.

Tighten rear-stop-bushing set-screw securely.

Tighten the clamping screw in lower selector-arm.

Replace cam stack.

Check and adjust the release mechanism as instructed on page 14.

### Adjustments

#### Setting the Index Pins

Set stitch selectors at "J" and "R".

Remove arm top cover and control panel.

At this setting, top surface of two arm followers should be approximately 1/64 inch below top surface of cam stack.

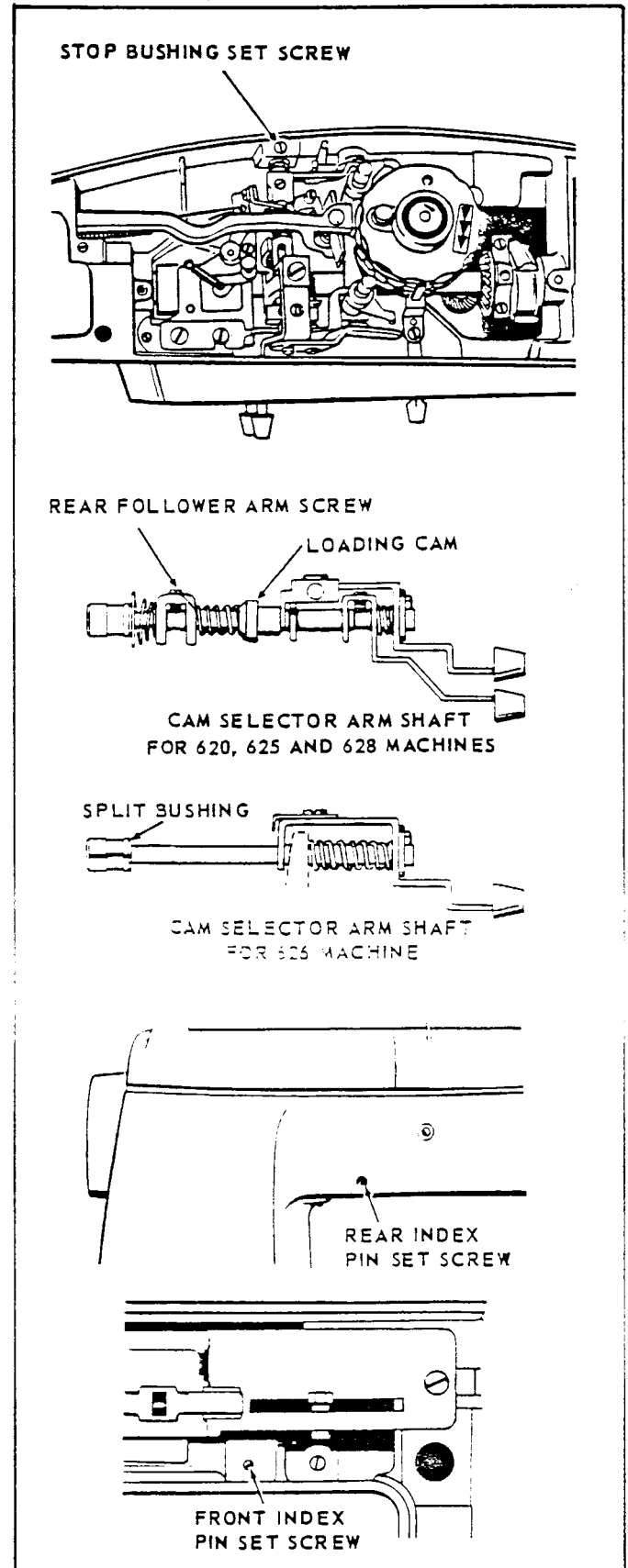
NOTE: Position of two arm followers is determined by height of index pins.

Loosen rear index-pin set-screw.

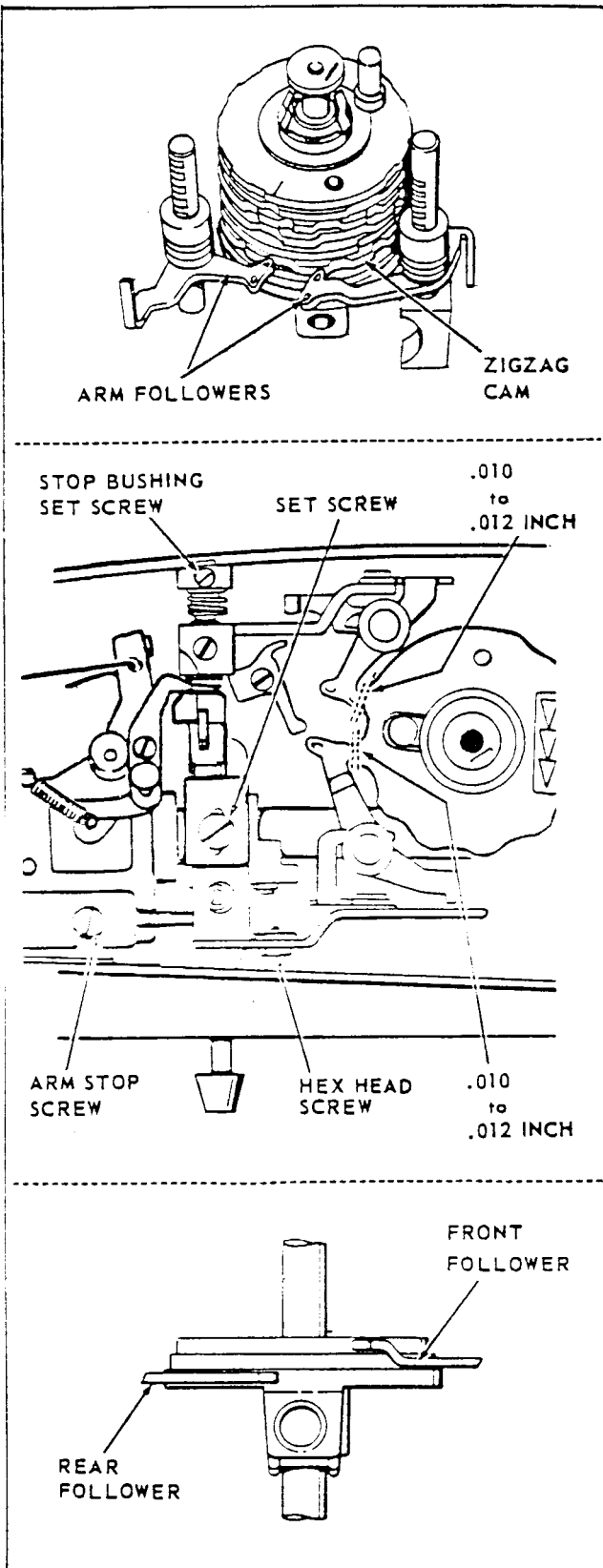
Raise or lower rear index-pin as required, to bring top surface of rear follower 1/64 inch below top surface of cam stack, then tighten set screw securely.

Loosen front index-pin set-screw at front of machine arm.

Raise or lower front index-pin as required, then tighten set screw securely.







### Setting Cam-Selector-Arm Stops

Remove arm top cover.

Check adjustment of worm wheel shaft (see instruction on page 17).

Set selector at "D" and "L".

Turn hand wheel over toward operator until arm-bracket followers rest upon high points of bottom (zigzag) cam of cam stack.

At this setting, when stitch pattern selectors are depressed as far as possible, clearance between both followers and high point of bottom cam should be 0.010 and 0.012 inch.

#### Front Selector-Arm Stop

Disengage release mechanism by pushing in on upper selector button.

Loosen screw in front selector-arm stop and depress top selector button until there is approximately 0.010 inch clearance between front follower and cam.

Maintain this clearance while moving stop toward front of machine until it makes contact with front selector-arm. Then tighten screw securely.

#### Rear Selector Arm Stop

Loosen stop-bushing set-screw at rear of cam-selector arm-shaft. Press lower selector button until there is approximately 0.010 inch clearance between rear follower and cam.

Maintain this setting while moving stop bushing toward front of machine until it makes contact with rear follower-arm, then tighten set screw securely.

#### Aligning Indicator with Selector Letters

##### Indicators "A" to "J"

Loosen set screw through hole in upper selector arm.

Align indicator mark with "A" position on front panel, making sure that rear follower is in contact with aluminum bight-control ring (lowest ring with largest diameter under the cam stack). Tighten set screw securely.

##### Indicator "K" to "Special"

Loosen hex head screw in front follower arm.

Align indicator mark with "K" position on front panel, making sure that front follower is in contact with aluminum bight-control ring (third ring from bottom under the cam stack). Then tighten hex head screw

## CAM STACK (Cont'd.)

### Cam-Selector-Arm Shaft Return-Spring Removal and Replacement CLASS 620, 625 and 628 MACHINES:

To remove front selector-arm return-spring, follow procedure described above for removal of cam-selector-arm shaft down to withdrawal of shaft from rear of machine.

As shaft is withdrawn, the tension-type return-spring can be lifted from between front and rear disc-selector-arm brackets.

To replace, insert new return-spring between front and rear disc-selector-arm brackets, slide shaft forward to engage spring, and reassemble cam-selector-arm shaft and follower as described.

To remove rear selector-arm return-spring, follow procedure described above for removal of cam-selector-arm shaft down to removal of selector arms from machine. This procedure releases coil-type rear return-spring.

To replace, fit new return-spring on shaft and reassemble cam-selector-arm shaft and followers as described above.

Check and adjust the release mechanism as described on page 14.

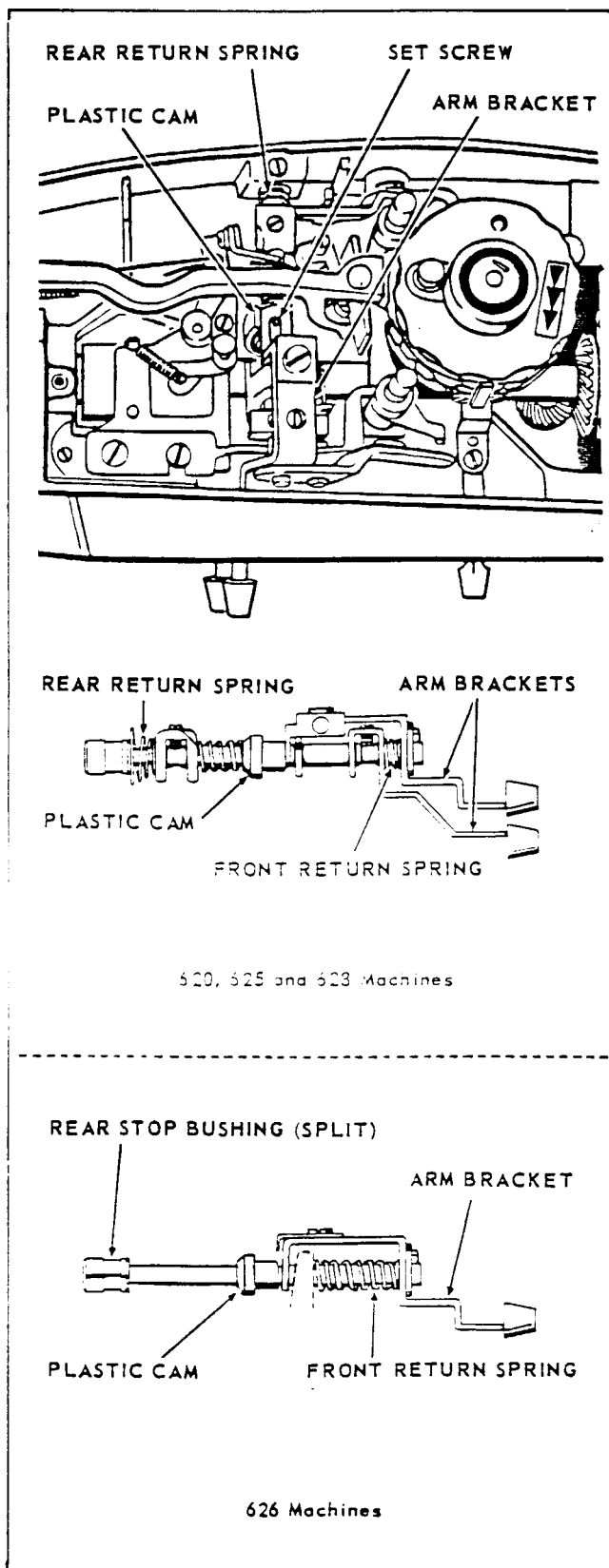
### CLASS 626 MACHINES

To remove selector-arm return-spring, follow procedure described above for removal of cam-selector-arm shaft down to withdrawal of shaft from rear of machine,

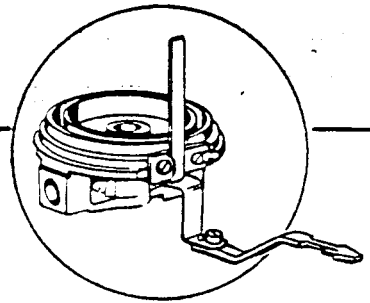
As shaft is withdrawn, the tension-type return spring can be lifted from the shaft between the legs of the selector-arm bracket.

To replace, fit new return-spring on shaft and reassemble cam-selector-arm shaft and follower as described above,

Check and adjust the release mechanism as instructed on page 14.



## BIGHT-AMPLITUDE AND PATTERN SELECTOR



NOTE: The following instructions apply generally to Class 620, 625, 626 and 628 Machines. As indicated on page 13, however, Class 628 Machines must use the Bight-Amplitude Selector in lieu of a Release Mechanism in order to neutralize the particular zig-zag stitch pattern provided by the replaceable Fashion Disc utilized. Accordingly, the section on page 20 dealing with Bight-Amplitude Adjustments will be particularly applicable to users of Class 628 Machines.

### Removal and Replacement

Remove arm top cover, face plate, and control panel.

Set stitch-pattern selectors at "A" - "K".

Remove driving-arm spring.

Remove bight-lever screw from bracket, and remove bight lever.

Loosen bight-amplitude set-screw and remove entire cam stack assembly.

Remove bight-amplitude and pattern selector.

Replace pattern selector in the reverse order of its removal.

### Observe the following:

Assemble cam stack as a complete unit. Upper eccentric half of worm wheel shaft should be turned toward hand-wheel-end of machine, as shown.

Make certain that driving-arm ball-pivot is engaged with pattern selector.

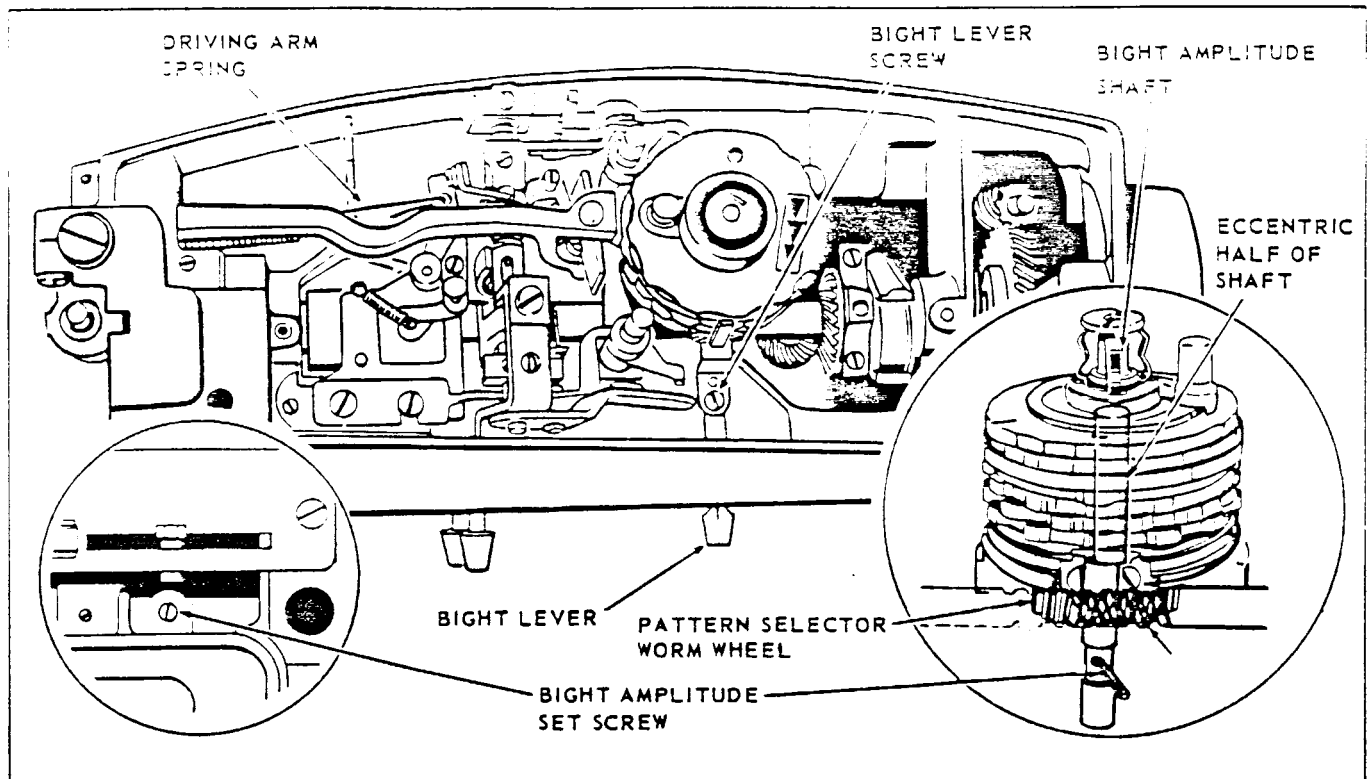
Set mesh between worm of arm shaft and worm wheel of pattern-selector by turning bight-amplitude shaft clockwise so that there is no binding and a minimum amount of backlash.

Tighten bight-amplitude set screw.

Replace driving-arm spring

Replace bight lever and fasten with set screw.

Adjust machine as instructed below and on following page.



## Adjustments

### Setting the Bight-Amplitude Stop-Plates

Set index pins at correct height and time the cam stack.

#### CHECK: (At No. 1 Position)

With stitch controls set at "A - L - 3", operate machine at slow speed and, at same time, move stitch width (bight) lever to No. 1 position. Movement of driving arm and vibrating bracket should stop at same time that movement of bight lever stops at No. 1 position.

Loosen clamping screw in left stop-plate.

Move bight lever to No. 3 position.

Run machine at moderate speed and move bight lever toward left, to point where there is no movement of vibrating bracket or driving arm. DO NOT PASS THIS POINT.

Maintain this position of bight lever, and move left stop-plate forward (toward operator) against bight-amplitude bracket beneath cam stack.

Hold stop-plate at this setting and tighten clamping screw securely.

#### CHECK: (At No. 5 Position)

With stitch controls set at "D - K - 0", operate machine at slow speed and, at same time, move stitch-width (bight) lever to No. 5 position. Movement of driving arm and vibrating bracket should stop at same time that movement of bight lever stops at No. 5 position.

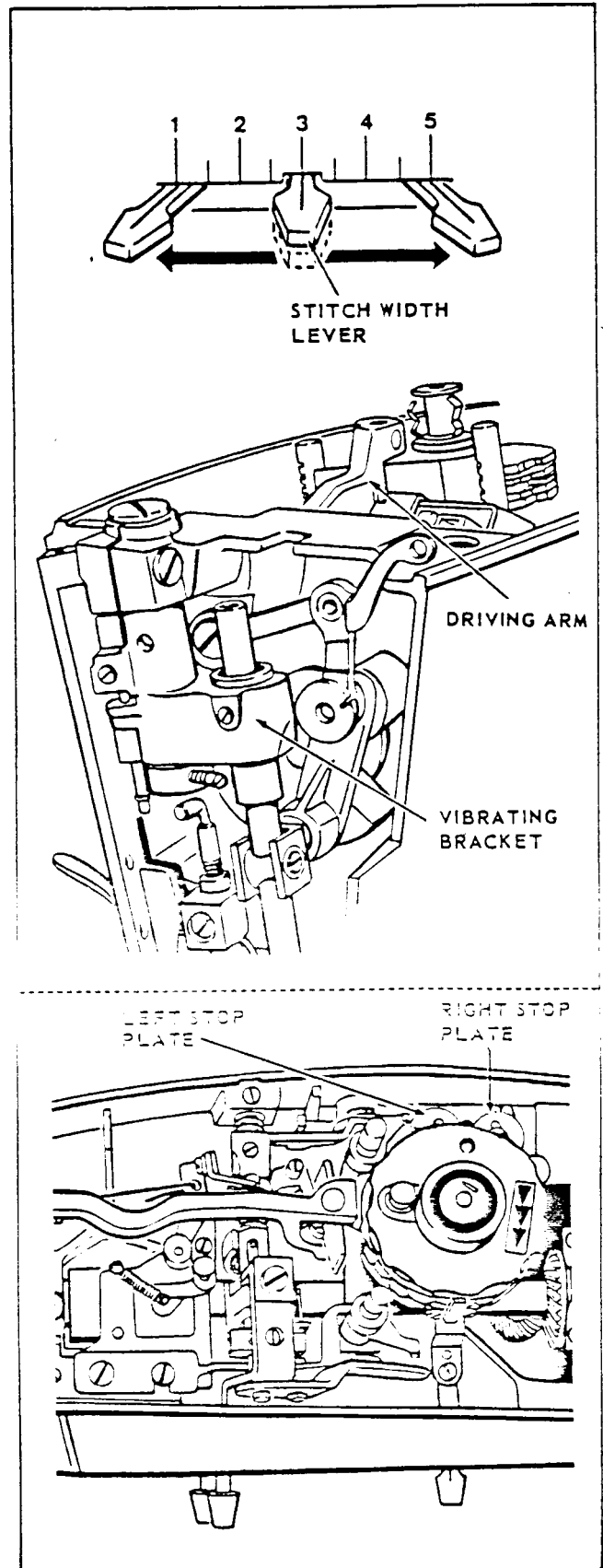
Loosen clamping screw in right stop-plate.

Move bight lever to No. 3 position.

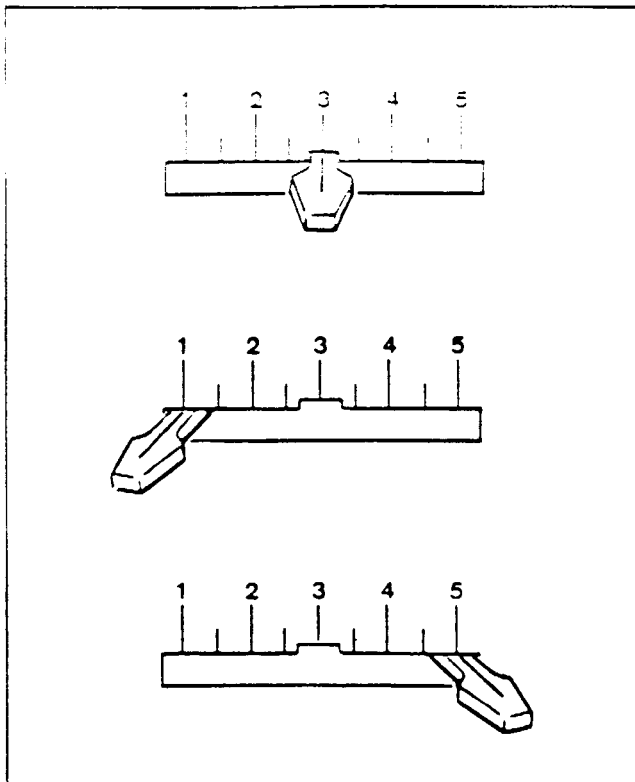
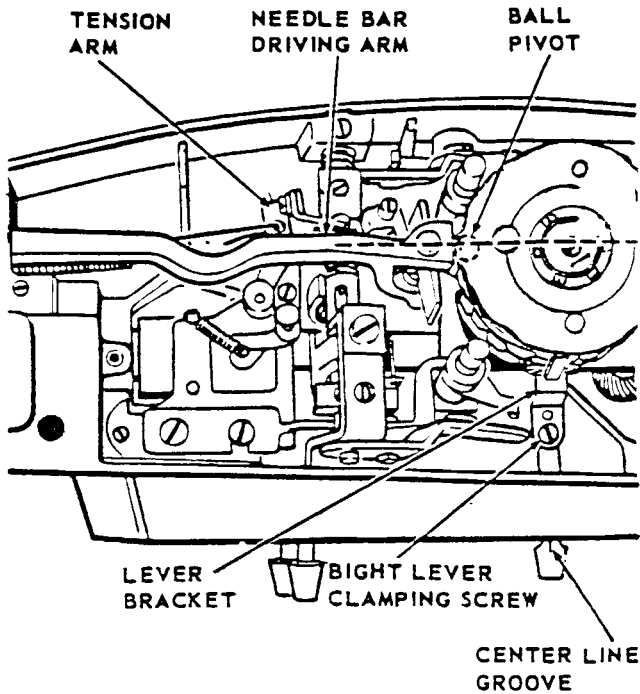
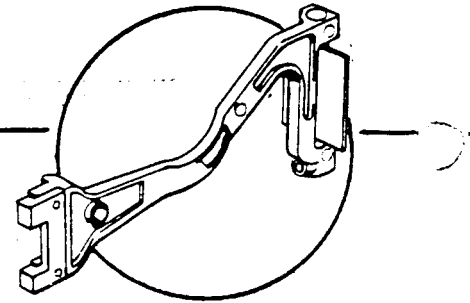
Run machine at moderate speed and move bight lever toward right to point where there is no movement of vibrating bracket or driving arm. DO NOT PASS THIS POINT.

Maintain this position of bight lever and move right stop-plate forward (toward operator) against bight-amplitude bracket beneath cam stack.

Hold stop plate at this setting and tighten clamping screw securely.



## NEEDLE-BAR DRIVING ARM



## NEEDLE BAR DRIVING ARM

### Removal and Replacement

Remove arm top cover and face plate.  
Remove cam-selector-arm shaft as instructed on page 15.

Remove needle-bar vibrating bracket.  
Lift needle-bar driving arm from machine.  
Replace needle-bar driving arm in arm of machine so that ball pivot rides in socket provided for it in pattern selector, as shown.

**CAUTION:** Make certain that tension arm is in correct position in relation to driving arm, as shown.

Replace cam-selector-arm shaft as instructed on page 15.  
Replace needle-bar vibrating bracket.

### Adjustments

#### Centralizing Needle-Bar Driving-Arm

Set bight-amplitude stop-plates as instructed on page 18.

Set bight lever at No. 3 position.

When bight lever is set at No. 3 position, the center line of needle-bar driving arm should coincide with a point midway between selector-arm followers.

Loosen bight-lever clamping-screw.

Push lever bracket toward left as far as possible. Align center line groove of bight lever with No. 1 position, as shown.

Tighten bight-lever clamping-screw.

Move bight lever as far as possible to the right. Center line groove should now be in line with No. 5 position, as shown.

If center line groove of bight lever is not in line with No. 5 position, loosen bight-lever screw and, while holding bracket to extreme right, move lever 1/2 the distance that it is out of line. Then tighten bight-lever clamping-screw. Lever will now be an equal distance from center position No. 3 when set at No. 1 and No. 5 positions.

Replace arm top cover and face plate.

# TROUBLE-SHOOTING GUIDE

## Chainstitch Adjustments

If sewing defects are encountered in chainstitching, the procedure given below should be followed in adjusting the machine. After each step, check the chainstitching operation. If the machine sews satisfactorily, no further adjustment is needed; if the machine does not chainstitch properly, proceed to the next step.

### Machine Settings

Check the machine to be sure it has been set for chainstitching in accordance with the instruction book; use 50 mercerized cotton or "A" silk thread, size 14 needle, between 8 and 12 stitches per inch.

Check chainstitch performance.

### Chainstitch Throat Plate

Check loop-retainer bar for free action; i. e., the bar should move front to back with no binds. In the front position, the bar should extend approximately  $3/32$  inch beyond the edge of the throat plate.

Check chainstitch performance.

When the bar is depressed against the throat plate, there should be visible clearance (approximately 0.010 inch) under the rivet head. The bar should also spring back into position when the pressure is released. Check chainstitch performance.

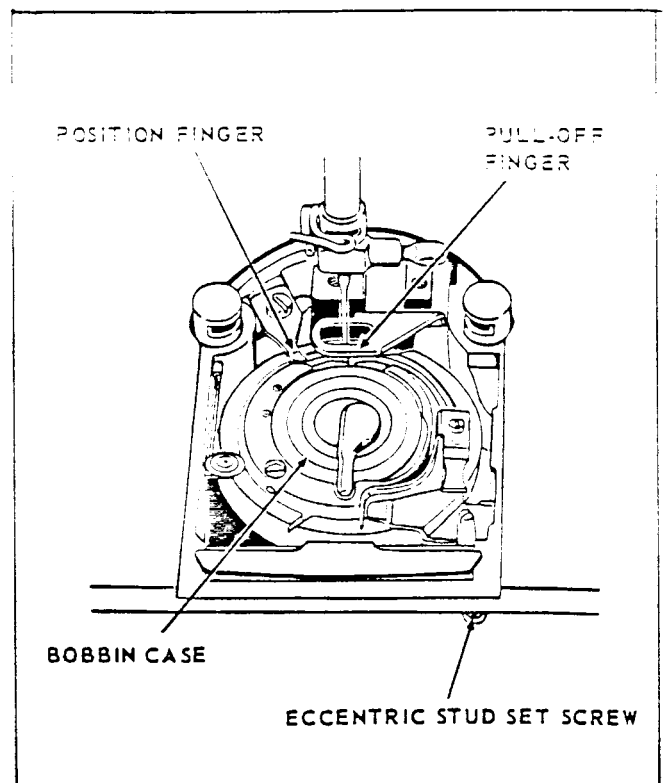
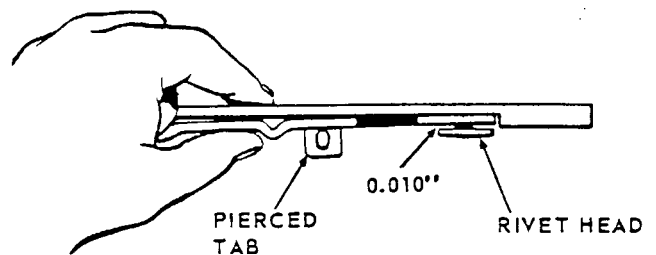
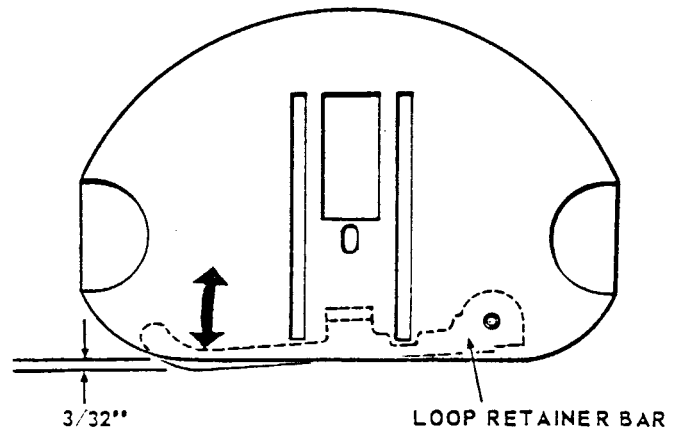
Check the pierced tab on the bar for sharp edges or burrs. Check chainstitch performance.

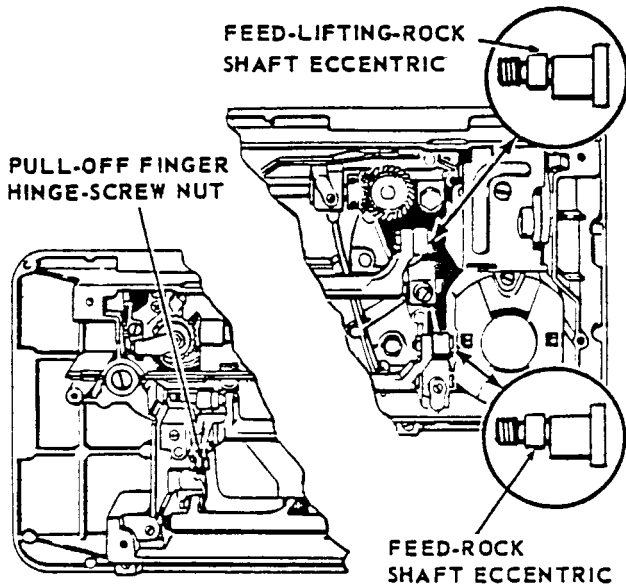
### Machine Adjustments

Check the radial setting of the bobbin case as instructed on pages 15 and 16, Service Manual for Class 600 and 603 Machines. The setting should be to the center, or to the right hand side of the needle. If radial setting is to the center of the needle, move it slightly to the right hand side. Check chainstitch performance.

Gently raise or lower the pull-off finger, by forming up or down until the finger is as close to the top of the hook as possible but still maintaining thread space. Check chainstitch performance.

**CAUTION:** Do not burr or nick the thread-handling edges of the pull-off finger during forming. Check for thread clearance in a 12-stitch-per-inch setting by rotating machine by hand. If thread clearance is sufficient, perform normal stitching test.



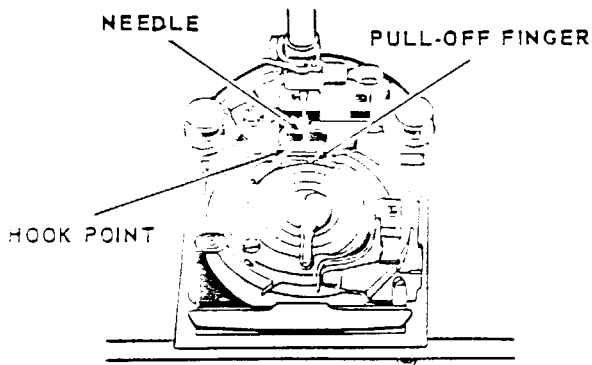


Remove bottom cover and check that the feed-lift and feed-rock-throw eccentrics are correctly assembled in the machine.

(Lay the machine on its back, panel facing upwards. Rotate the hand wheel until needle is at its lowest point. The hook point will be near the position finger at the lowest point. In this position, both throws should be down. If the throws are not down, reposition as described on pages 13 and 14 of Service Manual for Class 600 and 603 Machines.)

Check chainstitch performance.

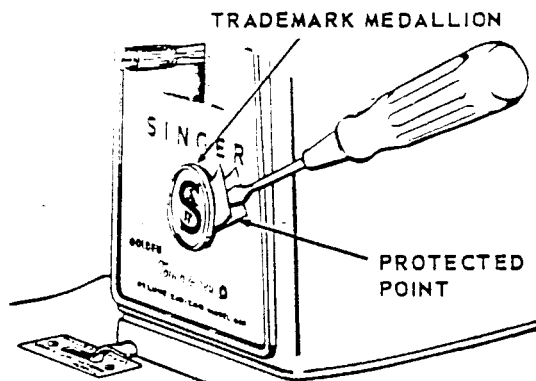
With the bottom cover removed, install a No. 18 needle, and rotate the hand wheel until the needle bar is at its lowest position, then continue to rotate until the hook point is directly behind the needle. Loosen the pull-off finger hinge-screw nut and the hinge-screw, allowing the pull-off finger to move freely. Allow the pull-off finger to rest lightly on the needle; then, holding the nut in position, tighten the screw.



**CAUTION:** Raise and lower the needle bar by rotating the hand wheel forward and back to ensure that in tightening the screw, the pull-off finger was not pulled back against the needle, causing it to deflect against the hook point. Hold the screw tight and draw up the lock nut. Repeat the precautionary check above, to be sure the pull-off finger does not deflect the needle. Replace bottom cover.

Check chainstitch performance.

#### Trademark Medallion



The trademark medallion on the upright arm can be removed easily in order to gain access to the panel and screws. Gently pry the medallion from the arm with a protected screw-driver point or other long, slender instrument.

To replace, position stud over hole and gently ease medallion back into position.

**Needle-Threader Storage and Use  
(Class 620 Machines Only)**

Servicemen should be aware of common customer mistakes in the handling, use, and storage of the Needle-Threader attachment. The following instructions cover the procedure suggested to users of new Class 620 Machines, and reflect the most common causes of damage and misalignment. As such, they can be of use for trouble-shooting during service calls.

To prevent damage to and ensure proper alignment of the Needle-Threader attachment, the procedure given below should be followed in storing and using this device.

1. When not in use, the needle-threader should be stored in the space provided behind the face plate.
2. Before using needle-threader, be sure that presser foot is lowered, and remains lowered while needle-threader is in use.

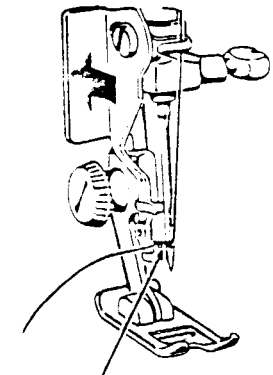
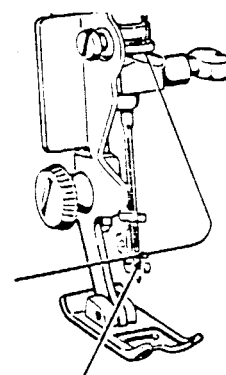
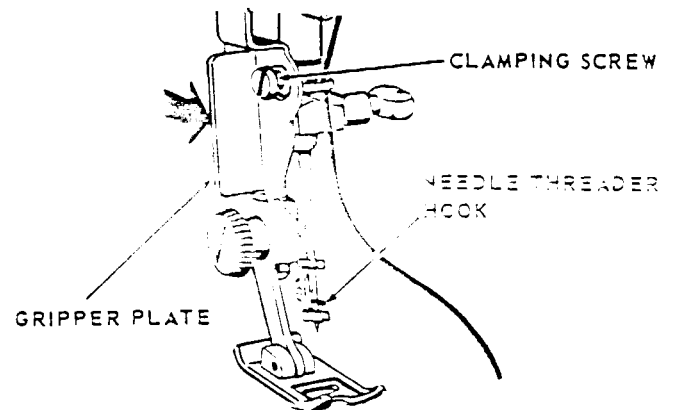
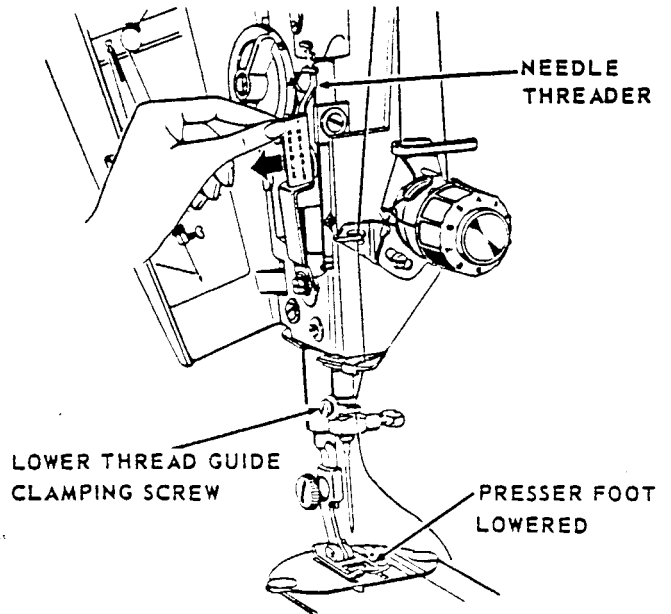
**CAUTION: DO NOT** raise presser foot while needle-threader is attached to needle.

3. When releasing the needle-threader for use, do not pull the supporting arm but to the left any more than necessary to clear the lower-thread-guide clamping-screw.
4. Attach supporting arm to lower-thread-guide clamping-screw through larger end of machined hole in arm. Upper and lower guides and needle-threader hook should now be aligned with needle eye.

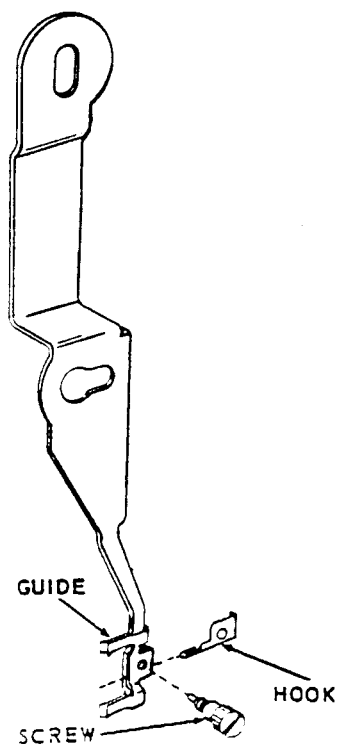
5. Using gripper-plate on supporting arm, gently pull arm forward until hook passes through needle eye, and guides engage needle shaft. The needle-threader is now ready for use.

6. To remove needle-threader from needle, push back gently on gripper plate, free thread from hook, disengage supporting arm from lower-thread-guide clamping-screw, and carefully swing needle-threader assembly back up to storage nest.

**CAUTION: DO NOT** close face plate while needle-threader is not properly stored.







### **Needle-Threader Removal and Replacement**

Remove pivot-pin-screw and spring from base of needle-threader supporting arm.

Remove needle-threader assembly. Set pivot-pin-screw and spring aside.

Replace needle-threader assembly by positioning it over machined hole. Be sure that threading hook is pointing up.

Replace spring with larger end against supporting-arm.

Replace screw and tighten securely.

### **Needle-Threading Hook Removal and Replacement**

To remove, lower needle-threader.

Remove screw from threader arm, as shown.

Push damaged hook out through threader arm.

To replace, insert new hook (thread slot up) from the rear of the needle-threader through the space between the threader arm and guide.

Align the holes in the hook body, needle guide, and threader arm. Replace screw.

Lower the presser foot and raise the needle bar to its highest position.

Position slot in threader arm over positioning screw on needle clamp.

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### **NOTES:**

# WIRING DIAGRAM

