

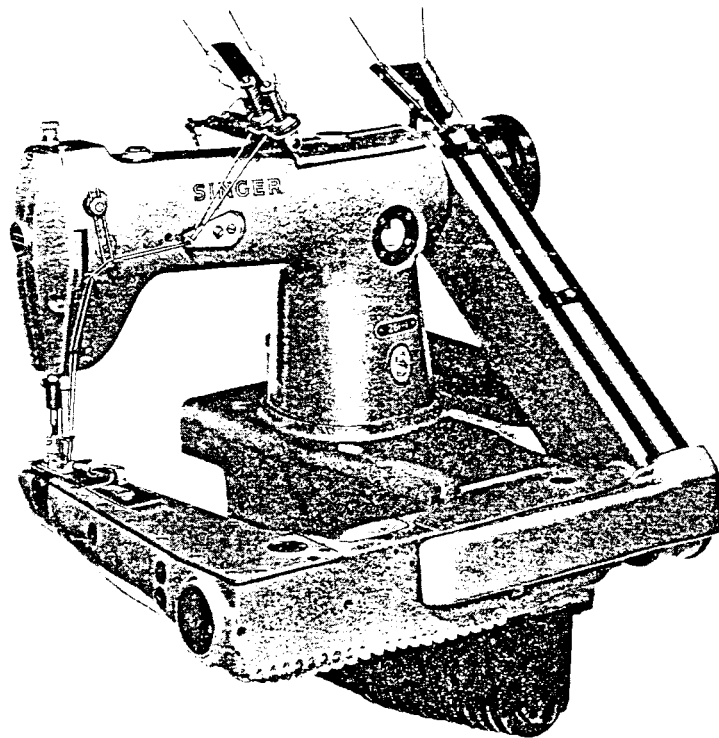
**SINGER**  
**CLASS 261**

*Clarence*

**SINGER\***

**SERVICE MANUAL**

**Class 261**



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**THE SINGER MANUFACTURING COMPANY**

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### TO ALL WHOM IT MAY CONCERN:

The improper placing or renewal of the Trademark SINGER\* or any other of the Trademarks of The Singer Manufacturing Company (all of which are duly Registered Trademarks) on any machine that has been repaired, rebuilt, re-conditioned, or altered in any way whatsoever outside a SINGER factory or an authorized SINGER agency is forbidden.

## DESCRIPTION

Machines of Class 261 are high speed, drop feed, feed-off-the-arm, two thread chain stitch machines designed for lap seam felling on materials ranging from light to heavy weight.

Available for two or three needle stitching operations, these machines perform outstanding work on shirts, trousers, pajamas, overalls, work shirts and similar articles of clothing.

### General Characteristics

Three plain superfinished bearings position and support the arm shaft and bed shaft.

Rotary bed shaft is belt driven.

Automatic lubricating system, with oil flow window in direct view of operator, delivers oil to all principal bearings.

Machine arm provided with seat for independent light fixture mounting.

Space at right of needle, 8 inches.

### Special Features

#### Machine 261-1

For light and medium weight materials

Two needles and two loopers

Stitch length, 8 to 22 to the inch.

Needle bar stroke, 1-1/16 inches.

Clearance under presser foot, 1/4 inch.

Gauges, 3/32 inch to 9/32 inch in steps of 1/32 inch.

Standard gauges, 1/8 inch, 5/32 inch, 3/16 inch, 1/4 inch.

Lap Seam feller "TYPE M" regularly supplied.

#### Machine 261-2

For medium weight materials

Two needles and two loopers.

Stitch length, 8 to 22 to the inch.

Needle bar stroke, 1-3/16 inches

Clearance under presser foot, 9/32 inch.

Gauges, 3/32 inch to 9/32 inch in steps of 1/32 inch.

Standard gauges, 1/8 inch, 5/32 inch, 3/16 inch, 1/4 inch.

Lap seam feller "TYPE H" regularly supplied.

#### Machine 261-3

For medium and medium-heavy weight materials.

Two needles and two loopers.

Stitch length, 6 to 18 to the inch.

Needle bar stroke, 1-5/16 inches.

Clearance under presser foot, 5/16 inch.

Gauges, 3/16 to 9/32 inch in steps of 1/32 inch.

Standard gauges, 3/16 inch and 1/4 inch.

Lap seam feller "TYPE H" regularly supplied.

#### Machine 261-20

For medium and heavy weight materials.

Two needles and two loopers.

Stitch length, 6 to 18 to the inch.

Needle bar stroke, 1-5/16 inches.

Clearance under presser foot, 5/16 inch.

Standard gauges, 3/16 inch and 1/4 inch.

Close-coupled feed roll intermittently actuated through a set of bevel gears and independently adjustable to bring motion of feed roll in unison with feeding mechanism.

Lap seam feller "TYPE H" regularly supplied.

#### Machine 261-31

For medium and medium-heavy weight materials.

Three needles and three loopers.

Stitch length, 6 to 18 to the inch.

Needle bar stroke, 1-5/16 inches.

Clearance under presser foot, 5/16 inch.

Standard gauges, 1/8 inch - 1/8 inch and 9/64 inch - 9/64 inch.

Lap seam feller "TYPE H" regularly supplied.

#### Machine 261-32

For medium-heavy and heavy weight materials.

Three needles and three loopers.

Stitch length, 6 to 18 to the inch.

Needle bar stroke, 1-5/16 inches.

Clearance under presser foot, 5/16 inch.

Standard gauges, 1/8 inch - 1/8 inch and 9/64 inch - 9/64 inch.

Close-coupled feed roll intermittently actuated through a set of bevel gears and independently adjustable to bring motion of feed roll in unison with feeding mechanism.

Lap seam feller "TYPE H" regularly supplied.

## LUBRICATION

Machines of Class 261 have an automatic lubricating system in which oil is circulated from a reservoir by means of a centrifugal pump and is delivered to all principal bearings. Provision is also made for automatically lubricating all other bearings in the machine.

BEFORE starting machine, the oil reservoir which holds approximately two quarts must be filled to high mark on sight gauge, as shown in Fig. 2.

Use SINGER\* OIL "TYPE A" or "TYPE C". Use "TYPE C" OIL when oil is desired which will produce a minimum of stain on fabrics.

Check oil level daily before starting machine. Should oil passing through oil flow window stop or become erratic, STOP machine and DO NOT run machine again until cause has been corrected.

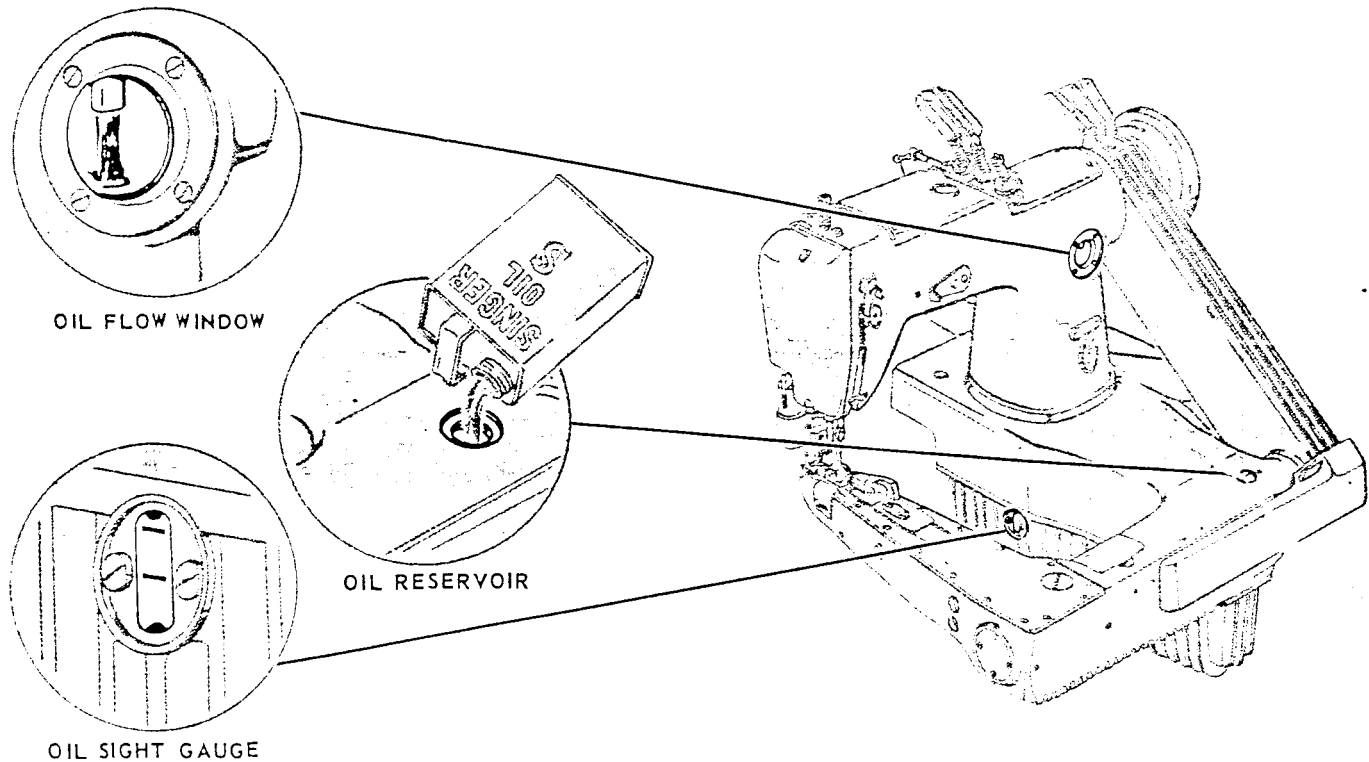


Fig. 2 Lubrication

### SPEED

MACHINE	MAXIMUM (R. P. M.)
261-1.....	6000
261-2.....	5500
261-3.....	4500
261-20.....	4500
261-31.....	4500
261-32.....	4500

### NEEDLES

MACHINE	NEEDLE
261-1.....	Catalog 2793 (149xs25)
261-2.....	Catalog 3651 (149x3)
261-3.....	Catalog 3651 (149x3)
261-20.....	Catalog 3651 (149x3)
261-31.....	Catalog 3651 (149x3)
261-32.....	Catalog 3651 (149x3)

Maximum efficient speed is dependent upon the ability of the operator, the nature of the operation and the type of material being sewn.

It is advisable to run new machines at a speed of 500 R. P. M. less than maximum for the first 100 hours of operation.

NOTE: Machine 261-32, use Catalog 3670 (149x4) for heavier weights of material.

Orders for needles should specify quantity required, size number and catalogue number.

## INSTALLATION

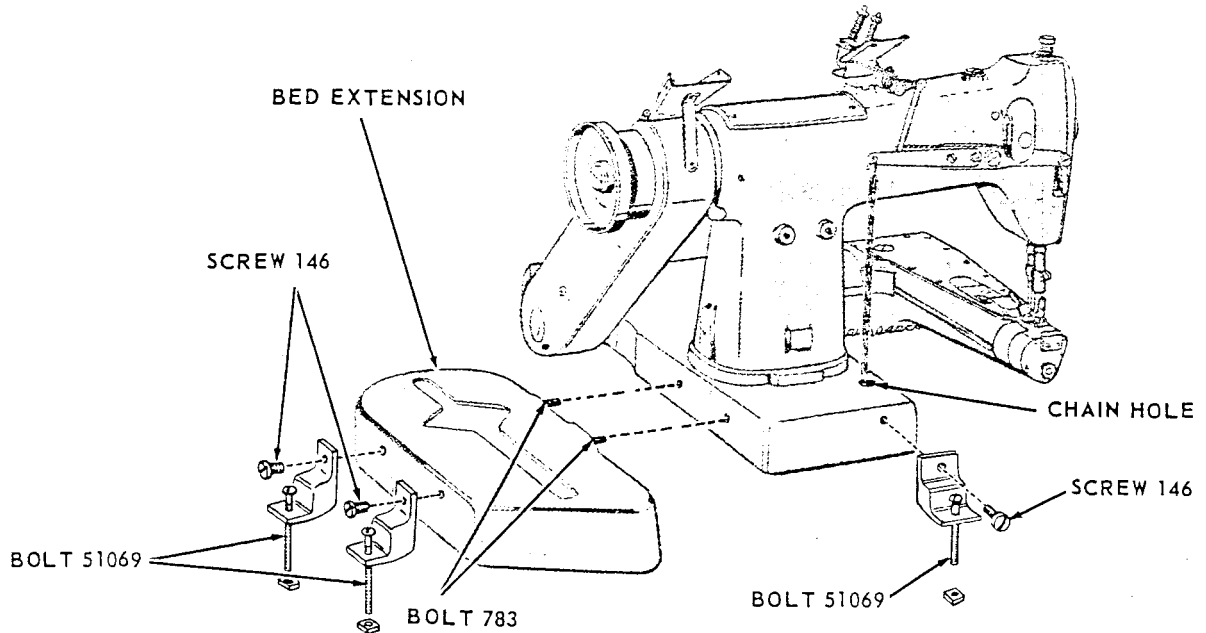


Fig. 3. Installation

Attach bed extension (counterweight) to right side of machine bed using two bolts No. 783, as shown in Fig. 3.

Insert two round rubber cushions into holes located approximately five inches to the rear of the front right corner of the machine base and behind the treadle chain hole.

Place machine on table, setting reservoir in cut-out at left edge of table. Make certain that presser bar lifter chain hole in machine base, Fig. 3, is directly over similar hole in table.

Using three screws No. 146, fasten the three mounting cushions to the machine, as shown in Fig. 3. Then fasten lower ends to table with three No. 51069 bolts and nuts after drilling required holes in table top.

Top surface of cylinder arm should be level and may be adjusted by loosening top bolts in lower section of stand legs and raising or lowering legs as required. Securely tighten leg bolts.

**CAUTION:** After setting up, DO NOT run machine until it has been thoroughly oiled, as instructed on page 4.

### V-Belt Tension

V-belt should not be too tight but should have just sufficient tension to drive machine at required speed.

A new belt is usually stiff. When first installed, tension should be adjusted with enough slack to allow belt to curve slightly between pulley.

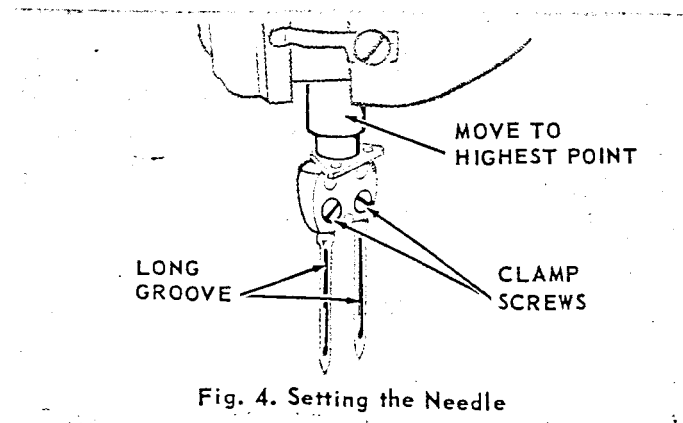


Fig. 4. Setting the Needle

### SETTING THE NEEDLE

Turn machine pulley over toward operator until needle bar is at highest point.

Loosen needle clamping screw, as shown in Fig. 4.

Insert needle up into needle holder as far as possible making sure that the single continuous groove of needle faces front of machine (facing the operator), as shown in Fig. 4. Tighten needle clamping screw.

## THREADING THE MACHINE

### UPPER THREADING - MACHINES 261-1, 261-2, 261-3

Turn machine pulley over toward operator until needle bar is at highest point.

Pass thread from unwinder through threading points indicated in Fig. 5. See inset, Fig. 5, for correct threading of needles.

Draw about two inches of thread through needle eye with which to start sewing.

### LOWER THREADING - Machines 261-1, 261-2, 261-3

Turn machine pulley over toward operator until needle bar reaches lowest point.

Swing open cover plates on both sides of throat plate and on front and top of horizontal arm.

Pass thread from unwinder through threading points indicated in Fig. 6.

Draw about two inches of thread through looper eye with which to start sewing.

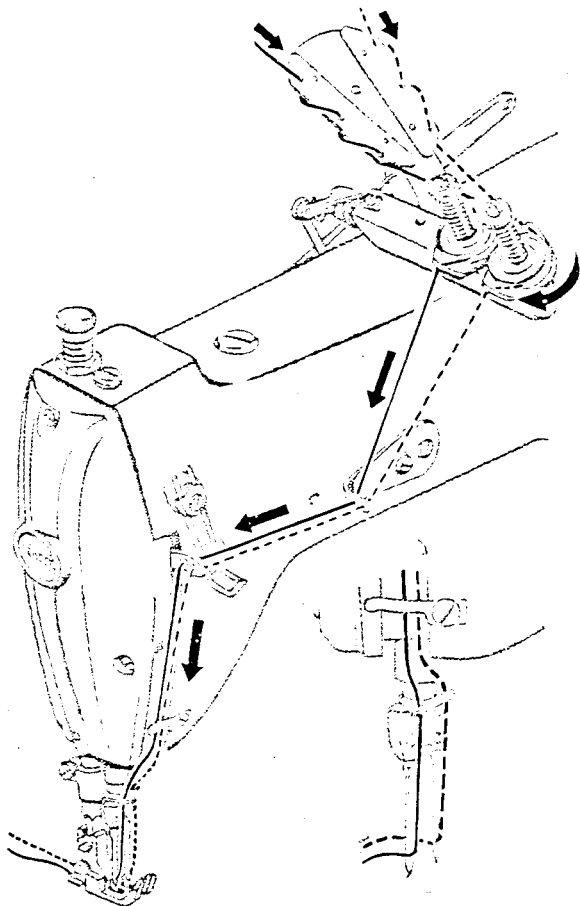


Fig. 5. Upper Threading

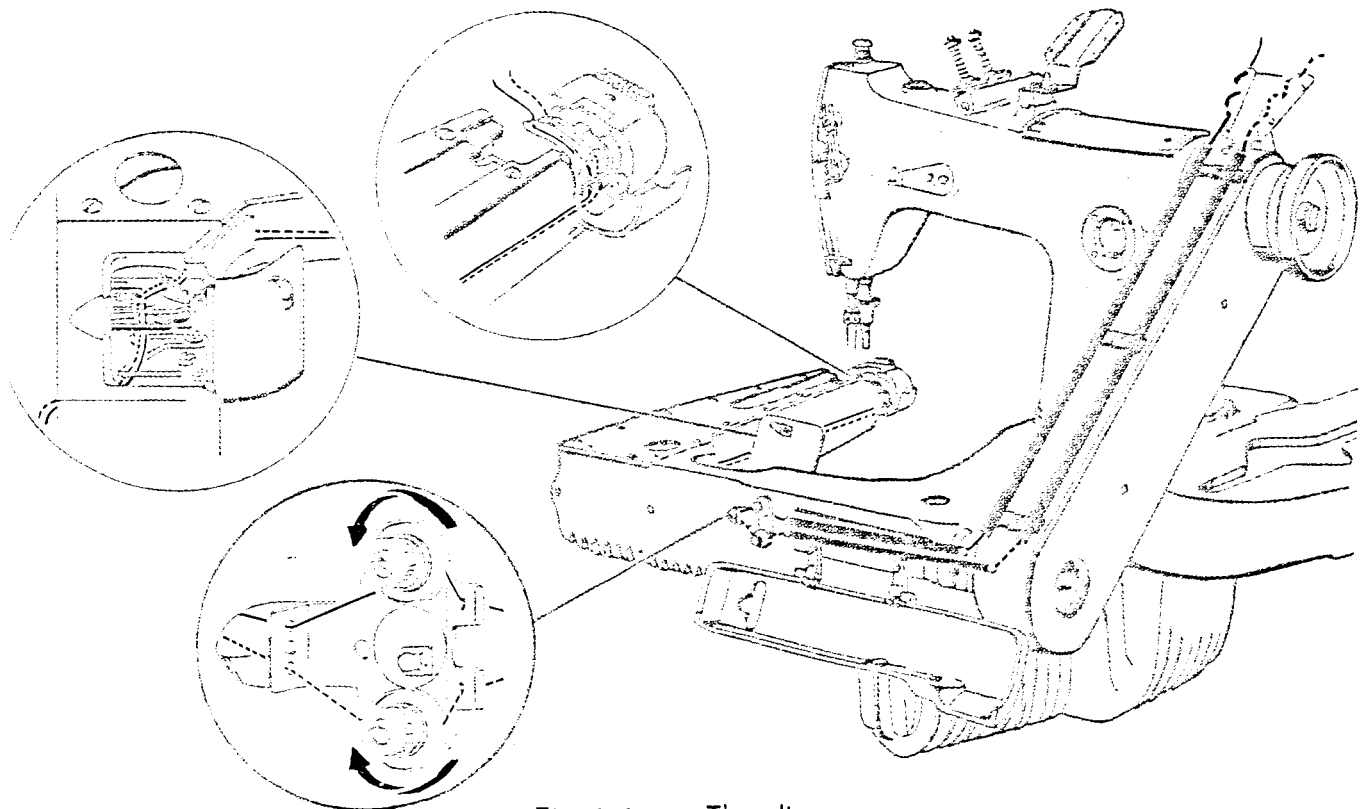


Fig. 6. Lower Threading

## THREADING THE MACHINE

### UPPER THREADING - Machines 261-20, 261-31, 261-32

Turn machine pulley over toward operator until needle bar is at highest point.

Pass thread from unwinder through threading points indicated in Fig. 7. See inset, Fig. 7, for correct threading of needles.

Draw about two inches of thread through needle eye with which to start sewing.

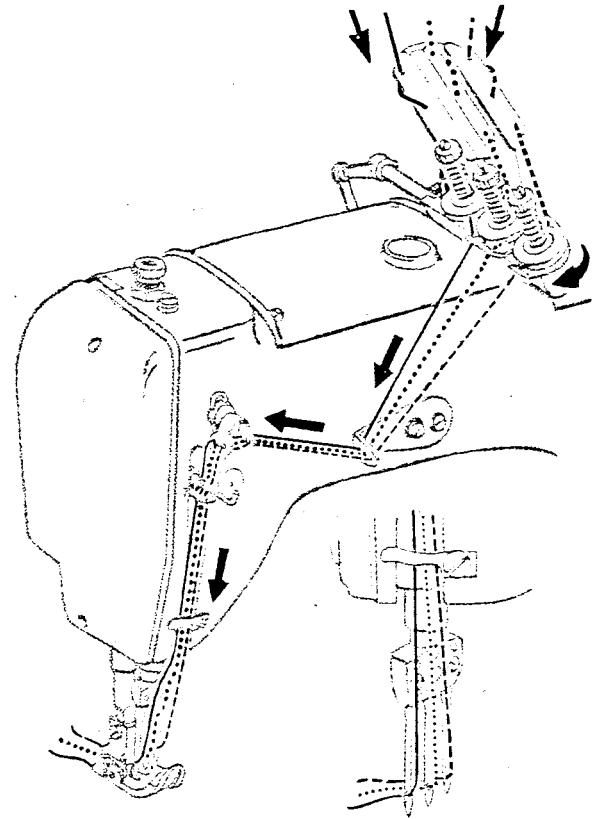


Fig. 7. Upper Threading

### LOWER THREADING - Machines 261-20, 261-31, 261-32

Turn machine pulley over toward operator until needle bar is at highest point.

Swing open cover plates on both sides of throat plate and on front and top of horizontal arm.

Pass thread from unwinder through threading points indicated in Fig. 8.

Draw about two inches of thread through looper eye with which to start sewing.

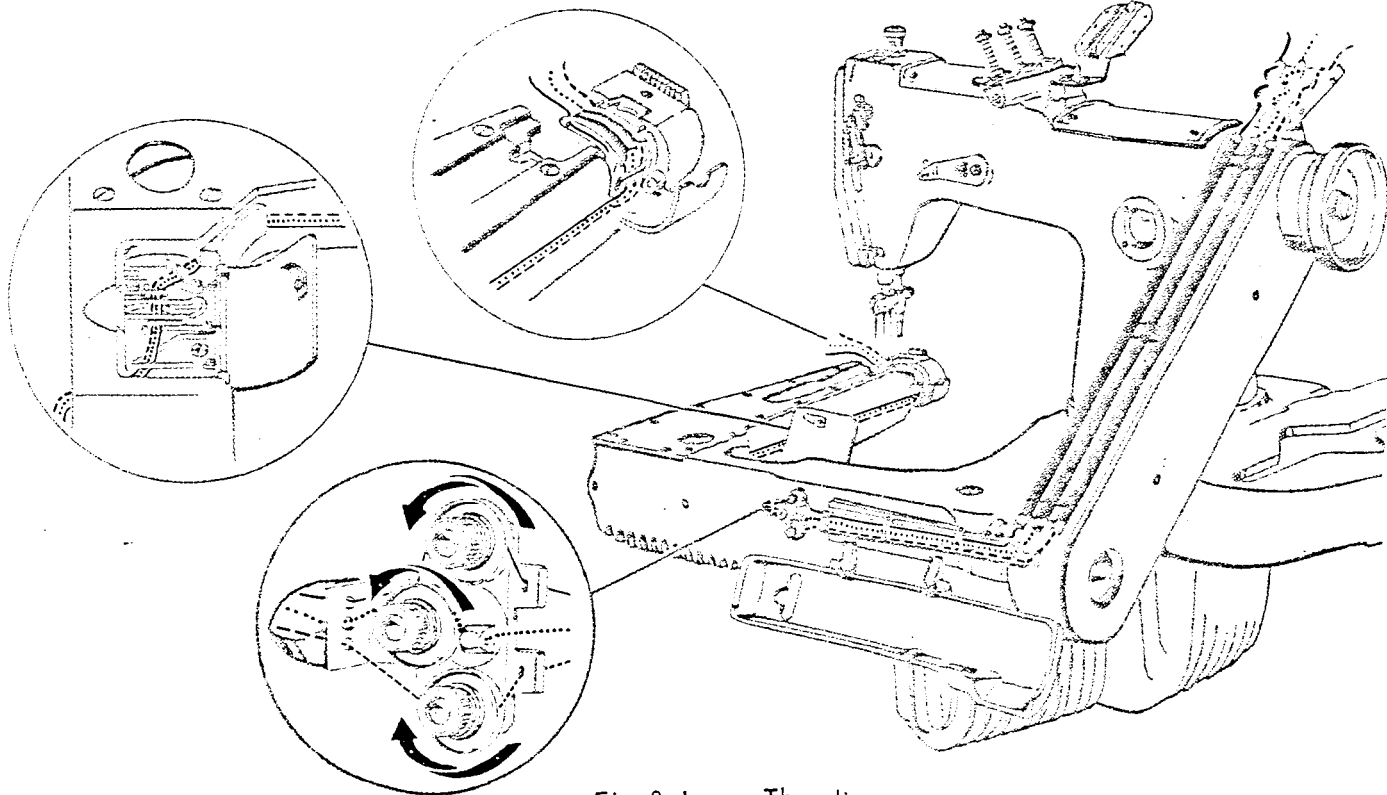


Fig. 8. Lower Threading



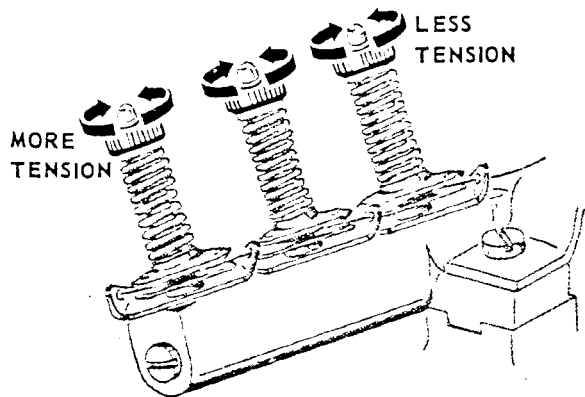


Fig. 9. Needle Thread Tension

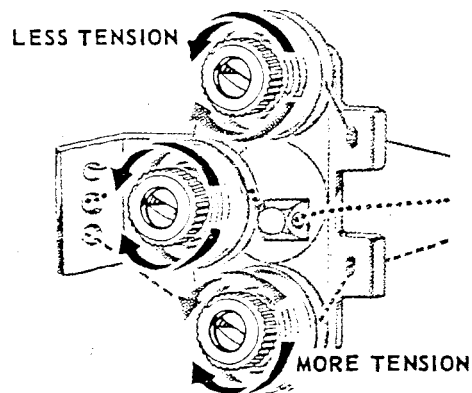


Fig. 10. Looper Thread Tension

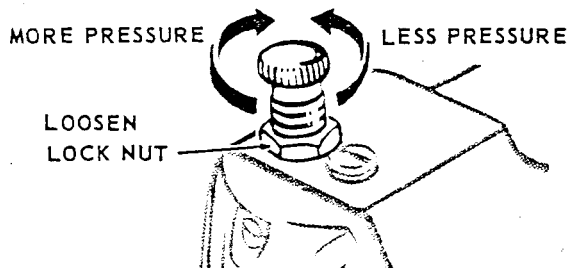


Fig. 11. Presser Foot Pressure

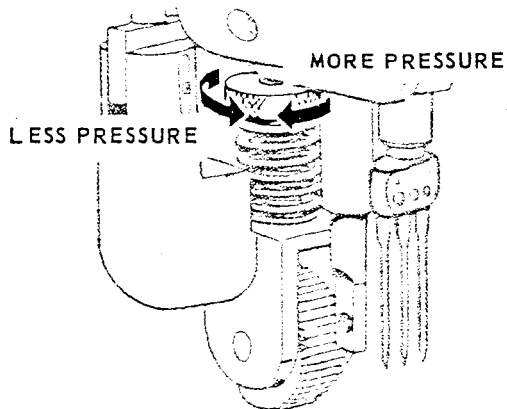


Fig. 12. Feed Roll Pressure

## TENSION

Tension on thread should be as light as possible while still sufficient to set the stitch correctly in material.

### Needle Thread Tension

To regulate needle thread tension, turn thumb screw shown in Fig. 9 as may be required.

**IMPORTANT:** Regulate needle thread tension only when presser foot is down.

### Looper thread tension

To regulate looper thread tension, open front cover plate and turn thumb screws shown in Fig. 10 as may be required.

## PRESSURE

Pressure on material should be as light as possible while still sufficient to insure correct feeding.

### Presser Foot Pressure

To regulate presser foot pressure, loosen lock nut on top of machine head and turn thumb screw shown in Fig. 11 as may be required.

### Feed Roll Pressure - Machines 261-20, 261-32

To regulate feed roll pressure, turn thumb nut shown in Fig. 12 as may be required.

## STITCH LENGTH

To adjust the stitch length, remove the screw cap from front end of cylinder arm cover, as shown in Fig. 13.

Turn machine pulley until lock screw, shown in Fig. 13 is directly beneath hole. Loosen lock screw.

Turn regulating screw which projects beyond body of eccentric clockwise (inward) for shorter stitch or counterclockwise (outward) for longer stitch.

Tighten lock screw and replace screw cap when desired stitch length is obtained.

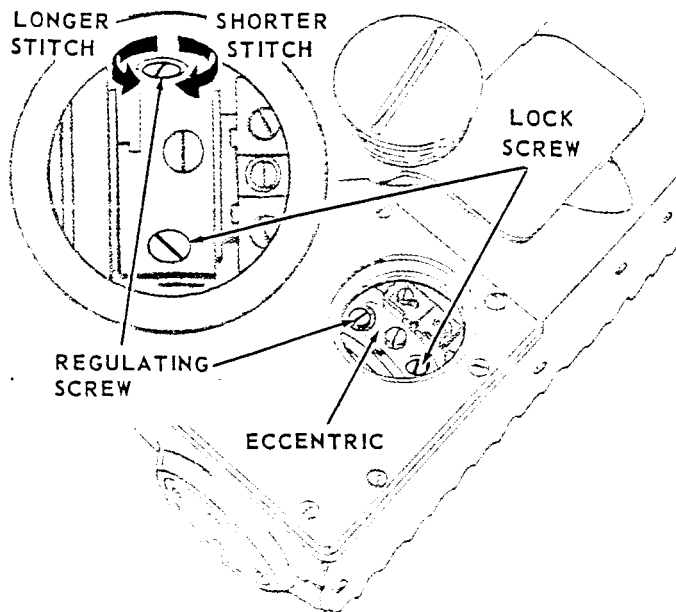


Fig. 13. Adjusting the Stitch Length

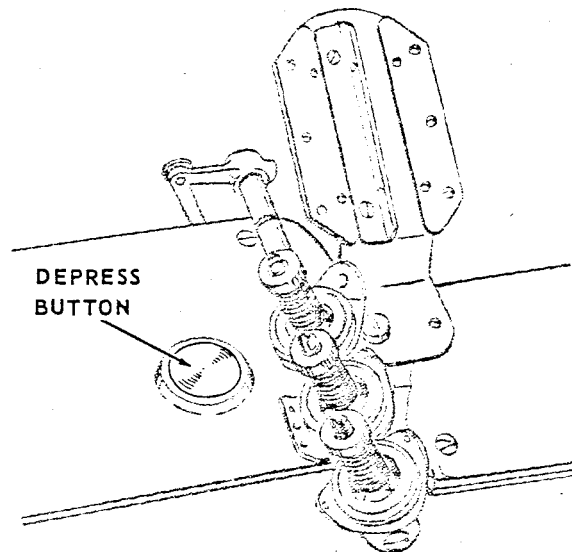


Fig. 14. Adjusting the Feed Roll

#### Feed Roll Stitch Length - Machines 261-20, 261-32

Feed Roll on machines 261-20 and 261-32 should be adjusted to conform to changes in stitch length in order to prevent undesired stretching or gathering of material.

Depress button located on top of machine arm, Fig. 14, and turn machine pulley until button clicks into notch on feed eccentric body.

Continue turning machine pulley with button depressed to adjust feed roll to correct stitch length.

Release button and check adjustment by placing material to be sewn under presser foot and feed roll and turning machine pulley to determine whether or not desired stitch length has been obtained.

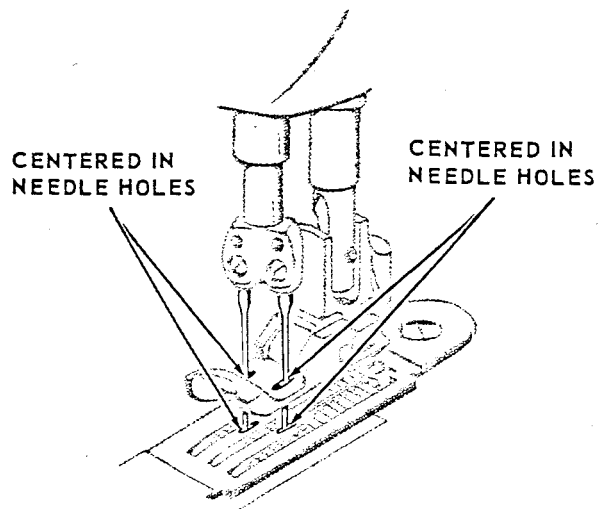


Fig. 15. Centralizing the Needles

#### **CENTRALIZING THE NEEDLES**

When needles pass through needle holes in throat plate and presser foot, each needle should be centered sidewise in its needle hole, as shown in Fig. 15.

To adjust, loosen needle bar clamping screw shown in Fig. 16 and turn needle bar as required to center needles in needle holes.

NOTE: If one or more needles cannot be centered in this manner, check needle bar, needle clamp, needles, presser foot and throat plate for wear, damage and need for replacement.

Then tighten clamping screw.

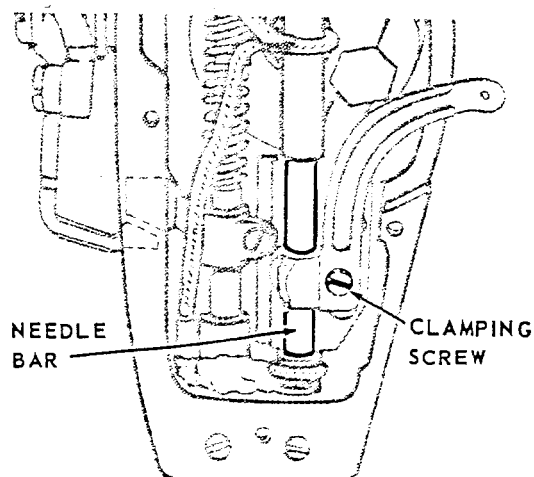


Fig. 16. Loosening the Clamping screw

## SETTING THE LOOPER HOLDER BUSHING ECCENTRIC

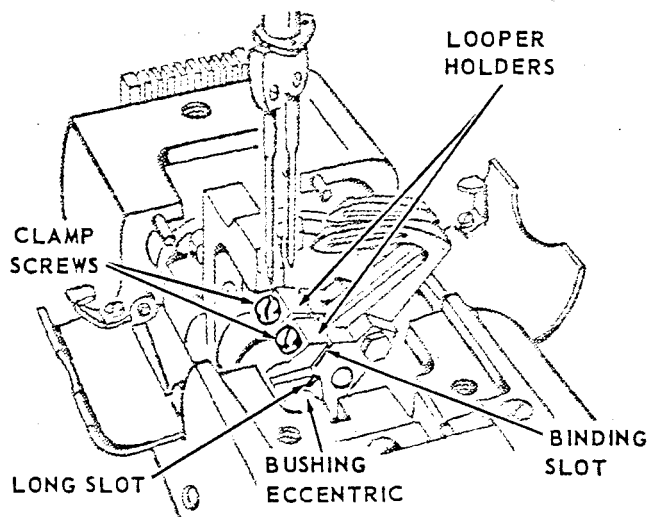


Fig. 17. Setting Looper Holder Bushing Eccentric

Long slot in bushing eccentric should be in line with binding slot in looper holders, as shown in Fig. 17. Eccentric will then be at its highest position.

To adjust, loosen clamp screws shown in Fig. 17 and move eccentric as required. Then tighten clamp screws.

NOTE: To increase capacity of machine, bushing eccentric can be turned thereby raising the looper. Caution must be taken not to raise looper too high causing interference with feed dog and throat plate. After raising the looper, the needle bar must also be raised to obtain the needle eye to looper eye position (see Timing Needle and Looper Movements, Page 11).

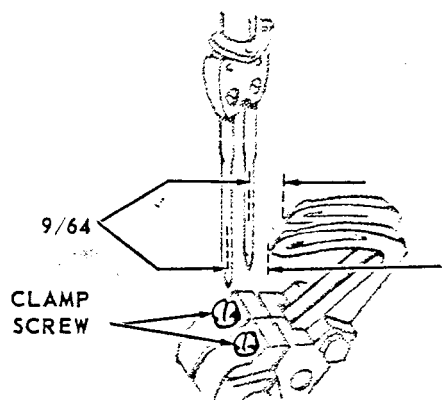


Fig. 18. Setting the Looper at Correct Distance

## SETTING THE LOOPERS AT CORRECT DISTANCE FROM NEEDLES

When needles are at their lowest position, loopers should be at start of forward stroke. At this point, distance between center of needle and point of its corresponding looper should be  $9/64$  inch, as shown in Fig. 18.

To adjust, loosen looper holder clamp screws shown in Fig. 18. Move looper holders to left or right as required to position points of loopers  $9/64$  inch from center of needles. Then tighten clamp screws.

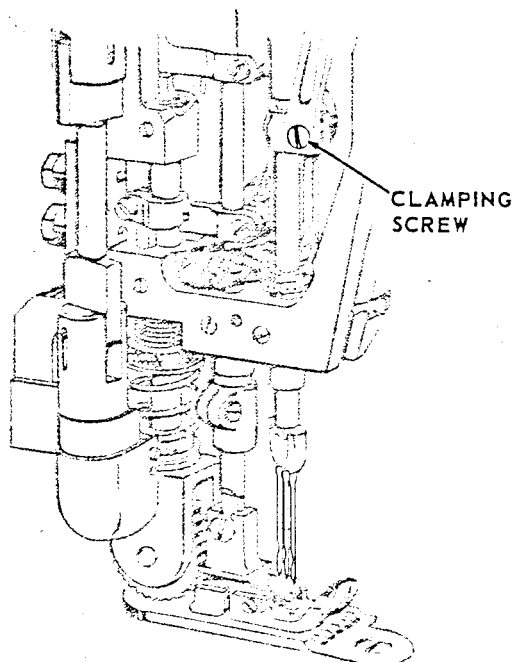


Fig. 19. Loosening the Clamping Screw

## SETTING THE NEEDLE BAR AT CORRECT HEIGHT

Turn machine pulley over toward operator until needle is at highest point. Remove face plate and loosen needle bar clamping screw shown in Fig. 16. (See Fig. 19, for Machines 261-20 and 261-32.)

Position point of needle approximately  $5/16$  inch from top surface of throat plate and tighten clamping screw.

NOTE: This is a preliminary setting. When needle bar height is correctly set, eyes of needles and loopers should meet eye to eye on BOTH forward and return strokes of looper. If this relationship does not exist, adjust as instructed below.

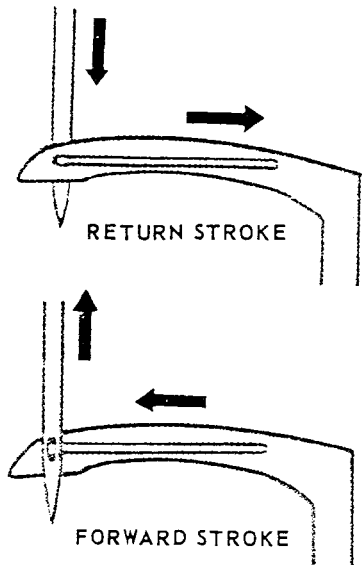
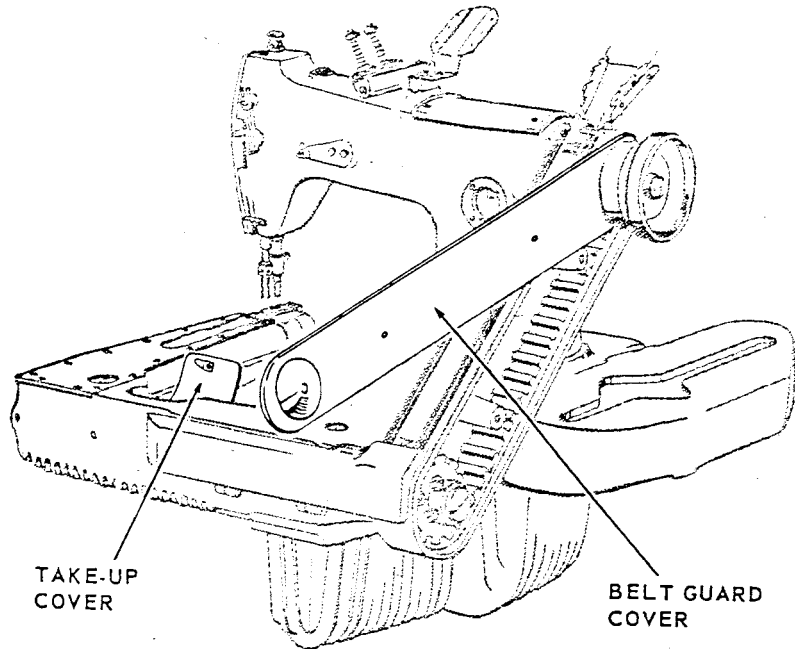


Fig. 20. Aligning Needles and Loopers



### TIMING THE NEEDLE AND LOOPER MOVEMENTS

Remove throat plate and turn machine pulley over toward operator until needle bar reaches its lowest point and begins to rise on FORWARD stroke of looper. Continue turning pulley until center of looper eyes are at center of needles, as shown in Fig. 20.

At this point, needle eyes should center with looper eyes, eye to eye. If looper eyes do not center with needle eyes at this point, loopers are out of time.

To time loopers, raise belt guard cover and raise cover on looper thread take-up.

Loosen two sprocket set screws and cap screw shown in Fig. 21.

Rotate looper thread take-up, Fig. 22 TOWARD operator to ADVANCE or AWAY from operator to RETARD looper movement until needle eyes and looper eyes are centered.

Tighten sprocket set screw just enough to hold sprocket in place and turn machine pulley to determine whether or not needle eyes and looper eyes cross centers on RETURN stroke of looper.

If machine fails this test, lower needle bar 1/2 the distance from bottom of needle eye to top of corresponding looper eye and repeat entire timing operation until CORRECT timing is obtained.

Tighten two sprocket set screws and cap screw. Replace throat plate, face plate and belt guard cover.

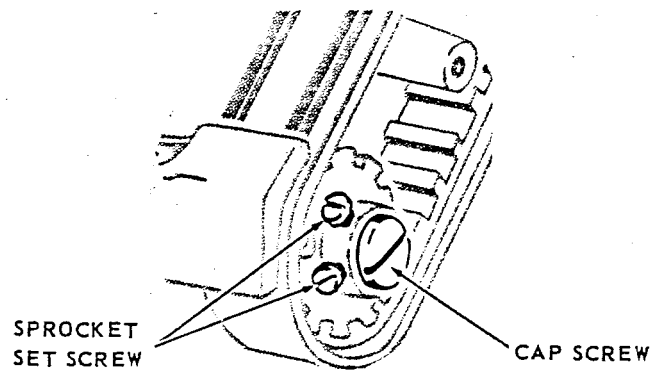


Fig. 21. Timing the Needle Movement

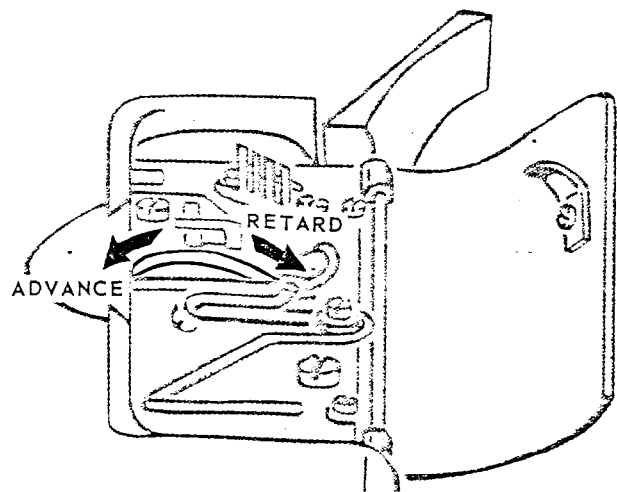
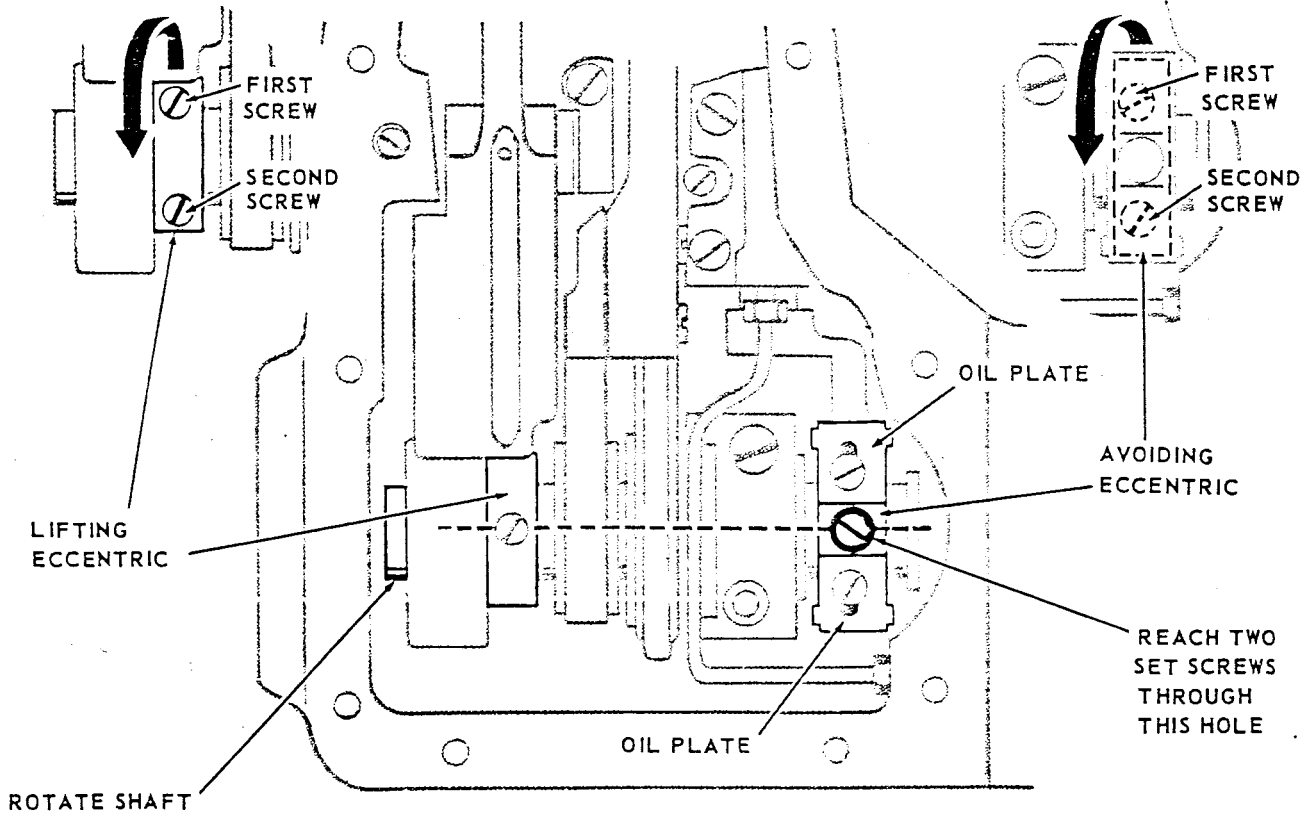


Fig. 22. Looper Thread Take-up

## TIMING THE LOOPER AVOIDING MOTION



**Fig. 23. Timing the Avoiding Motion**

That part of the looper motion in which the looper passes on the opposite sides of the needle on the forward and return strokes of the looper is called looper avoiding motion.

Looper avoiding motion is produced by avoiding eccentric located at right of feed eccentric on lower arm shaft, as shown in Fig. 23.

To time the avoiding motion, open looper covers and remove front cylinder arm cover.

Displace the two oil cover plates to expose hole in avoiding eccentric, as shown in Fig. 23.

Turn machine pulley over toward operator until the first of the two set screws IN THE AVOIDING ECCENTRIC, Fig. 23, appears. Loosen this screw approximately 1/4 turn leaving it loose but still below surface of eccentric.

Bring the second set screw beneath the hole and loosen it in the same manner. LEAVE SCREWDRIVER IN SLOT thereby holding eccentric in place while turning shaft (turning the machine pulley) to obtain the following adjustments.

1. Make certain loopers move BEHIND needles on FORWARD LOOPER STROKE and IN FRONT OF needles on RETURN LOOPER STROKE (See Fig. 20) by rotating shaft to align second screw in avoiding eccentric with second screw in lifting eccentric (See insets shown in Fig. 23.) First screw in avoiding eccentric, when visible through hole should line up with first screw in lifting eccentric.
2. Vary looper avoiding adjustment described above according to size of needle in use to provide approximately .003 inch clearance between the looper and the needle on both the forward and return strokes of the looper.

When correct adjustment has been obtained, CAREFULLY tighten both set screws securely to maintain correct adjustment. Then return oil cover plates to their former position and replace cylinder arm cover. Close looper covers.

NOTE: Make certain that loopers are 9/64 inch from needles when needles are at their lowest position, as instructed on Page 10.

## TIMING THE LOOPER TAKE-UP

Straight edge on looper thread take-up, Fig. 24, must contact looper threads just as loopers are starting their return (loop-shedding) stroke. Take-up may be advanced to take up more thread or retarded to take up less thread so that loopers, on their forward stroke, will just draw thread taut or pull a small amount of thread through the tension discs.

Open looper take-up cover, loosen guide screw and move guide away from adjusting hole, as shown in Fig. 24. Rotate machine pulley to make set screws in hub of take-up accessible through adjusting hole.

Loosen these set screws and turn take-up on shaft so that take-up contacts thread as loopers start their return stroke.

Securely tighten the two set screws, replace guide and tighten guide screw. Close looper take-up cover.

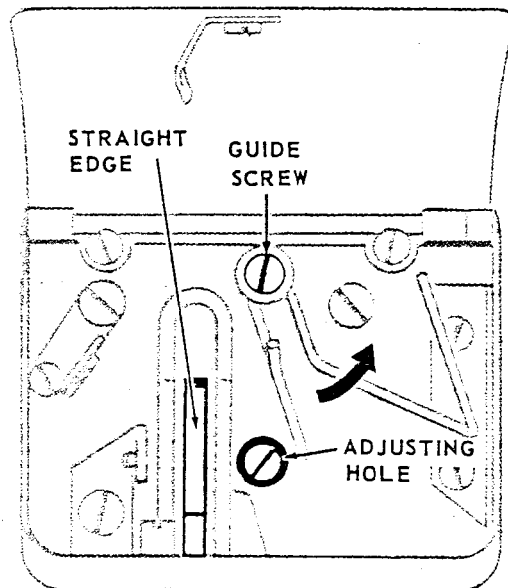


Fig. 24. Timing the Looper Take-up

## SETTING THE FEED DOG AT CORRECT HEIGHT

When feed dog is at its highest point, the full depth of the rear teeth should project above the throat plate, as shown in Fig. 25.

Feed dog may be raised or lowered by removing the screw plug at side of cylinder arm, Fig. 26, and turning hinge pin to correctly position the feed dog. This pin need not be locked as it is held in place by pressure of a set screw and lock nut device inside cylinder arm.

After positioning feed dog, replace screw plug.

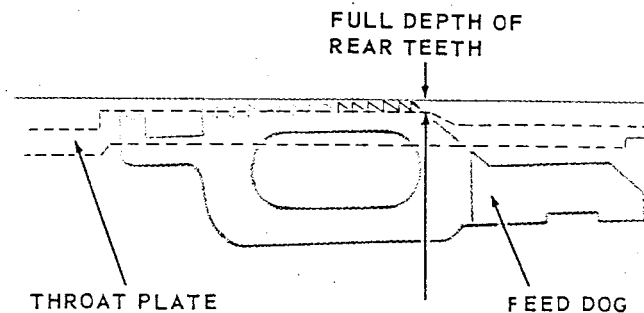


Fig. 25. Feed Dog at Correct Height

## REMOVING THE THREAD CUTTER FOR HONING

Remove the two thread cutter screws located at the end of the cylinder arm, as shown in Fig. 26. Remove cutter and holder.

After honing, replace cutter holder and two thread cutter screws.

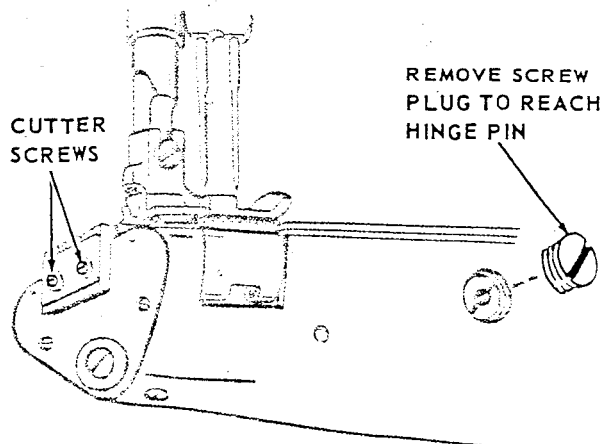


Fig. 26. Setting the Feed Dog and Removing Thread Cutter

## TIMING THE FEED

When feeding movement is correctly timed, feed dog should drop below throat plate before needles enter material and rise from below throat plate after needles have risen out of material.

Variations of this setting may be required to suit material and operation being performed.

Feeding movement is correctly timed for average sewing conditions by setting up the following alignment.

Turn machine pulley over toward operator until the first of two set screws on lifting eccentric is on top, as shown in Fig. 27. At this setting, first set screw on feed eccentric should be just visible at rear side of feed eccentric as shown in Fig. 27.

To adjust, loosen the two set screws in feed eccentric shown in Fig. 28. Rotate eccentric toward front of machine for earlier feeding or toward rear of machine for later feeding. Tight two set screws.

### Feed Roll Timing - Machines 261-20, 261-32

Feed roll on Machines 261-20 and 261-32 should be timed so that its movement coincides with movement of feed dog.

Remove the tension bracket and arm top cover from machine.

Loosen the three eccentric screws shown in Fig. 29 and turn eccentric over toward front of machine to start movement of feed roll sooner, or toward rear of machine to start movement of feed roll later.

Tighten one set screw and check timing. Re-set, if necessary. Then tighten the three eccentric screws and replace arm top cover and tension bracket.

### SETTING THE PRESSER BAR AT CORRECT HEIGHT

Test presser bar for smooth uniform motion. Accumulation of lint, oil and dirt may prevent proper seating of presser foot. Clean this area before checking and setting the presser bar.

When presser bar is correctly set, the following conditions should exist.

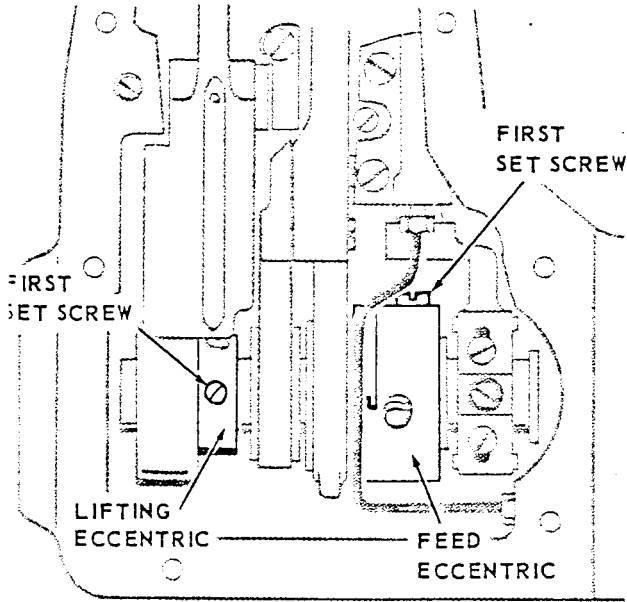


Fig. 27. Aligning the Feed Eccentric

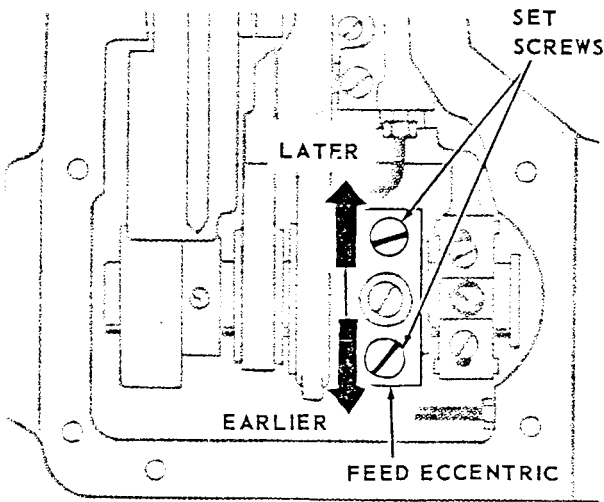


Fig. 28. Timing the Feed

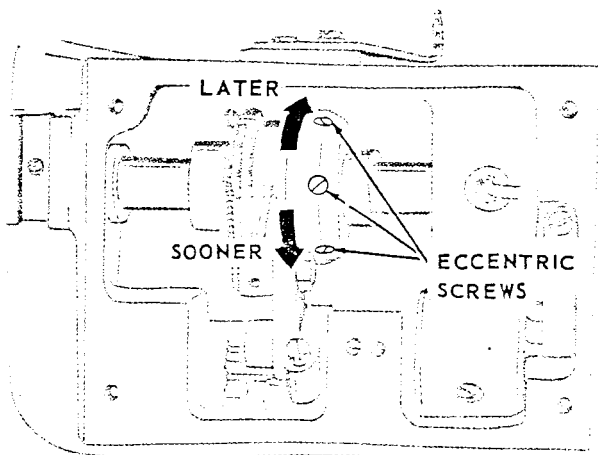


Fig. 29. Timing the Feed Roll

1. Presser foot should rise above throat plate ---  
 1/4 inch on Machine 261-1,  
 9/32 inch on Machine 261-2,  
 5/16 inch on Machines 261-3, 261-20, 261-31 and  
 261-32.
2. Presser bar lifter and lifting bracket should have  
 a slight clearance between them, as shown in  
 Figs. 30 and Fig. 31.
3. Presser foot should not come in contact with  
 needle clamp at any time.

To adjust, loosen clamp screw in lifting bracket  
 and clamp screw in presser bar stop, as shown in  
 Fig. 30, for all machines except Machines 261-20 and  
 261-32. See Fig. 31 for these machines.

Raise or lower presser bar as may be required to  
 obtain the correct height (See 1 & 2 above). Tighten  
 clamp screw in lifting bracket.

Raise or lower presser bar stop to prevent presser  
 foot from contacting needle clamp when presser bar  
 is raised and needle bar is at its lowest position. Then  
 tighten clamp screw in presser bar stop.

#### Feed Roll Height - Machines 261-20, 261-32

Place four thicknesses of average weight writing  
 paper (measuring .010 inch to .016 inch) under the  
 feed roll but not under the presser foot. Allow  
 feed roll to rest on paper.

Loosen feed roll clamp screw and collar clamp  
 screw, shown in Fig. 31. Press collar down to  
 rest on top of the lower bushing and tighten  
 clamp screw.

Position feed roll lifting bracket to allow  
 approximately 1/16 inch clearance between the  
 bracket and the collar as shown. Tighten  
 feed roll clamp screw.

### SETTING THE NEEDLE THREAD EYELET

Needle thread eyelet, Fig. 32, should be set so  
 that needle threads will not be so taut that they  
 break when loopers are shedding needle thread  
 loops on their backward stroke.

To adjust, loosen the two screws shown in  
 Fig. 32 and set needle thread eyelet so that  
 loopers back out of needle thread loops with  
 just a slight amount of tension on needle  
 threads. Then securely tighten two screws.

NOTE: When setting the needle thread eyelet,  
 it is best to start with eyelet in a low (zero  
 tension) position, gradually raising eyelet  
 until desired results are obtained.

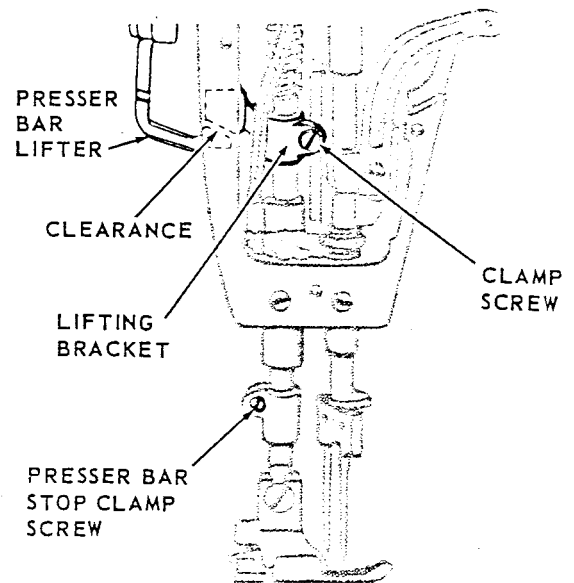


Fig. 30. Setting the Presser Bar

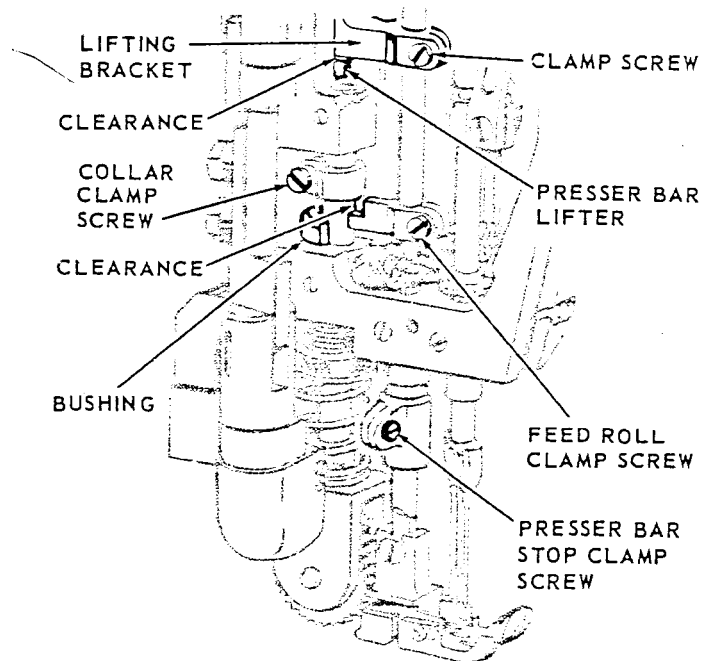


Fig. 31. Setting the Presser Bar Machine 261-20, 261-32.

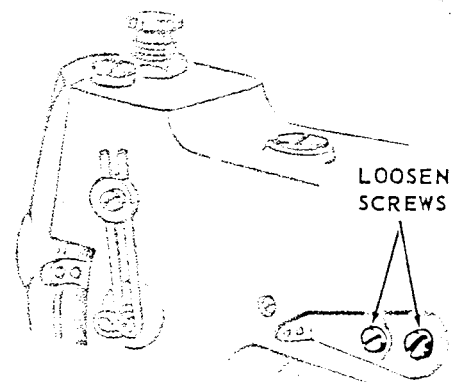


Fig. 32. Setting Needle Thread Eyelet



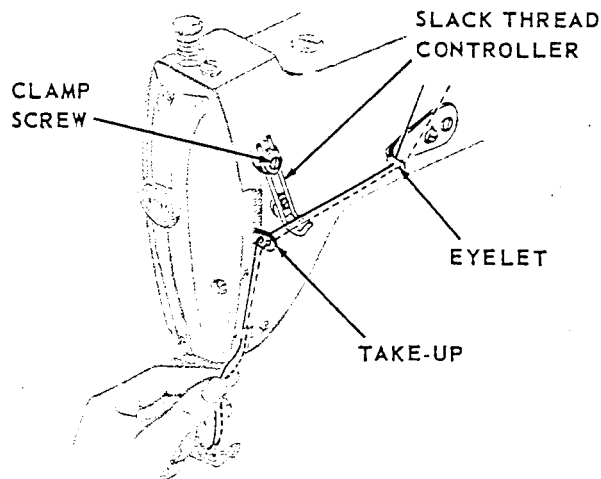


Fig. 33. Adjusting Slack-Thread Controller

### ADJUSTING THE SLACK-THREAD CONTROLLER

Slack thread controller, Fig. 33, should be set high enough to take up slack of needle threads after loopers have shed the needle thread loops and as needle bar finishes its downward stroke.

To adjust, loosen clamp screw holding controller to machine head.

Grasp needle threads, as shown in Fig. 33, pulling them taut. Threads should just barely contact slack thread controller and each thread should form a straight line from needle thread eyelet to needle thread take-up as shown.

Raise or lower controller as required and securely tighten its clamp screw.

NOTE: Variations in this setting may be required to suit differences in thread finish, twist, elasticity, etc.

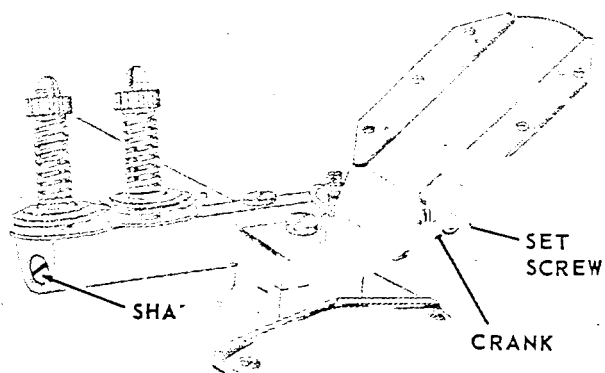


Fig. 34. Adjusting the Tension Releaser

### ADJUSTING THE NEEDLE THREAD TENSION RELEASER

Tension releaser must release tension on needle threads when presser foot is raised but must not release tension when presser foot is lowered.

To adjust, loosen set screw in tension releasing crank, shown in Fig. 34, and turn shaft in front of tension assembly as required to obtain the correct setting.

Securely tighten set screw.

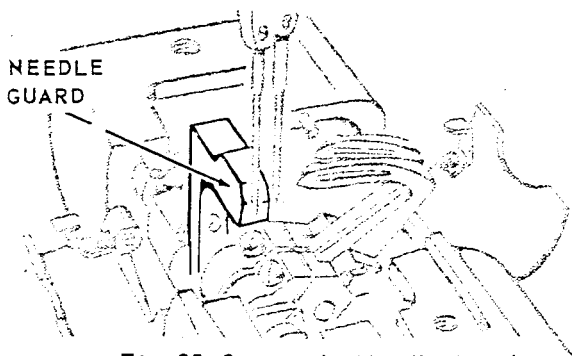


Fig. 35. Setting the Needle Guard

### SETTING THE STATIONARY NEEDLE GUARD

Function of the stationary needle guard, Fig. 35, is to prevent needles from being sprung into path of loopers when loopers are on forward stroke. Needle guard should be set as close as possible to needles without touching.

To adjust, loosen bushing set screw shown in Fig. 36 and move bushing in or out as may be required to position needle guard. Then tighten bushing set screw.

To adjust the height of needle guard, loosen clamp screw in center of needle guard bushing, Fig. 36. Raise or lower needle guard as required and tighten clamp screw.

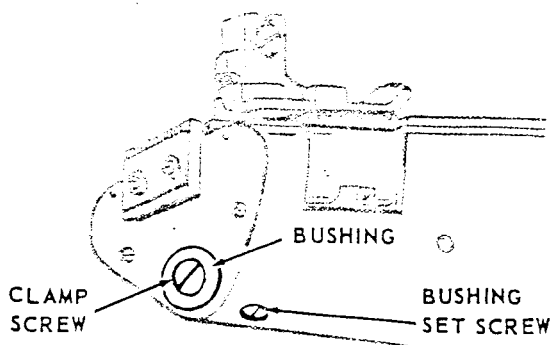


Fig. 36. Setting the Needle Guard