# SINGER
## 107G201

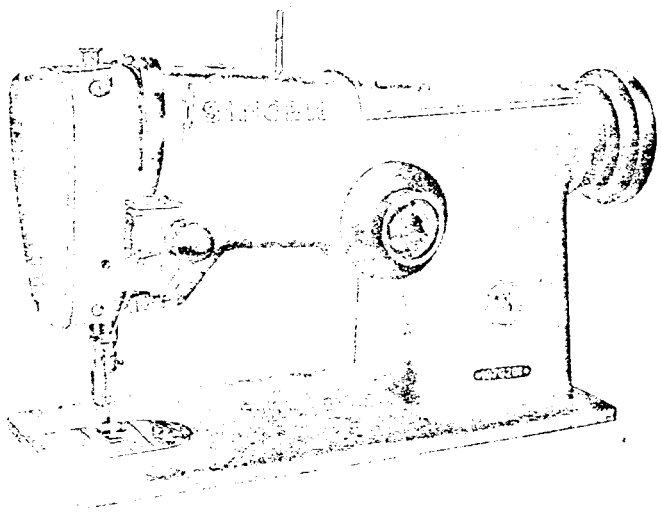
30310

# SERVICE MANUAL

for

# SINGER*

## SEWING MACHINES



107 G 201

THE SINGER COMPANY

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## DESCRIPTION

**The 107 G 201** Machine is a single needle, drop feed, short arm, flat bed, lock stitch, zig-zag sewing machine for stitching light and medium weight fabrics.

The machine specifications are as follows:

1. Needle Bar Stroke 1-5/16 inch = 33.40 mm
   Presser Bar Lift 9/32 inch = 7.15 mm
   Maximum Throw of Needle Bar 7/32 inch = 5.6 mm
   Maximum Length of Stitch 7 stitches per inch = 3.63 mm per stitch
   Bed 15-3/8 inches long, 7 inches wide = 390.53 mm long, 177.8 mm wide
   Space at right of Needle 8 inches = 203.2 mm
   Machine Pulley (Safety Type) for 3/8 inch V-Belt = 9.50 mm
   Outside diameter of belt groove 2.9 inches = 73.65 mm
   Effective diameter for 5/16 inch round leather belt (7.93 mm) 2-2/3 inches = 60.30 mm

2. The bight up to 7/32 inch = 5.6 mm is obtained by an eccentric and transmitted to the needle bar frame. The bight amplitude can be changed during sewing by turning the plastic regulating knob in directions "+" and "—" respectively.

3. The stitch length (forward feed only) is regulated by turning the adjusting knob at the machine pulley in directions "+" and "—" respectively, with the machine out of operation.

4. Transverse, horizontal axis hook, allows a lock stitch and zig-zag seam without half hitched stitches.

5. Sleeve take-up which controls the thread at all times to meet the exact requirements of the hook.

6. Two removable arm covers, at the top and in front of the arm provide accessibility to all parts in the arm.

7. The arm is provided with a tapped hole in the rear of the head end for mounting the Singer light.

8. Disc tension is used in connection with a concentric tension release device.

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## SPEED

The maximum speed recommended for machine 107 G 201 is 2.500 R.P.M. The machine should be run slower than the maximum speed at first until the parts which are in movable contact have become glazed by their action upon each other.

**CAUTION: The machine pulley must always turn over toward the operator when the machine is in operation.**

## SETTING UP (Figure 1)

Before the machine is placed in the table top, the drip pan should be attached in the table top cutout by means of four nails in such manner, that a connection between the knee lifting lever lifting rod roller bracket and the knee rock lever is possible.

The knee lifter bracket is assembled as shown in Fig. 1.

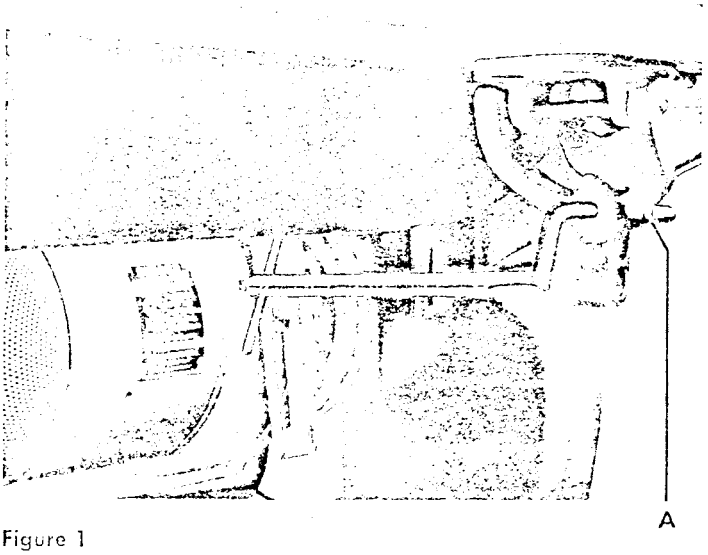


Figure 1

Position the knee lifter bracket as shown in Fig. 1. Assemble it so that the lifter rod does not strike the drip pan. Slots in the bracket provide necessary adjustment.

Set the stop-stud "A", Fig. 1, in such a manner that the action of the knee lifter is stopped, as soon as the presser foot is raised high enough to trip the hand lever.

**CAUTION: The machine should not be put in operation, even for a trial, unless all the instructions for the lubrication of the machine are observed.**

## LUBRICATION (Figures 2, 3, 4 and 5)

For the lubrication of the machine, only Singer Oil "Type B or D", supplied by The Singer Company, should be used.

In order to insure proper function of the machine and to prevent any excess wear of the moving parts and bearings it should be oiled regularly.

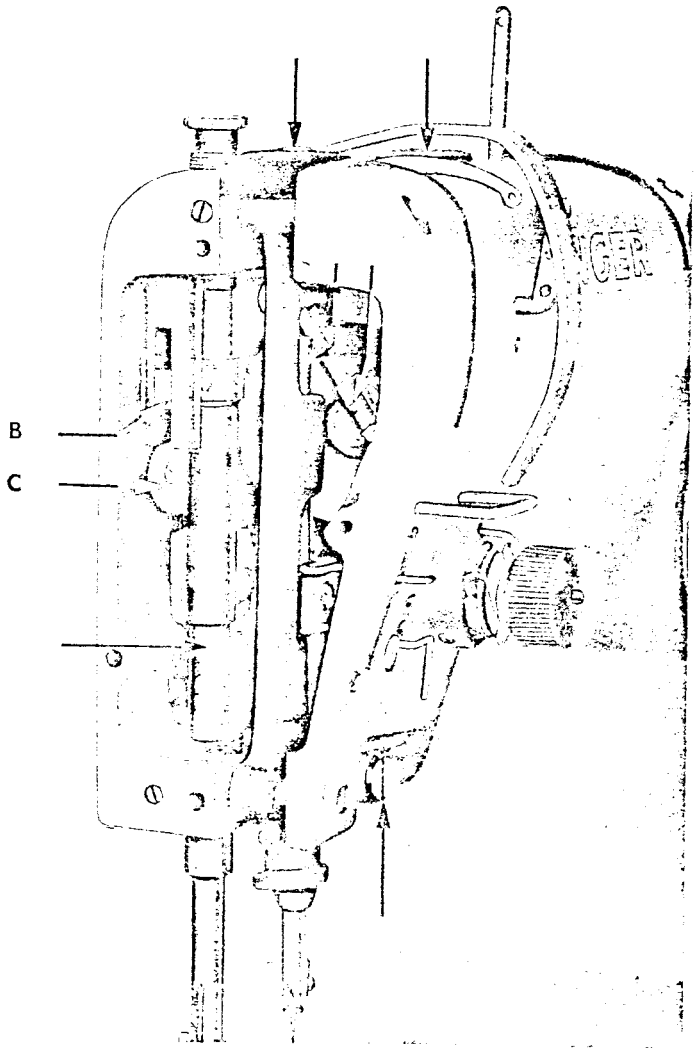


Figure 2

In case of continuous use, it should be oiled even more often if it is used to produce long seams and run steadily. All the arrows marked "B" and "C", as well as the unmarked arrows in Fig. 2, 3, 4 and 5 are lubrication points.

Remove the face plate as shown in Fig. 2, and oil all the bearings which are thus uncovered, then replace the face plate.

After its four fastening screws have been taken out, the arm cover (see Fig. 3) is removed, then all bearings and other oiling points thus uncovered are oiled. After this is done, replace the cover and tighten it down with the four screws.

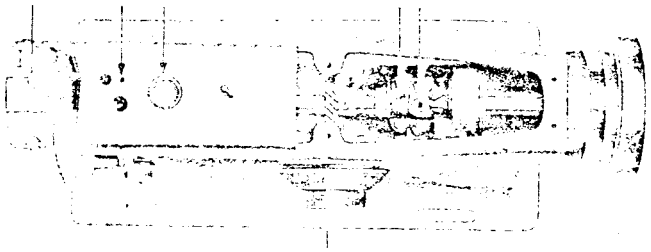

Figure 3



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Fig. 4 shows the back of the machine with the various lubrication points (indicated by arrows).

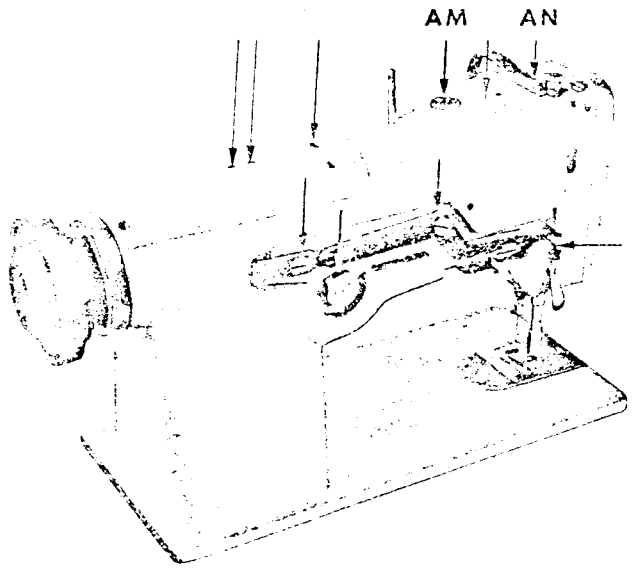


Figure 4

Prior to oiling the arm shaft bushing and the needle bar frame, remove the arm shaft bushing (front) oil packing plug "AM", Fig. 4 and the needle bar frame cap "AN", Fig. 4.

After oiling, the two plugs mentioned above, must be replaced again.

Fig. 5 shows the underside of the 107 G 201 machine with the various lubrication points.

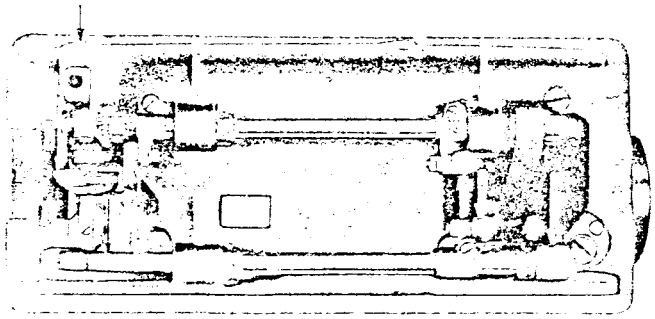

Figure 5

Remove the belt and tilt the machine back on its hinges and apply oil at the places where there are parts in movable contact, then tilt the machine forward into place.

Occasionally oil the bobbin case bearing in the bobbin case race.

## NEEDLES

The needles recommended for this machine are SINGER* NEEDLES, Catalog 1901, chromium finish.

The size of the needle to be used should be determined by the size of the thread which must pass freely through the eye of the needle. Rough or uneven thread or thread which passes with difficulty through the eye of the needle will interfere with the successful operation of the machine.

Orders for needles must specify the quantity required, the catalog number, the size number an the finish.

Example: 100 – 1901 – 12 – 1
100 Needles
1901 Cat. No.
12 Size
1 Chromium Finish

Singer Needles and packets are stamped with the trademark "SINGER".

## THREAD (Figure 6)

Left twist thread should be used in the needle. Either right or left twist can be used in the bobbin.

To determine the thread twist, hold the thread as shown in Fig. 6. Turn the thread toward the operator between the thumb and forefinger of the right hand. If left twist, the strands will wind together; if right twist, the strands will unwind.

Based on past experience the sizes of the needles and threads recommended are as follows:

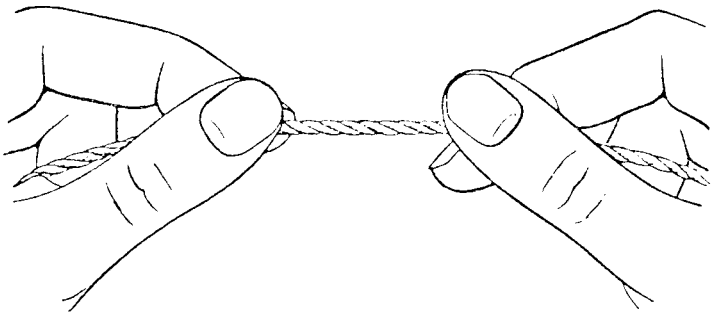

Figure 6

| Needle Size | Cotton | Silk |
|---|---|---|
| 10 | 90 – 150 | 000 – 00 |
| 12 | 70 – 90 | 00 – 0 |
| 14 | 60 – 70 | 0 – A |
| 16 | 40 – 60 | A – B |
| 18 | 30 – 40 | B – C |
| 20 | 24 – 30 | C – E |

## TO REMOVE THE BOBBIN CASE CAP (Figure 7)

First, turn the machine pulley toward the operator until the needle is at its highest point.

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Figure 7

After the bed slide has been opened reach under the table, open the bobbin case latch **"H"**, Fig. 7, and remove the bobbin case cap from the hook by means of this latch. While the latch remains open, the bobbin will be retained in the bobbin case cap.

Release the latch and the bobbin will drop out.

## TO WIND THE BOBBIN (Figure 8)

Fasten the bobbin winder to the table with its driving pulley in front of the machine belt so that the pulley will be released when sufficient thread has been wound upon the bobbin.

Place the bobbin on the bobbin winder spindle and push it on as far as it will go.

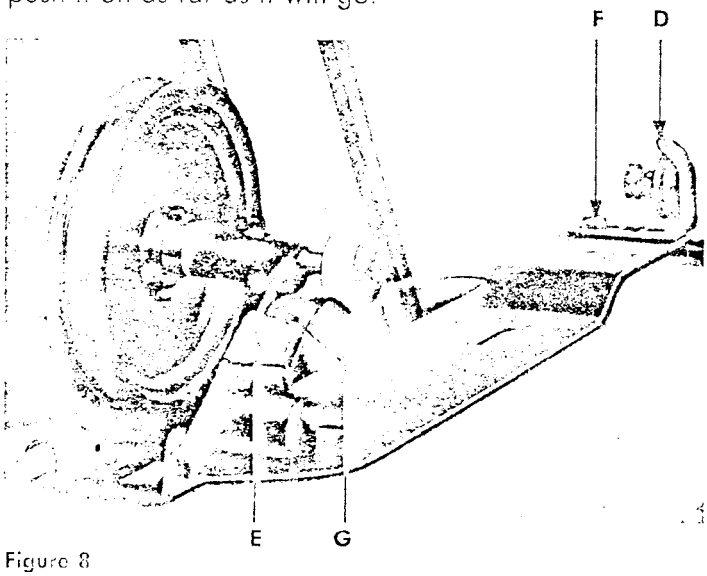


Figure 8

Next pass the thread through the thread guide in the tension bracket **"D"**, Fig. 8, and around the tension discs to the bobbin. Then wind the end of the thread around the bobbin a few times. Press down lever **"E"**, Fig. 8, to push the bobbin winder pulley against the machine belt and start the machine. When sufficient thread has been wound upon the bobbin, the bobbin winder will stop automatically. If the thread does not wind evenly on the bobbin, loosen the screw **"F"**, Fig. 8, at the tension bracket and move same to the right or left as required. Then retighten the screw **"F"**, Fig. 8.

The amount of thread wound on the bobbin is regulated by the screw **"G"**, Fig. 8. To wind more thread on the bobbin, turn the screw to the right; for less thread turn the screw to the left.

Bobbins can be wound while the machine is in operation.

**CAUTION: Synthetic threads should be wound with the smallest tension possible.**

## TO THREAD THE BOBBIN CASE (Figures 9, 10 and 11)

Hold the bobbin between the thumb and forefinger of the right hand, the thread drawing on top from the right towards the left.

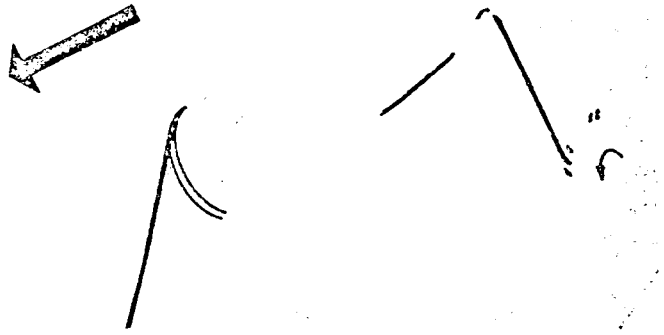

Figure 9

Figure 10

With the left hand hold the bobbin case open side up, the tension spring being at the front (see Fig. 9), and place the bobbin into it.

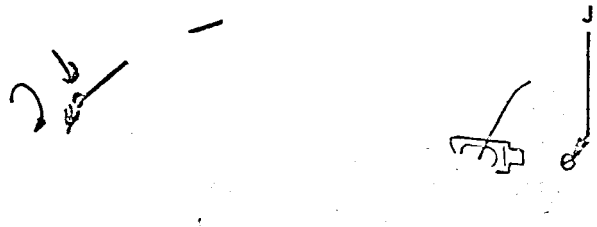


Figure 11

Figure 12

Then pull the thread towards the left into the slot in the edge of the bobbin case (see Fig. 10), draw the thread under the tension spring and into the second slot in the edge of the bobbin case; then pull the thread between the bobbin and bobbin case and into the third slot, in the edge of the bobbin case, then into the delivery eye, as shown in Fig. 11.

## TO REPLACE THE BOBBIN CASE (Figure 12)

After threading take the bobbin case by the latch and place it on the center stud of the bobbin case base holder. Release the latch, press the bobbin case until



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the latch engages in the groove near the end of the stud. Allow about 2 inches = 50.8 mm of thread to hang free and close the bed slide.

Fig. 12 shows how to hold the bobbin case cap after threading it, before it is placed into the hook.

## TO SET THE NEEDLE

Turn the machine pulley toward the operator until the needle bar reaches its highest point. Loosen the needle set screw at the lower end of the needle bar and push the needle into the bar to the needle stop with the long groove and the eye facing the operator. Then securely tighten the needle set screw.

## UPPER THREADING (Figures 13, 14 and 15)

Turn the machine pulley over toward you until the needle bar is at its highest position.

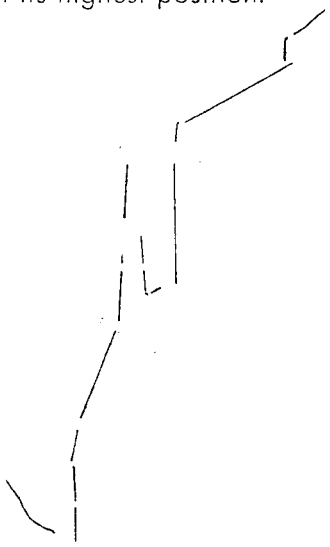

Figure 13

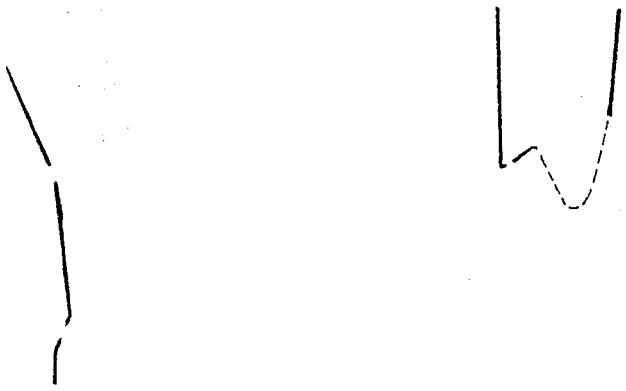

Figure 14

Figure 15

Lead the thread from the spool through the various guides, the tension take-up lever and down through the eye of the needle straight from you toward the presser bar.

As the thread is passed around between the tension discs draw it up and to the right until it passes into the fork above the thread controller.

## TO PREPARE FOR SEWING

With the left hand hold the slack end of the thread loosely and turn the machine pulley toward the operator until the needle moves down and up again to its highest point thus catching the bobbin thread. Then draw up the needle thread and the bobbin thread will come with it. Lay both threads back under the presser foot.

## TO REGULATE THE TENSIONS (Figures 12, 15, 16, 17 and 18)

The regulation of the needle and bobbin thread tensions is dependent on the material to be used.

The tension on the needle thread should be regulated only when the presser foot is down and the thread tension not released. The tension is regulated by means of the tension thumb nut "K", Fig. 21.

The tension on the bobbin thread is regulated by means of the small regulating screw "J", Fig. 12, in the bobbin case cap tension spring. To increase the tension, turn the screw to the right. To decrease the tension, turn the screw to the left. At the standard setting (= for normal sewing) the bobbin thread should just carry the weight of the bobbin case cap with the inserted bobbin.

The needle and bobbin threads should be locked in the center of the thickness of the material, Fig. 16, when the tensions are correctly regulated.

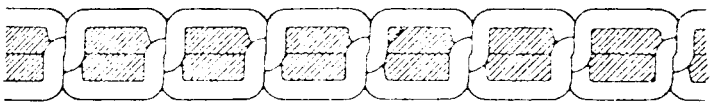

Figure 16

If the tension on the needle thread is too tight, or if that on the bobbin thread is too loose, the needle thread will lie straight along the upper surface of the material, Fig. 17.

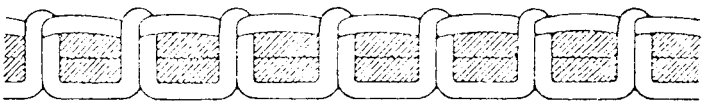

Figure 17

If the tension on the bobbin thread is too tight, or if that on the needle thread is too loose, the bobbin thread will lie straight along the underside of the material, Fig. 18.

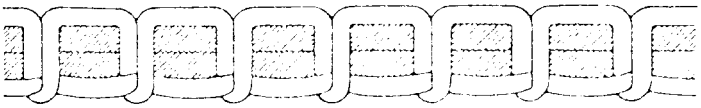

Figure 18

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## TO SET THE WIDTH OF THE BIGHT (Figure 19)

The width of the zigzag stitch can be set while the machine is in operation.

The bight, up to 7/32 inch (5.6 mm), is obtained by an eccentric and transmitted to the needle bar frame.

The width of the bight can be changed by turning the plastic regulating knob **"L"**, Fig. 19, in directions "+" and "—" respectively.

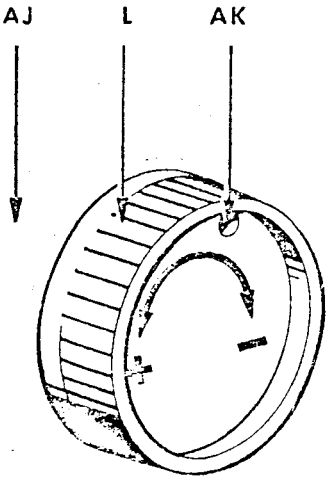


Figure 19

Maximum bight 7/32 inch (5.6 mm) is obtained when the regulating knob is turned counter-clockwise up to the stop.

## TO SET THE STITCH LENGTH (Figure 20)

With the machine out of operation, the stitch length (forward feed only) can be regulated by turning the adjusting knob **"M"**, Fig. 20, at the machine pulley in directions "+" and "—" respectively.

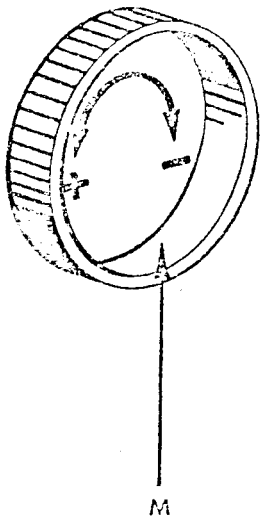


Figure 20

Maximum stitch length (7 stitches per inch) is obtained by turning the regulating knob counter-clockwise up to the stop.

## TO CLEAN THE HOOK

In order to preserve the life of the hook it is necessary to clean the hook by means of a brush once or twice daily depending on the materials used.

## TO SET THE THREAD TAKE-UP SPRING (Figure 21)

The thread take-up spring **"N"**, Fig. 21 set at the factory for normal sewing conditions, must have sufficient free movement to complete its action and should be at rest against the lower end of the thread take-up spring regulator **"O"**, Fig. 21, when the point of the needle in its downward stroke penetrates the material. The action of the spring should be sufficient to assure a light tension on the thread when same passes around the bottom of the bobbin case and casts off the hook point.

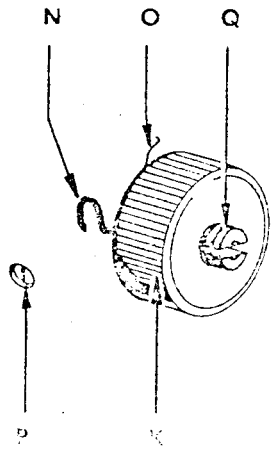


Figure 21

By loosening the tension retaining screw **"P"**, Fig. 21, the tension complete can be rotated until the spring regulator is in the desired position.

The tension of the thread take-up spring is set by turning the tension stud **"Q"**, Fig. 21, either toward the right to increase it or toward the left to decrease it, with the screw **"P"**, Fig. 21, securely tightened.

The tension on the thread take-up spring should be sufficient to insure its action at top speed; however, it should be light enough so that the spring will move all the way up before the thread is pulled through the tension discs. The tension on the thread take-up spring requires different settings depending upon the size of the thread and other particular sewing conditions.

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## TO SET THE PRESSER BAR (Figure 22)

In order to align the presser foot with the needle, lower the presser foot onto the throat plate and loosen the presser bar position guide screw "R", Fig. 22, through the opening in the arm. Then move the presser foot into the desired position and securely tighten the presser bar position guide screw "R", Fig. 22.

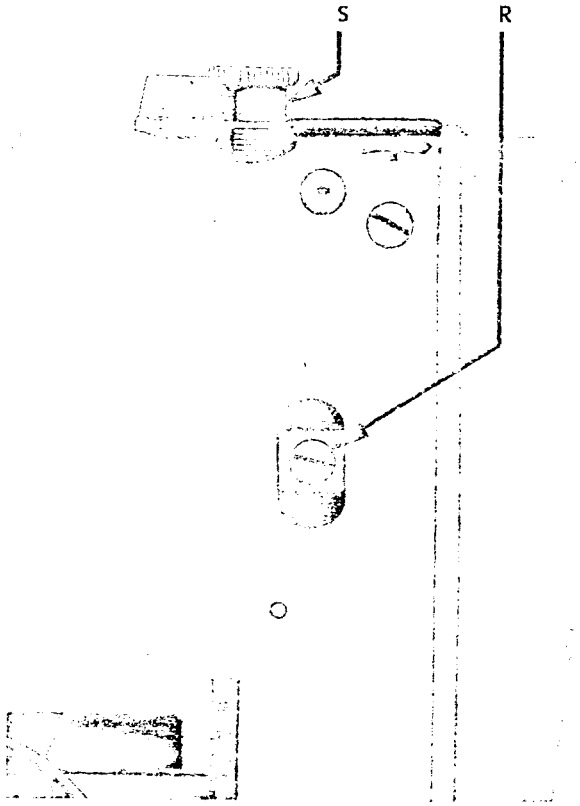


Figure 22

The presser bar lifter must be set so that a presser bar lift of 9/32 inch = 7.15 mm is obtained.

## TO REGULATE THE PRESSURE OF THE PRESSER BAR ON THE MATERIAL (Figure 22)

The pressure of the presser bar on the material is regulated by the presser bar thumb screw "S", Fig. 22. To increase the pressure turn the thumb screw clockwise (in), to decrease the pressure turn the thumb screw counter-clockwise (out).

**CAUTION: The pressure on the material should be as light as possible while still sufficient to insure proper feeding.**

## TO SET THE NEEDLE BAR AT THE CORRECT HEIGHT (Figures 2 and 23)

Time adjustments can be tested or made only when the needle bar frame is held stationary for straightaway stitching.

On machine 107 G 201 turn the plastic regulating knob "T", Fig. 23, (needle regulating spindle head), at the front of the arm, for straightaway stitching (plastic knob turned in clockwise, which means in direction "—"), and see that a straight needle runs in the center of the needle hole in throat plate.

After the pitman eccentric stud set screw "U", Fig. 23, has been loosened, adjustment can be made by turning the pitman eccentric stud "V", Fig. 23. Then retighten set screw "U", Fig. 23. Thus, an essential primary adjustment has been accomplished.

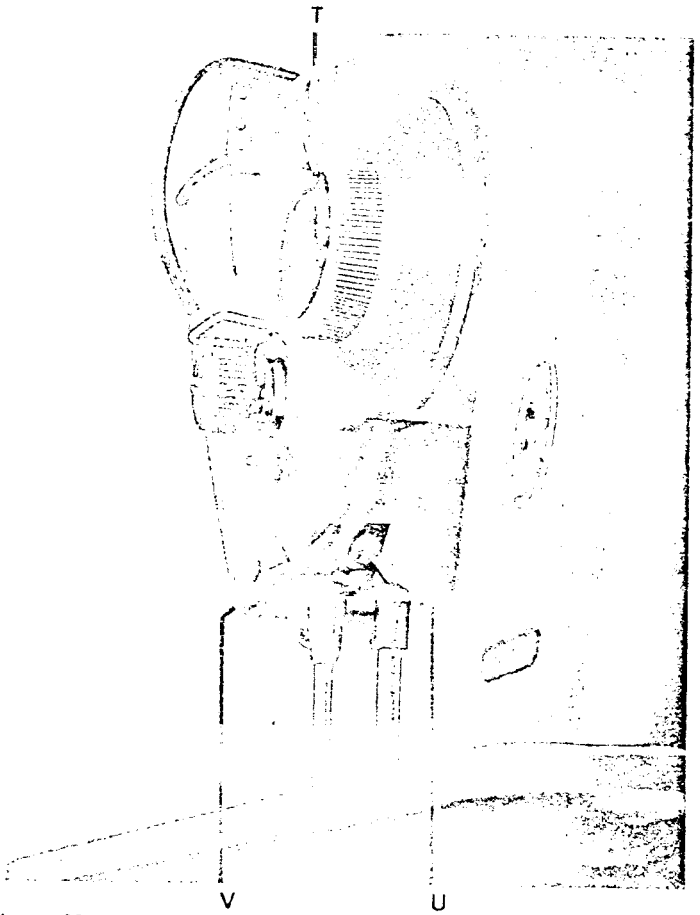


Figure 23

In order to check the correct timing of the needle bar the vibrator regulating spindle head (plastic knob) "T", Fig. 23, at the front of the arm is turned for the widest throw, counter-clockwise up to the stop, now turn the machine pulley toward you and as the needle starts upward from its lowest position, the needle bar frame should start on its lateral (side) movement.

See that the needle is up in the bar as far as it will go.

The needle bar which is in the machine when shipped from the factory has upon it (about two inches from the bottom) two lines 3/32 inch apart. When the needle bar

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is at its lowest position, the upper mark should be just visible at the end of the needle bar frame.

Loosen the needle bar connecting stud pinch screw and place the needle bar in the proper position as directed above, then retighten the screw.

The needle bar connecting stud pinch screw is accessible through an opening on the machine head.

To set a needle bar which has no mark: Set the needle bar so that when it rises 3/32 inch from its lowest position, the point of the hook will be at the center of the needle and about 1/16 inch above the eye.

## TO SET THE NEEDLE BAR FRAME (Figure 24)

After the screws "X", Fig. 24, have been loosened, the needle vibrator gear "Y", Fig. 24, can be shifted on the arm shaft.

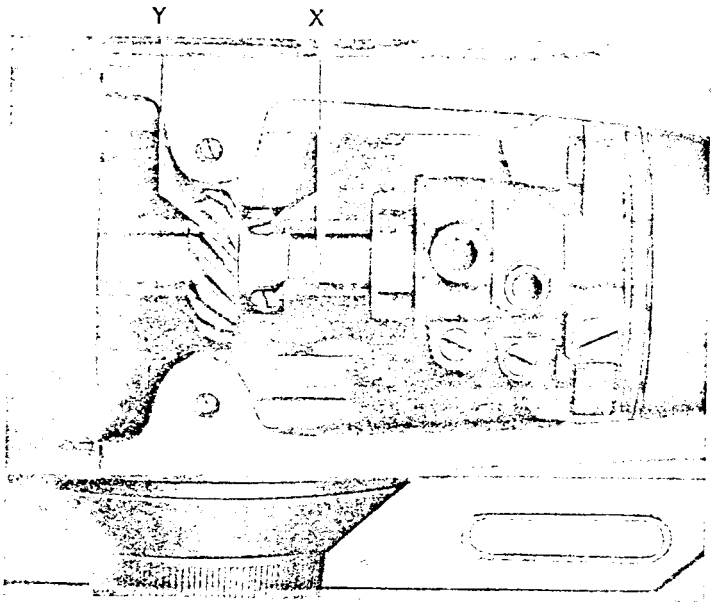


Figure 24

Once the desired adjustment has been made, the screws loosened before have to be retightened.

Concerning the lateral adjustment of the needle bar frame refer to **"TO SET THE NEEDLE BAR AT THE CORRECT HEIGHT".**

## TO TIME THE HOOK (Figures 25, 26 and 27)

Loosen the hook driving bevel pinion shaft belt pulley set screws "Z", Fig. 27, and turn the machine pulley toward you until the needle bar goes to its lowest position and upward until the lower mark across the needle bar is just visible at the end of the needle bar frame, then stop turning and hold the machine pulley firmly.

With the left hand turn the hook until the hook point **"AA"**, Fig. 25, is at the center of the needle (1/16 inch above its eye). See that the end play to the shaft is nearly eliminated, then retighten the pulley set screws **"Z"**, Fig. 27.

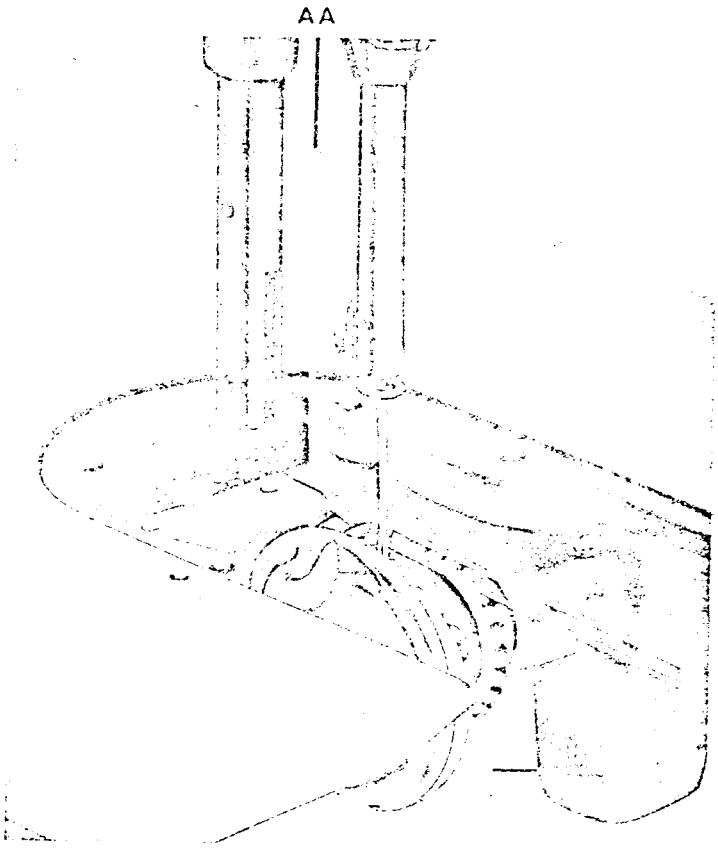


Figure 25

To set the hook to or from the needle: loosen the screws "AB" and "AC", Fig. 26, and move the hook to the desired position. Retighten the screws "AB" and **"AC"**, Fig. 26.

**CAUTION: The hook point should pass the needle as closely as possible without, however, touching it.**

## TO REMOVE THE HOOK (Figure 26)

After loosening the bobbin case stop set screw **"AD"**, Fig. 26, switch the bobbin case stop **"AE"**, Fig. 26, to the position shown on Fig. 26; then remove the hook position screw **"AF"**, Fig. 26, and remove the hook.


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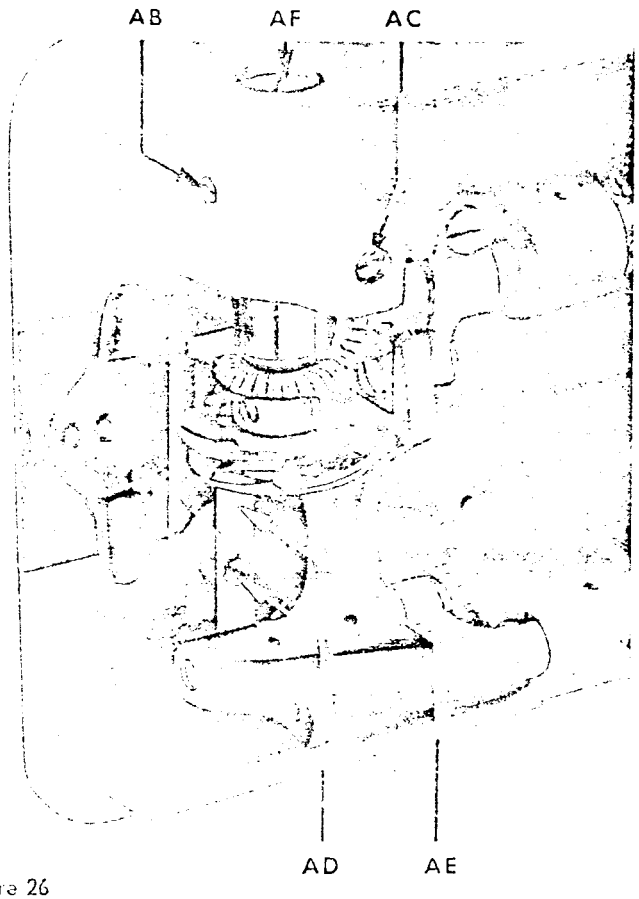


Figure 26

## TO ADJUST THE FEED DRIVING MECHANISM (Figure 27)

To take up lost motion of the feed driving and lifting connections, adjust their hinge and pinch screws.

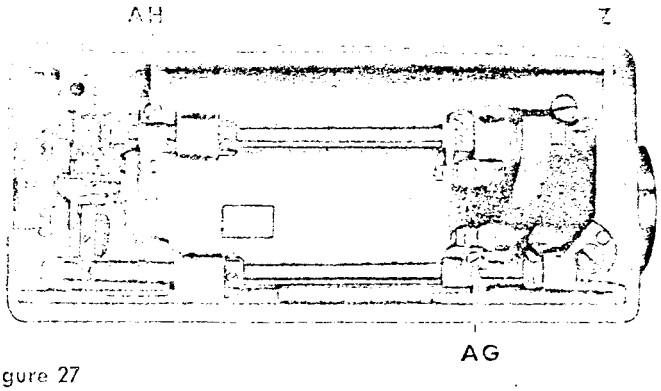


Figure 27

To prevent the feed dog from striking at either end of the slots in the throat plate: loosen screw "AG", Fig. 27, and move the feed dog forward or backward until the longest stitch can be taken without the feed dog striking the throat plate and retighten the screw "AG", Fig. 27.

## TO RAISE OR LOWER THE FEED DOG (Figure 27)

Usually, when at its highest position, the feed dog should show a full tooth above the throat plate.

Remove the throat plate: clean the lint and dirt from between the feed points and replace the throat plate. Tilt the machine back and turn the machine pulley toward you until the feed dog is at its highest position: loosen screw "AH", Fig. 27, and raise or lower the feed dog as desired and retighten the screw "AH", Fig. 27.

When raising or lowering the feed dog be careful that its underside does not drop low enough to strike the hook.

## TO REMOVE THE NEEDLE VIBRATOR GEAR SHAFT (Figure 19)

The cover and the plastic turning knob "AJ" and "L", Fig. 19, can be removed together after loosening the three set screws, which are accessible through the opening "AK", Fig. 19, in the plastic turning knob.

Then, after removing the three set screws in the flange of the needle vibrator eccentric bracket, on the front of the arm, it can be removed.

Now loosen all set and pinch screws of such parts, which are located on the needle vibrator arm shaft (needle vibrator arm shaft collar etc.).

The shaft can now be pulled out.

When replacing these parts be careful that the large washer is in place between the gear and arm, that the position screws are set firmly against the flat spots on the shaft and that the set screws are at the right of the position screws when the shaft has been returned to its place.

## TO REPLACE THE ARM SHAFT CONNECTION BELT

Remove the needle to avoid damage to the hook. Slide belt off the lower pulley, loosen the two screws in the machine pulley and remove the machine pulley with the ball bearing from the arm shaft. Lift the belt up and draw it around the arm shaft through the space normally occupied by the ball bearing.

The new belt is inserted through the ball bearing hole. After placing belt over upper pulley, replace machine pulley. To remove all end play from the shaft, lightly tighten set screws in machine pulley and tap the machine pulley into position with the palm of the hand. Tighten the machine pulley set screws firmly.

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In replacing the belt see that the hook (sewing) and needle are in correct time before running the belt on the lower pulley and verify the correctness of the timing before commencing to sew.

For proper adjustments see **"TO TIME THE HOOK".**

## TO REMOVE THE ARM SHAFT (Figure 20)

First turn out the plastic feed regulating knob **"M"**, Fig. 20, at the machine pulley, then remove all pinch and set screws of the needle vibrator mechanism (compression screw etc.); loosen the position screw and the set screw in the belt pulley, also loosen and remove the position screw from the feed lifting eccentric and from the needle bar crank; loosen the set screws in the needle bar frame driving gear pinion (on the arm shaft) and draw the shaft out from the machine pulley end of the machine.

## TO REMOVE THE ARM SHAFT BUSHING (FRONT) (Figure 4)

After removing the needle bar crank, remove the bushing position screw from the back of the arm, insert a brass rod through the arm cap hole and drive the bushing out.

## TO REPLACE THE ARM SHAFT AND CONNECTIONS

Return the shaft to its place through the belt pulley, the feed lifting eccentric, the shaft gear, friction washer and needle bar crank; return the position screws to the belt pulley, feed lifting eccentric and needle bar crank, and into their position holes in the shaft; tighten the set screw of each and replace the machine pulley, leaving the least possible end play to the shaft.


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