2 7B24

Service Manual for

211G165
211G166
211G265
211G266

SINGER

Form No. 30—444G (1269 / — 644)

Table of Contents

Timing and Other Adjustments

DESCRIPTION

The 211 G 165 machine is a single needle, lockstitch, high speed sewing machine with compound feed and alternating presser feet. It is suitable for automobile and furniture upholstery, awnings, tarpaulins, leather coats, buffing wheels and difficult work.

The machine has the following specifications:

1. Needle Bar Stroke: 1-5/16 inches = 33.40 mm
   Clearance under Presser Foot: 1/2 inches = 12.70 mm
   Space at Right of Needle: 10-1/2 inches = 266.70 mm
   Maximum Stitch Length: 3-1/2 stitches/inch = 7.25 mm/Stitch
   Bed Dimensions: 18-3/4 x 7 inches = 476.25 x 177.80 mm
   Machine Pulley (Safety Type) for 3/8 inch = 9.50 mm V-Belt
   Outside diameter of belt groove 2.9 inches = 73.65 mm
   Effective diameter for 5/16 inch = 7.93 mm round belt is
   2-3/8 inches = 60.30 mm
   Head End Location for Singer Light No. 625024-504
2. Adjustable thread lubrication.
3. Sleeve take-up.
4. Vertical axis hook, with rigid needle guard, makes two (2) revolutions for each stitch.
5. Safety clutch to prevent any overload or damage of the hook.
6. Needle Feed is adjustable relative to the lower feeding mechanism.
7. Alternating presser feet, adjustable by means of a lifting eccentric.
8. Stitch length indicated on the machine pulley and controlled by means of an adjustable feed driving eccentric.
9. Arm shaft and bed shaft are supported on the driven side by double shielded ball bearings. The needle bar frame rock shaft and the feed driving rock shaft are equipped with "Super Oilite" bearings. The feed driving eccentric connection has needle bearings.

The 211 G 166 machine is the same as the 211 G 165 machine except that the machine is provided with a reverse feed which can be actuated by hand lever or foot treadle;

the maximum stitch length is 5 stitches per inch;

the needle feed is set synchronous with the lower feed mechanism;
the arm shaft and the bed shaft are supported on the driven side by double shielded ball bearings. The needle bar frame rock shaft, the feed driving rock shaft, and the feed driving eccentric connection are equipped with "Super Oilite" bearings.

The 211 G 265 and 211 G 266 machines are the same as the relative 211 G 165 and 211 G 165 machines with the exception that an oil reservoir in the hook saddle permits controlled lubrication of the bobbin case, bobbin case opener mechanism and the hook.

SPEED

The recommended maximum speed for the 211 G 165 and 211 G 265 is 3500 RPM and that for the 211 G 166 and 211 G 266 is 2900 RPM. The speed depends on the type of material being sewn and on the method of sewing. At first the machine should be run below the maximum speed until all the movable parts and bearings are run in.

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

INSTALLATION OF THE MACHINE (Fig. 1)

Fasten drip pan to table with its left end even with left end of cut-out. Fasten knee lifter bracket in location shown in Fig. 1.

Assemble it so that lifter rod does not strike drip pan.

Screw slots in bracket provide necessary adjustment.

Set stop-stud to stop the action of knee lifter as soon as presser foot is raised enough to trip hand lever.

Screw drain pipe into drain hole in drip pan and attach oil jar as shown.

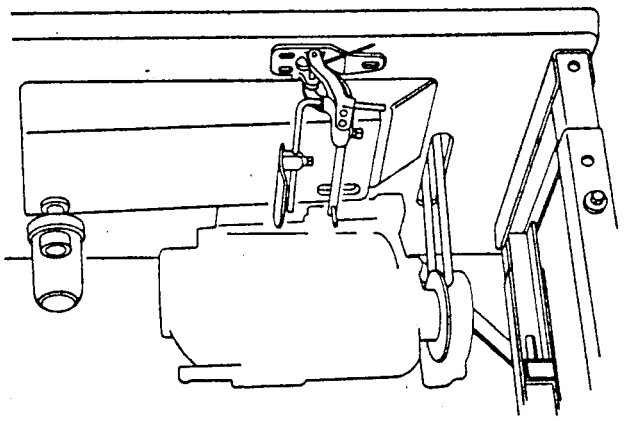

Figure 1

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 2-5)

For the lubrication of the machine, only Singer Oil "Type A or C", supplied by The Singer Company, should be used. In order to insure proper function of the machine and to prevent any wear of the moving parts and bearings, the machine should be oiled regularly.

In case of continuous use, it should be oiled even more often if it is used to produce long seams and run steadily.

The arrows indicate the points to be lubricated.

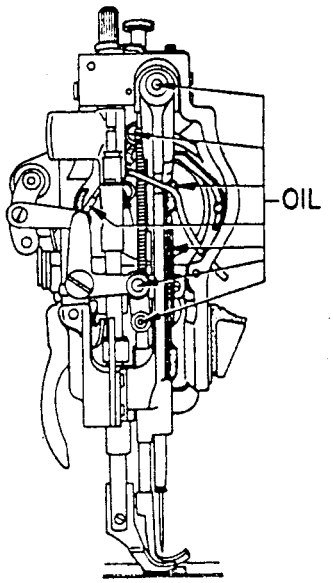

Figure 2

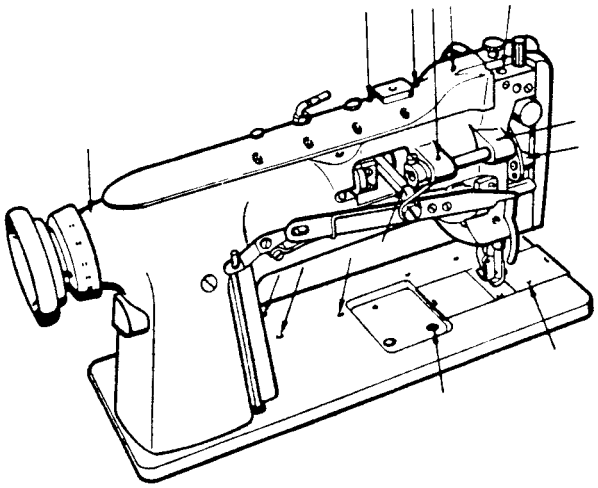

Figure 3

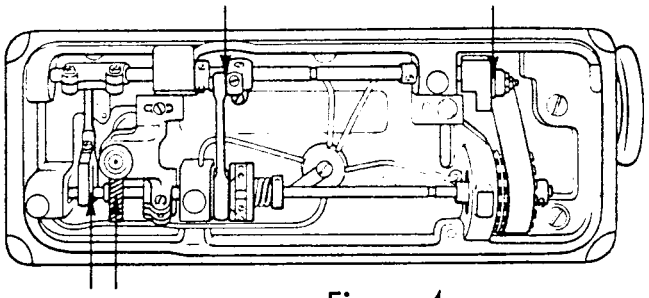

Figure 4

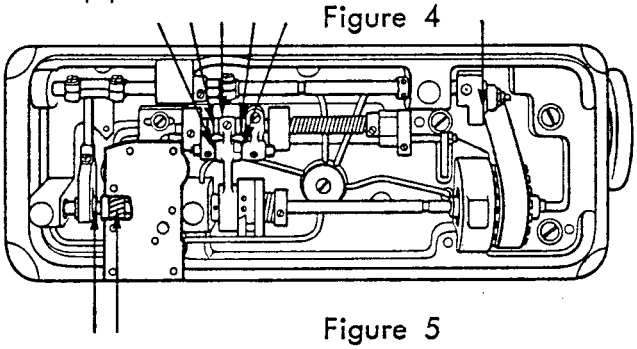

Figure 5

HOOK LUBRICATION 211 G 165 and 211 G 166 (Fig. 6)

Figure 6 shows the hook lubrication points 1 and 2 which can be reached after opening the right hand bed slide.

The oil reservoir 2 oils the upper hook bearing and the mechanism for the mechanical opener.

The small green felt 1 on the bobbin case oils the hook raceway and should always be saturated with oil..

If the felt appears almost black, then there is sufficient oil. If it is dry, then the color is a light green.

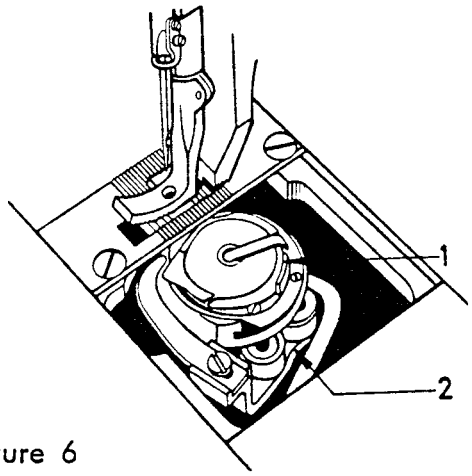

Figure 6

On a new machine, the felt should be oiled each time the bobbin is changed.

HOOK LUBRICATION 211 G 265 and 211 G 266 (Fig. 7, 8 and 9)

Remove oil gauge as shown in Fig. 7 and fill hook saddle reservoir to full mark on gauge.

Lubricate hook gears and opener gears by applying a generous supply of oil to holes indicated in Fig. 4.

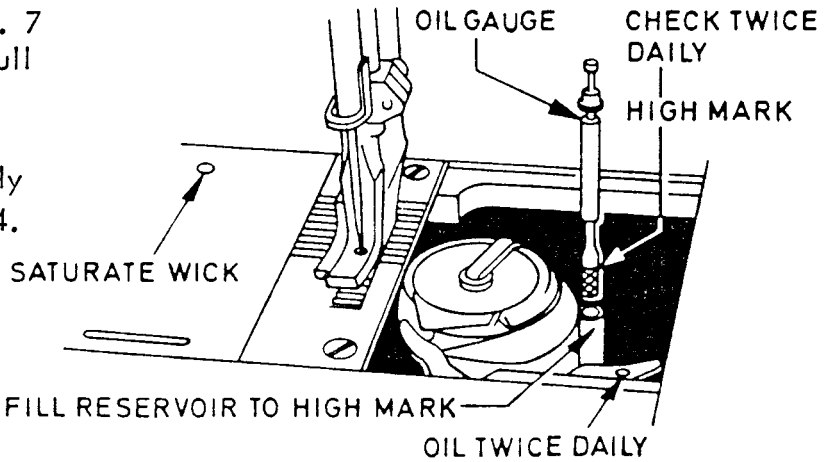

Figure 7

HOOK LUBRICATION 211 G 265 and 211 G 266 continued (Figures 7, 8 and 9)

The bobbin case raceway is lubricated by oil pumped from the hook saddle reservoir while the machine is operating.
The amount of oil received by hook raceway is very important.
To check this, first remove bobbin case. Then with the machine running, hold a small piece of white paper near the hook for about 10 seconds. A distinct spray of oil should be visible on the paper.
If there is no trace of oil or an excess of oil on the paper, proceed with the following steps:

1. Tip machine and loosen control valve set screw 1 shown in Figure 8 and return machine to upright position.
2. Turn control valve screw 2 shown in Figure 9 clockwise for more oil; counter-clockwise for less oil. Re-tighten control valve set screw 1.

be made between adjustments to insure uniform oil flow.
After each adjustment of oil control valve, set screw should be securely tightened.

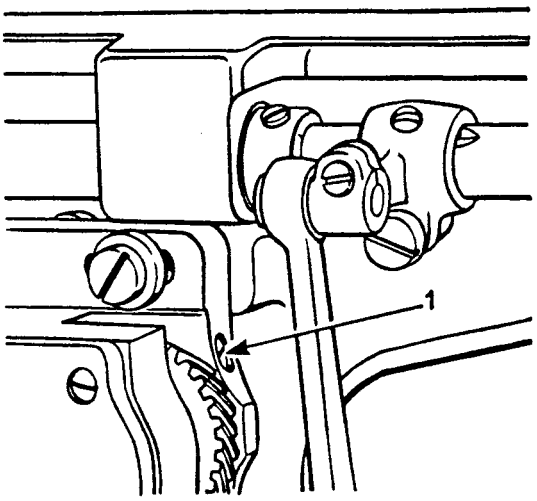

Figure 8

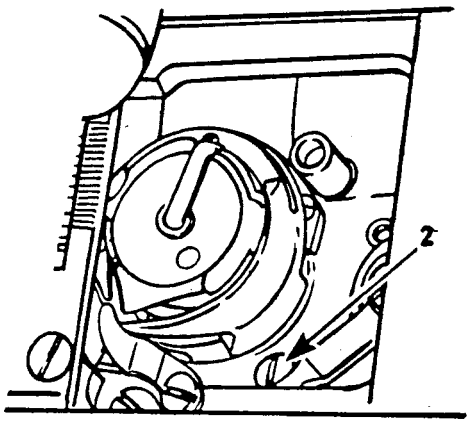

Figure 9

THREAD LUBRICATION (Figure 10)

The oil reservoir for thread lubrication can be filled through hole 3 in the oil regulating screw 4. The oil flow can be regulated by turning the oil regulating screw 4 counter-clockwise for more oil. Turn the oil regulating screw 4 in the clockwise direction to decrease the oil flow. When the screw 4 is turned in the clockwise direction until it reaches the stop, the oil flow is discontinued.

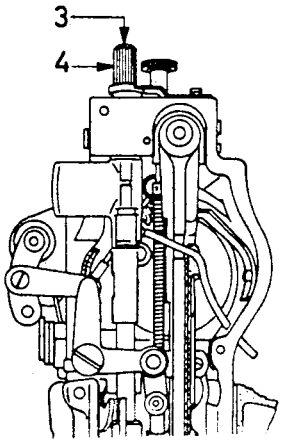

Figure 10

NEEDLES

Original Singer Needles, Catalog No. 3355 (135 x 17) which are available in sizes 9-26 should be used for this machine. The needle size is determined by the size of the thread, which should run freely through the needle eye. Rough and non-uniform thread that does not run freely through the eye interferes with the proper function of the machine. Orders for needles should include the desired quantity, the catalog number, the size, and the type. The type is shown with a suffix:

1 - chrome plated, 2 - nickel plated, 3 - special fine point.

Example: 100 - 3355 - 12 - 1
(100 needles - Catalog No. 3355 - Size 12 - Chrome Plated)

Needles and package carry the name: SINGER.

THREAD (Figure 11)

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 Figure 11. Turn it between thumb and forefinger of the right hand counter-clockwise (towards you). If left twist, the strands will wind tighter, if right twist, the strands will unwind.

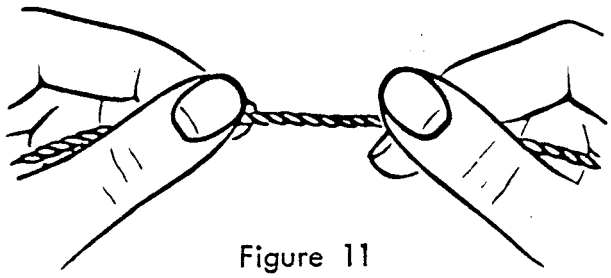

Figure 11

Based on past experience, the following needle sizes are recommended for the different threads.

Cotton Thread	Silk	Needle Size
100 to 150	000 to 00	10
90 to 100	00	11
80 to 90	0	12
70 to 80	A	13
60 to 70	A	14
50 to 60	B	15
40 to 50	C	16
30 to 40	C	18
24 to 30	D	20
16 to 24	E	22

BOBBIN REMOVAL (Figure 12)

Turn the machine pulley towards you until the needle bar has reached its highest point After opening the right bed slide, lift up latch 1, and remove bobbin.

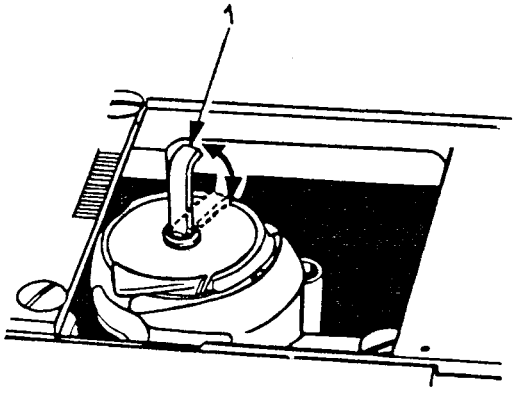

Figure 12

TO WIND THE BOBBIN (Figure 13)

Place the bobbin onto the bobbin winder spindle sliding it on the spindle to its stop. Pass the thread through the thread guide 1, in the tension control bracket and between the tension discs to the bobbin. Thread a few windings on the bobbin. Press down lever 3 to push the bobbin winder pulley against the drive belt and start the machine. When enough thread has been wound on the bobbin, the winder will stop automatically.
If the thread does not wind evenly, loosen screw 2, and correct by moving the tension control bracket. Tighten screw 2. The amount of thread wound on the bobbin is adjusted with screw 4. For more thread, the screw is turned clockwise; for less thread, counter-clockwise. Bobbins can be wound while the machine is sewing.

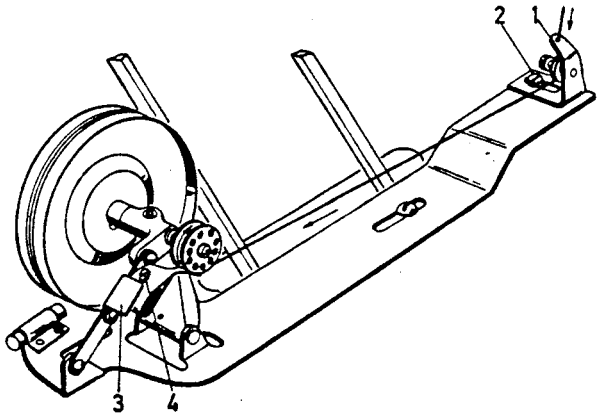

Figure 13

BOBBIN REPLACEMENT (Figures 14 & 15)

Hold the bobbin between thumb and fore-finger of the right hand so that the thread unwinds at the bottom from left to right. Put bobbin onto the center stud and close latch 1. Pull the thread into slot 2 and draw underneath the back of projection 3 on the bobbin case. Draw the thread through until it extends approximately 2 inches = 5 cm out of the bed slide opening. The bed slide should not be closed completely to allow the thread to be pulled down.

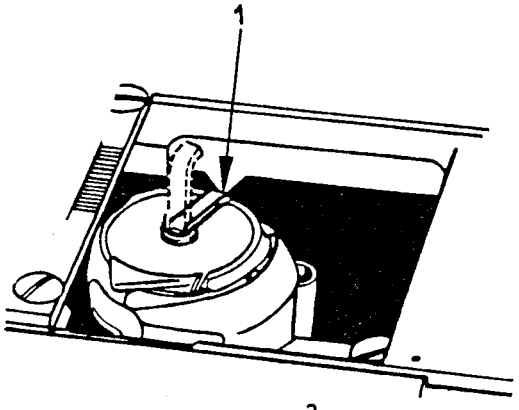

Figure 14

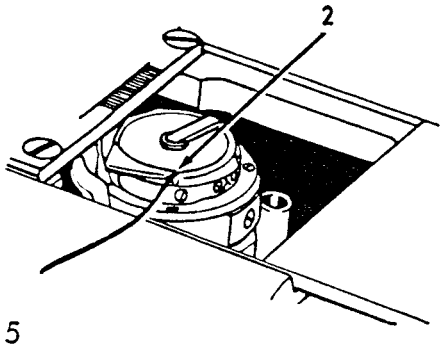

Figure 15

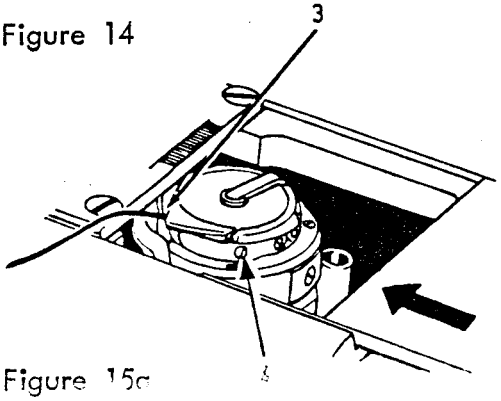

Figure 15a

TO SET THE NEEDLE

Turn the machine pulley towards you until the needle bar has reached its highest position. Loosen set screw at the lower end of the needle bar and push the needle to its stop. The long groove should be on the left and the needle eye should be in line with the arm of the machine. Tighten the set screw thoroughly.

THREADING OF NEEDLE THREAD (Figure 16)

With the needle at the highest position pass the thread from the unwinder through the hole in the thread guide 1, which is mounted on the arm cover. From there, pass the thread through the three (3) holes of the thread tension guide 2. Starting with the top hole, thread from right to left, from left to right through the middle hole, and from right to left through the bottom hole. Pass the thread over and between the tension discs 3, from right to left, and wind it under and around thread controller 4 from right to left. It is placed under the controller spring 5 and over the controller projection so that the controller spring holds the thread down. Pull the thread through the thread guide 6 and then from right to left through the eye of the thread take-up 7. Pass it back again through the thread guide 6, lead it behind the oil felt pad 8 and then draw the thread through the thread guide 9, and from left to right through the eye of the needle.

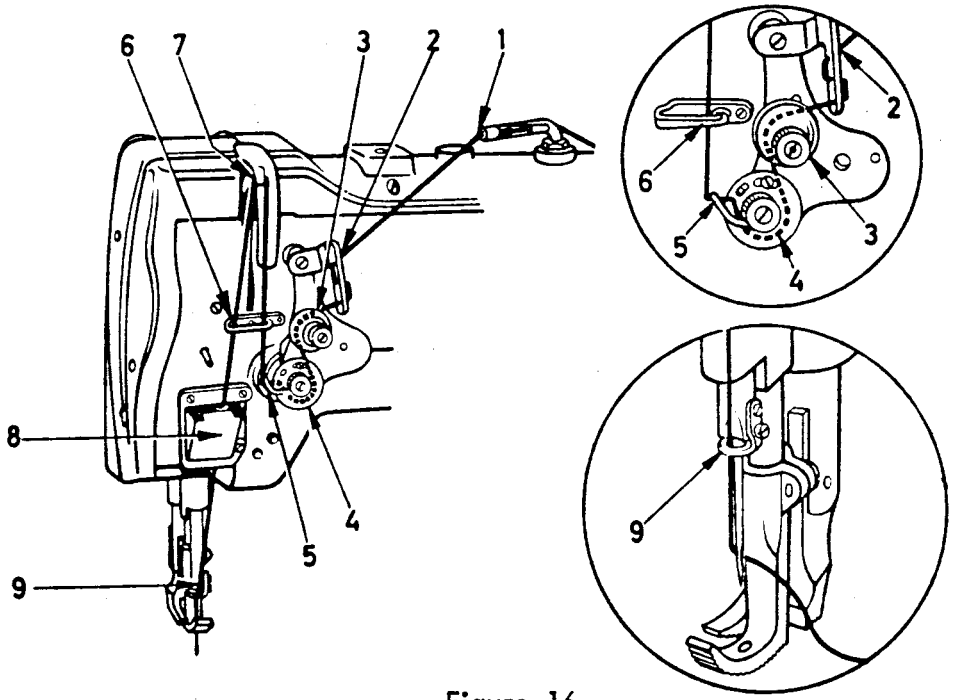

Figure 16

PREPARATION FOR SEWING

Hold the end of the needle thread loose in the left hand. Turn the machine pulley towards you until the needle has made one full stitch and is back to its highest point. By pulling the needle thread, the bobbin thread will come through the hole in the feed dog. Lay both threads underneath the presser feet and close the bed slide completely. Now the machine is ready for having the material placed under the presser feet.

TENSION CONTROL (Figures 17, 18, 19, 20 and 21.)

The tension of the needle thread is regulated by thumb nut 1, and should only be changed when the presser feet are down and the tension is not released. Turning the nut clockwise increases and turning it counter-clockwise decreases the tension.
The tension of the bobbin thread is regulated on the bobbin case tension spring by means of the adjusting screw 2. Turning it clockwise increases and turning it counter-clockwise decreases the tension.
With correctly adjusted tensions, the needle and bobbin threads should be locked in the center of the material as shown in Figure 19.
If the tension on the needle thread is too light, or if that on the bobbin thread is too loose, the needle thread will lie straight along the upper surface of the material as shown in Figure 20.
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 as shown in Figure 21.

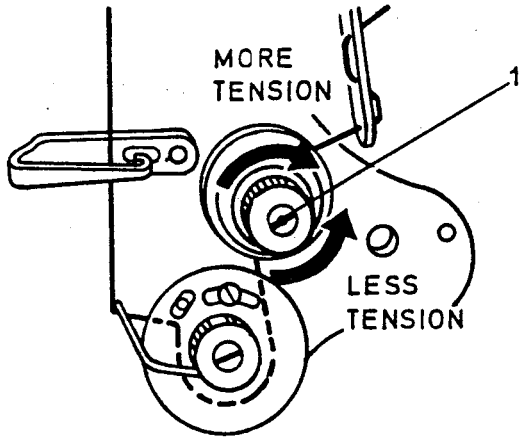

Figure 17

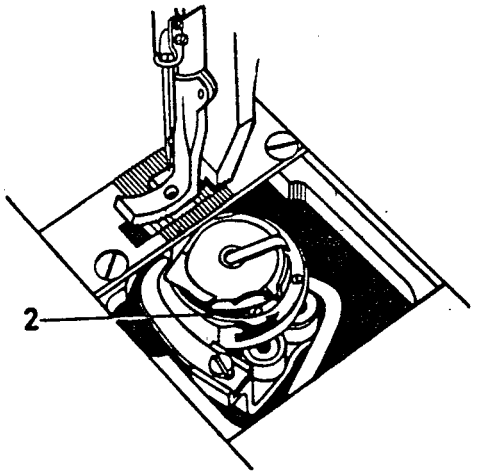

Figure 18

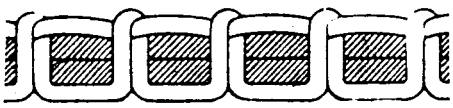

Figure 19

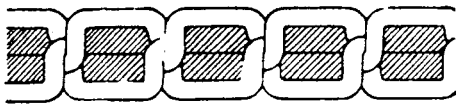

Figure 20

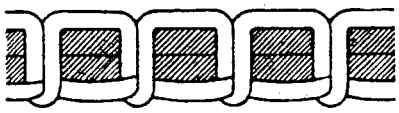

Figure 21

ADJUSTMENT OF THE STITCH LENGTH (Figure 22)

1. With machine OFF, depress button shown on bed surface. NEVER DEPRESS BUTTON WHEN MACHINE IS ON.

2. Turn machine pulley over toward you slowly until button drops (snaps) into position.

3. With button down, turn machine pulley until desired stitch length is opposite mark on arm as shown.

4. Release button. NEVER START MACHINE UNTIL BUTTON IS RELEASED.

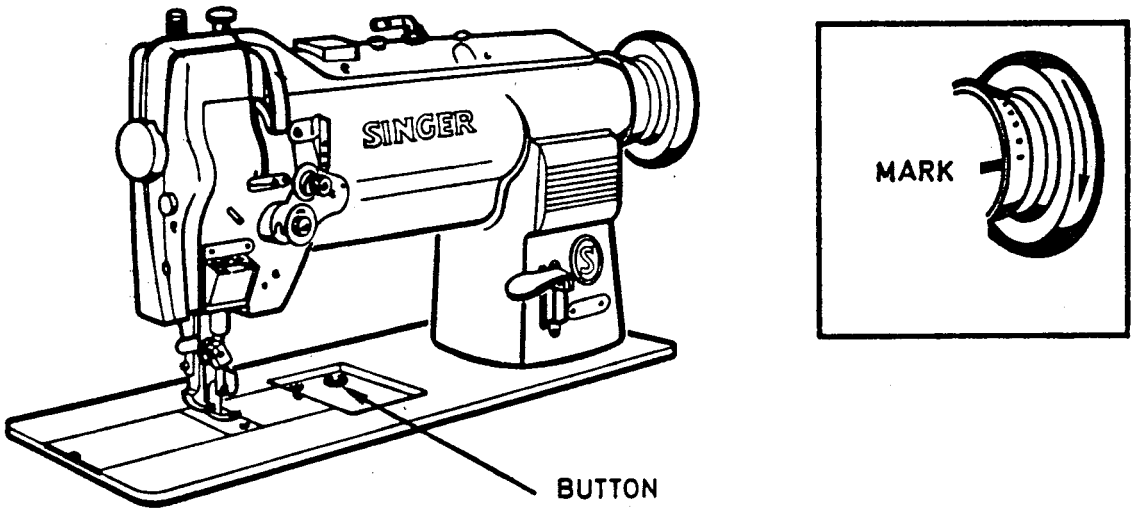

Figure 22

PRESSER FOOT PRESSURE (Figure 23)

Pressure of presser foot on material should be as light as possible while being sufficient to insure correct feeding. Pressure is regulated by screw shown at rear of machine arm. Turn screw downward to increase pressure or upward to decrease pressure.

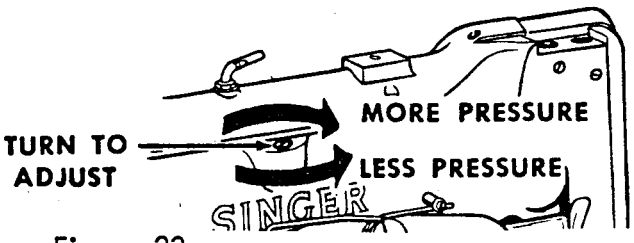

Figure 23

REENGAGEMENT OF SAFETY CLUTCH (Figure 22)

A safety clutch to prevent any overload and damage to the hook is installed in the lower belt pulley. If it is disengaged, open the bed slide and check the hook. Remove all thread and foreign matter from the hook by carefully turning the machine pulley forward and backward until the machine turns freely. By pressing the stitch length regulator button Figure 22, and at the same time turning the machine pulley, the hook driving shaft is locked until the safety clutch is reengaged. Reset the stitch length and the machine is ready for sewing.

TO USE THE REVERSE FEED ON THE 211 G 166/256 MACHINES (Figures 24 & 25

The feed of the machine can be reversed by hand lever or foot treadle.
To change feed direction by hand, push the reverse lever 1, completely down in order to have the same stitch lengh as in forward feed.
Release it only when you want to again feed the material in the normal direction.
To reverse the feed with the foot treadle, the foot treadle chain should be connected to the hole in the reversing lever 2.

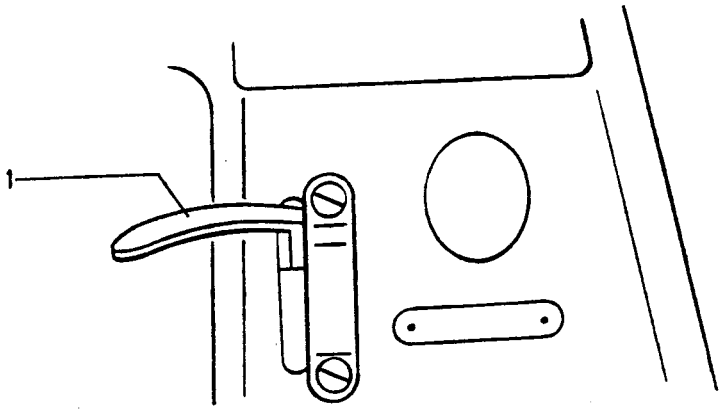

Figure 24

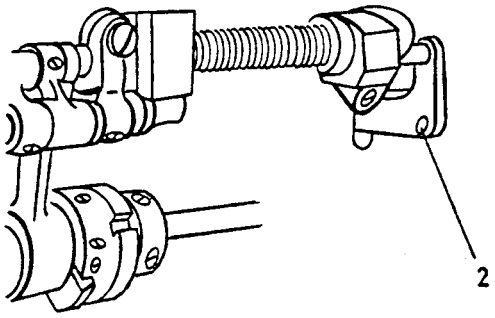

Figure 25

TIMING AND OTHER ADJUSTMENTS

The instructions on the following pages are for Adjusters and Mechanics only!

ADJUSTMENT OF THE THREAD CONTROLLER SPRING (Figure 26)

The function of the thread controller spring is to hold back the slack of the needle thread until the point of the needle reaches the material on its upward stroke, as without this controlling action of the spring, the slack thread (especially silk) will sometimes be penetrated by the point of the needle as the needle is descending. The spring should be adjusted so that the thread is under a light tension when it passes around the bottom of the bobbin case and is cast off the hook point. The tension of the controller spring should be sufficiently heavy to work satisfactorily at high speed and should also be light enough to allow the full upward movement of the spring before thread is demanded by the take-up. The regulation of the controller spring depends on sewing condition and the thread used.

Adjust the spring travel by loosening screw 1 and turning spring stop 2.

To adjust the spring tension, loosen set screw 3, and turn tension stud 4. Turning counter-clockwise increases and turning clockwise decreases the tension.

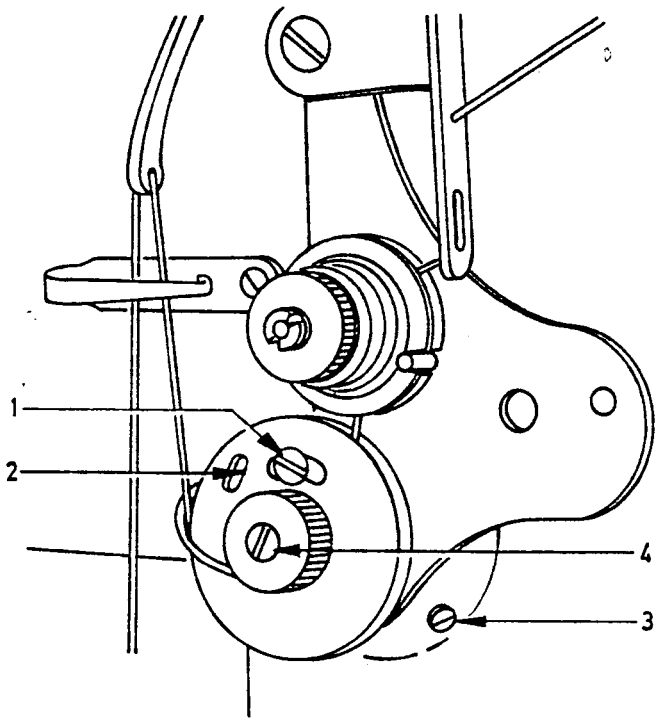

Figure 26

ADJUSTMENT OF TENSION RELEASE (Figure 27)

The tension release automatically relieves the spring pressure exerted on the needle thread tension disc when the presser feet are moved to the top position by the hand or knee lifter. The release can be adjusted by loosening screws 1 and 2 and positioning tension release spring. Then securely tighten screws 1 and 2.

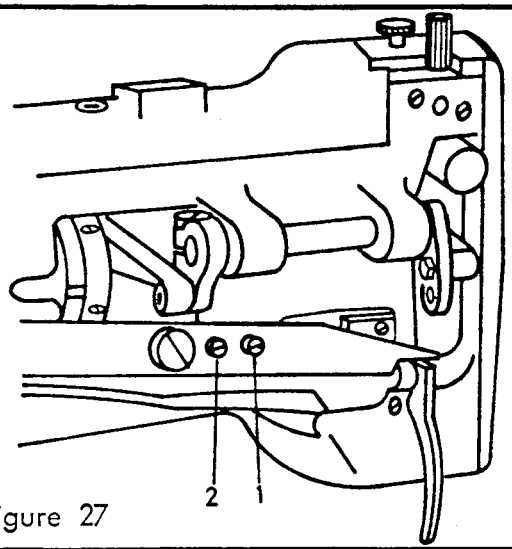

Figure 27

ADJUSTMENT OF NEEDLE BAR ROCK FRAME (Figures 28, 29, 30 and 31)

On the 211 G 165/265 MACHINES the needle bar rock frame is driven by a compound drive mechanism which can be made synchronous or differentiated with the lower feed. It must be adjusted so that, in zero position of the synchronous feed, the distance between the vibrating presser bar in the needle bar rock frame and the vertically moving presser bar, in the arm is 21/64 inch = 8.33 mm (see Figure 31).
For synchronous feed and for alignment of the needle bar rock frame, adjust the feed driving eccentric for zero stitch length. Loosen lock nut 1 and bearing nut 2. Then move screw 3 to its normal operating position in crank 4, where the drop feed and upper feed motions ar equalized.
Remove the front arm cover, loosen screw 5, and adjust the needle bar rock frame to the vertically moving presser bar to obtain the distance between the vibrating presser bar and the vertically moving presser bar as shown in Figure 31.
For differentiated feed, adjust the feed driving eccentric to the desired number of stitches per inch. Loosen lock nut 1 and bearing nut 2. Move screw 3 in the adjustable crank to the back in order to get a larger movement of the upper feed relative to the lower feed, and to the front for a smaller movement.

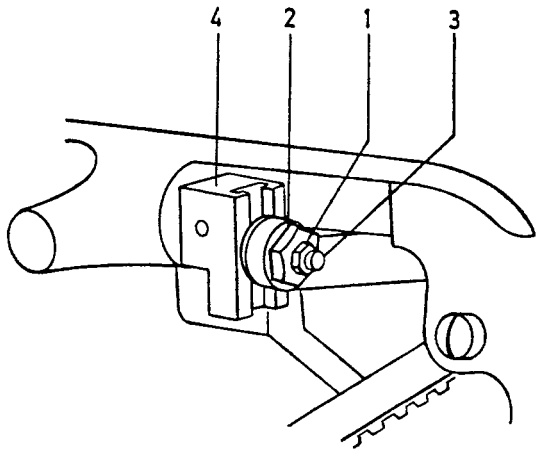

Figure 28

ADJUSTMENT OF NEEDLE BAR ROCK FRAME (cont.)

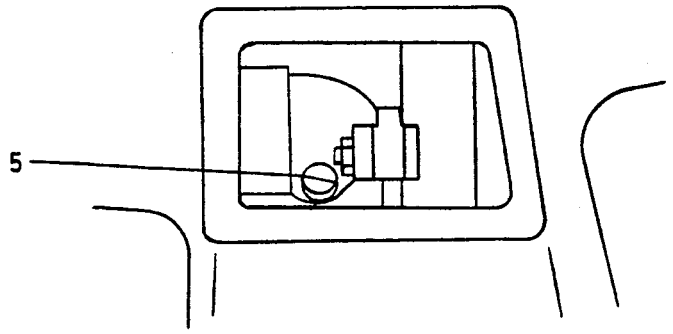

Figure 29

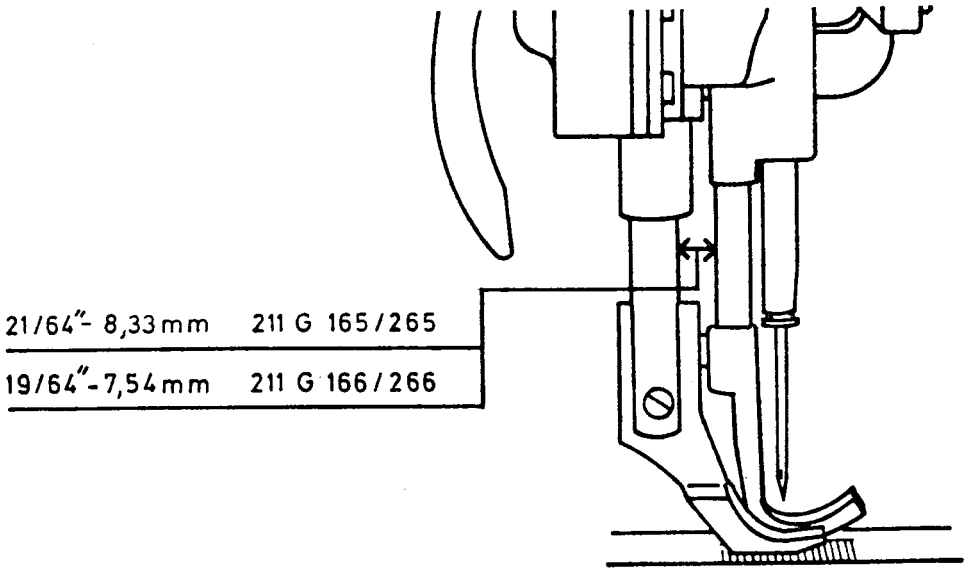

Figure 31

ADJUSTMENT OF NEEDLE BAR HEIGHT (Figure 32)

The adjustment of the needle bar height can be checked with two timing marks which are located approximately 2 inches = 50.8 mm from the lower end of the bar. The upper mark should be just visible at the lower edge of the needle bar rock frame when the needle bar is in its lowest position. The lower mark should be just visible when the hook point has reached the center line of the needle with the feeding mechanism in zero position (synchronous on the 211 G 165/265 MACHINES.)
To set a needle bar which has no timing marks, the feeding mechanism must be set on zero stitches (synchronous on the 211 G 165/265 MACHINES. Insert a straight needle in the needle bar. Then set the needle bar so that, when it rises 3/32 inch = 2.4 mm from its lowest position, the point of the hook is at center line of the needle and the eye of the needle about 1/16 inch = 1.6 mm below the point of the hook.

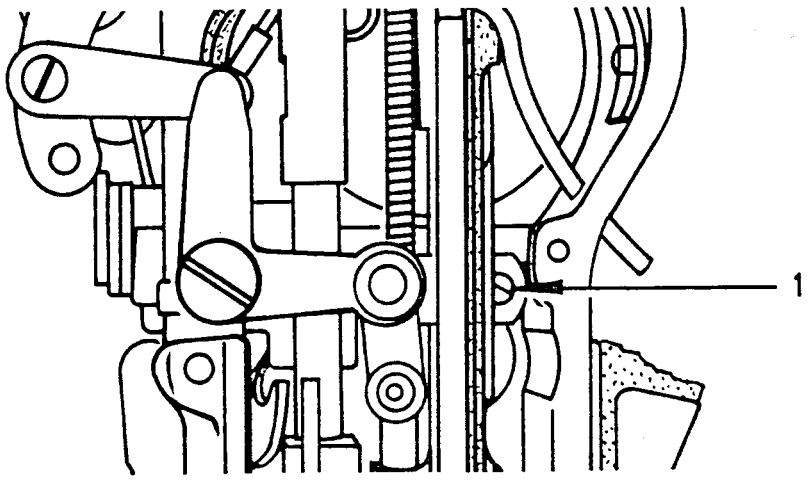

Figure 32

ADJUSTMENT OF THE HOOK (Figures 33 and 34) 211 G 165/166

To adjust the hook relative to the needle (distance and timing) remove the throat plate and set the feeding mechanism on zero stitches (synchronous on the 211 G 165 MACHINE) Check the needle bar height for proper adjustment and use a straight needle which has been correctly inserted to its stop. Turn the machine pulley over towards you until the lower mark on the needle bar is just visible at the end of the needle bar rock frame on the upward stroke of the needle bar. In this position the hook point should be about 1/16 inch = 1.6 mm above the needle eye on the center line of the needle and as close as possible to it without touching. The needle should barely touch the hook needle guard 1, without being deflected by it.
To adjust the distance between hook point and needle, maintain the hook point at the center of the needle, loosen screws 2 and 3, underneath the bed of the machine, and move the hook saddle to the right or left as required. Then securely tighten screws 2 and 3.

ADJUSTMENT OF THE HOOK 211 G 165/166 (cont.)

To time the hook point relative to the center line of the needle, loosen the set screws on the hub of the hook driving gear 4. Then tap the gear to the right, if the hook time is to be advanced, and to the left if it is to be retarded.
The hook needle guard 1, which is mounted on the outer periphery of the hook, should be adjusted so that the needle can never touch the hook point in the event that it is deflected in that direction.

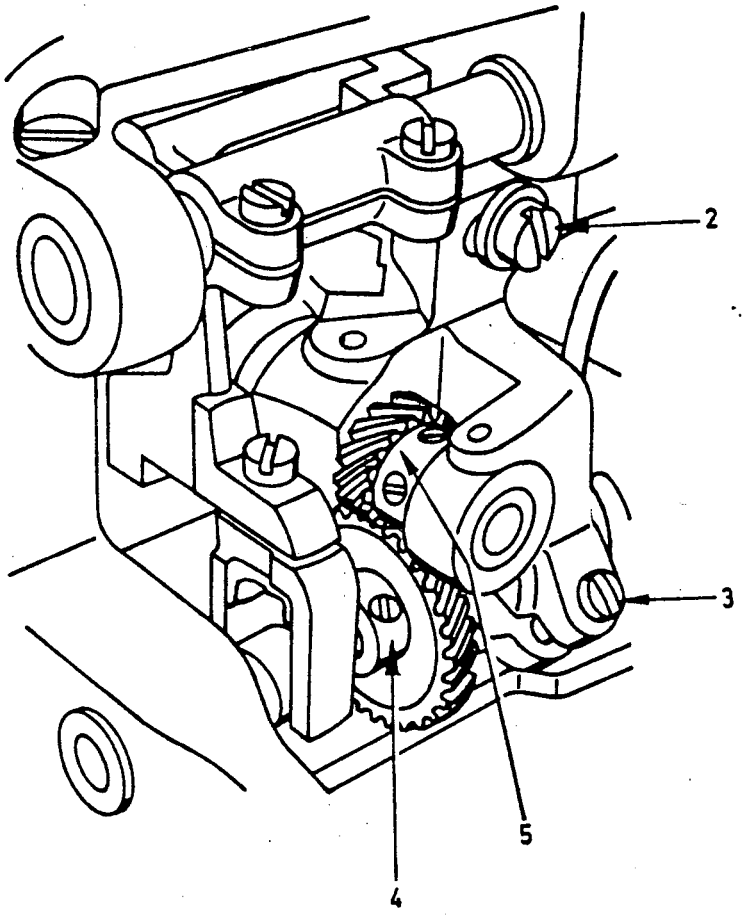

Figure 33

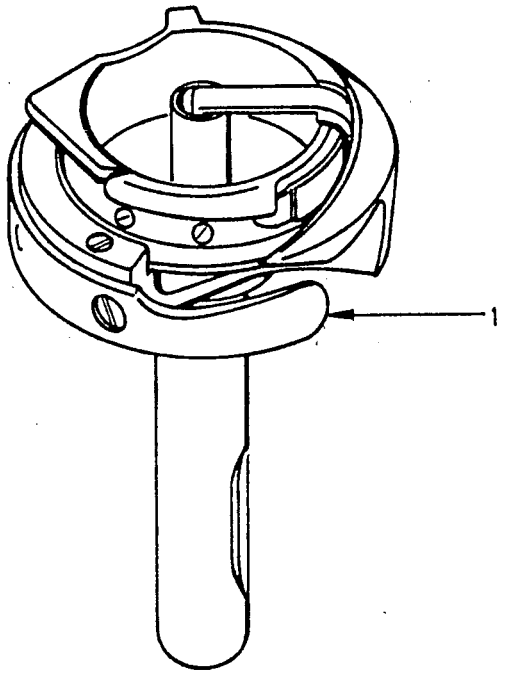

Figure 34

REPLACEMENT OF THE HOOK (Figure 33) 211 G 165/166

To replace the hook, remove the presser feet, throat plate, bed slide, feed dog, and the bobbin case opener. Loosen the set screws in the hub of the hook drive gear 5, pull the hook upwards from the hook saddle, and insert a new one. Then replace the feed dog and the bobbin case opener. The new hook should be adjusted as explained above.

ADJUSTMENT OF SEWING HOOK HEIGHT (Figures 35 and 36)

When lower timing mark on needle bar is just visible at lower end of needle bar frame on upward stroke of needle, the hook should pass about 1/16 inch above upper edge of needle eye as shown in Figure 35.
To adjust height of sewing hook, first, fasten throat plate to bed of machine and place bobbin case stop finger in sewing position. Pass a .032 inch shim between bobbin case stop finger and throat plate. If shim is too tight or too loose, turn machine pulley over toward you so that the hook hub socket screws 1 shown are accessible with a socket wrench. Loosen both screws and remove cloth washer from bobbin case. Turn bobbin case until one of the holes is in line with hook height adjusting screw 2. To raise hook, turn hook height adjusting screw 2 clockwise. To lower hook, turn hook height adjusting screw 2 counterclockwise. Retighten socket screws 1 and turn hook height adjusting screw 2 again just enough to leave a light tension. Check sewing hook timing.

ADJUSTMENT OF DISTANCE BETWEEN SEWING HOOK AND NEEDLE (Figure 37)

To prevent hook point from dividing strands of thread, it should pass as near to the needle as possible without hitting it.
Turn machine pulley over toward you until sewing hook point is in the position nearest to needle. Tip machine and loosen hook saddle screw 3. Adjust hook saddle until hook point is as close to needle as possible without hitting it. Retighten hook saddle screw 3. BE SURE HOOK DRIVING GEARS ARE CORRECTLY SET WITH RELATION TO FACE OF HOOK SADDLE. USE .008 INCH SHIM.
The function of the needle guard 5 is to prevent hook point from striking needle, if needle is deflected after penetrating material. The needle guard 5 can be bent with a pair of pliers, if necessary, but care should be taken to prevent guard from interfering with normal path of needle.

TIMING THE SEWING HOOK (Figure 38)

Regulate stitch length so that there is no feeding motion.
Remove throat plate and turn machine pulley over toward you until lower timing mark on needle bar is just visible at lower edge of needle bar frame on upward stroke of needle. With needle in this position, sewing hook is correctly timed if hook point is at vertical centerline of needle blade.
If sewing hook is not correctly timed, loosen socket screws 6 and turn to proper timing position specified above.

REMOVING BOBBIN CASE FROM SEWING HOOK (Figure 39)

Remove hook gib screws 7 from sewing hook. Lift off hook gib 8 and remove bobbin case.

REMOVING SEWING HOOK FROM MACHINE (Figures 36, 38, and 39)

Remove presser foot, throat plate and feed dog. Loosen hook hub socket screws 7. Lift hook off end of shaft.

To remove hook shaft, first remove ball bearing retaining cap screws 9 directly under hook. Tip machine back and loosen hook shaft gear hub socket screws 6. Lift out shaft from top end. If shaft does not lift out easily, loosen screws 10 in cover plate of hook saddle just enough, at first, to permit the oil to drain out. Then remove cover plate completely, being careful not to damage the gasket. Tap the end of hook shaft.

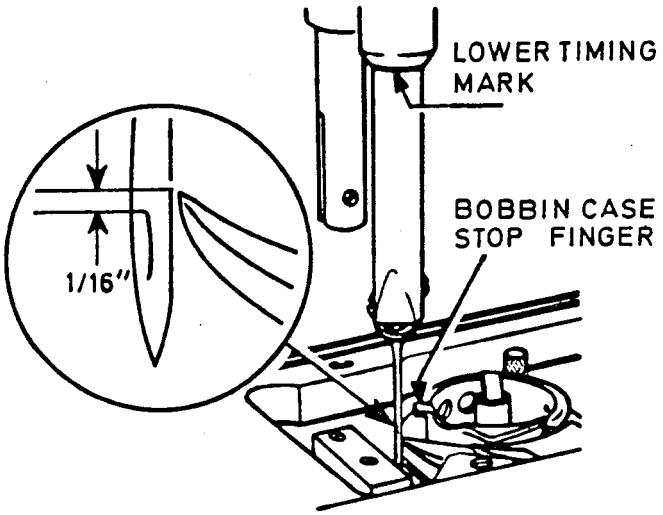

Figure 35

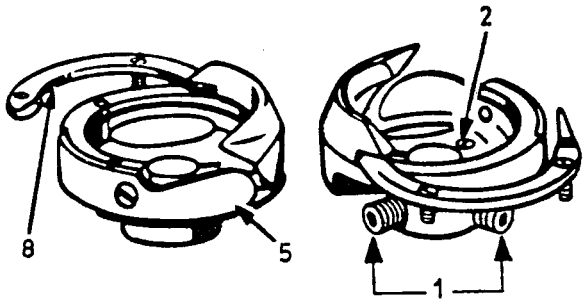

Figure 36

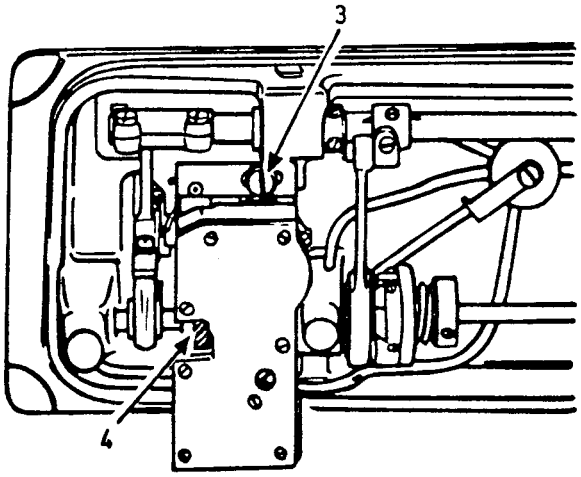

Figure 37

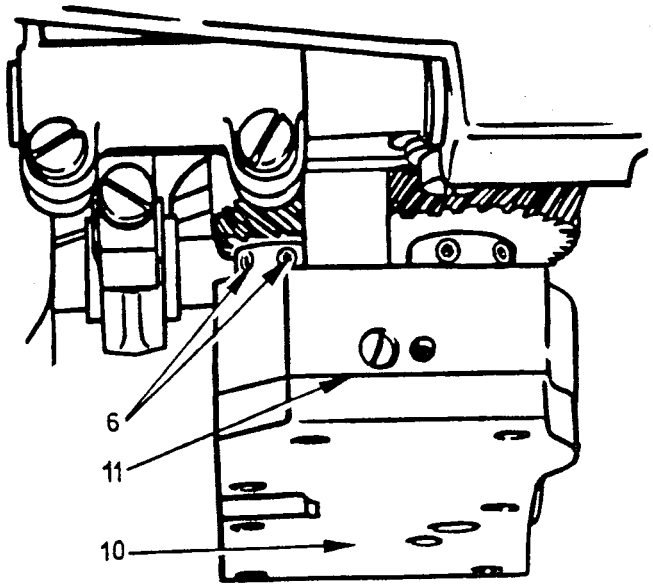

Figure 38

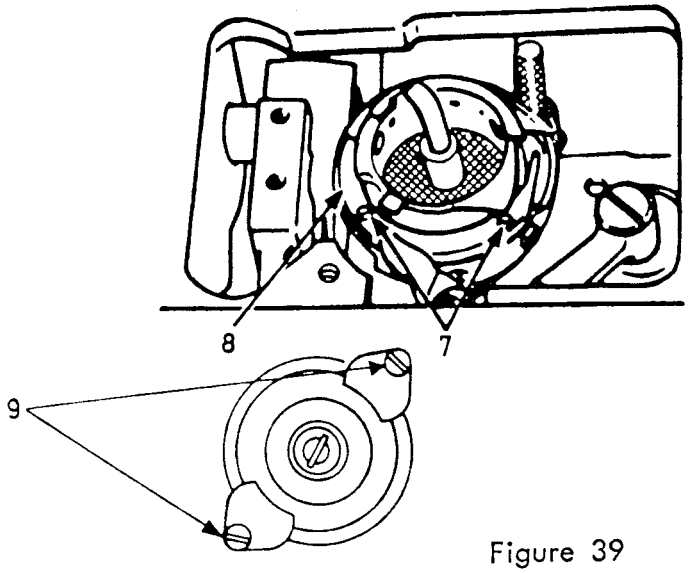

Figure 39

REPLACING SEWING HOOK (Figure 40)

CAUTION: The hook is equipped with a screw in the hub for adjusting the vertical position of the hook relative to the throat plate seat. This position is set with a gauge at the factory. WHEN REPLACING A HOOK, CARE MUST BE TAKEN TO SEE THAT THE BOBBIN CASE STOP FINGER, 1, FITS CORRECTLY IN THE THROAT PLATE! For correct adjustment, see instructions concerning hook height adjustment on page 18.

ADJUSTING BOBBIN CASE OPENER (Figure 40)

The bobbin case opener, 1, should be set so that it touches the bobbin case as lightly as possible and turns the bobbin case enough to make a sufficient opening for the free passage of thread between throat plate and bobbin case.

TIMING BOBBIN CASE OPENER (Figures 40 and 41)

Turn machine pulley over toward you until lower timing mark on needle bar is even with edge of needle bar frame on upward stroke of needle. When needle bar is in this position, reference mark A should line up with reference mark B on hook saddle, as indicated. If opener shaft is out of time, tip machine back and loosen socket screws 2. Return machine to upright position and turn opener driving shaft with screw driver in cap screw 3. Tighten socket screws 2 in opener driving gear hub.

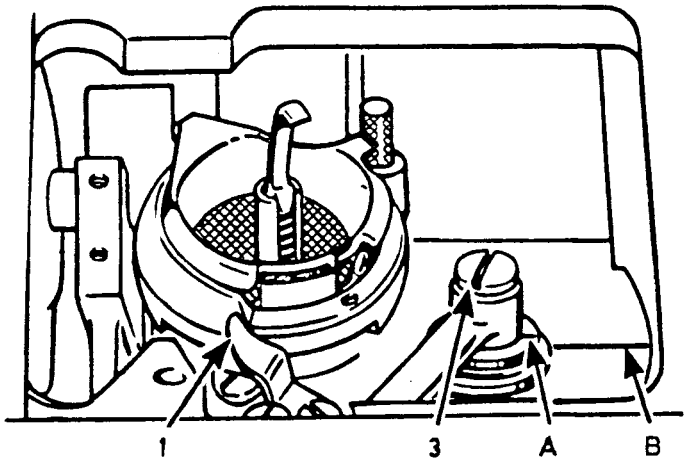

Figure 40

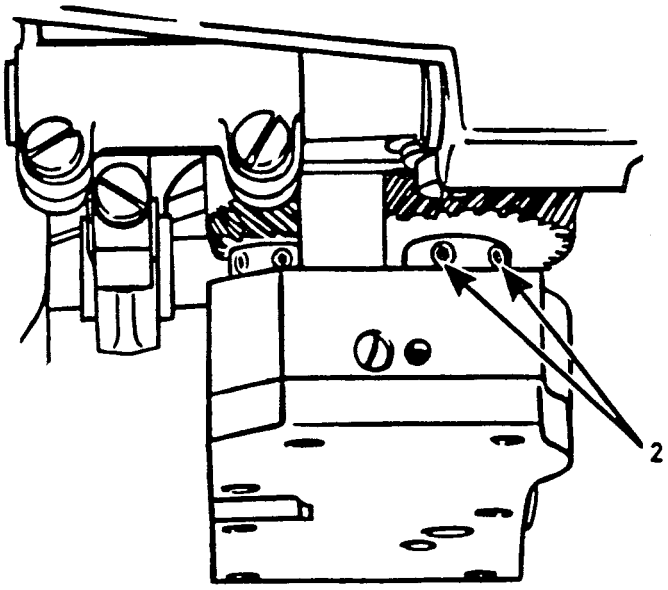

Figure 41

FEED DOG ADJUSTMENT (Figures 42 and 43)

The feed dog is attached by two screws to the feed bar. The feed dog should be adjusted sideways in the throat plate so that it does not touch it. It should also be centered in the direction of feeding so that the needle, in its lowest position, will be slightly in front of the center of the needle hole (seen from the front). For average sewing conditions, a full tooth of the feed dog should show above the throat plate with the feed dog in its highest position.

The feed dog can be adjusted with respect to the throat plate and needle by loosening the two pinch screws 2. Securely tighten pinch screws 2.

To adjust the feed dog height, turn the machine pulley towards you until the feed dog is at its highest position. Loosen screw 1, and pinch screws 2. Then move the feed bar to raise or lower the feed dog as required. Securely tighten screws 1 and 2.

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

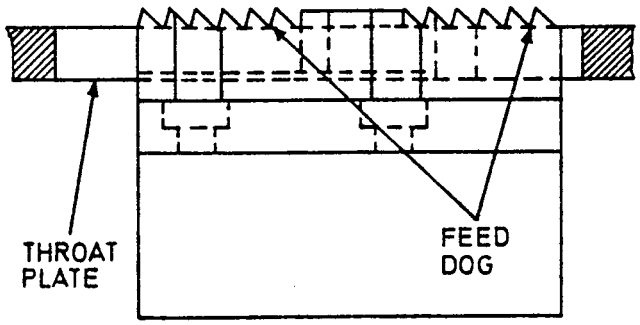

Figure 42

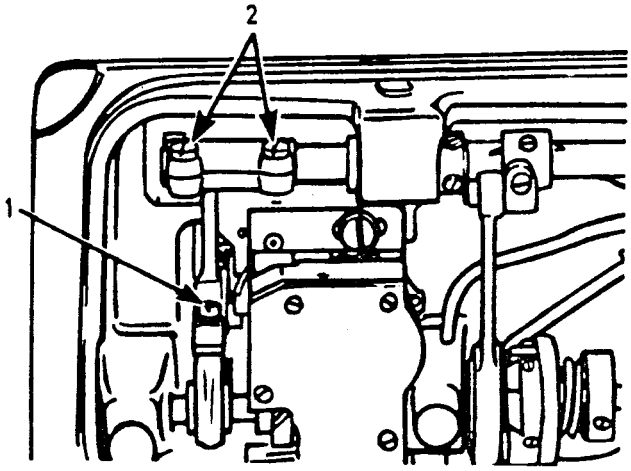

Figure 43

ADJUSTMENT OF THE PRESSER BAR HEIGHT (Figures 44 and 45)

The presser bar height can be adjusted after loosening pinch screw 1 in the driving crank, pinch screw 2 in the lifting element and pinch screw 3 in the presser bar guide. With both presser feet on the throat plate (as the needle enters the throat plate) tighten pinch screw 2 so that there is a clearance between the lifting element and the casting. Tighten pinch screw 3 so that a clearance remains between the guide and the casting. Normally the presser feet are adjusted so that the lift of the front presser is more than that of the rear presser. To do this turn crank 4 and retighten pinch screw 1.

ADJUSTMENT OF THE LIFTING ECCENTRIC AND THE LIFT OF THE ALTERNATING PRESSER FEET (Figure 45)

The lift of the alternating presser feet is governed by the thickness of the material sewn, and should be no higher than necessary. Normally, the lift is the same for both presser feet and is infinitely variable within the machine's capability by means of the adjustable lifting eccentric.

To adjust the lift of the presser feet use a screw driver to hold the lifting eccentric adjusting disc 5 from turning. To increase the lift, turn the machine pulley towards the operator; to decrease, turn the machine pulley away from the operator. For special requirements, the amount of lift can be increased by moving the screw stud 6 to the threaded hole 7.

To time the lift of the alternating presser feet, loosen the set screws 8 in the lifting eccentric and adjust the eccentric on the arm shaft. For normal work, the lifting eccentric is regulated with the presser feet at the same height, so that the point of the needle enters the throat plate when the feed dog touches the movable presser foot while both are even with the upper edge of the throat plate. Securely tighten the set screws 8.

ADJUSTMENT OF THE FEED DRIVING ECCENTRIC (Figures 46 and 47)

The stitch length of the machine can be adjusted by means of the feed driving eccentric as explained under "ADJUSTMENT OF STITCH LENGTH". The feed driving eccentric is mounted on the bed shaft as illustrated in Figure 46 for the 211 G 165/265 MACHINES and in Figure 47 for the 211 G 166/266 MACHINES.

The feed driving eccentric 9 is held in a guide of the feed driving flange 10 and adjusted by means of the adjusting screws 11 which are secured by lock screws to prevent shifting. To adjust, loosen the two lock screws and turn in the two adjusting screws 11 until all play is eliminated and the eccentric fits quite snugly in the guide of the feed driving flange 10. The linear movement of the eccentric is accomplished by turning the adjusting disc 12. A spring located between the adjusting disc and a collar prevents the disc from moving out of position when the machine is in operation.

The timing of the eccentric in relation to the needle movement is achieved by the feed driving eccentric positioning screw in a splined groove of the bed. The positioning screw is the first screw to appear when turning the machine pulley in a normal direction of rotation.

Figures 44, 45, 46, and 47.

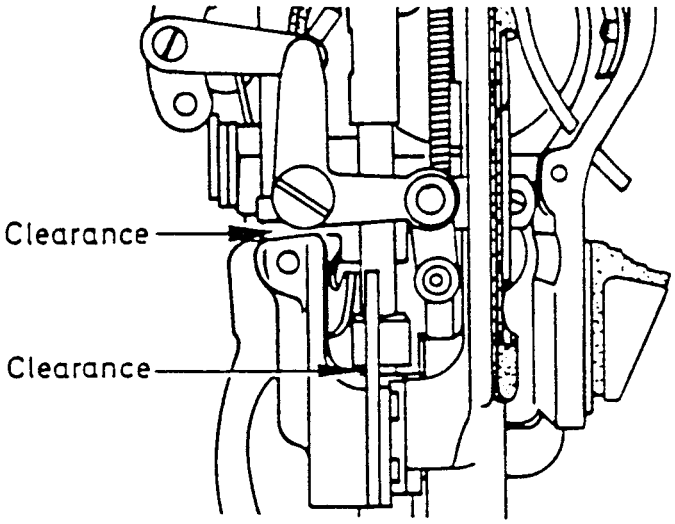

Figure 44

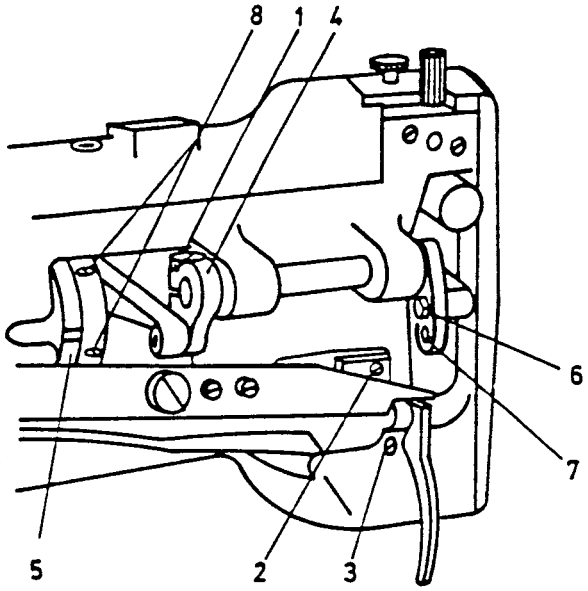

Figure 45

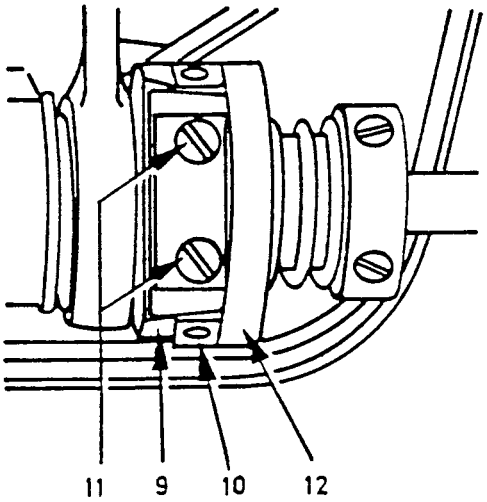

Figure 46

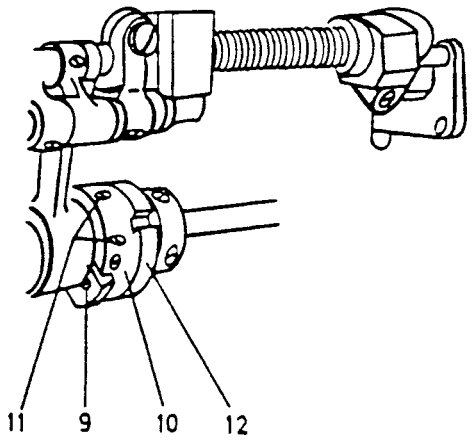

Figure 47

ADJUSTMENT OF THE REVERSE FEEDING MECHANISM ON THE 211 G 166/266 MACHINES (Figure 48)

As explained under "TO USE THE REVERSE FEED ON THE 211 G 166/266 MACHINES" the direction of feed can be reversed by using the reverse feeding mechanism which is adjusted at the factory for equal stitch length for forward and reverse sewing. Its bearing block is pinned in position and should never be changed!
To adjust this mechanism, set the feed driving eccentric 1, to 5 stitches/inch, loosen screws 2, and move crank 3 until 5 needle penetrations make exactly one inch. Then fully depress the reversing lever and the eccentric head of the bearing pin 4, should be resting against the bearing block. Loosen the two set screws 5, and turn the bearing pin 4 until the stitch length is the same in advance and reverse. Securely tighten all screws.

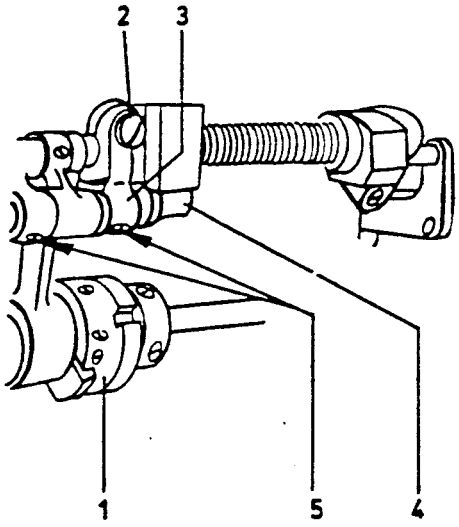

Figure 48

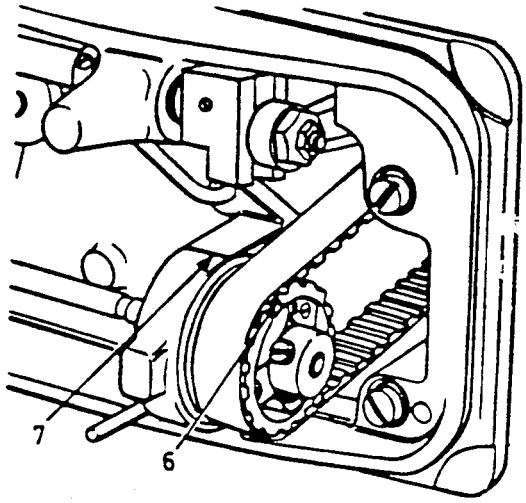

Figure 49

REPLACEMENT OF ARM SHAFT CONNECTION BELT (Figure 49)

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 (holding needle bar crank in place) tap the machine pulley into position with the palm of the hand. Tighten the machine pulley set screws firmly.
Turn the machine pulley over toward you until the thread take-up lever is at its highest point. Then turn the hook driving shaft until the setting mark "B" on the safety clutch pulley 6, is in line with mark 7, cut into the machine bed. Now, without disturbing the timing of either the arm shaft or the hook driving shaft, slip belt over lower pulley.
After the needle has been reinserted, the relationship of needle to hook should be checked. The hook point should be on the center line of the needle and 1/16 inch above the needle eye.