

SINGER
150W104

USE ONLY SINGER OILS and LUBRICANTS

*They insure freedom from lubricating trouble and
give longer life to sewing equipment*

"Singer Oil for High Speed Sewing Machines"

(Cloth and Leather)

For all manufacturing sewing machines except where a stainless oil is desired.

"Singer Stainless Oil for High Speed Sewing Machines"

For all manufacturing sewing machines where a stainless oil is desired.

"Singer Motor Oil"

For oil-lubricated motors, power tables, transmitters and machinery in general.

"Singer Stainless Thread Lubricant"

For lubricating the needle thread of sewing machines for stitching fabrics or leather where a stainless thread lubricant is required.

NOTE: All of the above oils are available in 1 quart, 2 quart, 1 gallon and 5 gallon cans or in 55 gallon drums, and can also be supplied in customer's containers.

"Singer Gear Lubricant"

This specially prepared grease is recommended for gear lubrication on manufacturing sewing machines.

"Singer Ball Bearing Lubricant"

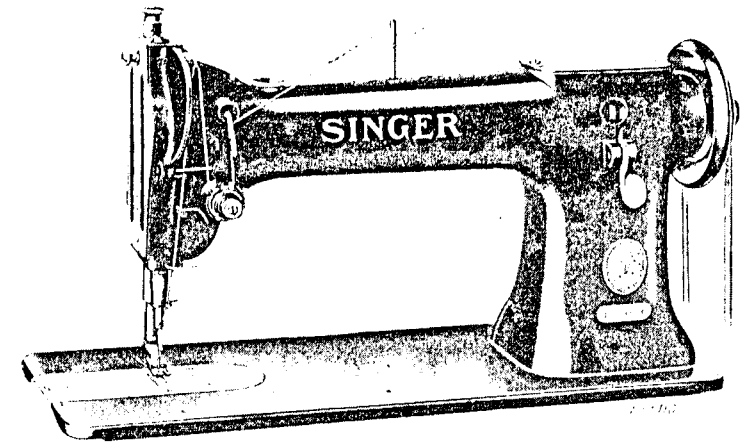
This pure grease is specially designed for the lubrication of ball bearings and ball thrust bearings of motors and electric transmitters, ball bearing hangers of power tables, etc.

NOTE: The above greases are furnished in 1 lb. and 4 lb. tins

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2456w

INSTRUCTIONS FOR USING AND ADJUSTING SINGER SEWING MACHINE



150 w 104

HIGH SPEED

LOCK STITCH

THE SINGER MANUFACTURING CO.

To all whom it may concern:

The placing or renewal of the name "Singer" (Reg. U. S. Pat. Off.) or any of the trade marks of The Singer Manufacturing Company on any machine that has been repaired, rebuilt, reconditioned, or altered in any way whatsoever outside a Singer factory or an authorized Singer agency is forbidden.

THE IMPORTANCE OF USING
GENUINE SINGER PARTS AND NEEDLES
IN SINGER MACHINES

The successful operation of Singer machines can only be assured if genuine Singer parts and needles are used. Supplies are available at all Singer Shops for the Manufacturing Trade and mail orders will receive prompt attention.

Genuine Singer Needles should be used
in Singer Machines.
These Needles and their Containers
are marked with the
Company's Trade Mark "SIMANCO." 1

Needles in Containers marked
"For Singer Machines"
are not Singer made needles. 2

DESCRIPTION

Machine 150w104 has one needle and a belt driven rotary sewing hook and makes the lock stitch. The pulley end of the arm shaft and hook shaft are mounted on ball bearings for quick pick-up, light running and smooth operation.

It is designed for use in the manufacture of a large variety of articles, including:

cloaks	overalls	upholstery
uniforms	knit goods	canvas goods
overcoats	bedding	hunting goods
suits	blankets	oiled clothing, etc.

Speed

The maximum speed recommended for this machine is 4000 stitches per minute, depending on the material being stitched. When the machine is in operation, the top of the balance wheel must turn over toward the operator.

To Oil the Machine

When the machine is received from the factory, it should be thoroughly cleaned and oiled.

USE ONLY SINGER "OIL FOR HIGH SPEED SEWING MACHINES (Cloth and Leather)" for general use or "STAINLESS OIL FOR HIGH SPEED SEWING MACHINES" where a stainless oil is desired.

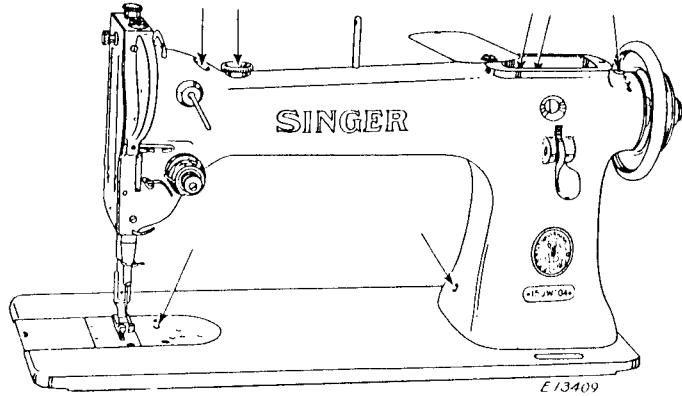


Fig. 2. Oiling Points at Front of Machine

Before starting the machine, fill the oil reservoir (K, Fig. 3) through the oil hole in the bed of the machine. This reservoir lubricates the front hook shaft bearing and sewing hook raceway through the oiling system shown in Fig. 3.

When starting a new machine, it is advisable each morning, for about a week, to apply a few drops of oil directly to the hook raceway (L, Fig. 3). **ALWAYS KEEP A SUPPLY OF OIL IN THE RESERVOIR (K).**

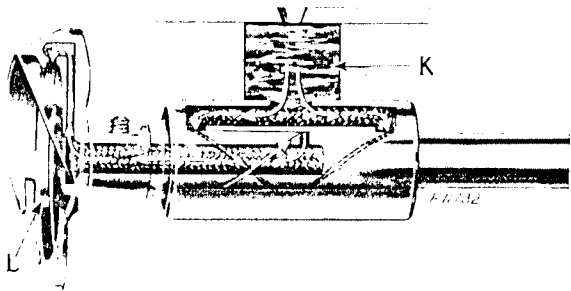


Fig. 3. X-ray View of Hook Lubricating System
(Oil flows in direction indicated by arrows)

Oil should be applied at the places indicated by arrows in Figs. 2, 3, 4, 5 and 6 and when the machine is in continuous use, it should be oiled at least four times each day. All wicking must be kept saturated with oil.

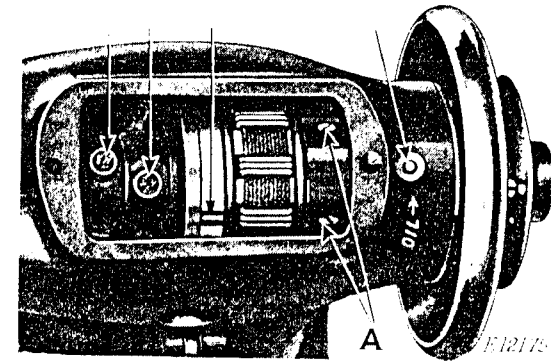


Fig. 4. Oiling Points in Arm of Machine

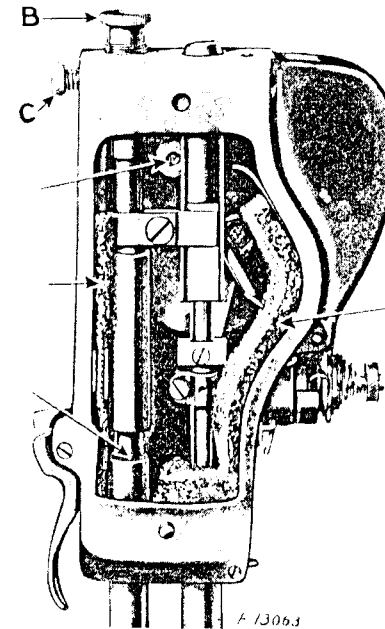


Fig. 5. End View of Machine, Showing Oiling Points
Also Adjustments on the Machine

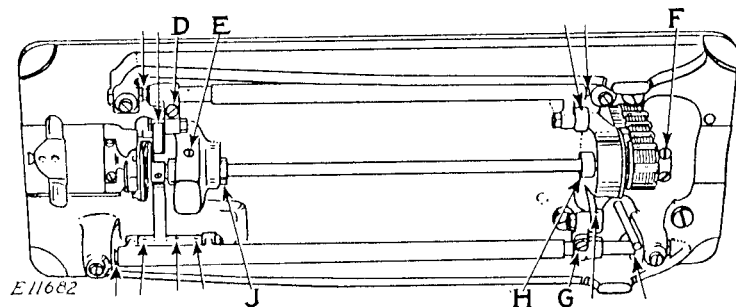


Fig. 6. Oiling Points in Base of Machine
Also Adjustments on the Machine

To Ensure Perfect Action of the Machine

The balance wheel must always turn over toward the operator.

Do not run the machine with the presser foot resting on the feed without cloth under the presser foot.

Do not run the machine when both bobbin case and needle are threaded unless there is material under the presser foot.

Do not try to help the machine by pulling the fabric lest you bend the needle; the machine feeds the work without assistance.

The slide over the bobbin case should be kept closed when the machine is in operation.

Needles

Needles for Machine 150w104 are of Class and Variety 135x5, sizes 7, 8, 9, 10, 12, 14, 16, 18, 20 and 22.

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. If rough or uneven thread is used or if it passes with difficulty through the eye of the needle, the successful use of the machine will be interfered with.

Orders for needles must specify the quantity required, the size number, also the class and variety numbers separated by the letter x.

The following is an example of an intelligible order:

"100 No. 14, 135x5 Needles."

The best results will be obtained in using the needles furnished by the Singer Sewing Machine Company.

Thread

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

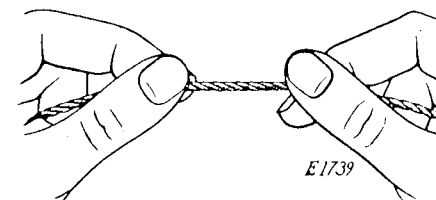


Fig. 7. How to Determine the Twist

Hold the thread as shown above. Turn the thread over toward you between the thumb and the forefinger of the right hand; if left twist, the strands will wind tighter; if right twist, the strands will unwind.

To Remove the Bobbin

Draw out the slide in the bed of the machine, reach down with the thumb and forefinger of the left hand, open the bobbin case latch (A, Fig. 12) with the forefinger and lift out the bobbin case. Release the latch, turn the open end of the bobbin case downward and the bobbin will drop out.

To Wind the Bobbin

(See Fig. 8)

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

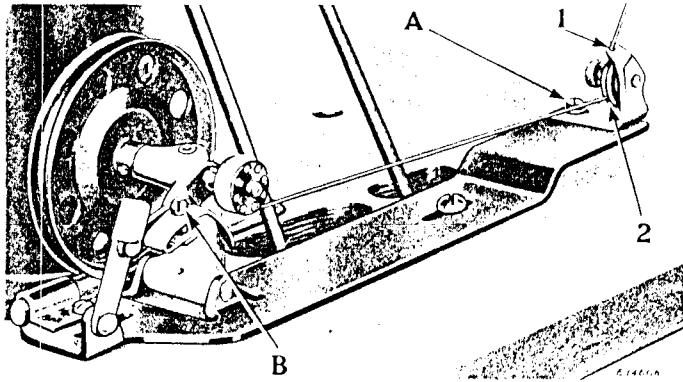


Fig. 8. Winding the Bobbin

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

Pass the thread down through the thread guide (1) in the tension bracket, around the back and between the tension discs (2). Then wind the end of the thread around the bobbin a few times, push the bobbin winder pulley over 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 (A) in the tension bracket and move the bracket to the right or left as may be required, then tighten the screw.

The amount of thread wound on the bobbin is regulated by the screw (B). To wind more thread on the bobbin, turn the screw (B) inwardly. To wind less thread on the bobbin, turn this screw outwardly.

Bobbins should be wound with light tension. This can be done while the machine is stitching.

To Thread the Bobbin Case

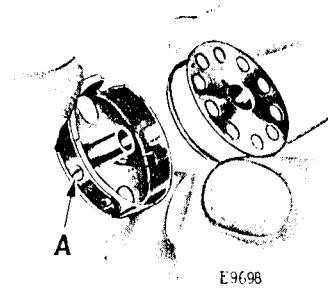


Fig. 9

Hold the bobbin between the thumb and forefinger of the right hand, the thread drawing on the bottom from the left toward the right, as shown in Fig. 9.

With the left hand, hold the bobbin case as shown in Fig. 9, the tension spring being at the front and place the bobbin into the bobbin case.

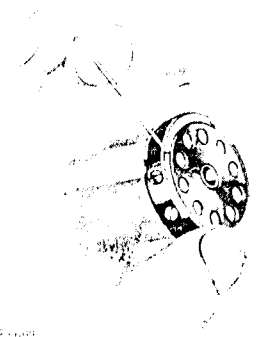


Fig. 10

Then pull the thread into the slot in the edge of the bobbin case as shown in Fig. 10, and back under the tension spring into the slot at the end of the tension spring, as shown in Fig. 11.

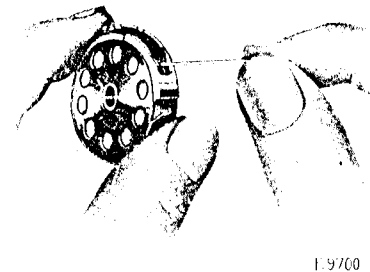


Fig. 11

To Replace the Bobbin Case

After threading, take the bobbin case by the latch, holding it between the thumb and forefinger of the left hand, place it on

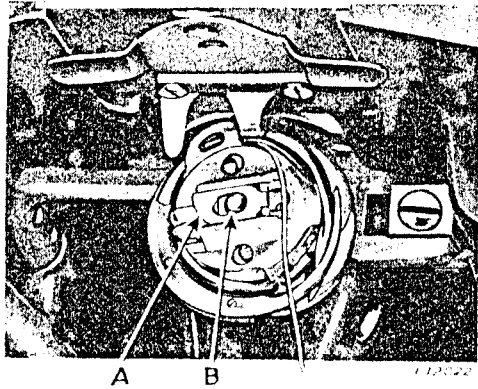


Fig. 12. Bobbin Case Threaded and Replaced

the centre stud (B, Fig. 12) of the bobbin case base, release the latch and press the bobbin case back until the latch catches the groove near the end of the stud (see Fig. 12). Allow about two inches of thread to hang free and replace the slide in the bed of the machine.

To Set the Needle

Turn the balance wheel over toward you until the needle bar moves up to its highest point; loosen the screw in the lower end of the needle bar and put the needle up into the bar as far as it will go, with the long groove of the needle toward the right and the eye of the needle directly in line with the arm of the machine, then tighten the screw.

Upper Threading

(See Fig. 13)

Pass the thread from the unwinder from back to front through the lower hole (1) in the pin on top of the machine, and from

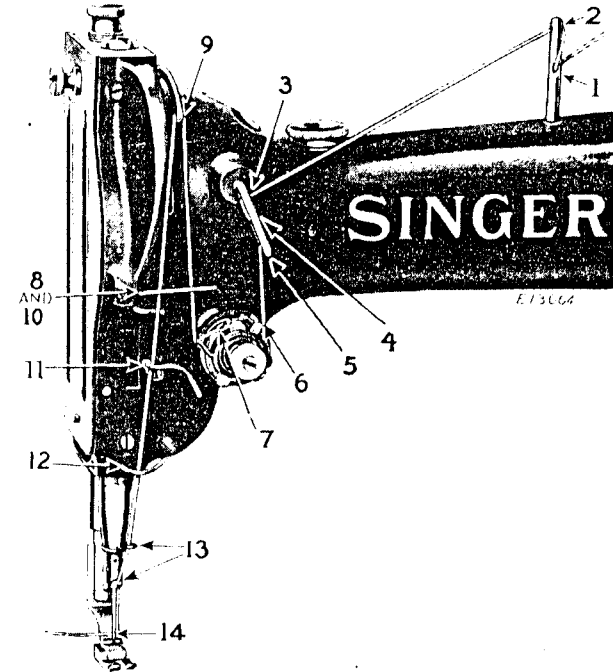


Fig. 13. Upper Threading

right to left through the upper hole (2) in the pin, down through the hole (3), up through the hole (4) and down through the hole (5) in the thread guide at the front of the machine, down and under from right to left between the tension discs (6), up into the fork (7) above the tension discs, against the pressure of the wire controller spring, up through the wire guide (8), from right to left through the hole (9) in the end of the thread take-up lever, down through the wire guide (10), into the wire guide (11), through the guides (12 and 13) and from right to left through the eye of the needle (14). Draw about three inches of thread through the eye of the needle with which to commence sewing.

Note: In cases where thread of low tensile strength is used, the threading through the three holes (3, 4 and 5) may give too much friction with resulting thread breakage, in such case threading through hole (4) may be omitted.

To Prepare for Sewing

With the left hand hold the end of the needle thread, leaving it slack from the hand to the needle, turn the balance wheel over toward you until the needle moves down and up again to its highest point, thus catching the bobbin thread; draw up the needle thread and the bobbin thread will come up with it through the hole in the throat plate. Lay both threads back under the presser foot.

To Commence Sewing

Place the material beneath the presser foot, lower the presser foot and commence to sew, turning the balance wheel over toward you.

To Remove the Work

Have the thread take-up lever at its highest point, raise the presser foot and draw the work back and cut the threads close to the goods.

To Regulate the Pressure on the Material

The pressure of the presser foot on the material is regulated by the thumb screw (B, Fig. 5) at the top of the machine. To increase the pressure, loosen the set screw (C, Fig. 5) at the back of the machine and turn the thumb screw (B) downward. To decrease the pressure, turn the thumb screw (B) upward. When the required amount of pressure is obtained, tighten the set screw (C) at the back of the machine.

Tensions

The needle and bobbin threads should be locked in the centre of the thickness of the material, thus:



Fig. 14. Perfect Stitch

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, thus:



Fig. 15 Tight Needle Thread Tension

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 under side of the material, thus:



Fig. 16. Loose Needle Thread Tension

To Regulate the Tensions

The tension on the needle thread should only be regulated when the presser foot is down. Having lowered the presser foot, turn the thumb nut (C, Fig. 22) at the front of the tension discs over to the right to increase the tension. To decrease the tension, turn this thumb nut over to the left.

The tension on the bobbin thread is regulated by the screw (A, Fig. 9) in the tension spring on the outside of the bobbin case. To increase the tension, turn this screw over to the right. To decrease the tension, turn this screw over to the left.

When the tension on the bobbin thread has been once properly adjusted, it is seldom necessary to change it, as a correct stitch can usually be obtained by varying the tension on the needle thread.

To Regulate the Length of Stitch

Press the stitch regulator lever (A, Fig. 17) and at the same time turn the balance wheel over toward you until the lever (A)

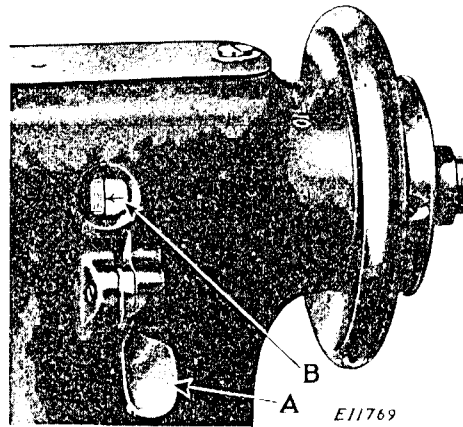


Fig. 17. Stitch Regulator

engages the notch in the stitch regulator flange (B, Fig. 17). Continue to hold the lever (A) in the notch in the flange (B) and at the same time turn the balance wheel backward or forward, as required, until the number of the desired length of stitch is opposite the arrow, as shown in Fig. 17, then release the lever (A).

INSTRUCTIONS FOR ADJUSTERS AND MACHINISTS

To Set the Needle Bar at the Correct Height

See that the needle is pushed up into the needle bar as far as it will go, then remove the face plate.

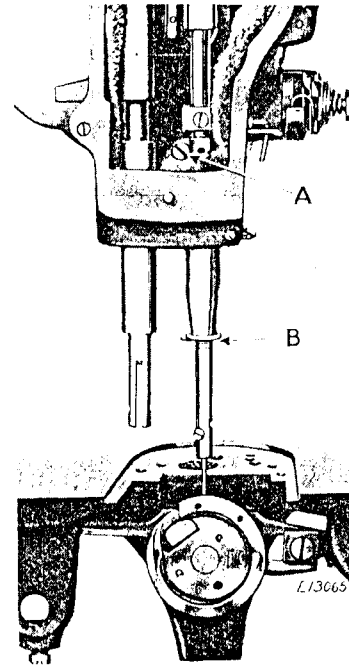


Fig. 18. Showing Needle Bar Set at the Correct Height

The needle bar which is in the machine when shipped from the factory has upon it, about $1\frac{1}{2}$ inches from the bottom, two timing marks $\frac{3}{4}$ inch apart.

Turn the balance wheel over toward you until the needle bar moves down to its lowest point. When the needle bar is in this position, the upper timing mark on the needle bar should be just visible at the lower end of the needle bar bushing, as shown at B, in Fig. 18.

In case the needle bar is not set at the correct height, loosen the needle bar connecting stud pinch screw (A, Fig. 18) and move the needle bar up or down until the upper timing mark is in the position, as instructed above, then securely tighten the screw (A).

To Set a Needle Bar Which Has No Mark

Set the needle bar so that when it rises $\frac{3}{4}$ inch from its lowest position, the point of the sewing hook will be at the centre of the needle and about $\frac{1}{16}$ inch above the eye.

To Time the Sewing Hook

Remove the bed slide, throat plate, bobbin case and bobbin case base.

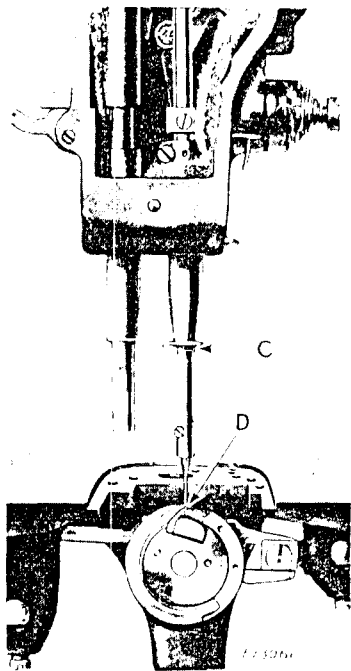


Fig. 19. Needle and Sewing Hook Correctly Timed

the needle bar bushing when the needle bar is on its upward stroke. Hold the balance wheel firmly and at the same time turn the sewing hook until the point is at the centre of the needle and $\frac{1}{16}$ inch above its eye. See that the end play to the shaft is almost eliminated, then securely tighten the pulley screws.

To determine whether the hook is correctly timed, see that a new needle is set in the machine, then turn the balance wheel over toward you until the **lower timing mark** on the needle bar is just visible at the lower end of the needle bar bushing, as shown at C, in Fig. 19, when the needle bar is on its upward stroke. When the needle bar is in this position, the point of the hook should be at the centre of the needle, as shown at D, in Fig. 19.

In case the hook is not correctly timed, loosen the screws in the hook shaft connection belt pulley (F, Fig. 6) and hold the hook with its point in the highest position, then turn the balance wheel over toward you until the **lower timing mark** on the needle bar is just visible at the lower end of

To Set the Hook To or From the Needle

Loosen the screws in the hook shaft connection belt pulley (F, Fig. 6), also loosen the screws in the collar (H, Fig. 6), and the set screw (E, Fig. 6) which holds the bushing at the right of the hook. To set the hook closer to the needle, carefully drive the bushing (J, Fig. 6) to the right. To set the hook farther from the needle, drive the bushing to the left. After carefully adjusting and timing the hook to the needle, tighten the screws that hold the bushing, collar and pulley. Leave the least amount of end play possible to the shaft, for lubricating purposes.

To Remove and Replace the Sewing Hook

To remove the sewing hook, turn the balance wheel until the needle bar is at its highest point, then remove the bed slide and throat plate, loosen the two screws in the hub of the hook and remove the hook.

When replacing the hook, have the first screw which appears as you turn the hook over toward you bear against the flat on the shaft.

When returning the throat plate to its position be sure to have the bobbin case base stop (A, Fig. 20) on the underside of the throat plate engage the position finger (B, Fig. 21) on the bobbin case base, as shown in Fig. 20.

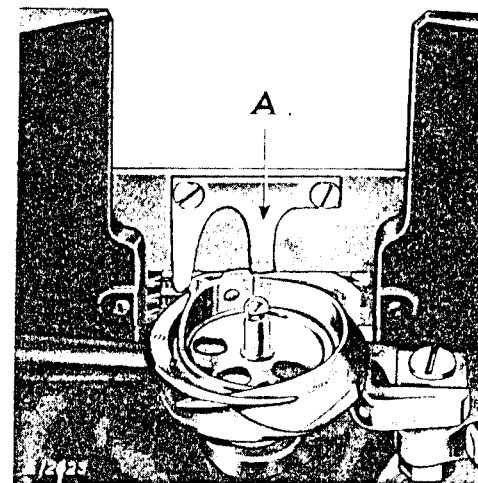


Fig. 20. Bobbin Case Base Correctly Engaged with Bobbin Case Base Stop Underneath Throat Plate

To Remove and Replace the Bobbin Case Base

To remove the bobbin case base, remove the bed slide, throat plate and bobbin case. Take out the three hook gib screws, remove the hook gib (C, Fig. 21) and remove the bobbin case base (B, Fig. 21).

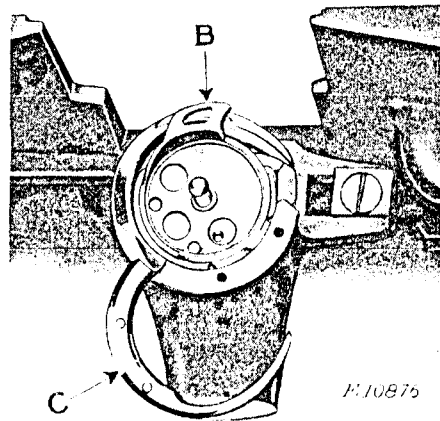


Fig. 21. Hook Gib Open for Removal of Bobbin Case Base

After replacing the bobbin case base replace the hook gib (C) and fasten it with the three screws. When replacing the throat plate, be sure to have the position finger (B, Fig. 21) on the bobbin case base engage the bobbin case base stop (A, Fig. 20) on the underside of the throat plate.

To Adjust the Feeding Mechanism

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

To prevent the feed dog from striking at either end of the slots in the throat plate, loosen the feed driving connection crank pinch screw (G, Fig. 6) and move the feed dog forward or backward until the longest stitch can be made without the feed dog striking the throat plate, then securely tighten the pinch screw (G).

To Raise or Lower the Feed Dog

Usually when the feed dog is at its highest position, it 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, being careful to have the bobbin case base stop underneath the throat plate engage the position finger on the bobbin case base. Tip the machine back on its hinges and turn the balance wheel over toward you until the feed dog is at its highest position, then loosen the feed lifting connection crank pinch screw (D, Fig. 6) and raise or lower the feed dog, as desired, after which securely tighten the pinch screw (D).

To Adjust the Thread Controller

The function of the thread controller spring is to assist the needle thread in passing over the bobbin case.

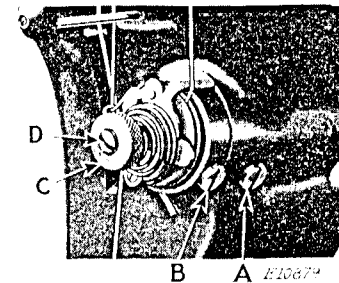


Fig. 22. Adjustment of the Thread Controller

For more controller action on the thread, loosen the set screw (B, Fig. 22) and set the thread controller spring stop lower. For less action, set the thread controller spring stop higher, then securely tighten the set screw (B).

It may be found advisable to increase the tension of the spring for coarse thread, or to lessen it for fine thread.

To increase the tension of the thread controller spring on the thread, loosen the tension stud set screw (A, Fig. 22) and turn the tension stud (D, Fig. 22) over to the left with a screwdriver. To decrease the tension, turn the tension stud (D) over to the right, then securely tighten the stud set screw (A).

To Remove and Replace the Arm Shaft Connection Belt

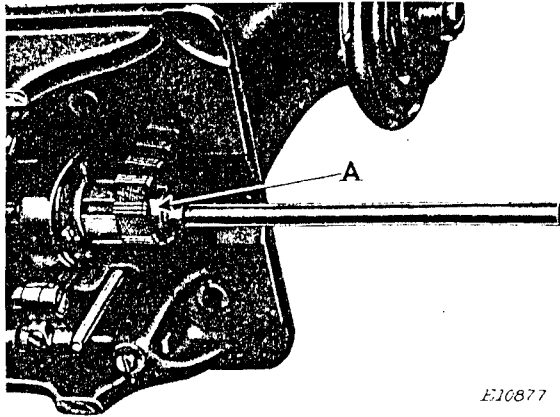
Remove the needle from the needle bar to prevent damage to the hook.

Slide the arm shaft connection belt off the lower pulley.

Loosen the two set screws (A, Fig. 4) in the arm shaft ball bearing collar, take out the large centre screw at the right of the balance wheel, loosen the balance wheel set screws and remove the balance wheel. Remove the three screws and ball bearing retainer and gently drive the ball bearing off the end of the shaft. Lift the belt up through the arm cap hole as far as possible and draw it out through the space normally occupied by the ball bearing.

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

To facilitate the replacing of the belt on the lower pulley use belt replacer 244005 (A, Fig. 23). Rest the replacer in the



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Fig. 23. Putting Belt on Lower Pulley with Belt Replacer 244005

loop of the belt and slide it over the hub of the pulley, as shown in Fig. 23, having the notches in the replacer engage the two set screws in the hub of the pulley. Turn the balance wheel toward you until the belt is fully over the pulley, then remove the replacer.

Note: As belt replacer 244005 will serve for several machines, it is not regularly furnished with the machine, and must be ordered separately.

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