SINGER
153W100, W101, 154W100
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 1/4 lb. tins and 1 lb. and 4 lb. tins.

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INSTRUCTIONS
FOR USING AND ADJUSTING
SINGER SEWING MACHINES

153w100, 153w101 and 154w100

CYLINDER BED

HIGH SPEED

COMPOUND FEED

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." |

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

DESCRIPTION

These lock stitch, compound feed, cylinder machines are used for setting sleeves in mackinaw and leather coats, raincoats, duck coats, etc. They have belt-driven vertical hooks which cannot get out of time, and a safety clutch which protects the hook from damage.

MACHINE 153W100 has one needle and one hook.

MACHINE 153W101 has one needle and one hook, and has alternating pressers in addition to the compound feed, which enable it to handle heavier work such as leather garments.

MACHINE 154W100 has two needles and two hooks, otherwise it is the same as Machine 153W100. It is furnished in gauges from 1/8 to 1/2 inch, as ordered.

Speed

The maximum speed recommended for Machines 153W100 and 154W100 is 3000 R.P.M., and for Machine 153W101 the maximum speed is 2900 R.P.M., depending on the nature of the material being stitched. The machine should be run slower than the maximum speed until the parts which are in movable contact have become glazed by their action upon each other. When the machine is in operation, the balance wheel should always turn over toward the operator.

Needles

Needles for Machines 153W100 and 154W100 are of Class and Variety 135x7 which are made in sizes 12, 14, 16, 18, 20, 22 and 24.

Needles for Machine 153W101 are of Class and Variety 135x16 which are made in sizes 14, 15, 16, 17, 18, 19, 20, 21, 22, 23 and 24.

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 passed 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.18, 135x7 Needles"

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

When the machine is received from the factory it should be thoroughly cleaned and oiled. When the machine is in continuous use it should be oiled at least twice a day.

Fig. 2. Oiling Points at the Front of the Machine

Oil should be applied to each of the places designated by arrows in Figs. 2, 3, 4 and 5.

Fig. 3. Oiling Points and Adjustments at Back of Machine 153W101

Fig. 4. Oiling Points and Adjustment in End of Cylinder

Remove the cylinder end cover and apply oil to the places indicated in Fig. 4. Move the face plate aside and oil the wick and bearings shown in Fig. 5, then replace the face plate.

OIL THE BOBBIN CASE BEARING IN THE HOOK RACE EACH TIME A BOBBIN IS REPLACED.

Fig. 5. Machine 153W100

Oiling Points and Adjustments Back of the Face Plate
Relative Sizes of Needles and Thread

The following sizes of needles and thread are recommended:

<table>
<thead>
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<th>COTTON THREAD</th>
<th>SILK THREAD</th>
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Thread

Use left twist thread for the needle. Either left or right twist thread may be used for the bobbin.

Fig. 6. 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 Set the Needle

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

ON MACHINE 154W100, the needles should be set with their long grooves facing each other and the eyes in line.

To Remove the Bobbin

Draw out the slide plate in the bed of the machine, and on Machine 154W100, also remove the cylinder bed cap. Insert the finger nail of the forefinger under the latch (G, Fig. 9) of each bobbin case, raise the latch and remove the bobbin.

To Wind the Bobbin

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. 7. 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 the screw outwardly.

Bobbins can be wound while the machine is stitching.
Fig. 9. Bobbin Cases of Machine 154W100 Threaded

The bobbin case in Machines of Class 153W is threaded the same as the right hand bobbin case illustrated above.

Fig. 10. Threading Class 153W Machines

on top of the machine and from 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 guides at the front of the machine, over from right to left between the tension discs (6), down, under from right to left around the thread controller (7), up into the take-up spring (8) and against the pressure of the spring until the thread enters the fork in the thread controller disc; up through the thread guide (9), from right to left through the hole (10) in the thread take-up lever, down through the thread guides (11, 12 and 13), through the guide (14) at the bottom of the needle bar, and from left to right through the eye of the needle (15).
Upper Threading of Machine 154W100

TO THREAD THE OUTSIDE NEEDLE OR THE ONE FARTHEST FROM THE UPRIGHT PART OF THE ARM, pass the thread from the unwinder from back to front through the hole (1) in the pin on top of the machine, then from right to left through the 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, over from right to left between the left tension discs (6), down under from right to left around the thread controller (7), up into the fork (8) of the thread controller against the pressure of the wire controller spring, up through the thread guide (9), up and from right to left through the upper hole (10) in the end of the thread take-up lever, down through the thread guide (9) again, and through the thread guides (12 and 13), down through the left hole (14) in the needle holder and from right to left through the eye of the left or outside needle (15).

TO THREAD THE INSIDE NEEDLE OR THE ONE NEAREST THE UPRIGHT PART OF THE ARM, pass the thread from the unwinder from back to front through the hole (A) in the pin on top of the machine, then from right to left through the hole (B) in the pin, down through the hole (C), up through the hole (D) and down through the hole (E) in the thread guide at the front of the machine, under from right to left between the right tension discs (F), down under from right to left around the thread controller (G), up into the fork (H) of the thread controller against the pressure of the wire controller spring, up through the thread guide (J), up and from right to left through the lower hole (K) in the end of the thread take-up lever, down through the thread guide (J) again, and through the thread guides (M and N), down through the right hole (C) in the needle holder and from left to right through the eye of the right or inside needle (P).

Draw about three inches of thread through the eye of each needle with which to commence sewing.

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 feed dog. Lay the threads back under the presser foot and close the slide.

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 the highest point, raise the presser foot, draw the work back and cut the threads close to the goods. Lay the ends of the threads back under the presser foot.
Tensions

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

Fig.12. 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.13. 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.14. Loose Needle Thread Tension

To Regulate the Tensions

The tension on the needle thread is regulated by the thumb nut (O, Fig.16) at the front of the tension discs on the front of the machine. To increase the tension, turn this thumb nut over to the right. To decrease the tension, turn this thumb nut over to the left.

The tension on the bobbin thread is regulated by means of the screw nearest the center of 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.

To Regulate the Pressure on Material

The pressure on the material is regulated by the screw (C, Fig. 3) at the back of the machine, the screw acting on a flat spring. To increase the pressure, turn this screw downward. To decrease the pressure, turn this screw upward. The pressure should be only heavy enough to enable the feed to move the work along evenly.

To Regulate the Length of Stitch

The length of stitch is regulated by the thumb screw (A, Fig. 15) at the right of the balance wheel.

Fig.15. Stitch Regulator

There is a notch in the hub of the balance wheel, as shown in Fig.15, and the number appearing in the notch shows the number of stitches to the inch that the machine is ready to make.

To lengthen the stitch, turn the thumb screw (A) over toward you. To shorten the stitch, turn this thumb screw over from you.
INSTRUCTIONS
FOR
ADJUSTERS AND MACHINISTS

Thread Controller

The function of the thread controller spring is to hold back the slack of the needle thread until the eye of the needle nearly reaches the goods in its descent, as without this controlling action of the spring, the slack thread or silk (more especially silk) will sometimes be penetrated by the point of the needle as the needle is descending.

Fig.16. Adjustment of Thread Controller

For more controller action on the thread, loosen the stop screw (S, Fig.16) at the right of the tension and set the stop lower, and for less action set the stop higher.

To strengthen the action of the controller spring on the thread, loosen the tension stud screw (T, Fig.16) at the right of the stop screw and turn the tension stud (R) slightly to the left with a screwdriver, or to lighten its action turn to the right and retighten the tension stud screw.
To Set the Hook To or From the Needle

Securely tighten the screw at M (Fig. 2).

Move the needle bar to the desired position of the needle bar, when the adjustment has been made, feed the feed regulator spindle feed 1/6 to 1/16" so that there is no feeding movement. When making this adjustment be sure to see that the distance when making this adjustment be sure to see that the correct material is used to determine the correct distance. When moving the feed regulator spindle feed, it is necessary to move forward or backward so as not to change the distance. When moving the feed regulator spindle feed, it is necessary to move forward or backward so as not to change the distance.

If the distance between the needle bar and presser bar should be 1/4 to 7/32" as shown in Fig. 5:

Tighten the feed regulator so that there is no feed movement.

To set a needle bar which has no mark, set the stitch regulator to zero, and inch the needle bar over so that the point of the center of the presser bar is set to the center of the needle bar.

To set the needle bar:

Adjust the needle bar to the correct position as directed above, then tighten the needle bar.

When the upper mark should be just visible at the end of the needle bar, move the needle bar over so that the feed regulator spindle feed is 0.010" above the tension plate. When the needle bar is set in the lowest position, there are two lines across the needle bar, about two inches above. See that the needle bar is up in the bar and far as it will go.
To Time the Sewing Hook

Set the feed regulating spindle head so that there is no feeding motion.

Remove the throat plate and turn the balance wheel over toward you until the lower mark across the needle bar is just visible at the end of the needle bar frame on the upward stroke of the needle bar. If the sewing hook is correctly timed with the needle bar, the point of the hook will be at the center of the needle and about 1/16 inch above the eye.

If the hook is not timed correctly, loosen the two set screws in the hub of the hook driving gear (N, Fig. 17) and turn this gear on the shaft until the point of the hook is at the center of the needle. Then securely tighten the two set screws in the gear.

To Remove the Bobbin Case and Hook from the Machine

Take out the hook gib screws and remove the gib (H, Fig. 18) to allow the bobbin case to be taken out, after which remove the screw from the center of the hook. Tap the hook lightly on the bottom of its rim to force it from its socket. Do not try to pry it out, as prying may bend the shank of the hook. When replacing the hook, be sure that the prongs of the shank properly enter the slot at the top of the socket, otherwise the hook will be out of time. Then replace the screw in the center of the hook, replace the bobbin case and securely fasten the hook gib in position by means of the screw.

Fig. 18. Sewing Hook Removed from Machine, Showing Oiling Wick and Hook Washer (Needle Guard)

Needle Guard

The function of the hook washer (needle guard) (J, Fig. 18), which is attached to the bottom of each sewing hook, is to prevent the point of the hook from striking the needle, if, when passing through the material, the needle is deflected toward the hook.

The needle guard can be bent with a small pair of pliers until it prevents the hook point from striking the needle, but it should not be bent outwardly enough to deflect the needle from its normal path.

To Adjust the Feed Dog

Usually when the feed dog is at its highest position, it should show a full tooth above the throat plate. To raise or lower the feed dog, remove the cylinder end cover, loosen the feed dog screw (D, Fig. 4) and adjust the feed dog to the required height, then securely tighten the feed dog screw (D).

If the feed dog strikes the throat plate, tip the machine back and loosen the pincher screw (U, Fig. 23) of the feed driving rock shaft crank at the end of the rock shaft, then set the feed dog so that it will not strike when the longest stitch is made, and retighten the pincher screw (U).

To Adjust the Mechanical Opener

The bobbin case lever (Q, Fig. 19) at the left of the sewing hook, actuated by the eccentric on the hook washer, strikes the projection on the bobbin case and turns the bobbin case slightly, making an opening between the bobbin case stop and the stop on the throat plate when the thread is across the bobbin case and passing between the stops.

Fig. 19. Adjustment of Mechanical Opener
At a predetermined load, the forces from the guide may make the needle frame rock. Be sure to remove the needle frame rock to prevent this from happening.

To repair the needle frame rock, follow these steps:

1. Remove the needle frame rock by hand.
2. Put the needle frame rock into position.
3. Turn the frame rock and needle back together, then tighten.
4. Ensure that the needle frame rock is secure before moving on.

When removing the needle frame rock, be careful not to damage the machine. Always replace the needle frame rock in the correct position and ensure it is tightened securely.

Note: If the needle frame rock is not replaced correctly, it may lead to damage or malfunction of the machine.
stud (A, Fig. 2) near the base of the arm to engage the hook driving shaft lock ratchet (A1, Fig. 21) which will prevent the hook driving shaft from turning backward. Turn the balance wheel away from you until the locking lever (B1) snaps into the notch (C1, Fig. 22) in the shaft collar as shown in Fig. 22. Release the lock stud and resume sewing.

To Adjust the Safety Clutch

The small screw (D1, Fig. 22) in the perimeter of the belt pulley controls the amount of force necessary to release the safety clutch. This adjustment is correctly made at the factory and should not be disturbed. If the screw is turned in too far, the safety clutch may not release until damage has been done to the belt or the hook. However, if the clutch releases too easily without the hook being jammed, the screw (D1) may be turned in just enough to keep the clutch from releasing during ordinary sewing.

To Remove the Arm Shaft Connection Belt from within the Arm

Slide the connection belt off the lower pulley; remove the feed regulating spindle head and balance wheel; loosen the arm shaft bushing screw (L, Fig. 3) at the back of the arm and remove the bushing; lift the belt up through the arm cap hole as far as possible and draw it out through the space normally occupied by the bushing.

Owing to the fact that the sewing hook makes two revolutions to one revolution of the hook driving shaft, and that the feed lifting eccentric is on the hook driving shaft, it is possible to have the sewing hook correctly timed without having the feed correctly timed. To overcome this, the plate (V, Fig. 23) is attached to the underside of the bed of the machine. This plate is marked with an arrow at its forward end and directly alongside of the plate, the side of one of the teeth of the belt pulley is marked as shown at W in Fig. 23. When replacing the belt, replace the arm shaft bushing and securely fasten it in position by the screw (L, Fig. 3) at the back of the machine, replace the feed regulating spindle head and the balance wheel and place the belt on the upper pulley, then turn the balance wheel toward you until the thread take-up lever is at its highest point. Then turn the hook driving shaft with the fingers until the arrow on the plate (V) and the timing mark on the belt pulley (W) are directly in line. Now, without disturbing either the arm shaft or the hook driving shaft, slip the belt over the lower pulley (Fig. 23). The feed will then be correctly timed with the needle bar.

To facilitate the replacing of the belt on the lower pulley, use belt replacer 265058 (X, Fig. 23). Rest the replacer in the 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 265058 will serve for several machines, it is not regularly furnished with the machine, and must be ordered separately.