

**SINGER**  
**47W70**

# USE ONLY **SINGER** OILS and LUBRICANTS

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

*The following are the correct lubricants for this machine:*

**TYPE B** — MANUFACTURING MACHINE OIL, HEAVY GRADE

*When a stainless oil is desired, use:*

**TYPE D** — MANUFACTURING MACHINE OIL, STAINLESS, HEAVY GRADE

## OTHER **SINGER** LUBRICANTS

**TYPE E** — THREAD LUBRICANT

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

**TYPE F** — MOTOR OIL

For oil lubricated motors and plain bearings in power tables and transmitters.

NOTE: All of the above oils are available in 1 quart, 1 gallon and 5 gallon cans

**GEAR LUBRICANT**

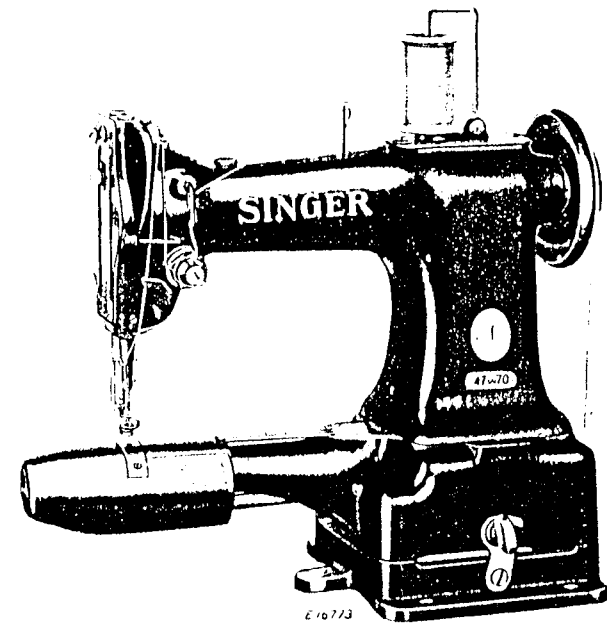
This specially prepared grease is recommended for gear lubrication on manufacturing sewing machines.

**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. Furnished in 1 lb. and 4 lb. tins.

Form 2592w

## INSTRUCTIONS FOR USING AND ADJUSTING **SINGER** SEWING MACHINE



47w70

THE SINGER MANUFACTURING COMPANY

TO ALL WHOM IT MAY CONCERN:

The improper placing or renewal of the Trade Mark "**SINGER**" or any other of the Trade Marks of The Singer Manufacturing Company (all of which are duly Registered Trade Marks) 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.

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THE IMPORTANCE OF USING  
**SINGER\*** PARTS AND NEEDLES  
IN **SINGER** MACHINES

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

**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

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DESCRIPTION

MACHINE 47W70 has one needle and a rotary sewing hook and makes the lock stitch. It is especially designed for mending and darning on heavy fabrics. It is used for repairing overalls, work clothes, barbers' coats, etc. Tubular shaped articles are conveniently handled on the cylinder bed of the machine.

When desired, the machine can be instantly converted into a flat bed machine by attaching a flat work plate, which is furnished, on order, at an additional charge.

The operator can freely move the work in any direction while darning, as there is no feeding mechanism to interfere with the handling of the work.

Speed

The maximum speed recommended for Machine 47W70 is 2800 stitches per minute. 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. When the machine is in operation, the balance wheel should always turn over toward the operator.

### To Oil the Machine

Use "TYPE B" or "TYPE D" OIL, sold by Singer Sewing Machine Company. See inside front cover for description of these oils.

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

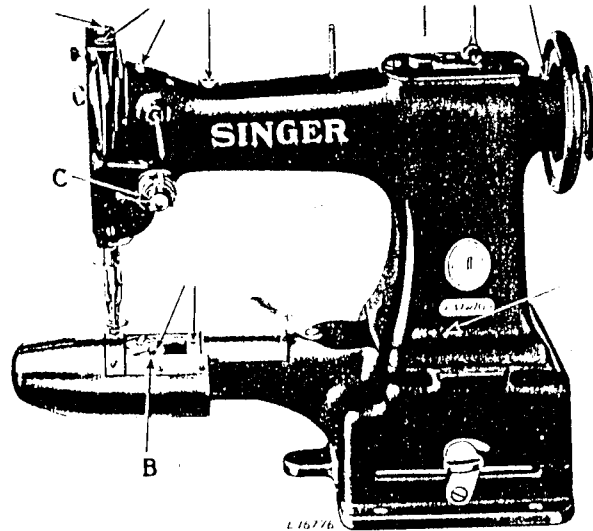


Fig. 2. Oiling Points and Adjustments at Front of Machine

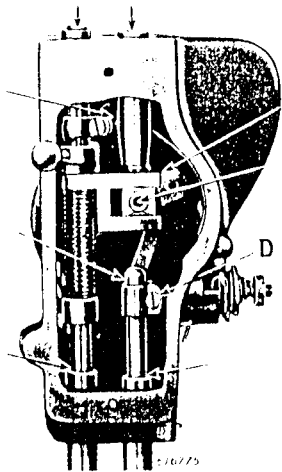


Fig. 3. End View of Machine, Showing Oiling Points  
Also Adjustment of Needle Bar

Oil should be applied to the oil holes shown by arrows in Figs. 2 and 3 and all other places where there are parts in movable contact. When the machine is in continuous use, it should be oiled at least twice each day.

Oil the bobbin case bearing in the sewing hook race each time a bobbin is replaced.

### Needles

Needles for Machine 4770 are of Class and Variety 126x3 and are made in sizes Nos. 10, 12, 14, 16, 18, 20, 22, 23 and 24.

The size of the needle to be used should be determined by the size of the thread which should 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, 126x3 Needles."

The best stitching results will be obtained with needles sold by Singer Sewing Machine Company.

### Thread

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

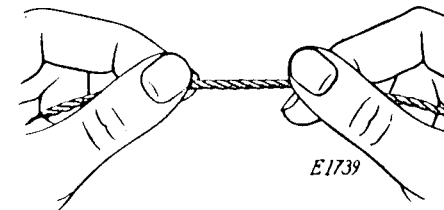


Fig. 4. How to Determine the Twist

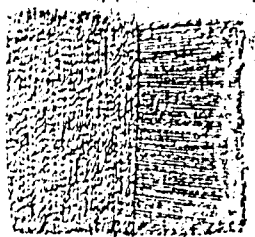
Hold the thread as shown above. Then turn the thread over toward you between the thumb and forefinger of the right hand; if left twist, the strands will wind tighter; if right twist, the strands will unwind.

### To Prepare for Sewing

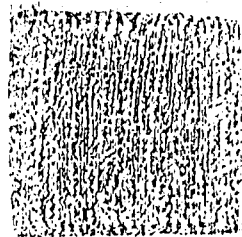
With the left hand hold the end of the needle thread leaving it slack from the hand to the needle. Turn the balance wheel over toward you until the needle moves down and up again to its highest point, thus catching the bobbin thread; draw up the needle thread and the bobbin thread will come up with it through hole in throat plate. Lay threads back under presser foot, close the slide plate and lock it with slide stop (E, Fig. 5).

### To Commence Darning

Place the work under the presser foot, having the unworn part of the work near the hole under the needle. Hold the needle



E 11798



E 12011

Fig. 9. Darning in Process

Fig. 10. Darning Finished

thread until the first stitch is completed, then commence the darning by making a line of stitches across the hole a little longer than the width of the hole. Continue making parallel lines of stitches across the hole, moving the work backward and forward and at the same time gradually moving the work sidewise until the hole is covered with lines of stitches running across the hole. Then commence as before and move the work lengthwise of the hole until the stitches across the hole are completely covered and the darn is finished.

When darning flat work, it is advisable to use embroidery hoops to hold the work.

### To Remove the Work

Stop the machine with the thread take-up lever at its highest point, and press the knee lifter to release the tension. Draw the work backward and cut the threads close to the goods, leaving two or three inches of thread with which to commence sewing.

### Tensions

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



Fig. 11. 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. 12. 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. 13. Loose Needle Thread Tension

### To Regulate the Tensions

The tension on the under thread is regulated by the screw (B, Fig. 2) in 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. See that there is no lint or dirt under the tension spring.

Correctly made stitches, as shown in Fig. 11, can usually be obtained by regulating the upper tension only, turning the tension thumb nut (C, Fig. 2) inward to tighten and outward to loosen the tension.

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INSTRUCTIONS  
FOR

ADJUSTERS AND MACHINISTS

Thread Controller

The function of the thread controller spring is to hold back the slack of the needle threads until the eye of each needle 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.

For more controller action on the thread, loosen the stop screw (B, Fig. 14) at the right of the tension and set the stop lower, and for less action, set the stop higher.

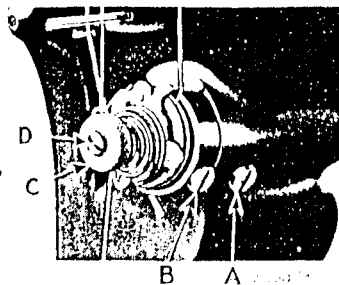


Fig. 14. Adjustments of Thread Controller

To strengthen the action of the controller spring on the thread, loosen the tension stud screw (A, Fig. 14) at the right of the stop screw and turn the tension stud (D, Fig. 14) slightly to the left with a screwdriver, or to lighten its action on the thread, turn the tension stud (D) to the right and tighten the tension stud screw (A).

To See if the Needle Bar is Set Correctly

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 at (J, Fig. 15) two lines  $3/32$  inch apart.

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

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TO SET THE NEEDLE BAR IN CORRECT TIME. Loosen the needle bar connecting stud pinch screw (D, Fig. 3) and place the needle bar in the proper position as directed above, then retighten the screw.

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 (N, Fig. 15) will be at the center of the needle and about  $1/16$  inch above the eye.

To See if the Hook is Correctly Timed

Remove the throat plate and turn the balance wheel toward you until the lower mark across the needle bar (J, Fig. 15), as it is going up, is just visible at the end of the bushing; now, if the needle bar and hook are in correct time, the point of the hook (N, Fig. 15) will be at the center of the needle and about  $1/16$  inch above its eye.

To Time the Hook

Loosen the screws (T, Fig. 16) in the hook driving gear and turn the balance wheel toward you until the needle bar goes to its lowest position and upward until the lower mark across the needle bar (J, Fig. 15) is just visible at the end of the bushing, then stop turning and hold the wheel firmly with the right hand, turn the hook until the point (N, Fig. 15) is at the center of the needle —  $1/16$  inch above its eye — then retighten the gear set screws (T).

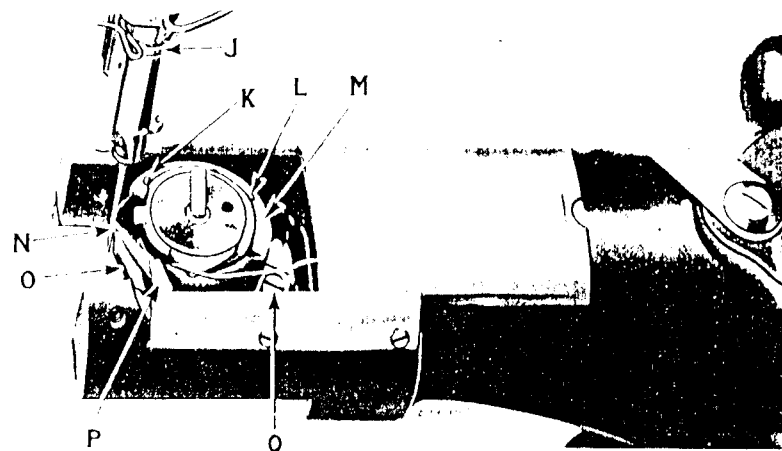


Fig. 15. Needle Bar and Hook Adjustments

### To Remove the Bobbin Case and Hook from the Machine

Take out the hook gib screws (K and L, Fig. 15) and remove the gib (M) 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 (S, Fig. 16) 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 (M) in position by means of the screws (K and L).

### To Set the Hook To or From the Needle

To prevent the point of the sewing hook from dividing the strands of the thread, it should run as close to the needle (within the scarf) as possible.

If the sewing hook runs too far from or too close to the needle, loosen the hook saddle screws (R, Fig. 16) just enough to permit the saddle to be driven by light blows to the position desired, then retighten the hook saddle screws (R).

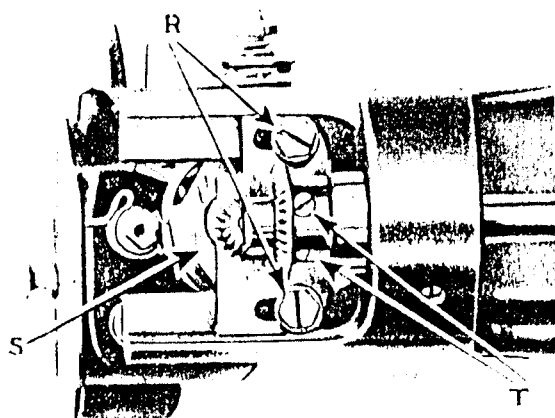


Fig. 16. Adjustment of Hook Saddle

### Needle Guard

The function of the hook washer (needle guard) (O, Fig. 15), which is attached to the bottom of the sewing hook, is to prevent the point of the hook from striking the needle if, when passing through the material, the needle is deflected towards the hook.

The upright portion of the hook washer (O) should be sprung with a screwdriver or other instrument until it prevents the hook point from striking the needle. It should not, however, be sprung outwardly enough to deflect the needle from its normal path.

### To Adjust the Mechanical Opener

The bobbin case lever (P, Fig. 15) 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.

The bobbin case lever (P) may be adjusted by loosening the bobbin case lever fulcrum screw (Q, Fig. 15) and moving the fulcrum forward or backward.

This adjustment should be made so that the opening between the lever and the edge of the bobbin case is just perceptible when the bobbin case lever has opened the bobbin case all the way.

If the bobbin case lever (P) is set to open the bobbin case too far, it will cause a bind between the bobbin case bearing and the hook bearing when the bobbin case is opened all the way, and care must be taken to see that this does not occur. When the correct adjustment of the bobbin case lever (P) is made, securely tighten the fulcrum screw (Q).

To Remove the Arm Shaft Connection Belt  
from Within the Arm

Slide the arm shaft connection belt off the lower pulley, remove the balance wheel from the end of the arm shaft, loosen the arm shaft bushing (back) screw 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 formerly occupied by the bushing.

When replacing the belt see that the sewing hook and needle at (N, Fig. 15) are in correct time before running the belt on the lower pulley, and verify the correctness of the timing before commencing to sew.

CAUTION - DO NOT Pinch Belt 224195 in handling, as this will put a permanent kink in the wire reinforcements. Do not store near radiator or other hot place, preferably in a cool, dark place until belt is installed in machine.

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