SINGER
96-10,12,16

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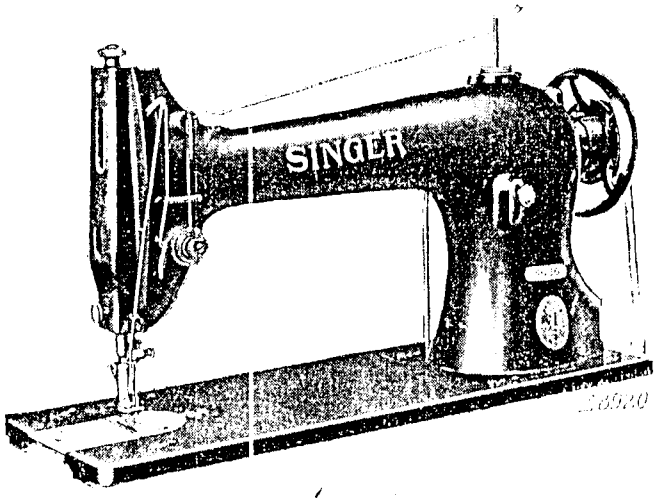
INSTRUCTIONS

FOR USING

SINGER SEWING MACHINES



96-10, 96-12 AND 96-16

HIGH SPEED LOCK STITCH

THE SINGER MANUFACTURING CO.

Purchase of Parts and Needles

Supplies of parts and needles for Singer Machines can be purchased at any Singer Shop for the Manufacturing Trade or ordered by mail. If orders are sent by mail, money or a post office order covering their value, including postage, should be enclosed and the order will then be promptly filled and forwarded by mail or express.

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 96-10 makes the lock stitch and is designed for sewing medium and heavy weight fabrics at high speed. It has the gear driven rotary hook.

Machine 96-12 has a reversible drop feed and is designed for use in the manufacture of clothing and for stitching medium and heavy weight fabrics at high speed. It is especially suitable for making cloaks, uniforms, overcoats, suits, overalls, etc., and can also be used for a great variety of other work.

Machine 96-16 has a reversible drop feed and is particularly adapted for use in the manufacture of overalls, heavy overcoats, etc., being fitted with an unusually high lift presser foot which enables it to sew khaki material and other heavy weight fabrics up to $\frac{7}{16}$ inch in thickness.

Speed

The maximum speed recommended for Machines 96-10, 96-12 and 96-16 is 3200 stitches per minute. The machines 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. If the fabric to be sewn is very closely woven or filled with dressing, the high speed of the machine may cause the needle to become heated. In such cases the speed must, of course, be reduced.

Needles

Needles for Machines 96-10, 96-12 and 96-16 are of the Class and Variety numbers given in the following table:

MACHINE	CLASS AND VARIETY NOS. OF NEEDLES	DESCRIPTION	SIZES
96-10 96-12	16 x 231	Cloth	14, 16, 17, 18, 19, 21, 22 and 23
96-16	16 x 233	Cloth	14, 16, 17, 18, 19, 21, 22 and 23
96-16	16 x 238	Khaki	19, 21, 22 and 23

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 an x.

The following is an example of an intelligible order:

"100 No. 18, 16 x 231 Needles" (if for cloth).
"100 No. 21, 16 x 238 Needles" (if for khaki).

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

Relative Sizes of Needles and Thread

The following sizes of needles and thread are recommended according to the class of work.

SIZES OF NEEDLES	CLASSES OF WORK	SIZES OF COTTON, LINEN OR SILK
14	Shirtings, Sheetings, Calicoes, Muslins, Silks, Dress Goods and all classes of general work.	60 to 80 Cotton A and B Silk
16 and 17	All kinds of heavy Calicoes, light Woolen Goods, heavy Silk, Seaming, Stitching, etc.	40 to 60 Cotton C Silk
18	Tickings, Upholstery, Woolen Goods, Trousers, Boys' Clothing, Cloaks, etc.	30 to 40 Cotton D Silk
19	Heavy Woolens, Tickings, Bags, Heavy Coats, Trousers. Heavy Clothing generally.	24 to 30 Cotton E Silk 60 to 80 Linen
21	Bags, Coarse Cloths and Heavy Goods.	16 to 20 Cotton 40 to 60 Linen
22 and 23	Extra Heavy Work.	8 to 16 Cotton 24 to 40 Linen

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.

Thread

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

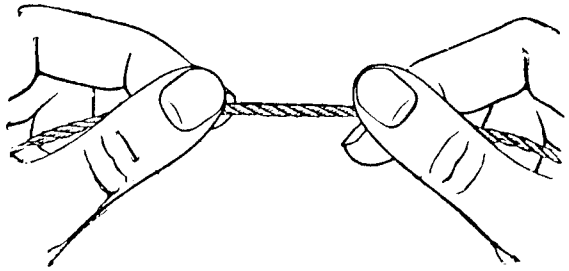


FIG. 2. HOW TO DETERMINE THE TWIST

Hold the thread as shown above. 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 Remove the Bobbin

Turn the balance wheel over toward you until the needle moves up to its highest point. Draw

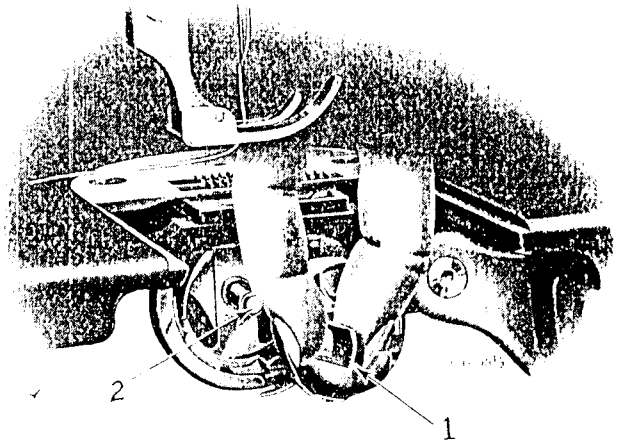


FIG. 3. REMOVING THE BOBBIN

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 (1, Fig. 3) with the thumb and lift out the bobbin case. While the latch remains open the bobbin is retained in 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. 4)

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.

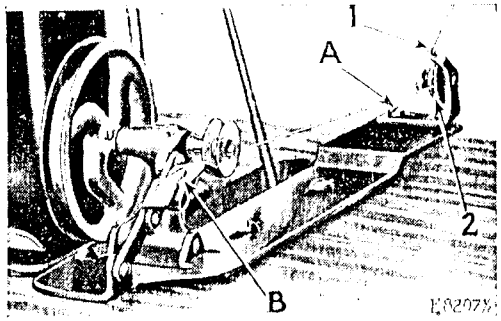


Fig. 4. Winding the Bobbin

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 can be wound while the machine is stitching.

To Thread the Bobbin Case

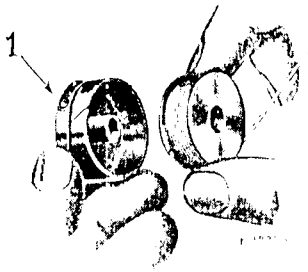


Fig. 5

Hold the bobbin between the thumb and forefinger of the right hand, as shown in Fig. 5, the thread drawing on the bottom from the left toward the right.

With the left hand hold the bobbin case as shown in Fig. 5, the slot in the edge being near the top, and place the bobbin into it.

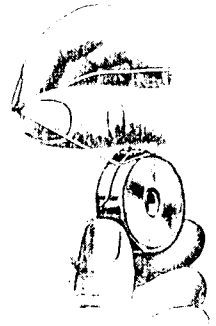


Fig. 6

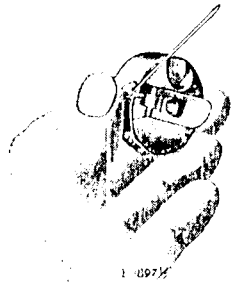


Fig. 7

Then pull the thread into the slot in the edge of the bobbin case as shown in Fig. 6; draw the thread under the tension spring and into the delivery eye at the end of the tension spring (see Fig. 7).

To Replace the Bobbin Case

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

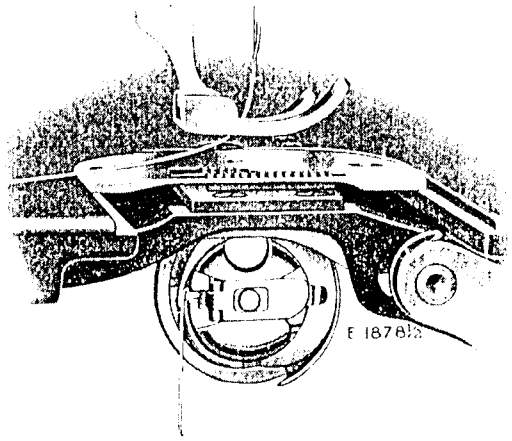


Fig. 8. Bobbin Case Threaded and Replaced

left hand, place the bobbin case on the centre stud (2, Fig. 3, page 7) of the bobbin case holder, release the latch and press the bobbin case back until the latch catches the groove near the end of the stud (see Fig. 8). 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 (3, Fig. 15, page 17) in the needle clamp and put the needle up into the clamp as far as it will go, with the long groove of the needle toward the left and the eye of the needle directly in line with the arm of the machine, then tighten the screw.

To Thread the Needle

(See Fig. 9 on the Following Page)

Pass the thread from the unwinder, or from the spool on the spool pin on the top of the machine, from right to left through the top hole (1) in the thread retainer, from left to right through the middle hole (2) in the thread retainer, and from right to left through the bottom hole (3) in the thread retainer, down, under from right to left between the tension discs (4), into the thread take-up spring (5), under the slack thread regulator (6), up and back of the wire thread guide (7), up and from right to left through the hole in the end of the thread take-up lever (8), down through the thread guide (9), down through the thread guide (10), into the thread eyelet (11), and from left to right through the eye of the needle (12). Draw about two inches of thread through the eye of the needle with which to commence sewing.

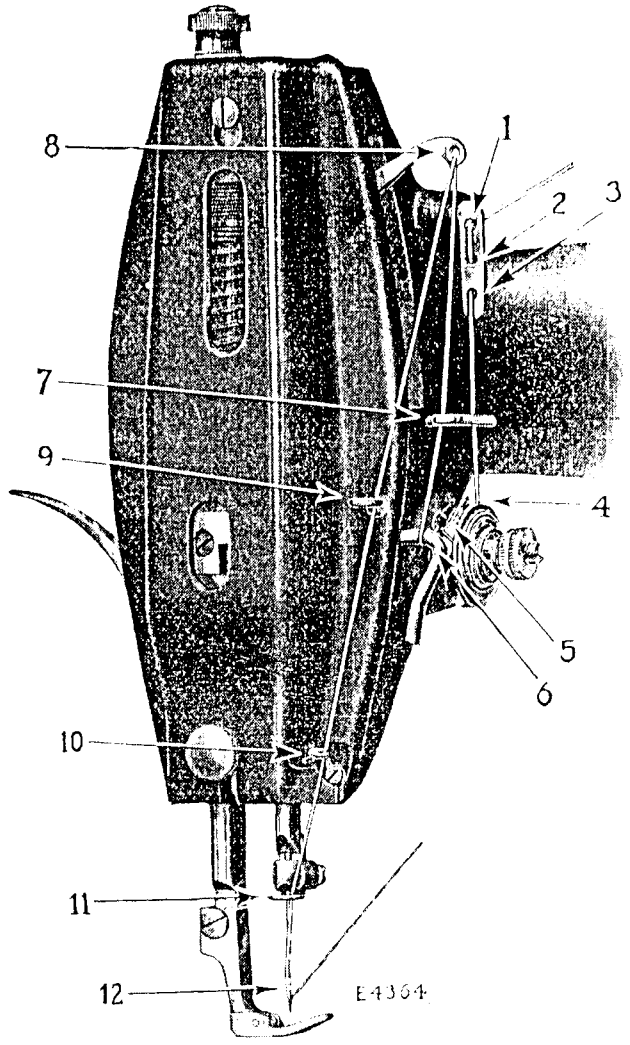


Fig. 9. Threading the Needle

To Prepare for Sewing

With the left hand hold the end of the needle thread, leaving it slack from the hand to the needle,

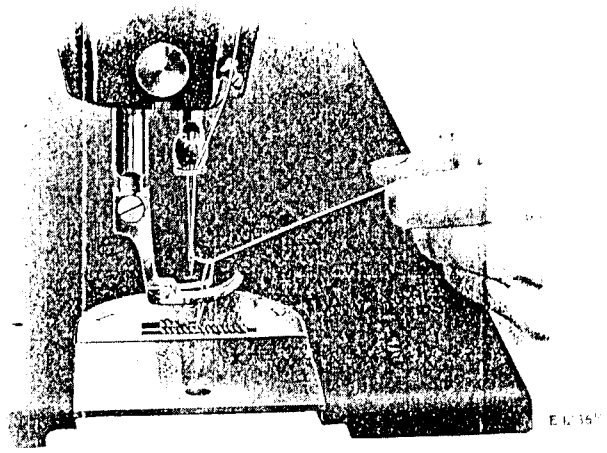


Fig. 10. Drawing Up the Bobbin Thread

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 (see Fig. 10). 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

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

Tensions

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

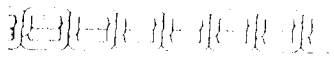


FIG. 11. PERFECT STITCH

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:

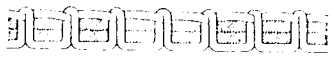


FIG. 12. TIGHT NEEDLE THREAD TENSION

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:

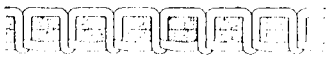


FIG. 13. LOOSE NEEDLE THREAD TENSION

To Regulate the Tensions

The tension on the needle thread should only be regulated when the presser foot is down. Having lowered the presser foot, turn the small thumb nut (2, Fig. 15, page 17) 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 large screw (1, Fig. 5, page 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 on Machine 96-10

The length of stitch is regulated by the thumb screw (4, Fig. 15) in the slot on the front of the upright part of the arm. To lengthen the stitch, loosen the thumb screw (4) and move it downwardly. To shorten the stitch, loosen this thumb screw and move it upwardly. When the desired length of stitch has been obtained, tighten the thumb screw.

To Regulate the Length of Stitch on Machines 96-12 and 96-16

The length of stitch is regulated by the thumb screw (D, Fig. 14) at the front of the machine. This thumb screw is marked with numbers denoting from one to five millimeters, and when the number or fraction is directly opposite the lock pin, the machine will make stitches of corresponding length. Move the feed reversing lever (E, Fig. 14) to a central position in the slot. To lengthen the stitch, turn the thumb screw (D) over to the left. To shorten the stitch, turn this thumb screw over to the right. When the desired length of stitch has been obtained, move the feed reversing lever (E) back to its original position.

To Reverse the Direction of Feed in Machines 96-12 and 96-16

Machines 96-12 and 96-16 can be made to feed the goods forward or backward, as desired, by

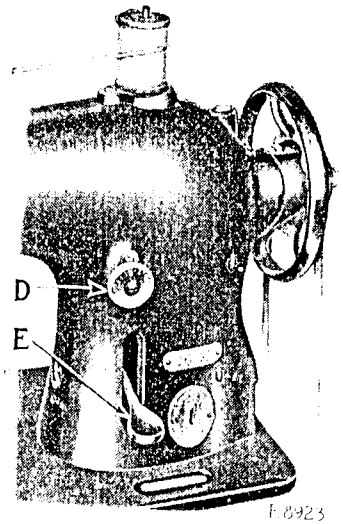


FIG. 14. SHOWING LEVER FOR REVERSING DIRECTION OF FEED ALSO STITCH REGULATOR ON MACHINES 96-12 AND 96-16

moving the lever (E, Fig. 14) in the slot at the front of the machine. To feed the goods from you, raise the lever (E) to its highest point. To feed the goods toward you, depress the lever (E) to its lowest point.

To Regulate the Pressure on the Material

The pressure on the material is regulated by the thumb screw (1, Fig. 15, page 17). To increase the pressure, turn this thumb screw over to the right. To decrease the pressure, turn this thumb screw over to the left.

To Oil the Machine

To ensure easy running and prevent unnecessary wear of the parts which are in movable contact, the machine requires oiling.

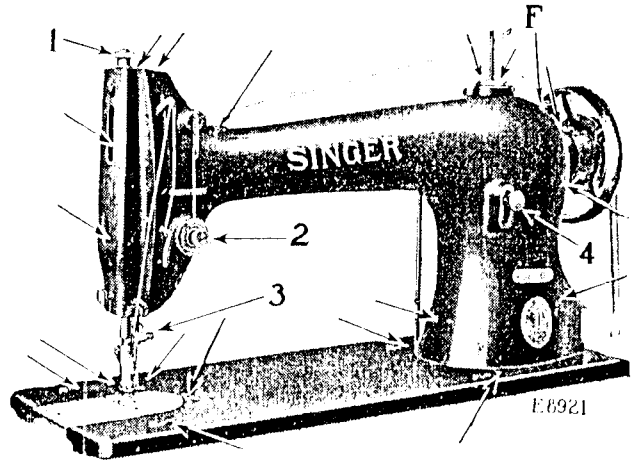


FIG. 15. OILING POINTS AND ADJUSTMENTS AT THE FRONT OF THE MACHINE

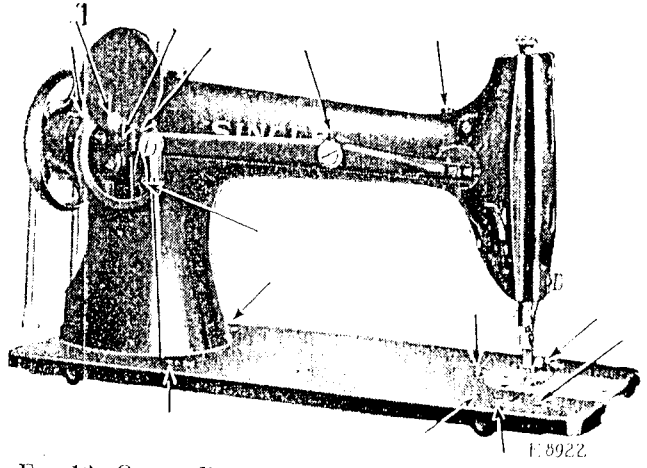


FIG. 16. OILING POINTS AT THE BACK OF THE MACHINE

Oil should be applied at the places as shown by arrows in Figs. 15, 16 and 17, and when the machine is in continuous use it should be oiled at least twice each day. Loosen the thumb screw (1, Fig. 16, page 17) in the round cover plate on the back of the machine, turn the cover plate up and oil the bearings which are thus uncovered.

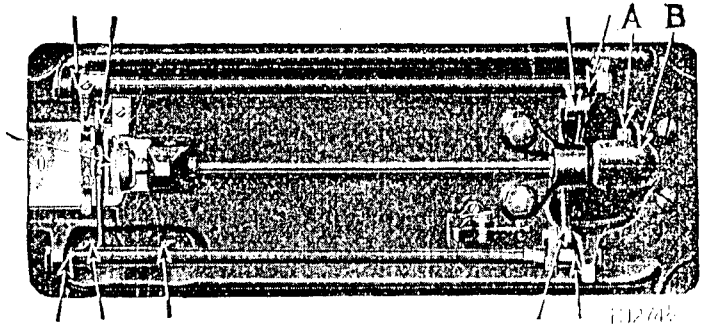


FIG. 17. BASE OF MACHINE, SHOWING OILING POINTS

Special Notice

Sufficient oil should be applied to the wicking which is retained in the oil tube (F, Fig. 15) to keep the wicking saturated. This tube conducts the oil to the arm shaft gears.

Turn the machine back on its hinges and apply oil at the places as shown by arrows in Fig. 17.

Occasionally remove the knurled thumb screw (A, Fig. 17) and fill the gear case (B, Fig. 17) with the Singer High Speed Lubricant, a grease which is especially prepared for this purpose, then replace the thumb screw (A).

Oil should be regularly applied to the bobbin case holder bearing in the sewing hook race.