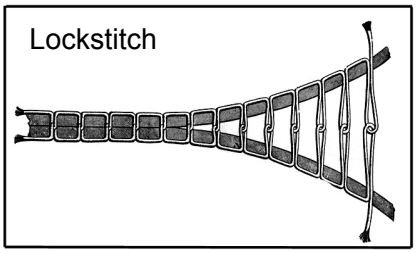
INTRODUCTION

The sewing test should establish that:

- The needle is set correctly to pick up the lower thread.
- The timing of the machine is correct.
- The tensions are correct.
- The machine sews at short to long stitch lengths - and reverse if fitted.
- The feed dog height and foot pressures are set correctly.

The test is little different from model to model. Any variations are covered as the test is explained.

Each stitch is formed by the top thread being picked up by the hook and guided round the lower bobbin. This 'locks' the two threads securely together.



The aim is to achieve stitching where the tension is equal on both top (needle) and bottom (bobbin) threads, so that the loops lie between the two pieces of material.

We do not know the variety of fabrics, stitch lengths and thread sizes that will be used with the machine. So the best we can do is to adjust the tensions at a 'normal' stitch length with an average weight of fabric.

We can then test at other stitch lengths to show that the machine can be adjusted to cope with the changes.

PREPARATION

Choose a piece of fabric for the test. It should be of sufficient size that you have room on it to sew lines of 3 to 4 inches (70 to 100 mm) length.

This will allow you to work up a reasonable speed and also check the machine's line control. So a piece of 6" x 6" (150 x 150 mm) folded over is needed.

The material should not be flimsy or stretchable. Curtain liner is our preference for weight and lack of pattern.

Always fit a new needle. It is essential that needles be perfectly straight and have a sharp point.

Machines arrive with bent and blunted needles. Replace them and use them to clean 'difficult to get at' places.

The test is best done with a medium size needle (14/90) and thread to suit.

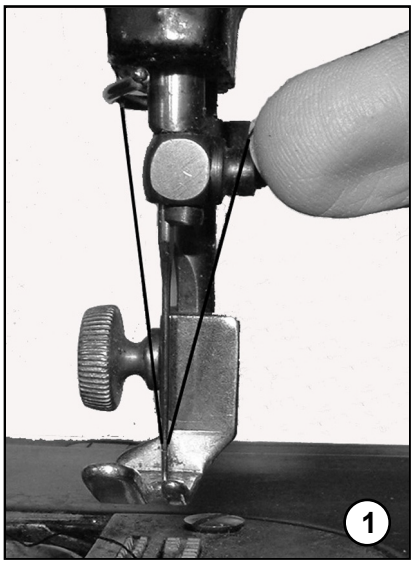
This section does not contain detailed instructions on fitting needles, threading up etc, as these are covered in the user manuals for each machine.

Keep one of each manual by you for guidance. If this means you send us a machine without a manual, note it on the Refurbishment Record on the outside of the case.

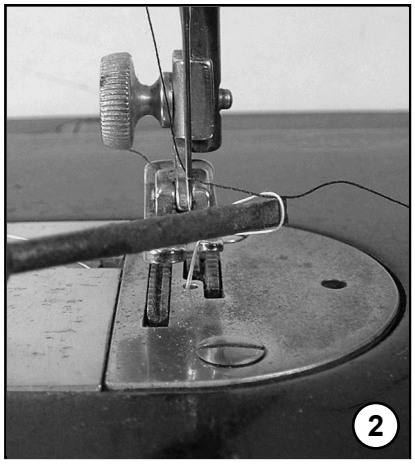
Choose a different thread colour for top and bottom. It makes it much easier to see the stitch formation.

Thread up the top and bottom according to the user manual.

PICKING UP THE LOWER THREAD



(1) With the presser foot lever raised, and the thread take up lever at its highest position, hold the end of the needle thread, leaving it slack from the hand to the needle.



(2)Turn the balance wheel towards you until the needle moves down and back up again to the highest position. Pull up the needle thread and the bobbin thread should come as well.

Tip: *If you leave the cover slide open, you can watch the top thread encircle the lower bobbin.*

Note: If the hook fails to pick up the top thread and capture the lower thread, it can be due to the following reasons:

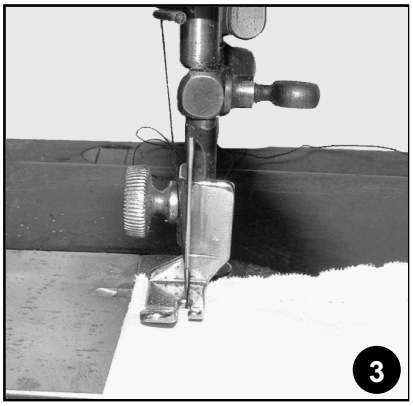
- You are holding the top thread too tight.
- The needle has not been pushed up into the needle holder as far as it will go.
- The needle is the wrong way round. (Flat side to the left for 201, to the right for other models.)
- The needle has been threaded the wrong way. (From right to left for the 201, left to right for other models).
- The needle is bent. Always start with a new needle.
- The machine timing needs adjustment. This is rare, so it is covered in the section "Advanced Techniques".

Guide the top thread through the slot in the presser foot and lay both threads towards the back of the machine.

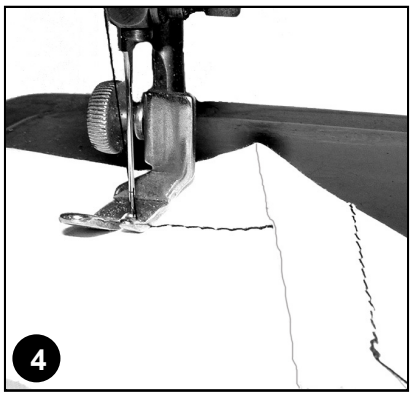
The following paragraphs assume that you have set the lower tension correctly.

See page [2] H-3 for further help.

SEWING TEST



(3) Insert the folded test piece and lower the presser foot. Choose a medium stitch length to start the test.

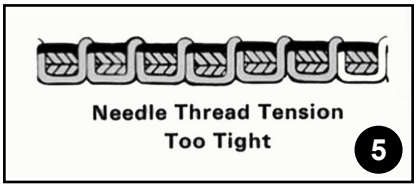


(4) Sew a seam down most of the length of the cloth, stop and turn the fabric through 90º so you can examine the results.

Note: *Do not try to help the feeding of the work by pulling the material, as this may deflect the needle and cause it to break. The cloth should feed without assistance if the foot pressure and feed dog height are set correctly.*

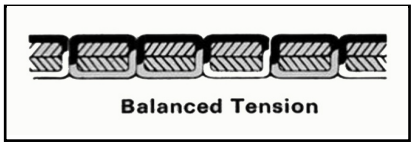
Tension

Tip: *With contrasting coloured thread on top and bottom, it is easier to see which thread is looser.*



(5) The diagram shows the loops of the bottom thread visible on top of the fabric.
In this case, loosen the top tension a little and try again. (Turn the thumb-nut anti-clockwise.)

(6) If the top thread loops are visible below the work piece as in this diagram, tighten the tension a little and try again. (Turn the thumbnut clockwise.)



If you are lucky - or have persevered - the tension will be just right.

Note: *It is not always easy to obtain as perfect a result as in the diagram. With thinner materials, particularly, you will have to settle for near perfection.*

As you test at various stitch lengths, you will probably have to lessen the top tension at the longest stitch. This is normal.

If you can adjust the tension between too loose and too tight, then the subsequent user will have the same control when changing fabrics, weight of thread etc.

Stubborn top loops under the fabric

If you still have an apparently loose top thread even at the point that the thread snaps or the material buckles, there are three possible causes.

- The cotton is not threaded through the tension check spring - or the spring is ineffective.
- 66/99 only, the top thread is not passing between the lower bobbin and the retainer arm easily. (If you leave the cover plate open you can watch this at slow speed.) See page [2] H-2 (9).
- The feed dog is set too high. In this condition, the feed

dog rises up too far on its return journey, and feeds the material backwards, shortening the stitch after the top thread has been pulled through the tension plates, so that too much thread remains.

Missing Stitches

The stitches should all be of the same length. If some pickups of the lower thread have been missed, the cause will be one of the reasons given on the previous page for not picking up the lower thread. The solutions are the same.

Puckering

The material has to be pulled through the machine by the feed dog. The presser foot holds the material firmly against the feed dog. Make sure the presser foot screw is screwed down enough to provide this pressure. (Enough pressure is also needed to keep the seam straight.)

If this fails to solve the problem, it is because *both* tensions are set too high, the feed dog cannot pull the fabric through against the resistance of the tensions - so the fabric slips.

Check the lower bobbin thread tension and start again.

Stitch length control

When you have achieved a satisfactory stitch formation at a medium setting, try stitching at various settings of the stitch length control.

At the maximum setting you will probably have to reduce the top tension to achieve a balanced stitch.

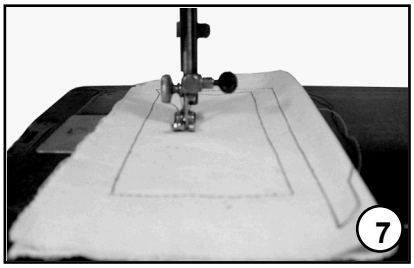
Reverse Stitching

Reverse stitching is available on 201s and some late model 99 machines. This function should be tested. It is normally used only for finishing seams, so do not alter the tension - just check that it works.

Completion of Test

When you are satisfied that the machine is sewing properly at a range of stitch lengths the sewing test is complete.

And finally. . .

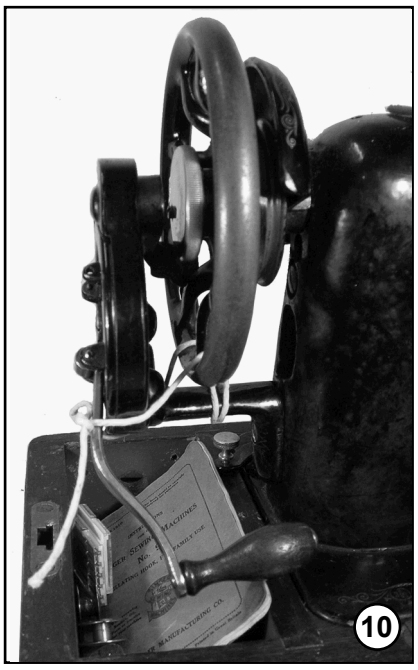


(7) Leave the piece of test fabric under the presser foot. This demonstrates that the machine has been tested and is working perfectly.

(8) Remove the cotton reel from the spool pin, unwind a few inches of cotton then cut it off and wind the end a few times round the pin.

Leaving the machine threaded in this way will hopefully help the recipient to follow the threading sequence. (Cotton reels inevitably fall off in transit.)

(9) Add the spare needles, bobbins and handbook if you have them, give the machine a wipe with a clean cloth and complete the paper work.



(10) Tie up the handle to the balance wheel and the handle bracket to avoid it being damaged in transit.

Congratulations!