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Student -please read through the glossary and then follow the instructions A) to K) below - go back to the glossary if you are confused by any terms and please call the teacher if you get stuck!

## GLOSSARY

- **Presser Foot** - the metal foot that the needle goes through. Needs to be **down** in order to sew, otherwise threads can get tangled up. It is lifted up and down by a lever – usually towards the back of the machine, to the right of the needle.
- **Control Pedal**- the pedal attached to the machine via wire, that sits on the floor and which you press with your foot to operate the machine.
- **Hand wheel** - the wheel on the right-hand side of the machine that turns when you put your foot down on the control pedal, or you can turn it by hand to move the needle or for tricky sewing bits (always turn the hand wheel towards you as that's the way it moves when operated by the control pedal - except if you need to move the needle you can move the wheel a half turn only either way)
- **Thread take-up lever** – the metal arm with a slit in on the front of the machine that you loop the thread through before heading down towards the needle
- **Teeth** - the little serrated teeth underneath the presser foot that move as the wheel turns. These teeth guide the fabric through and dictate stitch size in conjunction with the stitch length adjuster. Do not pull fabric through the machine as the teeth will not be able to do their job, just guide the fabric so it stays straight.
- **Bobbin** - creates the bottom stitch on a row of stitching. Wound up with the same thread as is on the top of the machine, it goes underneath the machine either in the bobbin case or on its own.

- **Tension** - a sprung device usually on the front of the machine that clamps the thread as it passes through it to create the right tension for a good strong stitch that looks the same top and bottom. Can be altered by a dial usually numbered 1 to 9.
- **Straight / running Stitch** - a basic running stitch used for stitching garments together, top stitching etc.
- **Back stitch** - one generally back stitches for three or four stitches at the beginning and end of each line of sewing to stop the stitching from unravelling, unless you are sewing in a circle (for example a skirt hem or trouser ankle) in which case you overlap the beginning and end of the line of stitching to secure it.
- **Backstitch function**- there will be a button, or a section on the stitch length adjuster that switches the machine into backstitch mode. You usually have to hold your finger on it on some machines you switch it to backstitch and then back to forward stitch.
- **Stitch Length Adjuster** - adjust your straight stitch or zigzag stitch length from 0 to 4 (usually - maybe some variation in this). On machines that have the backstitch function in the same section as a stitch length adjuster you may be able to screw in a lever so that after you have put into backstitch it automatically goes back to the same stitch length on forward stitch.
- **Raw Edges** - the cut edges of the fabric that are likely to fray.
- **Zigzag Stitch** - what it says! Used for neatening and securing raw edges (the cut edges of the fabric that are likely to fray) of fabric, as a decorative stitch, or as a very narrow zigzag instead of straight stitch when sewing jersey garments and an Overlocker (multi-needled machine that creates a stretchy stitch suitable for stretch garments) is not available. The width and length of zigzag can be altered with stitch length and zigzag width dials on the machine
- **Top stitch** - a stitch that secures the fabric and creates a nice finish, usually sewn 1 to 5mm from the seam
- **Seam Allowance (SA)** - usually 1 cm or 1.5 cm added to garments in order to sew them together. I.e. the distance from the sewing line to the raw edge of the cut piece of fabric will be 1 cm or 1.5 cm. You will be using a 1 cm seam allowance on the bag & purse or 1.5cm SA on cushions.

First of all we'll do the technical bit of setting up the machine ready for sewing. To sew you need a bobbin below and a reel of thread on top – both wound with the same thread. Grab a

reel of sewing thread from the sewing threads drawer. It may be in a bag with a wound bobbin or on its own.

### **A) WINDING ON A BOBBIN**

1. First thing to do is wind a bobbin with thread from the same reel as your sewing thread. Get an empty bobbin. If the thread you picked has a wound bobbin with it, pretend it IS the sewing thread reel for this exercise, as we don't want loads of bobbins wound for each thread! But if it's only quarter full pretend it's empty and wind thread on top for this exercise.
2. Each machine is slightly different in this respect but generally the thread goes from the top thread spool, round a small metal or plastic button either on the top or on the base of the machine and across to where the bobbin sits on the bobbin winder spindle ready to be wound. The thread winds round the bobbin from the back and the bobbin is pushed towards the bobbin winder stopper to connect it with the bobbin winder/wheel.
3. With most machines you need to disengage the wheel from the needle so that the needle doesn't go up and down while you're winding the bobbin, usually by holding the outside of the wheel and turning the inside of the wheel towards you, or on more modern machines pulling the wheel out - please ask for help with this if you are not sure. Some of the very modern machines don't need you to do this and they will automatically stop the needle moving when you engage the bobbin for winding.
4. Very slowly put your foot on the control pedal and the bobbin should start winding. Please ask for help if it doesn't! Sometimes on the older machines you need to hold the thread that is going to the bobbin to create a bit of extra tension if it's not looking as if it's tightly winding onto the bobbin. You can also hover your hand above the reel of thread on the top of the machine if it's in a vertical position & looks like it wants to jump off!
  - Once the bobbin is wound (it will stop once full) cut the thread,
  - take the bobbin off the bobbin winder spindle
  - reengage the wheel so it is connecting with the needle when it turns (see point 4),
  - . thread up bobbin thread and top thread as in exercise B), ready to start sewing
5. Do a line of stitching to check everything is working fine.

### **B) THREADING UP THE MACHINE AND BOBBIN**

- a. the thread from the reel comes off the button you used to wind the bobbin and now needs to go across, down, up and down again through all the little loops and holes (usually marked with numbers and arrows on the machine, or see guidebook) and then through the needle front to back (on our Janome 525S machines, but could be left to right on some machines – see machine guidebook)
- b. Load the bobbin in its case/hole, following the diagram on the plastic cover of the hole if a top-loading bobbin or your tutors instruction/machine guidebook if it goes in a bobbin case. A tip to check you've put it in right is that when you are pulling the thread off the bobbin clockwise, the bobbin generally turns in the anticlockwise if it is threaded up correctly. For bobbin cased bobbins it's the opposite.
- c. The thread that is on the bobbin comes up through the little hole to join the top thread and is pulled towards the back, underneath the presser foot with the top thread to keep them both out of the way once you start to sew. We will show you how to bring the thread up through the hole, or refer to your machine guidebook if not in class.

**Once your machine is threaded up**, set the needle in central position (5 on top right white dial on 525S – check your book for your machine or ask tutor) , put the stitch selector dial on running stitch and put the Stitch length on a medium-size stitch (2.8 or 3 is a good sewing size).

### **C) TO START SEWING**

1. Sit with your chair close to the table, with your back as straight as possible, and the control pedal in comfortable reach of your right foot.
2. The sewing machine should be three or 4 inches from the edge of the table nearest to you, with the needle part of the machine in front of you as that's the bit you will be using.
3. TO START SEWING, take your folded scrap of fabric, lift the presser foot, make sure the needle is up (you can turn the 'hand wheel' on the right side of the machine a half turn either way by hand to move the needle up) and place fabric so that the presser foot is 1 cm down from the top edge of your scrap of fabric.
4. Hold onto the 2 threads with your left hand and turn the Hand wheel towards you so that the needle moves downwards and pierces the cloth. Then let go of the threads.
5. Without touching the fabric with your hands, slowly put your foot down on the control pedal and sew a line of stitching halfway down your piece of scrap fabric – see that the

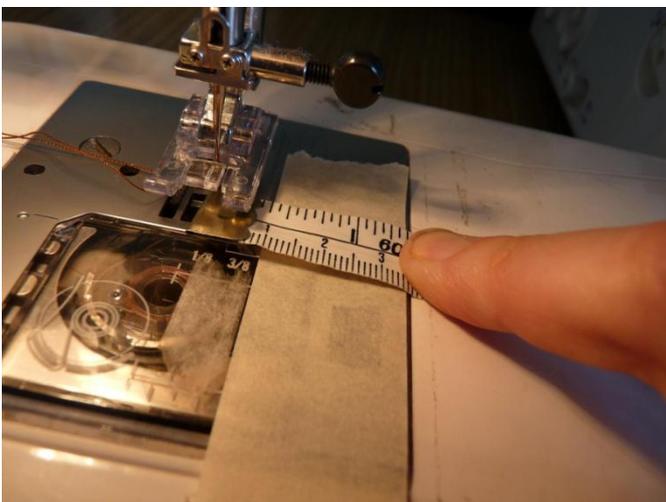
machine pulls your fabric through and you don't need to? Now you can use your hands for the rest of the length, but just to keep it straight. Don't pull the fabric through, the teeth will do this for you and you will be stopping them doing their job if you pull or push.

6. A HANDY TIP! If you want to sew more slowly you can tap the pedal with your foot rather than just put it down and keep it down. Try this and ask for help if you're not sure. This is a particularly good trick when you have to just sew a few stitches, need to sew very slowly or stop at a corner.
7. BACKSTITCH 3 or 4 stitches - this stops the thread from unravelling when you make a garment/other item.
8. PRACTICE TAKING THE FABRIC OUT OF THE MACHINE:
  - make sure the needle is up and the metal thread take-up lever is in a raised position (turn handwheel if not),
  - lift the presser foot,
  - pull the fabric to the left, out from under the foot pulling far enough away from the foot so that you have approximately 8 cm of thread between the fabric and the machine - if the fabric is stuck in the machine when you try to pull it away, turn the handwheel so the thread take-up lever is in a slightly different position and try again - do not force it!
  - Cut the threads very close to the fabric leaving 8 cm of thread coming out of the bobbin and out of the needle for the next time you start sewing. If you don't leave long threads the thread sometimes get sucked back up into the machine when you start sewing and you end up with nothing in the needle and have to re-thread which is boring! The best way to ensure this doesn't happen though is to hold the threads – see B) 4. above
9. WELL DONE! Now put your scrap back under the foot slightly to the left of where you stopped sewing so you can sew a different line. This time backstitch before you start sewing for three or four stitches, by putting your needle into the cloth 1cm forward from the top edge, then backstitching to the top edge, then continue sewing for a few centimetres forwards and stop. Now have a look at the stitch length dial - you can adjust the stitch length. Please ask if you don't know which the stitch length dial is. Experiment with continuing your sewing line using different stitch lengths. Longer stitch lengths (e.g. 4) are used for basting and gathering and shorter stitch lengths (e.g. 0.3-2) can be combined

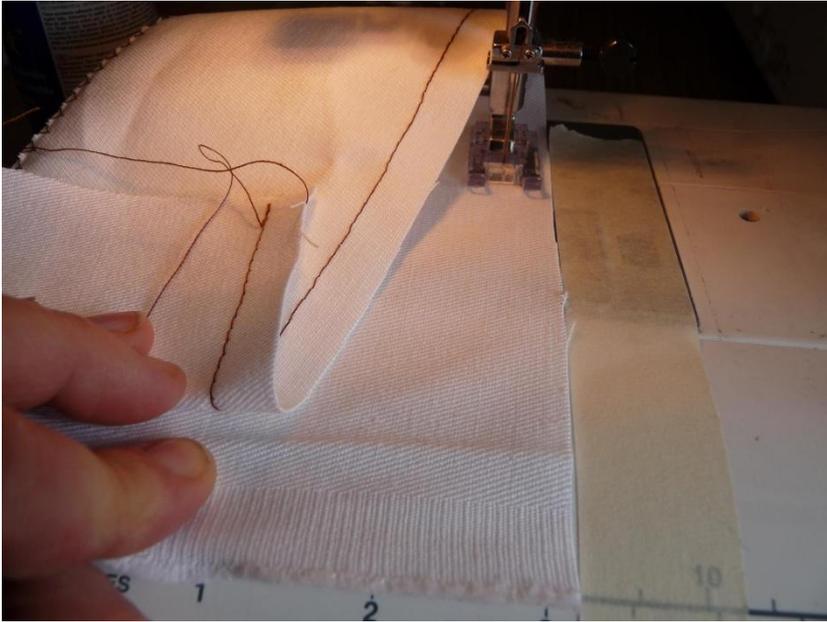
with a zigzag stitch to appliqué edges. When you have finished the line backstitch and take the fabric out of the machine as before.

#### **D) SEAM ALLOWANCE practice session –**

1. Turn off your machine at the plug so there is no electricity running to it (just in case there's a power surge!) as you're about to have your fingers close to the needle.
2. Grab some masking tape and a tape measure, and without any fabric under the foot move the needle so that it is down. Measure 1 cm from the needle to the right. Stick a strip of masking tape as shown in the photograph onto the machine. This will be your guide for 1 cm seam allowance as shown below. If your machine has markings you can use them instead, as long as you are sure the needle is a central position – but we find still using the masking tape helps as a strong visual guide when sewing.



3. Turn the electricity back on. Put your machine back to a straight stitch size 2.8 or 3. Place the fabric under the foot 1cm from the top of the fabric as normal and line the straight folded edge up with the masking tape. Backstitch a few stitches and then sew a normal straight stitch line 1 cm from the raw edge using the masking tape as a guide to keep you the right distance from the edge. See picture below.

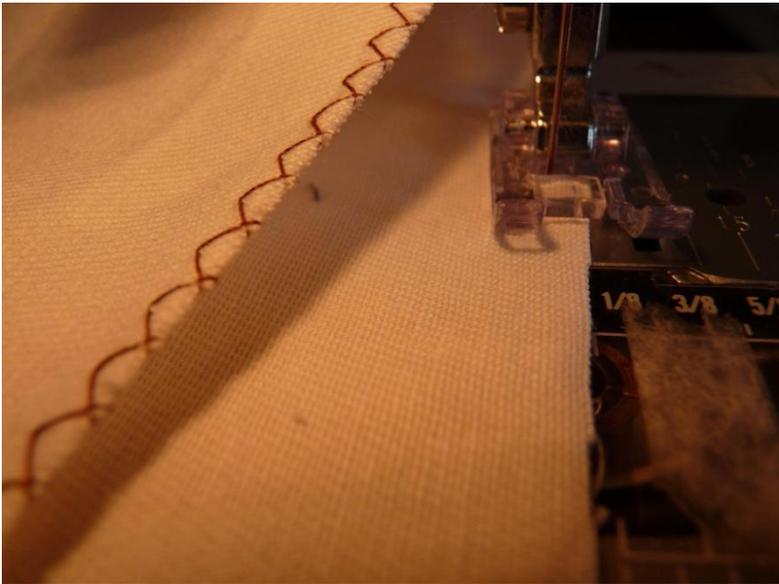


The raw edge is 1 cm from the needle and is lined up with the masking tape, which is stuck in a line 1 cm from the needle. The folded over cloth shows a perfect 1 cm seam allowance which will be used for sewing two pieces of cloth together to make clothes, cushion, bags etc. For 1.5cm seam allowance measure 1.5cm from the needle instead, or use the guide on the machine plate with the needle in central position.

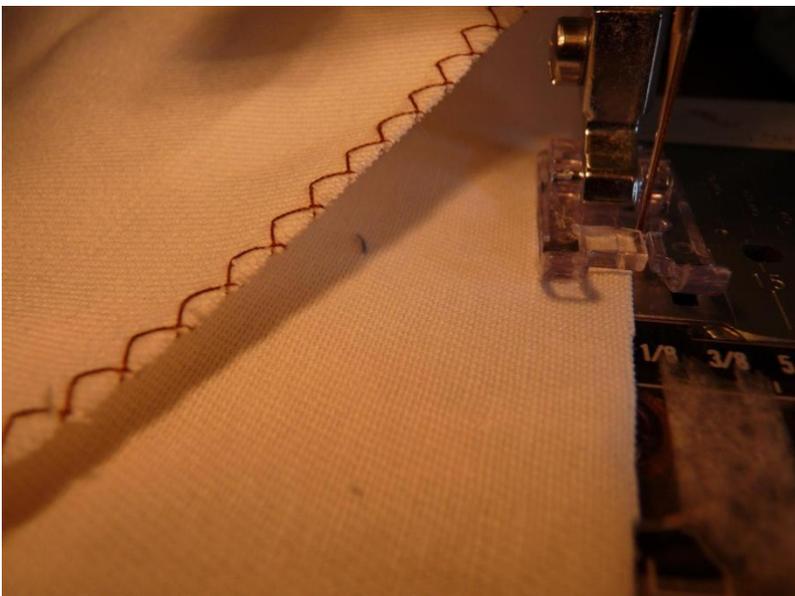
### E) ZIGZAG STITCHING

1. Put your fabric back under the machine back at the top, ready to create a new line of stitching. Make sure the **needle is out** of the fabric and adjust the stitch selector to zigzag. I use **3-step-zigzag** as it keeps the fabric flatter on thin fabrics (it's D on the 525s but different number on other machines). **3-step-zigzag** needs a shorter stitch length (1.5 – 2) if you have a stitch length adjuster on your machine. Or you can use normal zig-zag, leaving the stitch on same length as for your running stitch. Put the stitch width (usually same dial as the needle position dial) for both types of zigzag to the widest zigzag. Ask if you don't know which is the zigzag width adjuster. Nb: don't change the zigzag width with the needle in the fabric as it can break the needle as it moves it to the left or right. Start stitching! Stitch for about 10 cm then stop with the needle in.
2. CHECKING THE TENSION - Have a quick look at the stitch quality after you have sewn about 10 cm by stopping with the needle in, lifting the presser foot and pivoting the fabric round so you can inspect it easily in front of you. Does the stitch look exactly the same on the top and bottom? If it's not, see the section How to Check the Tension below.

3. ZIGZAG EDGE STITCHING – on your folded ironed edge we're going to practise an edge zig zag, which you use for stopping edges fraying & to create a nice finished look. Starting at the top, line the folded edge up with the right edge of the hole in the foot, or the slit in the foot on the 525S. Edge zigzag the entire length, backstitch each end - the needle should go onto the fabric when it goes down to the left and just off the fabric when it goes down to the right. Have a look at the photos below and ask if you don't quite understand. When you finish the line, take the fabric out of the machine.



Edge zigzagging: Needle should go onto the fabric when it goes down to the left



and just off fabric when it goes down to the right.

## **F) ADJUSTING TENSION**

Every time you start sewing with new fabric, do a test line of stitching on a scrap of the same fabric and check the quality of stitching.

1. Your stitching should look exactly the same on top as it does underneath the fabric. If it does, have a read through the next few points to understand the theory and then go to point number 8 below to do a tension exercise.
2. If your stitching doesn't look exactly the same on top as it does underneath, you first need to check that the top thread and the bobbin are wound and threaded up properly. You need to also check that the top thread and the bobbin thread are exactly the same cotton i.e. from the same reel. Always use the same reel of cotton on the top and in the bobbin when you're using your sewing machine or you risk the tension going funny. If everything is fine on both these points then you probably need to adjust the tension.
3. There is a tension dial for the top thread on your machine, usually towards the left on the front of the machine. The tension is generally only adjusted by the top thread tension adjuster unless there is a major problem in which case the bobbin can also be adjusted.
4. Make a note of what number the top thread tension is on at the moment.
5. Usually, once the tension is set it can just stay where it is unless the rest of fabric you're using is particularly thick or particularly thin. With some of the older machines we find we need to adjust the tension more often though. Have a look at your stitching on the top - does it look sunk into the fabric or can you see some of the bottom thread coming through to the top? Have a look at the bottom stitching in the same way.
6. If you can see some of the bottom thread coming through to the top, but none of the top thread coming through to the bottom:
  7. this means that the top thread is tighter than the bottom thread and is therefore pulling the bottom thread up through the cloth. Therefore you can reduce the top thread tension by 1 number i.e. if it is on 5 turn it to 4.

If you can see some of the top thread coming through to the bottom but none of the bottom thread coming through to the top:

this means that the bottom thread is tighter than the top and is therefore pulling the top thread down through the cloth. Therefore you can increase the top thread tension by 1 number i.e. if it is on 5 turn it to 6.

Do a line of stitching and see if the stitch looks more similar on top and bottom than before you adjusted the tension. If it still needs improving you can change the number again in the same direction as before.

8. A good way to remember which way to turn the tension dial: turning down to lower the dots (the dots you can see of bobbin thread when you look at your stitching from the top), turn it higher to raise them.
9. Understanding the tension, an exercise: Have a go on a piece of scrap fabric of stitching a line of stitching and adjusting the tension first down to a low number, have a look and see how it affects the stitching, and then continuing with the tension adjusted to a high number and see how it affects the stitching. See which number creates a perfect even stitch that is similar on both sides. This number will change from machine to machine.

### **G) CHANGING A NEEDLE/NEEDLE SIZES**

1. Why change a needle? Needles can get burrs on them which may snag your fabric or make the machine miss stitches. Sometimes they're difficult to feel so if you think this might be a problem take the needle out and spend a bit of time feeling for any roughness or burrs with your fingertips and fingernail. Or you might want to change to a different type of needle e.g. a jersey needle for stretch fabrics or a fine needle for chiffon.
2. Switch off your sewing machine at the plug so there is no electricity going to it.
3. Have a go at taking the needle out and putting it back in. Read the following notes as you go.
4. The standard needle size is size 14/90. This number is printed in very small letters on the needle. You might have difficulty reading it!
5. How to take the needle out: turn the screw that holds the needle in very slightly anticlockwise, just enough so you can get the needle out but so that the hole that the needle comes out of retains the shape of the needle so you know which way it goes back in. Have a look at the shape of the needle and which direction it was facing when it came out. Put the needle back in the same way it came out.
6. The thread goes through the side of the needle with a long groove in it. Generally the thread goes through the side of the needle that the bobbin is in front of i.e. if the bobbin is at the front of the machine you thread the needle from the front, if the bobbin/bobbin case is set to the left-hand side of the machine you generally thread the needle from the

left. Very occasionally there is an exception to this rule so it is much better to check when you take the needle out for the first time!

#### **H) CHANGING THE FOOT**

1. Switch off your sewing machine at the plug if it is on, so there is no electricity going to it
2. Modern machines generally have a lever at the back to release the foot and older machines have a screw that you unscrew, but not entirely as it's difficult to re-screw and you don't need to take it all the way out to release the foot. Have a go at releasing the foot and putting it back on. Ask for help if you're not sure.
3. There are lots of different feet that you can use on sewing machines; the main alternatives to the standard foot that you will use in our classes are zip feet - normal and invisible.

#### **I) TAKING OFF THE NEEDLE PLATE**

1. Switch off your sewing machine at the plug if it is on, so there is no electricity going to it
2. Sometimes your stitching will get in a tangle, perhaps the fabric is thin and gets sucked into the machine, or it is not threaded up properly and so the tension is all wrong. Usually you can pull this out by hand with a wiggle of the wheel as described earlier on. However sometimes it refuses to budge so you need to cut off the threads and then take off the back plate to take out the tangle.
3. Some machine's back plates just clip off and on but others you will need a small screwdriver.
4. To practice: Without any fabric in the machine, unclip or unscrew the back plate. Wiggle the wheel left and right so you can see the mechanism working. You can remove the bobbin case too in some machines – but PLEASE put it back in exactly the right position!! If there is thread tangles here this wiggling will help you remove the tangles - do so carefully.
5. Replace the back plate.

**Congratulations!!** You've completed the 'Learning to use a sewing machine' section of the class. Take a moment to congratulate yourself and then speak to the teacher about starting your shopping bag, where you'll practise your new found skills on making a useful item.