Hand Sewing Techniques

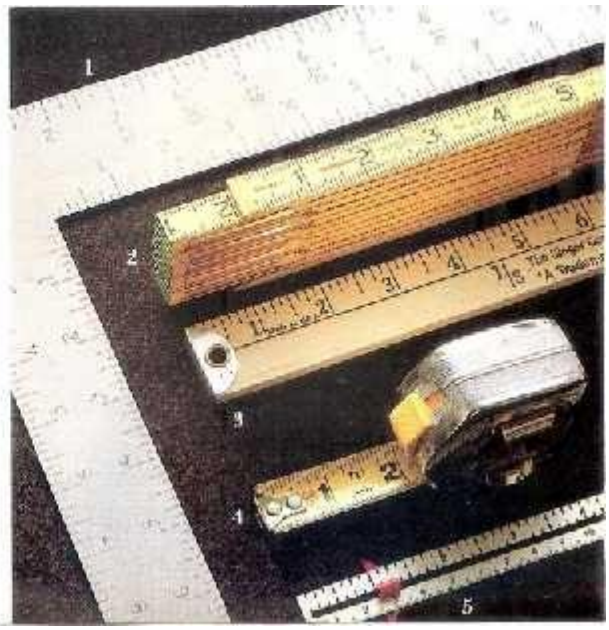
Learning Outcomes

By the end of this unit the learner will be able to:

- ✓ Explore and list the essential tools required in dressmaking
- ✓ Describe the health & safety measures when working in the sewing lab
- ✓ Explore different types of hand stitches mostly required when finishing off the garment

Hand Sewing Techniques

Sewing involves many steps: measuring, laying out the pattern, cutting, marking, stitching, and pressing. For each of these steps there are special tools and supplies to make sewing easier and help you complete your projects successfully.



The Basics

Using the proper equipment makes work easier and gives more satisfying results.

1. Needle threader eases threading of hand and machine needles.
2. Pins with plastic or glass heads are easier to see and handle.
3. Thimble protects your middle finger when you sew by hand.
4. T-pins are long, sturdy, broad-headed pins which are used to anchor fabrics to solid surfaces.
5. Quilting pins are extra long and useful for working with heavy or thick materials.
6. All-purpose thread is used for hand and machine sewing on most fabrics. Choose all-cotton, cotton Wrapped polyester or all-polyester thread, depending on the fibre content of the fabric.

Measuring Tools

1. Wood folding ruler is used for measuring large areas. Because of its stability, this ruler is more accurate than a tape measure.
2. Yardstick is used for measuring long, flat lengths of fabric, and for marking and squaring grain lines. The surface of the yardstick should be smooth so it does not snag fabric.

3. Spring-return metal tape measures large areas. It is also handy for measuring around curves.
4. Seam gauge makes quick, short measurements such as those for hems. The 6" (15 cm) metal or plastic ruler has a sliding marker for accuracy in measuring.

Marking & Cutting Tools

- Cutting board is marked with horizontal and vertical lines, and is useful for laying out and cutting lengths of fabric up to 2 yards (1.85 meters).
- 'Tailor's chalk is specially designed to mark directly on fabric and rub off easily.
- Trimmers have straight handles and are used for trimming and straightening edges.
- A lightweight, slim blade aids accuracy.
- Seam ripper is used to remove stitches. Use it with care to avoid ripping fabric.
- Bent handled shears allow fabric to remain flat during cutting. Shears should be lightweight, easy to handle and 8" or 9" (20.5 or 23 cm) long.
- Liquid marking pencils make sharp, defined lines on firm fabrics. One type of pencil makes a mark that can be removed with water; the other makes a mark that disappears in 18 hours. Test marking pencils on a fabric scrap before using. Ironing permanently sets the markings; if markings are on the right side of the fabric; do not press until they are removed.

Notions

Notions serve three purposes in sewing. Some, such as the rings used on Roman shades, are essential to the construction of an item; others, such as fusible web and fabric glue, make sewing easier. Notions such as braids, trims, piping and ribbons are simply decorative.

- Decorative trims such as bias tape, piping and ribbon are available in a wide range of colours and styles to complement the items you sew. Select trims with the same care requirements as the fabric.
- Cords, tapes and rings have specific uses on certain projects.

- Fusible web is used for hemming or for bonding two layers of fabric together; it is available in narrow strips for hems, or in 18" (46 cm) widths for fusing larger areas.
- Fabric adhesives such as glue stick and craft or white glue' may be used for temporary basting, or for permanently applying batting or trims to items which will not receive much handling.

Taking Measurements

The first step in making a pattern is to take accurate measurements. First of all take all measurements closely but not lightly.

Bodice Measurement

1. Bust - Around the fullest part of the bust, ensuring tape measure does not slip down at the back.
2. Waist - Around natural waist line. (It's a good idea to tie something around the waist and use this as a guide)
3. Hips - Around fullest part of the hips, generally over the bottom approx 20cm below the waist (20cm is considered the standard measurement, but will vary from person to person)
4. Upper Hips - Around hip bones, approx 10cm below waist line
5. Back Length - From nape (back of neck) to waist line
6. Front Length - From base of throat to natural waist line
7. Back width - From armhole to armhole about halfway down the armhole straight across
8. Chest - Around body, above bust and under arms
9. High chest - From armhole to armhole at the front approx 10cm below base of throat
10. Shoulder - From neck point to point at which arm begins and shoulder finishes
11. Scye Depth - From nape, down Centre back to lowest level of armhole
12. Scye Circumference - Around armhole, whilst arm is in normal position.

Sleeve Measurements

1. Neck to wrist - From side of neck, along shoulder, down the arm to wrist, make sure you allow the tape measure to follow the natural curve of the arm.
2. Under arm length - From underarm to wrist
3. Bicep - Around widest part of upper arm, high under the armpit
4. Wrist - Around widest part of the wrist
5. Hand width - Around widest part of hand (this measurement enables the cutter to make the wrist of the sleeve wide enough to pass over the hand if there is to be no side opening.
6. Elbow width - Around elbow with arm bent

Skirt Measurements

(Waist and hip measurements are required as well as the following measurements)

1. Waist to knee length - From waist line down centre front to knee level

2. Waist to ankle length - From waist line down centre front to ankle level.
3. Skirt length - From waist line to length of skirt required.

Trouser Measurements

(Waist and hip measurements are required as well as the following measurements)

1. Body rise - From waist line, down to seat of chair, over contour of hips, the person should be seated on a solid and upright seat.
2. Inside leg length - Down from crutch to level of outside ankle bone
3. Outside leg length - Down from waist, over hips to ankle bone. The actual length of trousers will vary depending on fashion trends, the inside and outside leg measurements are only a guide and these measurements can be varied for any design required.

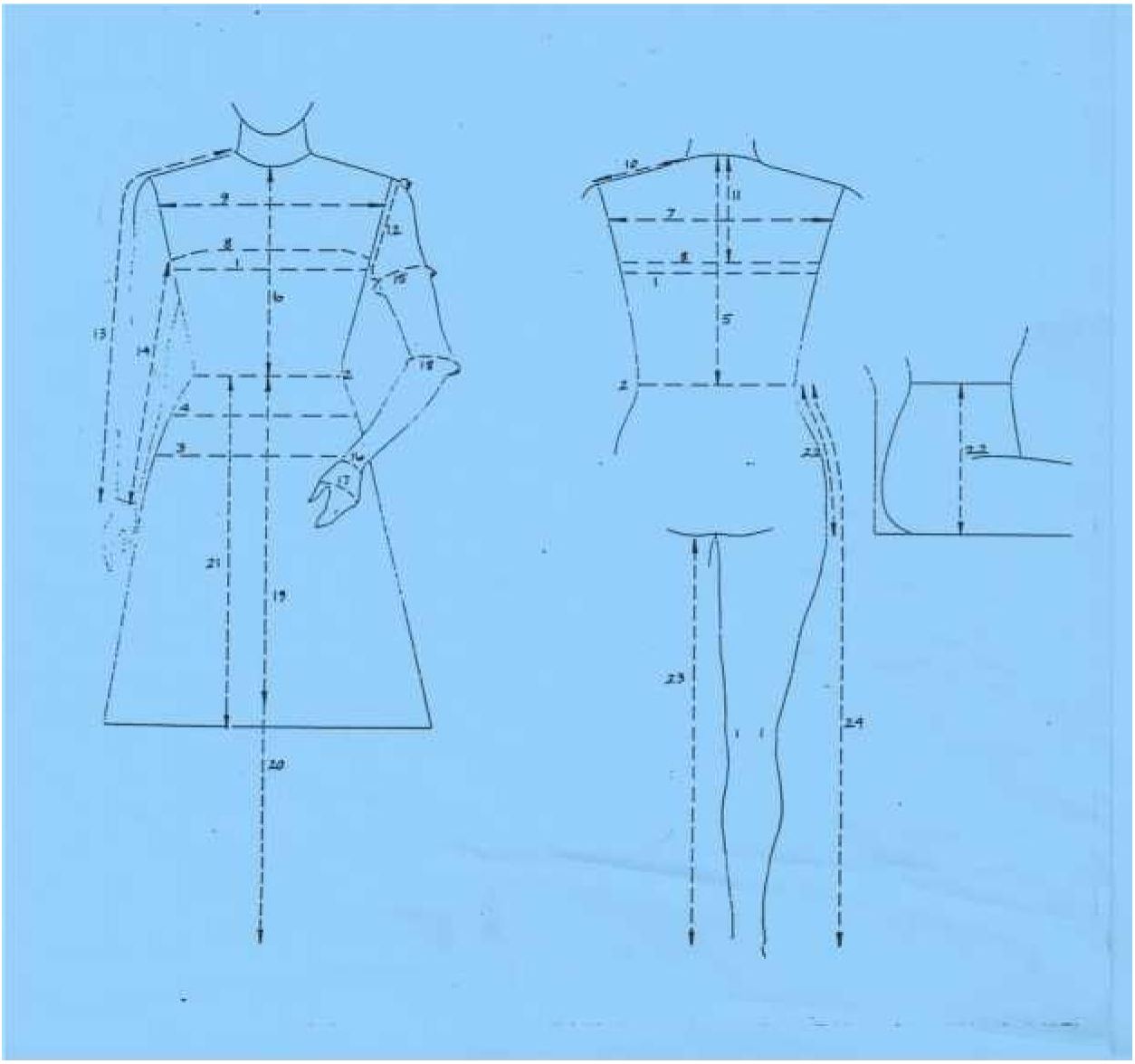


Fig 7.1

Sewing

Before the invention of a useable machine for sewing, everything was sewn by hand. Most early attempts tried to replicate this hand sewing method and were generally a failure. Some looked to embroidery, where the needle was used to produce decorative, not joining stitches.
This needle was altered to create a fine steel hook - called an aguja in Spain. This was called a crochet in France and could be used to create a form of chain stitch.

The ultimate look of the garment depends on how the patterned parts are attached together by means of sewing. Any variation in sewing will lead to defective material. Sewing is as tough as making pattern for any difficult style. Hence much concentration is to be paid while doing this job. Sewing can be classified into two groups and they are;

- Hand sewing,
- Machine sewing

Hand sewing can be best suited for some special and temporary purposes, it is not being dealt here, as most of the garments are machine made and mass-produced. Our main emphasis is onto the machine sewing.

Generally machine sewing is carried out on materials like woven and knitted fabrics, particularly in textile application. Again this may be on various fabrics having different quality parameters.

Single Needle Sewing Machine

A machine is used for sewing fabric, leather etc. Specifically, one that uses two threads (an upper and a lower, or bobbin thread) and is best at sewing woven materials.

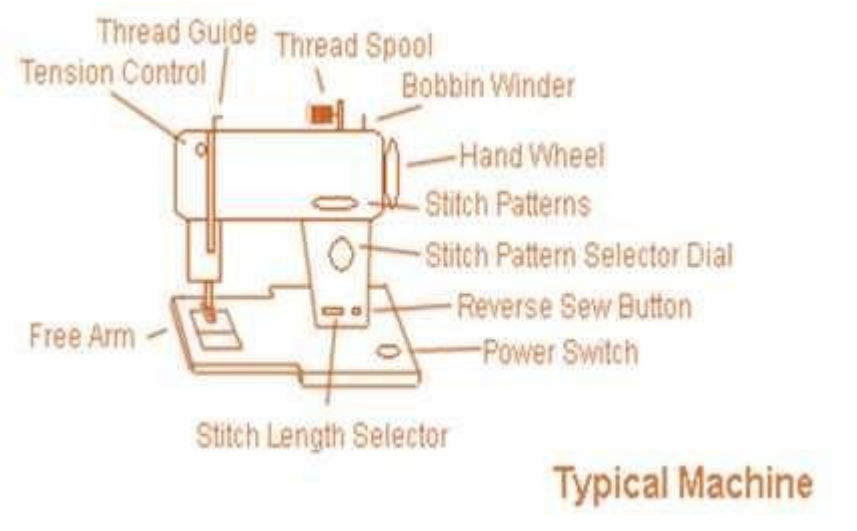


Fig 7.2

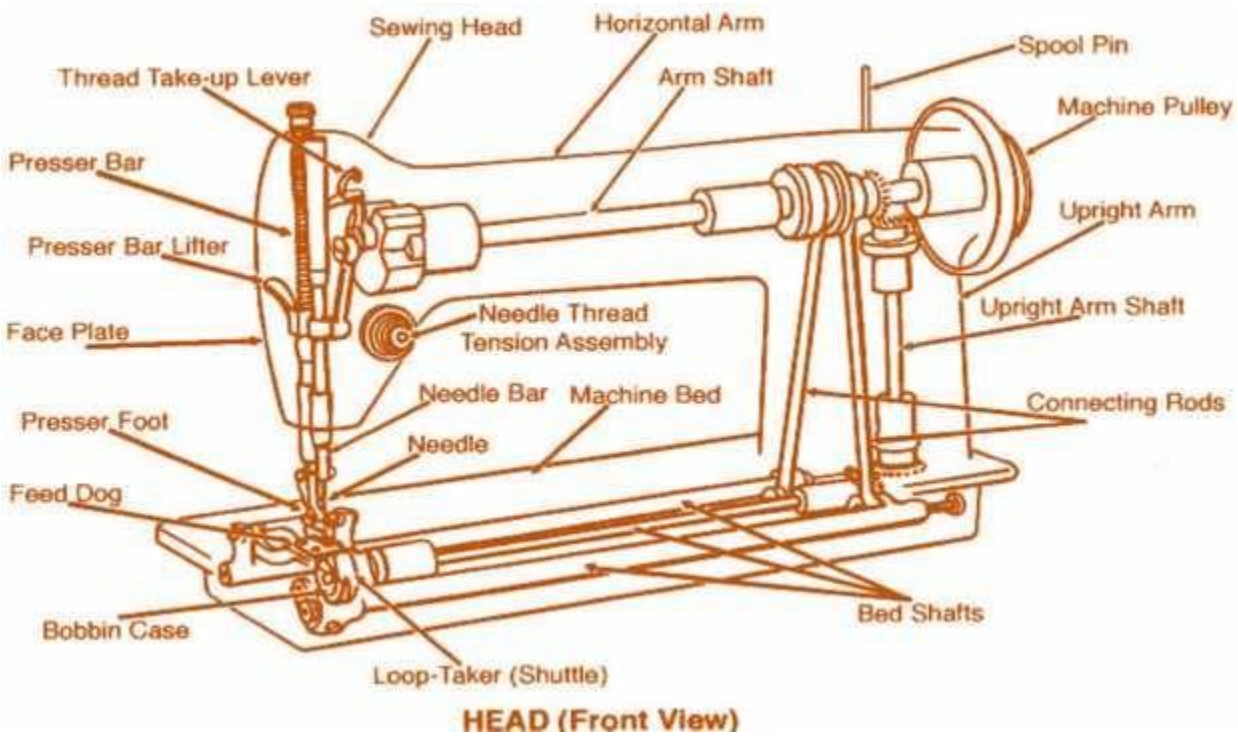


Fig 7.3

Organising the Room for Sewing

Before you begin organising, make a thorough inventory list of all the items you need in your sewing room, such as:

- Sewing machine
- Sewing table
- Fabric
- Cutting board
- Patterns
- Threads
- Mirrors
- Notions: thimbles, threaders, rulers, tracing tools, needles, pins, cushions, bobbins, elastic, seam rippers, pins, ribbons, dyes, fabric care, etc.
- Iron and ironing board
- Dress forms
- Garment steamer
- Other

Next, designate areas within your sewing room.

Create a Sewing Table Area

This should include the sewing table or desk, sewing machine, and a small basket or organiser for your daily sewing needs. This should also include enough open space for you to keep the material and supplies of your current project within easy reach.

Your sewing table is best placed by a window to maximize natural lighting. If that is not possible, use halogen bulbs. There are a variety of desktop and floor lights available, some are even equipped with a magnifier.

For floor covering, the flatness of a tile or linoleum is usually preferred over soft carpet to keep the machine in balance.

Create a Fabric Storage Area

As a sewer, you probably have quite a vast collection of beautiful fabrics. Help these fabrics maintain their beauty and structure by storing them safely.

There are different ways to categorise your fabric:

- By Colour: whites, blues, tans, reds, greens, etc.
- By Style: plaid, stripe, toile, polka dots, floral, contemporary graphics, holiday, etc.
- By Texture: cotton, rayon, denim, velvet, silk, canvas, leather, etc.
- By Purpose: fashion clothing, crafts, etc.

Safely store your fabrics by:

- Folding neatly and place in plastic containers. Label the outside by cutting small swatches of each fabric.
- Hanging fabric in a closet with a skirt or pant hanger. Multi-tiered hangers with clips can save space and help prevent wrinkles.
- Placing smaller amounts of fabric in large Ziploc bags.

However you decide to store the fabric, just make sure it is in a temperature-controlled environment to protect the fibres.

Create a Pattern Storage Area

Rather than keeping patterns scattered all over the place, keep them neat and tidy in a designated area. Lining up your patterns in drawers work especially well, You could also keep your patterns tucked inside a sturdy photo box, plastic container, pretty rectangular baskets, etc. Label the drawers or boxes based on one of the categories below.

- Style: shirts, slacks, skirts, dresses, etc.

- Size: infant, children's, teens, adults
- Gender: male, female
- Pick one system and stick with it.

Create a Sewing Supplies Area

Are your sewing supplies scattered all over the place? The exercise of organising a sewing room would be incomplete without finding a home for all your little tools. Depending on what your current inventory is, you may find the following items useful:

- Sewing caddies - many of these include lots of dividers and pull out drawers as well as handles for easy transportation.
- Thread boxes - these are convenient for seeing what colours you have available.
- Drawer organisers - help you keep supplies separated and identifiable.
- Household items - things you have around the house (for example, jars, plastic containers, etc.) can help you keep small items together.

These supplies don't need to be on or even next to your sewing table if you have open space for all of your daily sewing needs.

Create a Miscellaneous Area

This does not mean a “left over” area, rather this is for bigger items such as a full-length mirror, cutting board, iron and ironing board, garment steamer, and dress form.

Health & Safety Rules for Sewing Room

- No "Horse playing" allowed in the sewing lab.
- Put pins and needles in a pincushion. Do NOT leave them on the table and do NOT put them in your mouth as you sew.
- Keep scissors closed when you are not using them.
- Pass scissors and other sharp objects with the handle toward the other person.
- Keep fingers away from the path of the sewing machine needle.
- Do not lean your face too close to the sewing machine when stitching.
- Unplug the cord from the outlet and then disconnect the cord from the sewing machine when you are finished using the machine.
- Pick up any threads and fabric around the sewing machine.
- Cover the machine.
- Pick up and/or sweep anything on the floor around your machine and your desk/table.
- Rest the iron on its heel, if you leave it face down on the ironing board, you will burn the surface.
- Keep hands away from the hot area of the iron

- Be careful when filling and emptying the iron.
- Properly and safely use all the equipment in the Sewing Lab.

Hand Stitches

Some of your clothes may require hand stitch finishing.

Basting - a temporary type of stitch used to hold two or more pieces of material together. Begin with a knot, put the needle through the material from the wrong side to the right, take a tiny backstitch for security, baste as described below, and end off with a tiny backstitch or with two or three small stitches upright to the basting line.

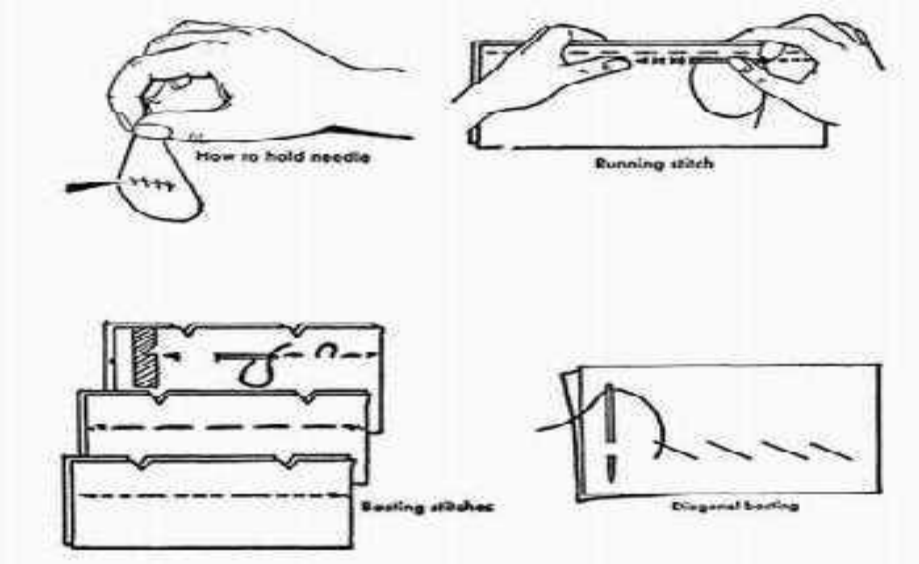
Even basting: Make your stitches ½ inch long and the spaces between stitches the same. This is a firm basting which is accurate and which will not pull out easily.

Uneven basting: Stitches are ½ inch to 5/8 inch long with ¼ inch space between. It is good as a guide line.

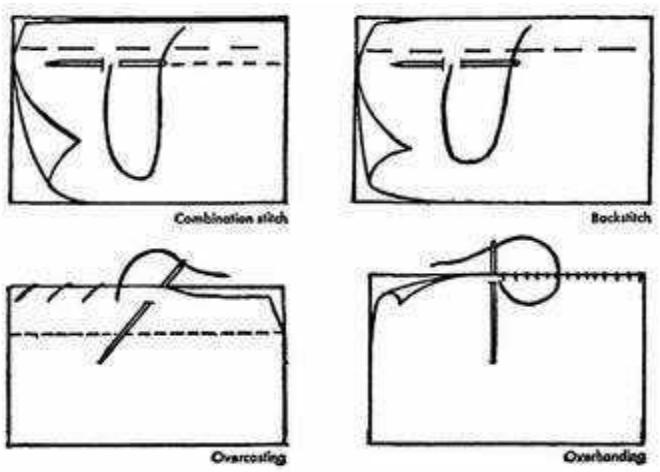
Diagonal basting: Used to prevent slipping of material when inserting zippers or putting in coat linings. Slant stitches on right side from bottom to top, come through to wrong side, hold needle in a straight line and pull out to right side again directly below where you originally inserted needle.

Dressmaker basting: Take one long and two or three short stitches.

Alteration or slip basting: This is used to baste seams where the garment has been fitted right side out or when you have to match plaids or stripes. Fold top material under at the proper place, and pin this fold to the place to be matched. Make a stitch through the turned-in edge on the fold, draw it through and make a short stitch through the under layer of material.



To complete the final touches often hand stitching is used. Below you get a rundown of the different basic stitches and how, when and where to use them.



The running stitch is a tiny, even basting stitch used for gathering, shirring, and mending. It can be used where a strong stitch is unnecessary.

Gathering is not a stitch but is rather an effect. Make a row of running stitches, but at the end, do not fasten. Leave a piece of thread about four inches long, and, holding this tightly, push the material back gently so as not to break the thread. Wind the thread around a pin to hold.

Shirring is the effect gotten by two or more rows of gathering. Make two or three lines of running stitches not more than ¼ inch apart and, holding all the ends together, gather and fasten threads around a pin.

Gauging is used to bring a large amount of material into a small space. Do two or three lines of uneven basting, making sure that corresponding stitches lie directly in line, one above the other. Pull up threads as in gathering and shirring.

Backstitching *(top right on picture)* is the strongest handmade stitch. Take a tiny running stitch, go back to the end of the stitch, through to the wrong side, and out again to the right side at a distance from the end of the last stitch equal to one running stitch. Continue going back and under, being sure to work in a straight line.

A half backstitch is made by making one running stitch, going back, under, and out again as described above, except that you leave a space equivalent to two running stitches, and follow up by going back the equivalent of one running stitch. On the right side, then, the work looks like a series of running stitches. Like the combination stitch, below, it is used where you need a stitch stronger than a running stitch, but not as strong as a backstitch.

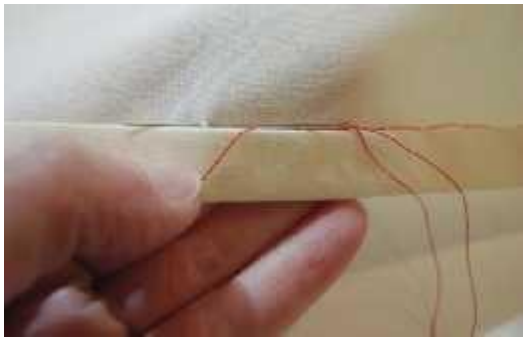
A combination stitch *top left on picture)* is two running stitches followed by one backstitch. It is stronger than a straight running stitch, but not as strong as backstitching.

Overcastting *(bottom left on picture)* is used on fabric edges to prevent ravelling. Make stitches slanting from right to left on the right side and have needle point towards your left shoulder as you come through from the wrong to the right side again. Overcastting can also be done quickly on the modern zigzag type of machine.

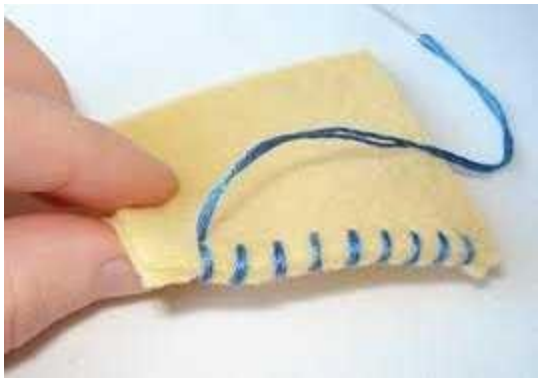
Over handing *(bottom right on picture)* is a stitch used to make flat, strong, invisible seams. Baste the two folds to be joined together and, holding the cloth firmly as you sew, make tiny, practically invisible stitches vertical to the seam line on the right side, and slanted on the wrong side. The same effect can be obtained by using a short zigzag machine stitch.

Hemming

In hemming, turn in the edge of the fabric ¼ inch, then turn second time, and baste to under fabric. Make small slanting stitches from right to left, *catching* only a thread or two of the under material. A bias hemming tape may be stitched on to avoid turning hem under. Blind hemming is done like hemming but with larger stitches through the fold and only one thread on under side. The work is invisible on the right side. This too can be done more rapidly with a sewing machine and is especially recommended when considerable hemming is to be done. *Slip stitching* is done for very fine work and is invisible on both sides. Take up one thread on underside of fold and one on underside of fabric.



Whipping is done to get a fine finished edge. Roll edge to be whipped a little at a time, wrong side facing you, hold roll tightly, and make tiny slanted stitches that pass under, not through the roll.

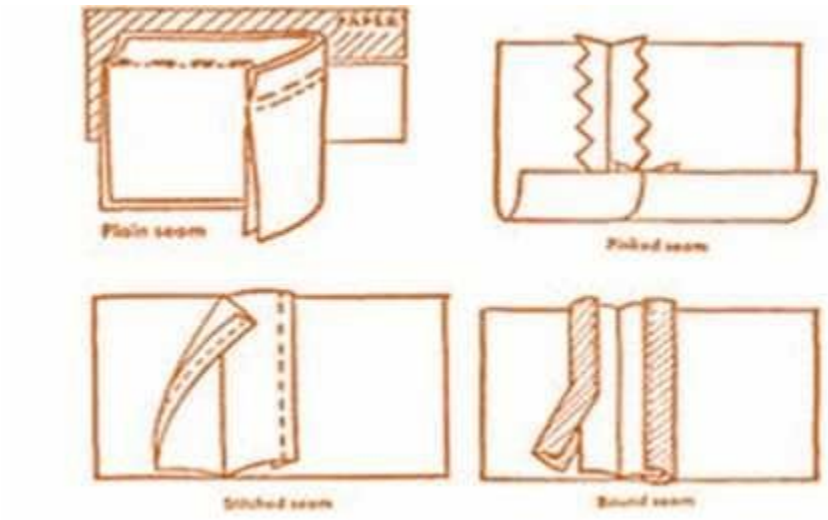


Sewing Seams and Seam Finishes

Seams are the lines of stitching which hold two pieces of fabric together. In general, we try sewing seams as inconspicuous as possible, and in most cases, as strong as possible. For this reason always make sure that you use good quality cotton for sewing seams.

The types of seam we use depend on the strength and the appearance we want to give. In some cases the seam may be used as part of the decoration, or for a functional purpose.
Plain seams are simplest and are used most often. Put two pieces of material, right sides together, and stitch on wrong side at required seam allowance, usually ½ inch (1 cm) from edge. Open and press flat. Edges may be pinked.

Stitched plain seam is made in the same way as a plain seam and then stitched again on the right side 1/8 inch from seam line on one or both sides for a tailored effect.



Flat fell seam is used when you need a flat finish, as in shirts and pyjamas. Make a plain seam, trim one edge to 1/8 inch, and turn in other edge ¼ inch (1/2 cm). Baste to position over trimmed edge and edge stitch. This is usually done on the right side.

Hem felled seam is made like flat fell except that seam is hemmed, rather than edge stitched, for a softer effect.

Fagoted seam has a space between fabric edges. Decide how far apart edges are to be; turn edges back one-half the width of the finished open space, baste them to a slip of paper, and fagot.

Hemstitched seam is basted as for plain seam, and pressed to one side. Have seam hemstitched and trim seam allowance close to hemstitching. A line of machine stitching can be done ½ inch (1 cm) from stitching on wrong sided.

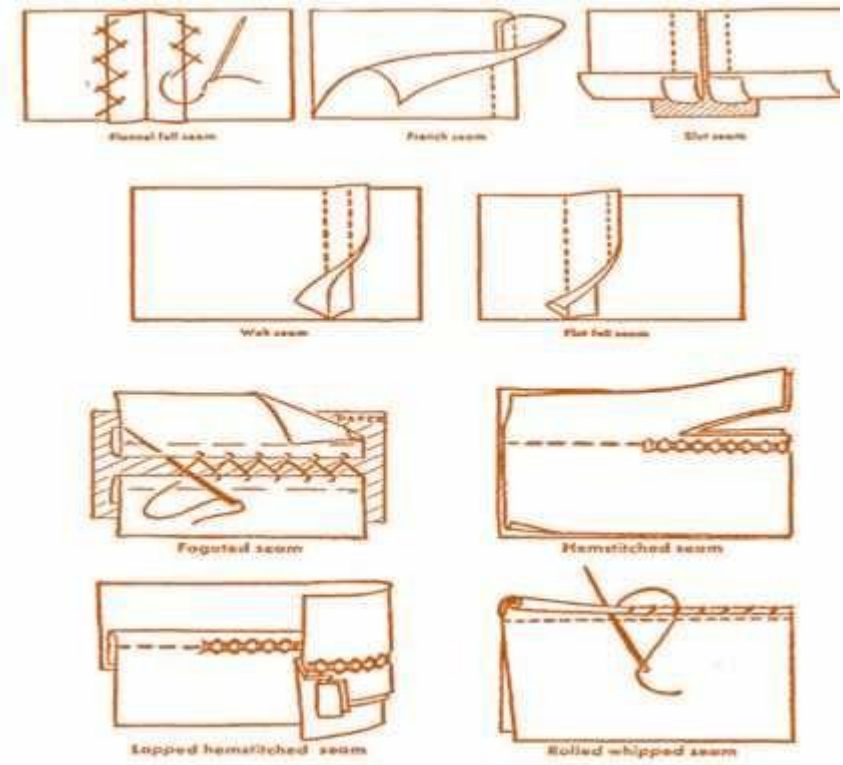
Lapped seam will look like a fell seam when finished. Turn one piece of material under on the seam allowance. Baste the folded edge on to the right side of the other piece, at the seam allowance.

Tucked seam is similar to lapped seam except that the final stitching is done not at the edge, but at a distance from the fold. The effect is like that of a tuck.

Lapped hemstitched seam is done by lapping seams, as explained under lapped seam. Hemstitch over the basting, trim away seam on wrong side. *(See picture below)*

Machine picoted seam is like hemstitched over the basting, trim away seam on wrong side.

Rolled whipped seam. Make a plain seam, trim the allowance to half, roll edges tightly a little at a time, putting needle under roll, not through it. *(See picture below)*



Strap seam is used for decoration. Plain seam is made and pressed open. On the right side, baste a strip of material with edges turned in, and edge stitch both sides. Braid and other trimmings may also be used.

Corded seam uses cord which has been basted inside a bias strip. Place bias covered cord on the right side of one piece of material with basting directly on seam line, cut edges towards edge of fabric. Baste and place second piece of fabric, right sides facing, edges together, in position as for plain seam. Baste and stitch on seam line, using cording foot.

Piped seam: Fold bias strip in half and placed on the right side of fabric with fold 1/8 inch inside seam line. Baste and place other piece right side down on top; baste and stitch. Trim seam, press so that piping falls along edge of seam.

Curved seam must be clipped or slashed in several places to make it lie flat. This is important for smooth finish.

Enclosed seams are plain seams used in double thicknesses as in collar and cuffs. Trim very close, clip edges to lie flat, press and turn.

Crossed seams are two seams that cross. To avoid bulkiness, press seams open and clip away edges of under seam.

Whipped seam is used for piecing when fabric is not wide enough to cut full pattern. Be sure grain of piecing is the same as the grain of garment / sewing project, turn in edges, and overcast with tiny stitches.

Seams with inserts: Place lace or trimming on right side, baste, and hem edges by hand, or use zigzag attachment or zigzag stitch on zigzag machine. On wrong side, cut fabric away, and roll edges, or turn the edges back and stitch them, but not to the garment / sewing project.

Bias seam should be sewed over paper to avoid tightening. Tear paper away.
Raw seam edges are finished to prevent fraying and ravelling and to act as stay lines so that seams do not pull out of shape. Finish must be suitable for the texture and transparency of the material.

Pinking is done with pinking shears and is a very simple finish. However, pinking should be done only on firmly woven fabrics.

Clean finish is the name for seam edges which are turned back ½ inch and stitched. The seam so finished is called a silk seam.

Binding: is done by enclosed edges in binding and stitching.

Hemstitching and Picoting: are done on transparent fabric seam edges. Picoting gives a very decorative effect, and is sometimes used to finish seam edges which are going to be fagoted together.

Sewing a Seam

1) Thread your machine and insert the bobbin. Holding the needle thread with your left hand, turn the hand wheel toward you until the needle has gone down and come back up to its highest point. A stitch will form, and you will feel a tug on the needle thread. Pull on the needle thread to bring the bobbin thread up through the hole in the throat plate. Pull both threads together under the presser foot and off to one side.

2) Cut two pieces of fabric and place them right sides together, aligning the outer edges. Pin the pieces together along one long edge, inserting the pins about every 2" (5 cm), perpendicular to the edge. Place the fabric under the presser foot so the pinned side edges align to the 11.2" (1.3 cm) seam allowance guide and the upper edges are just behind the opening of the presser foot. Lower the presser foot, and set your stitch length at 2.5 mm, which equals 10 stitches per inch.

3) Begin by backstitching several stitches to the upper edge of the fabric. Hold the thread tails under a finger for the first few stitches. This prevents the needle thread from being pulled out of the needle and also prevents the thread tails from being drawn down into the bobbin case, where they could potentially cause the dreaded THREAD JAM.

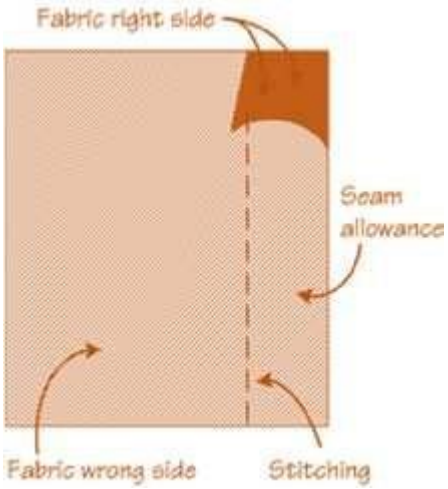
4) Stitch forward over the backstitched line, and continue sewing the 1/2" (1.3 cm) seam. Gently guide the fabric while you sew by walking your fingers ahead of and slightly to the sides of the presser foot. Remember, you are only guiding; let the machine pull the fabric.

5) Stop stitching and remove pins as you come to them. When you reach the end of the fabric, stop stitching; backstitch several stitches, and stop again. Turn the hand wheel toward you until the needle is in its highest position.

6) Raise the presser foot. Pull the fabric smoothly away from the presser foot, either to the left side or straight back. If you have to tug the threads, turn your hand wheel slightly toward you until they pull easily. Cut the threads, leaving tails 2 ½ '' to 3" (6.5 to 7.5 cm) long.

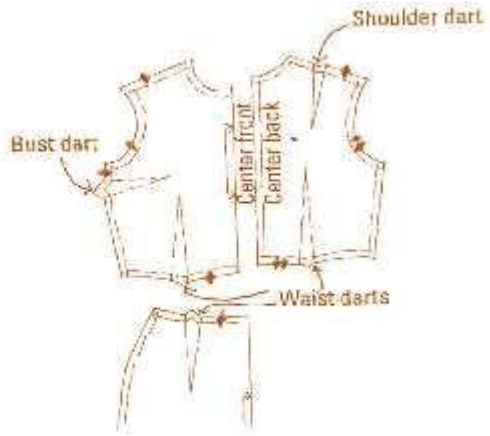
Seam allowance is the area between the edge and the stitching line on two (or more) pieces of material being stitched together. Seam allowances can range from 1/4 inch wide (6.35 mm) to as much as several inches. Commercial patterns for home sewers have seam allowances ranging from 1/4 inch to 5/8 inch.

Sewing industry seam allowances range from 1/4 inch for curved areas (e.g. neck line) or hidden seams (e.g. facing seams), to one inch or more for areas that require extra fabric for final fitting to the wearer (e.g. centre back



Darting Around

Darts are little wedges of fabric that you pinch out and stitch to shape pattern pieces at the waistline, back waist, shoulder, bust line, and hips, as shown in Figure below. Paper patterns mark darts with stitching lines and sometimes a fold line that converges to the point of the dart.



Darts help your projects take shape.

You may come across two dart types depending on the project. If the project has a horizontal waistline seam as you see in Figure, fabric needs to be "nipped in" to follow the natural curve at the waistline. So the darts on the bodice and the skirt have a wider amount of fabric taken out of the fabric at one end of the dart and then taper off at the point. This type is called a straight dart.

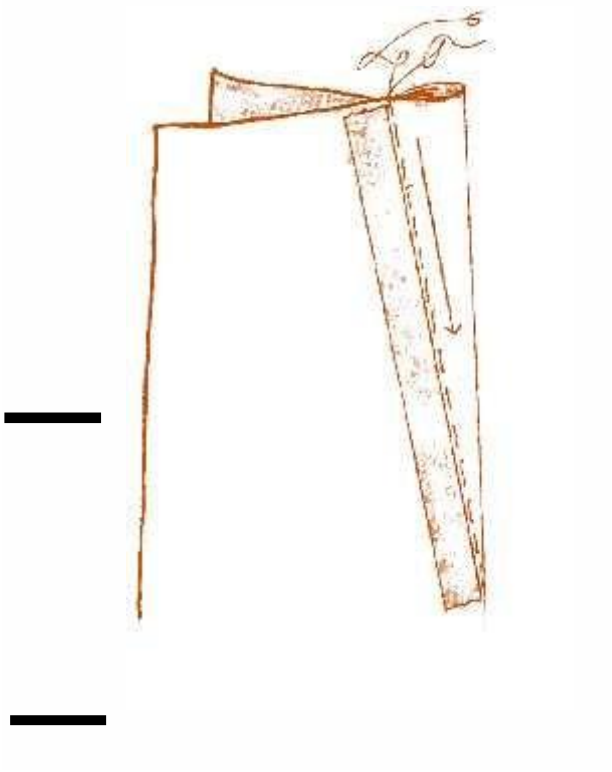
If you need to nip in the waistline on a garment without a horizontal waistline seam, such as a blouse with a contoured waistline or a drop-waist or one-piece dress, then you make a dart that's wide in the middle and is stitched to points at either end. This type is called a contoured dart.

Sewing the Straight Dart

To construct perfect straight darts every time, just follow these steps:

1. Mark the dart with pins or a fabric marker.
2. Fold the dart, right sides together, matching at the fold line and pinning perpendicular to the stitching line at the dots marked on the pattern piece.
3. Place a strip of invisible tape the length of the dart, next to the stitching line, as shown in Figure.

The tape forms a stitching template that helps to keep your sewing straight.



Use tape as a stitching template and sew from the wide end to the point of the dart.

Sewing the contour dart

1. Mark the contour darts using your dressmaker's chalk and/or pins.
2. Set your machine like this:

   - Stitch: Straight
   - Length: 2.5 to 3 mm/10 to 12 spi
   - Width: 0 mm
   - Foot: All-purpose

3. Starting at the widest part of the dart, sew to the point in one direction, and then turn the dart around and repeat for the other end of the dart, as shown in Figure. This two-step method makes the dart smooth and perfectly tapered at both ends.
4. Tie off threads at both ends and in the middle of the dart.

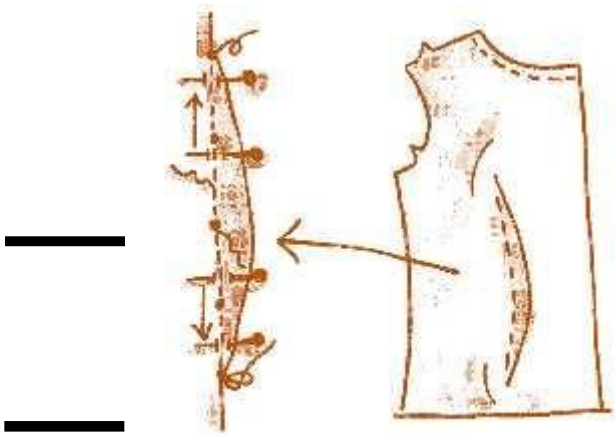


Figure 7-3: Mark and sew the contour dart in two steps.

Finishing the dart

After sewing your dart, press it so that the dart forms a clean, smooth line in the fabric. Just follow these easy steps:

1. Remove the tape and press the dart flat and together. Place the dart on the ironing board with the wrong side of the fabric up. Place one edge of the iron over the stitching line with the rest of the iron over the fold of the dart; press the dart flat from the stitching line out to the fold. By pressing over the seam line, you set the stitches so that they blend well into the fabric.

2. Press the dart to one side of the inside of the garment. Press horizontal darts so that the bulk of the dart is down. Press vertical darts so that the bulk of the dart is toward the centre of the

garment. If you have a tailor's ham, press the darts over a ham so when the dart is pressed it mimics the body curves. Don't use a too-hot iron for your fabric. Do use a press cloth. Some fabric is tricky to work with because, if pressed with a too-hot iron and/ or without a press cloth, it can shine and the seam allowances create shadows on either side of the seam line. If you're not sure about the iron's heat setting and what it does to your fabric, use a press cloth and test-press a fabric scrap.

Health and Safety

There are some very important dos and don'ts to observe before using a soldering iron.

- Do prepare a safe place in which to work.
- Do not have any extension leads or sockets on the workbench; they should be on
- the floor.
- Do not let leads from other equipment, such as sewing machines, lamps and extractor fans, go anywhere near the soldering iron.
- Always work on a piece of glass with masking tape around the edges.
- Always work in a well-ventilated room or use an extractor fan.
- Always remember to switch off the soldering iron when you have finished working.

Further Reading:

- ✓ ***Sew Step By Step (By Alison Smith)***
- ✓ ***Me and My Sewing Machine: A Beginner's Guide by Kate Haxell***