



The Techniques Manual:

A Companion Guide to

Materials, Fitting, Sewing, and Crafting

for the users of

Margo Anderson's Historic Costume Patterns

by

Margo Anderson

Version 1.0

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www.Margospatterns.com

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The Elizabethan Lady's Wardrobe

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The 16th Century Lady's Doublet

The 16th Century Lady's Loose Gown

The 16th Century Lady's Kirtle

Lovingly dedicated to
my husband, Doug Gordon
A partner in every sense of the word.

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Introduction

About this Manual

This book is composed of materials that were originally written as part of the instruction manuals for patterns from Margo Anderson's Historic Costume Patterns. You can see these patterns at www.margospatterns.com.

After creating half a dozen patterns with book length instruction manuals, It became obvious to me that I was repeating myself, and the logical solution was to gather the material into a separate book.

I feel that many people might find this material helpful, and so I have decided to post the book on my website for all to use and enjoy.

This book is my gift to you. You may print it, copy it, and give it away to as many people as you choose. I ask only that you don't change it in any way, that my name and contact information not be removed, and that you not charge for it.

Updates

I plan to update this manual on an ongoing basis. If you'd like to be told about updates, you can join my email list at margospatterns@yahogroups.com, or the [Margo's Patterns/Historic Costume Patterns](#) group on Facebook.

Focus

- This book concentrates on making historical costumes using modern methods. Hand sewing is used where it will be visible, but machine sewing and other modern conveniences are also used.

Using the Manual

I use the 3-ring binder format because it is the best way to present the large amount of material contained in this package, and makes it easy to customize to your needs.

You can use dividers to mark the sections so that you can find them quickly . You may also want to add some blank paper for making notes and sketching ideas, and a plastic zipper pocket insert to store swatches of fabric and trim.

Tools For Costumers

Every sewer needs a basic tool kit, containing, at minimum, shears, scissors, a seam ripper, measuring tape, pins, and needles. There are many more tools that will make sewing easier and better. Here are some things I find helpful.

You don't need to go broke purchasing all these things. Many of them are nice to have, but not essential, and you can often find them second hand. Most of my extensive collection of sewing tools came from garage sales, thrift stores and estate sales.

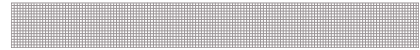
Measuring

Tape Measure

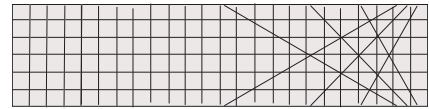
A plastic or cloth tape measure is essential for taking body measurements. If you're working with a larger body, look in the quilting notions department for tape measures up to 120" rather than the usual 60".

Rulers

A transparent ruler with a 1/8" grid for sewing and patternmaking. The most useful size is 2"x18". A 1x6" is a useful addition. These rulers can be found on the sewing notions racks, but you may find them at a lower price at an art or drafting supply store.

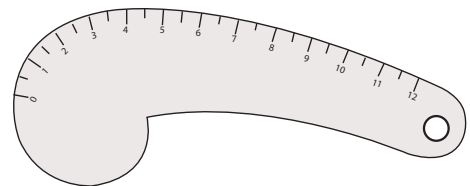


A quilter's ruler made of heavier plastic is good for marking strips, and for rotary cutting. The 6" x24" size is the most useful.



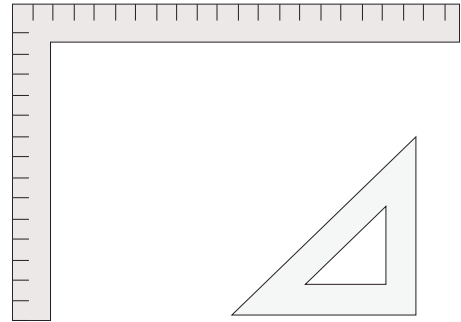
An ordinary yardstick for drawing long lines.

A French Curve for correcting curved seams after alterations.



A large carpenter's square for correcting the grain of fabric.

A triangle for marking bias.



Cutting

Shears are large scissors with one large loop for the fingers and another for the thumb. They are used for cutting out pattern pieces and during construction. While they should be good quality, you don't have to go broke buying them. There are several good brands for under \$30 a pair.

Shears should only be used for cutting fabric. Paper will destroy the edges on the blades.

***Tip:** To keep others from using them, I recommend going to the dollar store and buying at least a dozen pairs. Put them in every room in the house, including the kitchen, bathroom, and garage. If that doesn't work, buy a padlock and put it through the handles of your good shears!*

If you are left handed, don't try to use right handed shears unless you like having blisters. Most companies make their shears in left handed versions.

There are a number of styles of shears. I prefer bent trimmers with knife blades for general sewing. If you sew a lot of knits or sheer fabrics you may want to also own a pair of serrated blade shears, which grip the fabric better. If you have hand problems, there are comfort grip handles, and there are also spring handled shears that reduce fatigue considerably.

Pinking shears have blades that cut in a zigzag pattern. They are used to trim seam allowances to keep fabric from raveling, and to reduce bulk.

Scissors

The difference between scissors and shears is that scissors have finger loops that are both the same size. You will want a pair of pointed scissors from 5-7" for general sewing. A pair of small embroidery scissors with long narrow pointed blades are helpful for removing stitches.

Rotary Cutter

Rotary cutters hold razor sharp blades in a handle, like a pizza cutter. You must use a special rotary mat to cut on. Buy the biggest mat you can afford, and buy more than one blade at a time so you don't get frustrated by a damaged blade after the fabric store is closed.

Seam Rippers and Blades

You'll want a large seam ripper, for sturdy fabrics, and a small one for delicate fabrics and tight stitches. They do get dull, so replace them every year or two.

There are also other blades sold for ripping seams. Some are actually surgeon's scalpels. These are designed to cut the human body, so be careful!

Craft Knife

A craft knife with interchangeable blades can also be used for ripping seams, as well as cutting buttonholes.

Marking

All marking materials should be tested on a scrap to make sure that the marks can be removed. You should not iron over marks, as that can set the color.

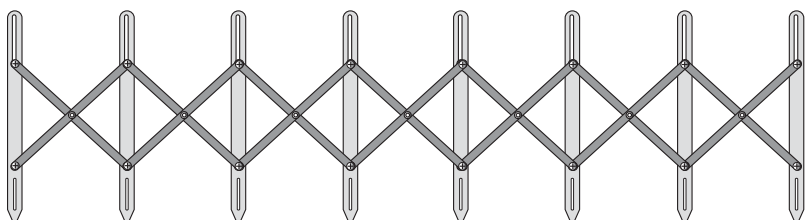
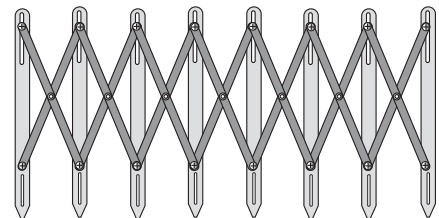
Chalk

Tailor's chalk comes in several colors and types, and in a flat square shape. It also comes made into pencils.

Ordinary blackboard chalk in white or colors can also be used, although it rubs off more easily than tailor's chalk.

Water or air soluble marking pens are easy to use, but if the marks are not thoroughly washed out they can reappear, sometimes even years after use. The garment should be thoroughly laundered after construction. For this reason I do not recommend them for clothing that will be dry cleaned rather than washed. I have also found that in very dry climates the air soluble marks sometimes disappear before they are needed.

A Flexible Gauge is a very useful tool for marking even spaces for pleats, buttonholes, or eyelets. Simply stretch it between the starting and stopping points, and mark your spaces.



Needles

In addition to ordinary sewing needles, I recommend keeping the following needles on hand:

Tapestry needles are large, blunt pointed needles with dull points. They are perfect for use as bodkins for lacing through small eyelets.

Long dollmaking needles are great for cartridge pleating, as you can take a number of large stitches without having to pull the needle through the fabric on every stitch.

Pins

You should have a variety of pins on hand for different tasks.

Yellow head quilter's pins are very long and strong, and are good for pinning thick fabrics.

Silk pins are for pinning silk and other fine fabrics.

Ball point pins are generally used for knits, but are also good for fine laces and other easily snagged materials.

Sequin pins are short, 1/2" pins. They are handy for pinning intricate applique.

Glass head pins have colorful ball heads that can be ironed over without the risk of melting like plastic heads can.

Brass pins with plain metal heads have more "tooth" than steel and will grip the fabric better. I recommend them for those historical costumes that were fastened with pins.

***Tip:** One of the most useful tools in my sewing room is a long handled floor magnet. It looks like a push broom, but has a strong magnet in the base. Sweep it over your floor and find all the pins you dropped!*

Thread

Spend money on good quality thread. Those cheap spools in the sale bins at the fabric store will frustrate you and can damage your machine.

Cone thread can be used in your regular sewing machine as long as it's good quality. The kind made for sergers is a lighter weight than regular sewing thread, and some people say it's not as strong. I've been using it for years with no problem, but your mileage may vary. You will need to buy or make a cone thread stand.

I strongly recommend the use of Rice's Silamide Thread for slipstitching. Silamide is a specialty thread that was originally developed as a substitute for silk thread. It is extremely strong. It is made of nylon and comes pre-waxed. It is so strong and slippery that you can sew without pulling the thread all the way out with each stitch. Instead, you stitch for a few inches, pulling the thread out only as far as is needed to make your stitches, and then pull the length of thread all at once. Once you get used to this, it makes hand sewing very fast. Nylon does not hold knots well, so start and stop your stitching by taking three tiny back stitches.

Sewing Machine Accessories, Attachments and Feet

I strongly recommend buying enough extra bobbins that you can wind a lot of them at the beginning of the project and not have to keep stopping to rewind.

Sewing Machine Feet

Most sewing machines come with a multipurpose zigzag foot, a buttonhole foot, a zipper foot, and a blind hem foot. If your machine didn't come with them, you can buy them from a dealer or online.

There are dozens of other feet available, for utility and decorative purposes. Some that I like are:

A Cording Foot has a small hole through which soutache braid, yarn, or other narrow trims can be fed. Often there is an additional guide that attaches to the needle screw. This foot makes it easy to do intricate corded designs.

The Piping Foot has a groove through which the corded portion of the piping can slide. While piping can be applied with the zipper foot, some people find the Piping Foot is easier to control.

A Walking Foot helps feed material through the sewing machine. It's particularly useful for heavy or slippery materials, and for those that need careful matching, such as stripes and plaids.

Sewing Machine Attachments

The ruffler attachment makes tiny pleats, resulting in a ruffle effect. It can be set for various fullnesses and thicknesses for fabrics, but is most useful for lightweight fabrics.

Template style buttonhole attachments are no longer made, but it's worth keeping an eye out at the thrift stores for them. They make much nicer looking buttonholes than the ones

most modern machine makes. Some of them make a small round eyelet, which is very handy. They can fit on most modern machines.

Mini vacuum attachments fit onto the hose of a regular vacuum cleaner and are great for cleaning lint out of your sewing machine and serger, as well as your computer.

Other Machine Sewing Helps

Sewing With an Awl

Sewing with an awl in hand is a trick from industrial sewing that vastly improves the level of control you have over your stitching. Use it to guide the fabric under the foot and keep it aligned precisely.¹

Eye protection should be worn when machine sewing. No matter how careful you are to pull your pins out as you sew, there's always the chance of sewing over and breaking a pin. I've had broken pins bounce off my glasses several times, so I strongly recommend wearing safety glasses when sewing.

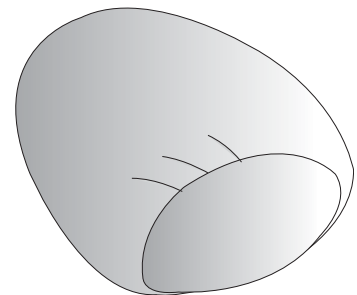
Pressing

A good steam iron is essential for sewing. Most irons today are equipped with auto shutoff, which can be annoying while sewing. Look for heavy rather than light, if possible.

Press cloths are used to provide a protective layer between the iron and the fabric, or are moistened and pressed through to provide extra steam. Muslin is usual, but I also like to have one made of silk organza, which takes a high amount of heat and can be seen through.

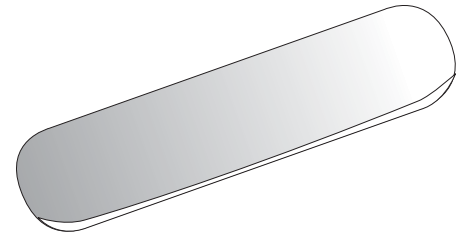
I also keep a terry towel on hand, to cover the ironing board when pressing velvet. a good sized scrap of self fabric can also work. There are commercial velvet boards made for this purpose, but they are very expensive.

A tailor's ham or pressing ham is an object made of cloth and covered with fabric, that is shaped roughly like, well, a ham. It is used to simulate curved portions of the body while pressing garments. There are a number of patterns available online for making your own.

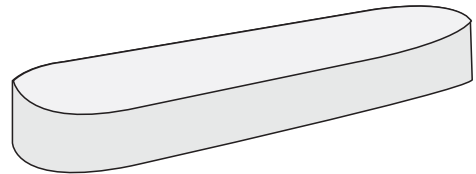


¹ Threads Magazine, issue #52 "Sewing with An Awl"

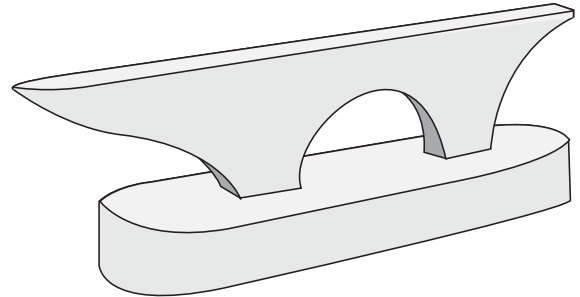
A seam roll is similar to a pressing ham, but is a cylinder shape. Use it to press seams open without the seam allowances pressing into the fabric and showing on the right side of the garment.



A clapper is a wooden tool used to flatten edges when pressing. The edge is pressed with high steam, the iron removed, and the clapper is pressed into place, trapping the steam.



A tailor's board is a wooden device with a number of surfaces and angles that can be used as mini ironing boards while pressing. Many tailor's boards have a clapper built into the base. They can be purchased, or, if you have woodworking ability, there are free patterns for making them online.



A spray bottle is used to dampen fabric while pressing.

A pop-top "sports bottle" makes it easy to fill your iron without spilling.

Crafting Tools

Most costumers eventually find themselves doing some form of crafting, from millinery to building accessories to jewelry making. Here are some useful tools.

Glues

Hot glue guns are very useful for building accessories. Hot glue has good holding power, and sets in seconds, so that the project doesn't need to be clamped.

Hot glue can inflict serious burns. When you are working with hot glue, always keep a bowl of ice water nearby, so that if your get glue on your hands you can cool it immediately.

Low temp melt glue is a safer version of hot glue. It may not stand up to very high heat, such as if the project is left in a closed car in summer.

Hand Tools

Pliers are used in jewelry making and millinery. Needlenose pliers can be used to pull a needle through heavy layers of fabric. Chain nose pliers have flat, unserrated jaws so that they don't damage chain or other metal components.

A pair of heavy wire cutters are needed when working with millinery wire.

A mallet made of wood, plastic, or rawhide is used for striking when setting grommets or rivets. You should never use a metal hammer to strike a metal tool. It could shatter and cause serious injury.

Eye protection should be worn whenever striking.

Fabrics

The fabrics available to 16th century Europeans were principally linen, hemp, wool, and silk. They also made great use of leather. While their fibers were limited, their choice of weaves and styles was not. There was a huge variety of fabric available.

Researching fabrics can be very confusing, as the same fabric names tended to be assigned to different fabrics at different times.

Historically Accurate Fabrics

Linen

Linen is a fabric made from the fiber of the flax plant. It is strong, absorbent, and breathable. More than any other natural fiber, it wicks moisture away from the body, making it the most comfortable fabric for warm weather and for wearing next to the skin.

Linen was widely used for shirts, smocks, and for linings, but rarely, if ever, for outer garments. In period, it was available in a huge variety of weaves and weights, ranging from gossamer thin lawn to heavy sailcloth. Today, the range of types available is much smaller, although in recent years it has become more available and less expensive.

Modern linen is stiff at first, and wrinkles easily. This is due to the finishes and sizing used in the manufacturing process, but the more it is washed, the softer and less wrinkle-prone it becomes. It is also prone to shrinking, so I recommend washing it in hot water and machine drying it on a high setting two to three times before cutting out your pattern.

When buying linen, be careful to check that you are buying 100% linen (flax) fiber. Many fabric stores and their employees confuse "linen look" weaves with the real thing, and you may find that the "linen" look contains little or no real linen fiber.

Because linen tends to ravel, all seams must be finished. Aside from this, though, linen is quite easy to sew. It holds a crease so well that folds can be finger-pressed in place without ironing.

Types of Linen

Handkerchief linen is lightweight, fine fabric that is excellent for making smocks. Medium to heavyweight linens are good for lining and interlining garments. Novelty linens refer to those with fancy textured weaves, or embroidered yardage.

Hemp

Hemp, a variety of cannabis, was used to make a fibre very much like linen. (The word "canvas" comes from cannabis, in fact.) Hemp cloth is presently becoming more available in the United States.

Wool

For everything other than body linen (shirts and smocks), wool was the most common fabric for garments. Wool keeps you warm even when wet, yet is breathable enough to be relatively cool in warm weather. It is also relatively fireproof, an important consideration in a time when almost all heating, cooking, and illumination was by open flame.

Wool is also wonderful to sew. It can be molded by steam and heat, and it doesn't show needle marks. Many people think of wool as a thick, heavy fabric, but it is actually available in a wide range of weights: from the thin, hard-finished wool from which a good quality man's suit is made, to heavy coating.

Types of Wool

Plain weave wools are those woven with a regular weave, such as:

Flannel, a medium-weight wool with a brushed texture. Not the same as the cotton flannel sold for shirts and pajamas.

Broadcloth, originally a plain-weave wool woven on a very wide loom. Today, it usually refers to a lightweight cotton fabric. Silk broadcloth is also available.

Serge, the thin, tightly woven wool of which high quality men's suits are made.

Patterned wools include:

Twill, woven with a variety of diagonal patterns. Twill is very strong.

Tweed, which can be woven in various patterns, usually twills, often refers to a mixture of colors in the weave, such as herringbone or speckled patterns. Excellent for lower and middle class costumes.

Wool is also woven into various luxury fabrics, including satin and velvet. These are expensive and hard to find, but would be suitable for upper-class costume use.

Washable wool is a fabric made by combining wool with nylon or polyester. I don't recommend it. It's not as absorbent and can be uncomfortable to wear; it rapidly pills and just looks cheap.

Silk

Silk was the luxury fabric of the time, as it still is, for that matter. Silk is very strong and wears well. It also takes dye well, allowing for rich, saturated colors.

Most people think of silk as thin, shiny stuff, but like wool it is actually available in many different weights and textures. One problem you will encounter is that most modern silks are deliberately woven with imperfections, called slubs. In the 16th century, hand-weaving was not a selling point, since there was no alternative. Instead, they strove for smooth perfection, and slubbed silks would have been rejected as grossly inferior.

Appropriate Silks for 16th Century Women's Costume

Dupioni and Shantung are plain weave silks. They are usually too slubbed to be appropriate for 16th century costume. Occasionally smoother versions can be found. To give the proper drape, they will need to be flat lined when used for kirtle or gown skirts.

Habotai, also called China silk, is a crisp, lightweight, plain weave silk that is excellent for lining upper class sleeves and partlets.

Taffeta is a light, crisp fabric that is excellent for the period. It needs to be flat lined to give it the proper weight.

Thai Silk is similar to taffeta, but a bit softer. It is most often seen in "shot," or changeable, weaves, with the warp and weft threads of different colors to give an iridescent effect.

Silk Noil, or raw silk, is a rough textured dull fabric. It is inappropriate for upper class wear, but makes an excellent "homespun" fabric for the middling sort. The Tudor Lady's Manual

Satin is another excellent choice for skirts, bodices, and sleeves. Silk bridal satin is heavy, stiff, and has a subtle sheen very different from the modern synthetic satins.

Brocade refers to fabric with an elaborate design woven, not printed, into the cloth. It may be either single-colored (now called Jacquard), or two or more colors. It may have a raised, velvet-like pattern (chenille), or even have metallic threads woven into it. Silk brocades are available, but are often staggeringly expensive. Modern versions include cotton and synthetic blends.

Modern Substitutes

Many of the period fabrics are getting harder and harder to find. Some are completely unavailable or so expensive as to exclude their use by all but a few people. Often, modern substitutes must be used.

Cotton is often used for re-enactment costumes. Depending on the weave and the way it's used, this can be very successful or disastrous. Cotton has the advantage of being absorbent and comfortable in hot weather, although not nearly so much as linen. However, many people make the mistake of using it in weights that are too light for the garment. If you will be using cotton, try to check it against the real thing. If it doesn't have the same weight and heft, consider flat lining it (page 68) with another layer of fabric to give it the proper look.

Some cotton fabrics useful for costuming:

Broadcloth, Muslin, and Batiste

Lightweight fabrics suitable for linings, and as a substitute for linen shirting.

Cotton Velvet

While both silk and wool velvet are still available, they can be very expensive, too lightweight for the purpose, or both. I prefer to use high quality cotton velvet.

Velveteen

Similar to cotton velvet, but is made by a different process. The pile is lower and the fabric itself is lighter, which can be an advantage for warm weather costuming. It's usually less expensive than cotton velvet.

Both cotton velvet and velveteen shrink a lot. If you ever plan to wash the costume, pre-wash the fabric in warm water and dry it on hot. Removed it from the dryer immediately to prevent permanent marking.

Cotton Twill

A reasonable substitute for wool twill.

Canvas

In period, a fabric made of hemp. You can find hemp canvas at some specialty suppliers. Modern cotton canvas, also called duck or drill, is ideal for flat lining garments such as bodices, foreparts, and foresleeves. Canvas may also be used as a fashion fabric for lower to middle class garments.

Brocade

You can often find very good cotton brocades sold as home decorating fabrics. Some of them are a blend of cotton and rayon, which gives a nice silky effect while still having the advantages of natural fibers.

It can be difficult to find the correct designs of brocade for the period. Look for stylized acanthus leaves, pomegranates, and flowers, in large patterns. Geometric patterns can also be used. Avoid naturalistic roses and other flowers, flowing scrolls, ribbons, paisley, and tiny all over designs.



Yes



No

Most of the brocades sold as party or bridal fabrics are too lightweight for our purposes, and will need to be flat lined for the right look, but are best avoided. You'll find a better selection in the home decorating department, including some heavy fabrics in period-style patterns and colors.

Cotton/Synthetic Blends

Many fabrics that appear to be cotton are actually blends of cotton and some synthetic material, usually polyester. I recommend that you avoid these fabrics for comfort's sake. Also, the higher the polyester content, the less natural the fabric looks.

Synthetic Fabrics

The 20th century brought about the greatest changes in textiles that history has seen, in the form of synthetic fabrics. While synthetics have been a boon to many, they're often seen as a blight to costuming. This may not be entirely true, but there are disadvantages.

One drawback of synthetic fibers is that, in general, they do not breathe well. This leaves them unsuitable for making period costumes which are tightly fitted and often worn in temperatures far higher than those for which the garments were designed.

Another problem is that most synthetic fabrics have an artificial look to them. This is most obvious in direct sunlight, when even a flat, dull textured synthetic will have a distinctly sparkly look. Especially if you are going to be wearing the costume outdoors, always look at the fabric in direct sunlight before using it! Most fabric stores will have someone walk you outside with the fabric to look at it if you explain the problem.

Some synthetic fabrics suitable for costuming may include:

Velvet

Synthetic velvet is often chosen for costumes which are intended to have a rich appearance. I don't feel that the choice is a good one, in most cases. Synthetic velvet is far too shiny for the purpose, and has a lightweight slinky drape that isn't suitable. It doesn't wear well, and the pile flattens when sat on, leaving shiny patches. Synthetic velvet is also much more difficult to sew than cotton velvet.

Crushed Velvet

is a novelty fabric that first became popular in the 1960s. It was artificially "distressed" to look old and worn out. This would not have been desirable to the Tudor eye, and is unsuitable for 16th century costume.

Brocades

Since authentic silk brocades are so expensive, synthetics are often used. They are available in a wide range of styles and weights.

Satin

Until recently synthetic satins were usually too light and too shiny for historical costuming. Lately more matte satins have become fashionable, and some of these look fairly good for the period. Be warned, though, that synthetic satins are not only very warm, but they don't wear well. Silk is preferable.

Lighter satin is suitable for linings.

Taffeta

is suitable for decorative linings, and for some garments. If used as a fashion fabric it needs to be flat-lined for the correct look.

Changeable or iridescent taffeta looks wonderful, but doesn't take stress well, especially at the seams of fitted garments such as bodices. I recommend it only for low stress uses.

Preparing Fabric

Samples

Making a sample lets you test your fabrics, trim, and construction techniques before starting your garment. It's worth doing for any sewing project, especially one as large scale and expensive as a period costume.

To make a sample, cut rectangles of your fashion fabric, interlinings, and lining. The pieces should be at least 6" on each size.

To test boning, sew a casing and insert piece of boning 1/2" shorter than casing. Stitch ends of casing shut.

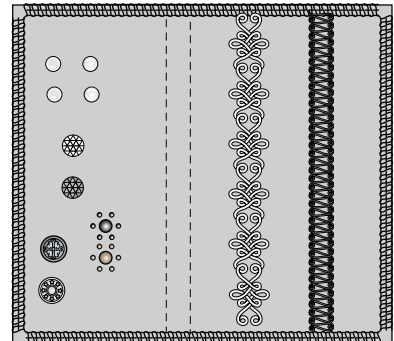
Stack the layers together in the order you'll be sewing them, for example, lining, flatlining, interlining, fashion fabric.

If you're experimenting with seam finishes, make multiple stacks and seam pairs of them together.

Apply trims.

Finish the edges by serging or zigzagging.

Wash or dryclean.



Pretreating Fabric

Unless you plan to never wash or clean your garment, I do NOT recommend cutting straight off the bolt. Almost all fabrics require some pre treating.

Pre-washing

If you are planning to wash your completed garment, you must pre-wash all the fabric, lining, and interfacing. Always prewash at the highest temperature at which you might wash your completed garment.

Some fabrics, especially linen and cotton velvets, are extremely prone to shrinking. You may wish to pre-wash and machine dry them two or three times before cutting.

Before pre-washing, serge or zigzag the cut ends of the fabric. In addition to keeping the fabric from unraveling, it's handy when storing fabric: if you always do this, you'll know that any fabric with finished ends has been pre-washed.

To prevent long lengths of fabric from tangling in the washing machine, sew the ends together, forming a loop of fabric.

Prewashing Fusible Interfacing

Fusible interfacing should be pre-shrunk, or it will shrink when washed, causing the fashion fabric to pucker. To pre-shrink it, soak it in the hottest tap water for ten minutes. Do *not* squeeze or wring the water out; that will make permanent wrinkles. Shake off excess water and hang to dry.

Pre-Shrinking Unwashable Fabrics

Fabrics that require dry cleaning should be pre-shrunk by steam pressing them. You can do this at home with a steam iron, or have your fabric pressed by a dry cleaner.

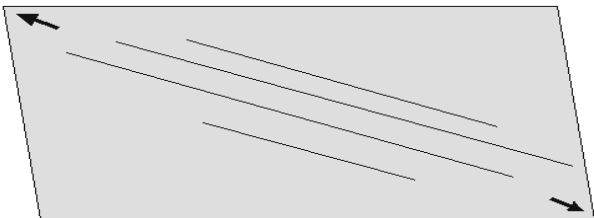
Straightening the Grain

Grain is the direction in which the threads of the fabric run. The length of the fabric, parallel to the selvedge, is called the lengthwise grain, and the direction running across the fabric selvedge-to-selvedge is the crosswise grain. The direction running at a 45° angle to the lengthwise or crosswise grain is called the bias.

Fabric can easily be thrown off grain, especially if it has been torn rather than cut. To check the grain, first make sure that the ends are cut evenly. Some fabric sellers are not very careful about cutting the ends on grain. The resulting uneven cut may have to be trimmed by several inches to make it even again—an excellent reason to buy at least a quarter yard more than the yardage requirement.



To even the ends, cut carefully across the ends, following a thread in the fabric. With some fabrics you can pull a crosswise thread until it puckers slightly, making it easier to follow.



After the ends are evened, check the grain by laying it on a table. Check one large corner by aligning it with your cutting table or board.

If the fabric is off grain, pull it gently on the diagonal until it straightens.

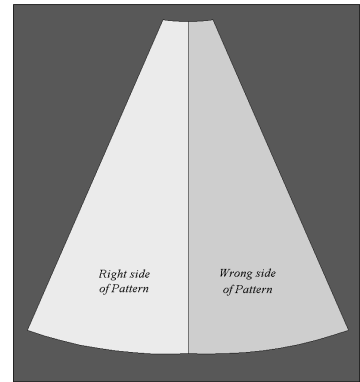
Cutting Fabric

Nap

Napped fabrics are those such as velvet or velveteen, which have a pile surface, and other fabrics such as satin and brocades, which have textures that reflect light differently. Napped surfaces look different in color and texture depending on the alignment of the grain as the pieces are cut, so it is important that all pieces are cut in the same direction.²

Thick Fabrics

Very thick fabrics such as heavy velvet or upholstery materials may need to be cut out flat, rather than on a fold, because the thickness of the fabric will add extra width to the folded area. To avoid this problem, pin and cut the piece out on one side, then carefully flip the pattern over along the fold line, re-pin and cut the second half. OR Trace the pattern piece to create a second half, flip over, and tape together.



Laying Out Your Fabrics

Lay the pre-washed and pressed fabric out on your cutting surface, folded as indicated in the pattern manual.

Some layouts require that you make several different folds to accommodate the pattern pieces, and it's easy to get a length of fabric turned around.

If you're using a napped or directional fabric that must be cut with all the pattern pieces facing the same way, it's a good idea to mark the fabric along its length to indicate the proper direction, using tailor's chalk arrows on the wrong side.

Many layout diagrams have the fabric laid out in double layers. When cutting napped fabrics, do not fold crosswise. Instead, cut the length of fabric in half and reverse one layer so that the nap is running in the same direction on both pieces.

² This is not necessarily a period practice, as there are extant garments which have nap running in different directions, but to modern eyes the garment will look wrong if the nap doesn't match.

Embellishment for 16th Century Costume

Fabric Manipulation

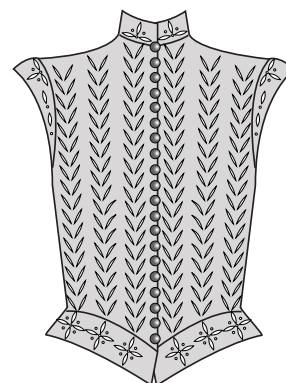
Fabric manipulation can be any kind of work in which the fabric itself forms the decoration. It is a good way to add surface texture to a costume when you don't want the richness of a lot of trim. It is also economical, just as it was 400 years ago.

There are a wide variety of fabric manipulation techniques.

Slashes, Cuttes, And Pinkes

Slashes, Cuttes, And Pinkes are all names for various types of holes in fabric. It is believed that the style originated with mercenary soldiers whose clothing became slashed on the battlefield. At any rate, the style caught on and is one of the characteristic design elements of Elizabethan costume.

For our purposes, I will consider slashes to be straight or shaped cuts over 2" long. Cuttes are small straight cuts, and pinkes are holes, either round or a decorative shape, usually under 1/4" .



Man's jerkin with pinkes and cuttes

Slashes were either faced, bound with braid, or left unbound.

For the latter to be an option, they should be cut out of a firmly woven fabric, and the slashes should be cut on the bias. Felted wools or leather can be used with no worry about fraying, and some other fabrics will work. Sometimes some fraying can add interesting texture.

The edges of slashes were sometimes sealed with wax or other substances. Fray check, glue, or other substances can be used, but care should be taken that they do not show on the right side.

In some cases, the entire piece of fabric was painted with a solution of Gum Arabic, to stiffen the fabric and prevent fraying.

If speed and durability rather than historically correct methods are desirable, some fabrics can be backed with fusible interfacing before cutting, which will seal the edges. If a fusible tricot interfacing such as Easy Knit is used, it can be dyed to match the fabric using cold water dyes. This prevents contrast from showing on the edges of the cuts.

Slashes can be cut with scissors, rotary cutters, or craft knives.

Cuttes can be cut with the above, or, as they were in the 16th century, with a mallet and chisel. A sharp wood chisel will work for straight cuts. There are a few artisans making replicas of chisels with scalloped or zigzagged blades for making fancy cuttes.

For pinks, leather drive punches work well. They are available in standard round shapes. Occasionally you can find harness punches in fancy shapes.

Cloth will dull a punch much faster than leather will, so if you are doing a large pinking project, either learn how to sharpen your punches or have an extra on hand.

Cuttes were sometimes worked in multiple rows, with the edges of the cuts caught together and stitched on the back of the fabric.

The underlayer of slashes, cuttes, and pinks can be of two types. One type is pouffed out through the slashes. These puffs can either be the actual smock or shirt, or false puffs of fabric sewn into the garment to give the look of puffs while staying in place better than the smock would. These puffs should be white fabric imitating the smock, not fancy colors or fabrics.

The other type of underlayer is flat, and could be a second garment showing through the slashes, but is more likely a layer of fabric built into the slashed garment. Flat underlayers can be of any contrast fabric.

Appliqué, the cutting of shapes of fabric and applying them to other fabrics, was rare. Occasionally, embroidered motifs called slips were cut out and appliquéd to another fabric.

Pleating and Shirring

Smocking was called pleatwork, and was used at the necks of some shirts and smocks.

There were some other methods of gathering and pleating fabric for surface texture. For example, some partlets show what seems to be crisscrossed rows of shirring creating a diamond pattern, or what is modernly called “pattern smocking”.

See the Bibliography for suggestions on fabric manipulation.

Embroidery

Embroidery was extremely popular in the 16th century.

England had been a center for ecclesiastical embroidery for hundreds of years. It has been theorized that with closing of the monasteries (after Henry VIII took England out of the Catholic Church), many skilled embroiders turned to decorating clothing instead, causing the fashion for embroidered clothing.

In Catholic countries, a large amount of embroidery was done in convents.

Embroidery was done both by professionals and amateurs. All women with any leisure time embroidered, even those in very high positions. Mary, Queen of Scots, was a superb needle woman and spent much of her imprisonment embroidering.

Blackwork embroidery was one of the most popular styles of the 16th century. It consisted of monochrome embroidery, usually black but sometimes other dark colors or even scarlet,

worked on white linen. The stitches were counted patterns in geometric forms, worked either as bands for edgings or as filling stitches on larger, naturalistic motifs. The stitches were sometimes augmented with gold threads and spangles, or owes, similar to sequins. Blackwork sleeves were very stylish, as were smocks, shirts, coifs, and caps. Blackwork does not seem to have been used on skirts or bodices, with the exception of embroidered linen jackets, which came into fashion quite late in the century.

Polychrome embroidery was worked in silks, often augmented with gold and silver threads. Naturalistic patterns of plants and animals were popular, as were symbolic designs. It is seen on all types of garments.

Metal embroidery was worked with bullion threads. Bullion is gold wire that has been coiled tightly, forming a spring-like tube. It was cut to length and couched onto the surface of the fabric with silk thread, or short bits of it could be sewn on like beads.

Metal threads were also made by pounding the metal into thin foil, cutting it into strips, and coiling it around a silk thread core. Metallics were often combined with pearls or other jewels on clothing.

Metal threads were made of gold, silver, and silver gilt, a thin layer of gold over silver. There are also references to actors wearing copper lace. This copper lace may have been a less expensive substitute for gold, or it may have been the base metal in a process similar to that of making silver gilt.

Whitework embroidery was often used for ruffs, veils, and undergarments, but rarely for outerwear.

Canvas embroidery, or needlepoint, was also popular, but was used for home furnishings such as pillow or curtains rather than than for clothing.

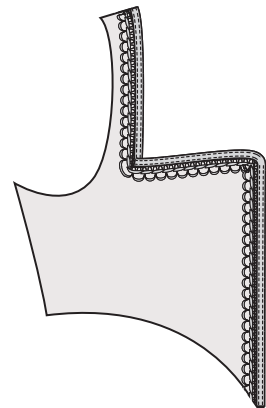
Embroidery thread for garments would have been silk or linen. I have not found any documentation for wool embroidery on clothing in the 16th century.

Trim

Trim is one of the things that can make or break a costume. Too much or too little, the wrong kind or the wrong color, can be disastrous.

Placing Trim

Trim with one scalloped or shaped edge should be placed with the scallop facing into the garment, not with the scallop on the outer edge.



Layering Trims

Openwork trims such as metallic lace or braid look good laid over a contrast color ribbon or tape, e.g., a black doublet with gold lace braid over red ribbon.

Narrow trims work well placed over a wider ribbon or band, either down the middle, in multiple rows, or on each edge.

Sewing Trims

If you are going to use machine stitching, straight-edged trims such as ribbon or banding will look far better if you attach them with a straight stitch, very close to the edge, rather than zigzagging.

Trims on corners should be mitered, not butted or overlapped.

Bands

The most available type of trim was plain bands of fabric, contrasting in color or texture or both. Bands of fabric one to three inches wide were often used along the edges of clothing, where they were called guards. Guards could also be embroidered, or otherwise embellished. They were also trimmed along the edges with applied trims or embroidery. Bands can be cut on the straight grain for application on straight edges, or on the bias to curve around edges.

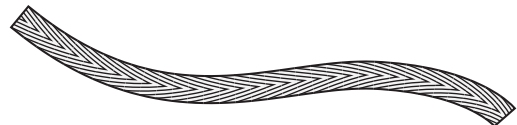
Ribbon

Ribbon looks best sewn on invisibly by hand or with a small straight machine stitch, as close to the edge as possible. Remember that most ribbon cannot be sewn smoothly on a curved line.

Brocaded ribbons have designs woven into them. Most of the commercially available designs are either too Victorian or too ethnic European in style, but occasionally appropriate patterns can be found. Look for stylized floral patterns or for geometric interlaced lines.

A good substitute for solid colored ribbon is bias tape, either purchased or made. It is easier to apply than ribbon, as it can be stretched and eased around curves. It is very economical, especially if you make it yourself. One yard of 45" fabric can be made into 22 yards of 1" bias tape.

Another substitute is cotton twill tape, which is dyeable, has a pleasant texture, and doesn't slip when tied as most modern ribbon does.



Lace

Lace as we know it was a new invention, tedious and difficult to make, and was very expensive.

The maximum width was approximately three inches. Wider laces were made by sewing strips of lace together. Lace as a fabric was extremely rare and expensive..

White lace made in fine linen thread was only used on collars, cuffs, ruffs, and some head wear. When you see references to "lace" on clothing such as gowns, doublets and sleeves, it was heavier, what we would think of as braid.

If you use lace as on garments that are not body linens, it should be the heavier sort, worked in gold or silver or colors, not the delicate type associated with ruffs and smocks.

Braid

What is modernly call braid could be a heavier version of lace, but was also made in other ways, including braiding, weaving, and passementerie, or the combining of various threads and cords.

Many upholstery braids look great for this period. Braids are available in all fabrics from cotton to wool to metallics.

A commonly used type of braid is the upholstery braids known as "guimpe." These are reasonably close to the real thing. The flat serpentine patterned guimpe is preferable to the type that has small loops along the edge, which will come unraveled unless you hand sew each tiny loop in place.



Metallic laces and braids should be used for noble and, sparingly, for upper middle class. They are available in many different qualities. Try to avoid the "plastic" looking ones with the very shiny finishes. The "antiqued" trims tend to look better in broad daylight than the bright yellow gold ones.

If a metallic trim is otherwise suitable but too bright, it may be possible to tone it down by dyeing it darker, or to match the fabric you will be sewing it to. Ideally, the threads that hold the trim together will take the dye and the metallic won't. **YOU MUST DO A TEST** before you do this, because some metallics will absorb the dye and you can be left with 30 yards of shiny black braid.

You can also tone down a too shiny metallic by spraying it with a matte finish coating purchased from a hobby and model store.

Fur

Fur was widely used as a lining, especially for gowns. The familiar white fur with black spots is ermine, and was worn only by royalty and the highest nobles (dukes and earls) on the

most ceremonial occasions. Rich furs such as sable and lynx were worn by those who could afford them. The Tudors were also fond of leopard, preferring the soft belly fur over the spotted upper coat. Less costly furs, such as squirrel and rabbit, may have been worn by those of more modest circumstances.

Because many people have moral objections to using fur, as well as financial issues, imitation furs are often used in costuming. There is a huge range of quality in imitation fur. If you are ordering it by mail, I strongly suggest you request a sample first, and look at it in sunlight before making your decision. Synthetic fur cannot be washed, ironed, or steamed, so thought should be given before using it in combination with fabric that will need such treatment.

Pearls and Gems

Pearls and Gems should be worn only by the wealthy. For jewels, Austrian crystals are good, as are uncut cabochon cuts. Sew-on settings are preferable to the pronged ones, which are designed for very thin fabrics only. Jewels were usually mounted in metal settings rather than sewn on by themselves. Bead stores sell filigree pieces to which jewels can be glued for this effect. Pearls and metallic beads can also be sewn on around the jewel to give the impression of a jeweled element.

Pearls, both real and imitation, were widely used, sewn on in strands, individually, in clusters or patterns, or mounted as jewelry.

Glass beads such as bugle and rocaille beads were a very new and expensive invention. They can be used sparingly as highlights on brocades and trims, but should not be worked into patterns on their own.

Gold or silver metal beads were also popular.

Many jewels and beads, especially plastic ones, can not be dry cleaned. If you plan to dry clean the garment, make test piece and have it dry cleaned before you start the project.

Patterns

Organizing the Patterns

Our pattern packages usually consist of many pieces, and they can be overwhelming at first. If you take the time to organize the patterns, they will be much easier to handle.

I recommend that you unfold all the tissue sheets and cut the pieces apart, sorting them into individual groups such as the smock, partlet, kirtle, gown, etc. Then store each garment's pattern pieces in its own manila envelope or plastic food storage bag. To keep them together, you can punch a hole in the upper corner of each envelope or bag and thread them onto a shower curtain ring or binder ring, or store them in a filing cabinet.

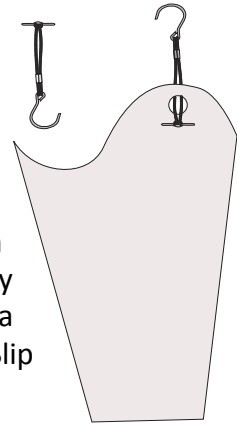
Reinforcing the patterns

The pattern pieces can be reinforced by ironing the tissue onto freezer paper or inexpensive fusible interfacing. For freezer paper, use a warm iron. For fusible interfacing, follow the manufacturer's instructions for iron temperature, but do not use steam.

Storing Reinforced Patterns

The fused pattern pieces will be too bulky to fold for storage. They can be stored either by rolling them into tubes, or by hanging. To hang, clip them to a skirt hanger, or use commercial pattern hooks.

To use commercial hooks, punch a 1" hole near one edge of the pattern piece. You can buy a commercial pattern punch, known as a "bunny punch" from its shape, but if you are only punching holes occasionally a circle punch from the scrapbooking section of the crafts store will do. Slip the pattern hook through the hole to hang.



Tracing

To preserve the multi-sizing of your patterns, I do not recommend cutting the tissues themselves. Instead, trace the desired size onto another material.

For tracing, choose a lightweight, transparent material such as tracing paper or dressmakers tracing fabric. Both materials can be purchased in rolls. A less expensive alternative is medical exam table paper. These materials come in relatively narrow widths, and will need to be taped together to trace the large pieces.

An even less expensive, and far more durable, solution is transparent plastic sheeting, which can be purchased at home building supply stores in rolls as wide as twenty feet. I recommend the .6 mil thickness. It's too bulky to fold, but can be rolled up in a tube or hung from pattern hooks.

Its only drawback is that you must use a permanent marker to trace onto plastic, and the ink can smear and rub off in the few minutes it takes to dry.

All tracing should be done with a fine tip pencil or pen. A wide marker line can throw off the pattern size. You may wish to use a ruler to true up straight lines and French Curve to guide you on curved lines.

Sizing

In order to make a properly fitted garment, you **must** take your measurements and alter the pattern accordingly. There is no substitute for this process, and failure to do so can result in a garment that is unattractive and uncomfortable.

There is no mandated standard sizing in the US. Sizing in the US can vary from one pattern, or clothing, manufacturer to the next. Each company sets its own sizing. I make no guarantee that my sizes will match those of any other patterns or garments to which you are accustomed.

Nor do I guarantee that our patterns will fit you without alterations. The human body simply has too many variations in shape to do so, even within the guidelines of pattern size measurements. I have, however, done my utmost to make the process of altering the pattern for fit as simple as possible.

Multisizing

My patterns were developed using standard measurement charts.³ This means that the sizing and cut is consistent. However, because body shapes change with size, the pattern pieces for different sizes may look quite different.

Most of our patterns include the entire size range in each pattern piece. However, the above difference in pattern piece shape can prove very confusing in some complex pattern pieces. Therefore some pieces are separated into different size groups. Be sure you have the correct size group by checking the size range on the pattern piece.

I am now using a multi group number/letter system for these pieces: for example, Piece 1A for sizes 2-10, 1AA for 12-20, and 1AAA for 22-30.

To avoid confusion, you may wish to mark the correct size lines using a highlighter pen or colored pencils.

Taking Measurements

Careful measurements are essential to correct fit. For the best results, do not try to measure yourself.

Take the measurements over the usual modern undergarments, including a bra if the subject usually wears one.

³ ASTM International, formerly known as the American Society for Testing and Materials. Men's, Women's, and Plus Size Women.

Wear shoes with the same heel height you will wear with the finished costume. Flat shoes or heels of less than 1" are correct for the period, unless you are planning to wear tall chopines.

The Waistline

The period waistline was at the true waistline, which is likely to be higher on the body than you think. It is NOT where a modern man wears his trousers! The location of the waistline can be difficult to determine. I recommend that you safety pin a length of 1/2" wide elastic around your waist, and then bend from side to side and front to back. The elastic will settle at your true waistline.

Each of our patterns requires a separate set of measurements, so follow the directions in the respective manuals for measuring.

Fitting

The “Fitting instructions” section of this manual is still under construction. I plan to add detailed general fitting instructions at a later date. Meanwhile, please refer to the individual pattern manuals for fitting instruction.

Making a Mockup

As with any closely fitting garment, you must make a mockup of the garment and fit it to your body. Failure to do so almost guarantees a garment with which you will not be happy.

A mockup, also called a muslin or a toile, is a test version of the garment. It need not be finely finished: simply cut the pattern shapes, adding boning or other shaping as needed, and test fit. The individual patterns provide instructions on doing so.

Fitting Strips

Fitting strips allow you to lace a garment on for fitting before the lacing eyelets are worked. This is very useful if you think the back length may need to be altered. Also, you can then wait to make the eyelets until all the edges of the garment are finished, and avoid having the raw edges ravel from handling.

Fitting strips are easy to make, and can be reused for many years. They are a very useful addition to your sewing supplies. They can also be purchased from some costume suppliers.

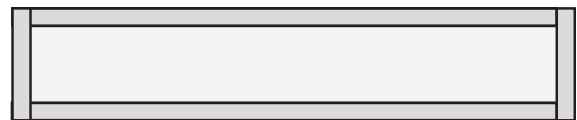
Making Fitting Strips

I prefer to make fitting strips 18” long, which is about the maximum you’ll ever need.

To make fitting strips, cut two pieces of canvas, denim, or other sturdy fabric, 4” wide x 18” long.



Press all edges under 1/2”.



Press in half lengthwise and edgestitch the sides together. Leave ends open.



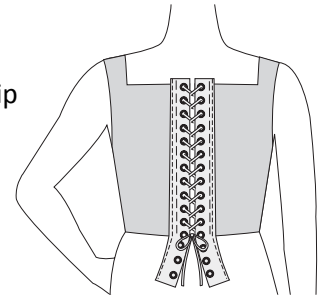
Apply grommets or make eyelets, spaced 1-1 1/2" apart.



For fitting garments that will have boned opening edges, slip a piece of boning into the space between the grommets and the stitching.



To use fitting strips, machine baste to edge of garment, having edge of strip even with edge of garment. Leave excess length of strip loose.



Construction Techniques

Many of the construction techniques I recommend are based on historical, theatrical, or industrial rather than home sewing methods, and may be unfamiliar. I have chosen the techniques I believe will give the very best results, and I urge you to try them. You will probably find some of them to be valuable contributions to your library of skills.

Seams

Seam Allowance

Unless otherwise stated, the seam allowance on our patterns is 5/8" (1.5 cm).

Hand Sewing

Hand sewing is very important to making a successful historical garment. While I provide efficient machine sewing methods where possible, there are some sewing operations that simply cannot be done by machine, while others are actually more trouble to do by machine than by hand.

Here are a few of the most common, and most useful, hand stitches.

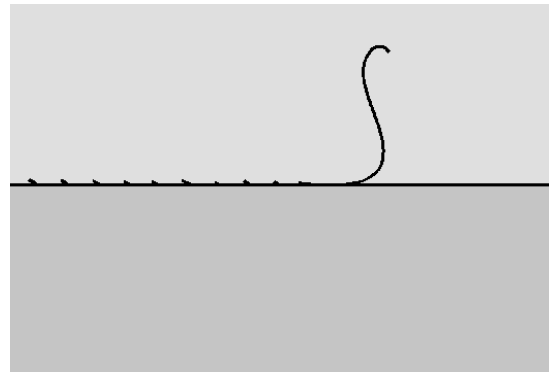
The Slipstitch

The slipstitch is a nearly invisible stitch which secures a folded edge to the fabric. To slip stitch, take a tiny stitch in the garment, as small as possible. Pass the needle through the folded edge for about 1/4" and come up again, take another tiny stitch in the garment.

The slipstitch is used for hems, attaching bands and trims, finishing collars and cuffs, and for stitching the seam allowances of bias and piped binding.

I strongly recommend the use of Rice's Silamide Thread for slipstitching. Silamide is a specialty thread that was originally developed as a substitute for silk thread, and is extremely strong. It is made of nylon and comes pre-waxed.

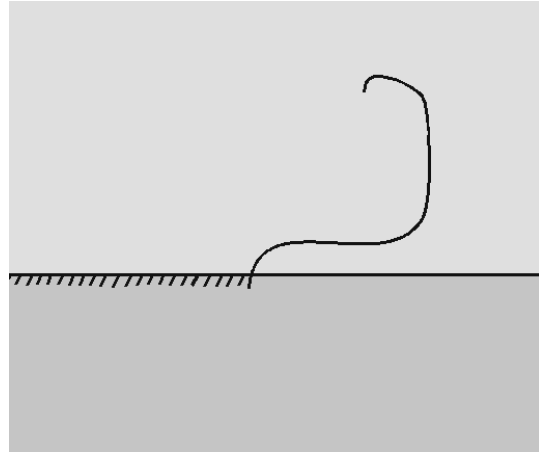
It is so strong and slippery that you can sew without pulling the thread all the way out with each stitch. Instead, you stitch for a few inches, pulling the thread out only as far as is needed to make your stitches, and then pull the length of thread all at once. Once you get used to this, it makes hand sewing very fast.



Whipstitch (Overcasting)

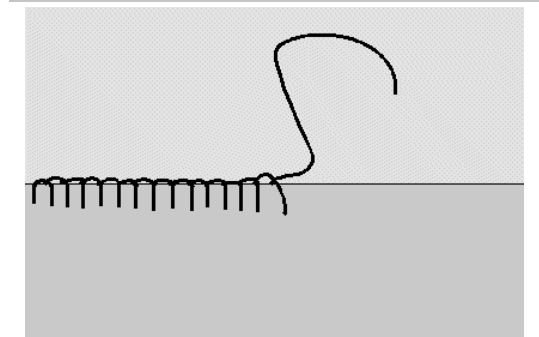
Whipstitch is used to finish edges, to sew a narrow, strong seam, and for make lacing eyelets.

To whipstitch or overcast a straight edge, bring the fabric up on one side of the fabric and carry it over the edge, coming back up from the wrong side to the right side.



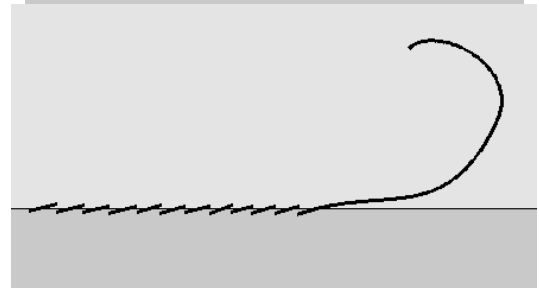
Buttonhole Stitch

Also known as blanket stitch, this stitch can be worked over an edge to form a buttonhole or as a decorative stitch. It is also useful for sewing on hooks and eyes and for making thread bars (p. 78) for fastening.



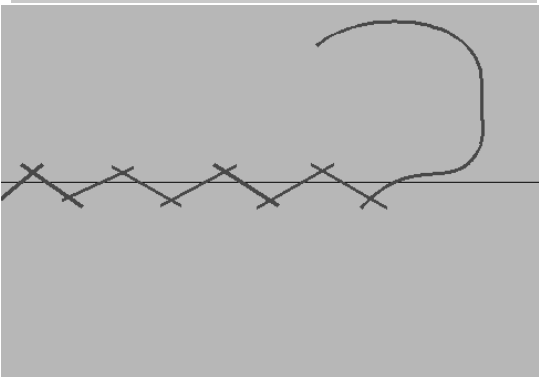
Hemming Stitch

This stitch is used for hemming and securing bias binding. Take a small stitch through the fabric, working from top to bottom. Come up through the fold. Take another small stitch $\frac{1}{4}$ " away, and repeat.



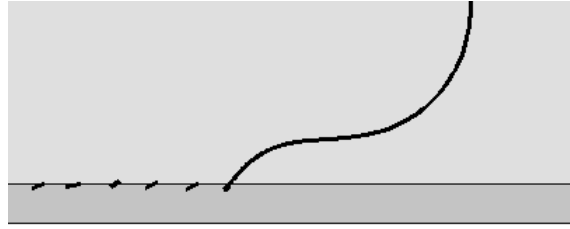
Catch Stitch

In embroidery, this is called the Herringbone stitch. It is a loose stitch used for securing seam allowances to the flat lining.



Slipstitch

The slipstitch is similar to the hemming stitch, but the long “float” stitch is taken inside the folded edge of the fabric, so that only a small stitch shows.

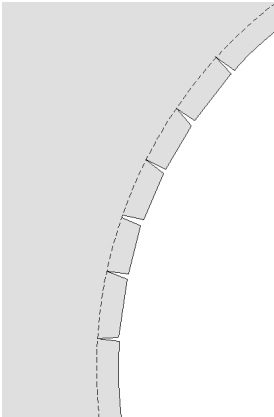


Seams

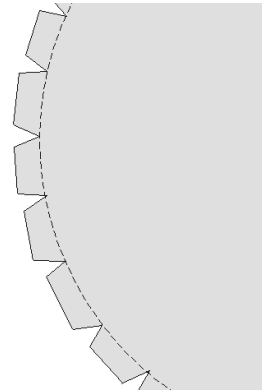
Curved Seams

Clip and notch all curved seams.

Clip Inner Curves



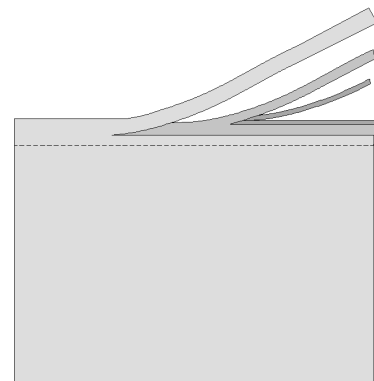
Notch Outer Curves



Grading Seam Allowances

Grading is trimming seam allowances to different widths, to allow the seam to turn easily and form a clean edge without bulk.

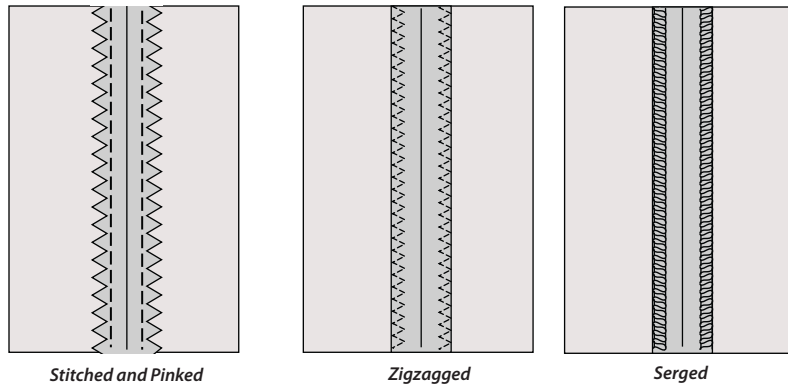
To grade seams, trim each layer of seam allowance individually, having the seam allowance that will fall nearest to the garment side cut the widest.



Finishing Seams

Exposed seams

All exposed seams should be pressed open and clean finished by one of the following methods.



Enclosed Seams

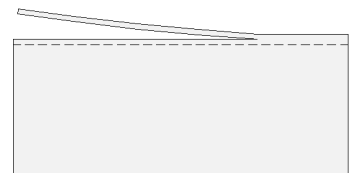
French seam

The French seam makes a fully enclosed, finished seam. It can be made by hand or by machine.

Place fabric pieces **WRONG** sides together. Stitch $\frac{1}{4}$ " away from edge.



1. Trim close to stitching.



1. Fold fabric along seam line, **RIGHT** sides together. Stitch $\frac{1}{4}$ " from folded edge, enclosing previous seam.



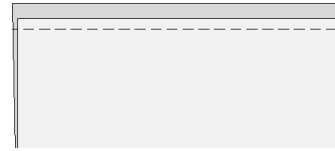
Run and Fell seam

The Run and Fell seam was widely used on body linens such as smocks and partlets.

1. Stitch seam, right sides together. ($\frac{5}{8}$ " seam allowance)



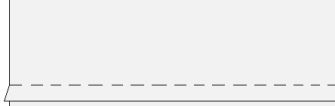
1. Trim one seam allowance to $\frac{1}{8}$ ".



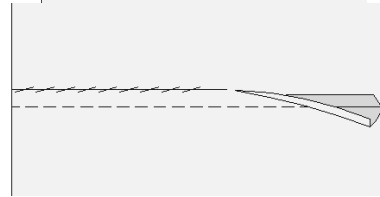
1. Fold the other seam allowance in half.



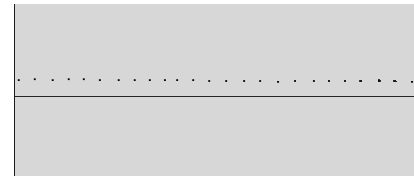
1. Press folded seam allowance over seam line, covering both raw seam edges.



1. Slipstitch folded edge to fabric.



1. When finished, the right side looks like this.



This is a very practical seam finish, but is time consuming. It can be "cheated" by sewing the first seam by machine, then hand sewing the hemmed edge. You can also do the seams entirely by machine, stitching close to the edge of the fold on the second pass of stitching. This will, of course, result in visible machine stitching on the outside of the garment. Such a seam is called a flat fell seam or a jeans seam.

Narrow Hemming

Narrow hemming can be done by hand or by machine. The turnout should be as small as possible. $\frac{1}{4}$ " is about as large as it should go, but on some fabrics, like very fine crisp linen, it can be as little as $\frac{1}{16}$ ".



Turn edge up desired amount and press. Turn up the same amount again and press. Machine or hand stitch close to fold. If machine stitching, use a very short stitch to make it as inconspicuous as possible.

Flatlining and Interlining

Flatlining, also known as interlining or underlining, is the technique of cutting a pattern piece in two layers: one of the outer, or fashion, fabric and one of the inner, or flatlining. You stitch them together and treat the result as a single layer of fabric.

Flatlining adds body to fabrics, and gives them a better drape. It can also ease construction by providing a layer that can be marked, with no worry that the markings will show through on the right side. Fusible interfacings and casings for boning can also be applied to flatlining before it is applied to the fashion fabric.

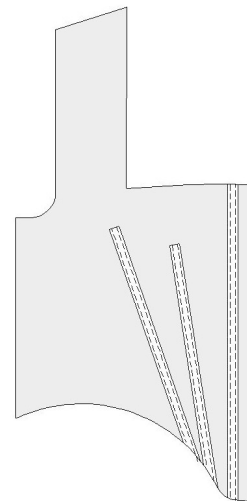
Flatlining can be done in all sorts of fabrics, from heavy canvas to silk organza, depending on the need for stability and drape. I recommend using prewashed cotton drill or duck for bodices that will be under stress, or for lightweight fabrics that need help to give them a heavy, stiff drape for items such as the kirtle skirt front or the foresleeves. Garments that simply need more drape, such as skirts and sleeves, can be flatlined with sheeting or good quality muslin.

If boning or other stiffeners are to be applied to the flatlining, you may wish to use another layer of interlining between the fashion fabric and the flatlining, to prevent them from “shadowing” on the outside if your fashion fabric is thin.

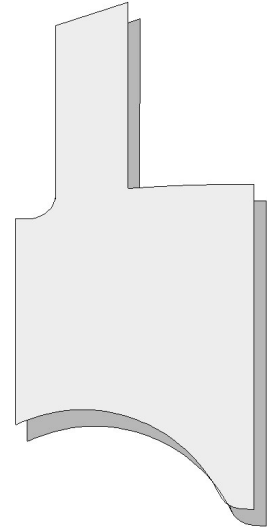
For a garment that will be machine washed, use one or two layers of prewashed cotton flannel for interlining. For a dry-clean garment, wool is excellent, as it breathes well and gives a very thick, lush look. Because it will never be seen, you can use any color or pattern of fabric for interlining that suits your needs and your budget for interlining.

How to Flatline

1. Cut the pattern piece out of both the fashion fabric and flatlining fabric.
2. Sew casings for boning, if needed, to flatlining. Leave openings at seam ends of bone casings so that boning may be inserted later.

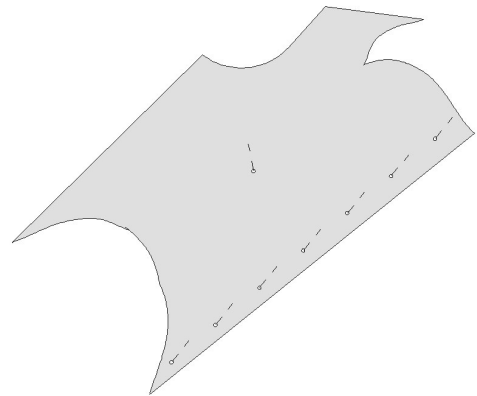


1. Lay the fashion fabric piece right side down.
2. Pin the flatlining to it. Any boning channels, etc, must be facing up (towards the inside of the finished garment).

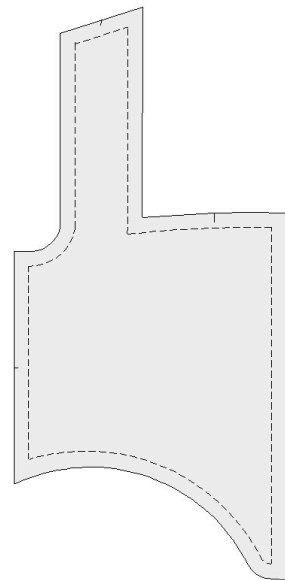


Sometimes flatlining a small piece that will go around a curved portion of the body, such as a bodice panel, can result in the fashion fabric's bubbling when worn. To avoid this:

1. Sandwich the pieces together and lay them over your thigh, fashion fabric side up.
2. Pin pieces together in the center.
3. Smooth the fabric to the outer edges, pinning as you work. This will align the edges in the proper curves.



1. Stitch along the seam line, (5/8" from the edge) using bobbin thread that matches the fashion fabric. The top thread may be a color that contrasts with the flatlining, to serve as a useful guide for final stitching.



Boning

Sixteenth century corsets, bodices, and other garments were often stiffened with strips of whalebone, [something here about boning being very late period](#) which is why the materials used for stiffening are called “bones”. Whalebone is not actually made from the bones of whales, but rather from baleen, a stiff yet flexible material which comes from the jaws of some types of whales. Other stiffeners included steel, reeds or broom straw, rope, and glue-stiffened fabric.

It is common practice to use spring steel stays for boning reproduction garments. Spring steel first came into common use in the 19th century.

Some of my previous patterns have used spring steel for boning. Recently, I have moved to the use of a material that is not manufactured for this use, but has nonetheless proved to be an excellent choice: plastic duct ties. These are similar to “zip ties” or “cable ties” but thicker and longer. They can be purchased in the heating and air conditioning section at large home building stores.

The advantage of duct ties is that they require no special tools to cut, grind, and tip the ends of the bones. Simply cut them to the required length with heavy duty scissors. To round and smooth the ends, hold them very close to but not directly in a candle flame for a few seconds. Do this in a well-ventilated room. I strongly suggest that you keep a bowl of ice water nearby, in case of drips. Melted plastic can cause serious burns.

Other Methods

I will be covering other stiffening methods in a future edition of this manual.

Bias Tape and Piping

My patterns make extensive use of bias binding and piping as edge finishes.

During the 16th century, piping and binding was most often done with strips cut on the straight grain of the fabric. However, I have found a few examples of bias binding. I find that using bias is far easier, and the results are far more attractive, so I have chosen to use bias in these instructions. If you do decide, for the sake of authenticity, to use straight grain strips, be prepared for some wrinkling and puckering.

Piping adds definition and shaping to edges. It can also be used to improve fit, such as when drawn up to fit a neckline and stitched in place to eliminate gaps.

Flat bias tape can be purchased quite inexpensively, and can be a great time saver; use the 1/2” single fold type for binding edges, or for very bulky edges use the 1”.

Making your own bias tape is worthwhile, especially to get a color match or for decorative effects. Bias strips can be used decoratively, as trim, far less expensively than purchased flat trim or ribbon, and bias can be applied to curves much more easily than ribbon. One yard of 45" fabric will make 22 yards of 1" bias tape, or 44 yards of raw edged 1 1/2" tape.

Cutting Bias

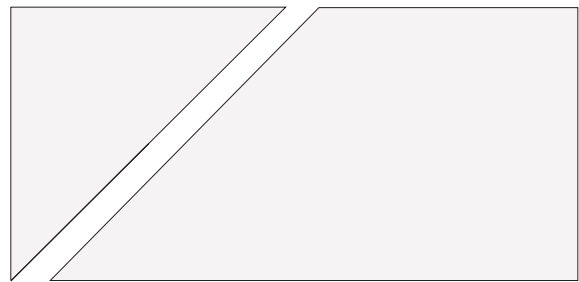
To make either bias tape or piping, start by cutting bias strips of fabric. You could do this by marking and cutting single bias strips and seaming them together, but for the amount of bias needed to bind a garment, I recommend using the bulk method shown here.

You may wish to make up batches of bias in basic colors such as black and white, and keep them on hand. This can be a great time saver.

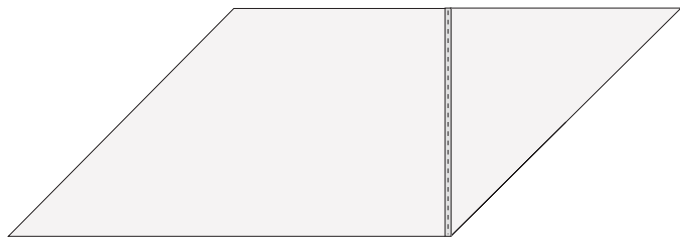
I will assume for the purposes of illustration that you are making 2" wide bias strips, which is what you need to make the piping size I recommend for finishing garments. Instructions given here will produce approximately 11 yards of 2" bias. If you want a narrower width, adjust the spacing, adding 1/2" fold allowances to your desired finished width.

Start with at least 1/2 yard of 45" fabric. Any shorter length will result in lots of seams across your piping. Make sure it's straight on grain: cutting bias off grain will produce ripples and wrinkles.

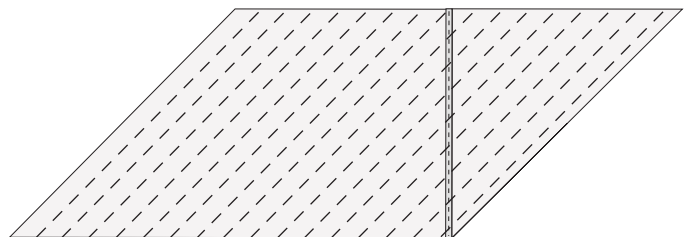
Cut off one corner at a 90° angle to the selvedge, as shown.



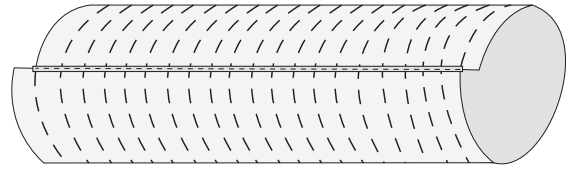
Pin the cut away corner to other end, as shown, and stitch with scant 1/4" seam allowances, using a very short stitch. Press open.



Mark cutting lines spaced 2" apart (or however wide you wish your bias to be) as shown. Make sure each line is on the true bias.

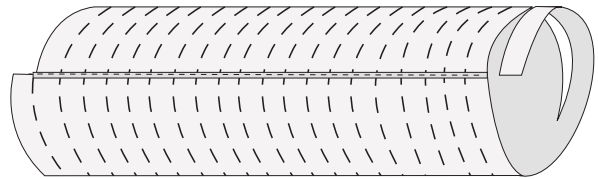


Pin long edges together, offsetting by 2", matching cutting lines as shown. Stitch with 1/4" seam allowances, using short stitches. Press open.



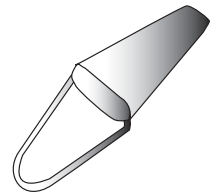
Cut along cutting lines, in one continuous piece.

TIP: If you have a serger, unthread it and stitch along the cutting lines, letting the serger's knife cut the strip for you.



Making Bias Tape

To shape your flat bias strips into folded bias tape, I recommend the use of a bias tape maker. These handy devices come in sizes for making bias from 1/4" to 2", and can be purchased at fabric and quilting stores. Follow the instructions that come with them.



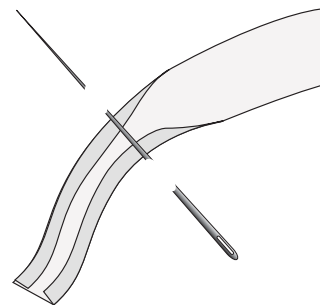
If you can't locate a bias tape maker, you can do this:

Find a long needle. (For wide bias you may need to use a long doll maker's needle.)

Fasten the needle to your ironing board as shown. The middle space should be the width of your desired finished tape.

Thread the end of a bias strip under the gap, folding seam allowances into place.

Pull gently on the end of the tape, and iron the fold allowances into place as the tape pulls out of the needle. (This is much easier if two people do it, one pulling, and the other pressing.)



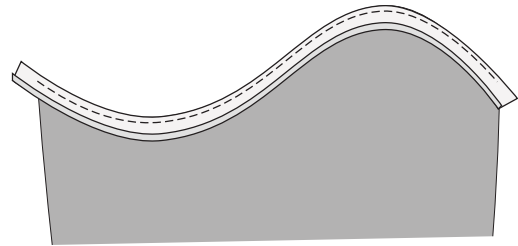
Bias Tape Binding

Bias Tape Binding is a way to finish edges. It's particularly useful on very bulky edges with lots of layers. Binding a garment is done on the flat, so you don't have to struggle to turn a boned garment inside out as you would with a bagged lining.

It is difficult to ascertain how many garments were actually finished this way. Some portraits show what appear to be piped edges. I have only found one example of cord filled piping on an extant garment.⁴

I recommend piping because it strengthens and reinforces garment edges and prevents them from stretching. It also keeps the inside edges from showing.

To bind a garment, open out one folded edge of bias tape. Place the crease made by the fold on the RIGHT side of garment seam line. Stitch on crease, stretching bias slightly on curves.



Grade garment seam allowances, leaving binding seam allowance untrimmed. Turn binding to wrong side. Hem or slipstitch to garment.



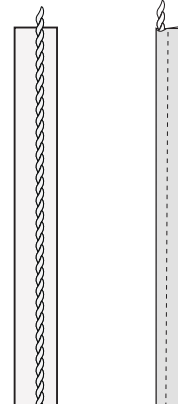
Piping

Piping is bias tape, folded around a cord and stitched to form a tube with seam allowances on one side. Piping can be inserted in a seam to give it definition and strength, or it can be used to bind edges.

The most commonly used cord for piping is cotton cable cord. Other materials can also be used for cording. I like regular acrylic knitting yarn for very small piping.

For most garments, you will want to keep your cord small, under 1/4". Anything larger risks looking "home dec".

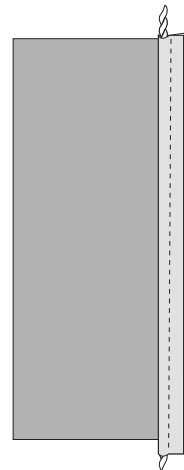
To make piping, start with continuous bias. Fold bias strip around cord, wrong sides together, and stitch close to cord, using a cording or zipper foot and a medium length straight stitch. Be careful not to stretch the fabric as you stitch.



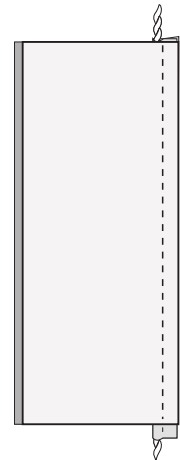
Inserting Piping in a Seam

When piping a seam, do not try to insert the piping into the seam as you sew it. Stitch it to one side of the seam first, then add the second piece of fabric and stitch the seam.

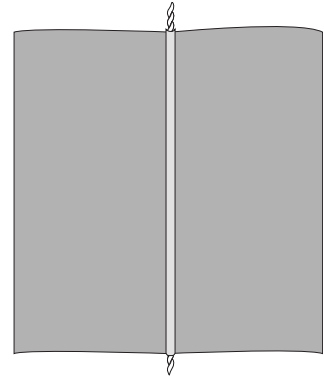
To attach piping, place it so that the corded portion is just to the inside edge of the garment stitching line, outside of the seam allowance. Stitch close to cord.



Lay the second piece over the first and stitch the seam, using a zipper foot or cording foot to stitch piping, so that the stitches are right up against the cord.



Open out and press seam allowances open.



Piped Binding

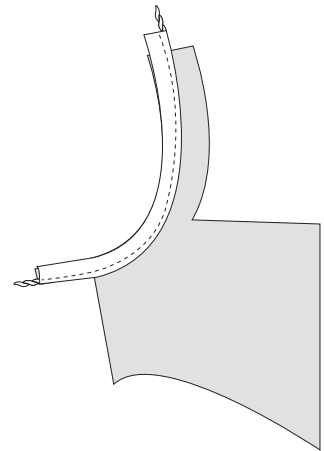
Piped Binding is an excellent edge finish. It is widely used in theatrical garments because it gives a crisp, defined edge, and adds strength to the garment. If applied to a flatlined garment, the result is an unlined garment that can easily be taken apart for alteration.

It is difficult to ascertain how many garments were actually finished this way. Some portraits show what appear to be piped edges. I have only found one example of cord filled piping on an extant garment.

To make a piped binding, you make piping with seam allowances at least 1" wide. After applying the binding, the seam allowances are turned under and hemmed to the flatlining.

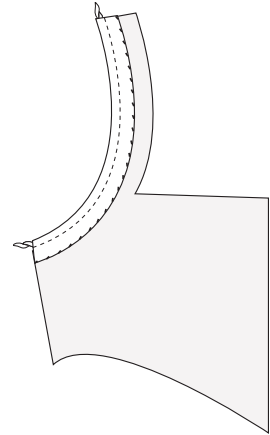
Applying Piped Binding

Place piping so that the corded portion is just to the inside edge of the garment stitching line, outside of the seam allowance. Stitch close to cord, using a zipper or cording foot.



Grade garment seam allowances. Do not trim piping seam allowance.

Turn piping seam allowances under. Hem in place.



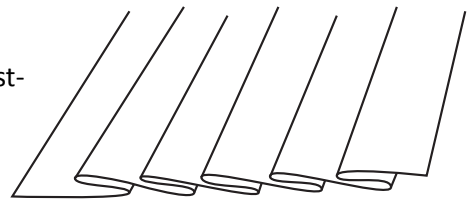
Pleating and Gathering

Pleating

There are many kinds of pleats. Here are the types most common in 16th century costume. (decorative pleating is discussed in the Embellishment section).

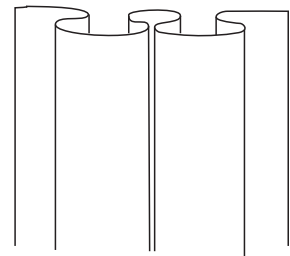
Knife Pleats

Knife pleats all face in one direction. When attached to a waistband, they hang straight with no “spring” out from the waist.



Box Pleats

Box pleats are basically the same as knife pleats, but made in pairs turned away from each other.



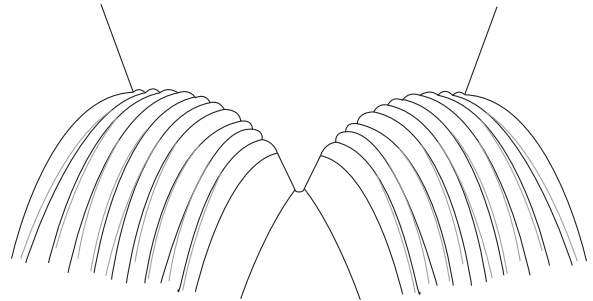
Rolled Pleats

Starts with a knife pleat, but the fabric is then turned a second time so that it rolls around the first pleat. The pleats hang in tubular folds.



Cartridge Pleats

Cartridge pleating, also called bullet pleating or gauging, is a traditional method of gathering large amounts of fabric into a small space such as a waistline or sleeve head. It looks complex, but is really quite simple once you learn how.

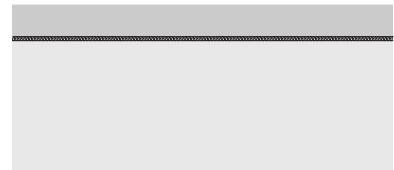


How to Cartridge Pleat

For the sake of clarity, I am giving instructions for pleating a skirt.

Clean finish upper edge of the skirt.

Press upper 2" to inside along fold line.

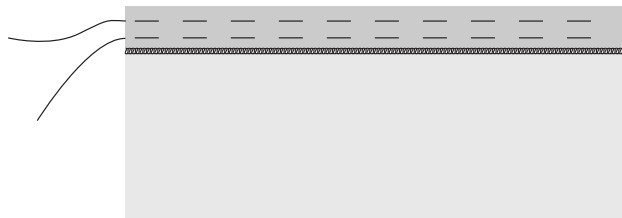


The Pleating Stitches

The next step is to make the stitches that will form the pleats. For most fabrics, 1" long stitches work well. If you are using a very heavy wool or velvet in small size, you may find that you need to make the stitches larger, up to 2" deep.

Don't try to make shorter stitches when using a thin fabric, it doesn't work. If you feel that your fabric needs more substance, insert a strip of heavy fabric such as wool or velvet, or strips of craft fleece, in the fold before putting in the gathering stitches.

Using strong thread such as button and carpet thread, make three rows of 1" long stitches spaced 1/2" apart, having the first row 1/4" from fold. You will have less tangling of your thread and be able to control the long length needed if you do not cut the thread off the spool until you are done stitching the row.

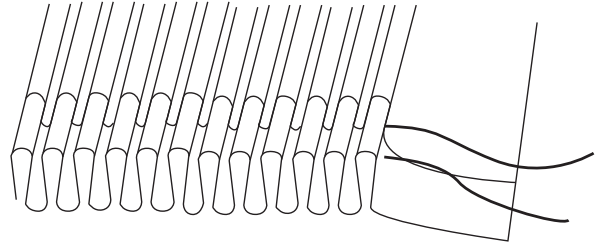


The three rows of stitches must be lined up very evenly. If you have a good eye for judging spacing, you may be able to “eyeball” the spacing of the stitches, but most people prefer to mark them first.

Pulling up the Pleats

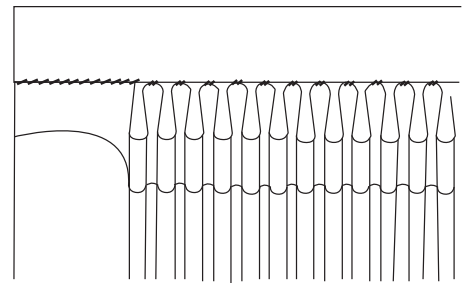
Holding all three threads at once, pull up the pleats until they form folds, as shown.

Pull the threads until the length of the piece matches that of the waistband (or other piece) to which you will be attaching it.



Using heavy thread, overcast stitch the pleats to the other edge, taking 2-3 stitches at the very top of each pleat.

Bring pleating threads to **WRONG** side of garment. Make very secure knots in threads, leaving about 1” slack at each end.



Gathering

Machine Gathering

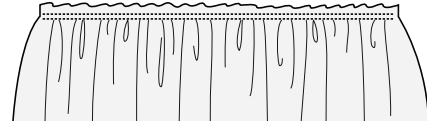
Machine gathering works best on lightweight fabrics. To make gathers pull up more smoothly, try using monofilament thread in bobbin.

Set machine for longest stitch. Loosen upper tension slightly.

Stitch along stitching line, leaving 6” thread tails. Stitch again 1/4” to seam allowance side of first line.

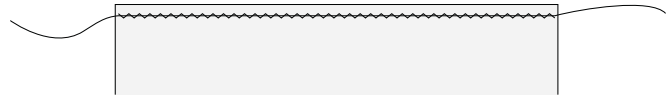


Pull gathers up to desired size.

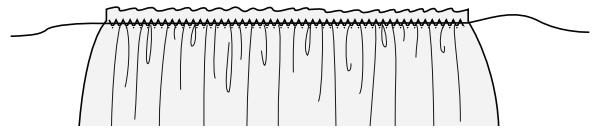


Zigzag Gathering

For bulkier threads, zigzag stitch over a heavy thread (waxed dental floss works well for this), being careful not to catch thread in stitching.



Pull thread up, like a drawstring.



Closures

Lacing

Lacing was widely used as a closure. Garments laced through eyelets, which were holes with the edges covered with stitching. Lacing rings made of metal could be sewn to the garments and the lace was passed through them. Metal grommets were not invented until the 19th century.

Lacing Patterns

A number of different lacing patterns were used. Cross lacing, the “x” pattern used modernly to lace shoes, was rare. The most common lacing pattern was spiral lacing. Ladder lacing was also used, especially to lace the fronts of open bodices like those worn in Italy and Germany.

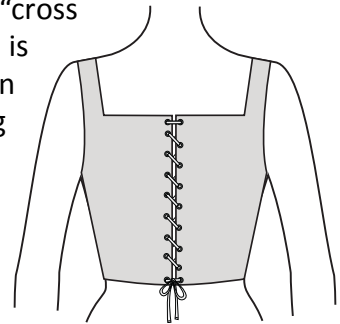
Eyelet Spacing and Marking

In general, the closer the eyelets are to one another the smoother your garment will lie. About 1” - 1 3/4” is good.

Spiral Lacing

Spiral lacing is a period technique that differs from the familiar “cross lace” style in that one end of the lace is anchored and the other is threaded continuously through all the holes in turn, rather than two ends alternating. The resulting lacing pattern forms a zig-zag around the opening, as shown, instead of a series of Xs.

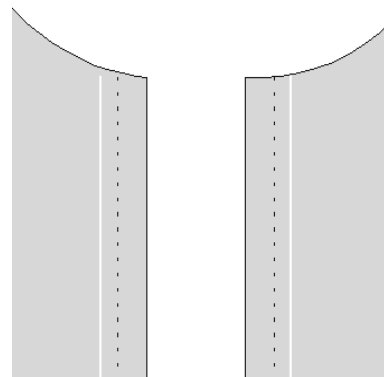
This style of lacing tends to cause the two sides to shift so that they don’t match up. The solution to this is to offset the holes slightly on each side.



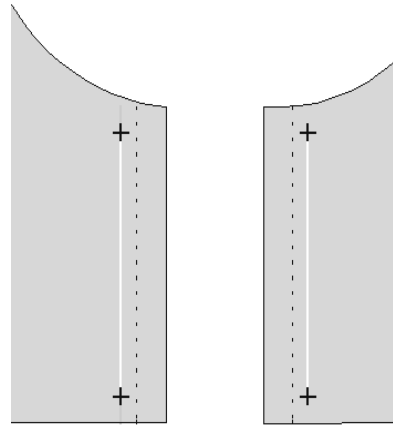
Marking for Spiral Lacing

To mark the placement for the lacing holes:

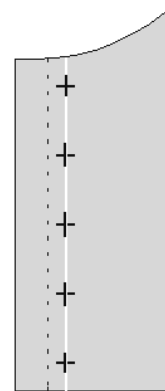
1. Draw a line with chalk or disappearing marker $\frac{1}{4}$ ” to the inside edge of boning on the side openings.



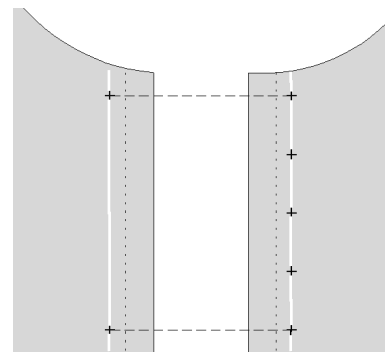
1. Mark points along this line, $\frac{3}{4}$ " from upper and lower edges.



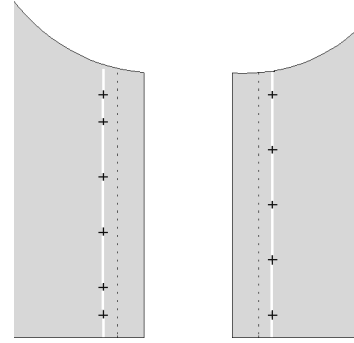
1. Measure distance between points. Divide by desired number of eyelets. This measurement will be the distance between the points, and will now be referred to as Measurement A.
2. Mark points between the first two, spacing according to Measurement A.



1. To mark eyelets for second side, place pieces side by side.



1. Mark points matching the upper and lower points on front.
2. Divide measurement A by 2. This will now Measurement B. Measure this distance from uppermost point. Mark.
3. Using Measurement A, mark more points.



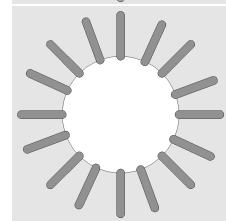
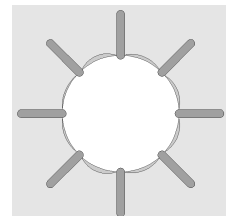
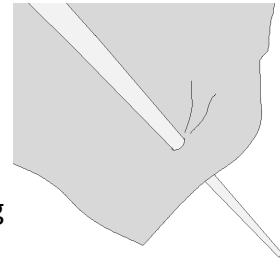
1. The second from the top and bottom eyelets on the back will be half a space from the first. This allows the garment to be securely fastened and still allows the cord to form the spiral lacing pattern.

Eyelets

Mark eyelet placement before beginning.

For each eyelet:

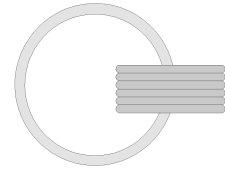
1. Use a tapered awl or large darning needle to make a hole through the fabric layers, so that the threads are pushed aside but not broken. Use the awl, a knitting needle, or a dowel sharpened in a pencil sharpener to enlarge the hole as much as possible. It's a good idea to try it on a scrap first so that you can have an idea of how much pressure you can use without ripping the fabric.
1. Using sturdy thread such as button and carpet thread, overcast the edges of the hole, making about eight stitches. Pull tightly and the fabric will compress, rolling back from the hole and forming a narrow lip.
1. Use your awl, etc., to stretch the hole again.
2. Stitch again, making your stitches radiate about 1/8" from the hole.



You do not need to solidly satin stitch the hole; that would actually weaken it by putting too much stress on the fabric.

Lacing Rings

The best rings I have found are 1/2" diameter metal Roman drapery rings. Do not use unsoldered jewelry jump rings or other rings with a break; they will come apart.

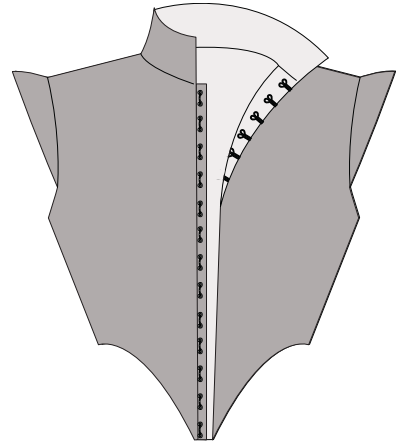


Lacing rings can be stitched by hand or by machine: in either case the stitch should be wide enough to allow the ring to move. I prefer to use a wide machine satin stitch, stitched back and forth over one side of the ring approximately 20 times.

Hooks and Eyes

Hooks and eyes in the 16th century were almost identical to the ones we have today. They are useful for any garment fastening that will be under tension.

For strength, attach hooks and eyes with a blanket stitch.



Buttons, Buttonholes, and Loops

Buttons

Buttons were used as fasteners on doublets, sleeves, shirts, and smocks, and also as non-fastening decorations. They were made of bone, horn, or wood for the lower classes. Wooden buttons are not recommended for washable garments.

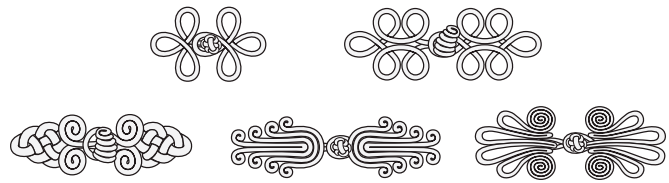
Buttons should be shank style, not the flat type with holes drilled through them. Also avoid metal buttons with coats of arms or crests on them.

For the upper classes, gold, silver, and pewter were popular, often enameled and set with gems.

Another button style was wooden molds wrapped with thread in various patterns. This style was so popular that cast metal buttons were made that imitated the look.

Frogs

Frogs are ornamental looped braid or cord with a button or knot for fastening the front of a garment. While they are usually associated with Chinese costume, they have been in use in many cultures and times, and were quite popular in Elizabethan times.



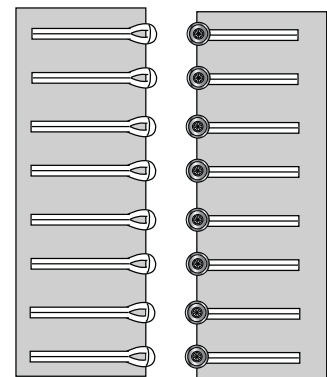
They can be simple loops of cording, or the cord can be worked into elaborate knotted constructions. The button portion can either be a knot of the same material as the cord, or it can be a separate button strung onto or sewn to the cord.

Frogs can be made of a wide variety of cording and other materials, including fabric tubes. There is even one example of frogs made of strings of pearls.

Frogs also can be purchased ready made. They are often made of a shiny rayon cording which takes dye very well.

Brandenbergs

Brandenbergs are a variation on frogs, made of strips of trim, ribbon, tape, or flattened fabric tubes sewn in double horizontal lines across the body of the garment, with a button on one side and a loop at the other.

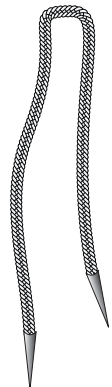


Points

Points were the strings or ribbons used to fasten clothing or to tie pieces of clothing to one another, such as with breeches tied to a doublet.

Points can be made of ribbon in widths of 1/4" to 1", but most ribbon available today is made of synthetic fibers that don't stay tied well. An excellent substitute is cotton twill tape, which comes in black and dyeable white.

Another type of point was made of braided or twisted cording, usually around 1/4" to 3/8" diameter. This cording could be a single color or a combination of colors, often in complex patterns. These may have been made in the same way as the Japanese cords called kumihimo are still being made today.



Aiglets

Aiglets (modern: aglets) were the tag ends on the ends of points. They were also used, usually in pairs, as trims, sprinkled over a hat or sleeve, for example.

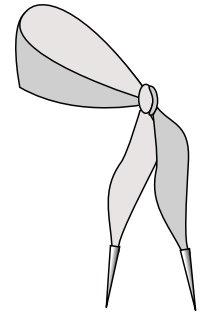
Aiglets were most often made of metal, ranging from base metal tags to elaborately chased, filigreed, enameled, and jeweled aiglets. Some of them were hollow and pierced, and filled with fragrant substances.

Aiglets may also have been made of wood or bone. There is even a surviving pair made of glass. Not surprisingly, one is broken.

Some modern substitutes for aiglets are bolo tie ends, jewelry filigree pieces, and some beads.

Tying Points

Bows in the Elizabethan period were usually tied as half bows. Start to tie a regular bow, but let the end of the last loop pull all the way through (like it did by mistake when you were learning to tie your shoes) so that you have one loop and two hanging ends. To have ends even, you will need to make one end of the point twice as long as the other.



Clasps

Some garments were fastened with elaborate metal and jeweled clasps. These can be imitated by purchasing metal filigree pieces and "sewing" beads to them with fine brass wire. Stitch the jewelry elements on to the garment, with hooks and eyes concealed underneath.

Miscellanea

Working With Artificial Fur

Use chalk to trace the pattern onto the back side of the fur fabric, one layer at a time. Remember to flip the pattern piece over for the other side.

Cut the fabric by taking small snips with sharp pointed scissors, working close to the backing of the fur so that you cut as few of the hairs as possible.

– or –

Use a sharp craft or razor knife to cut through the backing only, leaving as much of the fur intact as possible.

No matter how careful you are, you will still have fur fluff everywhere. You may wish to wear a dust mask while cutting, to avoid breathing it.

Give each cut piece a brisk shake to free the cut fur. If you want to eliminate as much of it as possible, you can put it in the dryer on AIR ONLY or vacuum the edges of remaining fur.

Never iron, steam, or heat dry artificial fur. Heat will cause it to frizz and matt.

Since the backing is a stable knit, seam finishing is unnecessary.

Fur Seams

To sew fur to fabric, smooth or comb hairs away from edge. Pin, using long “quilting” pins. Stitch with a long straight stitch. Grade seams but do not attempt to press or steam seam open. If hairs are trapped in stitching, use a large needle to pull them free.

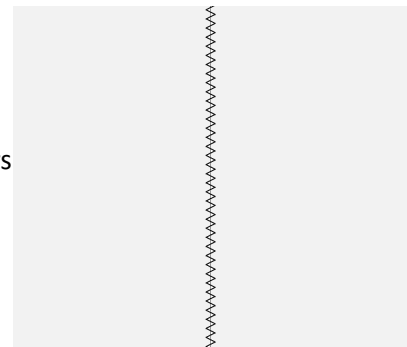
Hinged Seam

To seam fur to fur:

1. Slightly loosen the tension on your sewing machine and set for a very wide, long zigzag stitch.
2. Trim seam allowances to $\frac{1}{4}$ ".
3. Smooth fur away from edges.
4. Stitch, keeping the right-hand side of the zigzag stitch barely off the edge of the fabric.



1. Pull gently on both sides of seam until fabric lies flat.
2. To conceal seam, use a large needle to pull trapped hairs to right side.



Starch

Starch was a brand new invention in the 16th century, and was an extremely valuable status symbol. Starch was used on body linens, caps, aprons, and household linens, but its absolute pinnacle was in the way it was used to starch ruffs.

A Period Starch Recipe

Since old fashioned boiled starch is hard to find, here is a period starch recipe.

This recipe uses wheat starch, which can be purchased at health food stores and Asian grocery stores. If you can't find wheat starch, corn starch may be substituted.

In a medium sized saucepan, bring 4 cups water to a rolling boil.

Mix 3 tablespoons starch into 1/2 cup cool water. Stir until creamy.

When water boils, remove from heat and stir creamed starch into it with a wire whisk.

Starch is best used very hot.

Dunk the item to be starched into the mixture. If you are starching only the collar and cuffs, dip them into the pot and leave the rest of the garment alone.

Lift the garment out of the hot starch solution with a spoon or stick, and hang to dry. This is a messy procedure, so protect the floor if you are working indoors.

As soon as the starch is cool enough to handle, squeeze the excess out and blot with a terry towel. Use your fingers to smooth wrinkles out as much as possible.

Allow the item to dry completely, then iron. You may want to dampen the garment ever so lightly, but go lightly. Wet starching is extremely difficult to do well. Ruffles may be gauffered into the proper shape by using a narrow barreled hair curling iron, reversing the direction of the iron with each pinch.

This recipe gives a very stiff starch, suitable for ruffs and such. For a light starch for giving fabric body, etc., use one tablespoon of starch. For medium use two, and for a heavy starch for petticoats, etc., use three. For a large garment like a petticoat, double or triple the recipe.

Caring For Costumes

Cleaning

How to get your costume clean? Washing is effective, but requires forethought and action in the choices of fabric, trims, and construction technique. Dry cleaning is expensive. I urge you to try the authentic methods, which are easier and surprisingly effective.

In the period, dry cleaning didn't exist. People wore shirts and smocks made of linen next to their skin. The body linens absorbed sweat, body oil, and dirt and kept it from soiling the woolen and silk outer clothing. The body linens were washed frequently, and the outer clothing was mainly cleaned by airing, brushing, and sponging as needed.

Hangers

Heavy costumes need strong hangers. The best I've found are wooden suit coat hangers. However, garments with wide necks, such as bodices, tend to fall off of hangers without strap notches.

My solution to this is to drill holes in the top of the hangers, and then thread a wood screw through a large wooden bead and screw it to the hangers.

The beads will provide a stop to keep the straps from slipping off.

