

Stitching Edges using the Needle Positions

Narrow-stitched edges
on collars, cuffs, lapels, hems, etc.

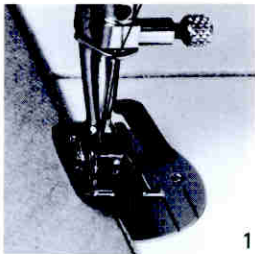
Presser foot:	016
Thread:	sewing thread
Needle:	80
Stitch selection:	selector lever 0
	changeover lever 0
Stitch width:	0
Stitch length:	1½–4
Needle position:	left / half-left
Feed-dog:	sewing
Colour mark:	●

Place fabric edge to left side of guide on blind-stitch foot (Fig. 1). Set needle position left or half-left. Switch on auto-matic long stitch for long stitches.

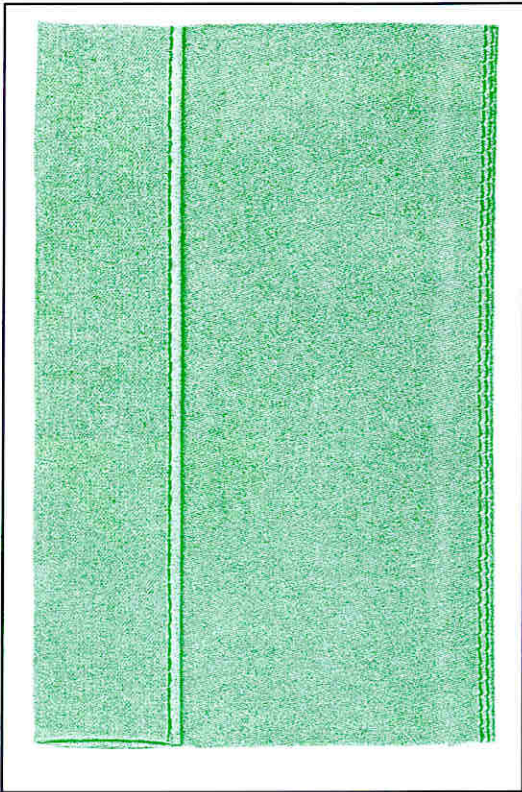
Wide-stitched edges
likewise for edges of all kinds

Presser foot:	000
Thread:	sewing thread
Needle:	80
Stitch selection:	selector lever 0
	changeover lever 0
Stitch width:	0
Stitch length:	1½–4
Needle position:	all positions
Feed-dog:	sewing
Colour mark:	●

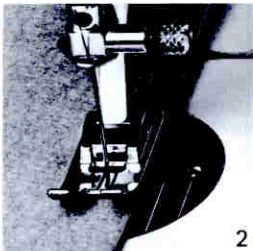
Guide material edge along the presser foot or along the markings in the stitch plate.



1

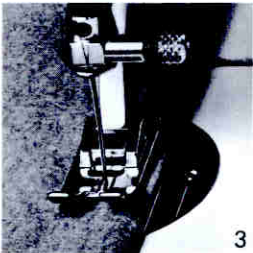


Stitching widths :
a) Presser foot deep = 7 mm (Fig. 2)



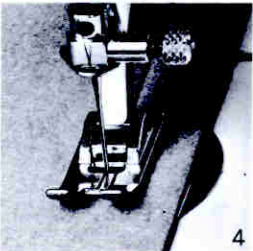
2

b) Marking line 1 = 10 mm (1 cm) (Fig. 3)



3

c) Marking line 2 = 15 mm (1,5 cm) (Fig. 4)



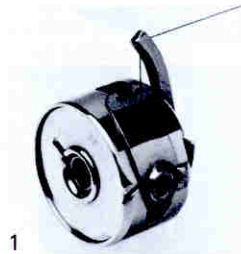
4

Other widths can be sewn using the needle positions left, half-left, right and half-right.

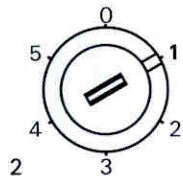
Buttonholes

Presser foot:	452
Thread:	sewing thr. / darning thr.
Needle:	80-70
Stitch selection:	selector lever 0 changeover lever 0
Stitch width:	connected automatically
Stitch length:	practically 0
Needle position:	connected automatically
Feed-dog:	sewing
Colour mark:	●

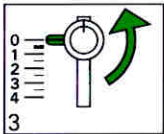
To sew buttonholes, thread lower thread in the finger of the bobbin case (Fig. 1).



Buttonhole setting
1. Switch buttonhole knob to position 1 (Fig. 2)

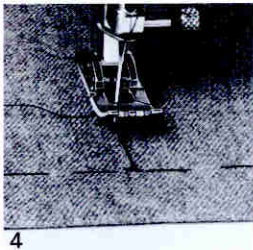


2. Set stitch length as follows. Turn knob to right until it locks. The Mark is now on top (Fig. 3) and the stitch length is 0. Now make **half** a turn to the **left** (marking

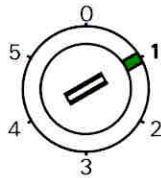


line to the bottom) and this will give the **basic setting** for the stitch length. Adjust stitch density to suit material: turn a little to left for thick fabrics — to right for fine fabrics. Always sew a trial buttonhole. The stitch length varies slightly depending on the type of material.

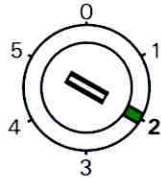
Sewing the buttonhole
Place the material under the foot so that the edge of the material lies **in front** of the presser foot (Fig. 4). Move needle down with the hand-



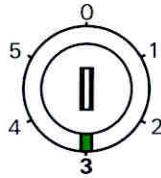
wheel and check whether it is at the **centre** of the presser foot. If not, operate needle stop once. Position work beneath foot and place needle exactly at start of the buttonhole. Lower presser foot and sew buttonhole.



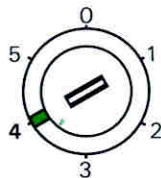
Knob to 1
Machine sews first bead forwards



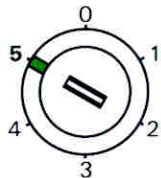
Knob to 2
Machine sews bar tack



Knob to 3
Machine sews second bead backwards



Knob to 4
Machine sews bar tack



Knob to 5
Machine does securing stitches

Reset knob to 1 for further buttonholes. Continue sewing as described above. Set knob to 0 for all other sewing work.

Cutting open buttonhole
It is best to cut from both ends of the buttonhole to the centre (Fig. 5). This avoids cutting through a bar tack.



Corded buttonholes

The gimp cord strengthens the buttonhole.

The gimp cord is particularly important in all knitted materials — both hand and machine-knitted — to ensure that the buttonhole does not pull out of shape.

The thickness of the cord depends on the material to be sewn. The following are suitable: beading thread No. 8, buttonhole thread, thick hand sewing thread, of fine crochet cord. Sew a trial buttonhole.

Place material under the foot so that the edge of the material lies **in front** of the presser foot. The loop of the cord then comes at the end of the buttonhole which is pulled by the button (Fig. 6).

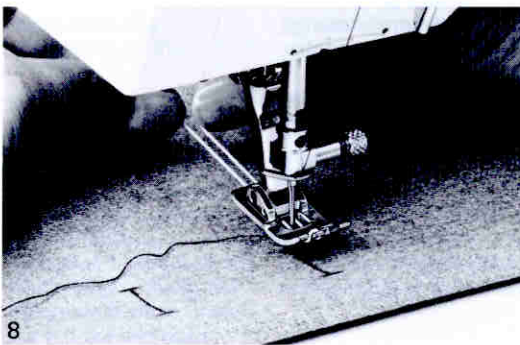
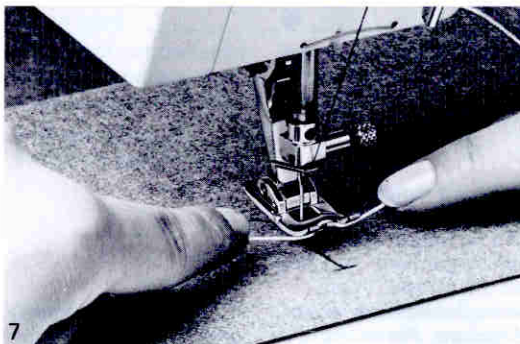
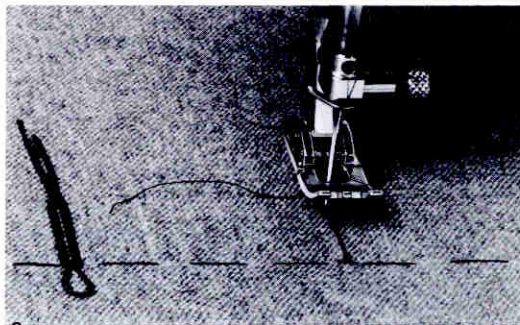
Sewing with gimp cord

It is much easier to position the cord if the needle is already in the material:

1. Move needle down using hand-wheel and check whether it is at the centre of the presser foot. If not, operate needle stop once. Position material beneath foot and place needle exactly at start of buttonhole. Do not lower foot yet.

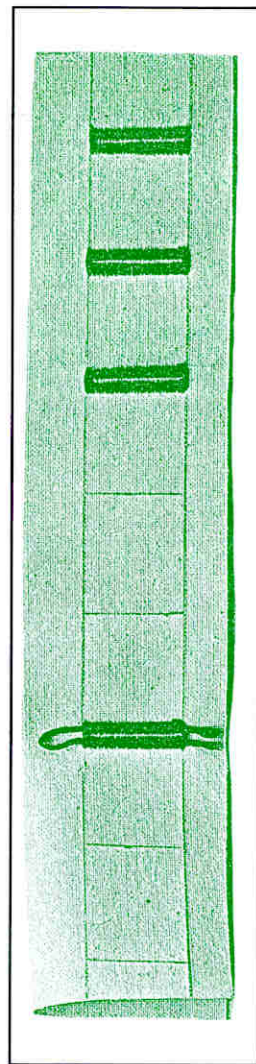
2. Place cord over the centre stem of the buttonhole foot (Fig. 7) and take both ends under the foot to the rear (Fig. 8). Lower foot and **check whether cord can slide**, i.e. is not stuck.

3. Sew buttonhole, do not hold cord as it must be able to move.



Finally pull the loop of the cord into buttonhole. In knitted fabrics thread ends of cord to rear with large hand sewing needle (Fig. 9) and tie or sew in securely.

The cord end can be cut off in woven material.



Mending Jersey

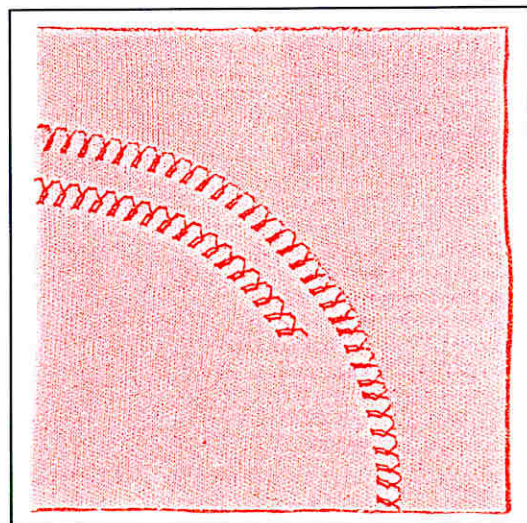
Patching with jersey stitch

Mainly for mending jersey underwear.

Presser foot:	560
Thread:	darning thread
Needle:	80-70
Stitch selection:	selector lever 4 changeover lever 1-20
Stitch width:	4
Stitch length:	2
Needle position:	centre
Feed-dog:	sewing
Colour mark:	●

It is best to darn minor tears. See page 30. For larger thin or damaged areas, it is preferable to

fit a replacement piece, since this retains the elasticity.



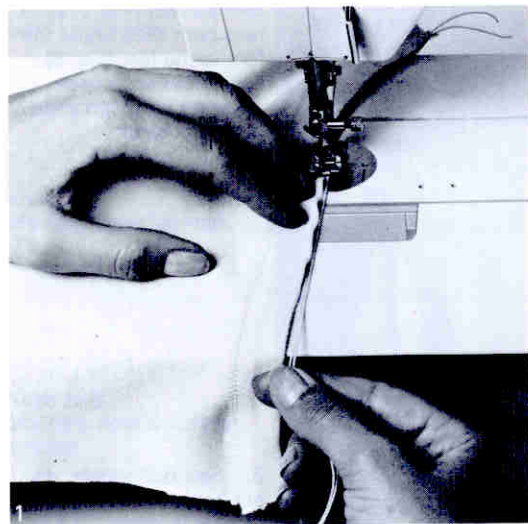
Cut out a replacement piece from the good part of a no longer worn, similar garment, rounding off the corners, to preserve the elasticity in all directions. Pin on the replacement piece and baste with small basting device stitches along the edge if possible. Then sew on with jersey stitch, 1-2 rows. Finally, cut out damaged portion.

Edging with elastic thread

Elastic thread is used to restore distorted edges to their original shape.

Presser foot:	000
Thread:	darning thread
Needle:	80
Stitch selection:	selector lever 0 changeover lever 0
Stitch width:	3
Stitch length:	1-1½
Needle position:	centre
Feed-dog:	sewing
Colour mark:	●

Guide two elastic threads along the edge and sew on with zig-zag stitches, pulling threads slightly (Fig. 1).



Mending Fabrics

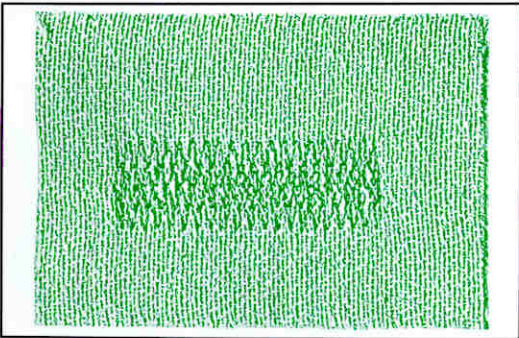
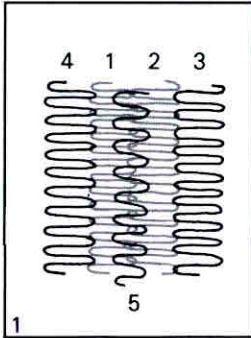
Mending tears with running stitch

(modern darning) For tears and thin places in practically all materials

Presser foot:	000
Thread:	darning thread
Needle:	80–70
Stitch selection:	selector lever 8 changeover lever 1–20
Stitch width:	4
Stitch length:	almost 0–¼
Needle position:	centre
Feed-dog:	sewing
Colour mark:	●

Always place a fine backing fabric underneath. Sew 3–5 rows of running stitch for tears, depending on the type of fabric and damage (Fig. 1).

On thin areas sew a sufficient number of parallel rows to cover. Overlapping each row slightly.



Patching with honeycomb stitch

For outer-wear and children's jeans

Presser foot:	560
Thread:	darning thread
Needle:	80
Needle position:	centre
Feed-dog:	sewing

1st operation

Switch on basting device

Stitch selection:	selector lever 0 changeover lever 0
Stitch width:	0
Stitch length:	1 approx.
Colour mark:	●

Do not cut out damaged places. Pin replacement piece on right side and

baste along edge with small stitches in darning thread.

2nd operation

Switch off basting device

Stitch selection:	selector lever 1 changeover lever 1–20
Stitch width:	4
Stitch length:	2
Colour mark:	●

Oversew edges with honeycomb stitch. Ensure that the honeycomb stitch seam lies completely on the

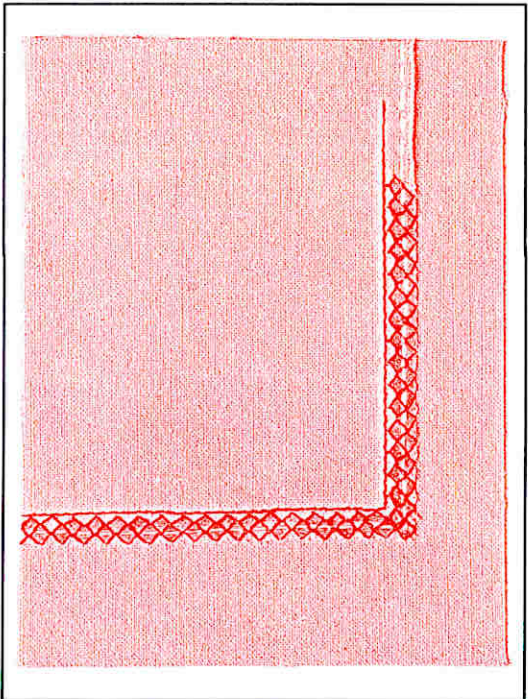
replacement piece and that the needle pierces exactly beside the edge of the replacement piece.

3rd operation

Stitch selection:	selector lever 0 changeover lever 0
Stitch width:	0
Stitch length:	½ approx.
Colour mark:	●

Sew straight stitch on the inside edge – along the honeycomb stitch, then cut out the damaged

piece. The straight stitch makes it easier to cut out.



Darning

Principle of darning

The feed-dog must be lowered for darning to ensure that the material will not be moved by the feed dog. The material is moved to-and-fro by hand. It is important to guide evenly when darning and this requires a little practice.

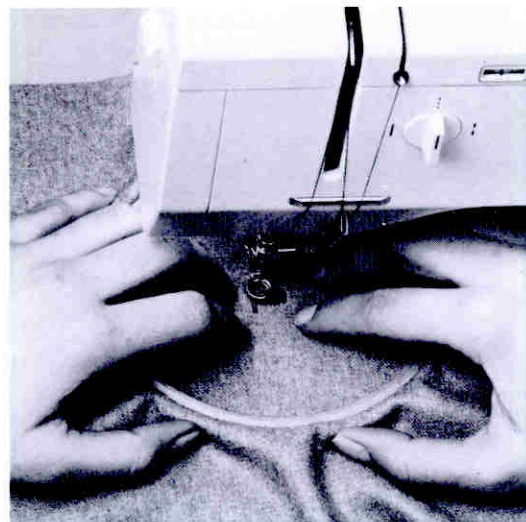
Recommendation

- Use a darning ring if possible, to keep the darning area taut.
- Move ring to-and-fro **without pressure**, otherwise jerky movements and torn threads occur.
- Starting from the left

side of the hole work up and down gradually across the hole towards the right. Finish with needle in work on the right and pivot the work 90 degrees. Sew second run at right angle to the first rows. Still working up and down fill in any gaps.

— Suitable method of holding ring: the 4 outer fingers hold it fairly tightly to keep it securely in the hand (Fig. 1). This also helps to guide the work regularly.

— Use sewing table, support elbows if possible. Set up machine a sufficient distance from edge of table.



Darning technique

There are various methods of darning. The following is one which can be learnt easily:

Presser foot:	285
Thread:	darning thread
Needle:	80-70
Stitch selection:	selector lever 0 changeover lever 0
Stitch width:	0
Stitch length:	0
Needle position:	centre
Feed-dog:	lowered
Colour mark:	●

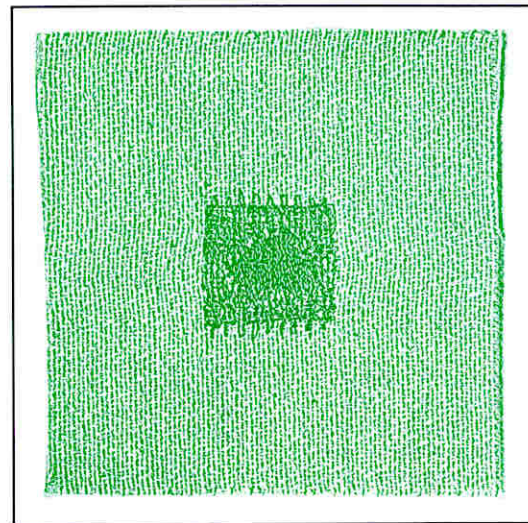
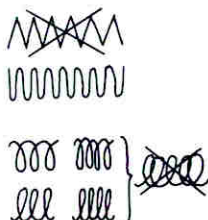
The Three Steps

1. Stretch work in darning ring. Bring up bottom thread at top left corner of hole. Moving ring up and down cover hole with first rows of stitches (not too many stitches or the darn will be «hard»).

2. Turn work and repeat from left to right so that 2nd rows of stitches are at right angle to first rows.

3. Fill in any gaps, stitching in the same direction as 2nd rows so that the stitches sink in. Always follow the grain and if the material surrounding the hole is worn thin vary the length of the rows to avoid strain.

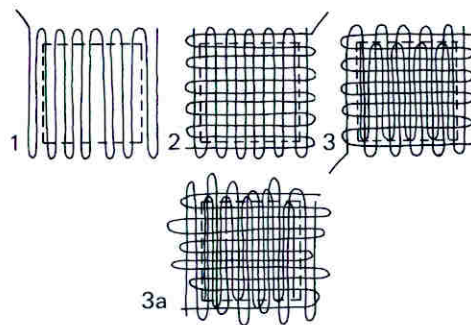
Important: do not darn too sharply, but in curves, otherwise there is a danger of tearing. The l- or m-motion is particularly popular with beginners. Ensure that these do not result in a circular motion.



Main faults:

Thread breaks frequently:
— work guided **irregularly** or too quickly.

Small knots form on the underside:
— work moved **too slowly** or machine running too fast.

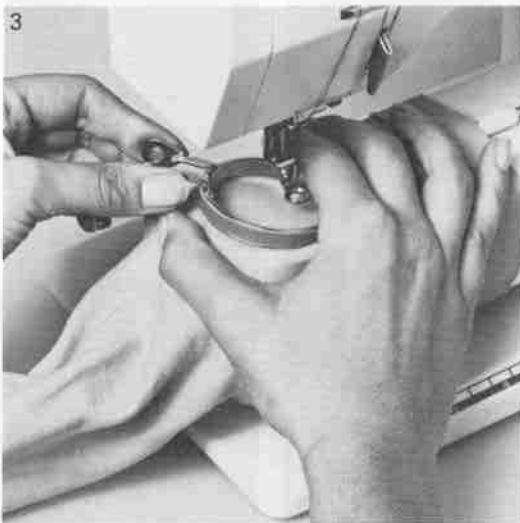
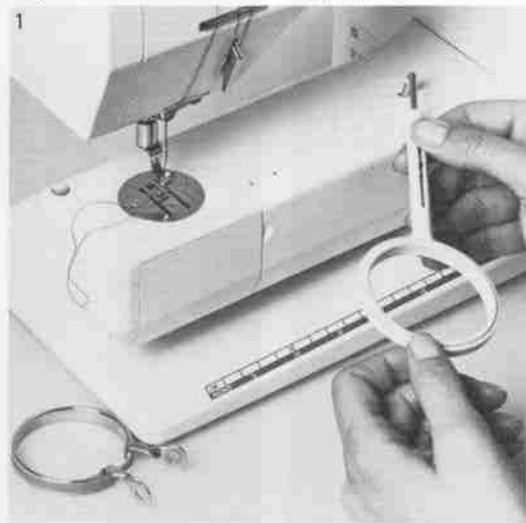


The small darning ring

The small darning ring is particularly useful for darning small holes in work that will not easily fit into a large ring, such as socks, sleeves, trouser legs, etc., or where you wish to use the free-arm.

Stretching the work

- Place darning ring without spring clip on free-arm (Fig. 1)
- Pull material evenly over free-arm and darning ring
- Stretch darning ring fully to left
- Place index finger and thumb of right hand around the small darning ring (Fig. 2)



Darning technique

When the work is stretched in the small darning ring over the free-arm sew the 1st run lengthwise and the 2nd run widthwise, since the work cannot be turned.

- With the left hand stretch darning material to extreme point of free-arm. The tension produced in this way is held with the thumb of the right hand.

- Insert the spring clip as follows with the left hand: close spring clip, insert under the index finger of the right hand and **hold firmly** (Fig. 3). Only then press spring clip fully into darning ring.

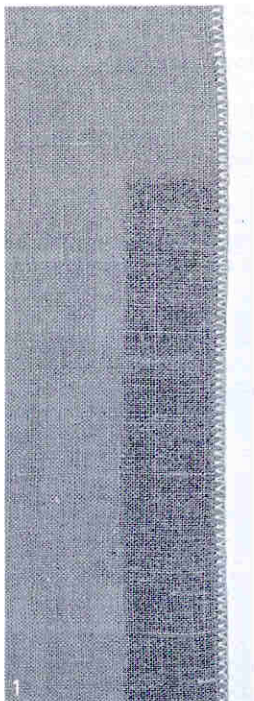
Edgings on Woven Material

Fine edge finishing

For frills, scarves (neckerchiefs), serviettes, etc.

Presser foot:	000
Thread:	darning thread
Needle:	80–70
Stitch selection:	selector lever 0 changeover lever 0
Stitch width:	1½–2
Stitch length:	½ approx.
Needle position:	centre
Feed-dog:	sewing
Colour mark:	●

Press turnings of approx. 1 cm to wrong side. Sew zig-zag over this pressed edge. Guide pressed edge to centre of foot as for oversewing. Then cut off remaining material on back against zig-zag stitches (Fig. 1).



Lace and insertions on woven material

Presser foot:	000
Thread:	darning thread
Needle:	80–70
Stitch selection:	selector lever 0 changeover lever 0
Needle position:	centre
Feed-dog:	sewing
Colour mark:	●

1st operation

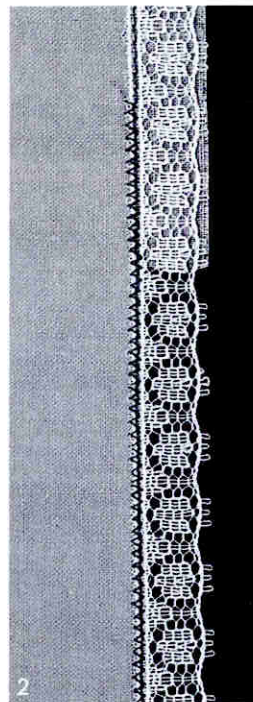
Stitch width: 0
Stitch length: approx. 1

Pin on lace, baste and sew on with straight stitch.

2nd operation

Stitch width: 1½–2½
(depending on lace)
Stitch length: ¼–½
(depending on lace)

Press raw edge under. Oversew edge of lace with zig-zag on right side. Cut off remaining material on back against zig-zag stitches (Fig. 2).

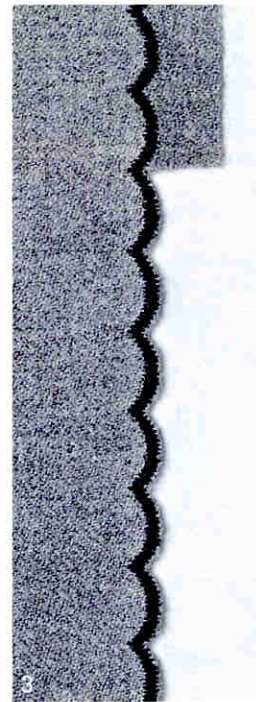


Scallop edging

For collars, cuffs, neckerchiefs, frills, tablecloths, serviettes, lining hems, etc.

Presser foot:	030
Thread:	embroidery thread No. 30
Needle:	80–70
Stitch selection:	selector lever 9 changeover lever 1–20
Stitch width:	4
Stitch length:	almost 0
Needle position:	centre
Feed-dog:	sewing
Colour mark:	●

Mark desired line and place paper underneath. Sew scallop, remove paper and cut round scallop (Fig. 3).

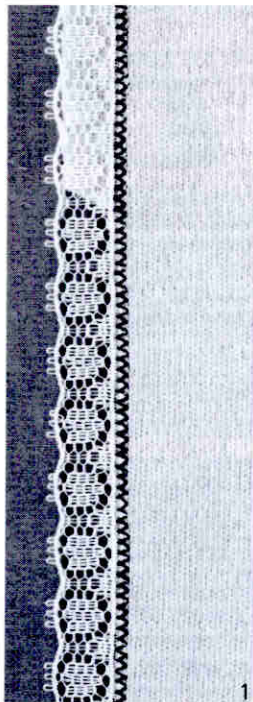


Edgings on Jersey

Lace on jersey

Presser foot:	000
Thread:	darning thread
Needle:	80–70
Stitch selection:	selector lever 0 changeover lever 0
Stitch width:	1½–2
Stitch length:	½ approx.
Needle position:	centre
Feed-dog:	sewing
Colour mark:	●

Pin on lace, baste with short basting device stitches, sew on with zig-zag over edge of lace. Cut off remaining jersey on back against zig-zag stitches (Fig. 1).

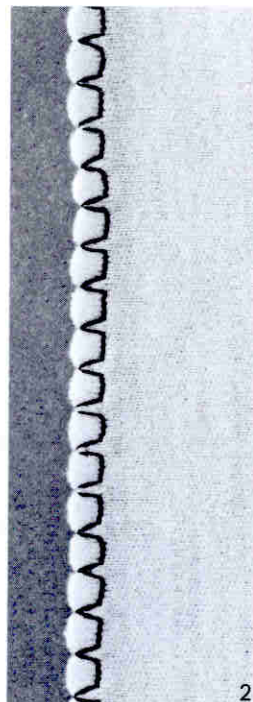


Shell edging

Specially for fine materials and jerseys

Presser foot:	000
Thread:	sewing thread
Needle:	80
Stitch selection:	selector lever 2 changeover lever 1–20
Stitch width:	4
Stitch length:	1
Needle position:	centre
Feed-dog:	sewing
Colour mark:	●

Place material under presser foot so that the edge for the shell edging is on the **left**. The needle on its left swing should just go over the edge (Fig. 2).



Elastic

Specially for sports- and other underwear

Presser foot:	000
Thread:	sewing thread
Needle:	80
Stitch selection:	selector lever 3 changeover lever 1–20
Stitch width:	3
Stitch length:	1
Needle position:	centre
Feed-dog:	sewing
Colour mark:	●

It is easier to gather jersey first: sew long straight stitches – then pull lower thread and gather jersey to the necessary width.

Pin on elastic and sew in place. Cut off surplus on back (Fig. 3). Remove gathering thread. Elastic must **not** be stretched during sewing.



Tailor Tacking

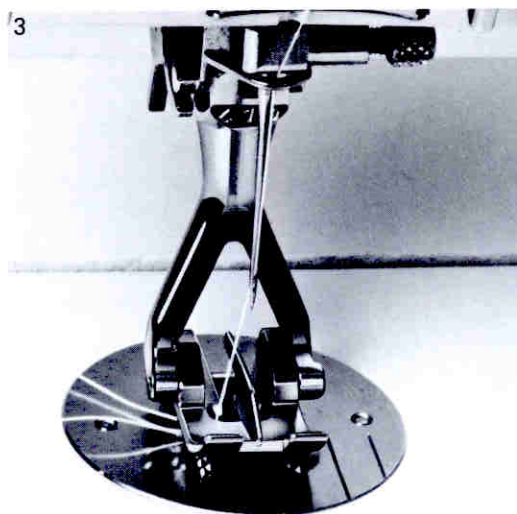
Patterns can be transferred in a simple way onto the fabric with the aid of the tailor tacking foot.

Presser foot:	419
Thread:	sewing thread
Needle:	80 (70 / 90)
Stitch selection:	selector lever 0 changeover lever 0
Stitch width:	2
Stitch length:	4
Needle position:	centre
Feed-dog:	sewing
Colour mark:	●

Preparation:

1. First set stitch width. Check that the needle is at its highest position, **only then** attach presser foot.
2. Loosen upper thread tension (Fig. 1) so that loose loops can form. (Reset thread tension to normal after tailor tacking.)
3. Take the top thread through to the back of the foot (Fig. 2). Before starting to sew, place both ends under the foot to the left (Fig. 3).

The first few stitches should be **sewn slowly**.



Tailor tacking with darning thread (in thin materials)

Needle: 70

Tailor tacking with sewing thread

Needle: 80

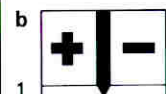
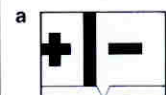
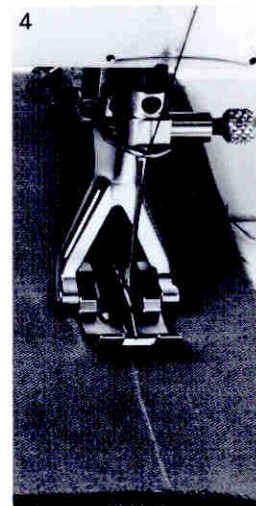
Tailor tacking with basting thread

(particularly in woollen fabrics)

Needle: possibly 90

Basting thread **only** top; normal thread below

First chalk mark the lines on to one side of fabric. Remove pattern, pin the two layers of fabric firmly and tailor tack along chalk line (Fig. 4).



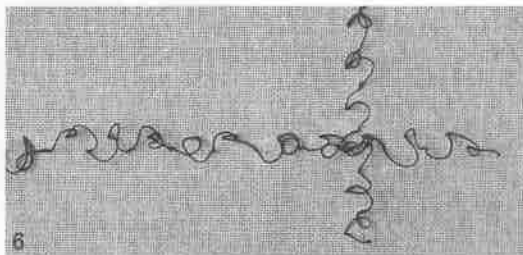


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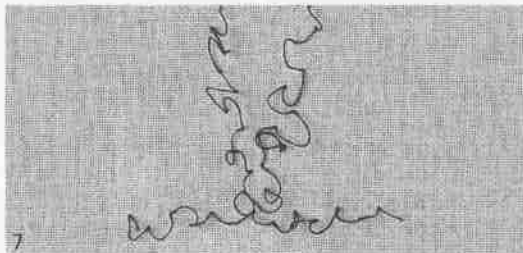
The two layers of material are then pulled apart and the threads cut through (Fig. 5).

After cutting, the **lower thread** is cut through several times on the back.

How to tack the corners ... (Fig. 6)



6

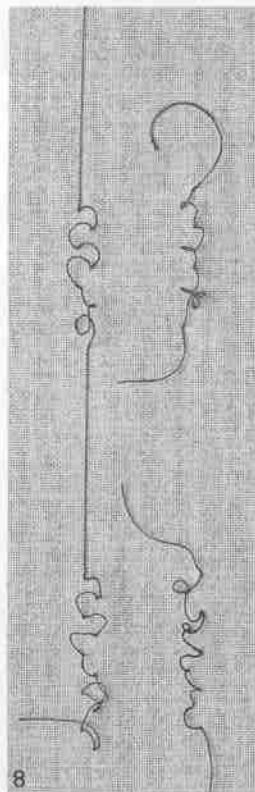


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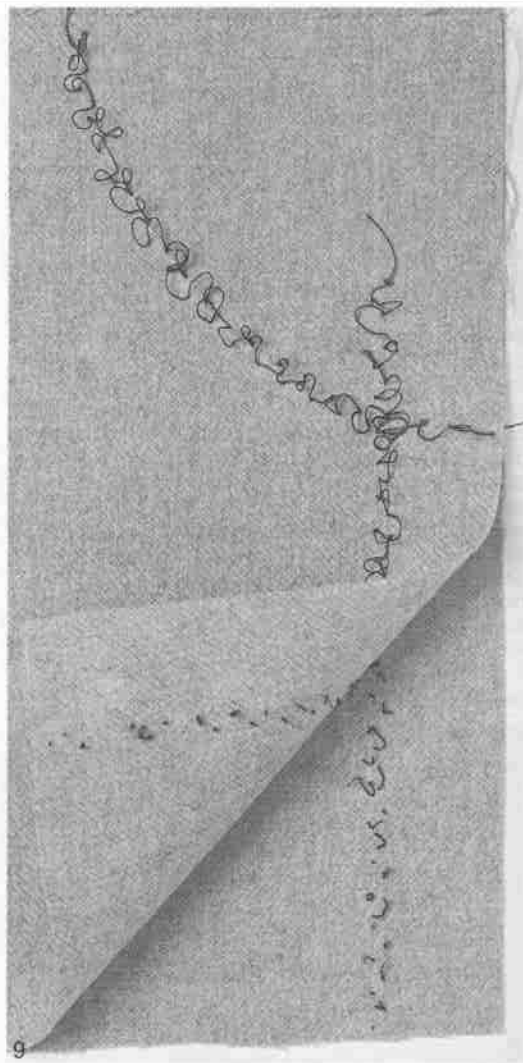
and the darts (Fig. 7)

Long seams need not be tacked for the whole length. Sew a few tacking stitches, raise tacking foot, draw material about 5 cm along, sew a few more stitches, etc. (Fig. 8 left).

Cut through the long intermediate stitches on both sides before cutting open (Fig. 8 right).



8



9

Gathering

Gathering with cord

Long pieces of material

Presser foot:	452
Thread:	sewing thread
Needle:	80
Stitch selection:	selector lever 6 changeover lever 1–20
Stitch width:	4
Stitch length:	1–2
Needle position:	centre
Feed-dog:	sewing
Colour mark:	●

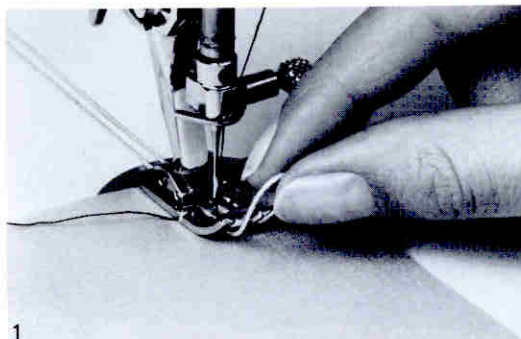
Both gathering rows can be sewn in one operation.

Procedure:

Check whether needle comes to the centre of presser foot. Place material, wrong side up, under the foot, lower the needle, but do not lower foot yet.

Take cord (2 × length of fabric piece + 20 cm) in the middle, place over middle stem of buttonhole foot and hold to the back as for buttonhole.

Lower presser foot. Lift thread loop from presser foot (Fig. 1) and pull thread forwards until the ends of the thread only project about 10 cm at rear. Then sew. The thread runs in the two grooves of the buttonhole foot and is oversewn. Finally, hold both threads and gather the material (Fig. 2).



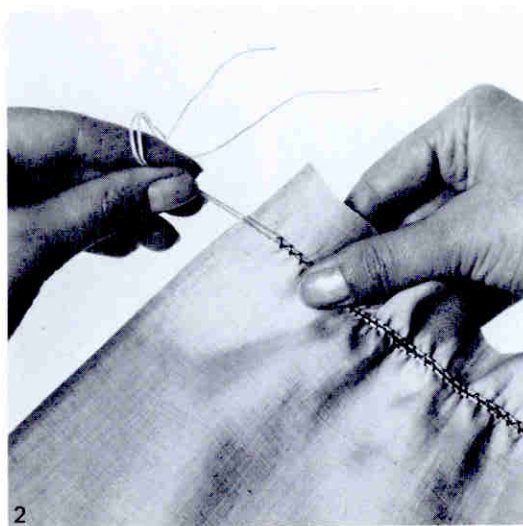
1

Normal gathering

Use presser foot 000. Small pieces or very thin fabrics can be gathered as follows:

Stitch width:	0
Stitch length:	4

Sew two parallel lines of straight stitches. Then hold the two lower threads and gather the material to the desired width.



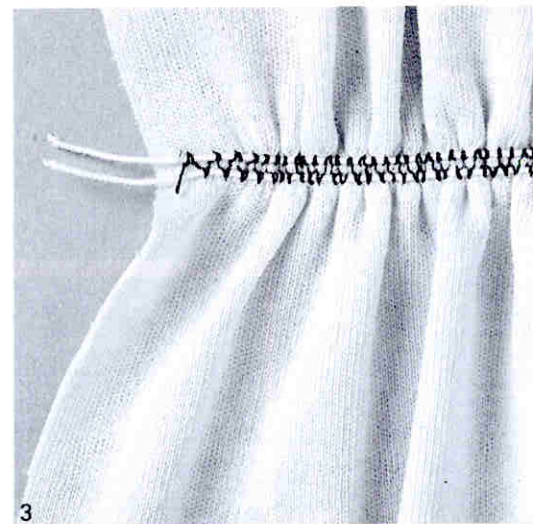
2

Gathering with elastic thread

Presser foot:	452
Thread:	sewing thread
Needle:	80
Stitch selection:	selector lever 6 changeover lever 1–20
Stitch width:	4
Stitch length:	1½–2
Needle position:	centre
Feed-dog:	sewing
Colour mark:	●

The procedure with elastic thread is the same as with cord, except that the elastic thread is pulled tight **during sewing**. The amount it is pulled depends on the desired amount of gather (Fig. 3).

Sew a trial piece.



3

Monograms

The following data apply to «freehand» monograms

Presser foot:	– (possibly 285)
Thread:	darning- / embroidery 30
Needle:	80
Stitch selection:	1
Stitch width:	4–2
Stitch length:	0
Needle position:	centre
Feed-dog:	lowered
Colour mark:	●

Monograms can be embroidered in various ways. Full details can be found in Bernina Sewing Manual No. 16, which also contains patterns for alphabets of various sizes and scripts.

Work **without presser foot**. But: **still lower lever for lowering presser foot**, otherwise loose stitches will be produced. Always stretch material in the loop. Lay paper under thin materials.

Those who are afraid at first to embroider without a presser foot can use the darning foot 285.

In most cases darning thread 30 is used. Embroidery thread is also suitable for large monograms, e.g. on towels.

Practice makes perfect

– Monograms are easier worked «freely» rather than trying to follow a marked line.

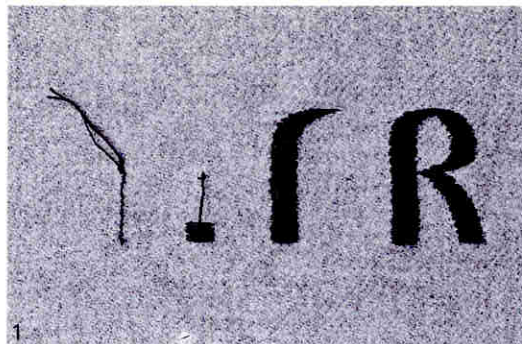
– Select stitch width 4 and do not sew letters larger than 2–3 cm.

Large monograms are more difficult as you must hold the hoop steady for longer.

– The letters R and B are particularly suitable for practising.

– Practice some pre-traced monograms later. The line traced should lie in the middle of the zig-zag stitch.

– Run machine at about three-quarters speed, but guide the frame **slowly**, regularly and smoothly!



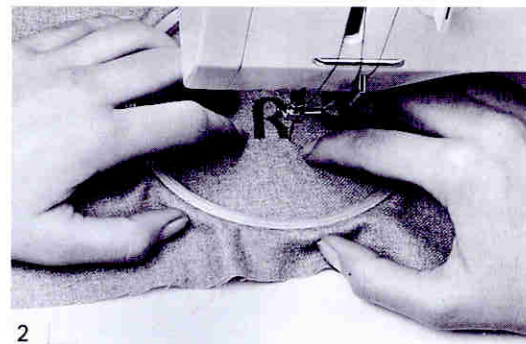
Procedure: (Fig. 1)

a) Bring up the lower thread through the material. Secure with a few straight stitches. Cut both thread ends.

b) Set zig-zag, sew 1–2 rest stitches with the aid of the hand-wheel, ensuring that straight stitches are covered by the zig-zag stitches.

c) Move frame outwards as though writing with it. **But do not twist it under any circumstances**, the narrow and wide sections are produced automatically. When the curved section begins, guide the frame along the curve without twisting it.

d) Finally secure with a few straight stitches.



Guiding the embroidery frame

The stitching of an even monogram largely depends on the correct holding of the frame. Hold frame as when darning (Fig. 2). Too much pressure by the fingers on the material produces irregular, jerky movements and therefore uneven monograms.

Important:

Work as closely to the centre of the frame as possible, otherwise regular guiding is very difficult.

Note:

Small, thin letters are more difficult to embroider. Practice with larger letters at first until you have become proficient.



Appliqué

Appliqué is a method of embroidery for sewing on shapes and figures. It allows free reign to the imagination. There is a wide range of methods for sewing on the shapes. The basic technique is explained below.

Guiding the material

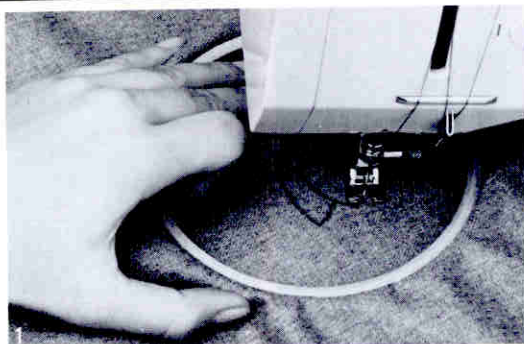
You can work with or without a frame, but stretched material can be guided more easily.

The most important basic principles:

- Guide the work by watching the needle in the slot of the presser foot.
 - Stop machine when altering position of hands.
 - To obtain a smooth curve guide material whilst sewing, stopping and turning will give a «ragged» effect.
- Exception: very small curves and corners.

Guiding with frame

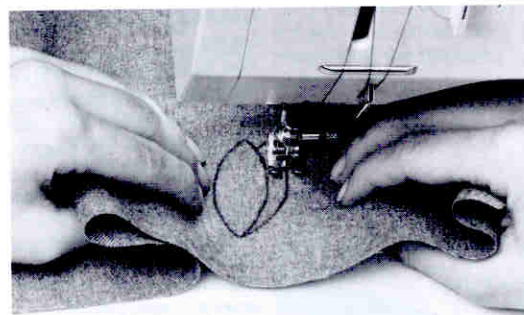
The frame is mainly guided by the left hand. It must be held firmly and be able to turn easily. The right hand must be able to operate the hand-wheel at all times.



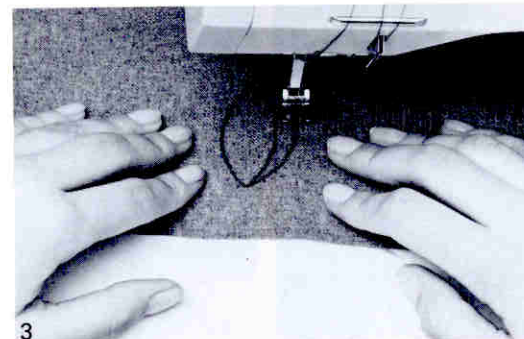
Hand position initially as when darning. Then draw index finger straight back (Fig. 1) to the inner edge of the frame. Middle and ring-fingers remain stretched.

Important note:

Do not place index finger parallel to the thumb, otherwise movement of the hand is restricted



2



3

Guiding without frame

Some textiles, e.g. velvet, cannot be stretched in the frame. Nevertheless, they should be guided in as stretched a condition as possible.

Place thumbs under the material. Make a fold if the workpiece is large. Guide near presser foot. In this way, the material can be stretched a little and turned easily (Fig. 2).

This method of guiding is unsatisfactory, slight pressure is exerted on the material and guiding is difficult (Fig. 3).

Single-colour appliqué

Presser foot:	030
Thread:	darning-/embroidery 30
Needle:	80
Stitch selection:	selector lever 0 changeover lever 0
Needle position:	centre
Feed-dog:	sewing
Colour mark:	●

Procedure

Trace the design onto the wrong side of the background material with tracing paper. N.B. This will be reversed on the right side.

The design can also be traced on thin Vilene* and ironed onto the back of the material. This is recommended for coarse and irregular fabrics on which it is difficult to trace.

Stiffen appliqué material with Vilene* and baste onto the right side of background material.

If vilene is not used, paper must be used underneath all satin stitches. This is torn away afterwards.

* Vilene = fine iron-on, non woven interfacing.

1st operation

Stitch width: $\frac{1}{2}$ –1
Stitch length: $\frac{1}{4}$ approx.

- Sew along the traced lines on the wrong side of background.
- Trim away the surplus material of the appliqued piece against the zig-zag stitches. Take work out of the frame for this purpose.

2nd operation

Stitch width: 1 $\frac{1}{2}$
Stitch length: almost 0

Cover the cut edge and the zig-zag stitches working on the right side with a satin stitch. Sew corners and small curves stitch-by-stitch. Finish by tracing the lines through that were not appliqued and sew over from right side.

Corners and small curves (Fig. 4).

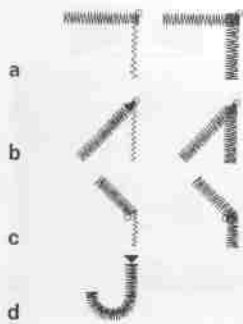
a) Rectangular corners:

Stop with the needle at outer edge, turn the work and continue sewing. The corner will then be over-sewn.

b) Pointed corners: sew to $\frac{1}{2}$ cm before corner. Then turn zig-zag back to 0 **while sewing**. Raise presser foot, turn work, set zig-zag again to $1\frac{1}{2}$ and continue sewing carefully.

c) Blunt corners: sew until the needle is exactly at the **middle of the angle**. Then sew out from centre, replacing the needle in the middle after every stitch. Raise presser foot and turn material slightly.

d) Sew small curves in the same way.

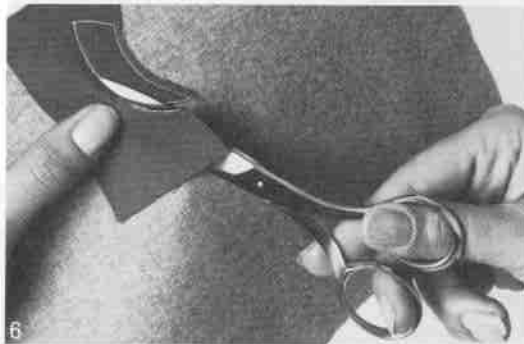
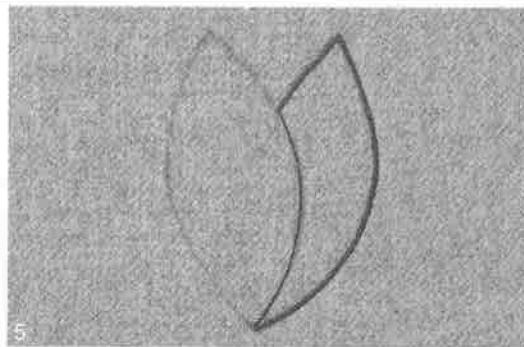


Multi-colour appliqué

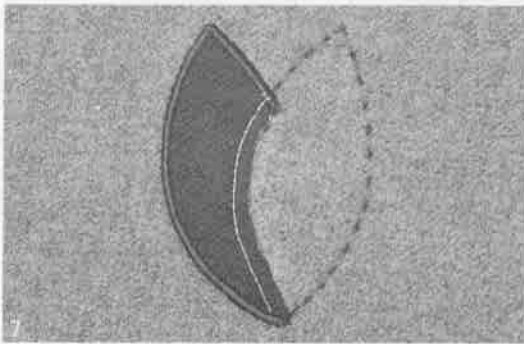
The appliqué pieces must overlap.

Lower appliqué piece:

1. Baste on appliqué material. Sew first operation: where colours intersect sew only with straight stitch, the remaining lines with zig-zag (Fig. 5).

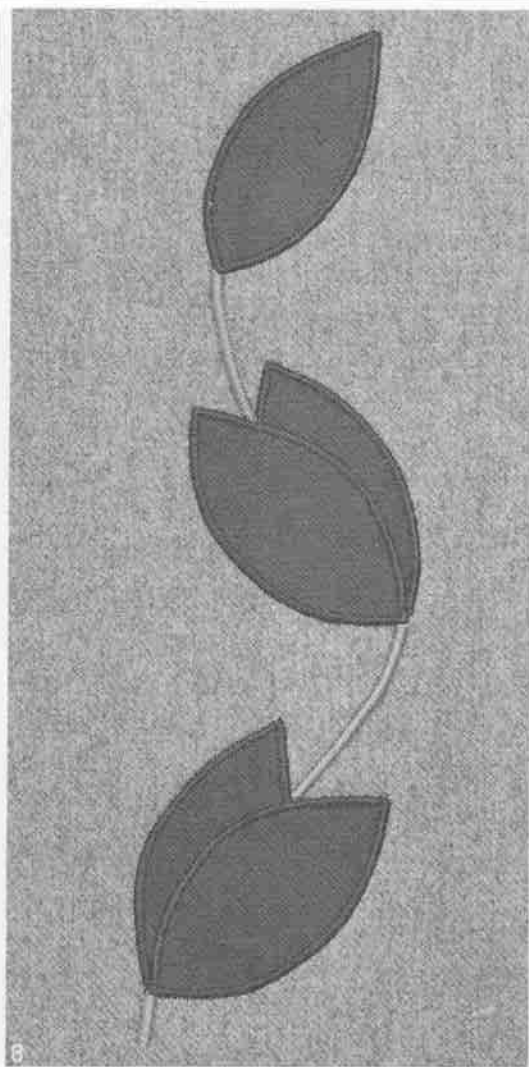


2. Cut off surplus material. **Warning:** leave 2 mm where straight stitch is sewn; cut off all material where zig-zag is sewn (Fig. 6).



3. Omit the straight stitch lines when covering the edges. These are covered by the next appliqué (Fig. 7).

Upper appliqué piece: work as for normal appliqué.



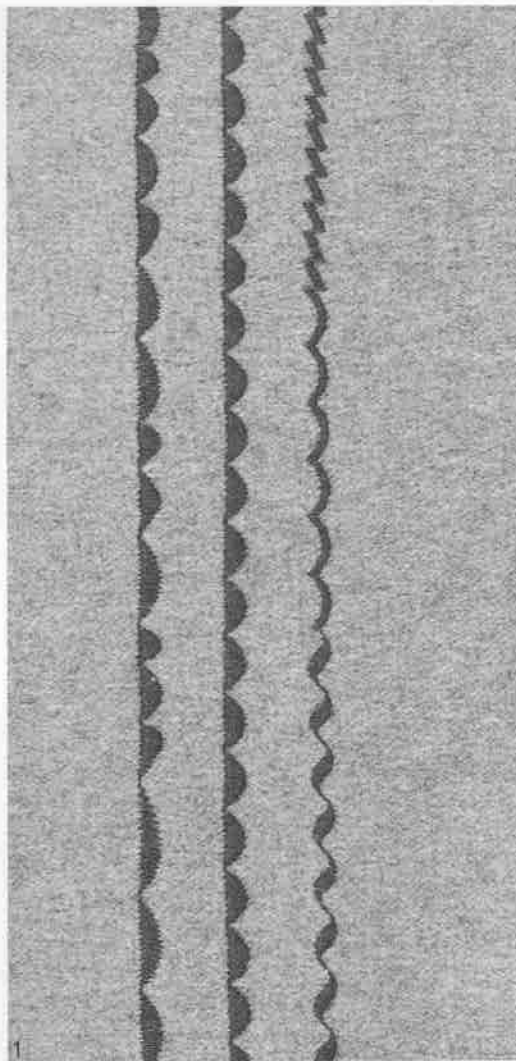
Embroidery with Decorative Stitches

Like all other needlework, whether free-hand embroidery, knitting or weaving, embroidery with decorative stitches on the machine requires some basic knowledge and a little practice for success. Practice makes perfect. With a little skill you too can produce works of art to your own design. Practice in the sequence specified. Each step is based on the preceding one. Even practice can be fun.

Basic exercises for decorative stitching

1. leaves (pattern indicator exercise)
2. flowers
3. parallel sewing of patterns
4. sewing and calculating corners
5. sewing and calculating curves

A bright, regular and rather firm cotton fabric is most suitable for practice purposes. Strengthen material a little if necessary.



Guiding the material

Ensure that the material runs **regularly** under the presser foot. Pulling, pushing or holding back the material produces irregular patterns (Fig. 1).

Use sewing table! Do not place machine at edge of table.

Paper underlay

Always use paper underneath to ensure that the material does not pull together owing to the width of the stitch (Fig. 2). Pattern paper, typewriter paper, unprinted

newspaper are suitable, but not tissue paper.

Pattern (repeat) indicator

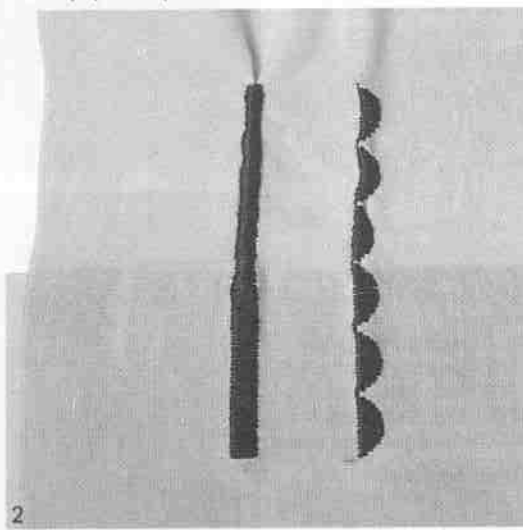
(Fig. 3)

The pattern indicator shows how far a decorative pattern has been sewn.

a) The red line indicates beginning and end of a pattern

b) The black line indicates the centre of the pattern

c) The broken stroke (vertical black line) is a preliminary indication that the pattern will soon be complete.



a

b

c

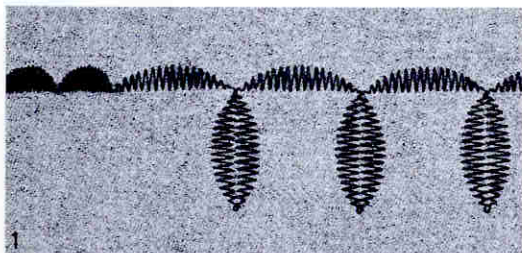
1. Leaves

Exercise for observing the pattern indicator

Presser foot:	030
Thread:	embroidery thread No. 30
Needle:	80
Stitch selection:	selector lever 15 changeover lever 1–20
Stitch width:	4
Stitch length:	½ approx.
Needle position:	centre
Feed-dog:	sewing
Colour mark:	●

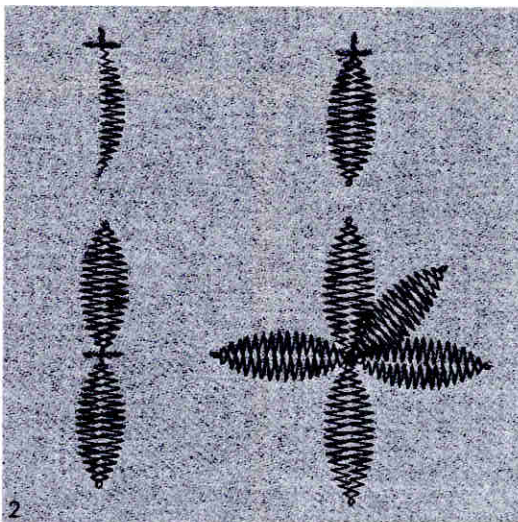
1. Sew pattern just over centre. **During this time watch the sewing** in the presser foot slot. Sew slowly after the centre of the pattern, so that sewing does not go past the end of the pattern. Towards the end of the pattern look to see whether the pattern indicator is at the broken black line. **If so, then watch the pattern indicator..**

2. Place needle into work (by turning hand-wheel)
3. Turn material and sew next half of leaf in same way (Fig. 1).



2. Flowers (Fig. 2)

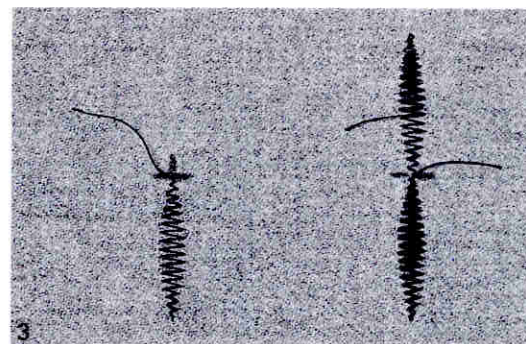
1. Always start in the middle
2. When sewing the second half towards the centre of the flower do not cross the end of the pattern, the red line, otherwise the next leaf



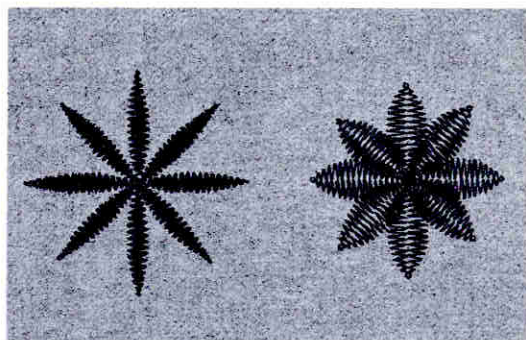
will be shorter, longer or out of line.

3. When the needle reaches the centre, check **each time** whether it is **actually** at the centre of the design. If it is not then reposition material so that it does come to the centre.

4. Set **needle** on centre-line between the leaves already sewn for intermediate leaves.



For this pattern the 2nd leaf is sewn directly over the 1st leaf (Fig. 3).



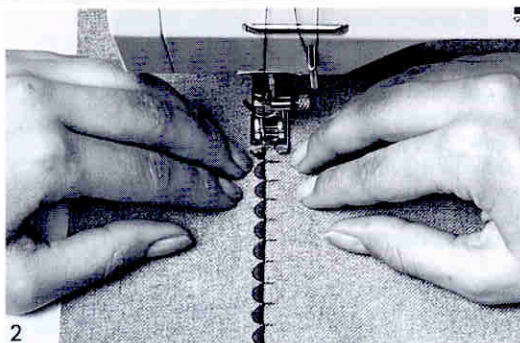
Embroidery with Decorative Stitches

3. Parallel sewing of satin stitch patterns

Presser foot:	030
Thread:	embroidery thread No. 30
Needle:	80
Stitch selection:	selector lever 9 ... 20 changeover lever 1–20
Stitch width:	4
Stitch length:	almost 0 – ¼
Needle position:	centre
Feed-dog:	sewing
Colour mark:	●

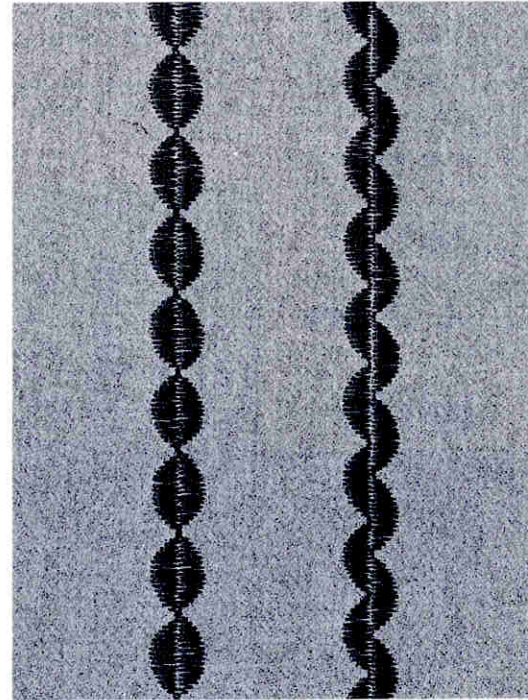
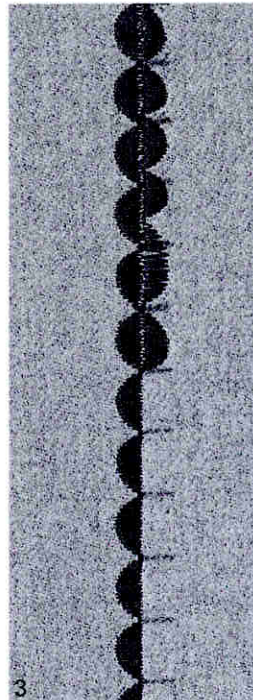
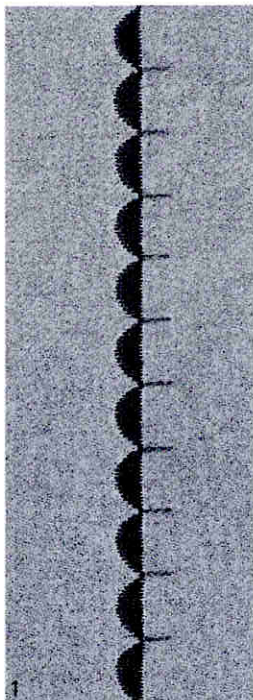
Sewing two perfectly matching parallel lines of embroidery patterns can be a problem. This is because when working the 2nd row of sewing the 1st row will also run partly under the foot. This acts as a thick material would do and shortens the stitch slightly and you must therefore compensate for this.

1. Mark a line out from the end of each pattern (Fig. 1).



2. For the 2nd row guide the material with fingers very close to the foot. All fingers should be on the fabric but the **middle fingers** are the ones that **do most of the work**. These should always be against the marked line. This means that at the end of each pattern your middle fingers must move down to the next marked line (Fig. 2).

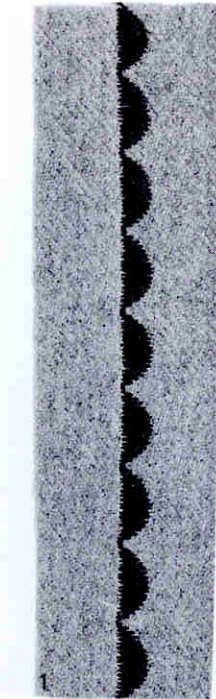
As you sew each individual pattern push the material slightly so that they match. Under no circumstances raise the presser foot and move the work. This procedure takes practice and you cannot expect perfectly matching patterns at your first attempt. Always sew slowly.



4. Sewing and calculating corners

Presser foot:	030
Thread:	embroidery thread No. 30
Needle:	80
Stitch selection:	selector lever 9 ... 20 changeover lever 1–20
Stitch width:	4
Stitch length:	almost 0—¼ approx.
Needle position:	centre
Feed-dog:	sewing
Colour mark:	●

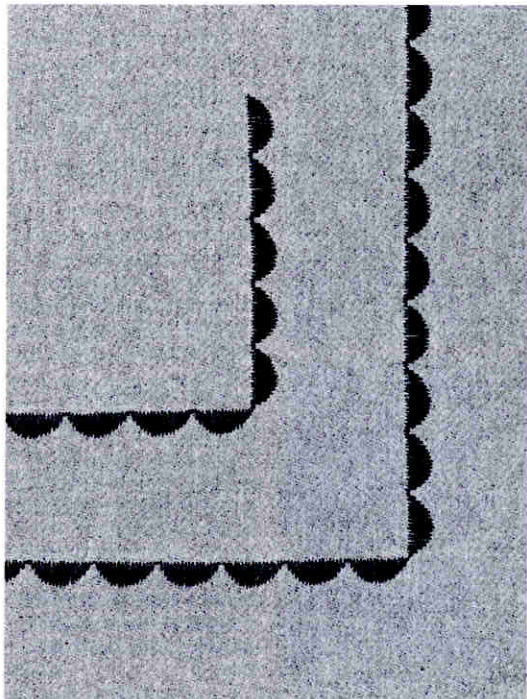
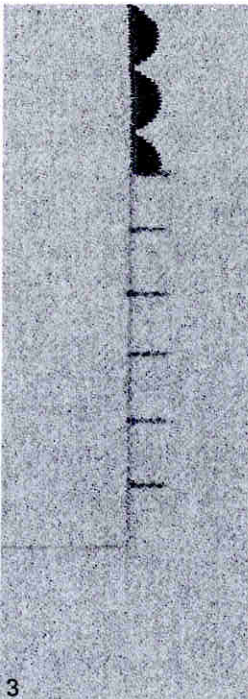
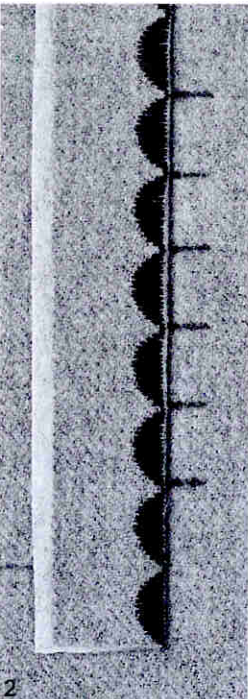
pulling the material. In this way, should adjustment be necessary, it will hardly be noticeable spread over the 6 patterns (Fig. 3).



When sewing towards a pre-determined corner you do not know beforehand whether the pattern will end exactly in the corner.

To ensure that the pattern ends at the corner, the following calculation can be made:

1. Sew a test piece on a remnant of the same material, at least 6 patterns, place paper underneath (Fig. 1).
2. Lay this test on the previously determined corner and mark on to the material, the end stitch of at least 6 patterns (Fig. 2).
3. When sewing towards the corner stop at least 6 patterns away. You can now tell whether the patterns will fit exactly or whether you will have to adjust the length of each slightly by pushing or



5. Sewing and calculating curves

Presser foot:	030
Thread:	embroidery thread No. 30
Needle:	80
Stitch selection:	selector lever 9 ... 20 changeover lever 1–20
Stitch width:	4
Stitch length:	almost 0
Needle position:	centre
Feed-dog:	sewing
Colour mark:	●

1. Sewing curves

A curved line can be divided into short straight sections. It is therefore possible to sew along the curve of a decorative stitch pattern in the same way by sewing the individual patterns «straight».

Practice procedure:

Divide the marked curve into straight sections corresponding to the length of the pattern with the aid of dots. Sew first pattern, lower needle, raise presser foot, turn material sufficiently for next dot to be directly in front of needle. Lower foot, sew second pattern, etc. (Fig. 1).

With a little practice, it will be simple to estimate the distance between the dots, i.e. the length of the pattern, so that the dots need no longer be marked.

2. Calculation of circles and closed figures

If a closed circle (up to 2½ cm dia.) or closed shape must be sewn, the pattern has to be calculated so that they fit in exactly.

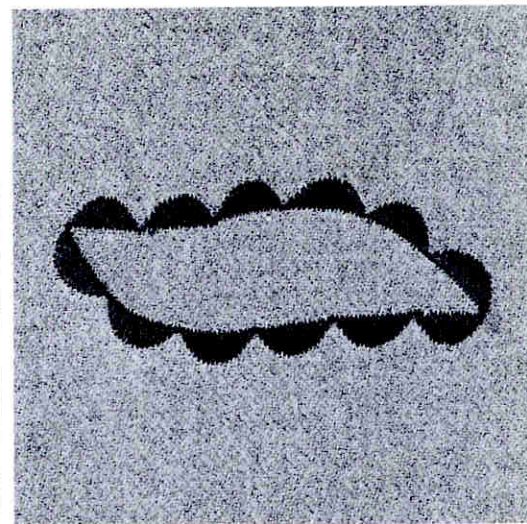
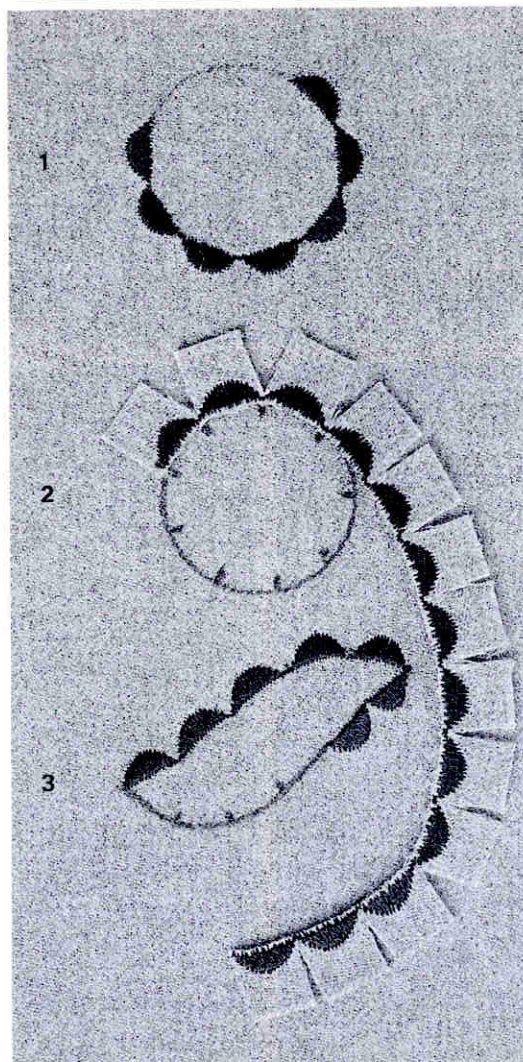
Method: (Figs. 2 and 3)

— Sew a sufficiently long trial piece (with paper underlay). Cut off edge of material fairly closely against straight edge of pattern.

— Snip material into curved side of pattern (Fig. 2).

— Place trial piece on circle or figure and check whether the patterns coincide (Fig. 2).

If not, alter stitch length very slightly and sew another trial piece. When the calculation is right, transfer dots to the design.



Changing the Bulb

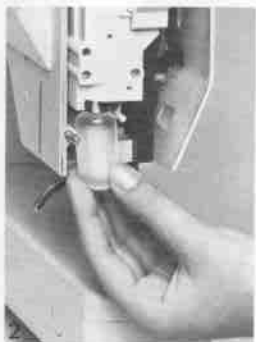


Use 15W bulb with bayonet socket.

● **Disconnect the sewing machine from the power supply by pulling out the plug from the socket.**

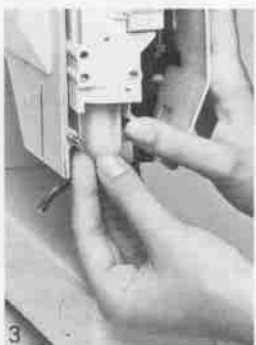
● **Remove front cover (Fig. 1):**
— Pull cover forwards steadily.

● **Removing old bulb: (Fig. 2):**
— Press bulb upwards, twist to left and withdraw.



● **Inserting new bulb: (Fig. 3):**
— Press safety strap to right with the right hand, insert new bulb with the left hand: press upwards and twist to right to the stop.

● **Replace front cover.**



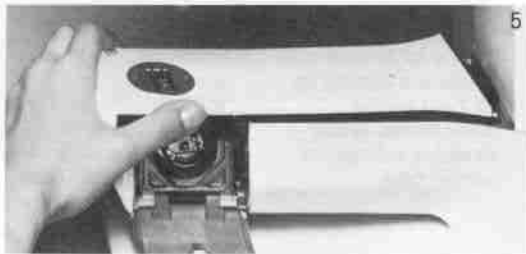
Maintenance: Cleaning and Lubricating

If the machine is kept in a cold room, it should be taken to a warm room about 1 hour before use to allow the oil in the bearings to become more fluid.

Cleaning

During sewing pieces of thread and fluff collect under the stitch plate and around the hook. These remnants must be removed from time to time. The free-arm cover has to be removed for this purpose.

- Set main switch to ○
- Remove presser foot and needle
- Open hinged cover on free-arm
- Press with right index finger on the upper releasing lever (Fig. 4)



- Lift off free-arm cover (Fig. 5)
- Clean feed-dog, underside of stitch plate and free-arm cover.

Lubricating the hook:
1—2 drops of oil after 3—4 hours sewing

Cleaning the hook


- Set main switch to ○
 - Remove bobbin case (see page 5)
 - Press lower releasing lever to left with the left thumb (Fig. 6).
- The half-round locking strap with the black hook race cover can now be swung down.
- Remove hook (Fig. 7)
 - Clean hook race top and bottom with brush and cotton cloth. Never use a screwdriver or scissors, etc. to remove pieces of thread!
 - Oil hook race slightly (Fig. 8)
 - Turn hand-wheel if necessary until hook driver is on left and replace hook.
 - Close black hook race cover and locking strap. The latch must engage
 - Check by turning hand-wheel
 - Insert bobbin case



Prevention of Faults

If the sewing machine does not sew satisfactorily, it is usually due to incorrect operation.

Check whether:

- upper and lower threads are correctly threaded
- the needle is correctly fitted, flat side of shank at rear
- the needle size is correct, see Needle and Thread table, page 10
- the machine is clean, remove free-arm cover, brush out remnants of thread
- the hook race is clean and oiled
- remnants of thread are trapped between the thread tension discs and beneath the bobbin case spring
- the buttonhole knob is set to 

Upper thread breaks

- upper thread tension too tight
- poor quality needles, preferably buy needles from a Bernina dealer
- needle fitted incorrectly, flat side of shank must be at rear
- needle blunt or bent
- poor quality thread, knotted thread, thread dried out due to prolonged storage
- Needle plate or hook tip damaged, take to Bernina dealer.

Lower thread breaks

- lower thread tension too tight
- bobbin jams in bobbin case, replace bobbin

- hole in stitch plate damaged by needle, must be polished by expert
- needle blunt or bent.

Faulty stitches

- wrong needles, use only needle system 130/705
- wrong size needle for thread being used
- needle blunt or bent, not fitted correctly, push right up when inserting
- poor quality, roughly polished needle
- needle tip shape does not suit material to be sewn, if necessary use ball-tip for knitted materials and cutting tip for hard leather
- lower thread is still threaded in finger of bobbin case.

Needle breaks



- needle clamping screw not sufficiently tightened
- the material was withdrawn from the front instead of the real under presser foot
- while sewing over thick parts material was pushed while needle was still in the material, use jeans foot.
- poor quality thread, irregularly twisted or knotted.

Tension errors

- thread remnants between the thread tension discs
- thread remnants under bobbin case spring
- thread threaded in finger of bobbin case as for buttonhole sewing

- threaded with foot lowered
- wrongly threaded, check upper and lower threads

Machine runs slowly or not at all

- plug not fully inserted
- main switch at 
- winder cover not closed
- main switch at , reduced sewing speed
- machine movement blocked by unsuitable oil, machine must be cleaned by an expert
- machine has been standing in a cold room.

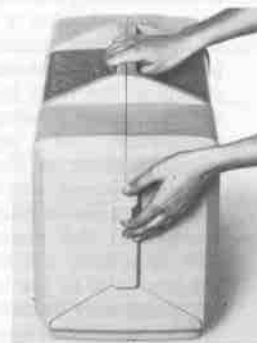
If you take your machine to an expert, **please always take foot control and accessories!**

Stowing in Carrying Case

The spacious carrying case protects the machine from damage and provides room for foot control unit, cable, sewing table, presser foot lifter, instruction book and box of accessories.



Stowing:
Ensure that the machine is properly inserted in the case. The correct position is shown on the bottom of the case.




Important!

Safety Regulations

Subject to BEAB and OSHA safety regulations (official testing centers in Great Britain and the U.S.A.).

The following safety regulations must be observed without fail:

- The moving needle is a source of danger (risk of injury to fingers). The sewing position must therefore be kept under constant observation.
- Manipulations within the area of movement of the needle, such as changing the needle, the presser-foot or stitch plate, must only be performed with the machine switched off (main switch set to  position). The same applies when removing and replacing the lower thread bobbin or hook.
- During maintenance work (cleaning or lubricating) or changing the light bulb and interruptions in sewing or after completion of work, the machine must be disconnected from the power supply by pulling out the mains plug.
- Repairs to the electronic section, especially the changing of the lead wire to the foot control unit, may only be carried out by one of our service agencies.

Special accessories

The contents of the present «My Bernina Guide» only cover basic sewing work, especially practical routine sewing and the basic principles of embroidery with decorative stitches.

Your BERNINA has of course many more possibilities to offer you particularly in the field of embroidery and design, for example:

- Broderie anglaise
 - Circular embroidery
 - Cording
 - 2- and 3-needle work
 - Free-hand embroidery
 - Hem stitches
 - Embroidery with pearl yarn/wool
 - Embroidery with metal thread
 - Buttonhole stitch embroidery (Cavelier foot)
 - Imitation smocking
 - Practical application of the decorative stitches
 - Sewing on buttons
 - Hemmer/shell hemmer/lap hemmer etc.
-
- For this type of sewing a special foot or special accessory is available.

Your BERNINA dealer will be glad to give you information and advice on the additional possibilities your machine has to offer.

The right to make constructional changes differing from text and illustrations is reserved.

Notes by the Bernina agent concerning instructions, customer service visits and any warranty provisions.

Notes

Date _____

Notes



Fr. Gegauf Ltd.
Manufacturer of Bernina
Sewing Machines
Steckborn / Switzerland

BERNINA 