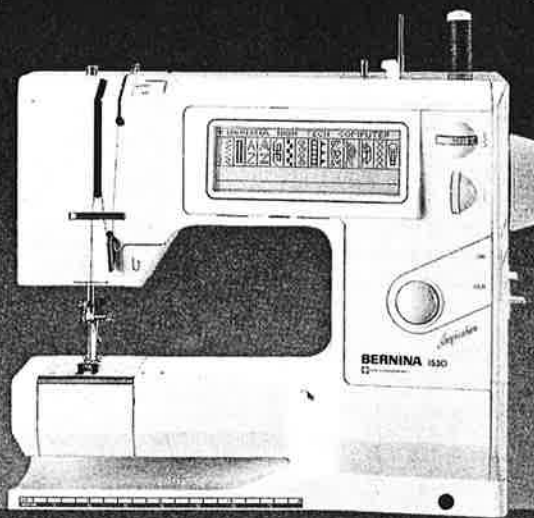


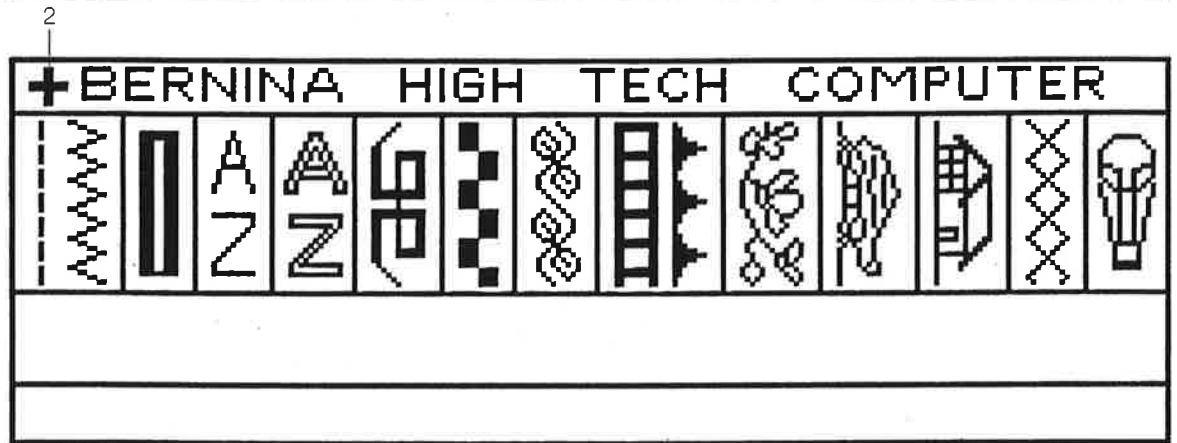
BERNINA®



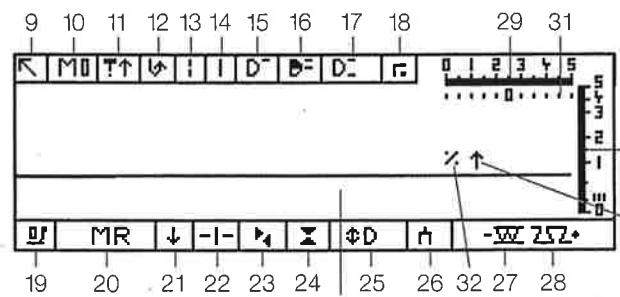
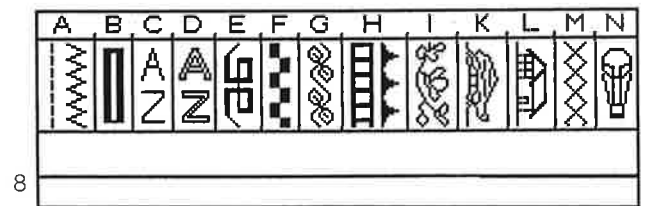
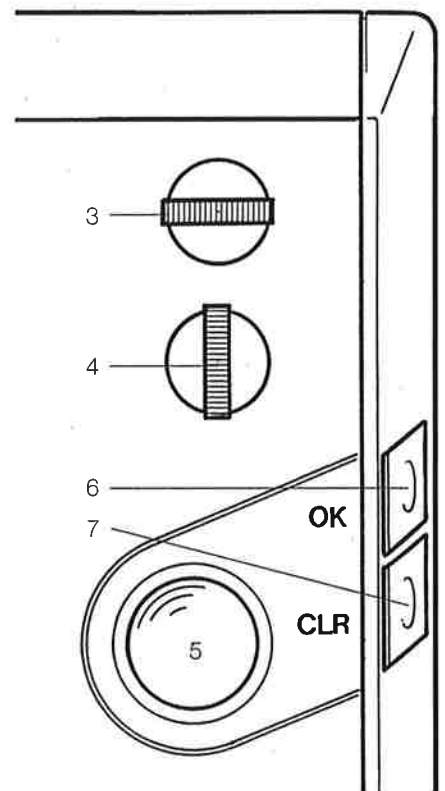
BERNINA® 1530

Inspiration

Control panel



- 1 Menu
 - 2 Cursor
 - 3 Stitch width dial
 - 4 Stitch length dial
 - 5 Tracking ball
 - 6 OK button
 - 7 CLR (clear) button
 - 8 Menu with alphabetic sections
 - 9 Back to menu
 - 10 Sewing speed
 - 11 Needle stop up/down
 - 12 Reverse sewing
 - 13 Long stitch
 - 14 Basting stitch
 - 15 Pattern begin
 - 16 1/2 pattern length
 - 17 Pattern end
 - 18 Securing button
 - 19 Presser foot indicator
 - 20 Memory
 - 21 Save/Leave Memory
 - 22 Memory subdivision
 - 23 Mirror image right - left
 - 24 Mirror image vertical
 - 25 Pattern extension
 - 26 Double needle limitation
 - 27 Balance -
 - 28 Balance +
 - 29 Stitch width indication
 - 30 Stitch length indication
 - 31 Needle positions
 - 32 Next screen
 - 33 Previous screen
 - 34 Programme screen
- 9-28 Functions



Details of the machine

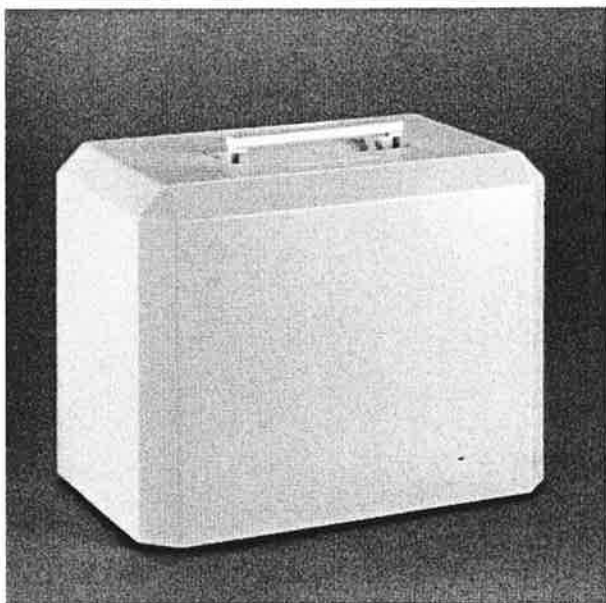
- 1 Bobbin cover
- 2 Stitch plate
- 3 Presser foot
- 4 Needle clamp
- 5 Darning hoop fixation hole
- 6 Attachment base
- 7 Thread cutter
- 8 Thread regulator
- 9 Securing button
- 10 Thread take-up
- 11 Pre-tension stud
- 12 Tension regulator
- 13 Bobbin winder (with On/Off switch)
- 14 Spool holder
- 15 Screen
- 16 Stitch width adjustment dial
- 17 Stitch length adjustment dial
- 18 Tracking ball
- 19 Screen contrast
- 20 Handwheel
- 21 OK button
- 22 CLR button
- 23 Main switch
- 24 Feed dog button
- 25 Foot control socket
- 26 Quick needle threader
- 27 Mains plug
- 28 Presser foot lifter socket
- 29 Carrying handle
- 30 Supplementary thread guide
- 31 Light switch (back of machine)
- 32 ??Nähfuss-Lifterhebel??
- 33 Retractable cable button
- 34 Sewing table fixation socket





Setting up the machine

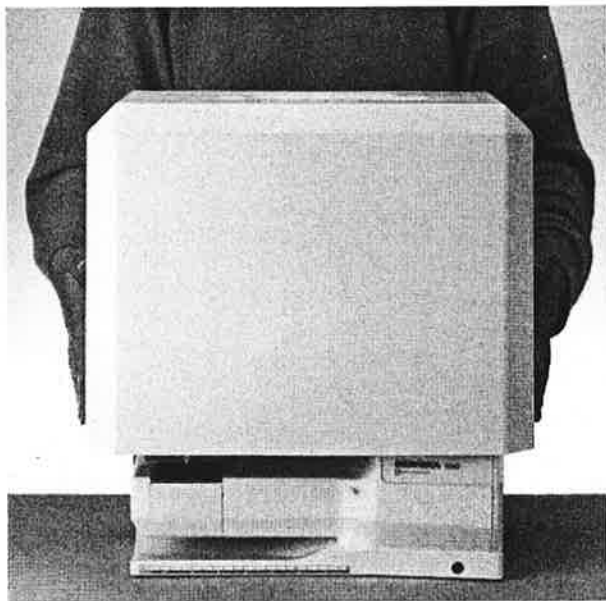
Carrying case



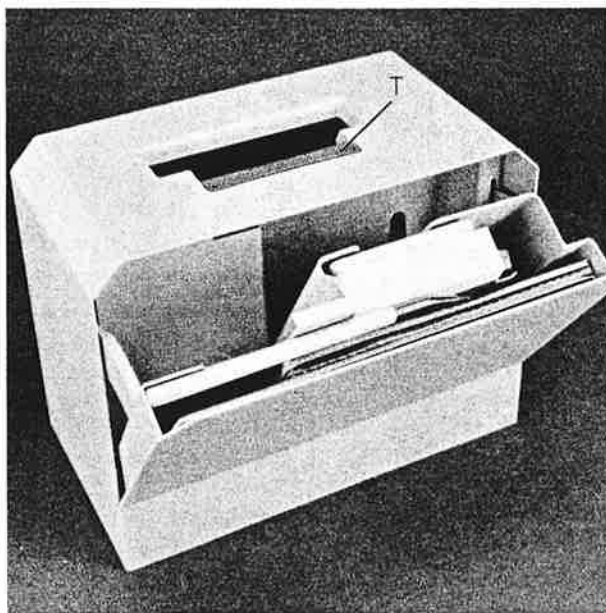
Carrying case, accessories

The carrying case protects the machine from dust and dirt.

Always carry the machine by its handle.

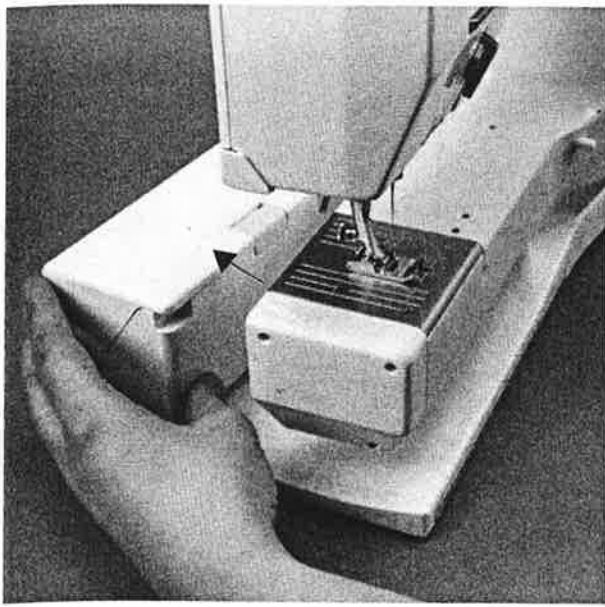


Hold the carrying case with both hands to the sides and lift it straight upwards.



The case has a built-in accessory compartment. Press the regulating bar «T» to swing out the compartment which has space to stow the foot control unit, the presser foot lifter, the sewing table and Bernina instruction book.

Accessory box

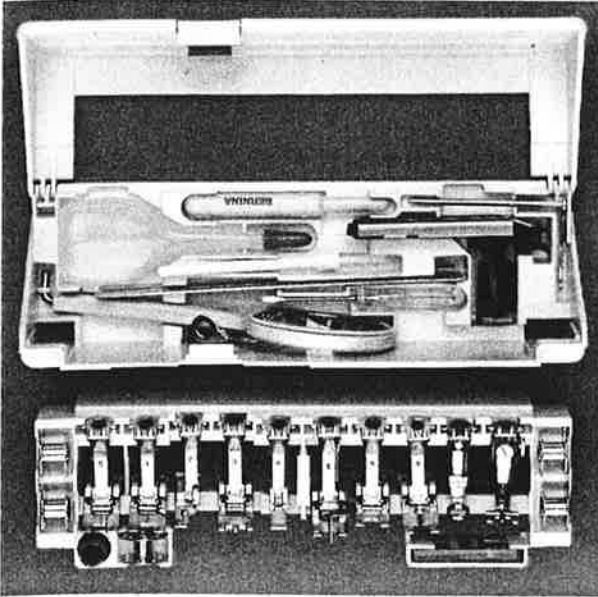


Removing the accessory box

Simply push the box backwards.

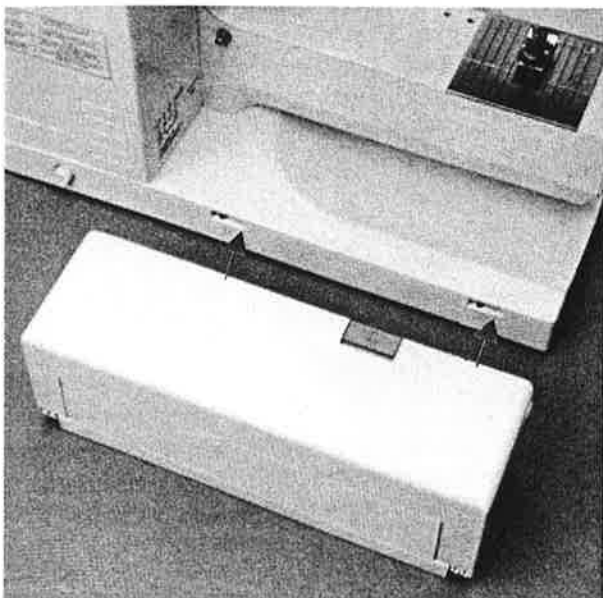
Bernina 1530 Standard Accessories

6 bobbins
130/705H needle assortment
Ruler/template
Seam ripper
Darning ring with arm
Needle threader
Small screwdriver
Special screwdriver
Cleaning brush
Oiler
Seam/quilting guide
Zig-zag presser foot
Reverse pattern foot
Overlock foot
Buttonhole foot
Automatic buttonhole foot
Zip foot
Blind stitch foot
Embroidery foot
Jeans foot
Darning foot
Button sewing-on foot



Accessory box

Accessories are neatly arranged and easy to remove.

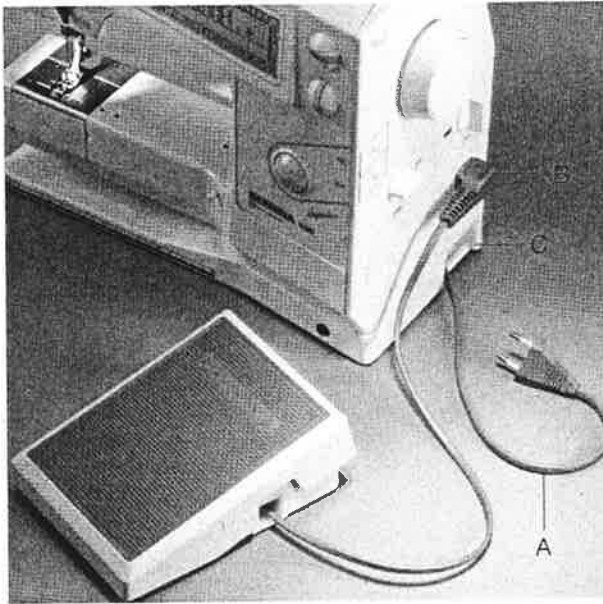


Replacing the accessory box

The box has two fixing lugs that fit into the base plate of the machine.

Lay the box onto the base plate from the back and press against the free arm until the fixing lugs engage into the holes provided.

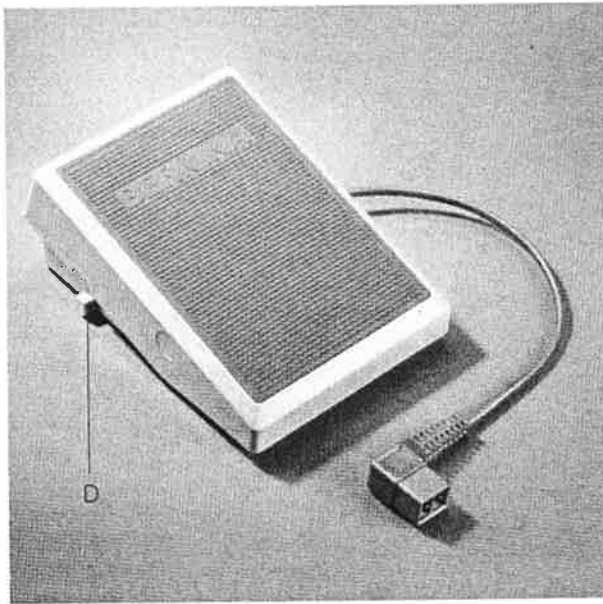
Mains cable, foot control, sewing light, power switch, needle stop



Connecting the mains cable and foot control

Pull the mains cable (A) out from the machine and plug into the power socket. Pull the cable from the foot control and insert the plug into the socket (B).

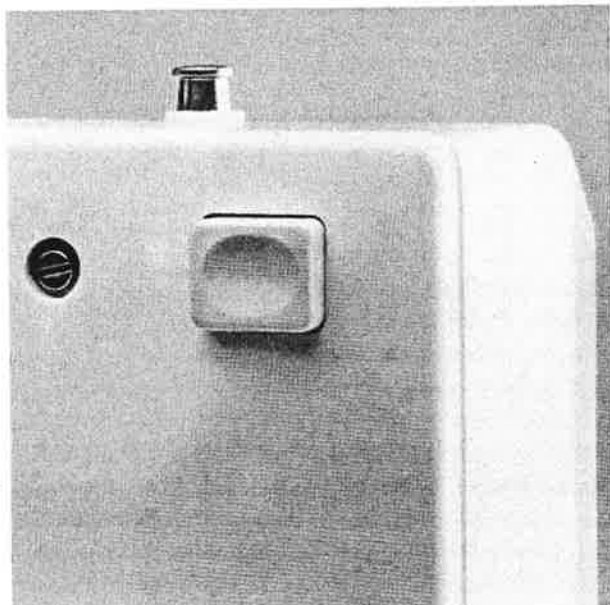
Press button (C) to rewind the cable.



Foot control

The foot control is used to regulate the sewing speed. It is fitted with a retractable cable. Press knob (D) to rewind the cable.

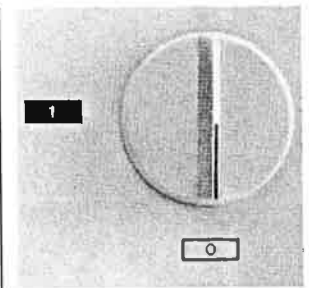
The sewing speed can be controlled from virtually 0 to maximum speed by varying the pressure on the plate of the control.



Sewing light

The sewing light is switched on and off by means of the switch on the rear of the machine.

When the power switch is in the 0 position, the sewing light is also off.



Power switch

The power switch is the rear knob on the hand-wheel side of the machine.

0 The machine is switched off.

1 The machine is switched on.

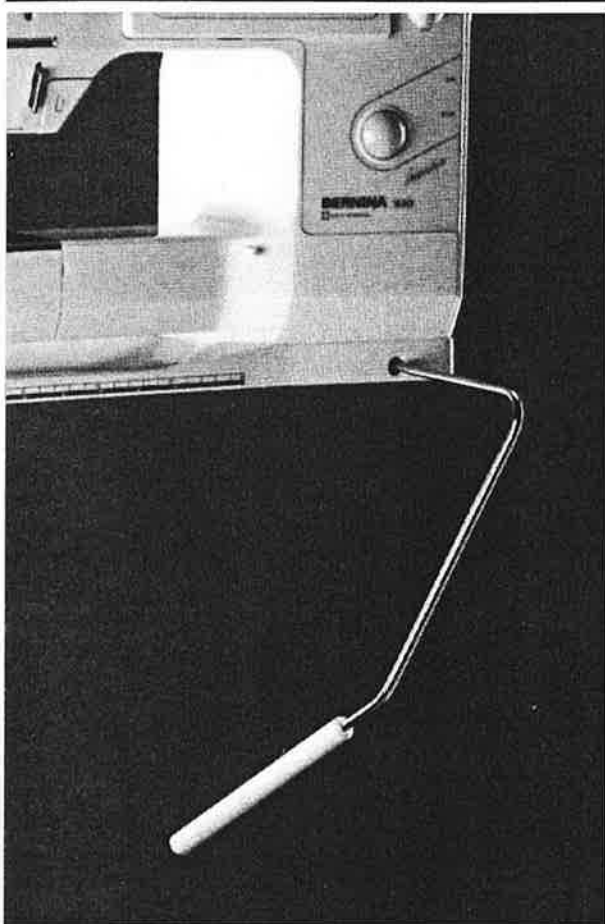
Electronic needle stop and foot control

When you stop sewing the electronic system returns the needle to its highest or lowest position. By gently tapping the back of the foot control with your heel, the needle can be moved electronically down into the work or respectively up out of the work.

Motor

The DC motor and electronic speed control give exceptionally good needle penetration power, even when sewing at slow speeds.

Presser foot lifter, sewing table



Raise the presser foot Lower the feed dog

Many sewing operations are much simpler if both hands are free to guide the work.

The presser foot lifter is operated with the right knee and is used to raise and lower the presser foot, leaving both hands free.

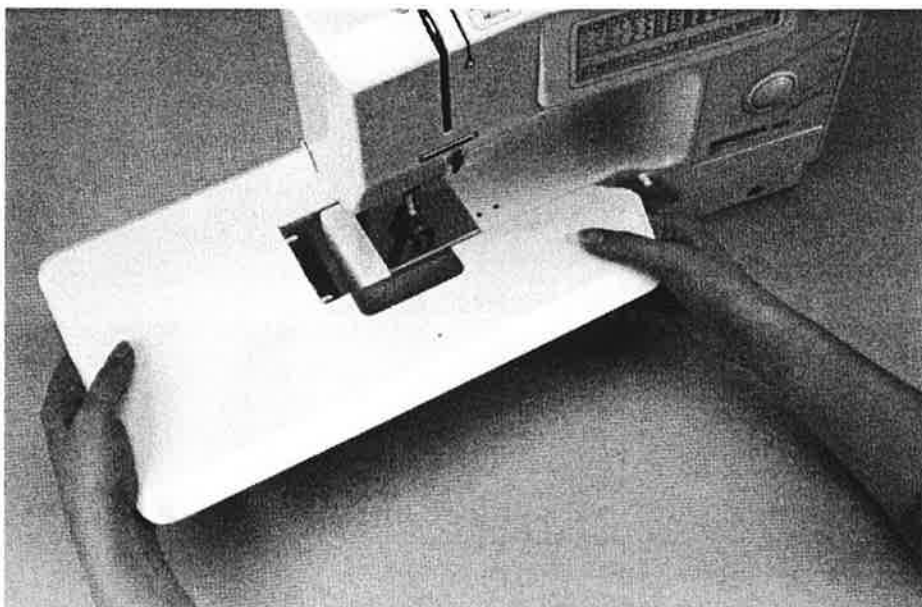
When the presser foot lifter is moved to the right, the presser foot is raised and the feed dog is lowered simultaneously.

The next stitch returns the feed-dog to the sewing position.

Attaching the presser foot lifter

The presser foot lifter is stored in the carrying case. The presser foot lifter socket is located on the front right hand side of the base plate. Insert the presser foot lifter so that it hangs to the left.

It should be possible to operate the presser foot lifter comfortably with the right knee without the need to alter your customary sitting position. If the angle is uncomfortable, it can be adjusted. Your Bernina dealer will be happy to make this adjustment for you.



Sewing table

The sewing table is used to enlarge the working surface. It simplifies all sewing where the free arm is not required.

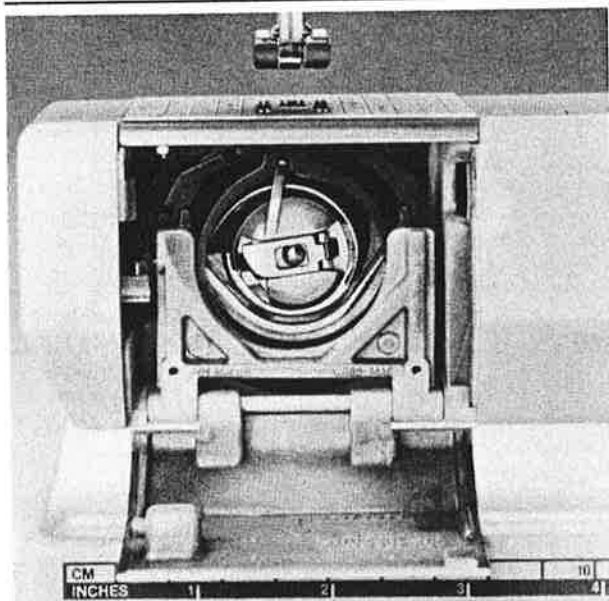
Fitting the sewing table

Slide the table along the free arm until the centering pins engage in the holes provided. Press firmly from the left to lock the sewing table in position.

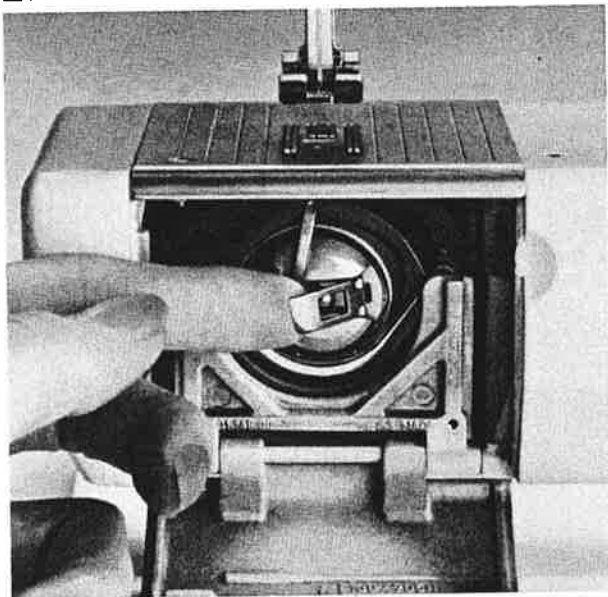
Removing the sewing table

Push firmly to the left (away from the machine) to release the sewing table.

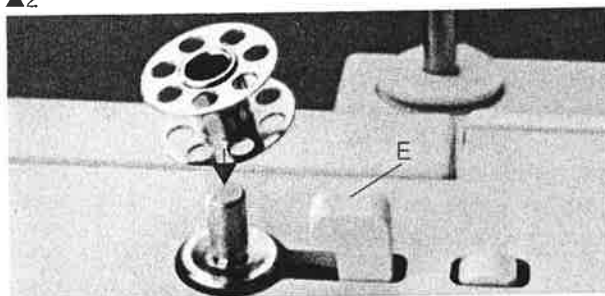
Bobbin case and bobbin, winding the lower thread



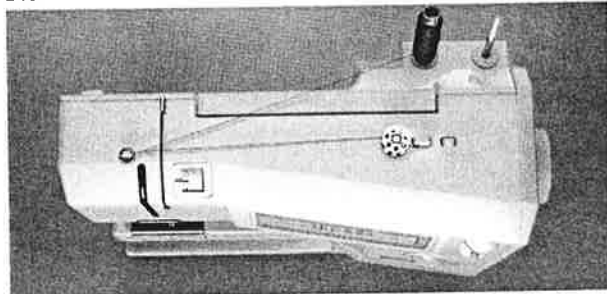
▲1



▲2



▲3



Removing the bobbin case

Set the power switch to the **0** position. Raise the needle fully with the handwheel. Open the hinged front cover on the free arm (Fig. 1).

With the index finger of the left hand, pull the bobbin case latch forward (Fig. 2) and remove the bobbin case.

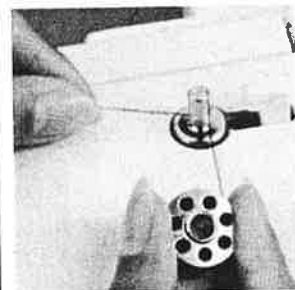
Winding the lower thread

Place empty bobbin on spindle (fig. 3). Take thread from the cotton reel on the thread holder pin, pass thread clockwise around the pretension stud to the empty bobbin (fig. 4). Wind round the empty bobbin several times in a clockwise direction. Set the power switch to the **1** position and press the engaging lever E against the bobbin.

Start the bobbin winder motor with the foot control. The speed of the bobbin winder can be regulated by increasing or decreasing the pressure on the foot control.

WARNING:

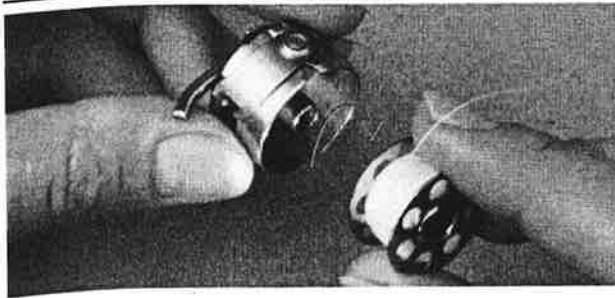
Please refer to the safety instructions.



▲5

When removing the bobbin, cut the thread by pulling it under and up against the thread cutter at the base of the spindle (fig. 5).

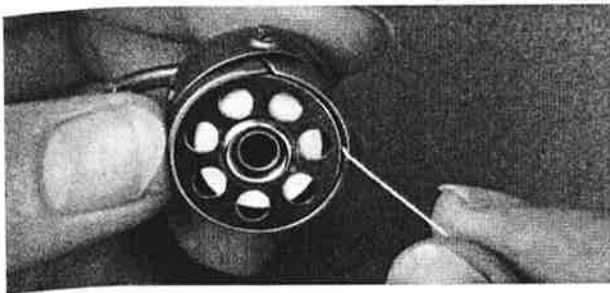
Inserting the bobbin



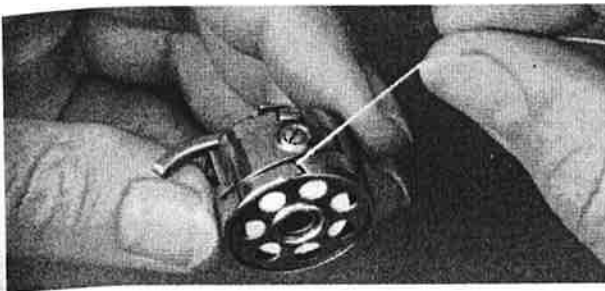
Inserting the bobbin

Hold the bobbin case in the left hand.

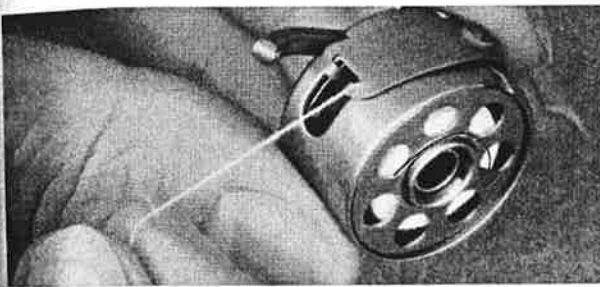
Insert the bobbin with the thread running in a clockwise direction (see arrow).



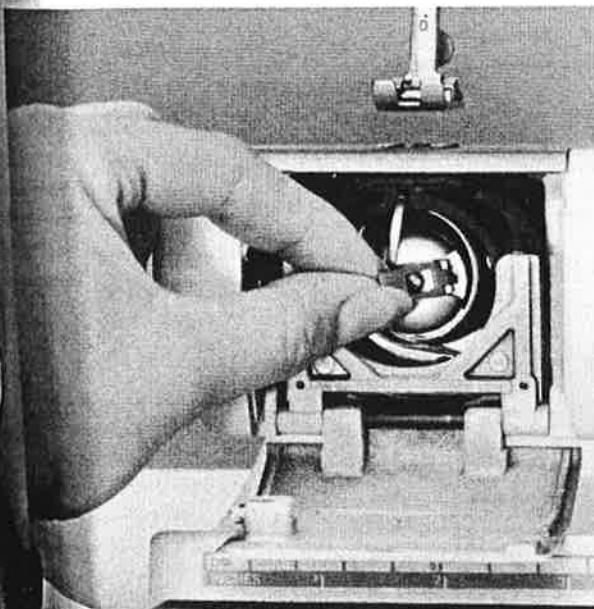
Bring thread anticlockwise into the slot.



Pull the thread into the slot and



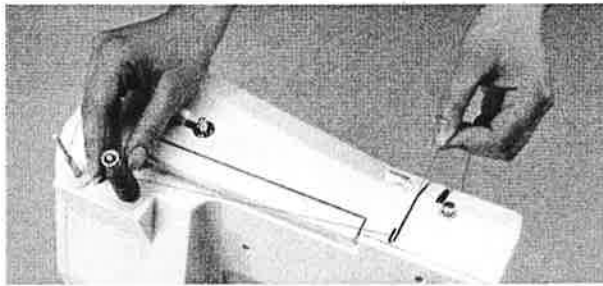
under the spring until it lies in the T-shaped slot at the end of the spring. When the end of the thread is pulled, the bobbin should turn clockwise in the direction of the arrow.



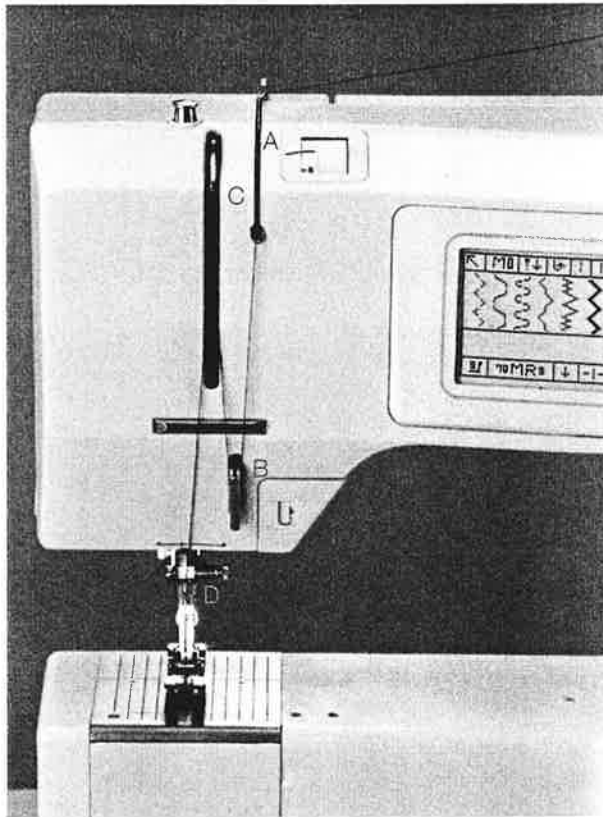
Inserting the bobbin case into the hook

Hold the bobbin case by the latch with the index finger and thumb of the left hand. Insert so that the finger of the bobbin case points upwards, engaging in the notch of the hook race cover. Check: pull end of thread.

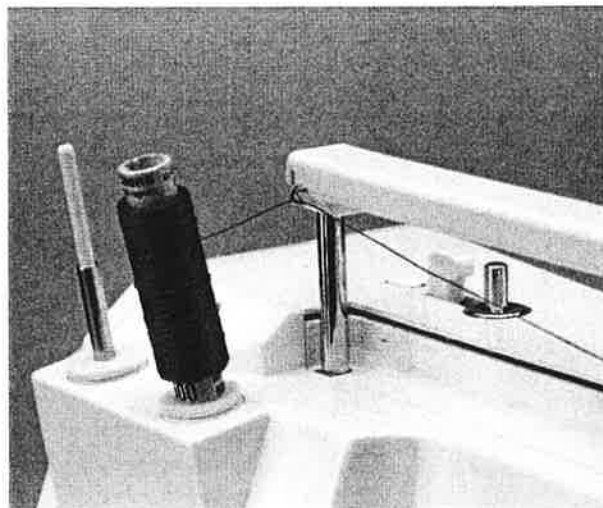
Close the hinged front cover.



▲1



▲2



▲3

Threading the upper thread

Turn the power switch to **0**. Check that the needle is in the raised position. Raise the presser foot. Place thread spool on one of the spool holders and hold in position while threading.

Slip the thread into the first guide on the back of the machine and then take it through the long slit on the thread tension (Fig. 1).

On the front of the machine, take the thread down through the long slot A, slip it into the thread regulator B, up into the slit of the thread take-up C and down again to the thread guide D on the needle clamp (Fig. 2).

Thread the needle from front to back.

The eye of the needle is easy to see against the white plate on the presser foot shaft. Pull the thread approx. 10 cms (4") to the back of the needle.

When using special threads, e.g. metal or embroidery threads, etc. which wind quickly off the spool, thread the supplementary guide on the handle to control the thread feed.

When using the supplementary guide, take the thread directly from the spool to the guide and raise the carrying handle (Fig. 3). Continue threading as described above.

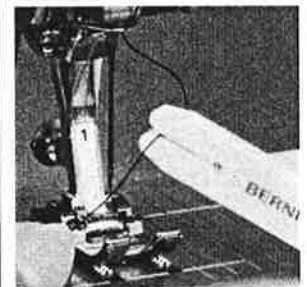
Quick needle threader

The needle threader is positioned on the right of the machine under the handwheel.

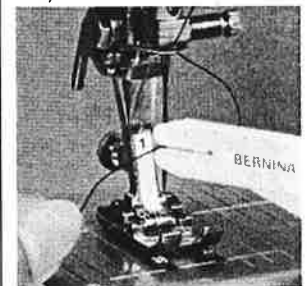
a) Lay the thread lightly across the threader.

b) Position the threader to the top of the needle, press very gently and run the threader down the needle.

c) When it reaches the needle eye, the threader will pass the thread through the eye of the needle. Carefully remove the threader.



▲a)



▲b)

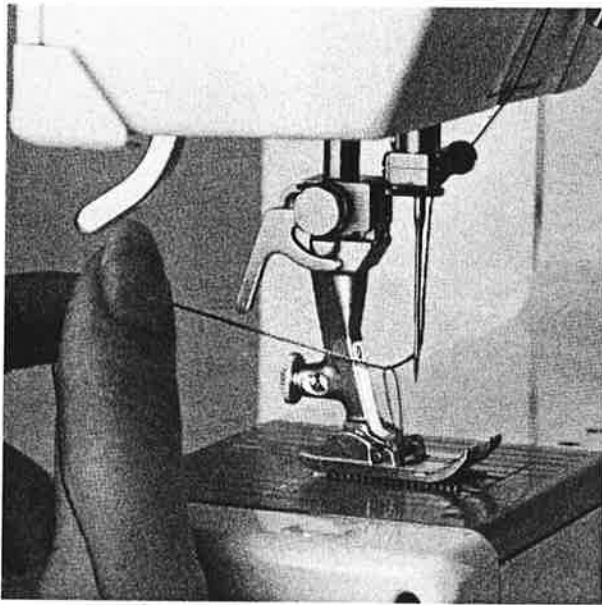


▼c)

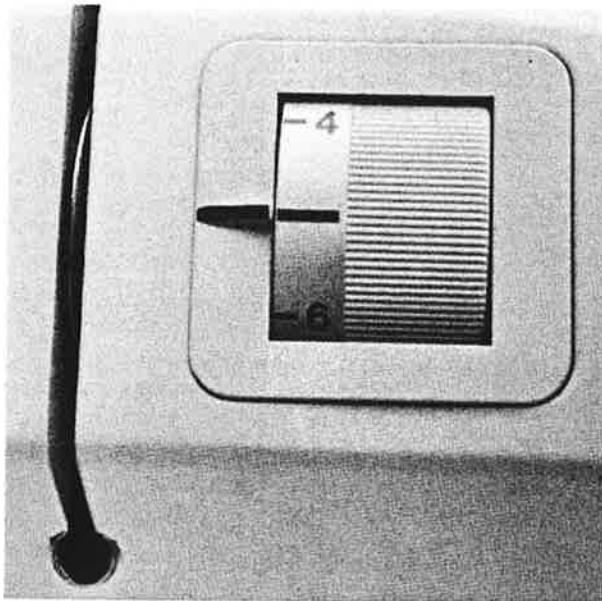
WARNING:

Please refer to the safety instructions.

Bringing up the lower thread, thread tension, feed-dog, thread cutter

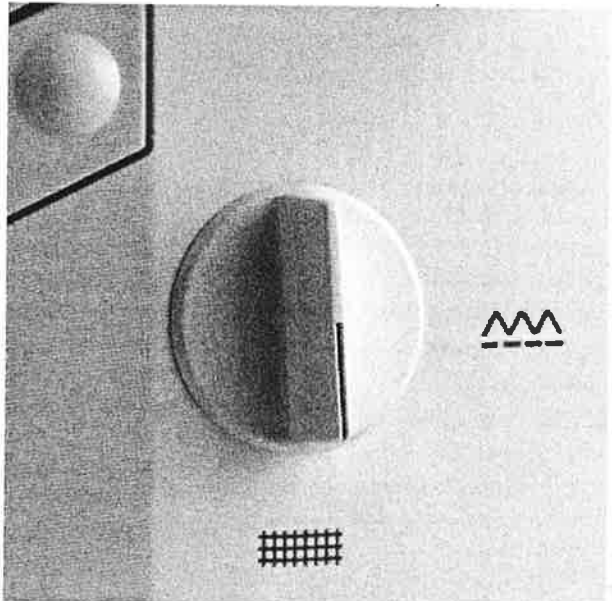


▲1



▲2

▼3



Bringing up the lower thread

Set the power switch to **1**.

Hold the end of the upper thread with the right hand. Sew a single stitch by tapping once on the foot control. The needle stop will insure that the needle returns to its highest position. Pull the upper thread so that the lower thread is brought up through the hole in the stitch plate (fig. 1).

Take both threads through the slot in the presser foot and place to the side.

Instead of using the needle stop, the lower thread can be brought up by turning the handwheel forwards until the needle is in its highest position.

Thread tension

One of the biggest advantages of Bernina sewing machines is that there is very rarely any need to alter the thread tension for normal sewing.

For normal tension, the red mark on the tension regulating dial should be in line with the mark to the left of the dial (fig. 2).

For special sewing, e.g. tailor tacks, the thread tension can be adjusted by turning the dial.

Turn forwards to a lower number to loosen the upper tension.

Turn backwards to a higher number for a tighter upper tension.

Important:

Return the tension to the normal setting when special sewing has been completed.

Lowering the feed-dog

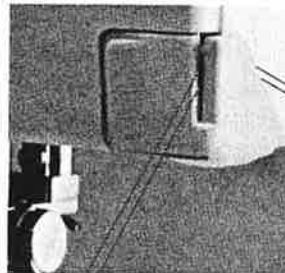
For certain types of sewing, e.g. darning, the fabric must not be moved by the feed-dog.

To lower the feed-dog, turn the knob on the handwheel side of the machine to the right until it points to symbol **■ ■ ■ ■** (fig. 3).

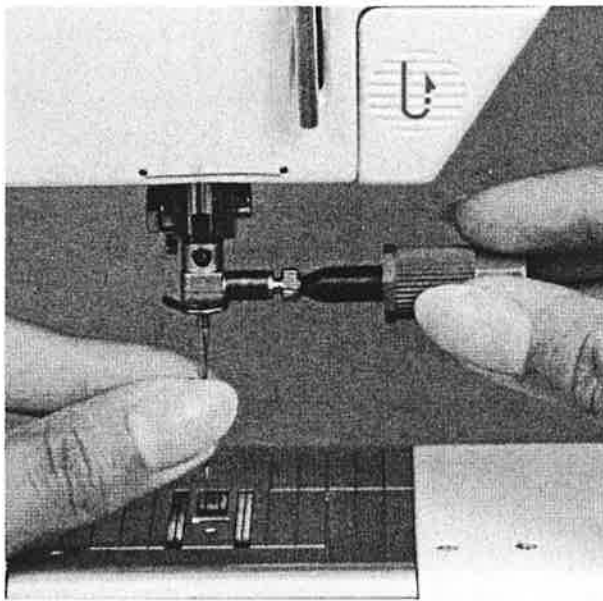
For normal sewing, turn the knob to the symbol **〰〰〰**. The feed-dog will return to the sewing position with the first stitch.

Thread cutter

To remove the work, raise the presser foot, take work out to the rear left and hook both threads into the cutter. The thread ends free themselves when you start sewing again.



Inserting the needle, changing presser feet



▲1

Inserting the needle

Use the special screwdriver provided in the accessory box to loosen or tighten the needle clamp.

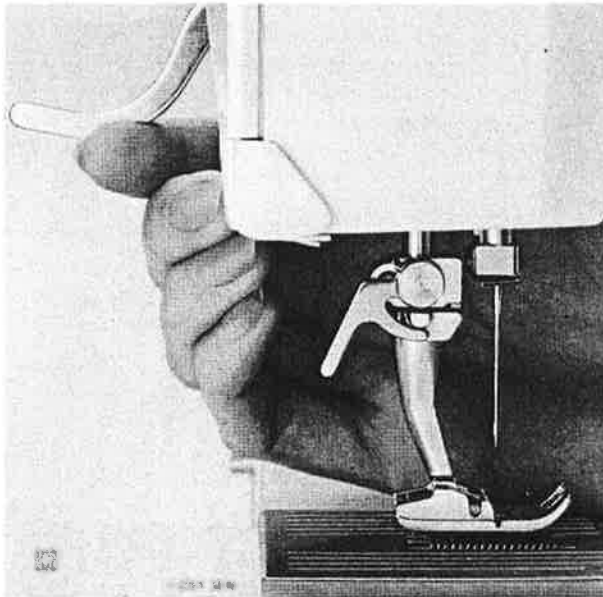
Set the power switch to the **0** position. Check that the needle is raised. Lower the presser foot.

To loosen the needle clamp, make a half-turn forwards (fig. 1).

To insert the needle: The flat side of the needle should always be to the back. Insert the needle until it reaches the top of the clamp. If the needle is not fully inserted, faulty stitches will occur. Tighten the needle clamp securely.

WARNING:

Please refer to the safety instructions.



▲2

Changing presser feet

See page 15 for the various presser feet and their uses.

Successful sewing depends on the correct choice of presser foot. The feet are very easy to change.

Set the power switch to the **0** position.

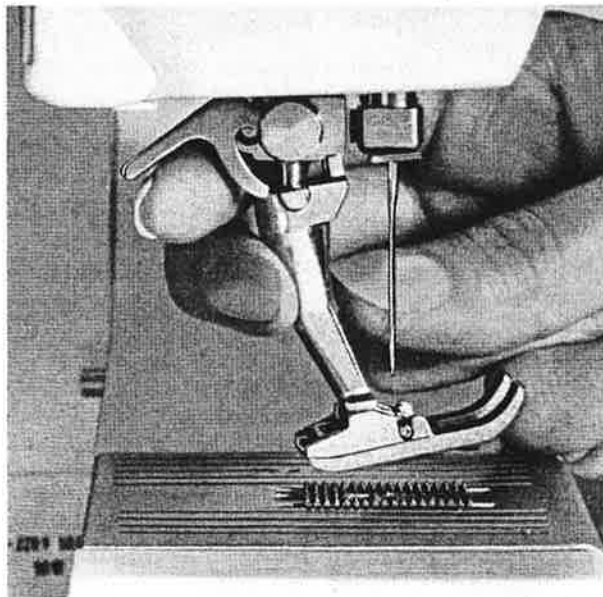
Check that the needle is raised.

Raise the presser foot (fig. 2).

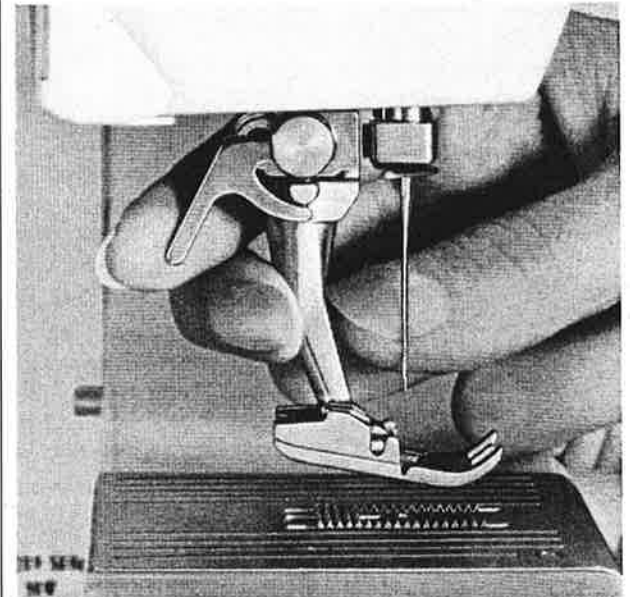
Raise the clamping lever with the index finger of the right hand and using the middle finger and the thumb, remove the presser foot (fig. 3).

To attach the presser foot, the procedure is the same but press the clamping lever downwards with the index finger (fig. 4).


Set the power switch to the **1** position.



▼3



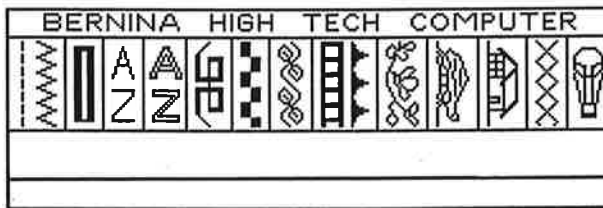
▼4



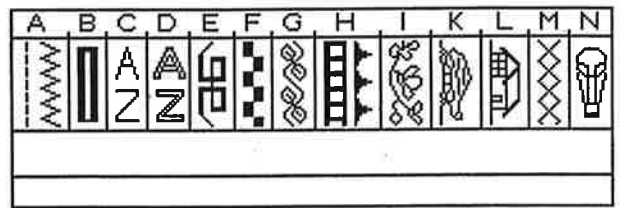
Stitch pattern groups
Presser feet
Practical stitches
Buttonholes

Stitch pattern groups

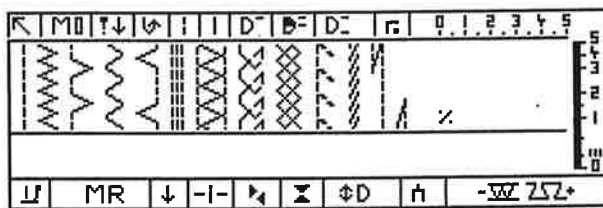
Menu



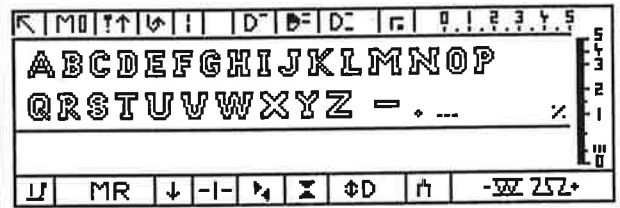
Menu with codes



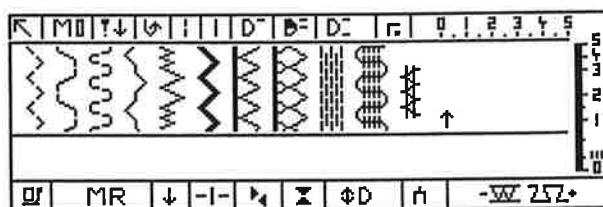
A1 Practical stitches



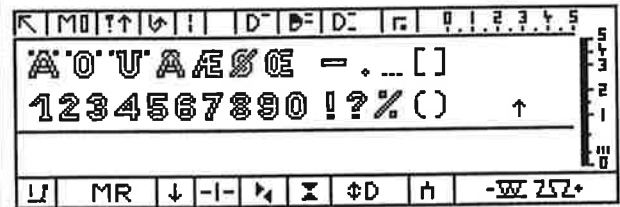
D1 Alphabet - double



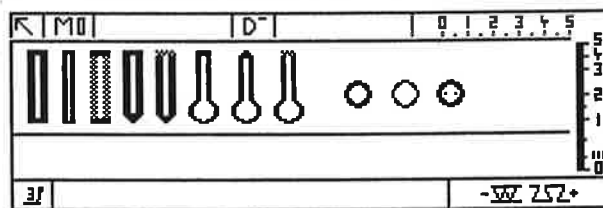
A2 Practical stitches



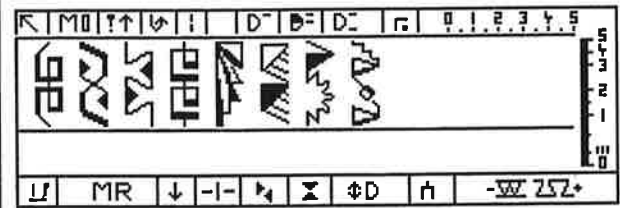
D2 Alphabet - double



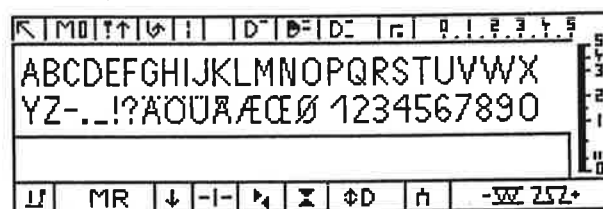
B1 Buttonholes / Eyelets / Sewing on buttons



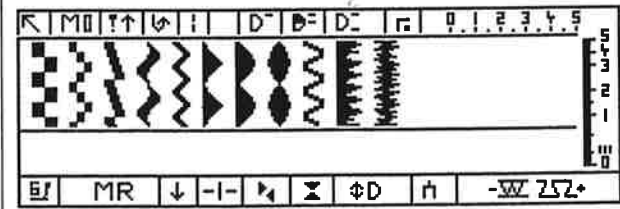
E1 Geometric patterns



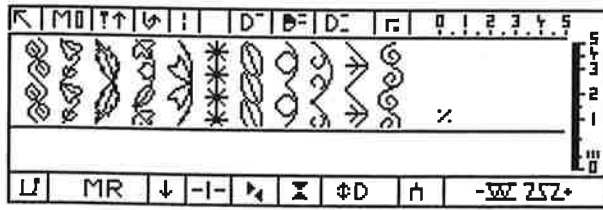
C1 Alphabet - simple



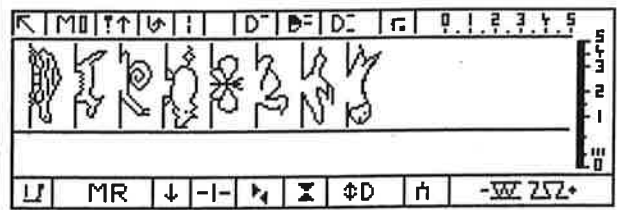
F1 Compact stitches



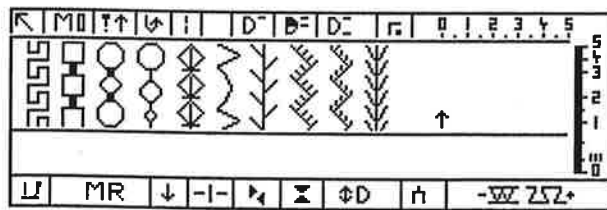
G1 Pearl stitches



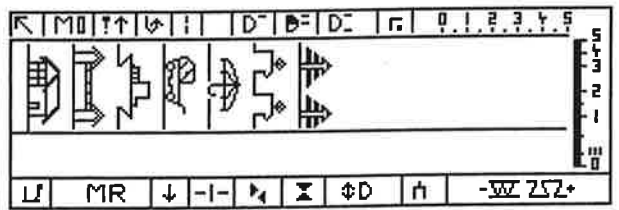
K1 Animals



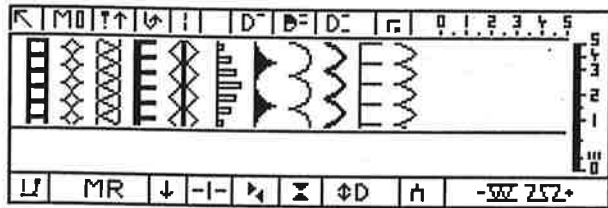
G2 Pearl stitches / Feather stitches



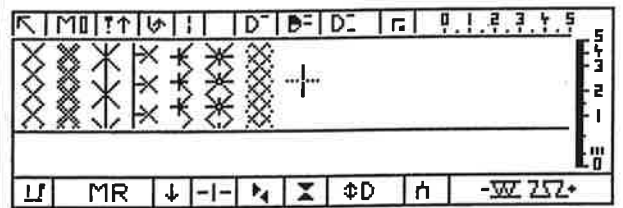
L1 Objects



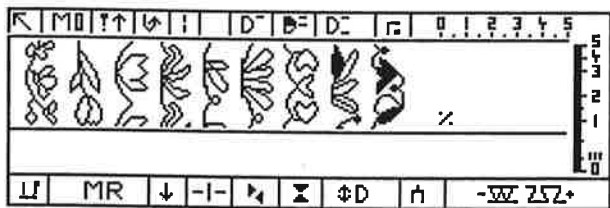
H1 Hem stitches / Edging stitches



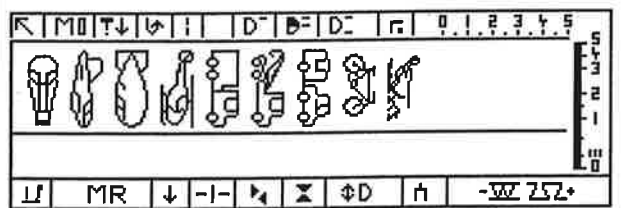
M1 Cross stitches



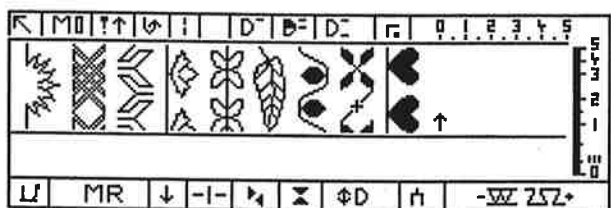
I1 Floral stitches



N1 Vehicles



I2 Floral stitches

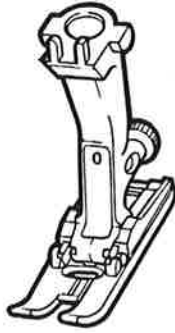


Presser feet

Presser feet are important sewing aids and are made with special grooves and guides to suit particular tasks. The success of a sewing project depends on the correct choice of presser foot.

Most of our presser feet are multi-purpose and can be used for several sewing tasks to produce successful results.

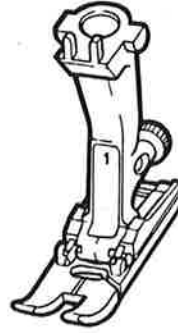
0



Zig-zag foot

Straight stitch
Zig-zag
Practical stitches

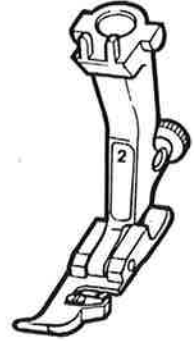
1



Reverse pattern foot

Practical stitches
Embroidery stitches

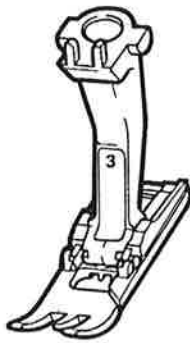
2



Overlock foot

Vari-overlock
Double overlock
Oversewing edges

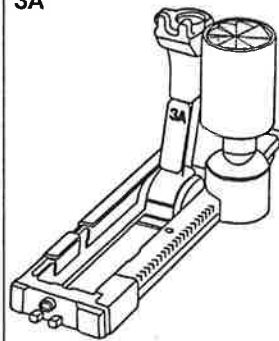
3



Buttonhole foot

Buttonholes

3A



Automatic buttonhole foot

Buttonholes
Darning programme

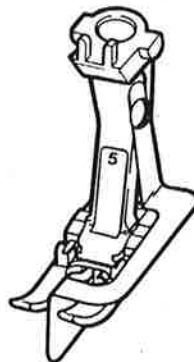
4



Zip foot

Sewing in zips
Top stitching
Raised seams

5



Blind Stitch foot

Blind hemming
Edge stitching

6



Embroidery foot

Embroidery stitches
Satin stitch
Appliqué
Sewing over perle yarn

8



Jeans foot

Straight stitch in thick, hard fabrics and over several thicknesses

9



Darning foot

Darning
Quilting
Freehand monograms
Freehand embroidery

18







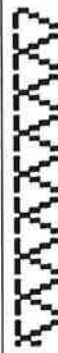

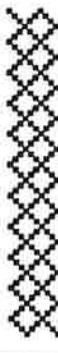

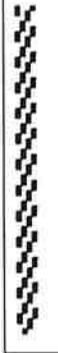







Button sewing-on foot

Sewing on buttons





Practical stitches

Practical stitches









<p>A1/1 Straight stitch</p>  <p>All non-stretch fabrics. All straight stitch work.</p>	<p>A1/2 Zig-zag</p>  <p>Most fabric types. All simple zig-zag such as oversewing fine fabrics. Sewing on elastic and lace.</p>	<p>A1/3 Vari-overlock</p>  <p>Primarily for fine synthetic, silk and cotton jerseys. Stretch overlock seams and hems, particularly suitable for sports underwear, pyjamas, T-shirts, sweatshirts, running suits, etc.</p>	<p>A1/4 Running stitch</p>  <p>Most types of fabric. Mending, patching, reinforced seams.</p>
<p>A1/5 Blind stitch</p>  <p>Most types of fabric. Blind hems, shell edging on soft jerseys and fine fabrics, decorative seams.</p>	<p>A1/6 Triple straight stitch</p>  <p>Corduroy, denim, canvas, tough, heavy fabrics. Bags, blankets, sleeping bags. Visible seams and hems. Sewing on tape.</p>	<p>A1/7 Double overlock</p>  <p>All types of knit. Hand or machine knitted fabrics. Overlock = sew and neaten in one operation.</p>	<p>A1/8 Jersey stitch</p>  <p>Natural, blended or synthetic fabrics. Visible seams and hems, particularly for lingerie, sweatshirts and delicate knitted fabrics. Mending jersey/interlock. Sewing on elastic.</p>
<p>A1/9 Honeycomb stitch</p>  <p>Most types of interlock and smooth fabrics. Visible seams and hems in T-shirt, pullovers, lingerie, tablecloths, napkins, crafts.</p>	<p>A1/10 Stretch overlock</p>  <p>Medium weight knits, towelling and firm wovens. Overlock seam, flat joining seam, crafts.</p>	<p>A1/11 Super Stretch</p>  <p>Super stretch stitch for very stretchy fabrics. Ideal for sports and gymwear.</p>	<p>A1/12 Securing stitches</p>  <p>All types of fabric. Secures the beginning and end of seams sewn with straight stitch.</p>
<p>A2/1 Reinforced zig-zag</p>  <p>Most types of fabric. Oversewing loosely woven fabrics, reinforcing edges, mending seams, sewing on elastic, decorative seams.</p>	<p>A2/2 Universal stitch</p>  <p>Firm interlock and knits and fabrics such as felt and leather. Flat joining seams, visible seams, patchwork, mending interlock, sewing on elastic, decorative seams.</p>	<p>A2/3 Lycra stitch</p>  <p>Special stitch for lycra. Flat joining seam and hems. Oversewing seams in underwear.</p>	<p>A2/4 Gathering stitch</p>  <p>Most types of fabric, including leather. Gathering with perle yarn or shirring elastic. Butted seams = butting two pressed edges and sewing together.</p>

Practical stitches / Buttonholes

Practical stitches

<p>A2/5 Stretch stitch</p>  <p>Very stretchy fabrics. Flexible and stretchy seam – ideal for sports-wear.</p>	<p>A2/6 Triple zig-zag</p>  <p>Corduroy, denim, canvas, all thick and firm fabrics. Visible seams and hems. Sewing on tape.</p>	<p>A2/7 Reinforced overlock</p>  <p>Medium weight knits and jerseys, towelling and firm wovens. Overlock seam, flat joining seam, crafts.</p>	<p>A2/8 Knit overlock</p>  <p>All knits, including machine and hand knits. Overlock seam = sewing and neatenng in one operation.</p>
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Buttonholes

<p>B1/1 Standard buttonhole</p>  <p>Fine to medium weight woven fabrics. Blouses, dresses, trousers, bedlinen, etc.</p>	<p>B1/2 Standard buttonhole narrow</p>  <p>Fine to medium weight woven fabrics. Blouses, dresses, trousers, children's and baby clothes.</p>	<p>B1/3 Stretch buttonhole</p>  <p>All stretch and knits – cotton, wool, silk and synthetic fabrics. Blouses, dresses, trousers, bedlinen, etc.</p>	<p>B1/4 Round buttonhole with normal bartack</p>  <p>Medium to heavy weight fabrics. Dresses, jackets, coats, trousers, rainwear etc.</p>
<p>B1/5 Round buttonhole with diagonal bartack</p>  <p>Medium to heavy weight fabrics. Dresses, jackets, coats, trousers, rainwear, etc.</p>	<p>B1/6 Keyhole buttonhole with normal bartack</p>  <p>Heavy weight, non stretch fabrics. Jackets, coats, trousers, leisure wear, etc.</p>	<p>B1/7 Keyhole buttonhole with pointed bartack</p>  <p>Thick, firm non-stretch fabrics. Jackets, coats, trousers, leisure wear etc.</p>	<p>B1/8 Keyhole buttonhole with diagonal bartack</p>  <p>Thick, firm non-stretch fabrics. Jackets, coats, trousers, leisure wear etc.</p>

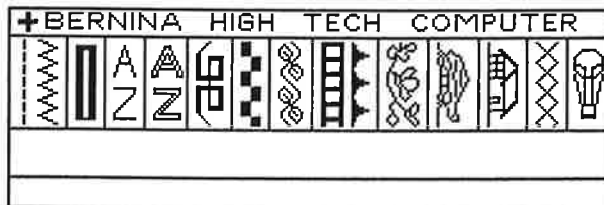
General instructions

Functions

General instructions

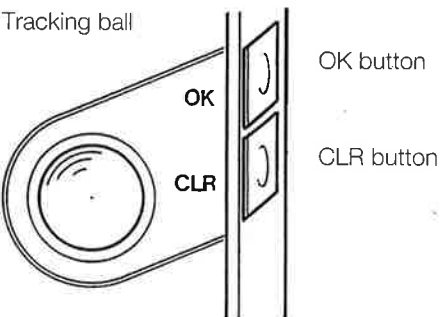
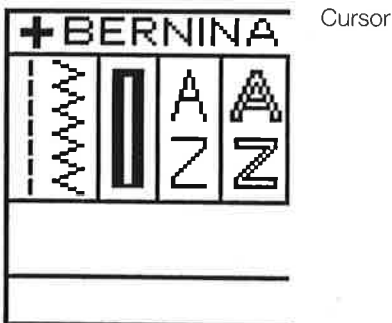
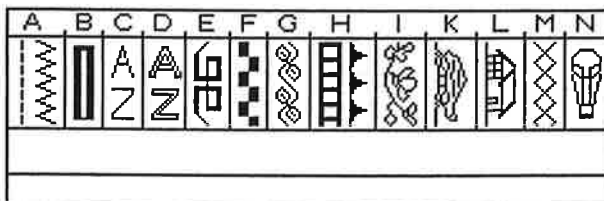
Switch the machine on with the power switch

Fig. 1: Main menu



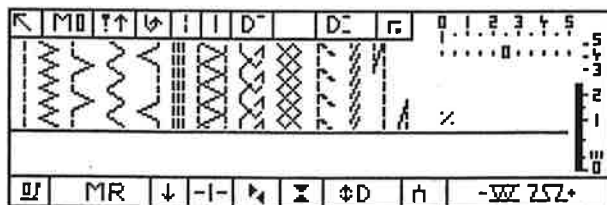
Press the OK button

Fig. 2: Main menu sections with codes



From menu to stitch

The cursor is controlled with the tracking ball. The OK button is pressed to confirm the programme selection. The selected programme appears on the screen with the cursor indicating the first stitch.



It is also possible to go direct to straight stitch after switching on the machine.

Procedure:

1. After switching on, the main menu appears on the screen.
2. Tap the foot control and the Practical Stitch programme (A1) appears automatically with the cursor indicating straight stitch.

Activating a pattern / function

Use the tracking ball to move the cursor to the stitch or function required.

Press the OK button to activate the selected stitch or function. The screen contrast inverts, i.e. the light sections become dark and the dark sections become light.

Numbers in special function programmes

Some special function programmes, e.g. Pattern End, have numbers which appear after activating the programme. The numbers can be selected by pressing the OK button (with the exception of the left number in the memory section - see «memory»).

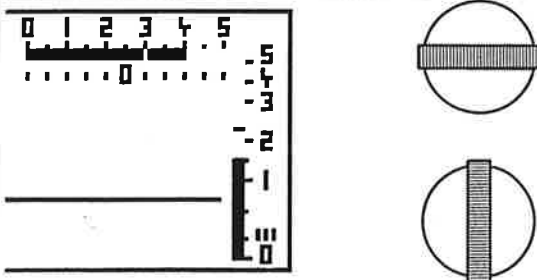
Cancelling a pattern / function

The selection and activation of a new pattern cancels the previously selected pattern.

The functions can be cancelled individually by moving the cursor to the appropriate symbol and pressing the CLR button.

All functions and altered stitch lengths/widths and needle positions can be cancelled by pressing the CLR button twice quickly. (Exceptions: Needle stop, Double needle limitation.)

Stitch width / stitch length



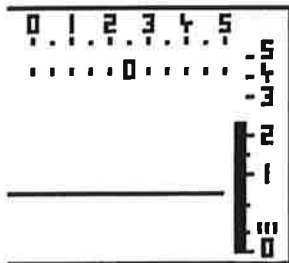
The stitch length and stitch width can be adjusted with the two dials. The basic settings remain visible.

Restoring basic settings:

2 methods

1. After alteration, the basic settings can be reset by turning the dials manually.
2. The basic settings can be restored by pressing the CLR button twice quickly.

Needle positions



11 different needle positions can be selected. To alter the needle position, move the cursor to the position required and press the OK button.

Restoring basic settings

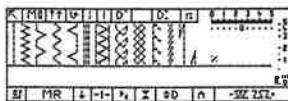
1. To return to the basic position manually, move the cursor to the basic position and press the OK button.
2. To return automatically, Press the CLR button twice. All functions are returned to the basic setting at the same time.

Stitch pattern identification

Patterns are not named on the screen. Each pattern is identified with a letter and two numbers.

Example: Pattern A1/4

A 1 4
Programme Group Pattern



The letter indicates the pattern programme shown in the menu, e.g. A, B, C, etc.
The first number indicates the group in which the pattern is listed, e.g. 1 or 2
The second number indicates the actual stitch pattern in the group. The patterns are numbered from left to right, e.g. no. 4 pattern (Running stitch).
To select the second group in a programme, select the first group, e.g. A1. Then select the second group by moving the cursor to the appropriate symbol.

Programming / editing

Detailed instructions for programming and editing can be found in the section «Memory» on pages 52-55.

Screen lighting / stand by

The screen is equipped with background lighting to ensure that all the information is easily visible. If no manipulations are made for a period of 3 minutes while the machine is switched on, the background lighting turns off automatically and the screen becomes darker. The information on the screen remains visible and the selected patterns or programmes are not affected.

Restoring the lighting

The background lighting is automatically restored as soon as any manipulation on the machine takes place, e.g. turning the tracking ball or pressing any of the controls (OK or CLR buttons, stitch length or width dials), pressing the foot control or pressing the securing button.

Screen contrast setting

The contrast can be adjusted with the dial positioned above the handwheel (see No. 19 in Details of the Machine).

Functions

The functions are displayed in the top and bottom sections of the screen.

Selecting / activating the functions

Functions are selected by moving the cursor to the appropriate symbol and activated by pressing the OK button.

As soon as the cursor is on a function symbol, it changes from a cross cursor to a marking cursor, covering the whole function section. It returns to a cross cursor as soon as it leaves the functions.

To select an individually numbered function within a group of functions, press the OK button until reaching the number desired, e.g. Pattern End, Memory, Pattern Extension, etc.

Cancelling functions

Individual functions:

Move the cursor to the appropriate symbol and press the CLR button.

All functions – return to basic settings:

Press the CLR button twice. To erase all altered settings including stitch width, length and needle position.

The following functions must be cancelled individually: Needle Stop and Double Needle Limitation.

Functions

A, B, C

Stitch group display

After switching on the machine press the OK button. The stitch programmes (A,B,C..) appear.



Back to Menu

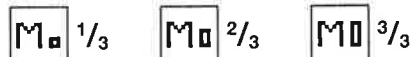
Move the cursor to this function to return to the menu.



Sewing speed

(1/3, 2/3 and 3/3)

The machine sews at the speed selected even when the foot control is fully depressed. The speed selected appears on the screen.



Application: Difficult or intricate work, button-holes, embroidery etc.



Needle stop up/down

The Needle Stop can be altered to generally up or generally down. The arrow next to the needle symbol shows the setting.

Application: Sewing corners, difficult or intricate work, etc.



Reverse sewing

Permanent reverse sewing.

Application: Mending with Running Stitch, inventing new decorative stitches.



Long Stitch

Only every 2nd stitch is sewn (max. stitch length 10 mm).

Application: Top stitching, decorative top stitching and basting fine fabrics.



Automatic Basting

Only every 4th stitch is sewn (max. stitch length 20 mm).

Application: Basting



Pattern Begin

Automatic return to the beginning of a pattern or pattern programme. The inverted display disappears after 2 seconds.

Application: Embroidery



1/2 Pattern

The machine stops automatically at the halfway point of a pattern.

Application: Embroidering corners, combining patterns.



Pattern End 1-9 x

The machine stops automatically at the end of an individual pattern or programmed pattern combination.

Automatic stop at the end of a number of individual patterns or pattern combinations can be selected with the numbers 2-9.

Application: Motif embroidery and repeats.



Securing

Three securing stitches will be sewn automatically at the beginning and end of a single pattern, and at the beginning and end of pattern (combinations) or letters saved in the Memory.

Application: Motif embroidery, individual letters, etc.



Presser foot indicator

The appropriate foot for each stitch selected is displayed.



Memory

When Memory is selected, the free capacity is indicated on the left (max. 70 stitches/functions) and the selected Memory Save Programme (1-9) on the right.

The subsequent save programme is recalled by pressing the OK button and the contents are visible in the programming window.

Application: Programming and combining patterns.

The saved programmes can always be recalled (longterm memory).



Save/Leave Memory

This function saves programmes and switches off the Memory.

In order not to lose saved programmes, it is essential to always leave the Memory with this function!



Memory subdivision

The capacity in each directory can be subdivided into several sequences, allowing efficient use of the 70 possibilities.



Mirror image right - left

The mirror image of the selected stitch will be sewn.

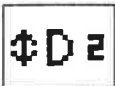
This function can also be programmed. Application: Individual embroidery patterns or programming individual pattern combinations.



Mirror image vertical (sewing direction)

The vertical (sewing direction) mirror image of the selected stitch will be sewn.

This function can also be programmed. Application: Individual embroidery patterns or programming individual pattern combinations.



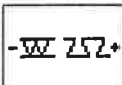
Pattern Extension 2-5 x

Individual stitch patterns or programmed pattern combinations can be lengthened from 2 to 5 times their normal length.
Application: Embroidery of all types.



Double Needle Limitation 2-4 mm

The stitch width is limited. By pressing the OK button, the Double needle width will be indicated (2, 3, or 4 mm) and the stitch width limited accordingly.
To cancel the Double Needle Limitation, press the OK button.
Application: Sewing with Double needles.



Balance - and +

Use to match up forward and reverse sewn stitches and for fine adjustments to the stitch length.
Application: Practical stitches, e.g. Honeycomb stitch in jersey, decorative stitches, fantasy stitches, letters and buttonholes, etc.

The following symbols appear to the right of the last stitch in a stitch group. They indicate that there is more than one group in the same programme, e.g. A1 and A2.



Next group

Press for the next group within a programme.



Previous group

Press for the previous group within a programme.

Additional symbols in some stitch programmes

The following symbols appear when certain stitches are selected.

They remind you about manipulations which must be carried out when sewing certain stitches.



Drop feed dog

The feed dog must be lowered for this work.



Securing button on head frame

This button memorises the length of buttonholes; mending and darning programmes are also saved with this button. The desired length is sewn and then memorised by pressing the Securing Button.



Turn fabric

This symbol appears half way through the last cross stitch in the Cross Stitch programme (M1 8) to remind you to turn the fabric by 90 degrees.



Practical Sewing

Straight stitch, needle positions

Forwards sewing

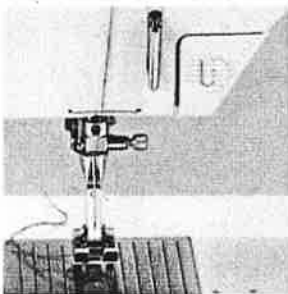
Select Practical Stitch programme A1, Straight stitch is activated (Pattern 1). The basic settings are indicated.

Adjusting the stitch length

Adjust the length to suit the fabric and work with the stitch length dial. The basic setting remains visible. To restore the basic setting, quickly press the CLR button twice.

Securing

(Seam begin/seam end)
There are two methods:



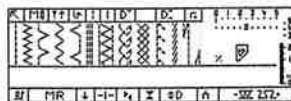
▲1

Securing using the Securing button on the frame head

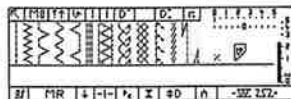
Press the button. The machine sews in reverse until the desired number of stitches have been sewn. Then release the button and the machine sews forwards (Fig. 1).

Securing using Stitch Programme A1/12 (Straight stitch)

When the programme is activated, the machine sews 5 forward and 5 reverse stitches. Then it goes into the forward mode again and the seam can be completed.



This procedure can be reversed by pressing the Securing Button on the head frame. The machine sews 5 reverse, 5 forward stitches and then stops.



Securing Function

When this function is selected, 3 securing stitches will be sewn on the spot at the beginning and end of individual patterns.

If a pattern or letter combination is programmed, the securing stitches are sewn at the beginning and end of the programme.

This securing function is particularly useful for individual embroidery stitches/letters or at the beginning and end of a stitch programme / word.

Needle positions

The needle position is altered with the cursor and the OK button (Page 21).

Examples:

Edge stitching (Page 28).

Sewing in zips (Page 33).

For normal sewing, the needle position is Centre.

Zig-zag/

Practical stitches

Select Zig-zag (A1/2) and activate. The basic width and length settings are indicated.

Adjusting the stitch width

Use the stitch length dial to adjust the width to suit the fabric and work. The width of all stitches can be adjusted while sewing. To restore the basic setting, press the CLR button twice.

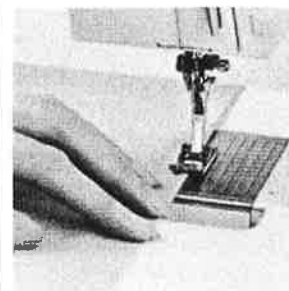
Neatening edges

Needle: 80/70

Thread: Embroidery 60/
darning thread

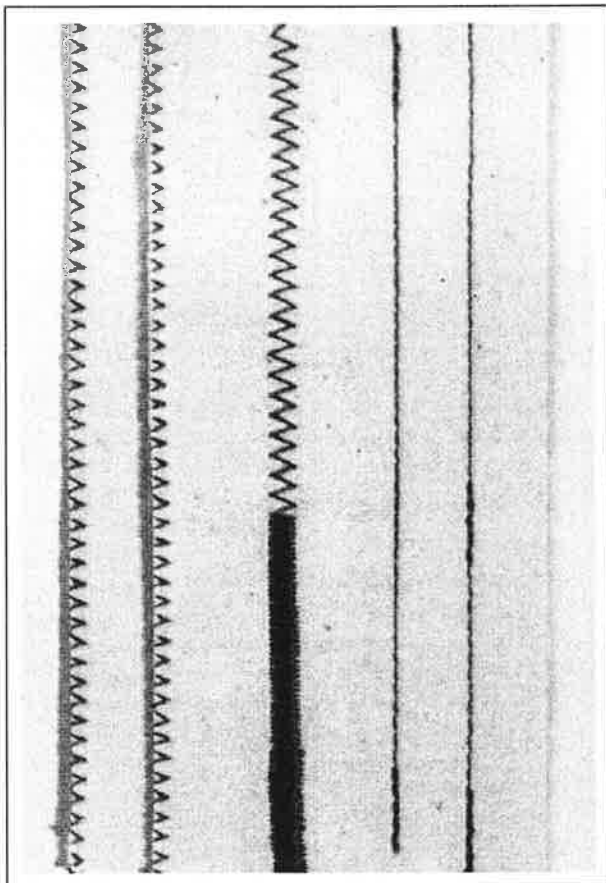
Feed-dog: 

If necessary, adjust the width and length to suit the fabric. In general, the zig-zag should not be too wide or too long. Use as fine a thread as possible, especially on fine fabric. Trim the raw edges. Guide the edge of the fabric to the centre of the foot so that the needle goes into the fabric and then over the edge.



Satin stitch = close zig-zag

Select zig-zag. Adjust width as required and set length to satin stitch. Test sew!



Individual programming, altering basic settings

Individual programming

Individual stitch length and width settings can be saved even if other stitches are sewn in between. This is particularly useful for basic stitches such as straight and zig-zag.

Example

1. Select Zig-zag, adjust width to 4 and length to 1.
2. Select Running stitch (A1/4), adjust width to 4, length to 1.
3. Select Zig-zag and the adjusted settings appear.
4. Select Running stitch and the adjusted settings appear.

The altered settings will be saved. They remain saved until the basic settings are restored or until the machine is switched off.

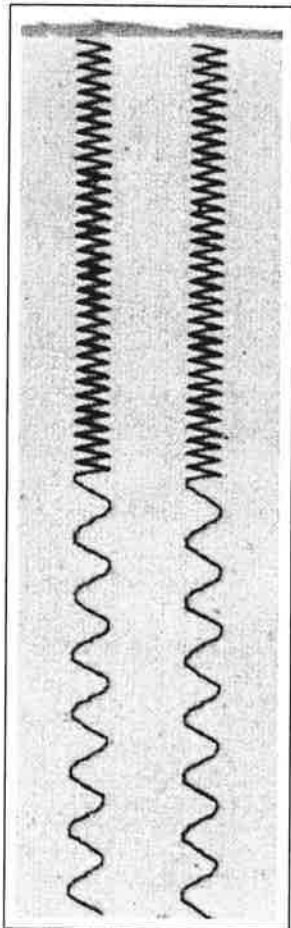
Restoring basic settings

There are two methods:

- Manually.
- Press the CLR button twice. This clears all adjusted settings.

Altering the basic settings

The width and length of all stitches can be altered to suit the fabric and the work.



Edge stitching

Collars, cuffs, lapels, hems, etc.

Edge stitching

Needle: 80

Thread: Sewing thread

Feed-dog: 

● Stitch: A1/1

Straight stitch

Stitch length as required

Needle position:

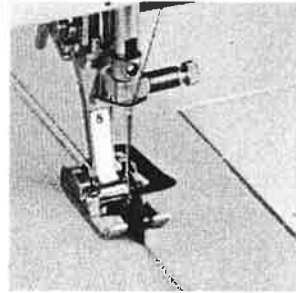
Left for outer edges

Needle position:

Right for turned edges

Presser foot:

Nr. 5 Blind Stitch foot



▲2

Turned edges

From the right, place the turned edge against the guide on the foot and select needle position right (Fig. 2).

Top stitching

For all edges.

Needle: 80

Thread: Sewing thread

Feed-dog: 

● Stitch: A1/1

Straight stitch

Needle position:

all positions

Guide the fabric edge along the presser foot or the markings on the stitch plate. The needle position can be adjusted for sewing intermediate widths.

Widths:
Presser foot
width = 7,5 mm (Fig. 3)

Stitch plate markings:

1st line = 1 cm ($\frac{3}{8}$ ")

2nd line =

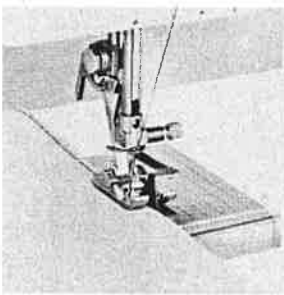
1,5 cm ($\frac{6}{8}$ ") (Fig. 4)

3rd line = 2 cm ($\frac{3}{4}$ ")

4th line =

2,5 cm (1") (Fig. 5)

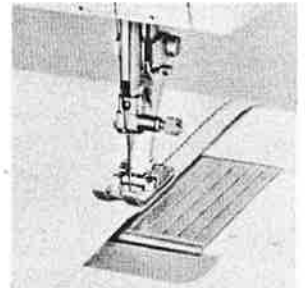
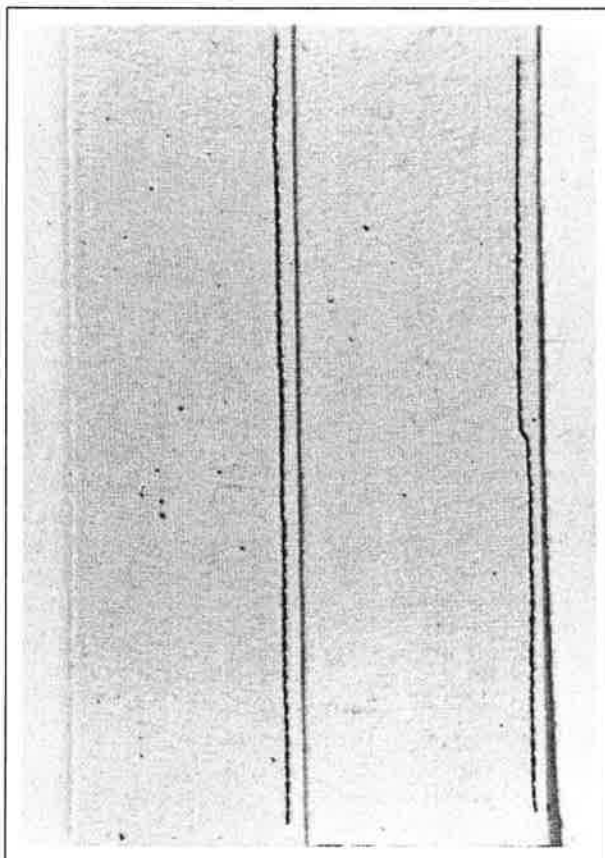
5th line = 3 cm ($1\frac{3}{16}$ ")



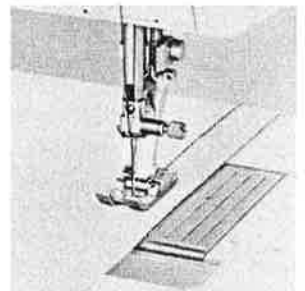
▲1

Outer edges

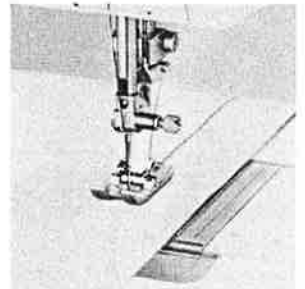
From the left, place the edge of the fabric against the guide on the Blind Stitch foot, set needle position left to the required distance from the edge (Fig. 1).



▲3



▲4



▲5

Practical stitch seams

The choice of seam depends on the item to be sewn, the choice of stitch on the fabric. There are 3 types of seams:

Open seams

Seams which are pressed open. They lie flat and can be let out.
Applications: trousers, skirts, coats, jackets, etc.

Overlock seams

Seams which are sewn and neatened in one operation.
Applications: in knits for pullovers, jackets, jersey blouses, underwear, hand and machine knitted garments.

Flat joining seams

Seams in which the fabric edges are overlapped and oversewn.
Applications: leisure wear, underwear, crafts.

Triple straight stitch

Open seam

Hard wearing seam for firm woven fabrics, e.g. for trousers.

Needle: 80-90

Thread: Sewing thread

Feed-dog: 

● Stitch: A1/6

Triple straight stitch

Zig-zag seams

Open seam

Stretch seams for interlock fabrics in wool, synthetic or blended fibres, and for silk, cotton and wool.

Needle: 80

Thread: Sewing thread

Feed-dog: 

● Stitch: A1/2

Zig-zag

Stitch width: approx. 1

Stitch length: approx. 1½

Stretch seams

Super stretch seams

Open seam

Very stretchy seam for stretch fabrics; ideal for sportswear.

Needle: 80

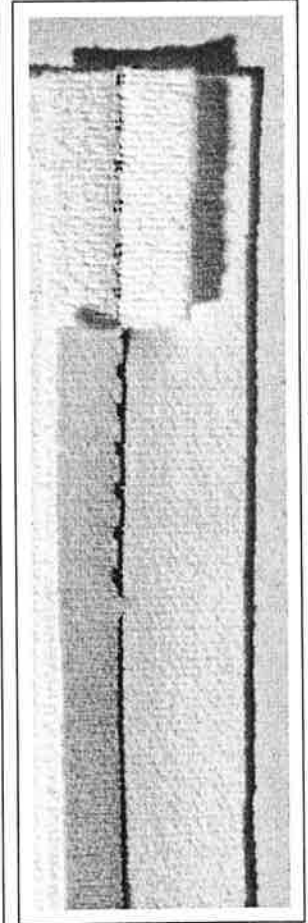
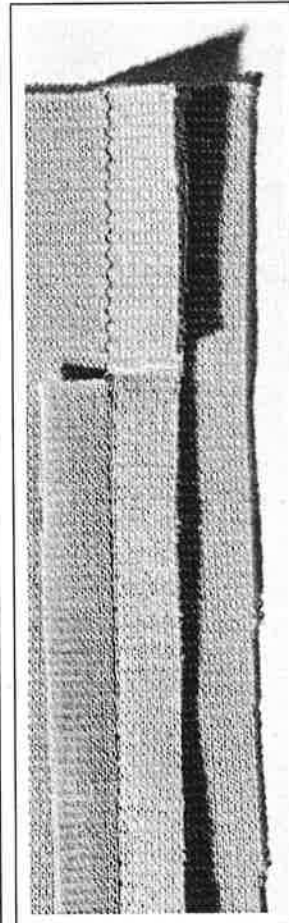
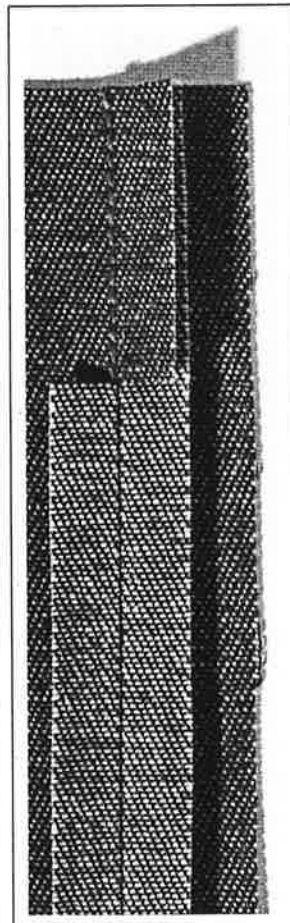
Thread: Sewing thread

Feed-dog: 

● Stitch: A1/11 or A2/5

Super Stretch stitch

Stretch stitch




Practical stitch seams

Vari-overlock seam

Stretch overlock seam for all fine, soft knits, e.g. silk jersey, fine interlock, etc.

Needle: 80-70

Thread: Sewing thread/
darning thread

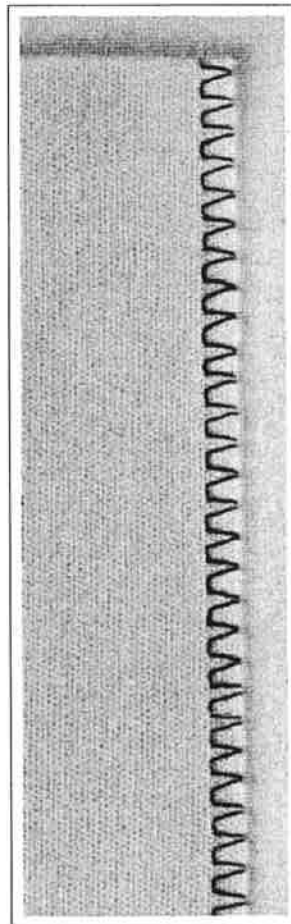
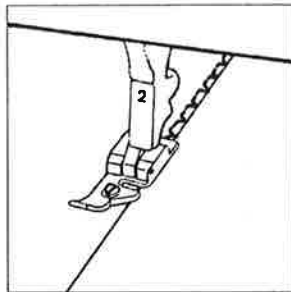
Feed-dog: 

● Stitch: A1/3

Vari-overlock



Position the fabric edge under foot so that the raw edge is in line with the pin on the foot.




Double overlock seam Knit overlock seam

Overlock seam for loosely woven knits.

Needle: 80

Thread: Sewing thread

Feed-dog: 

● Stitch: A1/7 or
A2/8

Double overlock
Knit overlock



Stretch overlock seam Reinforced overlock seam

Overlock seam for firm, thicker knits.

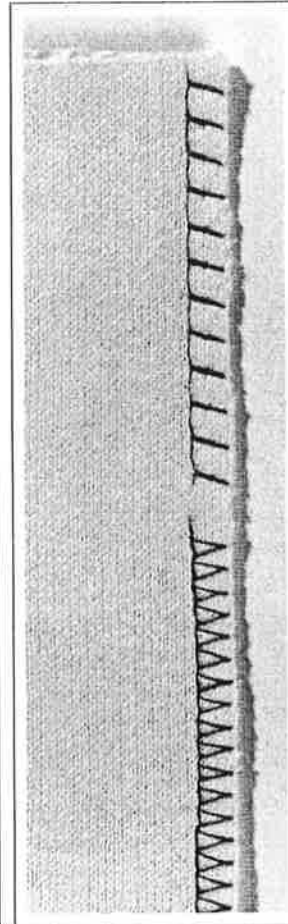
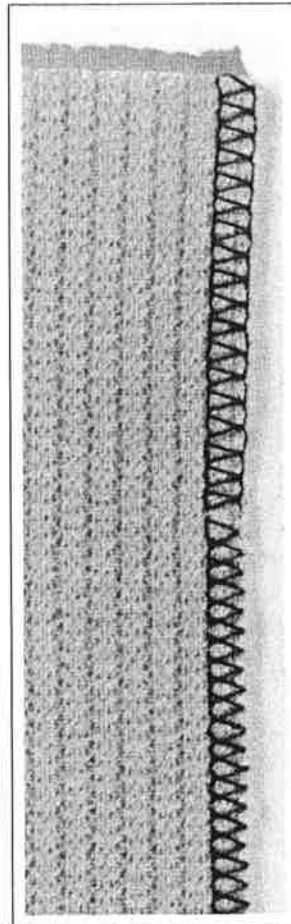
Needle: 80

Thread: Sewing thread

Feed-dog: 

● Stitch: A1/10
or A2/7

Stretch overlock
Reinforced
overlock



Practical stitch hems

Preparation

Baste the hem, mark the desired depth, sew and trim surplus fabric. Refer to instructions for sewing knits (Page 32).

Visible hem with Jersey stitch

Stretchy seam for all jerseys in cotton, fine wool, synthetic and blended fibres.

Needle: 80

Thread: Sewing thread

Feed-dog: 

● Stitch: A1/8

Jersey stitch




Visible hem with Triple zig-zag

Hard wearing seam for all firm woven fabrics, e.g. denim, canvas, etc.

Needle: 80

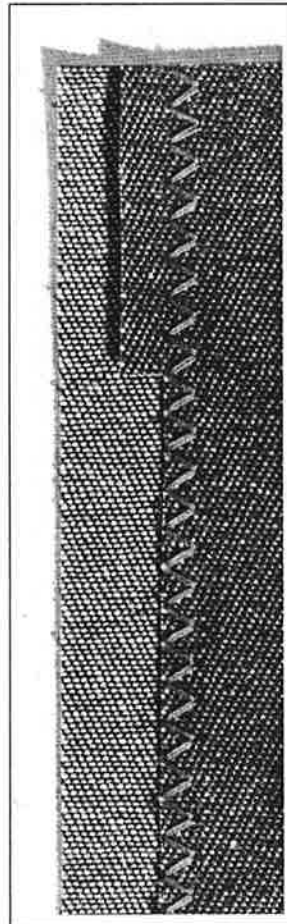
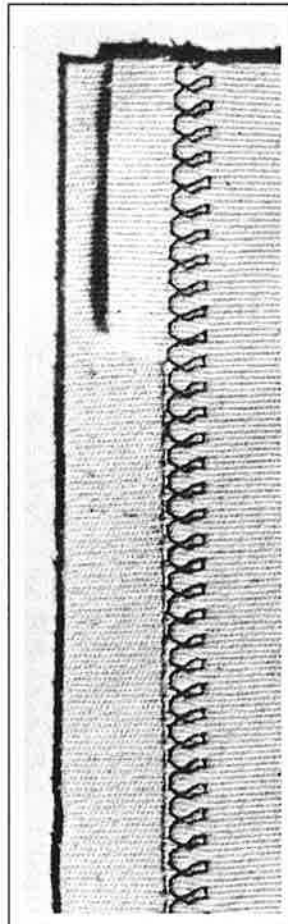
Thread: Sewing thread

Feed-dog: 

● Stitch: A2/6

Triple zig-zag

Stitch width: 2 1/2 - 5, depending on the fabric



Sewing knitted fabrics

Important:

1. Use a perfect needle. Even a very slightly blunt needle will damage knit, causing it to ladder.
2. Use fine thread, particularly for fine knits. Coarse thread can also damage the knit.
3. Use darning thread for basting. It is easier to remove than the thicker and shorter fibre basting thread.
4. Press each seam as it is sewn before moving on to the next stage of sewing.

5. Sew a sample to test stitch and stretch. As the elasticity of modern fabrics varies considerably, the basic setting should be adjusted where necessary to suit the fabric.

For very stretchy fabrics:

- shorten the stitch length slightly and/or
- increase the stitch width slightly.

This puts more thread in the seam and improves its elasticity. The seam should stretch as much as the fabric.

Neckband with Honeycomb stitch

Suitable for medium to heavy-weight knits.

Needle: 80

Thread: Sewing thread

Feed-dog: 

● Stitch: A1/9

Honeycomb stitch

Press 1 cm ($\frac{3}{8}$ ") to wrong side. Sew from the right at a foot's width from the edge. Trim surplus fabric on the wrong side (if necessary).

Neckband with overlock

Suitable for all fine jerseys and knits.

Needle: 80/70

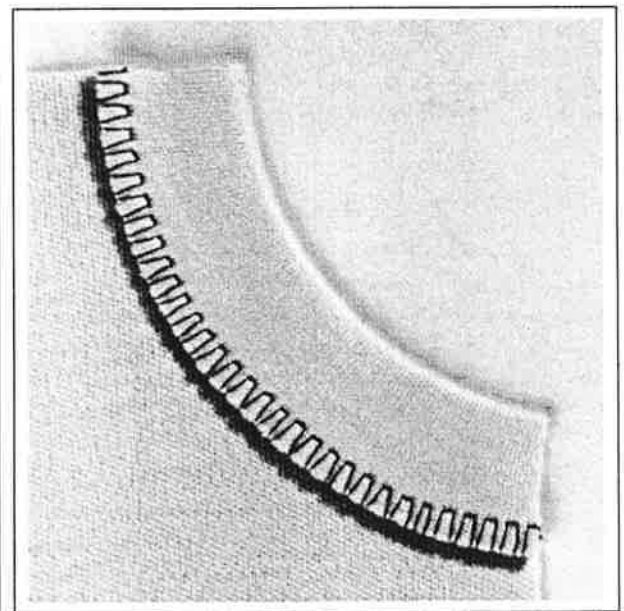
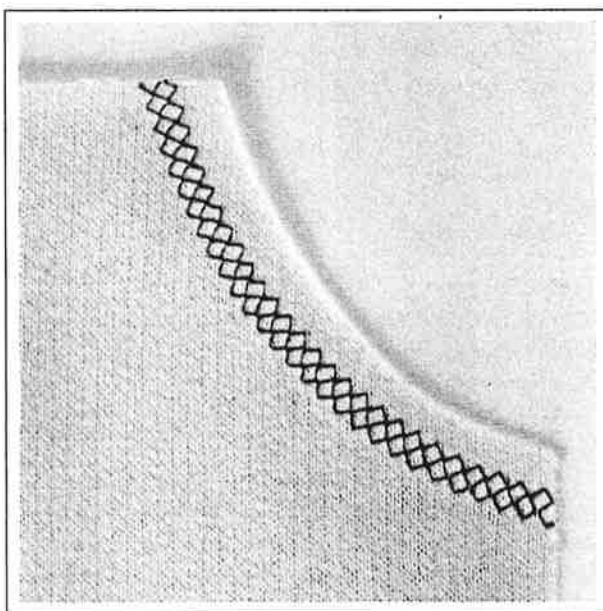
Thread: Sewing thread

Feed-dog: 

● Stitch: A1/3

Vari-Overlock

Fold band in half and press. Pin to the right side of the neck edge, matching the edges. When sewing, guide the raw edges along the pin on the foot.




Zips / Jeans foot

Sewing in zips

Needle: 80

Thread: Sewing thread

Zip foot: 4

Feed-dog: 

● Stitch: A1/1

Straight stitch

Adjustment: needle position
left/right

Method:

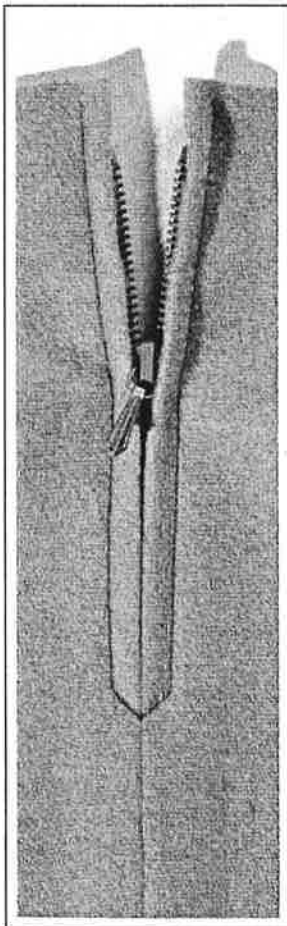
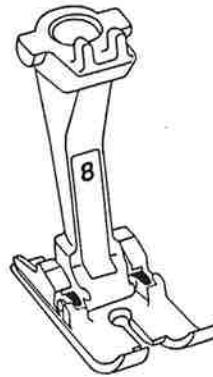
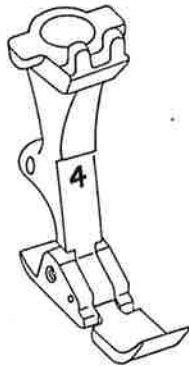
Baste the zip into position so that the teeth are covered by the fabric. Sew in the zip, each side from bottom to top, once with needle position right and once with needle position left.

Seams in thick fabrics

The Jeans foot is particularly suitable for sewing thick and hard fabrics. Adjust stitch length to between 3 and 4 as required.

Please note that needle position must be set to «Centre» and stitch width to «0».

Important: Use a Jeans needle or No. 100!



Long stitch / Basting stitch

With Long stitch, the machine sews every second stitch. The maximum stitch length is 10 mm.

Long stitch

Needle: 80

Thread: Sewing thread

Feed-dog: 

● Stitch A1/1

Straight stitch

Stitch length: $3\frac{1}{2} - 5$

Function:

Long stitch

For top stitching, the Long stitch can be combined with the Triple straight stitch.

For top stitching with button-hole twist (Cordonnet): Use needle 100-110!

The Long stitch can be used to baste very fine fabrics.

Basting stitch

The machine sews every fourth stitch. Maximum stitch length is 20 mm.

Needle: 80-90

Thread: Sewing / darning thread

Feed-dog: 

● Stitch: A1/1

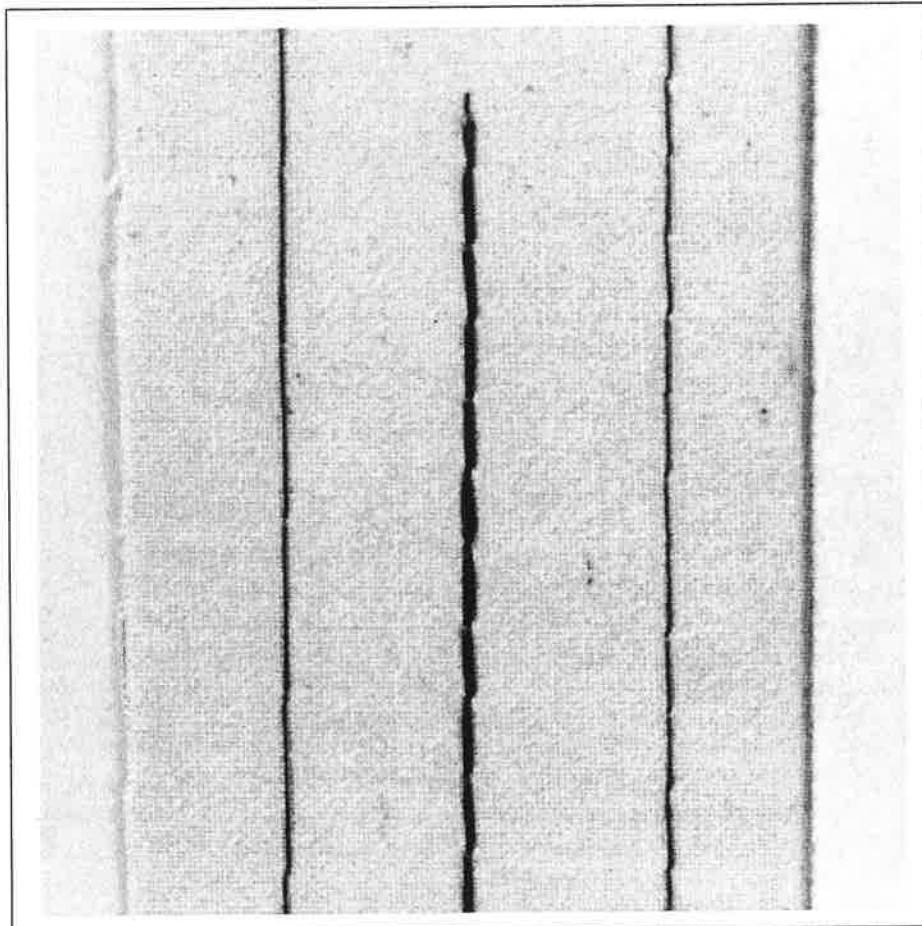
Straight stitch

Stitch length: $3\frac{1}{2} - 5$

Function:

Basting stitch

Tip: To secure the beginning and end of the seam, sew a few stitches with normal straight stitch.




Blind hemming

Needle: 80

Thread: Sewing/darning thread

Feed-dog: 

● Stitch: A1/5

Blind stitch 

Preparation

Prepare hem as for hand sewn hem.

Positioning the hem

Position work under the foot as shown in Fig. 1.

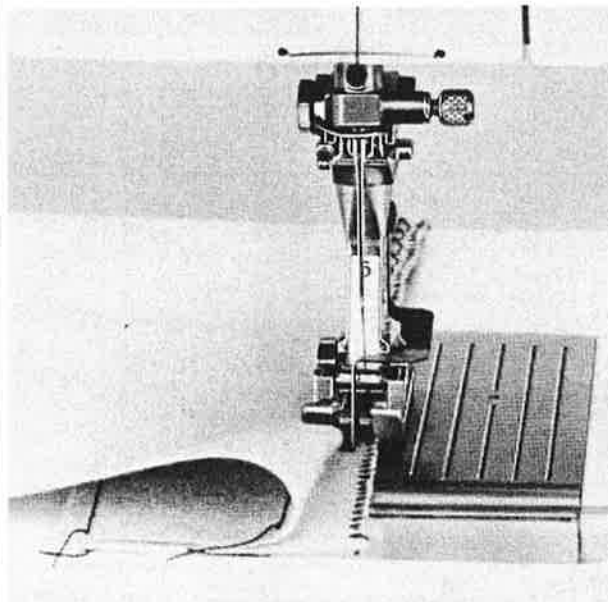
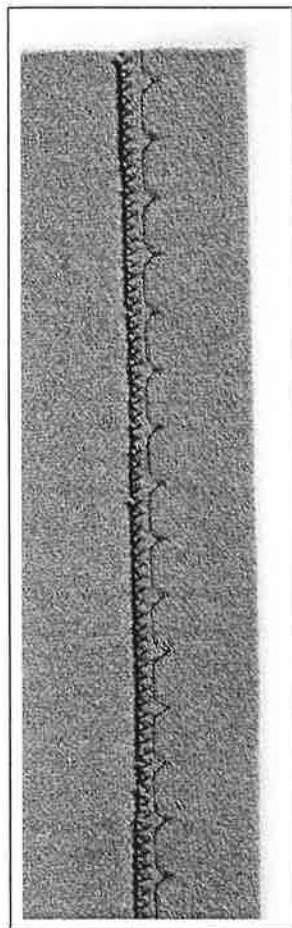
Sewing

The needle should just catch the edge of the fabric, as when sewing by hand. Given the variations in fabric qualities and thicknesses, it is advisable to test sew. Minor adjustments to the stitch width may be necessary.

Tip: While sewing, hold the fabric back slightly.

Sewing test

Sew slowly to the point when the needle swings to the left. With the aid of the handwheel, bring the needle down until it is just about to enter the fabric. Check that it just catches the fabric. If necessary, adjust the stitch width slightly: narrower if the needle is going in too far and a little wider if it is not catching sufficiently. Check the next zig-zag stitch in the same way. Sew for approximately 10 cm (4") and adjust again if necessary.



▲1

Sewing on elastic

Sewing on elastic/ perle yarn with the Gathering stitch

For gathering long sections of fabric. For frills and flounces on children's and doll's clothes, for home textiles and crafts.

Needle: 80

Thread: Sewing thread

Feed-dog: 

● Stitch: A2/4

Gathering stitch

Presser foot:

Nr. 3 Buttonhole foot

Cut a length of shirring elastic or perle yarn double the length of the fabric. Fold in half and slip the loop onto the centre prong on the foot. Lower the needle into the fabric. Take both ends under the foot to the back and lower the foot.


Holding the ends firmly at the back of the foot, lift the loop off the prong and pull the elastic or yarn through to the front through the grooves on the foot, leaving short ends behind the foot and sew. If sewing elastic, stretch the elastic as you sew. The more you pull, the tighter the gather will be. Perle yarn is simply oversewn and the fabric is gathered afterwards by pulling on the yarn. At the beginning and end of each row, sew a few stitches with the feed-dog lowered.

Sewing on narrow flat elastic with the Universal stitch

For gathering long sections of fabric. For waistlines and cuffs, sportswear, children's and doll's clothes, home textiles, crafts, etc.

Needle: 80

Thread: Sewing thread

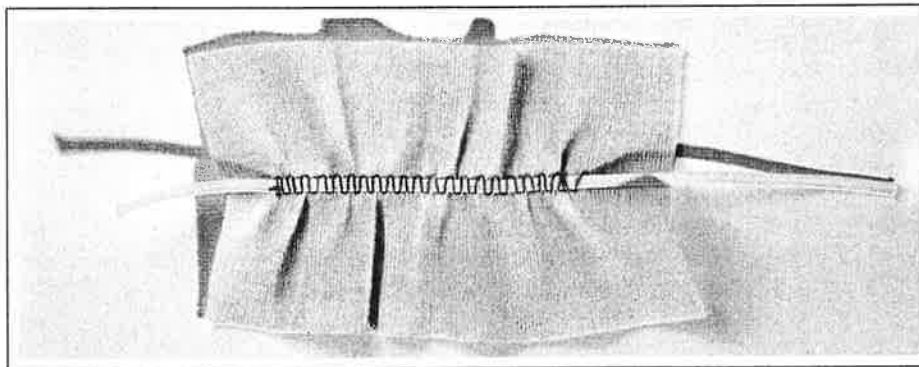
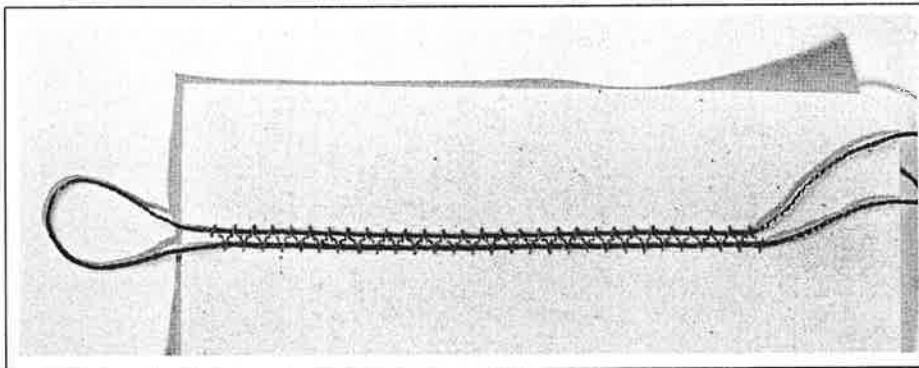
Feed-dog: 

● Stitch: A2/2

Universal stitch

Stitch width: according to
width of elastic

Cut elastic to length required. Oversew the elastic, taking care not to pierce it with the needle. Even out the gathers after sewing.



Sewing on elastic

Sewing on wide elastic with Sewn-out Zig-zag or Lycra stitch

For sportswear, lingerie,
children's clothing, etc.

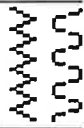
Needle: 80

Thread: Sewing thread

Feed-dog: 

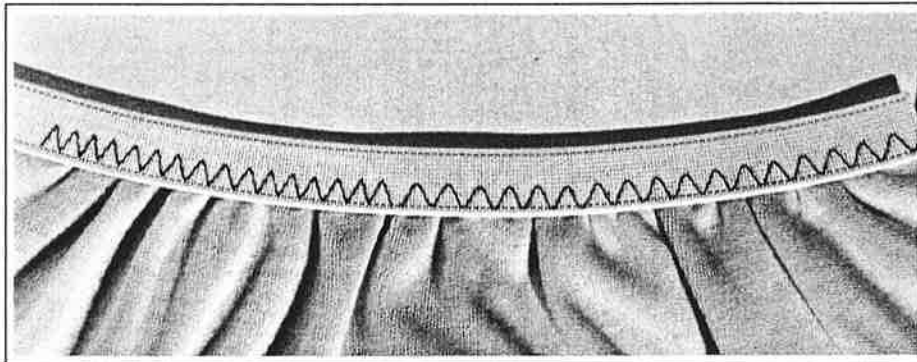
● Stitch: A2/1 or
A2/3

Sewn Zig-zag or
Lycra stitch



Cut elastic to length
required. Pin and sew. Trim
the surplus fabric.

Tip: Sew a row of long
straight stitches, pull on the
lower thread and gather to
the required length. Then
sew on the elastic. This is a
simpler method as the
elastic does not have to be
stretched while sewing.



Automatic mending / Bartack programme

Automatic mending programme

Quick and easy mending method for tears and worn areas on practically all woven fabrics.

Simple mending programme

Needle: 80

Thread: Darning thread

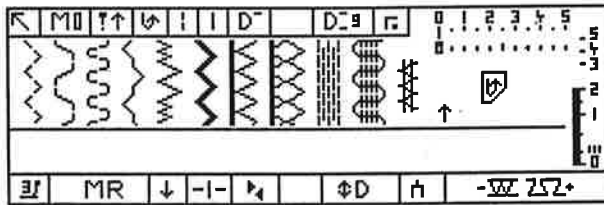
Feed-dog: 

● Stitch: A2/9 Simple mending programme

Presser foot: No. 3A

Buttonhole foot with slide

Symbol: Securing button on head frame



Activate the simple mending programme. Insert needle above and to the left of the section to be mended.

Sew the first row. Press the securing button to programme the length. For rows 30 mm (1 3/8") long, the machine changes direction automatically. The machine completes the mending programme and stops automatically. Larger sections can be mended by starting at a different point and repeating the mending programme.

Bartack programme

Primarily for reinforcing seams subject to wear such as pocket openings on jackets, jeans and overalls and for mending or reinforcing buttonholes.

Activate the Bartack programme. The machine starts top left and completes a row. The machine stops automatically.

Needle: 80

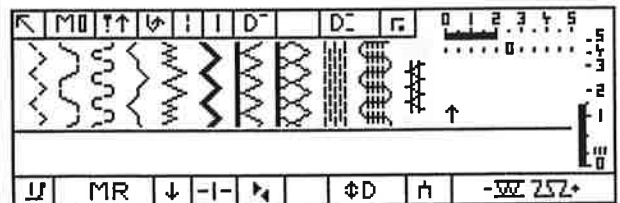
Thread:

Sewing/darning thread

Feed-dog: 

● Stitch: A2/11


Bartack programme



Reinforced mending programme

Needle: 80

Thread: Darning thread

Feed-dog: 

● Stitch: A2/10 Reinforced mending programme

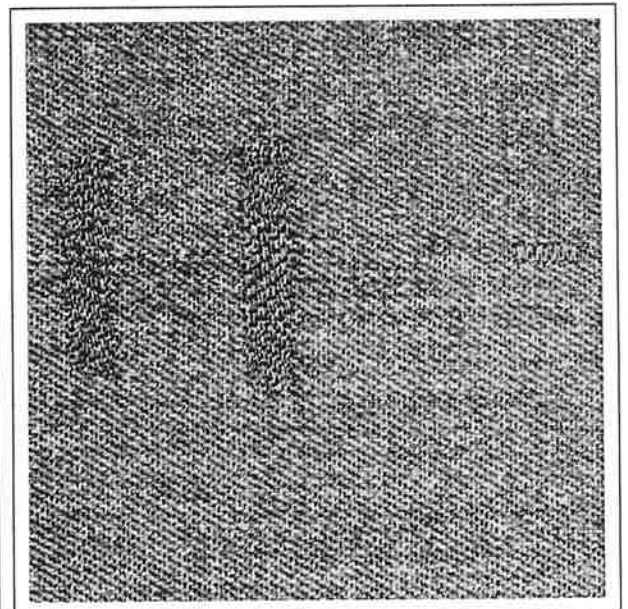
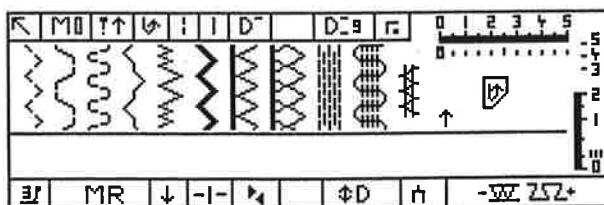
Presser foot: No. 3A

Buttonhole foot with slide

Symbol: Securing button on head frame

Activate reinforced mending programme. Insert needle above and to the left of the section to be mended.

The machine sews a row with Running stitch. Press the securing button to programme the length. For rows 30 mm (1 3/8") long, the machine changes direction automatically. The machine completes the mending programme and stops automatically. Larger sections can be mended by starting at a different point and repeating the mending programme.



Darning

Basic darning principles

The feed-dog must always be lowered for darning. The work is moved to and fro by hand and not by the machine. It is important to move the work evenly and this requires a little practice.

Recommendation

Whenever possible, use the darning ring to keep the darning area taut.

Move the ring backwards and forwards smoothly; jerky movements result in torn threads.

Always work from left to right, moving up and down over the hole, not from side to side.

Use the sewing table and support your elbows on the work table. Position the machine slightly back from the edge of the table.

Darning technique

Needle: 80-70

Thread: Darning thread

Feed-dog: 

● Stitch: A1/1

Straight stitch

Stitch length: 0

Presser foot:

No. 9 Darning foot

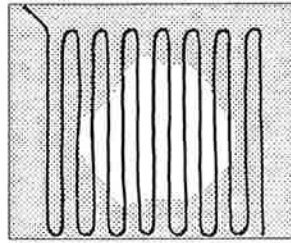
Important

At the end of rows, change direction in curves and not points otherwise the fabric is likely to tear.

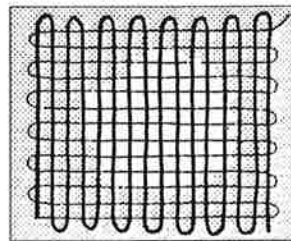


The three steps

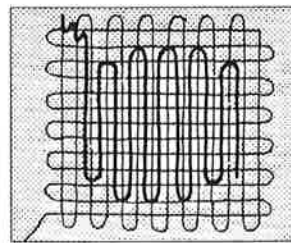
1. Darn from top left to top right of hole. Turn by 90 degrees.



2. Work from left to right, filling in the hole but not too densely. Turn by 180 degrees.



3. Fill in the darning, working in the same direction as step 2, but only over the edge of the darn.

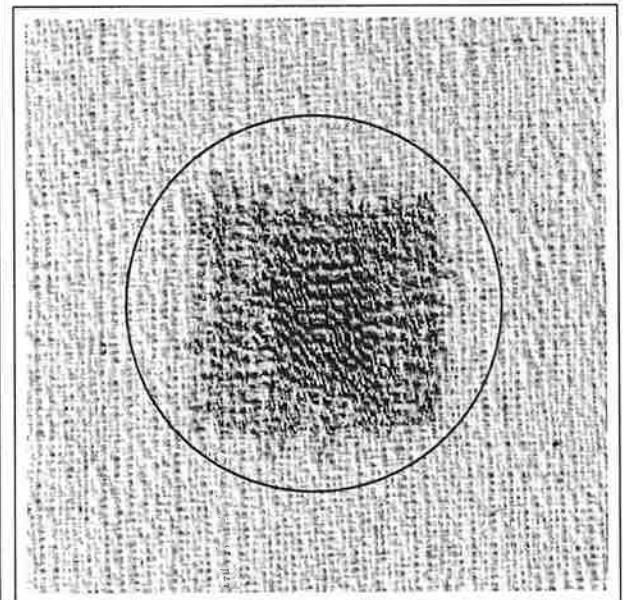
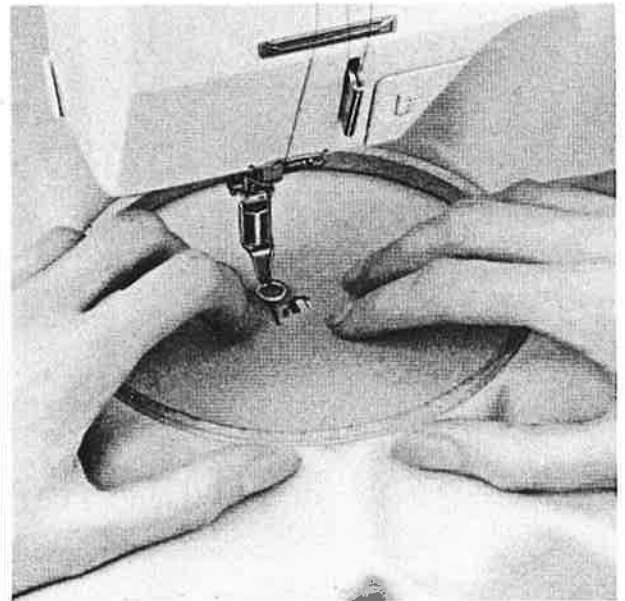


Main faults

Thread breaks frequently:
– work not moved evenly.

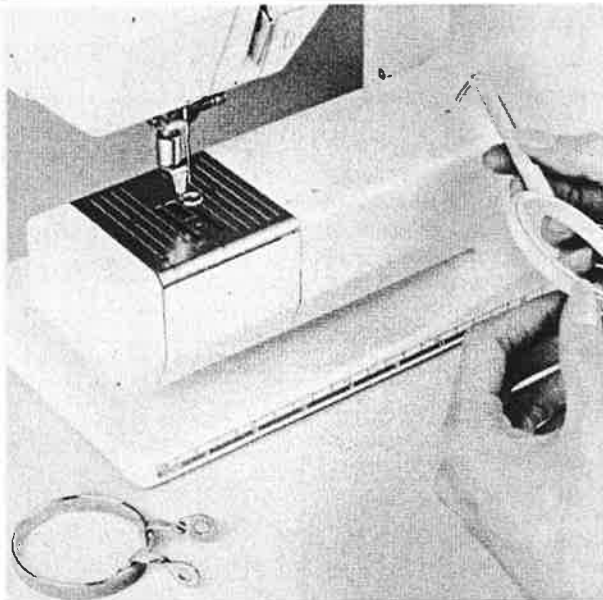
Stitch uneven and obtrusive:
– fabric moved too quickly in relation to the sewing speed.

Small knots on the under-side:
– fabric moved too slowly in relation to the sewing speed.

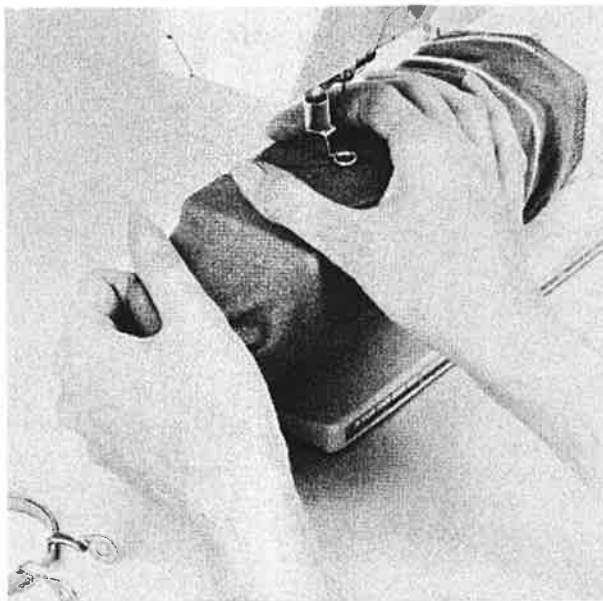


When the darning technique has been mastered, work rows of stitches in irregular lengths so that the darn blends into the fabric.

Darning with the small darning ring

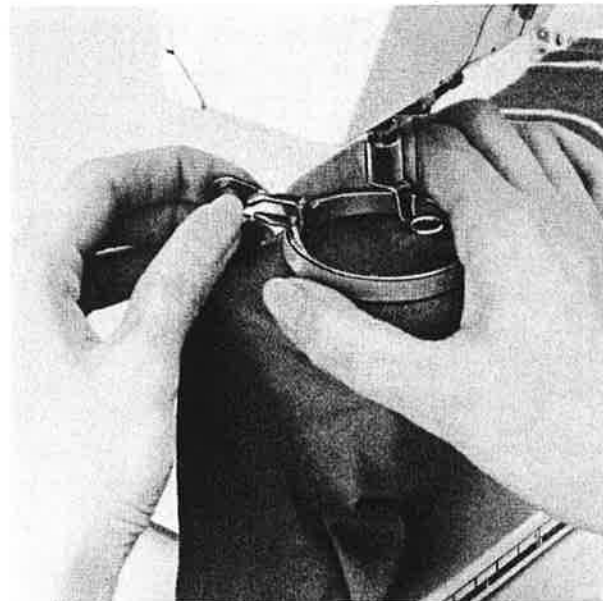


▲1



▲2

▼3



The small darning ring

The small darning ring is particularly practical for darning small torn/worn areas in fine fabrics and in fine underwear, socks and pullovers, e.g. in Helanca, interlock and jersey.

Stretching the work

- Fit the darning ring without the spring clip onto the free arm (fig. 1).
- Slide the garment over the free arm and the darning ring.
- Push the darning ring as far as possible to the left. Place the index finger and the thumb of the right hand on the darning ring to form a circle.
- With the left hand, stretch the fabric over the end of the free arm. Hold the tensioned fabric with the thumb of the right hand (fig. 2).
- Using the left hand, fit the spring clip as follows: close the spring clip, insert it under the index finger of your left hand and hold firmly. Then press the spring clip down into the ring (fig. 3).

Darning technique

Tubular items are usually stitched up and down and then side to side as it is not possible to turn the work.

Mending woven fabrics

Reinforcing edges with Running or Honeycomb stitch

Ideal for heavy duty wear such as overalls and for table linen and items made from towelling.

Needle: 80-70

Thread: Darning thread

Feed-dog: 

● Stitch: A1/4 or A1/9

Running stitch/
Honeycomb stitch



Stitch length: Adjust as required to suit the fabric

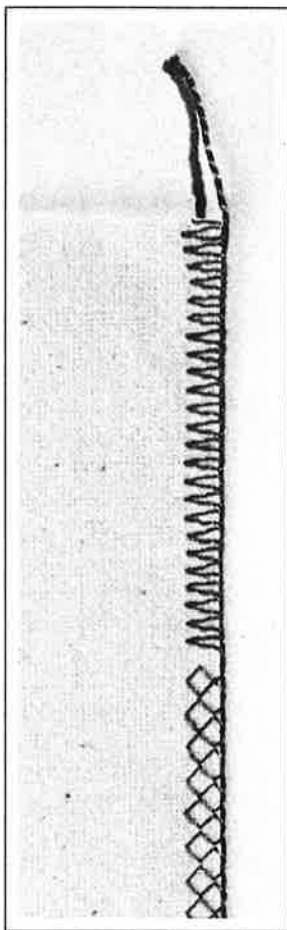
Tip: Sewing in cord strengthens the edges.

Oversew the edges with Running or Honeycomb stitch. If necessary, sew a second row slightly in from the edge.

Feed the cord into the machine and oversew. Suitable cords: perle yarn, buttonhole yarn (cordonnet), fine crochet yarn.

Patches with Running or Honeycomb stitch

Both stitches are ideal for sewing on patches. Cut out a square or rectangular patch and sew on. (See Mending Interlock, page 43).





Mending interlock fabrics

Patching using Jersey stitch

Primarily for mending interlock underwear.

Needle: 80-70

Thread: Darning thread

Feed-dog: 

● Stitch: A1/8

Jersey stitch

This method of mending is particularly suitable for large worn areas as the garment retains its elasticity.

Method:

To maintain stretch in all directions, round off the corners of the patch. Place the patch over the worn area and sew on with 1-2 rows of Jersey stitch. Then cut away the worn section from behind.

Edging with shirring elastic

Elastic restores distorted edges to their original shape.

Needle: 80-70

Thread: Darning thread

Feed-dog: 

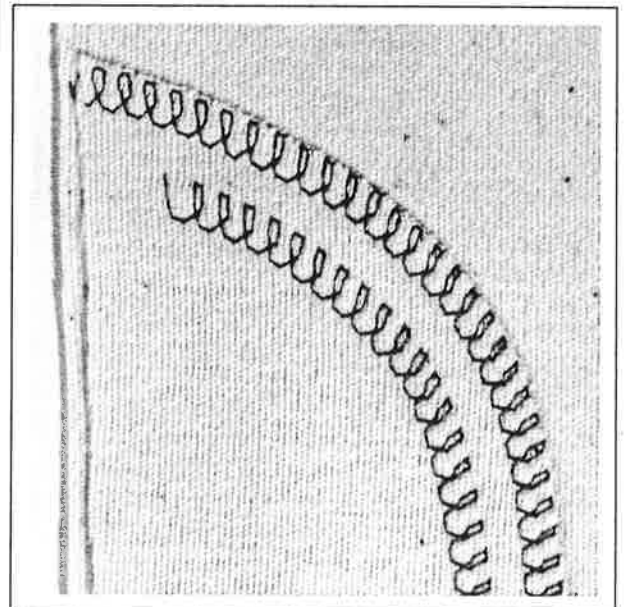
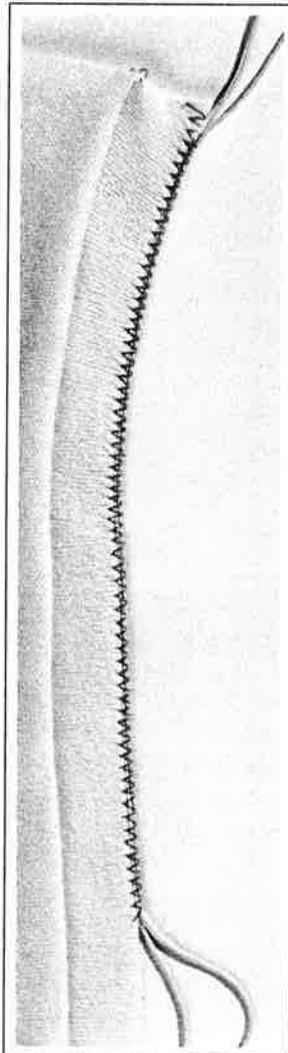
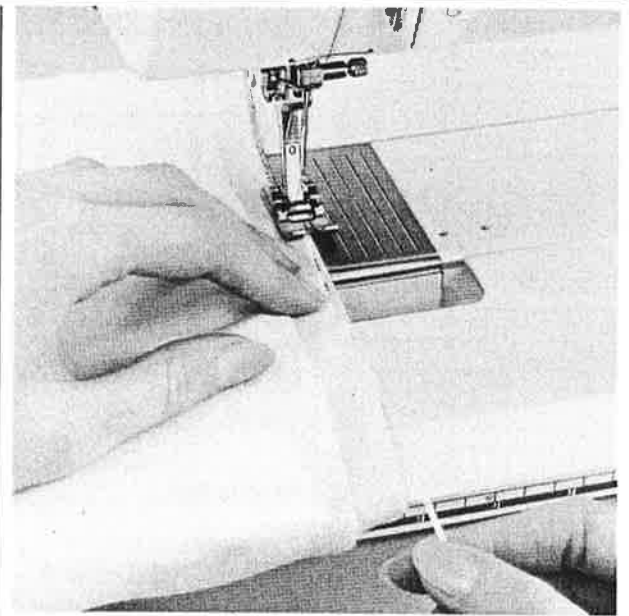
● Stitch: A1/2

Zig-zag

Stitch width: 5


Stitch length: 1 1/2 - 2

Guide two strands of elastic along the edge and sew in place with zig-zag stitch, gently pulling on the elastic as you sew.



Four step standard buttonhole / Four step stretch buttonhole with gimp cord

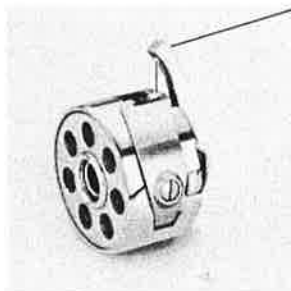
Buttonhole
(for woven fabric)
Stretch buttonhole
(for knitted fabrics)

Needle: 80-70
Thread: Darning thread,
sewing thread
Feed-dog: 

● Stitch: B1/1-3
Presser foot: No. 3

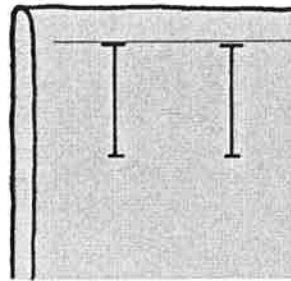
Preparation

The lower thread may be
thread through the finger of
the bobbin case.



Marking the buttonholes

Mark the buttonholes.



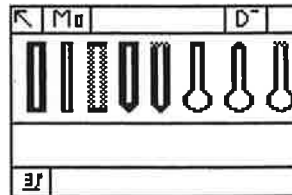
Sewing test

If necessary, adjust the
stitch length and width to
suit the fabric:
- bead density with the
stitch length dial
- bead width with the stitch
width dial

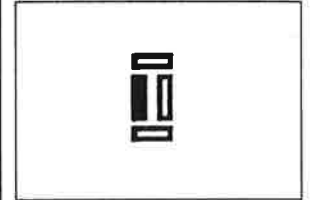
Tip: Always test sew
buttonholes!

Sewing buttonholes

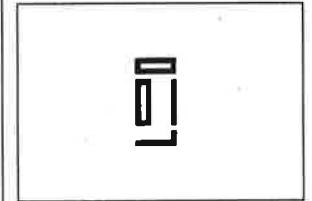
Select the buttonhole pro-
gramme. The first button-
hole is activated, machine
is ready to sew the first (left)
bead forwards. Insert the
needle exactly at the be-
ginning of the buttonhole,
lower the presser foot.



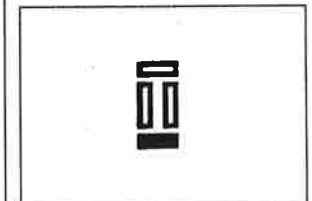
Sew the first bead forwards
to the desired length. Press
the securing button on the
head frame and the
machine is now set to
sew the next step (symbol
on screen).



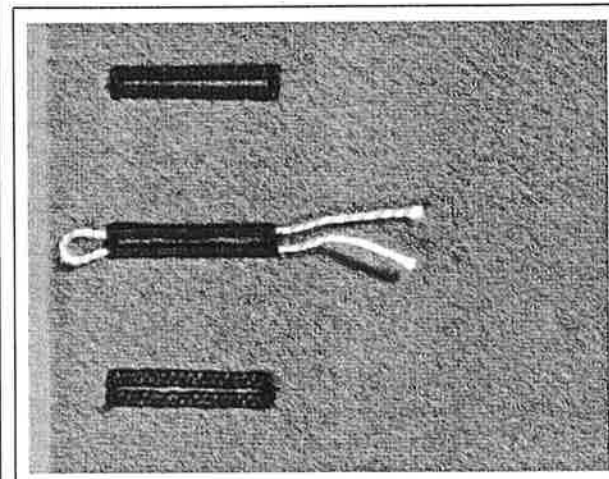
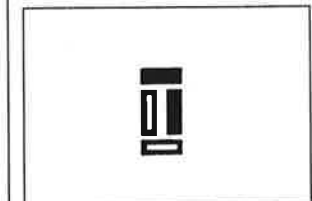
The machine sews reverse
straight stitch back to the
starting point. Press the
securing button to set the
next step.



The machine sews the first
bartack and the second
bead.
Press the securing button
to set the next step.



The machine sews the
second bartack and secur-
ing stitches.
The machine stops auto-
matically at buttonhole
begin.



Four step standard buttonhole / Four step stretch buttonhole with gimp cord

Buttonholes with gimp cord

Gimp cord strengthens buttonholes. Suitable cords are perle yarn No. 8, buttonhole thread, fine crochet cord. The loop should lie at the end of the buttonhole most subject to wear, so place the fabric under the foot so that the loop comes at the appropriate end.

Positioning the cord

It is easier to position the cord when the needle is in the fabric. Bring the needle to centre of the foot and lower it into the fabric at the exact start of the buttonhole. Do not lower the foot yet.

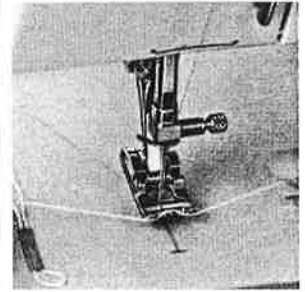
Hook the gimp cord over the centre prong of the foot (Fig. 1) and take both ends under the foot to the back (Fig. 2). Lower the foot and check that the cord slides easily. Sew the buttonhole. Do not hold the cord but let it slide freely. When sewing is complete, pull the loop into the buttonhole.

Securing the gimp cord

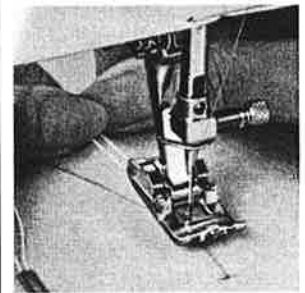
Take the ends of the cord through to the wrong side with a sewing needle (Fig. 3) and knot or sew in securely.

Cutting buttonholes open

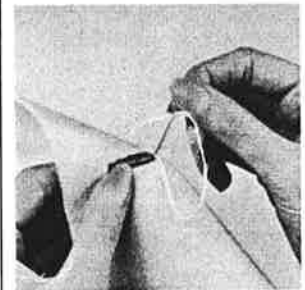
The best method is to cut from the ends towards the centre (Fig. 4) to avoid damaging the bartacks.



▲1



▲2



▲3




▲4

Four step round buttonhole / Four step keyhole buttonhole

Round buttonhole/ Keyhole buttonhole

Needle: 80

Thread: Sewing thread

Feed-dog: 

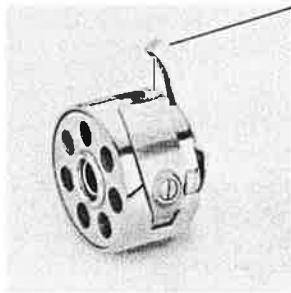
● Stitch: B1/4-8

Presser foot: No. 3

Round and keyhole buttonholes are suitable for jackets, coats, trousers and leisure wear.

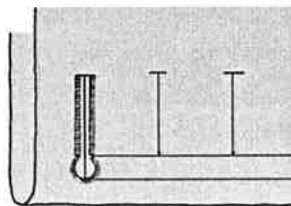
Preparation

The lower thread may be thread through the finger of the bobbin case.



Marking the buttonholes

Mark the bead length. The length of the curve or eye of the buttonhole must be included in the calculation.



Sewing test

If necessary, adjust the stitch length and width to suit the fabric:
– bead density with the stitch length dial
– bead width (buttonhole width) with the stitch width dial

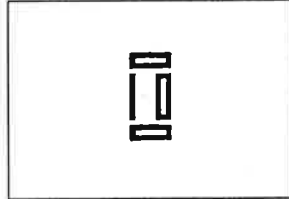
Tip: Always test sew buttonholes!

Sewing buttonholes

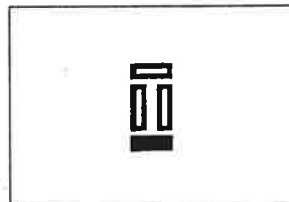
Activate the desired buttonhole. Insert the needle at the beginning of the buttonhole and lower the presser foot.

The machine sews straight stitch to the bead length required.

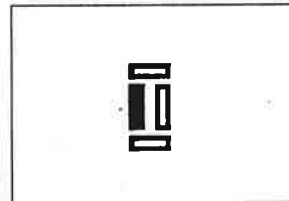
Press the securing button to set the machine to the next step.



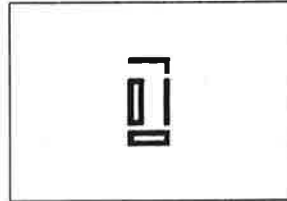
The machine sews the curve or the eye. The machine is ready for the next step.



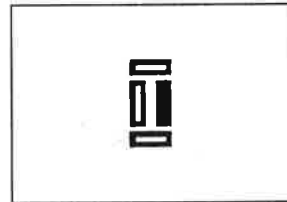
The machine sews the first bead in reverse. Press the securing button to set the next step.



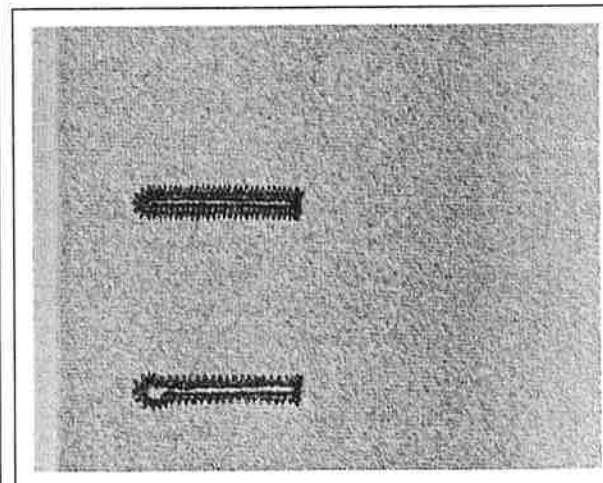
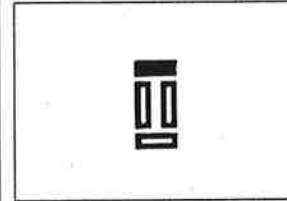
The machine sews straight stitch forwards up to curve or eye. Press the securing button to set the next step.



The machine sews the second bead in reverse. Press the securing button to set the next step.



The machine sews the bartack and securing stitches. The machine stops automatically at buttonhole begin.



Cutting the buttonholes

See page 45.

Fully automatic buttonholes with gimp cord

All types

Fully automatic standard buttonhole

(for woven fabrics)

Fully automatic stretch buttonhole

(for knitted fabrics)

Fully automatic round buttonhole


(for firm fabrics)

Fully automatic keyhole buttonhole

(for firm fabrics)

Needle: 80-70

Thread: Darning/sewing thread

Feed-dog: 

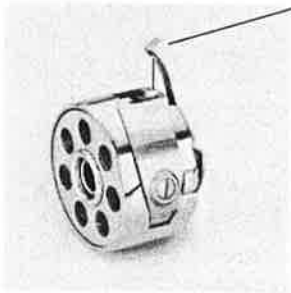
● Stitch: B1/1-8

Presser foot:

No. 3A (with slide)

Preparation

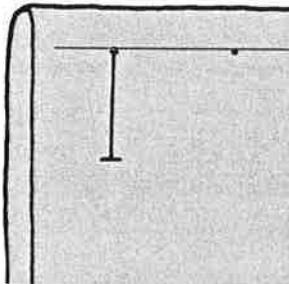
The thread may be threaded through the finger of the bobbin case.



Marking buttonholes

Standard and stretch buttonholes:

Mark only the first buttonhole. After sewing the first buttonhole, the length is automatically programmed. Mark the starting point of the remaining buttonholes.



Round and keyhole buttonholes:

Mark the bead length. The length of the curve or eye should be included in the calculation.

Mark only the first buttonhole. After sewing the first buttonhole, the length is automatically programmed. The curve or eye should be at the end of the buttonhole most subject to wear.

Sewing test

If necessary, adjust the stitch length and width to suit the fabric:

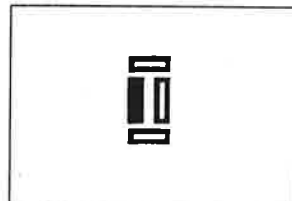
- bead density with the stitch length dial
- bead width (buttonhole width) with the stitch width dial

Tip: Always test sew buttonholes!

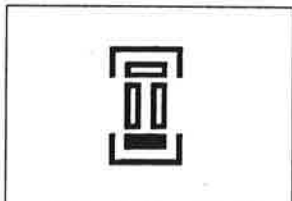
Sewing buttonholes

Activate desired buttonhole.

Machine is ready to sew the first bead forwards. Insert needle at the beginning of the buttonhole, lower the foot. Sew the first bead forwards to the desired length. Press the securing button to programme the length.



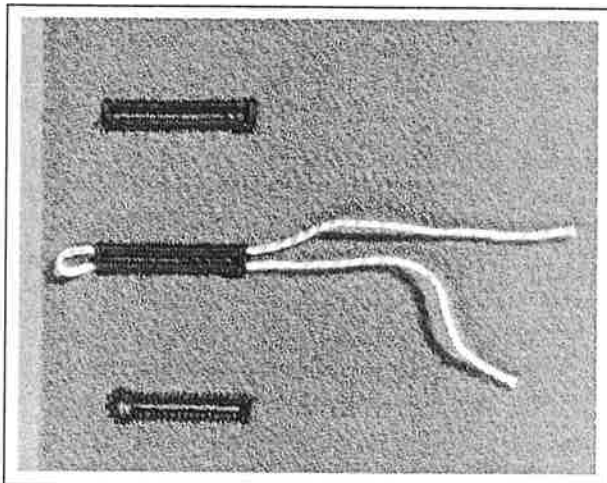
The bracket over the buttonhole symbol shows that the length is stored. The machine completes the buttonhole automatically, sews the securing stitches and stops at the starting point.



All further buttonholes can be sewn automatically. Just insert the needle into the starting point of the buttonhole and press the foot control.

Important

If the machine malfunctions, activate the function «Pattern Begin» and the machine is automatically set at the starting point of the buttonhole.



Fully automatic buttonholes with gimp cord

All types

Fully automatic buttonholes with gimp cord

Gimp cord strengthens buttonholes.

Suitable cords are perle yarn No. 8, buttonhole thread, fine crochet cord. The loop should lie at the end of the buttonhole most subject to wear, so place the fabric under the foot so that the loop comes at the appropriate end.

Positioning the cord

It is easier to position the cord when the needle is already in the fabric. Insert the needle exactly at the start of the buttonhole. Do not lower the presser foot yet.

Guide the cord from the right under the foot and hook it over the prong at the back (Fig. 1).

From the left, bring the cord under the foot and insert both ends into the retaining slots (Fig. 2).

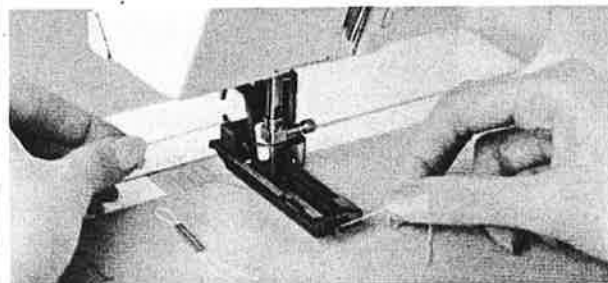
Fully automatic keyhole buttonhole, double sewn (reinforced)

For thicker fabrics and increased durability, it is advisable to reinforce the buttonhole by sewing it twice.

Important: After completing the first buttonhole, do not move the fabric but just depress the foot control.

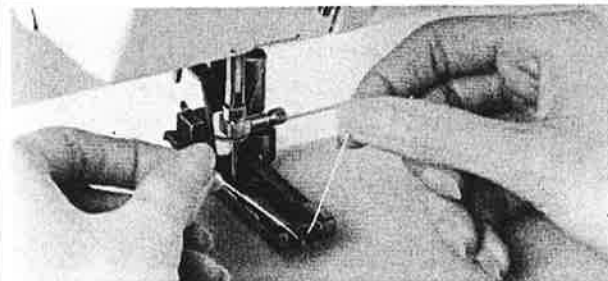
Securing the cord and cutting the buttonhole

See page 45.



▲1

▼2



Eyelet programme / Button sewing-on programme


Eyelet with narrow zig-zag or straight stitch

Sewn eyelets have a variety of uses. They are not only suitable for cords and bands but they can also make a decorative element for children's clothing, leisure wear and crafts.

Needle: 80

Thread:

Darning/sewing thread

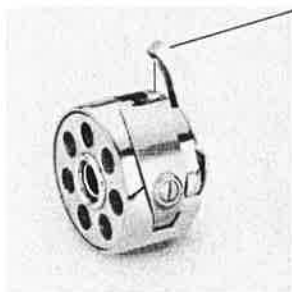
Feed-dog: 

● Stitch: B1/9 and 10

Presser foot: 1

Preparation

When sewing eyelets, the lower thread may be threaded through the finger of the bobbin case.

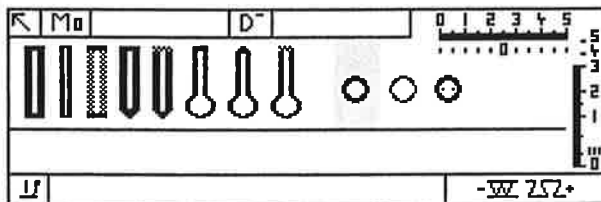


Marking eyelets

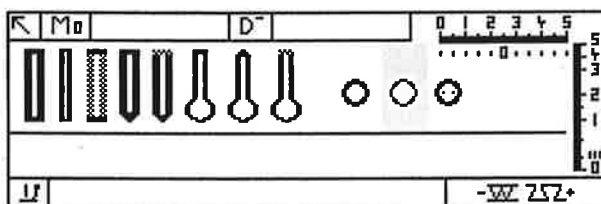
Mark the centre point of the eyelet.
Insert the needle approx.
2 mm above the centre point.

Sewing eyelets

Activate the eyelet programme B1/9.
The eyelet will be sewn with zig-zag.
The machine stops auto-matically when the eyelet is complete.



Activate the eyelet programme B1/10.
The eyelet will be sewn with straight stitch.
The machine stops auto-matically when the eyelet is complete.



Cutting eyelets

Stamp out the centre of the eyelet with an awl or hole puncher.


Button sewing-on programme

Buttons with 2 or 4 holes can be sewn on by machine.

Needle: 80

Thread:

Sewing/darning thread

Feed-dog: 

● Stitch: B1/11

Stitch width: according to distance between holes

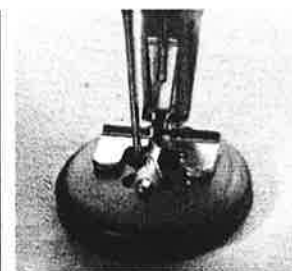
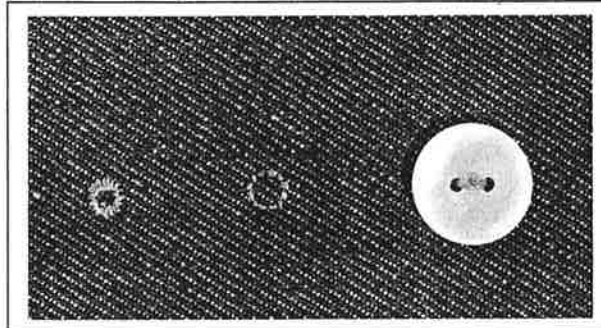
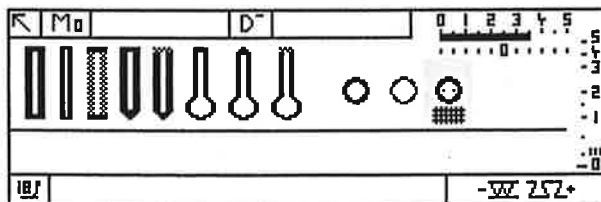
Presser foot: No. 18

Sewing on buttons

Activate the button sewing-on programme.
The feed-dog symbol appears on the screen:
Lower the feed-dog!

Hold the thread when starting to sew.
The machine stops auto-matically at the end of the programme.
The threads are secured and can be cut off.

Tip: Cut the upper thread close to the button. Pull both lower threads through to the wrong side and cut.







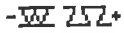



For buttons with 4 holes, sew the lower holes first and then the upper holes.

Decorative stitches, combining with functions

Combining basic settings and functions

Unusual and attractive effects can be obtained by combining basic settings with functions.

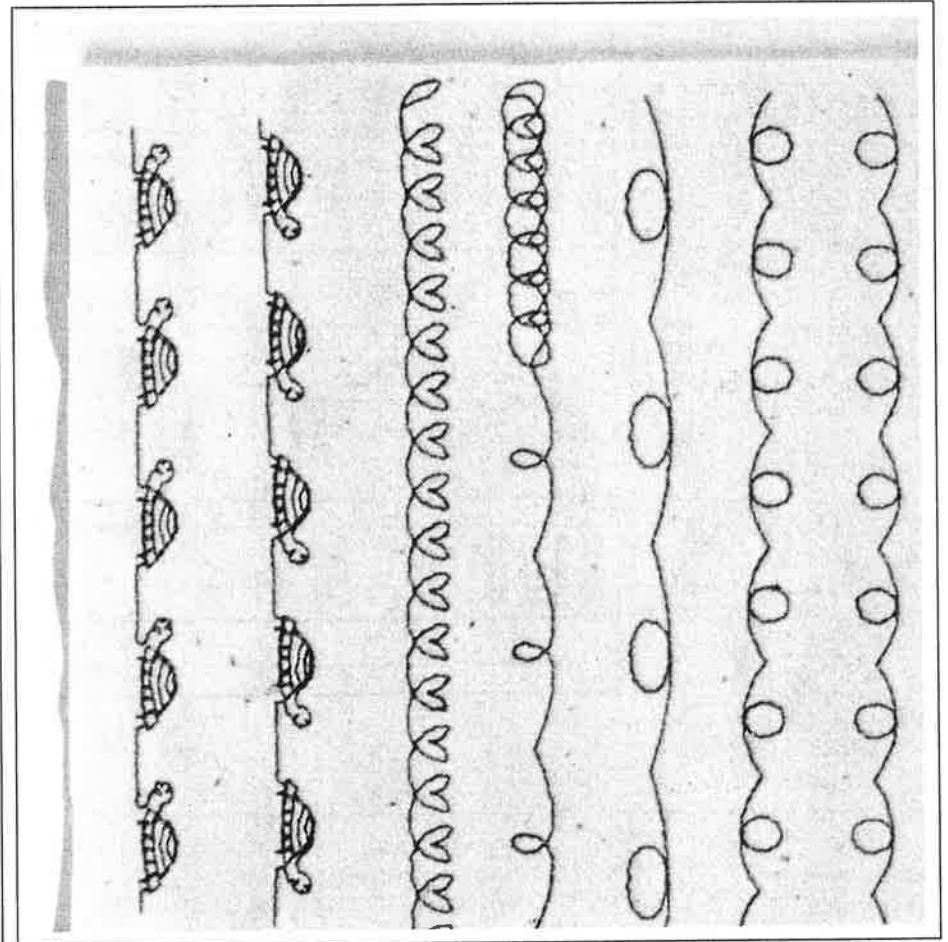
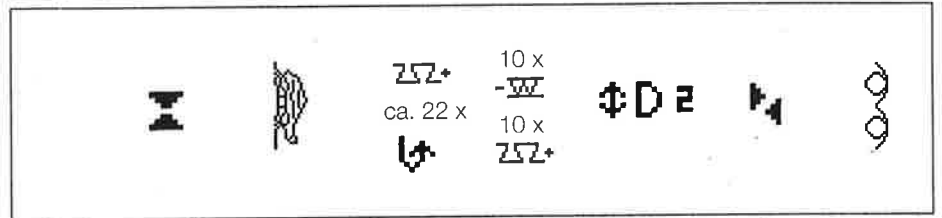
The following functions can be combined with basic settings:

-  Mirror image right – left
-  Mirror image vertical
-  Pattern Extension
-  1/2 Pattern
-  Balance
-  Long stitch
-  Double needle limitation
-  Reverse sewing

Balance

Many pattern variations can be obtained by pressing the Balance + or –.

Example



Method

- Activate the desired stitch.
- Activate the desired function.


A number of functions can be combined simultaneously with a basic setting. Before activating a new variation or combination, press the CLR button twice quickly to erase the functions. Erase special functions individually.

Cross Stitches

Cross stitches are an attractive addition to the usual embroidery stitches and provide scope to use your own imagination and creativity.

Needle: 80

Thread: Sewing thread, embroidery and darning thread

Feed-dog: 

● Stitch: M1/1-8

Cross stitches

Presser foot:

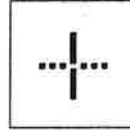
Reverse stitch foot No. 1

Cross stitches 1-7

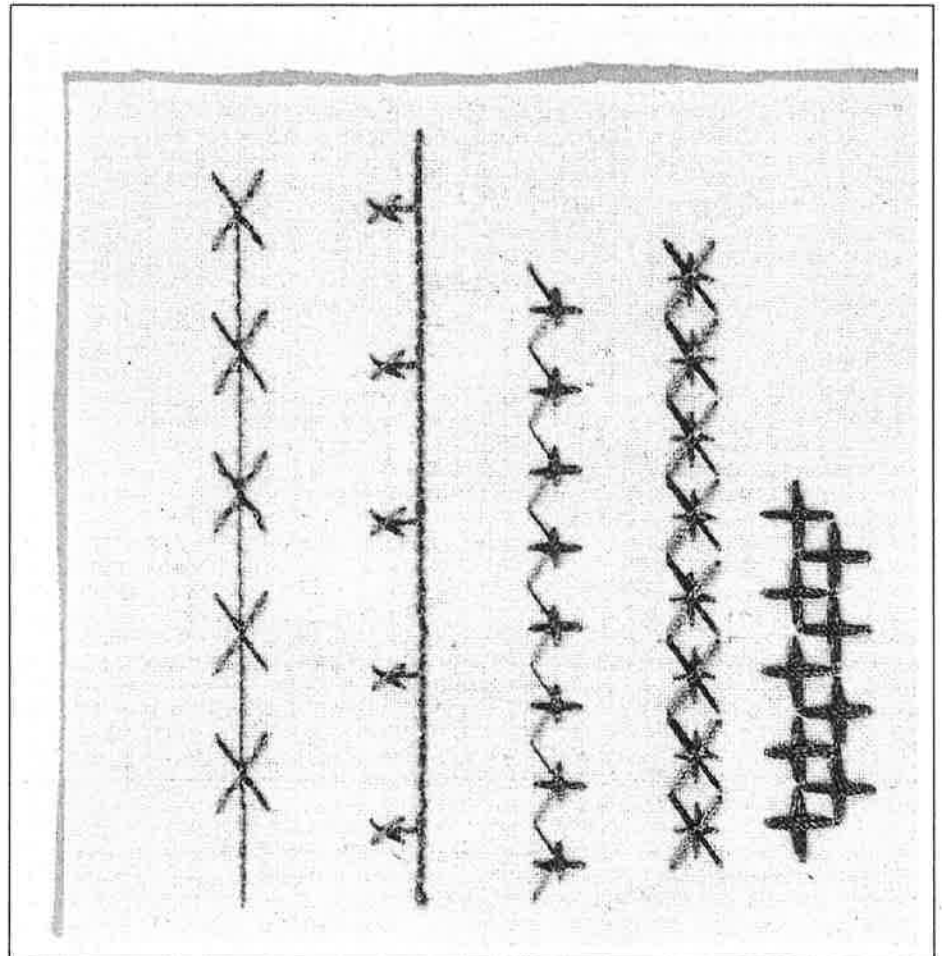
Sew in the same way as other stitches.

Large cross stitch M1/8

1. Sew one line of the cross. The machine stops automatically in the centre of the line.



The arrow appears above the stitch symbol. Turn work by 90 degrees.
2. Sew the second line. The machine stops automatically at the end of the line and switches automatically to stitch begin.



Memory

Programming and editing patterns and letters

Programming allows stitches, letters and numbers to be combined, saved and edited.

Memory

There are 9 directories each containing 70 storage units. Each individual directory can be subdivided within the 70 units.

The saved contents of any directory selected is shown in the programme screen. The contents can be rolled over the screen with the cursor.

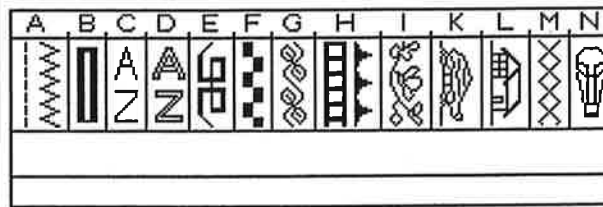
Editing is possible at any time.

The directory contents remain saved and can be recalled at any time, as long as the programme was saved. Saved programmes are not affected by power cuts or if the machine is not used for some time.

When sewing a saved programme, the contents roll over the screen. The cursor marks the pattern being sewn.

Procedure

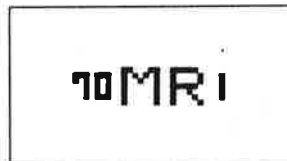
Opening the Memory
 + = cross cursor
 - = programme cursor



Select a stitch group



Move the cursor to MR (Memory). Press OK to activate the Memory.



Two figures appear in the Memory screen:
 - to the left of MR = number of free units in the directory
 - to the right of MR = directory number (e.g. 1). Press OK to activate the next directory (e.g. 2, 3, up to 9).



When viewing individual directories, the contents and programme cursor are displayed.

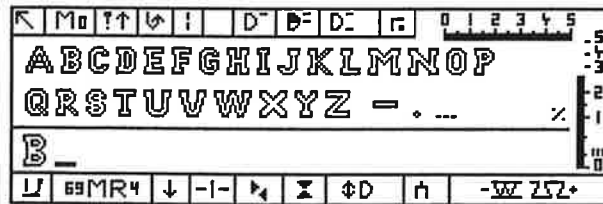
After opening Memory, you can return to the Menu and select any stitch group. The programming screen remains visible.

Memory

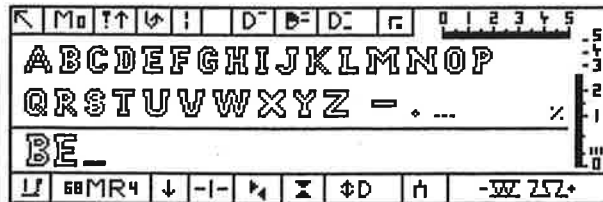
Programming and editing patterns and letters

Programming

Open the Memory



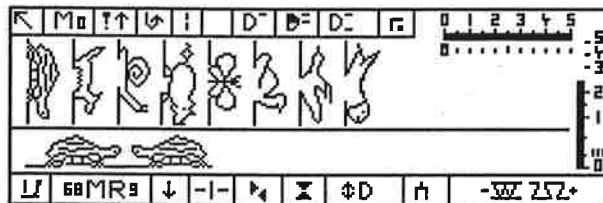
Move the cross cursor to the desired stitch and press OK. The stitch immediately appears in the programming screen. The programming cursor (→) moves to the right.



Move the cross cursor to the next desired pattern and confirm with OK. This pattern is now saved.

Continue as described above.

Programming with Mirror Image functions



Functions can be attributed to stitches and saved.

Move the cross cursor to the desired function and press OK. Move the cross cursor to the desired stitch and press OK. The stitch appears in mirror image form on the screen.

General editing guidelines

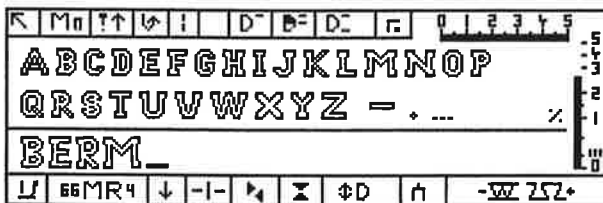
The programme cursor is always to the right of the last selected stitch.

The last programmed stitch can be erased by simply pressing the CLR button.

The programme cursor must be activated for editing within a programme, so that it can be moved to the left or right to alter a particular stitch.

All editing, such as erasing or inserting, is done to the **left** of the programme cursor.

Erasing the last selected stitch



The programme cursor is always to the right of the last selected stitch. All alterations take place to the **left** of the cursor. To erase the last selected stitch, the cross cursor must be in a programming area. If the cross cursor is on an activated function e.g. Mirror image, the activated function will be cleared but not the last selected stitch. Press the CLR button to erase the last stitch.

Activating the programme cursor



Move the cross cursor to the programme cursor and press OK. The cross cursor disappears. Move the programme cursor to the left or right with the tracking ball.

To reinstate the cross cursor, press OK.

Memory

Erasing a stitch within a programme

BEONINA

BENINA

Activate the programme cursor in the programming screen.

Move the cursor to the **right** of the stitch to be **erased** and press CLR. The stitch to the **left** of the cursor will be erased.

Inserting a stitch into a programme

BENINA

BERNINA

Activate the programme cursor.

Move the cursor to the **right** of the stitch to be inserted. Press OK to reinstate the cross cursor. Select the stitch to be inserted from the stitch group and activate with OK. The stitch appears on the screen.

Memory subdivision

NA-I-ST

It is possible to subdivide directories (1-9) into smaller sections which can be sewn individually. Select the Memory Subdivision function with the cross cursor and press OK. Memory subdivision is now activated. To subdivide an existing programme, follow the instructions for «Inserting a stitch into a programme», using the Memory subdivision instead of a stitch.

Saving a programme

64MR4 ↓

Move the cross cursor to the function Save/Leave Memory and press OK. The programme is now stored, the programming screen clear and Memory switched off.

Memory


All practical and decorative stitches are programmed and edited in the same way.

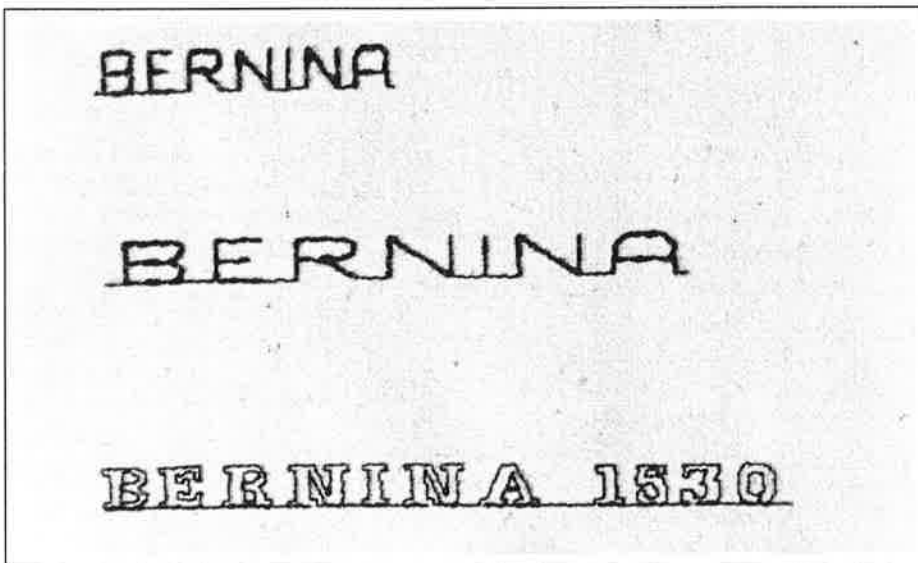
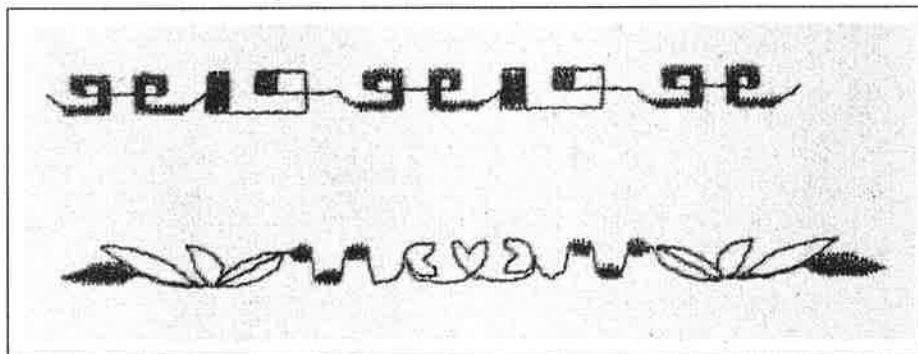
Erasing a complete directory



24MR3

The contents of a directory, e.g. directory 3, can be erased in one operation. Move the cross cursor to MR. Press the CLR button twice and the contents are erased.

If the contents are erased and no further stitches are programmed, press  «Save/Leave Memory» function.



A dark grey spiral-bound notebook with a faint grid pattern. The text 'Threads Needles' is printed in a light grey, sans-serif font on the right side. The spiral binding is visible on the left edge.

Threads Needles

All about Needles

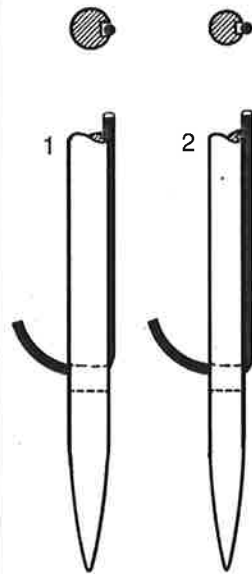
1. Needles and sewing machine

Your Bernina uses needle system 130/705H. Make sure you buy this system when replacing needles. Needles are available in sizes 70 to 120. The finer the needle, the lower the number. The opposite applies to thread - the finer the thread, the higher the number. The table below shows which needle should be used for which thread.

2. Needles and thread

The needle size required depends on the thread selected. The needle must suit the thread.

When sewing, the thread lies in the long groove of the needle (fig. 1). If the needle is too fine, the thread will not fit into the groove (fig. 2) and faulty stitching will occur.

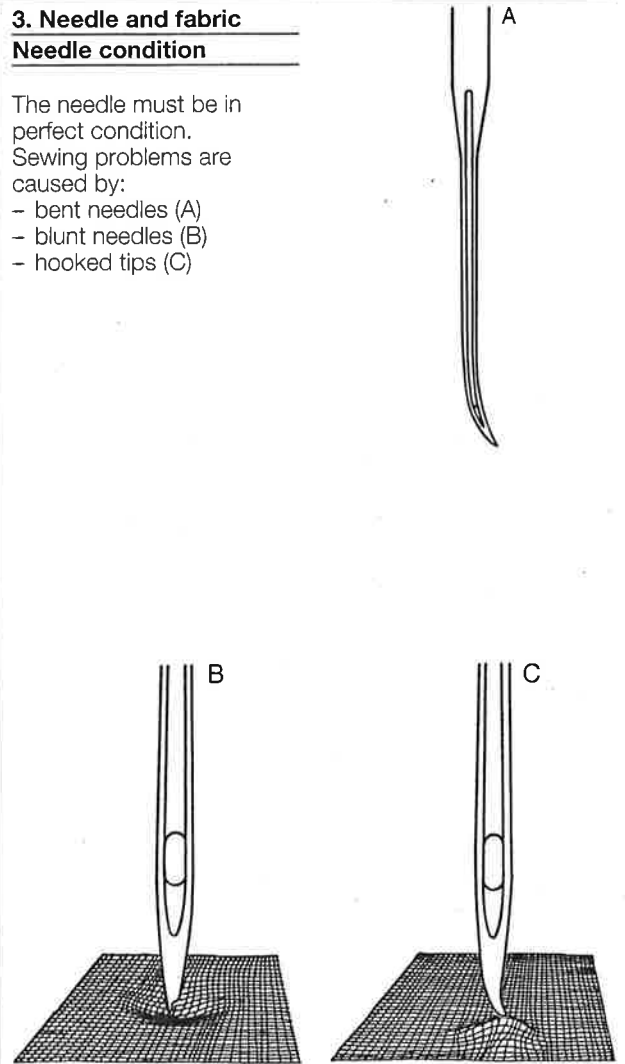


3. Needle and fabric

Needle condition

The needle must be in perfect condition. Sewing problems are caused by:

- bent needles (A)
- blunt needles (B)
- hooked tips (C)

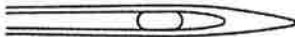
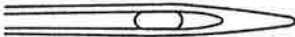

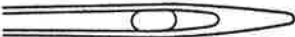

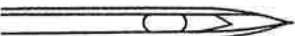


Needle/thread table

Needle	70	80	90	100	110-120
Darning thread	*	*			
Embroidery thread no. 30		*			
Sewing thread Mercerised cotton		*	*		
Synthetic sewing thread		*	*		
Coarse mercerised cotton Mercerised synthetic			*	*	
Buttonhole thread for top stitching (Cordonnet)				*	*

All about needles

The modern domestic sewing machine is capable of handling a large variety of fabrics. However, as in industry, special needles are required for different fabrics, e.g. needles with various different points.

Table of special needles	Needle description	Needle point	Suitable for
Standard needle	130/705 H	Normal point, slightly rounded 	Universal needle for woven synthetic and natural fibres, e.g. linen, chiffon, batiste, organdie, wool, velvet.
Special needles	130/705 SES	Fine ball point 	Fine knitted fabrics made from silk, synthetics, cotton and fine wool.
	130/705 H-SUK	Medium ball point 	Heavier knitted fabrics in synthetic or natural fibres.
	130/705 H-S	Medium ball point 	Special needle for delicate or difficult stretch fabrics.
	130/705 H-J	Extra fine point 	Overalls, heavy linen, denim, canvas. Pierces dense fabrics easily.
	130/705 H-LR + H-LL	Cutting point 	Leather, suede, calfskin, pigskin, imitation leathers and suedes, plastics.

Feed-dog and fabric

1. Feed-dog and stitch length

With each stitch the feed-dog moves forward by one step. The length of this step is governed by the stitch length selected. With an extremely short stitch length, the steps are short. The fabric moves under the foot quite slowly, even at full sewing speed. Button-holes, satin stitch and decorative stitches are all sewn with a short stitch length.

Important:

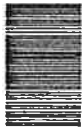
a) Make sure that the fabric feeds evenly.



b) Pushing will result in gaps.

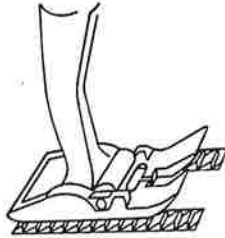


c) Holding back will result in pile-ups.

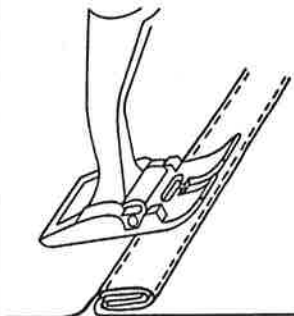


2. Feed-dog and fabric

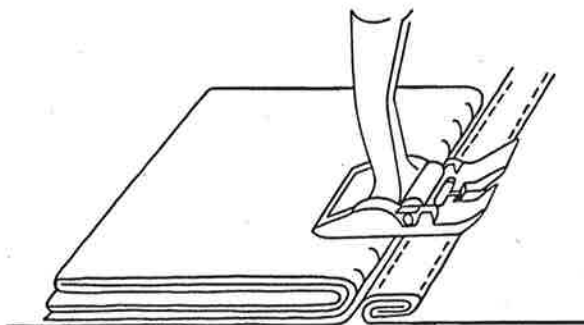
a) The feed-dog can only work effectively if the presser foot is horizontal.



b) If the presser foot is tilted, e.g. at a seam or hem, the feed-dog will be unable to grip the fabric and the work will stick.



c) Place a piece of fabric folded to the thickness of the work next to the sewing so that the presser foot is level and the fabric will feed easily.

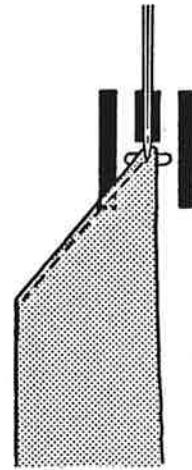


3. Feed-dog and sewing corners

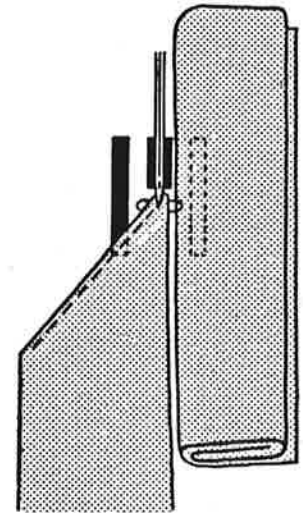
a) The two rows of teeth of the feed-dog are quite a distance apart because of the width of the zig-zag needle hole.



b) When sewing corners, only a small part of the fabric is actually on the feed-dog so it cannot feed the work correctly.



c) Place a folded piece of fabric against the corner and the feed-dog will be able to do its work properly.





Trouble shooting
Maintenance

Fault prevention

If your sewing machine does not work properly, it is usually due to incorrect operation.

Check whether:

- The upper and lower threads are correctly threaded.
- The needle is inserted correctly with the flat side of the shank to the rear.
- The needle size is correct. (See needle thread table).
- The machine is clean. Brush out any remnants of thread or lint.
- The hook race is clean and oiled.
- Any remnants of thread are trapped between the tension discs and beneath the bobbin case spring.

Upper thread breaks

- The upper tension is too tight.
- Poor quality needles. Ideally, needles should be purchased from a Bernina dealer.
- The needle has been fitted incorrectly. The flat side of the shank must be to the rear.
- The needle is blunt or bent.
- Poor quality thread, knotted or dried-out thread.

Lower thread breaks

- The lower thread tension is too tight.
- The bobbin is jammed in the bobbin case. Replace the bobbin.
- The hole in the stitch plate has been damaged. This must be repolished professionally.
- The needle is blunt or bent.

Faulty stitching

- Wrong needles. Use only the 130/705H needle range.
- The needle is blunt or bent or incorrectly fitted. Push right to the top when inserting.
- Poor quality, badly polished needle.
- The needle point does not suit the fabric being sewn. If necessary, use ball point for knitted fabrics and cutting point for hard fabrics.

Needle breaks

- Needle clamp screw not sufficiently tightened.
- Fabric withdrawn forwards instead of to the back.
- When sewing over a thick area, the fabric was pushed with the needle still in it. Use the Jeans foot.
- Poor quality thread, unevenly wound or knotted.

Faulty tension

- Remnants of thread between the tension discs.
- Remnants of thread under the bobbin case spring.
- Lower thread still threaded in the bobbin case finger.
- Threaded with the foot down.
- Incorrectly threaded - check lower and upper threads.

Machine fails to sew full zig-zag width

- Check if «Double Limitation» function (26) has been activated.

Machine fails to run or only runs slowly

- Plug not inserted correctly.
- Power switch on «0».
- Sewing speed 1/3 or 2/3 activated.
- Unsuitable oil used. Machine must be cleaned by a specialist.
- Machine has been standing in a cold room.
- Bobbin winder switched on.

Machine sews in reverse

- Function «Reverse Sewing» (12) is activated.

Machine does not sew selected stitch

- Unwanted functions are activated.
- Stitch length/width has been altered (individual settings stored).

Programme is erased

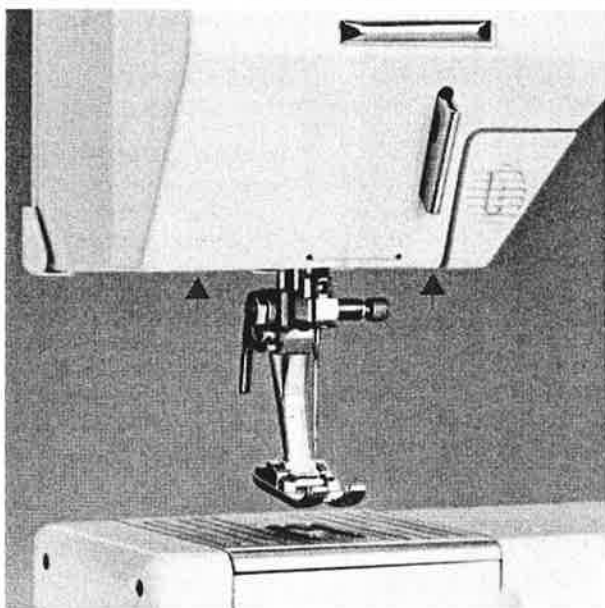
- Machine was disconnected from electricity supply without programme being saved first.

Cursor does not move

- Clean the tracking ball (see page 65).

If you need to take your machine to be serviced or repaired, always take the foot control and accessories.

Changing the bulbs

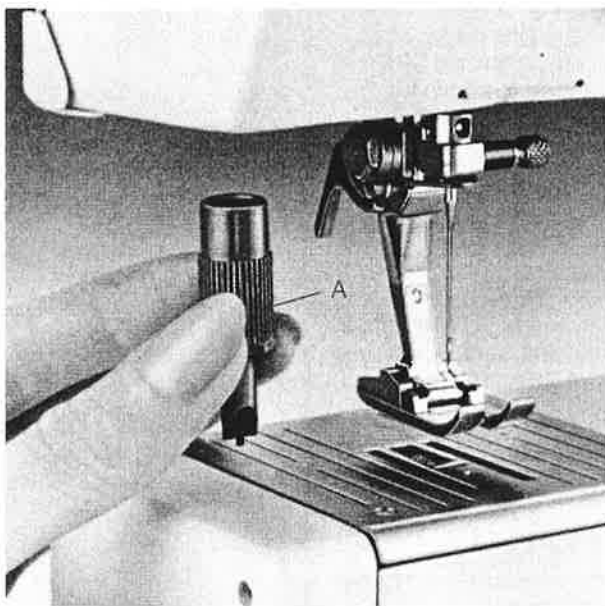


Fitting the bulbs

Your machine is equipped with 2 low voltage 6 volt/4 watt bulbs. The first is located in front of and to the left of the presser foot. The other is behind the foot to the right.

WARNING

Please refer to the safety instructions.



Changing bulbs

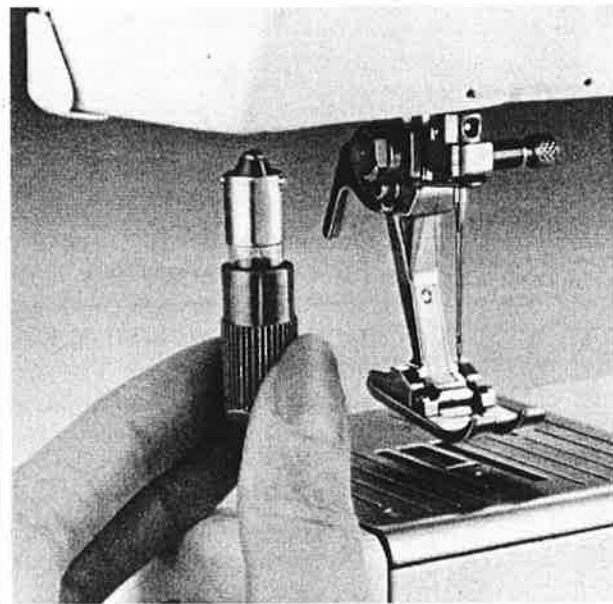
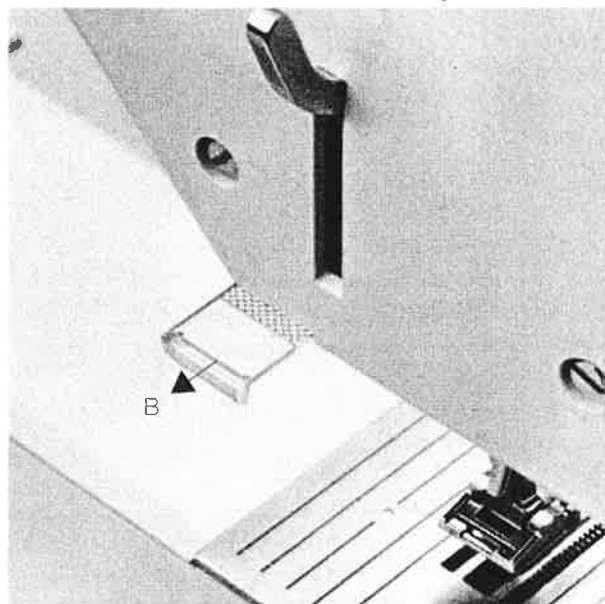
To change the front bulb (fig. 1): Using the special gadget A, press the bulb upwards, twist to the left and remove.

To insert new bulbs

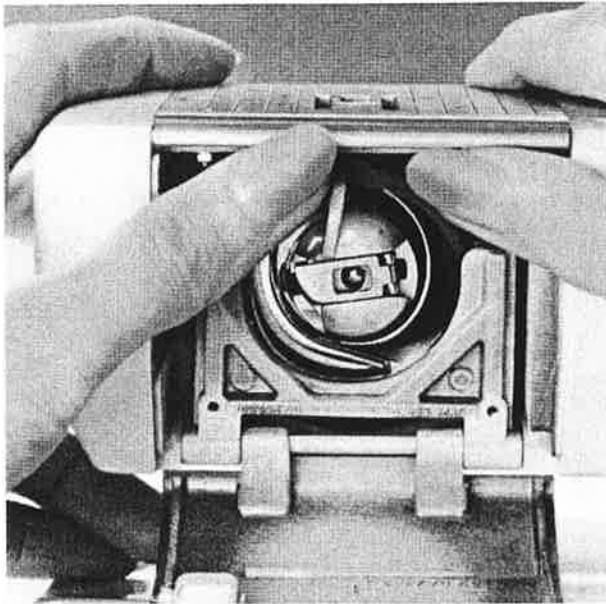
Place the new bulb on the gadget (fig. 3), insert into the holder, press upwards and twist to the right until it clicks into place. After replacing the rear bulb, refit the diffuser B.

To change the rear bulb (fig. 2):

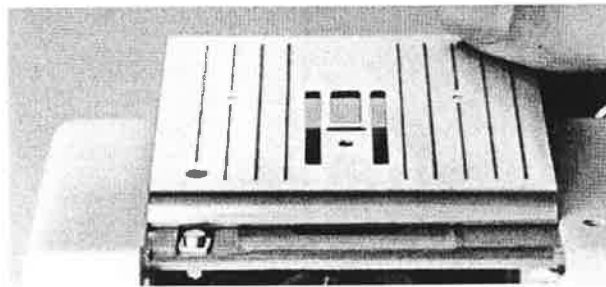
Remove the diffuser B. The bulb can then be removed in the same way as above.



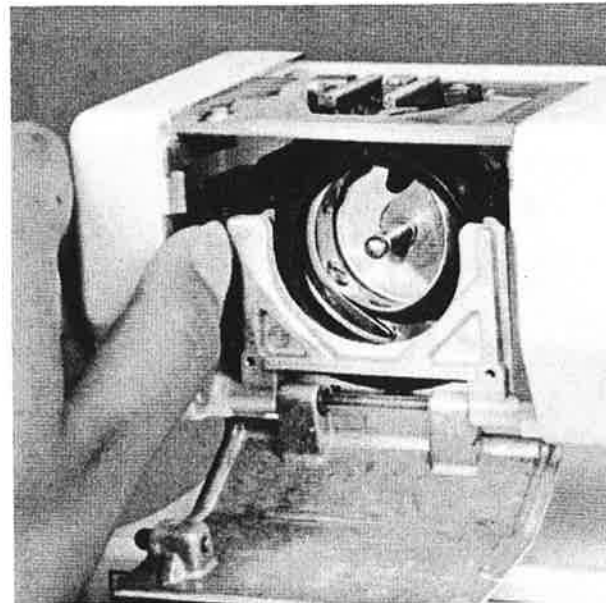
Maintenance: Cleaning and oiling



▲1

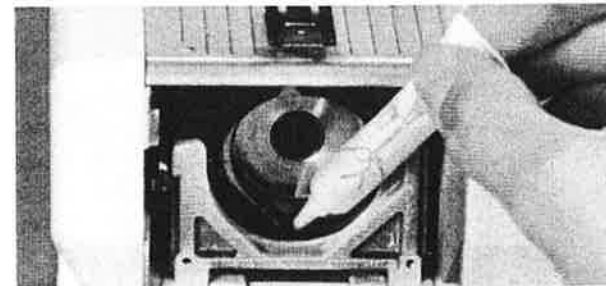


▲2



▲3


▼4



If the machine has been stored in a cold room, it should be brought to a warm room approximately one hour before use in order to restore the oil in the bearings to a fluid state.

Cleaning

When sewing, pieces of thread will collect under the stitch plate and around the hook. These remnants must be removed regularly.

- Disconnect the machine from the power socket by removing the plug from the socket.
- Remove the presser foot and the needle.
- Open the hinged front cover on the free arm.
- Lower the feed dog. Set knob to position .
- Using both thumbs, press the stitch plate up and back (fig. 1).
- Clean the feed-dog and underside of the stitch plate.
- To refit the stitch plate on the free arm, insert from the rear and push forward until it engages (fig. 2).

To oil the hook: Apply 1-2 drops of oil after 3-4 hours of sewing.

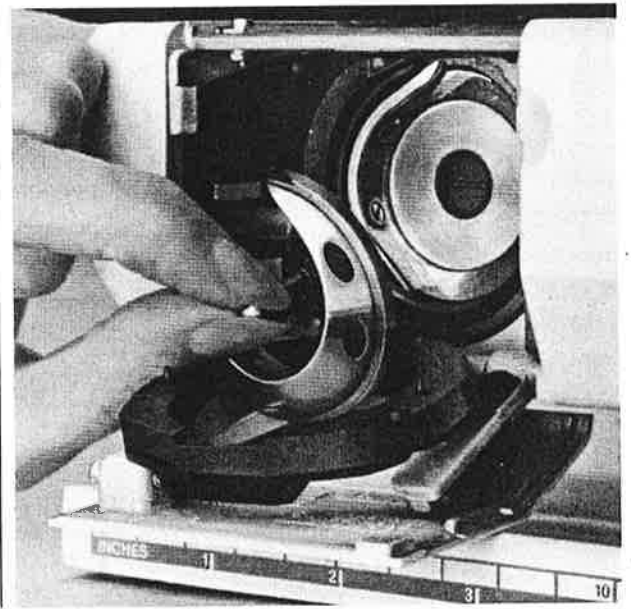
To clean and oil the hook:

- Disconnect the machine from the power supply by removing the plug from the socket.
- Take out the bobbin case (see page ...).
- With the thumb of the left hand, press the lower release lever to the left (fig. 3).
- Fold down the semi-spherical locking strap with the black hook race cover.
- Take out the hook.
- Clean the top and bottom of the hook race with a brush and cotton cloth. Never use a screwdriver or scissors to remove remnants or thread.
- Lightly oil the hook race with 1-2 drops of oil (fig. 4).
- Insert the hook. If necessary, turn the handwheel until the hook driver is on the left (fig. 5).
- Close the black hook race cover and locking strap. The pawl must engage.
- Check by turning the handwheel.
- Insert the bobbin case.

WARNING

Please refer to the safety instructions.

▼5



Maintenance: Cleaning the tracking ball and screen

Cleaning the tracking ball

After a long period of use, the tracking ball may be affected by dust and the natural oils present on the skin of fingers and hands. This can affect the movement of the cursor which can become erratic. Should this occur, it is necessary to clean the tracking ball.

Use a soft, damp (not wet), smooth fibre cloth. Use only tap water.

If it is very dirty, add a few drops of mild washing-up liquid to the water.

Important:

- Do not use solvents in any form!
- Do not use any type of powder or abrasive cleaner!
- Do not push anything between the tracking ball and housing!
- Do not remove the tracking ball!

Cleaning the screen and housing

Clean in the same way as the tracking ball.

Important:

If the screen is damaged or breaks, a liquid can escape. If this comes into contact with the skin, wash thoroughly with soap and water.