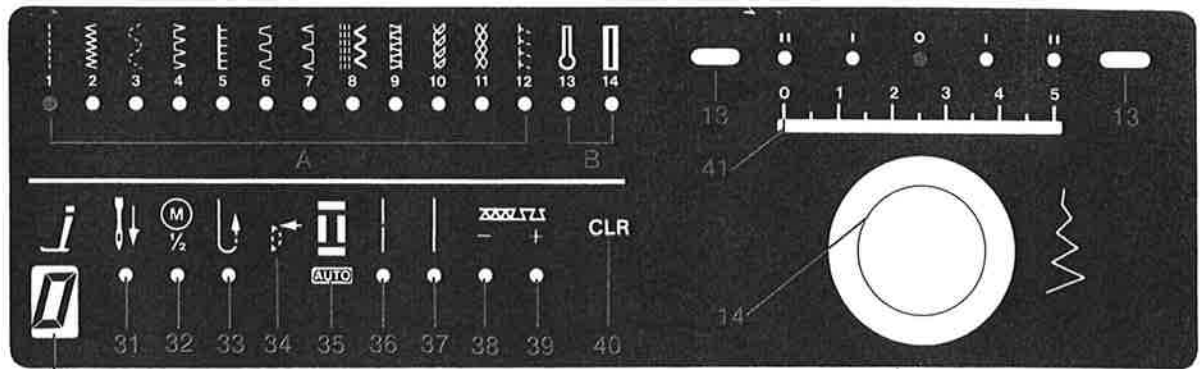


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Guide

Model 1230

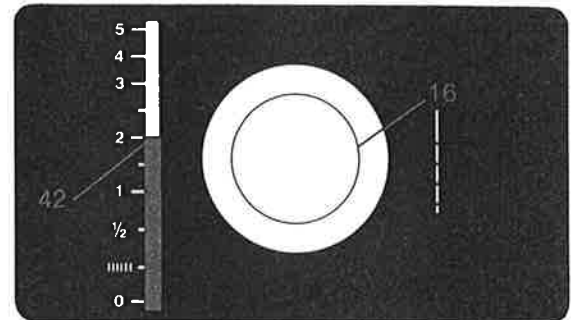
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Indicator/Control panel

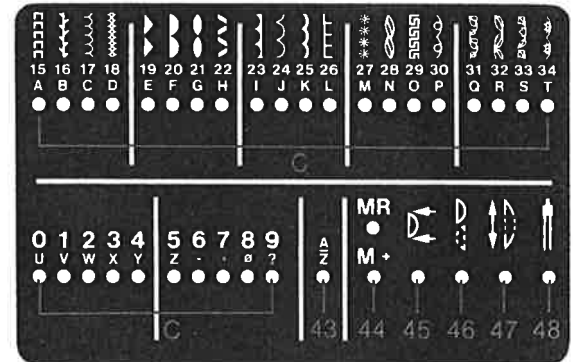


26

BERNINA  1230 MADE IN SWITZERLAND

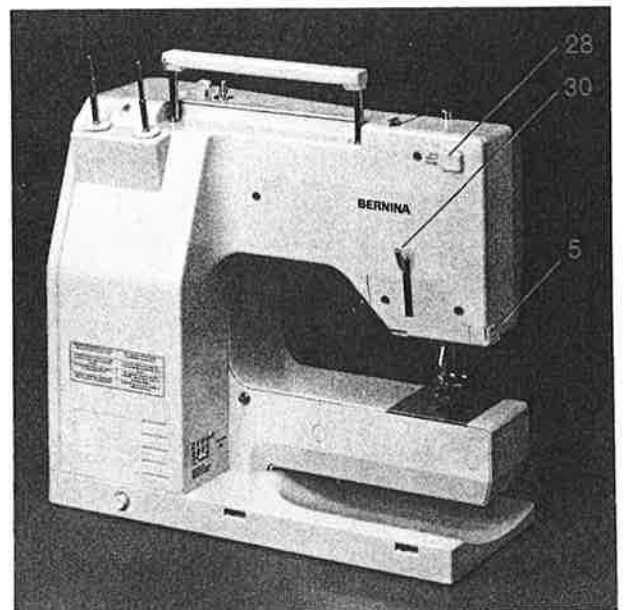
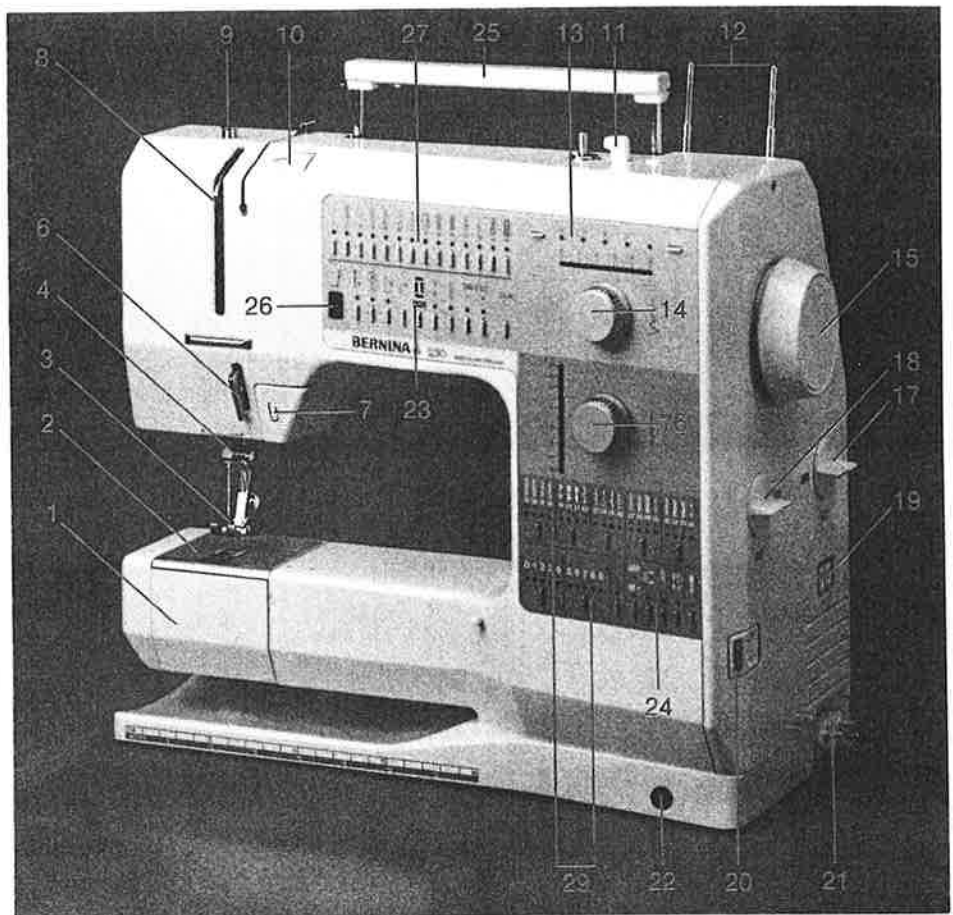


- A Practical stitches
- B Buttonholes
- C Decorative stitches
 - Alphabet
 - Numbers
- 13 Needle position buttons
- 14 Selector knob for stitch width
- 16 Selector knob for stitch length
- 26 Presser foot indicator
- 31 Needle stop down
- 32 1/2 speed
- 33 Reverse sewing button
- 34 Pattern begin
- 35 Selector button for buttonhole steps
- 36 Long stitch
- 37 Basting stitch
- 38, 39 Balance
- 40 Clear button
- 41 Light beam with blinker for stitch width
- 42 Light beam with blinker for stitch length
- 43 Selector button for Alphabet
- 44 Programming button/Repeat button
- 45 Single pattern/pattern end
- 46 Mirror image
- 47 Double stitch pattern
- 48 Double needle limitation



Details of the machine

- 1 Hinged front cover
- 2 Stitch plate
- 3 Presser foot
- 4 Needle clamp
- 5 Thread cutter
- 7 Securing stitch control
- 8 Thread take-up lever
- 9 Pre-tension stud
- 10 Tension regulating dial
- 11 Bobbin winder (with on/off switch)
- 12 Thread holder pins
- 13 Needle position buttons and indicators
- 14 Selector knob for stitch width
- 15 Handwheel
- 16 Selector knob for stitch length
- 17 Power switch
- 18 Feed-dog knob
- 19 Connection for foot control unit
- 20 Quick needle threader
- 21 Mains cable
- 22 Presser foot lifter socket
- 23 Selector buttons for general functions
- 24 Selector buttons for special functions
- 25 Carrying handle
- 26 Presser foot indicator
- 27 Practical stitches (selector buttons and indicators)
- 28 Sewing light switch (rear of machine)
- 29 Decorative stitches Alphabet Numbers
- 30 Presser foot lifting lever



Index

Index

A

Accessories 9
 Accessories box 9
 – fitting 9
 – removing 9
 Alphabet programming 31
 Automatic storage 28

B

Balance 26, 29
 Basic setting
 – altering 28, 31
 – combining with functions 29
 – retrieve 28
 Basting stitch 26, 37
 Blind hemming 38
 Blind stitch 23
 Bobbin case and bobbin 12
 Bobbin winding 12
 Buttonhole
 – three-step standard buttonhole 40
 – with gimp cord 40
 – three-step Keyhole buttonhole 41
 – marking 40, 41
 – cutting 40
 – programmed standard buttonhole 42
 – with gimp cord 42
 – programmed Keyhole buttonhole 43
 – reinforced 43

C

Carrying case 8
 Changing the bulbs 51
 Cleaning and oiling 52
 Clear button (CLR) 26
 Clearing 26
 Compact stitches 24
 Cutter 15

D

Darning 47
 – with small darning ring 48
 Decorative stitches 24
 – altering the basic setting 28
 – combining with functions 29
 – programming 30
 Double needle limitation 26
 Double overlock 23
 Double overlock seam 35
 Double stitch pattern 26

E

Edge stitching 39
 Edges, oversewing 27
 Edging stitches 24
 Edging with elastic thread 46

F

Fault prevention 50
 Faulty stitching 50
 Faulty tension 50
 Feed-dog
 – lowering the 15
 – lower 11
 – and fabric feed 20
 – and presser feet 20
 – and sewing of corners 20
 – and stitch length 20
 Flat joining seam 34, 35
 Floral stitches 24
 Foot control unit 10
 – connecting 10
 – and electronic needle stop 10
 Forward stitching 27
 Function buttons 26
 – balance 26, 29
 – basting stitch 26, 27
 – clear button (CLR) 26
 – double needle limitation 26, 29
 – double stitch pattern 26, 29
 – long stitch 26, 29, 37
 – mirror image 26, 29
 – needle stop down 26
 – pattern begin 26, 30
 – presser foot indicator 26
 – programme selector button A-Z 26
 – programming button MR 26, 30, 31
 – reduced sewing speed 26, 30
 – reverse sewing button 26, 29
 – securing stitch control 27
 – single pattern (pattern end) 26, 30

H

Hand look stitches 24
 Hem, visible with
 – Jersey stitch 33
 – Triple zig-zag 33
 Hems, practical stitch 33
 Honeycomb stitch 23, 32, 45
 Hook 52

I

Important 6, 53
 Inserting the bobbin 13
 Interlock fabric mending 46

J

Jeans foot 22, 36
 Jersey stitch 23, 33, 46

K

Keyhole buttonhole
 – reinforced 43
 Knitted fabrics, sewing 32

L

Leather/Plastic 36
 Letters/Alphabet 24
 – programming 31
 Long stitch 37
 Lower thread
 – breaks 50
 – bringing up 14
 – winding 12

M

Machine
 – fails to run 50
 – fails to sew full zig-zag width 50
 – stitching in reverse 50
 – will only run slowly 50
 Mains cable 10
 – connecting 10
 Maintenance 52
 MR (programming button) 26
 Marking buttonholes 40, 41
 Mending
 – interlock fabric 46
 – tears using Running stitch 44
 – woven fabric 45
 Mirror image 26
 Motor 10

N

Neckband
 – with decorative seam 32
 – with overlock seam 32
 Needle and fabric 18
 Needle breaks 50
 Needle positions 27
 Needle stop 10
 – down 26
 – electronic 10
 Needle, inserting 16
 Needle, standard 19
 Needle/Thread table 18
 Needles and the sewing machine 18
 Needles and thread 18
 Needles, all about sewing machine needles 18
 Needles, special 19
 Needle threader 14
 – threading the needle 14
 Numbers and letters 24
 – programming 31

O

Oiling and cleaning 52
 Open seams 34
 Overlock seams 34
 Overlock stitches 23
 Oversewing edges 27

Index

P

Patching using
 – Honeycomb stitch 45
 – Jersey stitch 46
 Pattern begin 30, 33
 Pattern end (single pattern) 26, 30
 Pearl stitches 24
 Plastic/Leather 36
 Power switch 10
 Practical stitch hems 33
 Practical stitch seams 34, 35
 Practical stitches
 – forward sewing 23
 – reverse sewing 23
 – table 23
 Presser feet 22
 – blind stitch foot 22, 38
 – buttonhole foot 22, 40, 41
 – changing 16
 – darning foot 22, 47
 – embroidery foot 22
 – jeans foot 22, 36
 – overlock foot 22, 35
 – reverse pattern foot 22
 – special buttonhole foot 22, 42, 43
 – tailor tacking foot 22
 – zip foot 22, 36
 Presser foot indicator 26
 Presser foot lifter 11
 – attaching 11
 – and lower the feed dog 11
 Prevention, fault 52
 Programming 33
 Programming button (MR) 32

R

Reducing sewing speed 26, 30
 Repeating the memorized programme 30, 31
 Reverse sewing 27
 Reverse sewing button 26, 29
 Running stitch 23, 44

S

Safety instructions 6, 53
 Satin stitch 27
 Seams
 – double overlock seam 35
 – flat joining seam 34, 35
 – open seams 34
 – overlock seams 34
 – stretch seams 34
 – stretch overlock seam 35
 – triple straight stitch seam 34
 – vari-overlock seam 35
 – zig-zag seam 34

Securing stitch control 27
 Sewing light 10
 – changing bulbs 51
 Sewing machine needles, all about 18/19
 Sewing speed, reduced 26, 30
 Sewing table 11
 – fitting 11
 – removing 11
 Sewing thick fabrics 36
 Single pattern (pattern end) 26, 30
 Special needles 19
 Standard buttonholes
 – with gimp cord 40
 Stitch length, to alter 27
 Stitch width, to alter 27
 Stitches
 – decorative stitches 24
 – edging stitches 24
 – compact stitches 24
 – floral stitches 24
 – hand look stitches 24
 – pearl stitches 24
 – altering the basic setting 28, 31
 – combining with functions 29
 – faulty stitching 50
 – forward sewing practical stitches 23
 – Blind stitch 23, 38
 – Running stitch 23, 44
 – Straight stitch 23, 27
 – Stretch stitch 23, 34
 – Universal stitch 23
 – Vari-Overlock 23, 32, 35
 – Zig-zag stitch 23, 27
 – reverse sewing practical stitches 23
 – Double overlock 23, 35
 – Honeycomb stitch 23, 32, 45
 – Jersey stitch 23, 33, 46
 – Stretch Overlock 23, 35
 – Triple straight stitch/ Triple zig-zag 23, 33, 34
 Stitching
 – edge 39
 – forward 27
 – needle positions 27
 – reverse sewing 27
 – top 37, 39
 Storage, automatic 28
 Straight stitch 23, 27
 – triple straight stitch 23, 34
 Stretch Overlock 23, 35
 Stretch seam 34
 Stretch stitch 23, 34

T

Thread
 – bringing up the lower thread 15
 – cutter 15
 – needles 18
 – threading the upper thread 14
 Thread tension 15
 Thread, lower
 – breaks 50
 – bringing up 15
 winding 12
 Thread, upper
 – breaks 50
 – threading the 14
 Threader (Quick needle threader) 14
 Top stitching 37, 39
 – using buttonhole thread (Cordonnet) 37
 Triple straight stitch 23
 Triple straight stitch seam 34
 Triple zig-zag 33

U

Universal stitch 23
 Upper thread
 – breaks 50
 – threading the 14

V

Vari-Overlock 23, 32, 35
 Vari-Overlock seam 35
 Visible hem with
 – Jersey stitch 33
 – Triple zig-zag 33

W

Woven fabric, mending 44, 45

Z

Zig-zag seam 34
 Zig-zag stitch 23, 27
 – triple 23, 33
 Zips 36

Important

Safety instructions

SEV, VDE (Official testing authorities in Switzerland and West Germany). The following safety instructions must be observed.

– The moving needle is a source of danger (risk of injury to the fingers). Always therefore keep your eyes on the area in which you are working.

– Any operations performed within the needle movement area, e.g. changing a needle or presser foot, must always be carried out with the machine switched off (power switch at 0). The same applies to removing and replacing the lower thread bobbin.

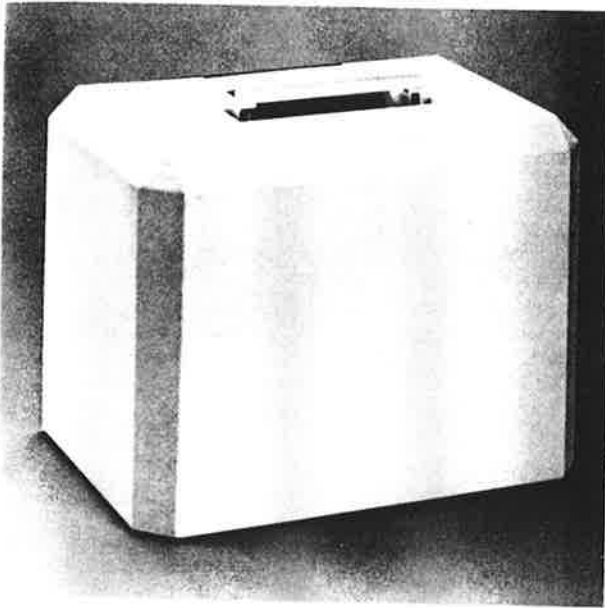
– When carrying out maintenance (cleaning or oiling), whenever work is interrupted or finished and also for changing bulb, the sewing machine should be disconnected from the mains by removing the mains cable from the socket.

– Repairs to the electronics, with particular reference to changing the connecting lead, should be carried out only by a BERNINA dealer.

Setting up the sewing machine

Carry case	8
Accessories box	9
Mains cable	
Foot control unit	
Sewing light	
Power switch	
Needle stop	10
Presser foot lifter	
Sewing table	11
Bobbin case and bobbin	
Winding the lower thread	12
Inserting the bobbin	13
Threading the upper thread	
Quick needle threader	14
Bringing up the lower thread	
Thread tension	
Feed-dog	15
Inserting the needle	
Changing presser feet	16

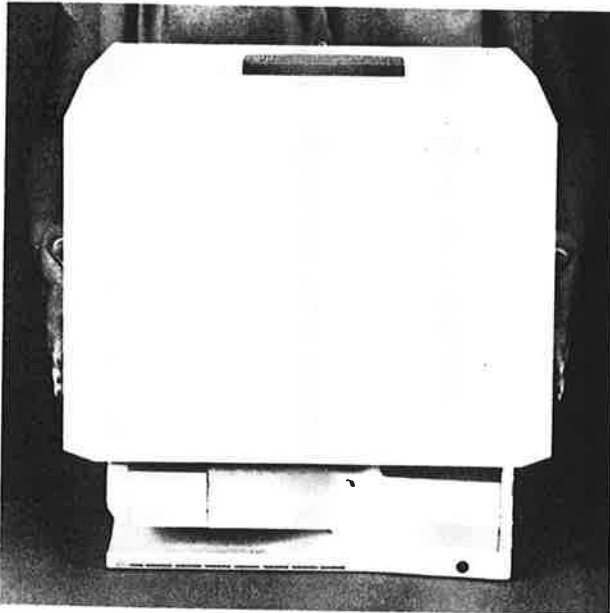
Carrying case



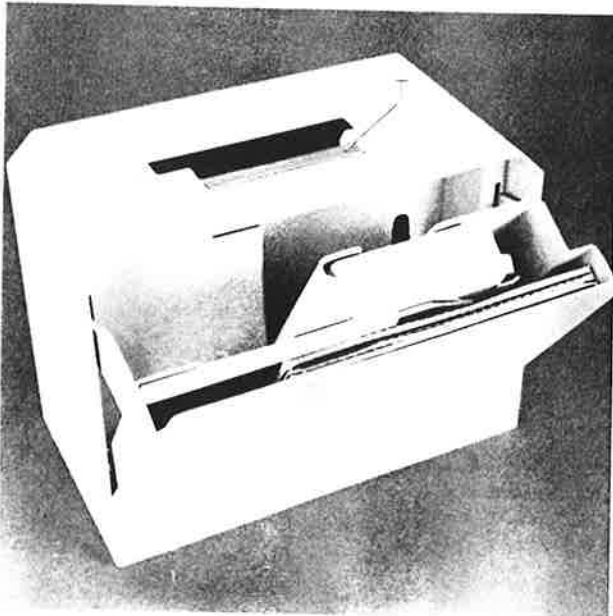
Carrying case, accessories

The carrying case protects the machine from dust and dirt.

Always carry the machine by its handle.

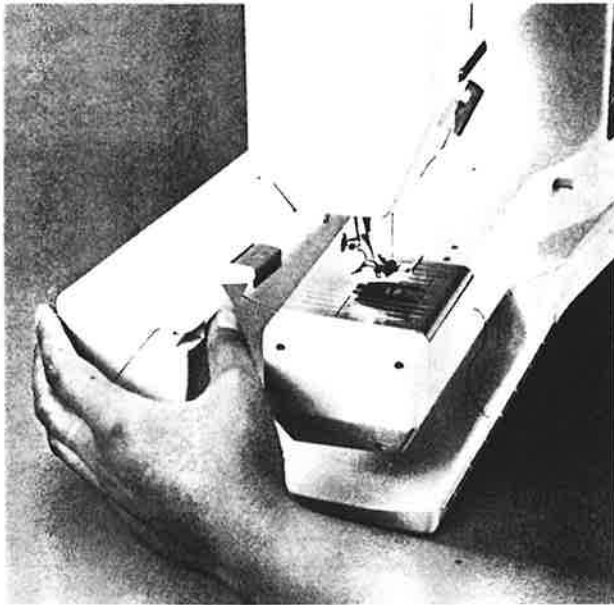


Hold the carrying case with both hands to the sides and lift it straight upwards.



The case has a built-in accessories compartment. Press regulating bar "T" to swing out the accessories compartment. This has space to stow the foot control unit, the presser foot lifter, the sewing table and BERNINA instruction books.

Accessories box



Removing the accessories box

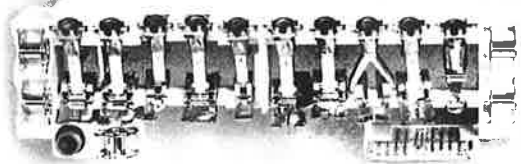
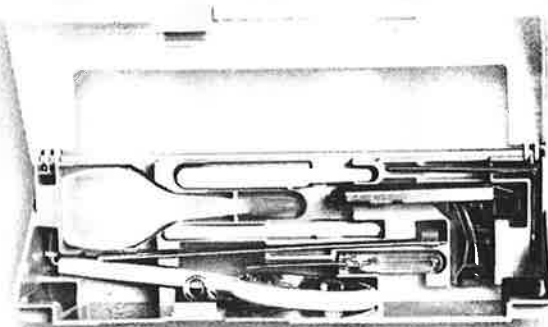
Simply push the accessories box backwards.

Standard accessories for the BERNINA 1230

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

Accessories box

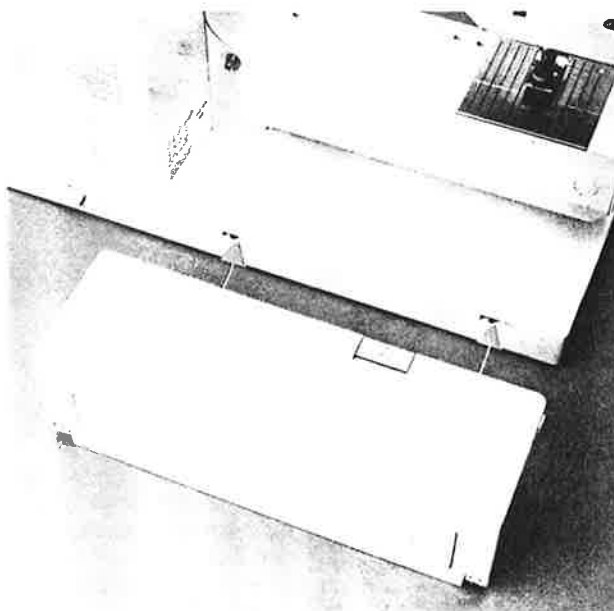
The accessories box allows accessories to be seen at a glance.



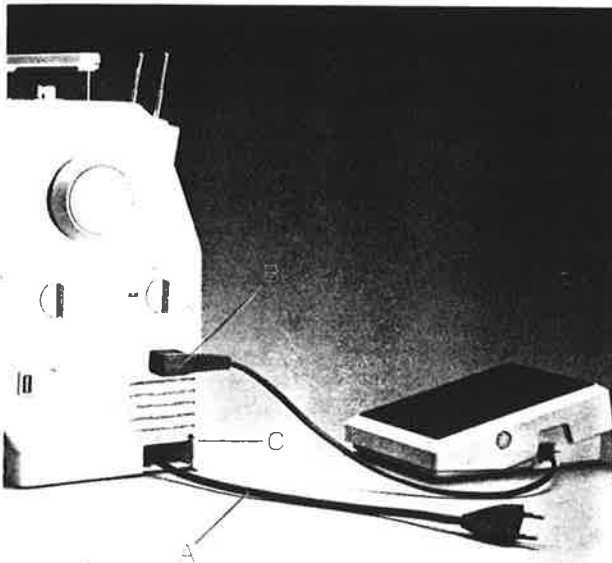
Fitting the accessories box onto the machine

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

Lay the accessories box onto the base plate from the rear, and press against the free arm until the fixing lugs engage in the holes provided.



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



Connecting mains cable and foot control unit

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

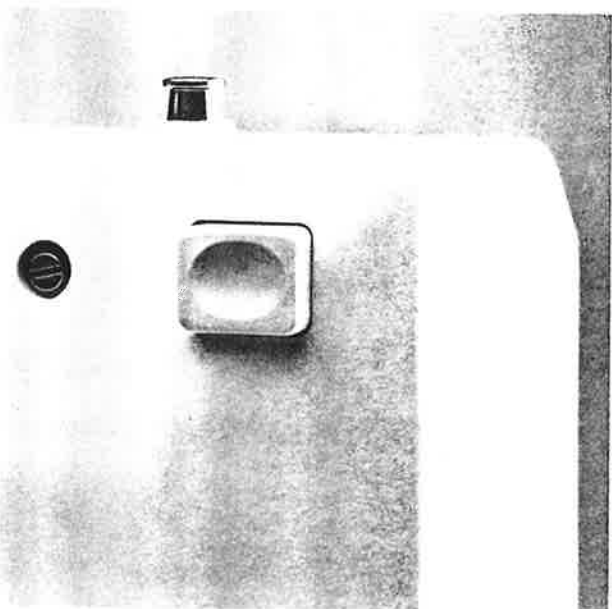
By pressing the button (C), the mains cable will automatically rewind.



Foot control unit

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

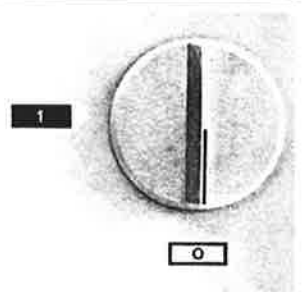
The sewing speed can be controlled from virtually 0 to maximum speed by varying the pressure on the plate of the foot control unit.



Sewing light

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

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



Power switch

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

The machine is switched off.

The machine is switched on.

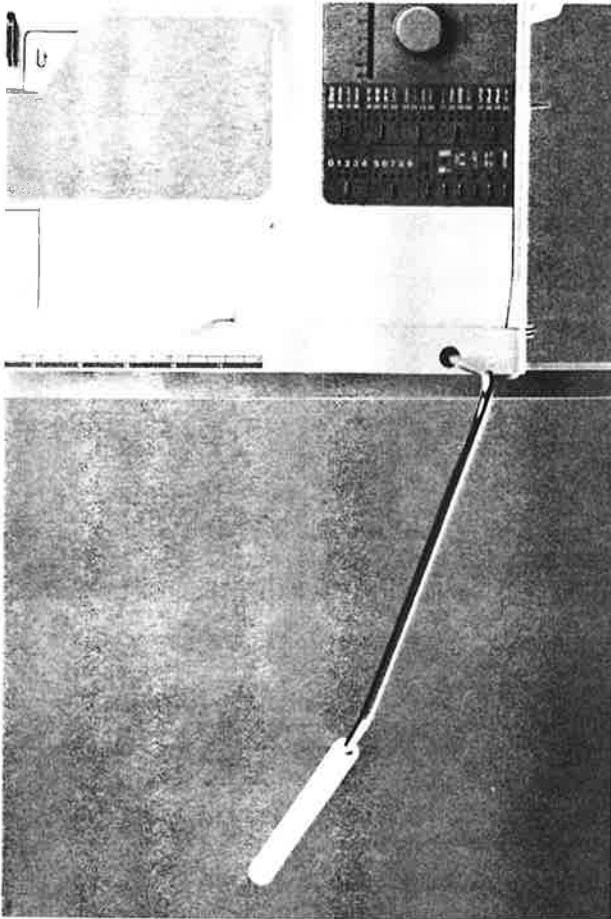
Electronic needle stop and foot control unit

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

Motor

The D.C. motor and electronic speed control give exceptionally good fabric penetration power, even when sewing at slow speed.

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 by 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 at the same time the feed-dog is lowered.

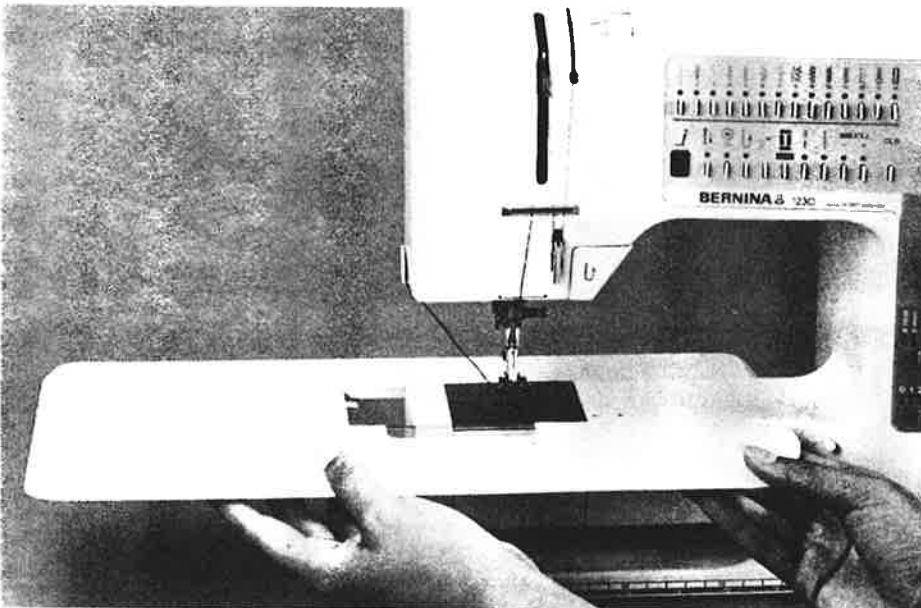
The next stitch returns the feed-dog to sewing position.

Attaching the presser foot lifter

The presser foot lifter is stored in the carrying case (see picture on page 8). 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 need to alter the customary sitting position. If the angle of the presser foot lifter is uncomfortable, it can be adjusted.

Your BERNINA dealer will be pleased 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.

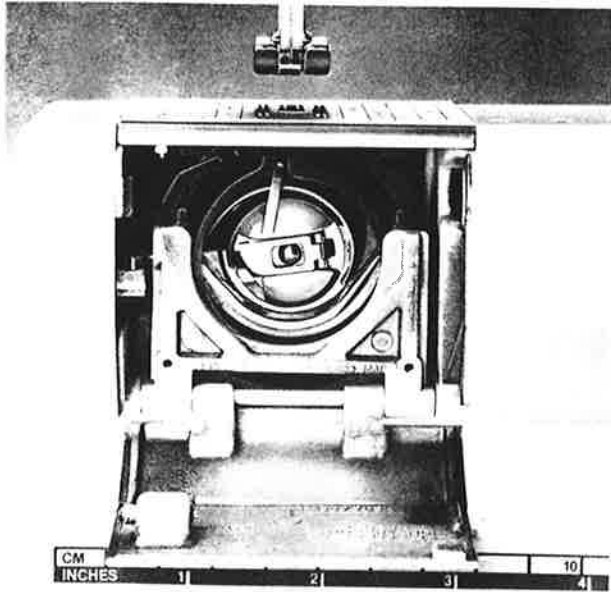
Fitting the sewing table

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 on the machine.

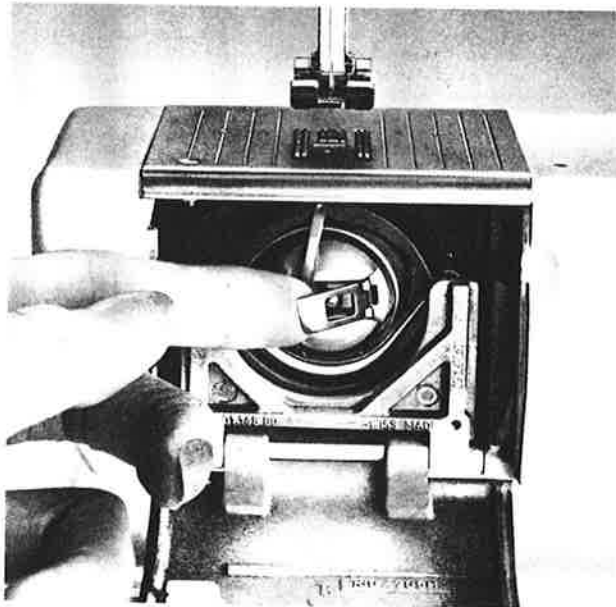
Removing the sewing table

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

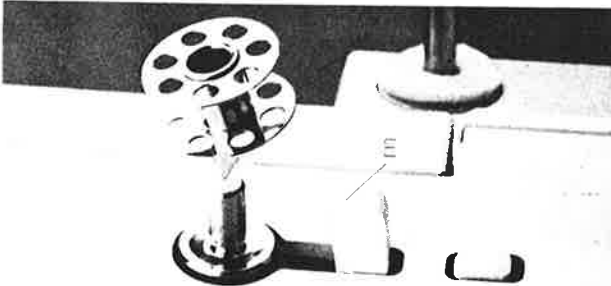
Bobbin case and bobbin, winding lower thread



▲1

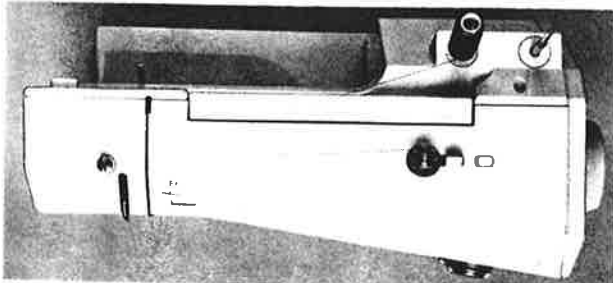


▲2



▲3

▼4



Removing the bobbin case

Set the power switch to the **0** position. Check that the needle is raised. If not, raise the needle 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 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 pre-tension stud to the empty bobbin (fig. 4). Wind around the empty bobbin several times, again in a clockwise direction. Set the power switch to the **1** position. Press the engaging lever E against the bobbin.

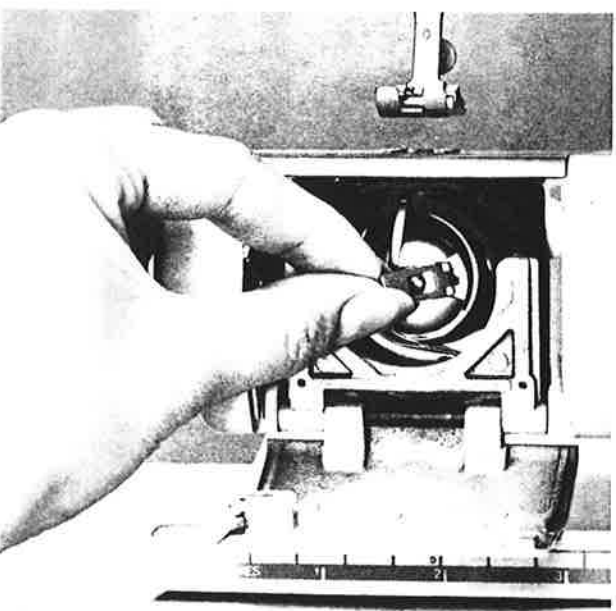
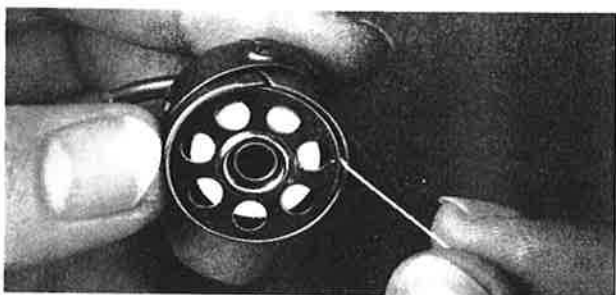
Start the bobbin winder motor with the foot control. The speed of the bobbin winder can be regulated by increasing or decreasing the pressure on the foot control.



▲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 to the slot.

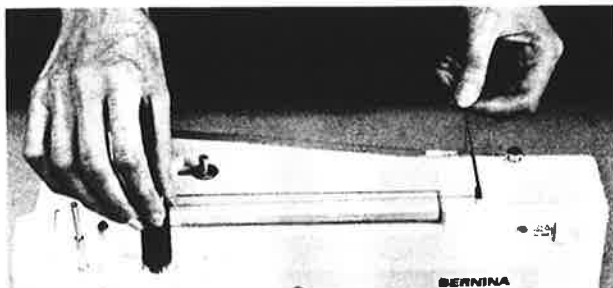
Pull the thread into the slot and

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.

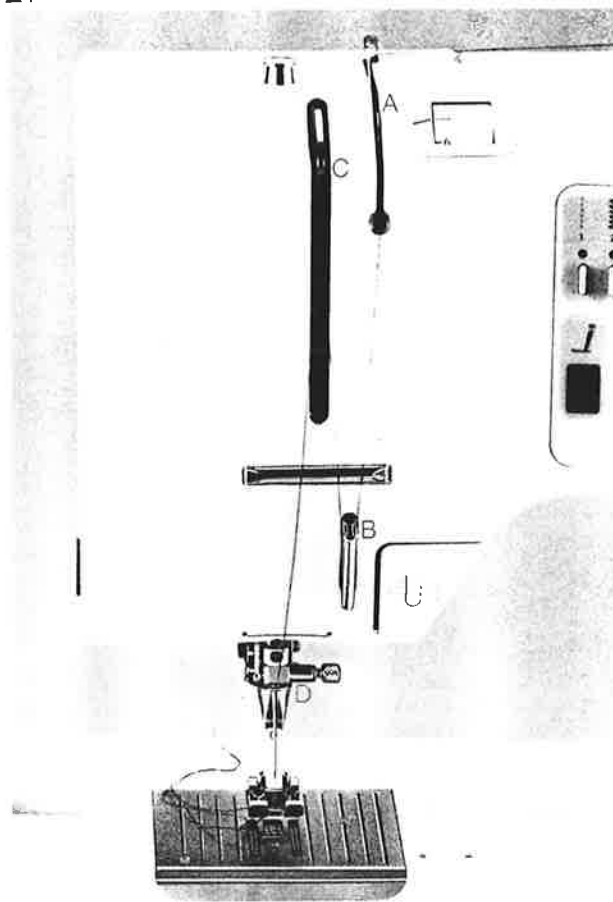
Inserting the bobbin case into the hook

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.

Threading the upper thread



▲1



▲2

Threading the upper thread

Set the power switch to **0**.

Check that the needle is in the raised position. Raise the presser foot. Place the cotton reel on one of the two thread holder pins. Hold the cotton reel in position whilst threading.

First clip the thread into the thread guide on the top of the machine, then bring it through the long slot (A) of the thread tension (fig. 1).

At the front of the machine, take the thread downwards under the thread regulator (B), up again to the thread take-up lever at the top (C) and then downwards to the needle holder thread guide (D) (fig. 2).

Always thread the needle from front to back.

The small white plate on the front of the presser foot shaft helps when threading the eye of the needle. Pull the thread approximately 10 cm (4") through the eye of the needle.

Quick needle threader

The Quick needle threader for threading the needle

The needle threader is positioned on the right of the machine, under the hand-wheel.

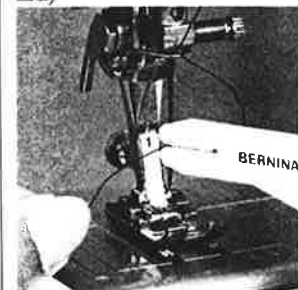
a) Lay the sewing thread lightly across the threader.

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 needle threader.

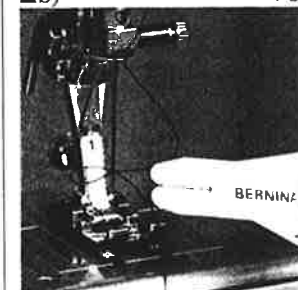


▲a)



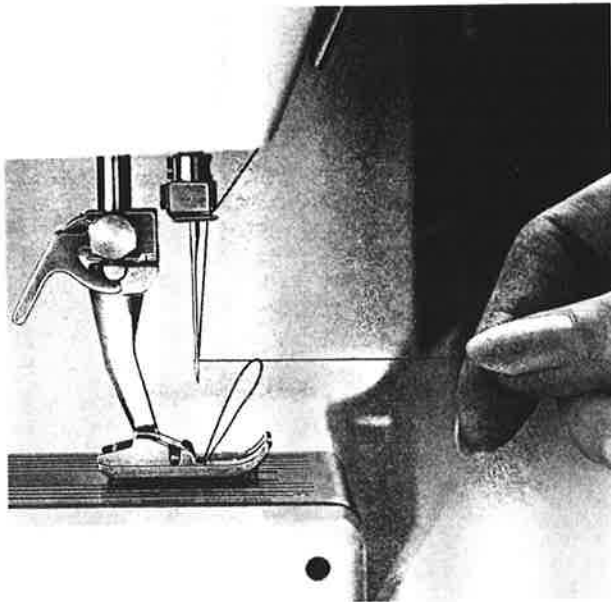
▲b)

▼c)



BERNINA

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

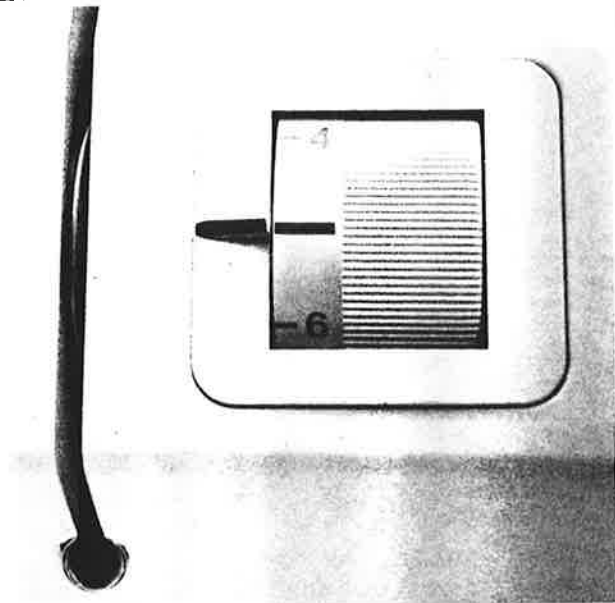


Bringing up the lower thread

Set the power switch to **1** position. 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 forward with the right hand until the needle returns to its highest position. In this case the upper thread has to be held with the left hand.

▲1



Thread tension

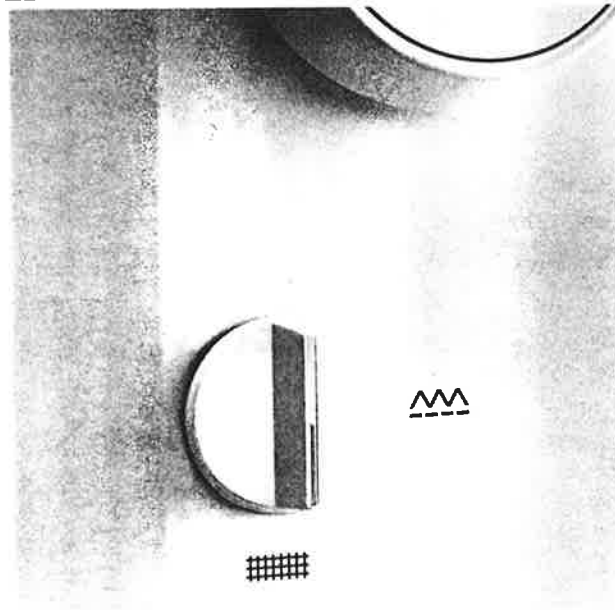
One of the main advantages of BERNINA machines is that there is very rarely any need to alter the thread tension for normal sewing.

For the normal tension setting, the red mark on the tension regulating dial should match the adjacent mark on the machine (fig. 2).

For special sewing, e.g. for tailor tacks, the thread tension can be adjusted with the aid of the regulating dial. Turning the tension regulating dial forwards, to number 4 or below, gives a looser upper thread tension.


Turning the tension regulating dial backwards, to number 6 or above, gives a tighter upper thread tension.

▲2



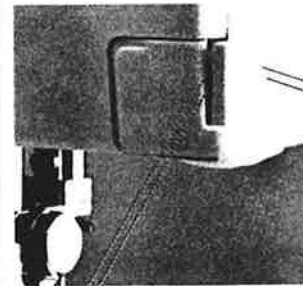
▼3

Lowering the feed-dog

For certain types of sewing, e.g. darning, the fabric must not be moved by the feed. In such cases, the feed-dog should be lowered by turning the near knob, on the hand-wheel side of the machine, to the right until the mark points to symbol  (fig. 3).

For all normal sewing, the mark on the knob should point to symbol . The feed-dog will return to sewing position with the first stitch.

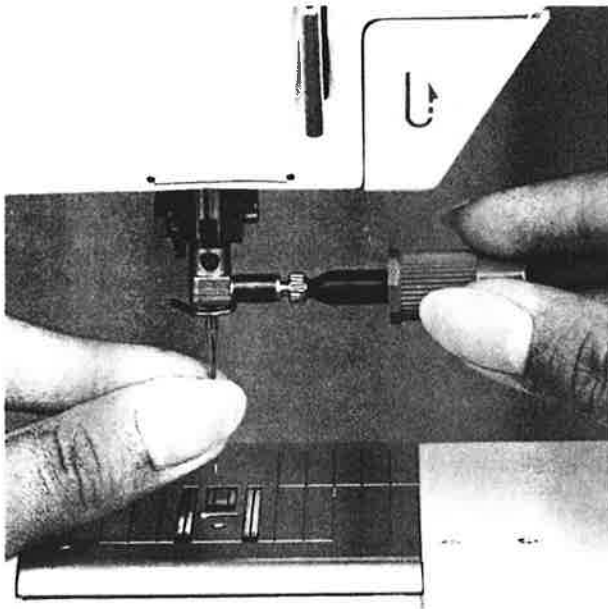
Do not forget:
The thread tension should be reset to normal when the special sewing has been completed.



Thread cutter

To remove the work, raise the presser foot, pull 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

A small brown screwdriver for slackening or tightening the needle clamp is provided in the accessories box.

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

To slacken the needle clamp: Half a turn forwards, anticlockwise (fig. 1).

To insert the needle: The flat side of the needle shank should always be to the rear. Insert the needle until it reaches the top. If the needle does not reach the top, ie. is set too low, faulty stitches will result. Tighten the needle clamp securely.

Changing presser feet

For the various presser feet and their uses, see page 22.

The success of a piece of sewing is largely governed by the correct choice of the presser foot. The feet are therefore easy and practical to change.

Set power switch to the position.

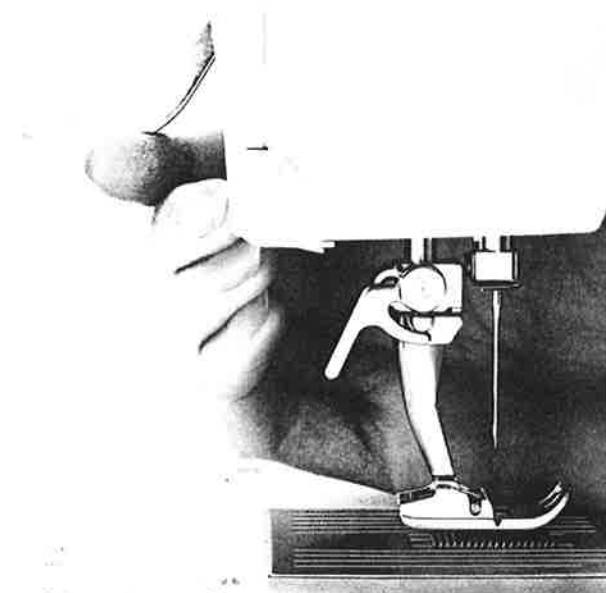
Check that the needle is in raised position.

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).

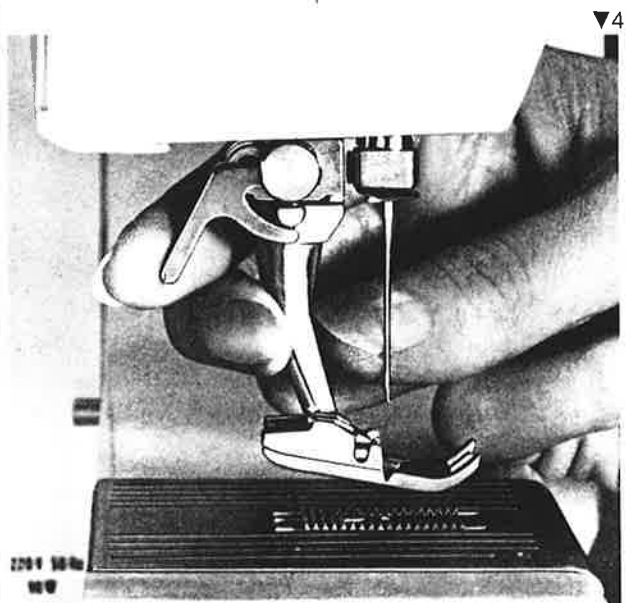
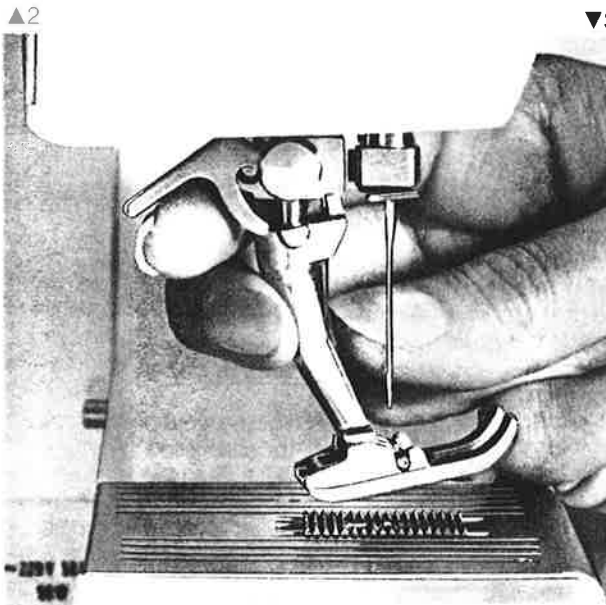
To attach the presser foot: the procedure is the same, but press the clamping lever downwards with the index finger (fig. 4).

Set the power switch to the position.



▲2

▼3



▼4

Threads Needles

Needles and the sewing machine	
Needles and thread	
Needle and fabric	
Needle/Thread Table	18
Special needles	19
Feed-dog and stitch length	
Feed-dog and fabric feed	
Feed-dog and the sewing of corners	20

All about sewing machine needles

1. Needles and the sewing machine

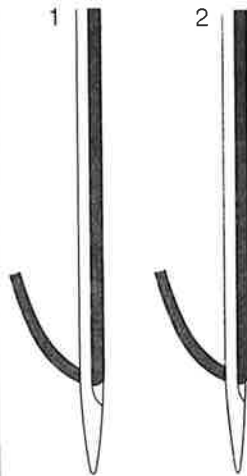
Your BERNINA has a 130/705 H needle system. Make sure, when buying new needles, that they are the 130/705 H system. Commercially available needle sizes are nos. 70 to 120. The finer the needle, the lower the number. For thread, the opposite applies. The finer the thread, the higher the number.

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 match 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 result.



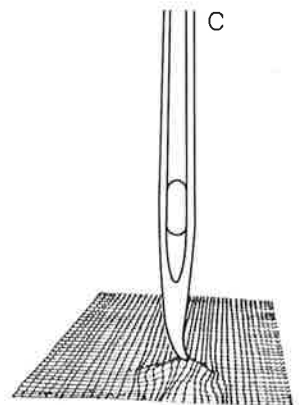
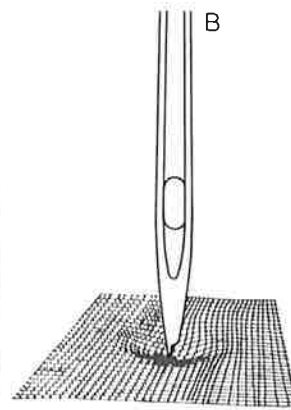
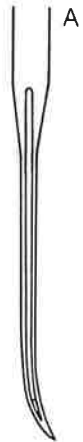
3. Needle and fabric

Needle condition

The needle must be in perfect condition.

Sewing problems are caused by:

- Bent needles (A)
- Blunt needles (B)
- Hooked tips (C)

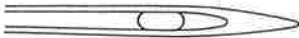







Needle/Thread Table

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 sewing machine needles

The modern domestic sewing machine is capable of handling a very wide range of fabrics. However, as in the trade, special needles are required for some of these fabrics, e.g. needles with varying types of 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, organdy, 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 stretch needle. Especially for delicate or difficult stretch fabrics
	130/705 H-J	Extra fine point 	Workwear, heavy linen, denim fabrics, canvas. Pierces dense fabrics more easily
	130/705 H-LR + H-LL	Cutting point 	Leather, suede, calfskin, kid pigskin, imitation leathers and suedes, plastics

Feed-dog and fabric feed

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 extremely short. The fabric moves under the presser foot quite slowly – even at full sewing speed. For example, buttonholes, satin stitching and decorative stitches are sewn with this short stitch length.

Important:

a) Make sure that the fabric feeds evenly!



b) Pushing will result in "gaps".

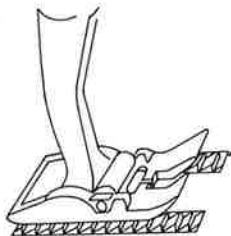


c) Holding back will result in "pile-ups".

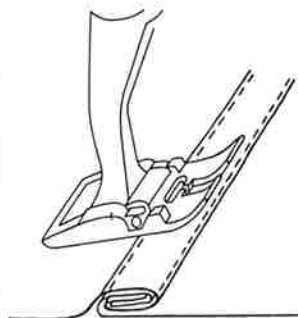


2. Feed-dog and fabric feed

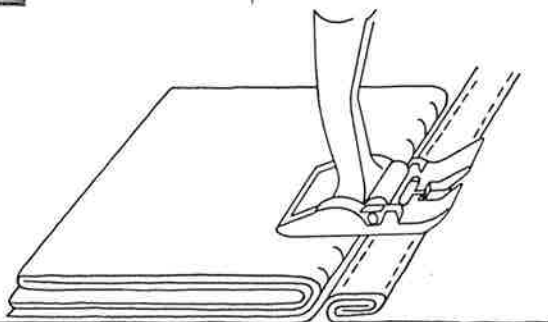
a) The feed-dog can only work effectively if the presser foot is horizontal.



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



c) Place a piece of fabric, folded to the thickness of the work, beside the sewing, so that the presser foot is again level and the sewing will feed without sticking.

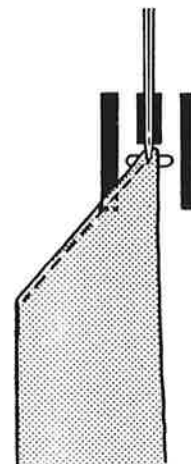


3. Feed-dog and the sewing of corners

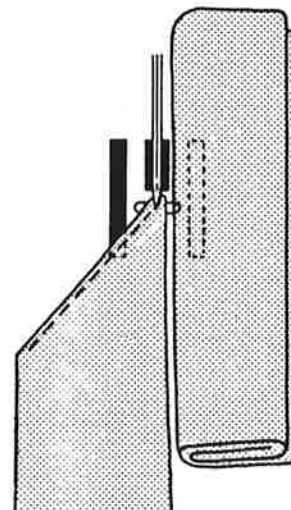
a) The two rows of teeth of the feed-dog are quite a distance apart because of the width of the zig-zag needle hole.



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



c) If a folded piece of fabric is placed against the corner, the feed-dog will once again be able to work properly.



Presser feet

Practical stitches

Decorative stitches

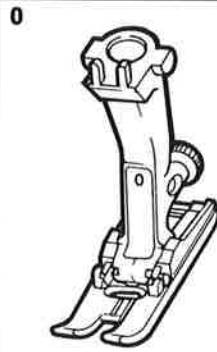
Presser feet	22
Forward and reverse sewing practical stitches	23
Decorative stitches	
Letters	
Numbers	24



Presser feet

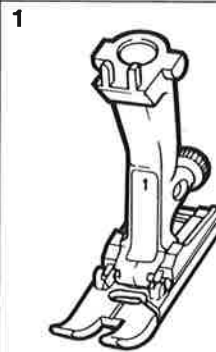
Presser feet are an important aid to sewing. They are designed with grooves and guides. The success of a piece of sewing is determined by the correct choice of presser foot.

Individual presser feet are not just for one particular type of work. They can also be used to simplify other tasks.



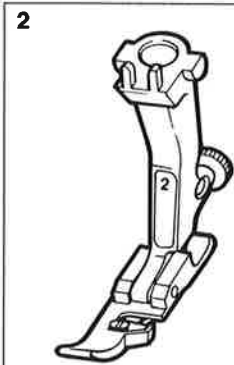
Zig-zag presser foot

Straight stitch
Zig-zag
Practical stitches



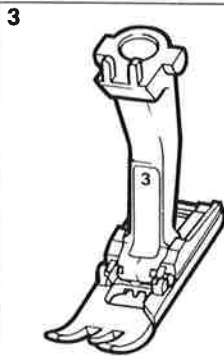
Reverse pattern foot

Practical stitches
Decorative stitches



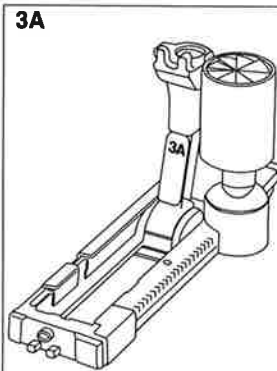
Overlock foot

Vari-overlock seam
Vari-overlock hems
Oversewing seam edges



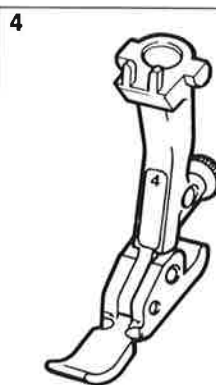
Buttonhole foot

Buttonholing



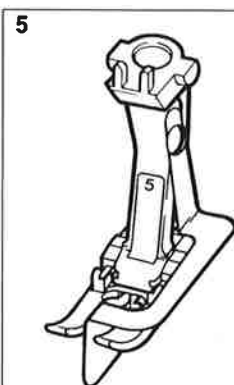
Special buttonhole foot

Keyhole buttonholes
Standard buttonholes
(programmed)



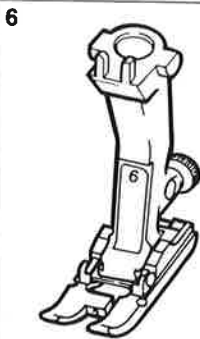
Zip foot

sewing in zips
Piping



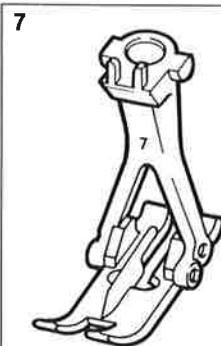
Blind stitch foot

Blind hemming
Edge stitching



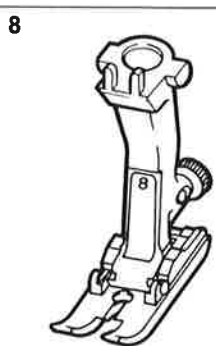
Embroidery foot

Decorative stitching
Satin stitching
Applique
Couching



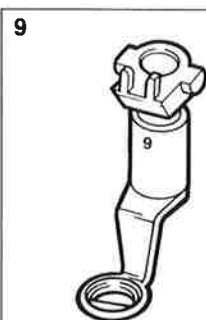
Tailor tacking foot

Tailor tacking
Fringing
Faggotting



Jeans foot















Straight stitch seams in
thick, hard fabrics and
over thick seams



Darning foot





















Darning
Free hand monograms
Free hand embroidery

Forward sewing practical stitches 1-7 / Reverse sewing practical stitches 8-12 / Buttonholes 13-14

<p>1 Straight stitch</p>  <p>All types of non-elastic fabric. All straight stitch work.</p>	<p>2 Zig-zag stitch</p>  <p>Most types of fabric. All simple zig-zag work, e.g. oversewing, especially on fine fabrics, sewing on elastic and lace.</p>	<p>3 Running stitch</p>  <p>Most types of fabric. Mending, patching, reinforcing edges etc.</p>	<p>4 Vari-Overlock</p>  <p>Primarily for fine synthetic, silk and cotton jerseys. Elastic overlock seams and hems, particularly suitable for sports underwear, pyjamas, T-shirts, sweat-shirts, running-suits etc.</p>
<p>5 Stretch stitch</p>  <p>For highly elastic fabrics. Highly elastic open seams for tailored outer wear, ski, horse-riding, climbing and hiking wear.</p>	<p>6 Universal stitch</p>  <p>For firmer knitted fabrics, felt, leather etc For joining seams, visible hems, patchwork, mending on interlock, sewing on elastic, decorative seams.</p>	<p>7 Blind stitch</p>  <p>Most types of fabric. Blind hems, shell edging on soft jersey and fine fabrics, decorative work.</p>	<p>8 Triple straight stitch / zig-zag</p>  <p>Corduroy fabrics, denim, deckchair fabrics, all heavy and tough fabrics. Reinforced seams and visible hems. Sewing on tapes, extra strong seams for sportswear, woollen blankets, sleeping bags, rucksacks and soft toys.</p>
<p>9 Double overlock</p>  <p>Firm knitted fabrics and hand and machine knitted fabrics. Overlock seam = Sewing and oversewing in one operation (pull-overs, jackets, sweatshirts etc.)</p>	<p>10 Jersey stitch</p>  <p>Interlock in natural, blended and synthetic fibres, velour. Visible hems, visible seams, particularly for underwear, sweatshirts and delicate knitted fabrics, repairs in interlock underwear.</p>	<p>11 Honeycomb stitch</p>  <p>Many types of interlock and jersey fabrics. Visible hems, visible seams for T-shirts, sweatshirts, underwear, napkins, table-cloths, craft work etc.</p>	<p>12 Stretch Overlock</p>  <p>Medium weight knitted fabrics, towelling, velour and other firm fabrics. Overlock seams, flat joining seams, craft work.</p>
<p>13 Keyhole buttonhole</p>  <p>For most firm or heavier fabrics (not stretch). Jackets, coats, trousers, overalls etc.</p>	<p>14 Standard buttonholes</p>  <p>For fine to medium-weight fabrics, woven and knitted. Blouses, dresses, slacks and pants etc.</p>		

Decorative stitches, Letters, Numbers

Decorative stitches

"Hand-look" stitches	Compact stitches	Edging stitches	Pearl stitches	Floral stitches
   	   	   	   	   
15 16 17 18	19 20 21 22	23 24 25 26	27 28 29 30	31 32 33 34

Letters / Alphabet

A B C D | E F G H | I J K L | M N O P | Q R S T

U V W X Y | Z - . ø ?

Numbers

0 1 2 3 4 | 5 6 7 8 9

Practical sewing

Function buttons	26
Straight stitch, Needle positions, Zig-zag, Practical stitches	27
Automatic storage	
Altering decorative stitches	28
Combining decorative stitches with functions	29
Programming decorative stitches	30
Programming letters and numbers	31
Sewing knitted fabrics	32
Practical stitch hems	33
Practical stitch seams	34, 35
Zip fastener	
Jeans foot	
Plastic/Leather	36
Long stitch	
Basting stitch	37
Blind hemming	38
Edge stitching	39
Three-step standard buttonhole with gimp cord	40
Three-step Keyhole buttonhole	41
Programmed standard buttonhole with gimp cord	42
Programmed Keyhole buttonhole reinforced	43
Mending woven fabric	44, 45
Mending interlock fabric	46
Darning	47
Darning with small darning ring	48

Function buttons, Use, Clearing



Presser foot indicator

This shows a suitable presser foot for the stitch selected.



Needle stop down

The machine will stop with the needle in the fabric (indication light on). When the button is pressed again the machine returns to normal, e.g. the needle is out of the fabric when the machine stops (indication light off).

Use: sewing corners, applique, outline quilting.



Reduced sewing speed

When the foot control is completely pressed down, the machine will only run at half speed (indication light on). Press the button to clear this function.

Use: for delicate work, sewing buttonholes, embroidery etc.



Reverse sewing button

The machine will sew continuously in reverse. When the button is pressed again (indicator light off), the machine will return to forward sewing.

Use: mending with the Running stitch.



Pattern begin

Selects the beginning of any stitch or programme.

Use: embroidery.



Buttonhole

For sewing buttonholes see pages 40–43

Long stitch

The machine sews every second stitch.

Use: for Top stitching, edge stitching and possibly basting in very fine fabrics.

Basting

The machine sews every sixth stitch.

Use: basting.



Balance

Fine adjustment of the stitch length.

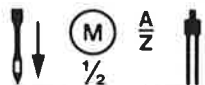
Use: satin stitch, embroidery, buttonholes etc.

CLR

Clearing

Clears function buttons and alterations to the basic setting.

EXCEPTION: these functions can only be cleared individually.



Alphabet selection

With this button the alphabet is selected.



Programming – repeating

For programming the selected stitch or letter.

The previously memorized programme can be recalled (repeated), even after switching off or a power failure.



Single pattern/pattern end

The machine will stop either at the end of a pattern or at the end of a programmed group of stitches.

Use: embroidering motifs and borders.



Mirror image

The machine will sew the selected stitch in mirror image (the indication light goes off when a new stitch is selected).

Use: sewing borders with embroidery stitches.



Double stitch pattern

The selected stitch or the memorized programme will be sewn with double the number of stitches.

Use: all embroidery.



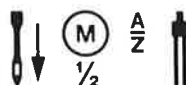
Double needle limitation

The stitch width is restricted to the maximum width for a 2mm double needle (no needle breakages). This function is only cleared by pressing the button a second time.

Use: sewing with a double needle.

Clearing the function buttons

1. The following functions can only be cleared individually:



2. The CLR button clears:

A: without memorized programme

1 x press – the altered basic settings and the functions in use.

B: with memorized programme

1 x press – clears the memorized programme only.

2 x press – clears all function buttons.

EXCEPTION:

– the function buttons that have to be cleared individually.

– the last programme.

Forward stitching

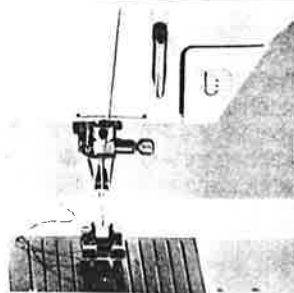
Select straight stitch – the indicator light will come on. The stitch length light beam will show the automatic basic setting.

To alter stitch length

The stitch length can be adjusted with the stitch length knob to suit the sewing and fabric. The blinker will always show the basic setting. The stitch length is returned to the basic setting by pressing the CLR button.

Securing the ends

(At the beginning and end of a seam) Press the Securing stitch control and the machine will sew in reverse. After 3–4 stitches, release the Securing stitch control and the machine will sew forwards again (fig. 1).

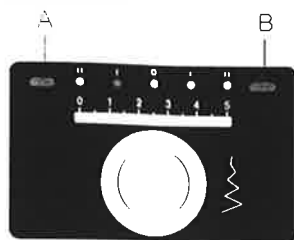


▲1 Needle positions

The position of the needle can be moved to the left or right with the aid of buttons A and B.

Typical uses:
Edge stitching, page 39.
Sewing in zips, page 36.

For normal seaming, the needle usually remains in the centre.

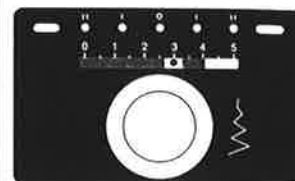


Zig-zag stitch/practical stitches

Select zig-zag stitch or a practical stitch. The indicator light will come on. The blinkers will show the automatic basic setting for the stitch width and the stitch length.

To alter the stitch width

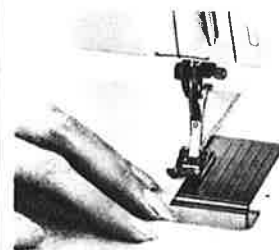
The stitch width can be adjusted with the stitch width knob to suit the sewing and fabric. The stitch width of any stitch can be altered at any time, even whilst sewing. The stitch width is returned to basic setting by pressing the CLR button.



Oversewing edges

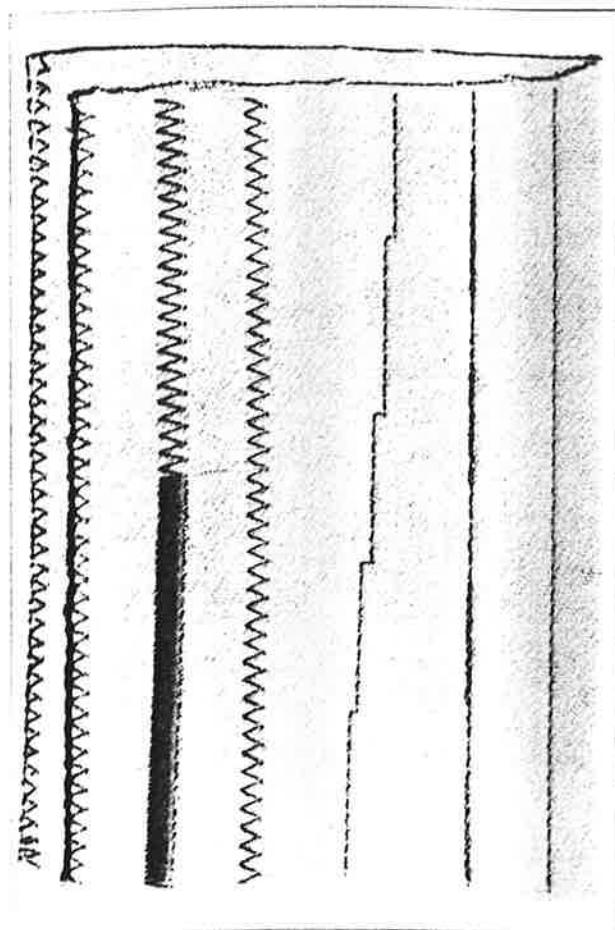
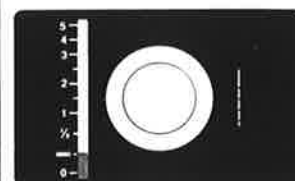
Stitch selection:
Needle: 80/70
Thread: Embroidery 60/darning thread
If necessary adjust the stitch width and stitch length to suit the fabric. Generally, the zig-zag should not be too wide or the stitch length too long. Use as fine a thread as possible, especially on fine fabrics. Begin by cutting away the frayed edges. Guide the edge of the fabric to the centre of the foot, so that the needle goes into the fabric, then over the edge.

When sewing on the edge, guide with the fingers to the edge.



Satin stitch = close zig-zag

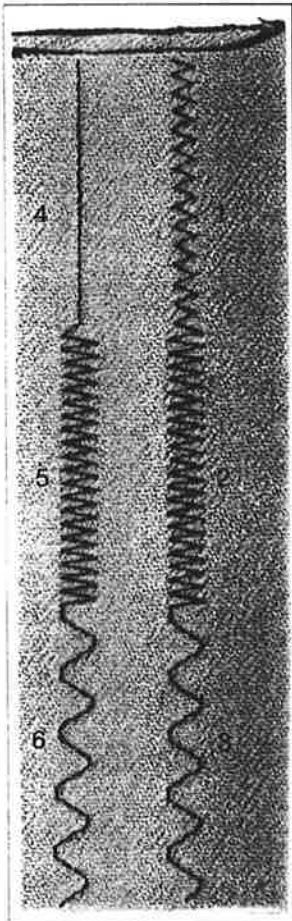
Select zig-zag stitch, adjust stitch width as required. Set stitch length to satin stitch. Sew a test piece!



Automatic storage

Automatic storage

An individual alteration to a stitch width, length and/or needle position will remain in the machine, even when any number of other stitches are selected in between.



For example

1. Select zig-zag (basic setting).
2. Alter the stitch width to 5 and stitch length to 1.
3. Select Running stitch, alter width to 4, length to 1.
4. Select straight stitch (basic setting).
5. Select zig-zag, the altered settings remain.
6. Select Running stitch, the altered settings remain.

Any two stitches can be stored in this way. The altered values are retained until reset or cleared, or until the machine is switched off.

To return to the basic setting

There are two ways of doing this:

- Manually reset to the blinker. Use this method when wishing to reset only the width or the length of a stitch. Or when wishing to reset only one of two altered stitches.
- With the CLR button. This clears all altered settings.

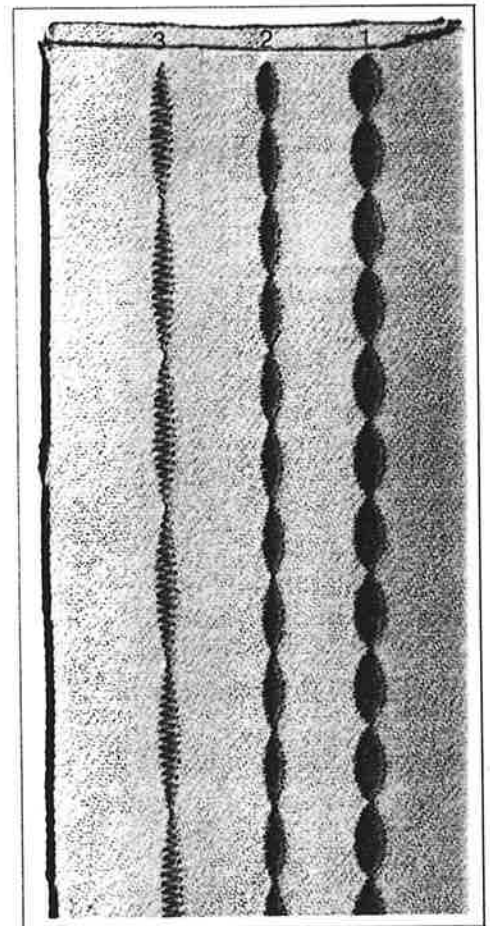
Decorative stitches, altering the basic setting

Altering the basic setting

The facility for altering the stitch width and length enables the embroidery stitch to be suited to all fabrics and types of work.

Example:

1. Select the desired stitch (indicator light on) (basic setting).
2. Alter stitch width to 2. Press the Pattern begin button \rightarrow and sew.
3. Alter stitch length to $\frac{1}{2}$. Press \rightarrow and sew.









Decorative stitches, combining with functions

Combining the basic settings and functions

Combining the basic settings and function buttons can give some surprising effects.

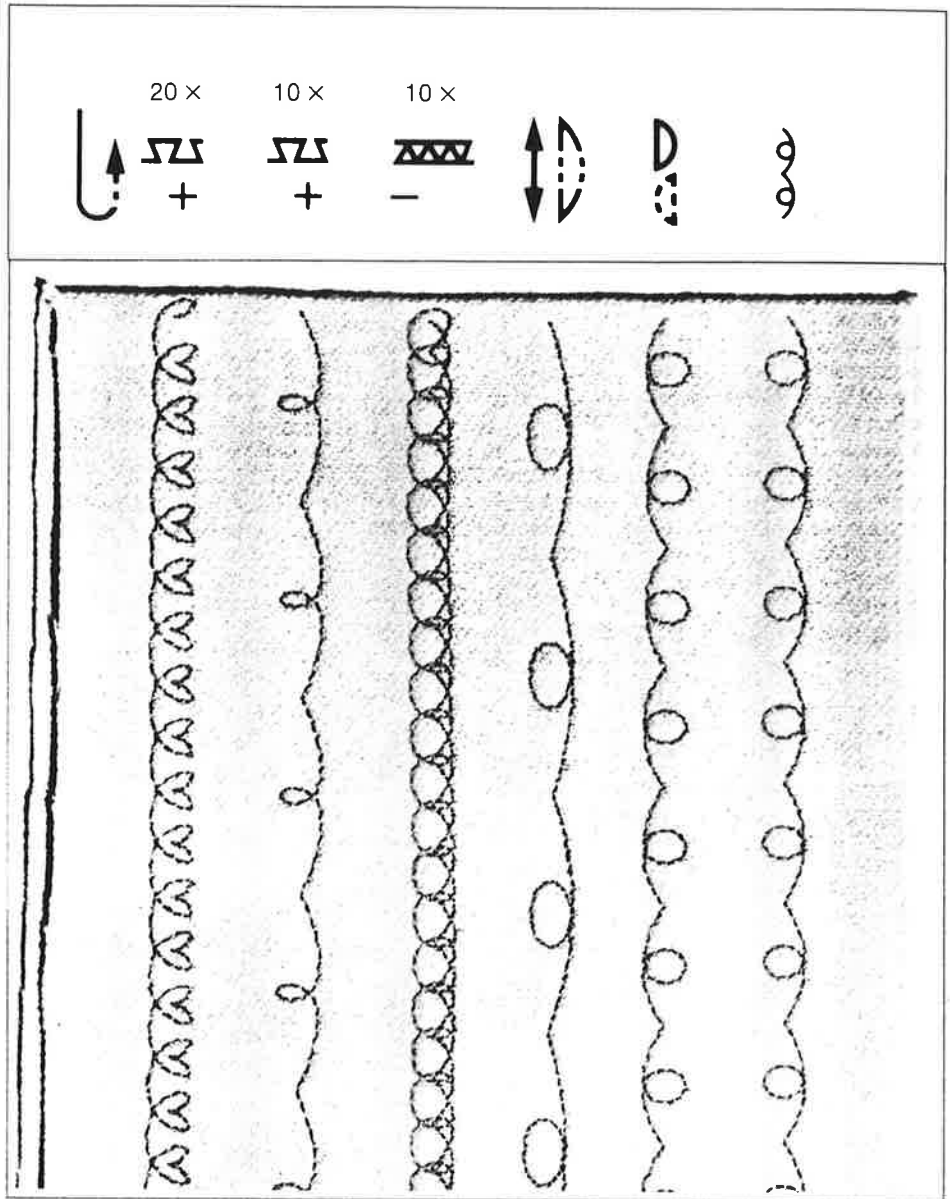
The following function buttons can be combined with the basic settings:

-  Mirror image
-  Double stitch pattern
-  Balance
-  Long stitch
-  Double needle limitation
-  Reverse sewing

Balance

Various effects (stitch changes) result through adding numbers of Balance + or - to a stitch.

Example:



Method:

- Select the desired stitch.
- Select the desired function.

A number of function buttons may be combined simultaneously with a basic stitch.

Decorative stitches, programming

Programming enables groups of stitches to be selected and stored.

Up to 50 stitches can be programmed into the memory.

Method:

- Press MR button (the upper indication light will come on).
- Select the desired stitch and press M+.
- Select the next desired stitch and continue as above.

Before selecting a new programme, press the CLR button x 2 and clear any individual functions by pressing the appropriate button.

Repeating the programme

If other sewing (without the programme) is required, the last memorized programme can be returned to simply by pressing the MR button (x 1 only).

A useful tip for all embroidery work:

Pattern begin:



Always press this button before starting to sew. The machine will then be at the start of the pattern.

Single pattern / pattern end:



The machine will stop:
- at the end of a stitch, or
- at the end of a programmed group of stitches.

This function is also extremely valuable when sewing motifs or parallel rows of embroidery.

Reduced speed:



Particularly useful for tricky embroidery work.


Example 1

(sewn continuously)

- Select MR
- Stitch 19/ M+ 1x
- Stitch 25/ M+ 1x
- Stitch 20/ M+ 2x
- Stitch 25/ M+ 1x


Example 2

(sewn continuously)

- Select MR
- Stitch 30/ M+ 1x
- Select Mirror image  / M+ 1x




Example 3

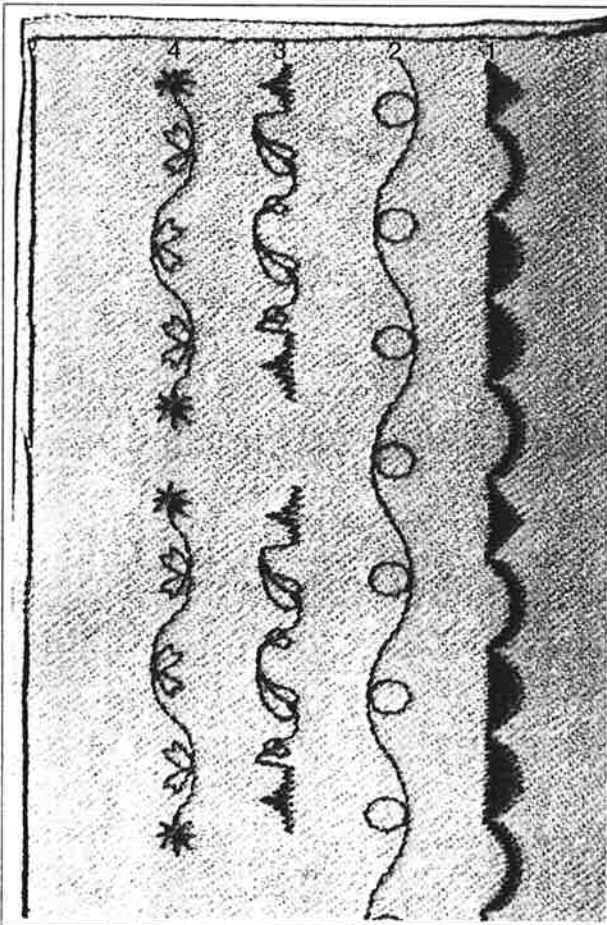
(sewn in programmed groups)

- Select MR
- Stitch 23/ M+ 1x
- Stitch 31/ M+ 2x
- Stitch 23/ M+ 1x
- Select Single pattern / pattern end 

Example 4

(sewn in programmed groups)

- Select MR
- Stitch 27/ M+ 1x
- Stitch 34/ M+ 1x
- Select Mirror image  / M+ 1x
- Clear Mirror image  / M+ 1x
- Stitch 27/ M+ 1x
- Select Single pattern / pattern end 



Letters and Numbers, programming

Programming/ combining

Up to 50 symbols can be entered into the memory, a space between words counts as one entry. Pressing the CLR button once clears the programme. The memory allows any programme until either the memory is full or the CLR button is pressed. Practical and decorative stitches, letters, numbers and/or Mirror image can be combined and programmed. Other functions can be combined with a memorized programme.

Method:

- Select MR button (upper indication light is on).
- For letters press the $\frac{1}{2}$ button (indication light on).
- For stitches and numbers cancel the \times button (indication light off).
- Select the desired stitch and press M+, etc.

Altering the basic setting

By altering, for example, the stitch width, letters and numbers can be worked to the desired size or perhaps small/large letters combined together. With the Balance button to give a fine adjustment to the stitch length, any stitch can be regulated to suit the fabric and the thread.

Repeating the memorized programme

By selecting the MR button the last memorized programme is recalled (repeated). The indication light will show the first stitch of this programme (decorative stitch or letter). This programme will remain in the machine until a new sequence is entered into the memory.

Example 1 "MARIA"

- Select MR
- Select $\frac{1}{2}$ button
- M / M+ 1x
- A / M+ 1x
- R / M+ 1x
- I / M+ 1x
- A / M+ 1x
- Select $\frac{1}{2}$ and sew

Example 2 (programme added to 1st example) "BRAUN 1988"

- - (spacer) / M+ 1x
- B / M+ 1x
- R / M+ 1x
- A / M+ 1x
- U / M+ 1x
- N / M+ 1x
- - / M+ 1x
- Cancel \times
- 1 / M+ 1x
- 9 / M+ 1x
- 8 / M+ 2x
- Select $\frac{1}{2}$ and sew

Is the sewing test satisfactory, the programme complete? Then press CLR 1x and then recall the programme by selecting MR and pressing $\frac{1}{2}$. Should the memorized programme be required with double the number of stitches, simply press the \rightleftarrows button.

Before selecting a new programme sequence, press the CLR button 2x and clear any individual functions by pressing the appropriate button.

Example 3 (altering the basic setting) "SUSANNE"

- Select MR
- Stitch 27 / M+ 1x
- Select $\frac{1}{2}$ button
- S / M+ 1x
- U

Change stitch width to 3

- M+ 1x
- S / M+ 1x
- A / M+ 1x
- N / M+ 2x
- E / M+ 1x
- Cancel \times button
- Stitch 27 / M 1x
- Select $\frac{1}{2}$

In case of error

If an error is made, press the CLR button 2x and clear any individual function by pressing the appropriate button.

MARIA

MARIA BRAUN 1988

SUSANNE

Sewing knitted fabrics

Important:

1. Use a perfect needle. Even a very slightly blunt needle will damage the knit, causing it to ladder.
2. Use fine sewing thread, particularly for fine knitted fabrics. Coarse thread can also damage the knit.
3. Use darning thread for basting. When the seam is sewn, darning thread is easier to remove than the considerably thicker and shorter fibre basting thread.
4. Press each seam as it is sewn, before going on to the next stage of sewing.
5. Sew a sample to test the stitch and stretch. As modern textiles vary considerably in their elasticity, the basic setting should be adjusted, where necessary, to suit the fabric.

For extremely stretchy fabric:

- Shorten the stitch length slightly and/or
 - increase the stitch width slightly.
- This gives the seam more stretchy. The seam should be as stretchy as the fabric.

Neckband with decorative seam

Needle: 80

Thread: Sewing thread


● Stitch: 
Honeycomb stitch

Suitable for firmer knitted fabrics. Fold the neckband in half and press. Make sure the edges are perfectly straight. Pin and baste to the right side of the neckline. Guide the work so that the stitches come exactly to the edge of the neckband. Cut the surplus neckline fabric from behind neckband.

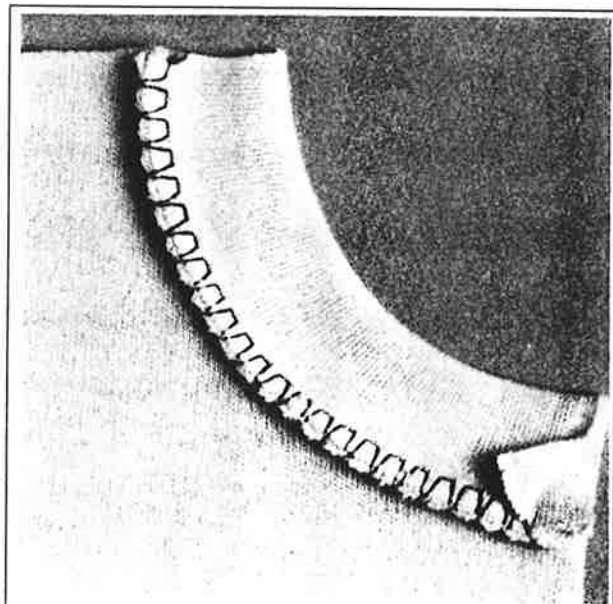
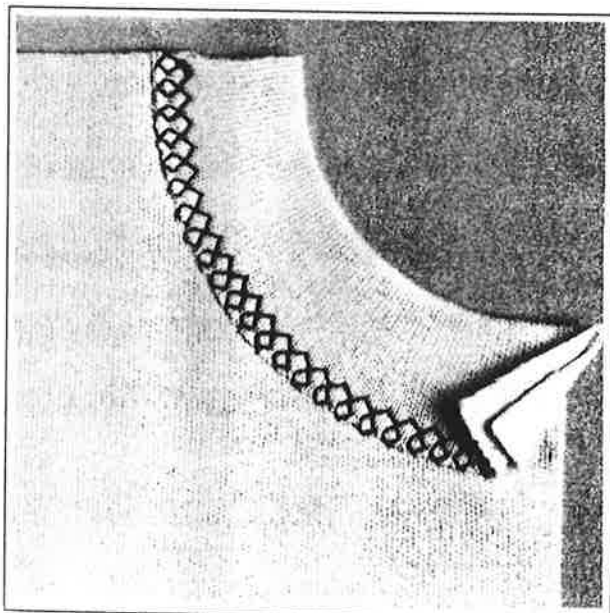
Neckband with overlock seam

Needle: 80/70

Thread: sewing thread

● Stitch: 
Vari-overlock

Specially designed for all fine knitted fabrics. Fold the neckband in half and press. Make sure the edges are perfectly straight. Pin and baste, right sides together, so that the edges of neckband are exactly in line with neckline edge. Position the work so that all edges are guided to the pin of the overlock foot.



Practical stitch hems


Preparation

Baste the hem, depth of hem plus minimum of 1 cm ($\frac{3}{8}$ "') extra, sew and cut away surplus fabric against stitch. Check with instructions for working with knitted fabrics (page 32).

Visible hem with Jersey stitch

Needle: 80

Thread: Sewing thread


● Stitch: 
Jersey stitch

Elastic visible hem for interlocks in cotton, fine wool, synthetic and blended fibres.

Visible hem with Triple zig-zag

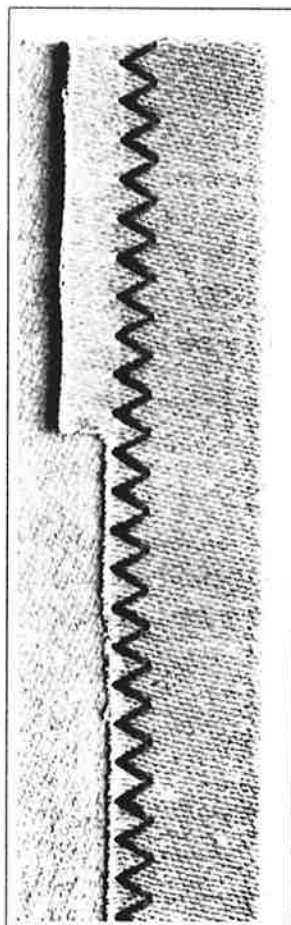
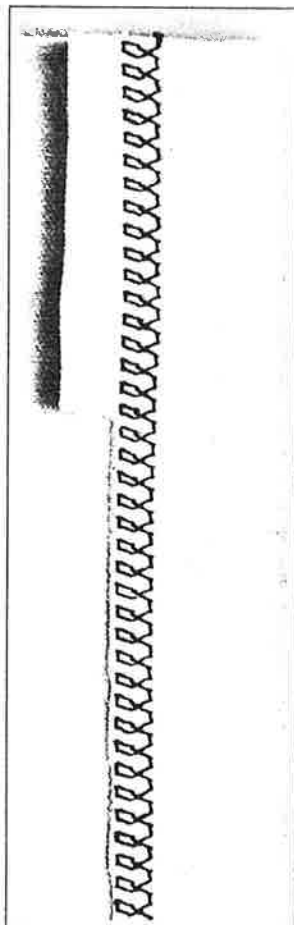
Needle: 80-90

Thread: Sewing thread

● Stitch: 
Triple zig-zag

Stitch width: $2\frac{1}{2}$ -5, depending on fabric

Hard wearing visible hem for firm fabrics, e.g. denim, roller blind fabric, deck-chair fabric etc.



Practical stitch seams

The type of seam chosen is governed by the garment being sewn, the choice of stitch primarily by the fabric being used. There are 3 types of seams:

Open seams:

These are seams that are pressed open. They lie flat and are not bulky. They allow garments to be let out. Used in dresses, trousers, skirts, coats, jackets etc.

Overlock seams:

These are seams that are sewn and oversewn in one operation. They are quick to produce, and are narrow, but do not allow garments to be let out. Used especially for knitted fabrics on pullovers, T-shirts, sweatshirts, running suits, underwear and for hand and machine knitted garments.

Flat joining seams:


These are seams in which the edges are overlapped and then oversewn. They lie flat. They are narrow, and again cannot be let out. They do not curl. The edges are neat. Used for beachwear, leisure wear, foundation garments and craft work.

Triple straight stitch seam

Open seam

Needle: 80-90

Thread: Sewing thread

● Stitch:  Triple straight stitch 5


Hard-wearing reinforced seam for firm fabrics.

Zig-zag seam

Open seam

Needle: 80

Thread: Sewing thread

● Stitch:  Zig-zag stitch
Stitch width: approx. 1
Stitch length: approx. 1½


Elastic seam for interlock fabrics in wool, synthetic or blended fibres, and for silk, cotton and wool jersey.

Stretch seam

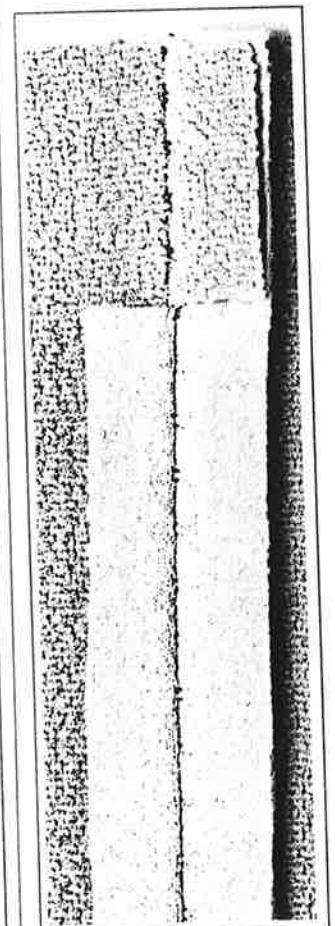
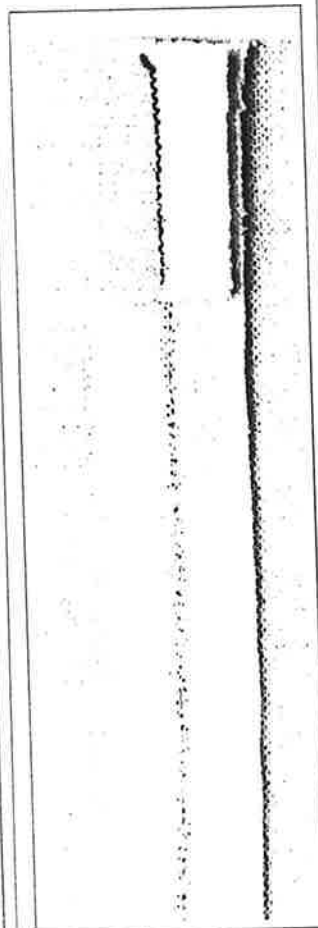
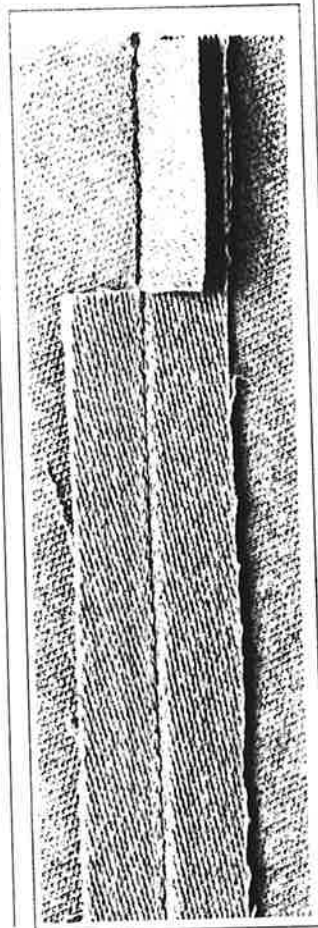
Open seam

Needle: 80

Thread: Sewing thread

● Stitch:  Stretch stitch

Highly elastic seam for stretch fabrics, especially sportswear.



Practical stitch seams

Vari-overlock seam

Needle: 80-70

Thread: Sewing thread

● Stitch: **VVVV**
Vari-overlock

4

Highly elastic overlock seam for all fine jerseys: dresses, blouses, underwear, sports-underwear.

Double overlock seam

Needle: 80

Thread: Sewing thread

● Stitch: **VVVV**
Double overlock

9

Elastic overlock seam for firm, course or open knitted fabrics.

Stretch overlock seam

Needle: 80

Thread: Sewing thread

● Stitch: **TTTT**
Stretch overlock

Elastic overlock seam for thick, soft or looser knitted fabrics.

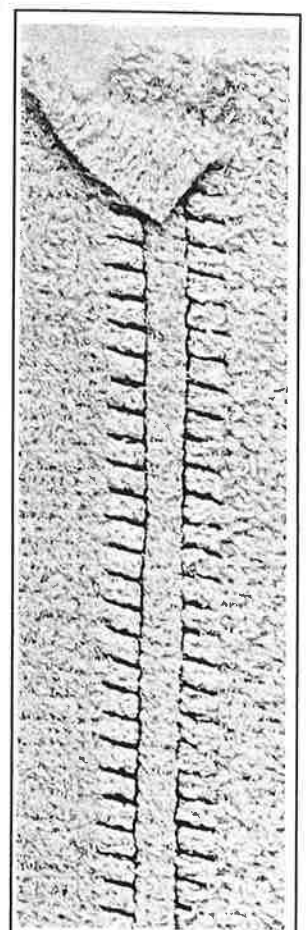
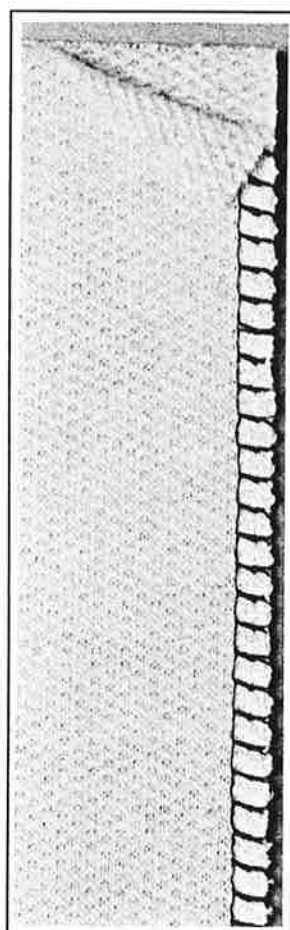
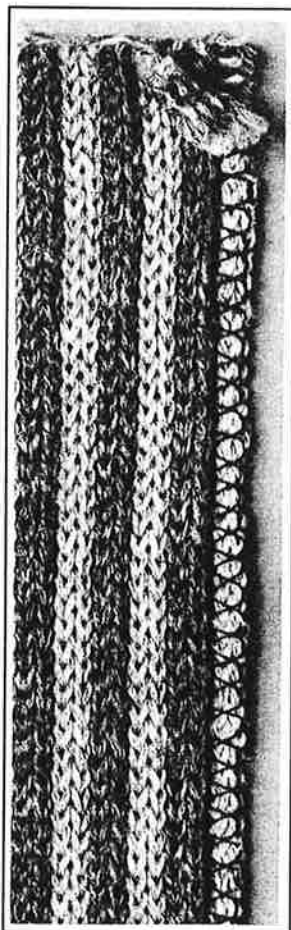
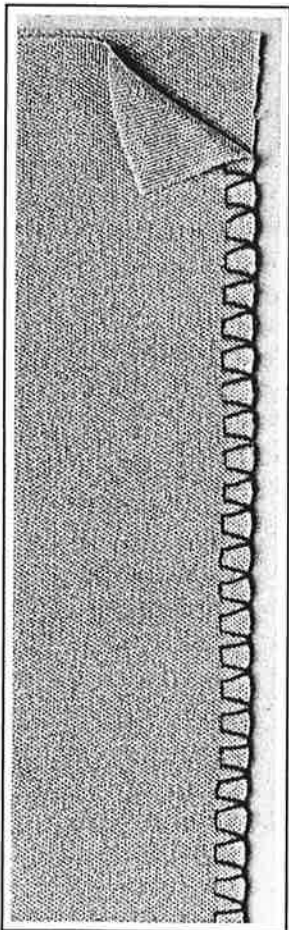
Flat joining seam

Needle: 80

Thread: Sewing thread

● Stitch: **TTTT**
Stretch overlock

Visible seam for towelling, velour, leather etc.



Zips

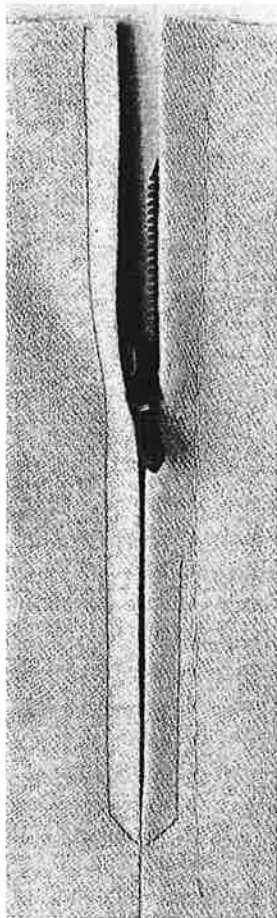
Zip fastener inserted flat

Method:

Baste entire length of seam. Mark length of zip and sew seam only to start of zip. Remove basting stitches from sewn part of seam only. Press entire seam, trim and oversew. Remove remaining basting stitches.

Baste the zip into position so that teeth are covered by the fabric.

Sew in the zip, starting each side at the bottom and sewing to the top, once with needle position right, once with needle position left.



Needle: 80

Thread: Sewing thread

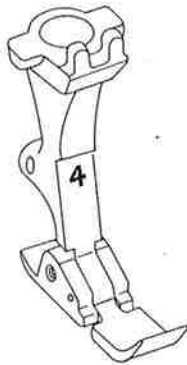
Zip foot: 4

● Stitch: - - - - -

Straight stitch

Alteration:

Needle position left/right

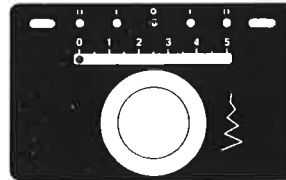


Jeans foot

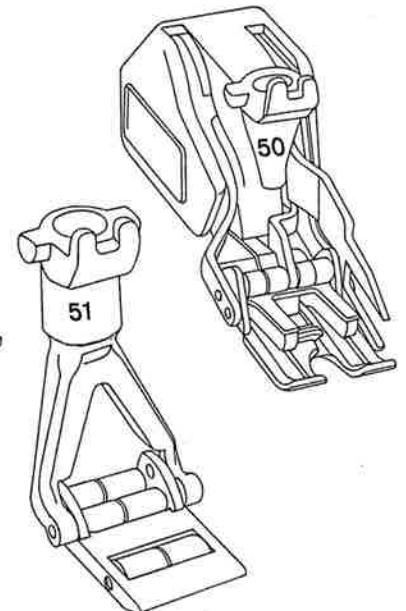
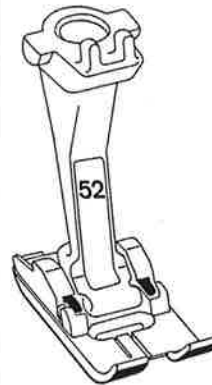
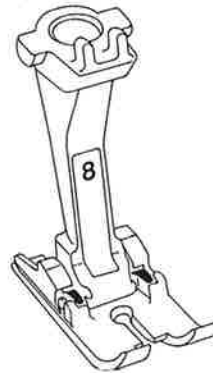
Thick fabrics and seams

The Jeans foot enables exceptionally thick and hard fabrics to be sewn easily. Select a stitch length of between 2 and 3,5 mm, depending on the fabric.

Note that the needle position setting must be "centre", and the stitch width "0".



Use a Jeans needle or needle size 100.



Plastic / Leather

Plastic

Like synthetic fabrics, plastic is also made from a varying number of raw materials. When sewn, plastic should be handled according to the surface and grain. If the fabric does not feed correctly, i.e. sticks to the presser foot, use one of the following special presser feet: Walking foot (No. 50), Roller foot (No. 51), Teflon foot (No. 52). Always sew plastic with a long stitch length to avoid tearing.

Leather and imitation leather

Naturally it is possible to sew leather. Some leathers will require a special leather needle.

Always sew a test piece before starting on the work itself. The stitch length should not be too short. Use Walking foot (No.50), or Roller foot (No.51), or Teflon foot (No.52) as required. (These presser feet are additional accessories).

Long stitch

Long stitch

With the Long stitch, the machine sews every other stitch, giving a maximum stitch length of 10 mm. Long stitch can be sewn in any of the five needle positions.

Needle: 80

Thread: Sewing thread

● Stitch: -----
Straight stitch

Stitch length: 1½–5

Needle position: any position

● Function button: ---
Long stitch

For fine fabrics Long stitch can also be used for basting.

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

Top stitching using buttonhole thread (Cordonnet)

a) Buttonhole thread as the upper thread

Rule of thumb: Use size 110 needle.

With certain fabrics a size 100 needle could be large enough. Sew a test piece.

b) Buttonhole thread as the lower thread

If the thicker needle is unsuitable for the fabric, the buttonhole thread should be wound on the bobbin and used as the lower thread. If the sewing line is not visible, e.g. when sewing on pockets, mark the line with basting in a contrasting colour. This will show in the reverse side and can easily be removed when the work is completed.

Basting stitch

Basting stitch

With Basting stitch, the machine sews every sixth stitch, producing long Basting stitches, up to a maximum length of 3 cm. Basting stitches can be sewn in any of the 5 needle positions.

Needle: 80–90

Thread: sewing thread/
Basting thread

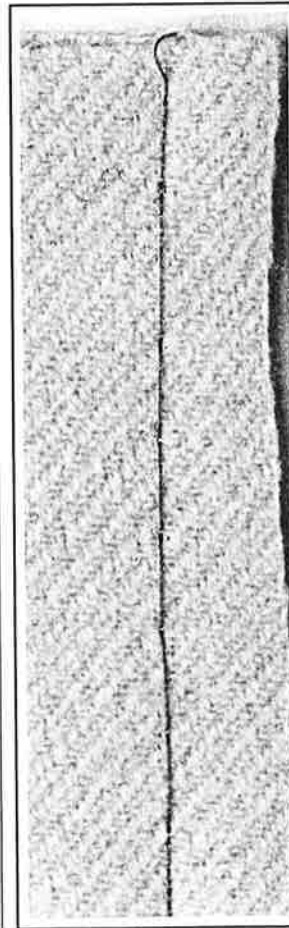
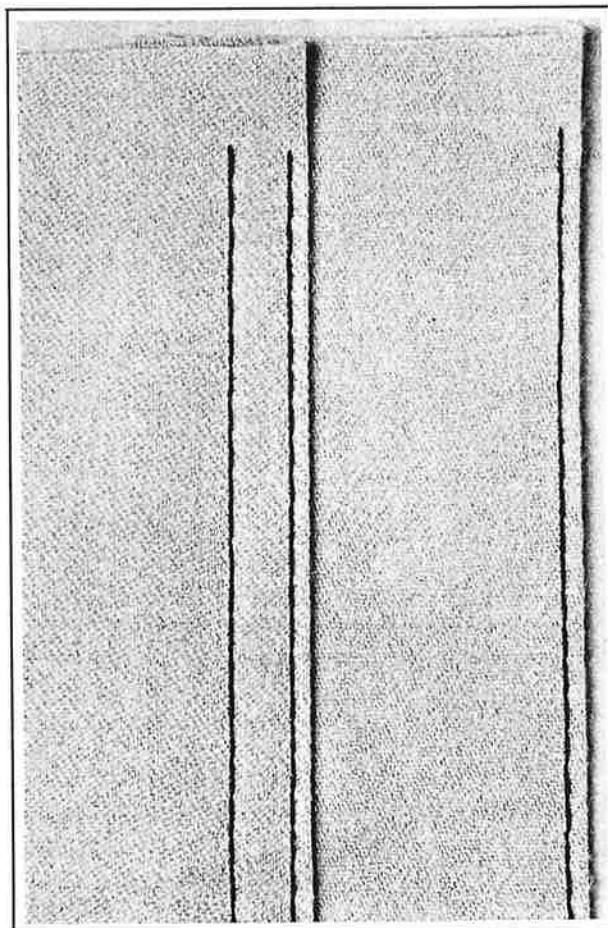
● Stitch: -----
Straight stitch

Stitch length: 1½–5

Needle position: any position

● Function button: ---
Basting stitch


To secure the ends at the beginning and end of the seam, sew a few stitches with normal straight stitching.



Blind hemming

Needle: 80–70

Thread: Sewing thread/
Darning thread

● Stitch: 
Blind stitch

Important

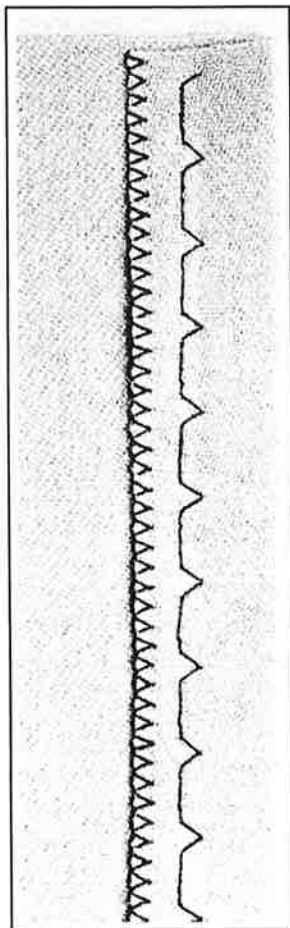
As with hand sewing, fine fabrics require a fine needle and a fine thread. This work is best done at slow speed.

Method

The hem should be prepared in the same way as for sewing by hand. Oversew the raw edge, baste and press.

Positioning the hem

The hem is positioned under the foot as shown in fig. 1.



Test piece

(Either on a scrap piece of fabric from the garment, or directly on the hem.) Given the variations in fabric thicknesses, it is advisable to sew a test piece first. As when sewing by hand, the needle should only catch the edge of the fabric. The basic setting is always a stitch width of 2.8. With the variations of fabric thickness, minor adjustments may be required.

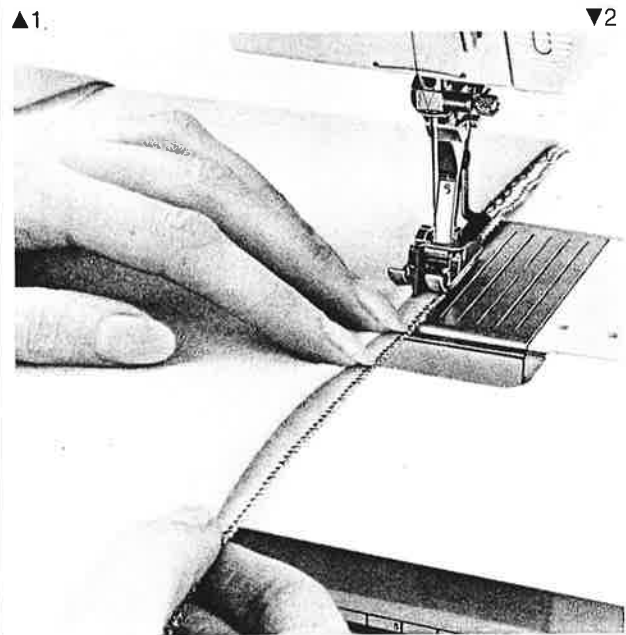
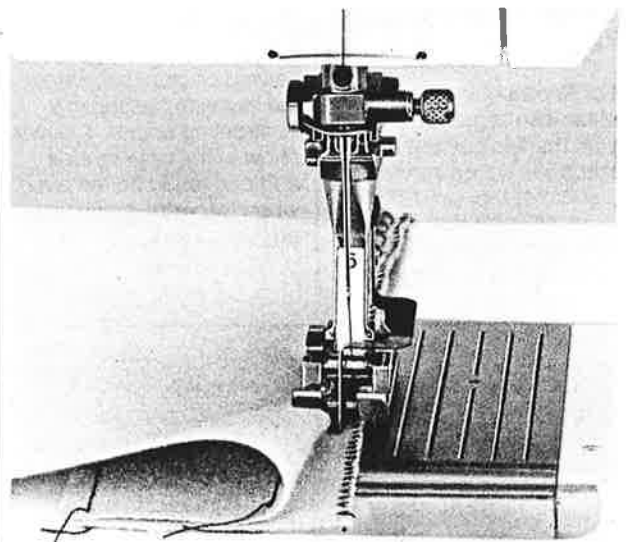
Test piece:
Sew slowly to the point when the needle swings to the left. With the aid of the handwheel, bring the needle down until it is just about to enter the fabric. Check that it is only just catching the fabric. If necessary adjust the stitch width slightly: narrower if the needle is going in too far and a little wider if it is failing to catch sufficiently. Check the next zig-zag stitch in the same way. Then sew for approximately 10 cm (4") and check again.

Guiding the work

Guide the hem as shown in fig. 2.

Tip:

Whilst sewing, hold the under fabric back slightly.



Edge stitching

Edge stitching

On collars, cuffs, lapels, gems etc.

Needle: 80

Thread: Sewing thread

● Stitch: -----

Straight stitch

Stitch length: as required

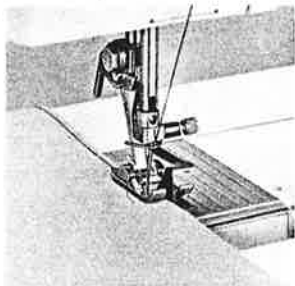
Needle position:

Left/half left for outer edges (fig.1)

Needle position:

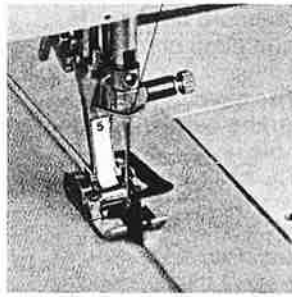
Right/half right for turned-in edges (fig. 2)

Presser foot: No.5 Blind stitch foot



▲1

Place the edge of the fabric from the left, against the guide on the Blind stitch foot. Set the needle position to left or half-left. For longer stitches, use Long stitch.



▲2

Position turned in edges to the right of the guide on the foot and select needle position right/half right.

Top stitching

for edges of all kinds

Needle: 80

Thread: Sewing Thread

● Stitch: -----

Straight stitch

Needle position: any position

Guide the edge of the fabric to the outer edge of the presser foot or the marks in the needle plate. With the help of the 5 needle positions it is also possible to sew intermediate widths.

Widths:

Edge of presser foot = 7.5 mm ($\frac{3}{16}$ " (fig. 3)

Guide lines on stitch plate

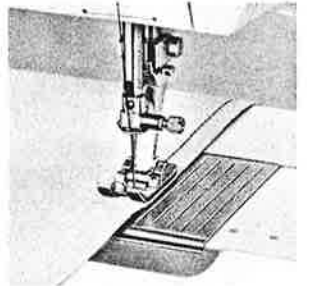
Line 1 = 1 cm ($\frac{3}{8}$ "

Line 2 = 1,5 cm ($\frac{5}{8}$ " (fig. 4)

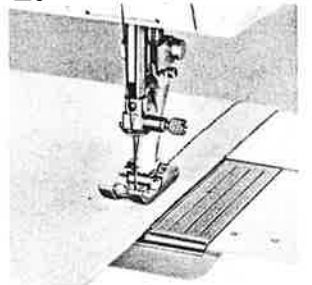
Line 3 = 2 cm ($\frac{3}{4}$ "

Line 4 = 2,5 cm (1" (fig. 5)

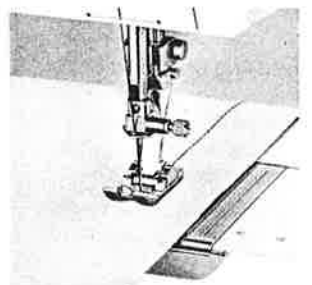
Line 5 = 3 cm ($1\frac{1}{8}$ "



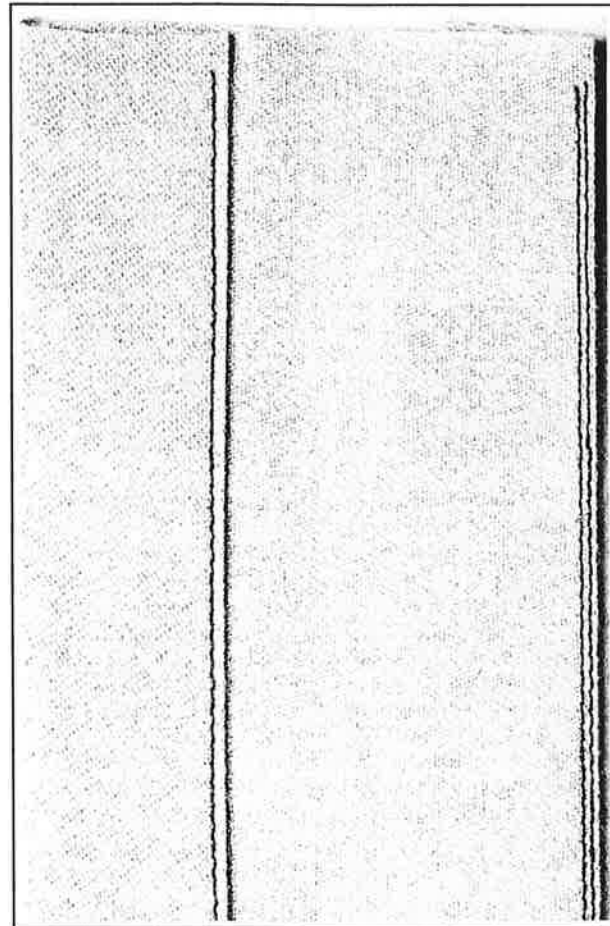
▲3



▲4



▲5



Three-step standard buttonhole with gimp cord

Standard buttonhole

Needle: 80–70

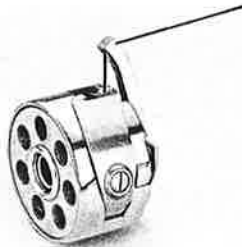
Thread: Darning thread, sewing thread

● Stitch: 
No. 14

Presser foot: No. 3

Preparation

When sewing buttonholes, thread the lower thread through the finger of the bobbin case.



Sewing test

If necessary adjust the stitch length to suit the fabric:

– Forward bead with the stitch length knob.

– Reverse bead with the Balance buttons

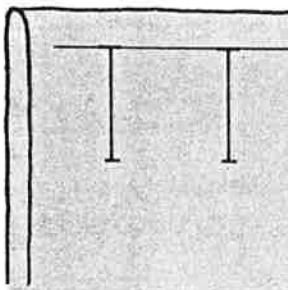
Bead too dense = – button

Bead too open = + button

Altering the bead width

The width of the bead can be altered with the stitch width knob (test).

Marking the buttonholes



Sewing the buttonholes

Stitch: Select the button No. 14 for standard buttonholes. The machine is ready to sew the first bead forwards.

Lower the needle into the fabric exactly at the start of the buttonhole, lower the presser foot.



1. The machine sews the first bead forwards. Stop the machine when the buttonhole is the desired length.



2. Press the buttonhole steps button, the machine sews the bar tack and the reverse bead. Stop the machine when the second bead is level with the first.



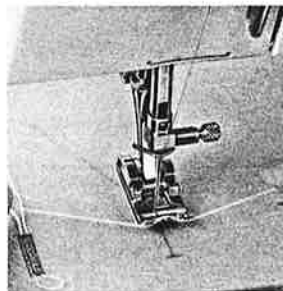
3. Press the buttonhole steps button, the machine sews the bar tack and securing the stitches. The machine will stop automatically and be set to sew the first bead of the next buttonhole. On all further buttonholes do **not** press the buttonhole steps button at the start, sew to the length desired and then press the button for step 2.

Standard buttonhole with gimp cord

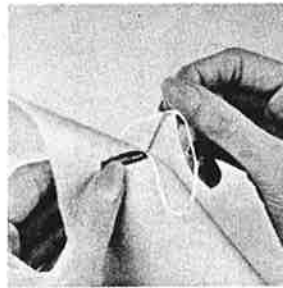
The gimp cord strengthens the buttonhole.

The gimp cord is particularly important for all knitted fabrics – included hand and machine knits – to prevent the buttonhole from pulling out of shape. The thickness of the cord depends on the fabric to be sewn. Suitable cords are perle yarn No. 8, buttonhole thread or fine crochet cord.

Sew a trial buttonhole first. Lay the fabric under the foot so that the loop of the cord will come at the end of the buttonhole pulled by the button (fig.1).



▲1



▲3

Securing the gimp cord

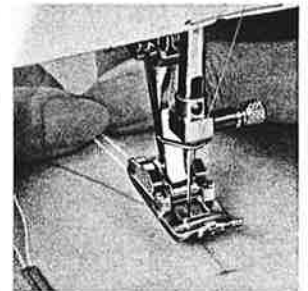
In knitted fabrics, pull the ends of the cord through to the back using a coarse hand sewing needle (fig. 3) and tie or sew in securely. (In woven fabrics, the cord ends can be simply cut off).

Positioning of the cord

It is easier to position the cord if the needle is already in the fabric. Bring the needle to the centre of the presser foot, using the handwheel or needle stop. Lower the needle into the fabric at the start of the buttonhole. Do not lower the foot yet.

Hook the gimp cord over the centre prong at the foot of the buttonhole foot (fig.1) and take both ends back under the foot (fig. 2). Lower the foot. Check that the cord is able to slide, i.e. that it is not trapped by the foot.

Sew the buttonhole. Do not hold the gimp cord. It must be able to slide. Finally, pull through the loop of the cord.



▲2



▲4

Cutting the buttonhole open


It is best to cut from the ends towards the centre of the buttonhole (fig. 4). This avoids cutting through the bar tack.

Keyhole buttonhole

The Keyhole buttonhole is worked on firmer or heavier fabrics and is suitable for jackets, coats, trousers, overalls etc.

Needle: 80

Thread: sewing thread

● Stitch: 
No. 13

Presser foot: No. 3

Preparation

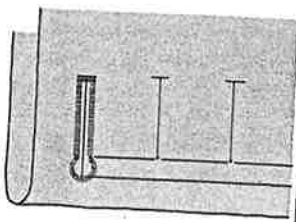
When sewing buttonholes, thread the lower thread through the finger of the bobbin case.



Marking the buttonholes

Mark the bead length (excluding step 2, the eye). However, the eye must be included when calculating the total length of the buttonhole.

Sew a test buttonhole.



Sewing test

If necessary adjust the stitch length to suit the fabric:

– Forward bead with the stitch length knob

– Reverse bead with the Balance buttons

Bead too dense = – button

Bead too open = + button.

Sewing the buttonholes

Stitch: Select the button No. 13 for Keyhole buttonholes. The machine is ready to sew the first bead forwards.

Lower the needle into the fabric exactly at the start of the buttonhole, lower the presser foot.



1. The machine sews the first bead forward. Stop the machine when the bead is at the marked length.

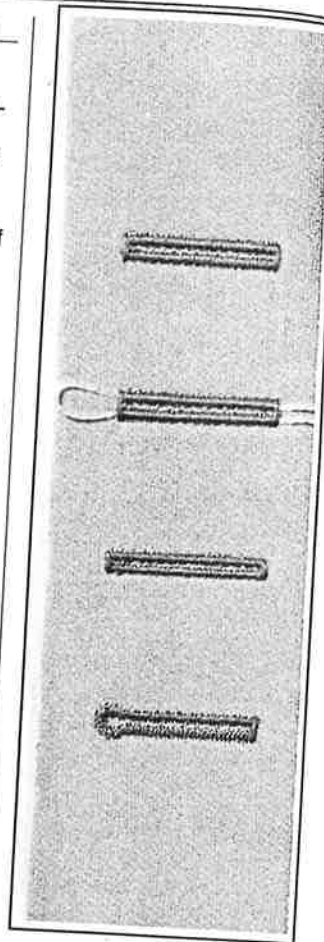


2. Press the buttonhole steps button. The machine sews the eye and the backwards bead. Stop the machine when the second bead is level with the first.



3. Press the buttonhole steps button. The machine sews the bar tack and securing stitches.

The machine will stop automatically and be set to sew the first bead of the next buttonhole. On all further buttonholes do **not** press the buttonhole steps button at the start, sew to the length desired and then press the button for step 2.



Cutting the buttonholes


See page 40

Programmed standard buttonhole

Programmed buttonhole

Needle: 80-70

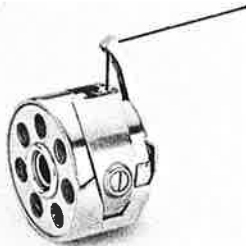
Thread: Darning thread, sewing thread

● Stitch:  No. 14

Presser foot: No. 3A

Preparation

When sewing buttonholes, thread the lower thread through the finger of the bobbin case.

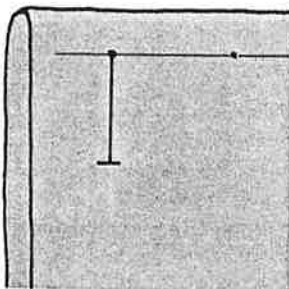


Sewing test

If necessary adjust the stitch length to suit the fabric:
- Forward bead with stitch length knob
- Reverse bead with the Balance buttons
Bead too dense = - button
Bead too open = + button

Marking the buttonholes

Mark only the first buttonhole. From that the buttonhole will be programmed.



Sewing the buttonholes

Stitch: Select the button No. 14 for standard buttonholes. The machine is ready to sew the first bead forward.
Lower the needle into the fabric exactly at the start of the buttonhole, lower the presser foot.



1. The machine sews the first bead forward. Stop the machine when the buttonhole is the desired length.



2. Press the buttonhole steps button. The machine is now switched to AUTOMATIC. The buttonhole is programmed. From now on do not press the buttonhole steps button again. The machine will complete the buttonhole and stop automatically. For further buttonholes, place the needle in the fabric at the beginning of the buttonhole and sew, the machine makes the complete buttonhole automatically.

Caution

If the thread breaks or runs out, sew the buttonhole through to the end with the needle unthreaded. The machine will then be ready to sew the first bead of the next buttonhole.

with gimp cord

Programmed buttonhole with gimp cord

The gimp cord strengthens the buttonhole.

The gimp cord is particularly important for all knitted fabrics - including hand and machine knits - to prevent the buttonhole from pulling out of shape. The thickness of the cord depends on the material to be sewn. Suitable cords are perle yarn no. 8, buttonhole thread or fine crochet thread. Sew a trial buttonhole first. Lay the fabric under the foot so that the loop of the cord will come at the end of the buttonhole pulled by the button (fig. 1).

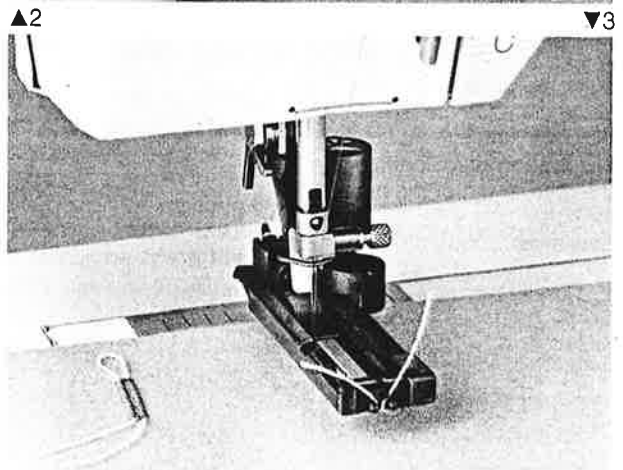
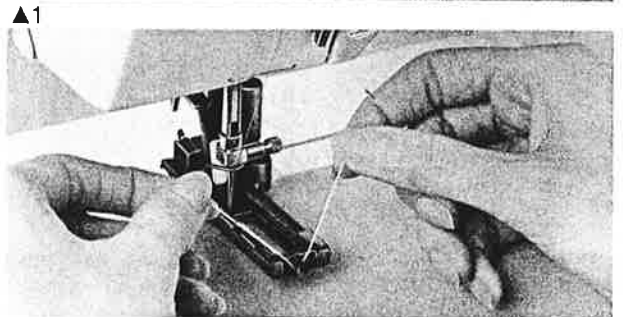
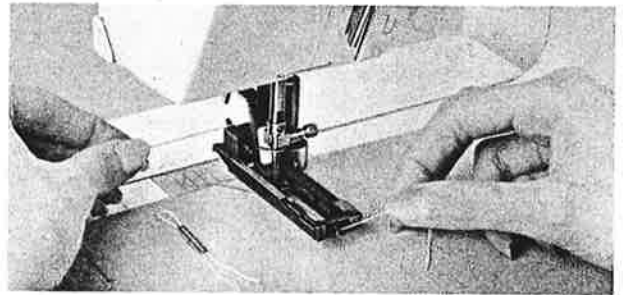
Positioning the cord

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

Move the needle to the centre of the presser foot, using the handwheel or needle stop. Lower the needle into the fabric at the start of the buttonhole. Do not lower the foot yet.

Guide the cord to the right, under the buttonhole foot and hook it over the prong at the back (fig. 1). Then bring it round, to the left and forwards under the foot. Pull both ends of the cord into the retaining slots at the front (fig. 2). Cut away the excess cord (fig. 3).

Securing the gimp cord and cutting buttonhole open see "Standard buttonhole", page 40.




Programmed Keyhole buttonhole

The Keyhole buttonhole is worked on firmer fabrics and is suitable for jackets, coats, trousers, overalls etc.

Needle: 80

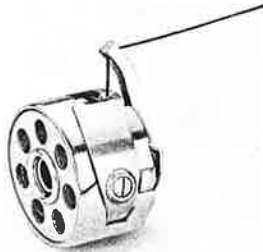
Thread: Sewing thread

● Stitch: 
No. 13

Presser foot: No. 3A

Preparation

When sewing buttonholes, thread the lower thread through the finger of the bobbin case.



Sewing test

If necessary adjust the stitch length to suit the fabric:

- Forward bead with stitch length knob
- Reverse bead with the Balance buttons
- Bead too dense = - button
- Bead too open = + button

Marking the buttonholes

Mark the bead length (excluding step 2, the eye). However, the eye must be included when calculating the total length of the buttonhole.

Mark **only** the first buttonhole, from that the buttonhole will be programmed. The Keyhole buttonhole should be positioned on the garment so that the eye is at the end where the button will rest. ►

Sewing the buttonholes

Stitch: Select the button No. 13 for Keyhole buttonholes. The machine is ready to sew the first bead forwards. Lower the needle into the fabric exactly at the start of the buttonhole, lower the presser foot.



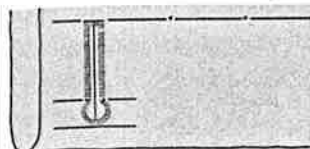
1. The machine sews the first bead forward. Stop the machine when the bead as to the marked length.



2. Press the buttonhole steps button. The machine is now switched to AUTOMATIC. The buttonhole is programmed. From now on do not press the buttonhole steps button again. The machine will complete the buttonhole and stop automatically. For further buttonholes, place the needle in the fabric at the beginning of the buttonhole and sew, the machine makes the complete buttonhole automatically.

Caution

If the thread breaks or runs out, sew the buttonhole through to the end with the needle unthreaded. The machine will be ready to sew the first bead of the next buttonhole.



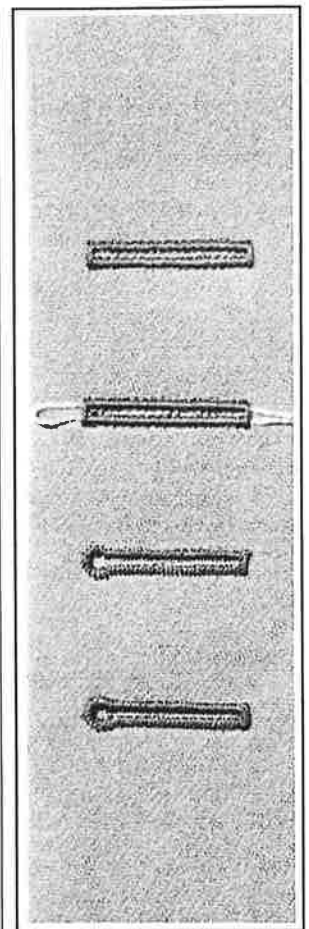
reinforced

Programmed Keyhole buttonhole, double-sewn (reinforced)

In thicker fabrics or to give better durability it is advisable to reinforce the buttonhole, i.e. to sew over it a second time, e.g. for jackets, coats or overalls.

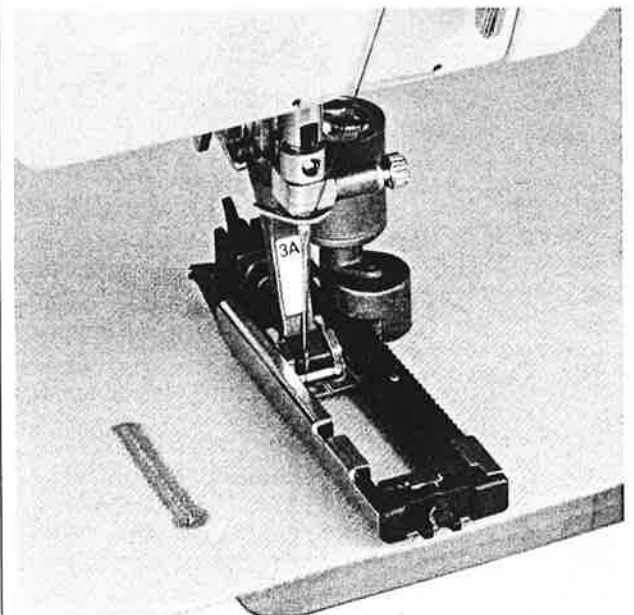
Method

For the first stage it is better to have the stitch width slightly narrower and the stitch length slightly longer than the basic setting. Sew the buttonhole as described. After the securing stitches the machine is ready to sew the buttonhole again, i.e. the second stage of the double-sewn buttonhole. For this second stage the width and length can be adjusted to suit the fabric or as desired.



Cutting the buttonhole

See page 40.




Mending woven fabric

Mending tears using Running stitch


Modern darning method for tears and thin areas on virtually all fabrics.

Needle: 80-70

Thread: Darning thread

● Stitch: 
Running stitch

Stitch length: Adjust to suit the fabric where necessary

● Function button: 

Important:

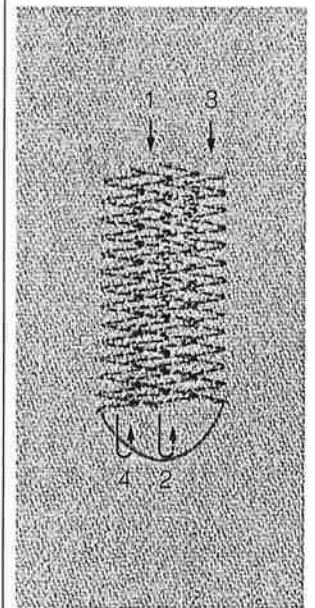
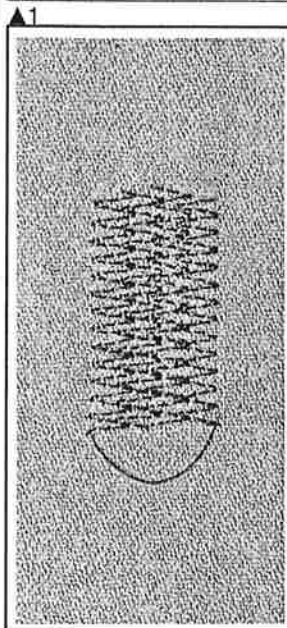
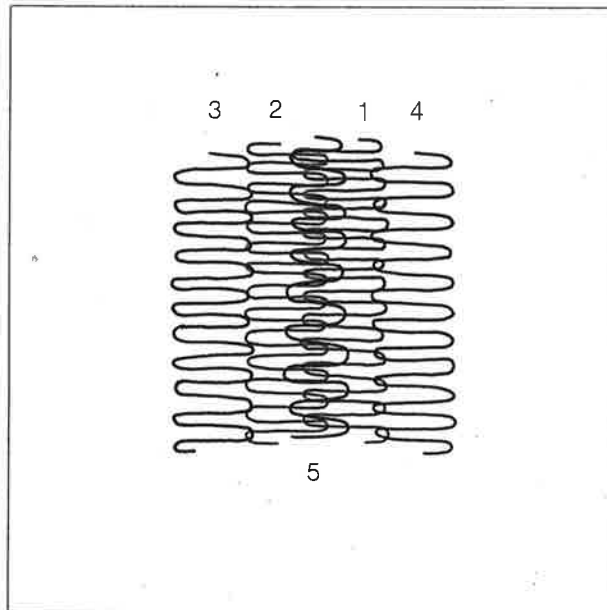
Always lay a fine fabric underneath. On tears, sew 3-5 rows of Running stitches (fig. 1).

On thin areas, sew sufficient adjacent rows to cover. Overlap the rows very slightly.

Method

On flat garments it is possible to turn the work, lower the needle into the fabric to do this, so the stitching is always in a forward direction (fig. 1).

On tubular items (sleeves, trouser legs), press the reverse sewing button after the first row, move the fabric sideways slightly, and sew the second row in reverse. Continue, alternating forwards and reverse (fig. 2).



Mending woven fabric

Patching using Honeycomb stitch or Running stitch (according to fabric)

For outerwear and especially jeans.

Needle: 80

Thread: Darning thread

Step 1


● Stitch: -----
Straight stitch

● Function button: ---
Basting stitch

Do not cut away worn/torn areas. Pin patch to the right side and baste along the edge using darning thread.

Step 2

Clear Basting stitch

● Stitch: 
Honeycomb stitch

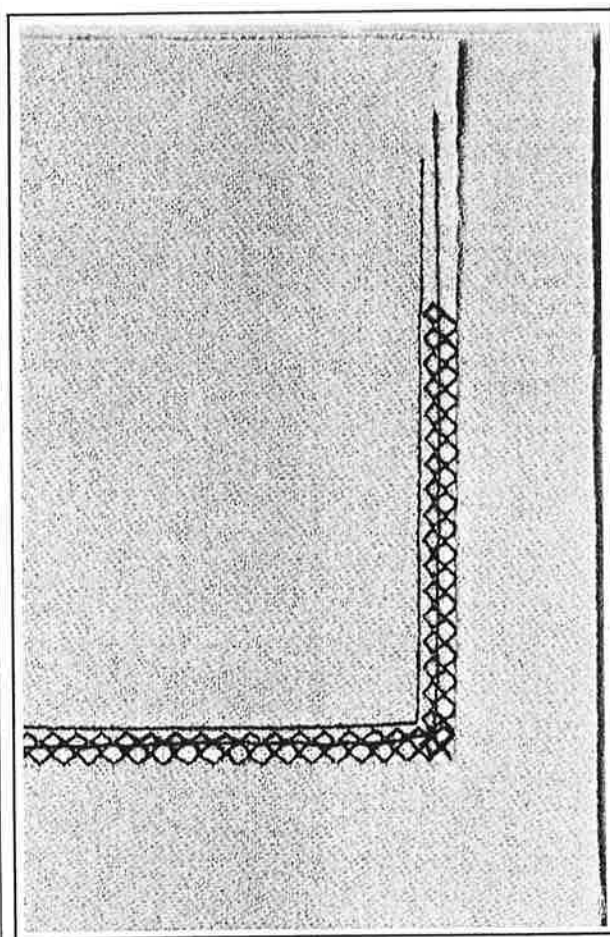
Oversew edges with Honeycomb stitch. Guide the edge of the patch to the right of the zig-zag slot of the foot to ensure all Honeycomb stitches are on the patch.

Step 3

● Stitch: -----
Straight stitch

Stitch length: approx. 1

Sew a straight stitch along the inside edge of the Honeycomb stitch. Then cut away the worn/torn piece from behind patch. This is easier with the straight stitch.




Mending interlock fabric

Patching using Jersey stitch

Primarily for mending interlock underwear.

Needle: 80-70

Thread: Darning thread

● Stitch: 
Jersey stitch

Small tears/worn areas are best darned. See page 47. For larger tears or worn areas, it is better to sew on a patch as this retains the elasticity.

Cut out a patch, possibly from the sound part of similar discarded garment. Where possible round off the corners to preserve elasticity.


Pin on the patch and baste as close as possible to the edge using small basting stitches. Then sew patch into place using 1-2 rows of Jersey stitch. Finally, cut away torn/worn piece from behind patch.

Edging with elastic thread

The elastic thread is used to restore distorted edges to their original shape.

Needle: 80-70

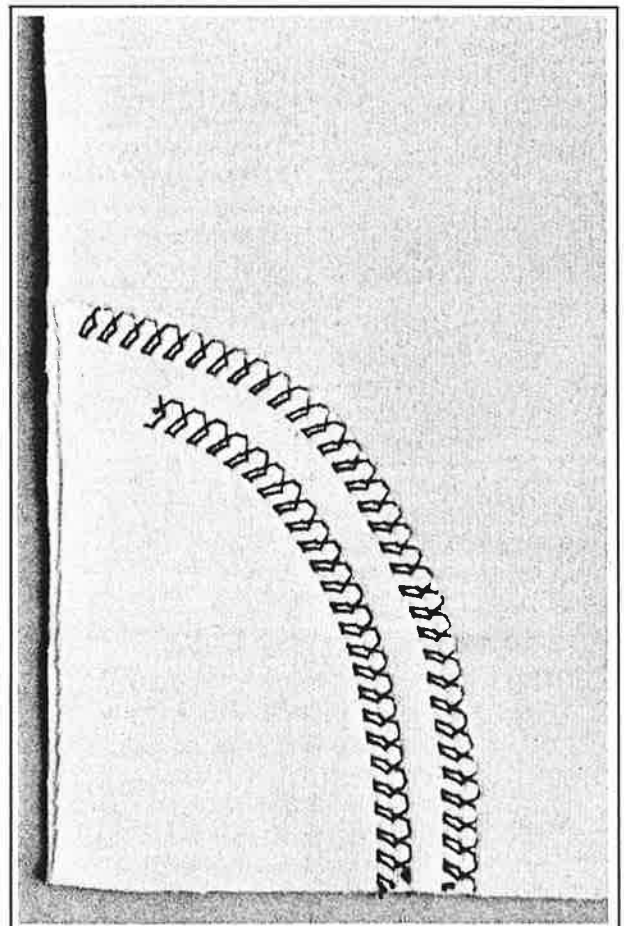
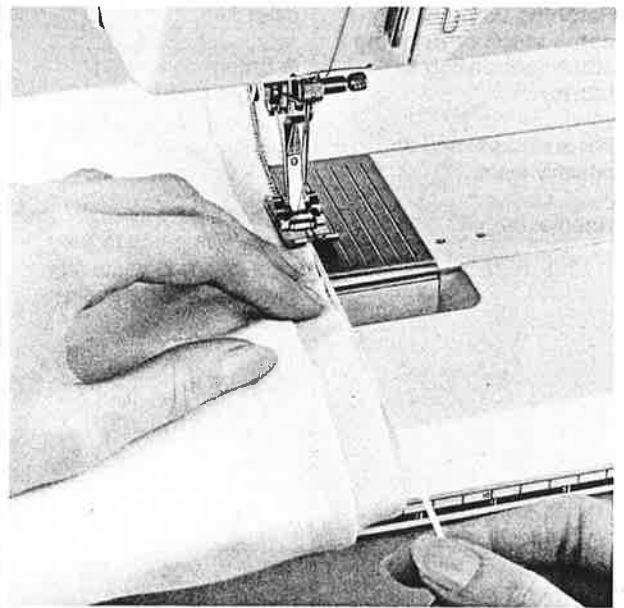
Thread: Darning thread

● Stitch: 
Zig-zag stitch

Stitch width: approx. 3

Stitch length: 1-1½

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



Darning

The principle of darning

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

Recommendation

Whenever possible, use a darning ring to keep the darning area taut. Move the ring backwards and forwards without pressure, otherwise jerky movements occur, resulting in torn threads. Always work from left to right, moving up and down over the hole, not from side to side. Finish each stage with needle in fabric on the right and pivot the work 90° (except with tubular items). Work is guided with little finger and thumb to the outside of the hoop, held firmly to give a smooth movement. Use the sewing table and support the elbows on the work table. Position the machine slightly further back from the edge of table than normal.

Darning technique

There are various methods of darning. The method described here is one that is easy to learn:

Needle: 80-70

Thread: Darning thread

● Stitch: -----

Straight stitch

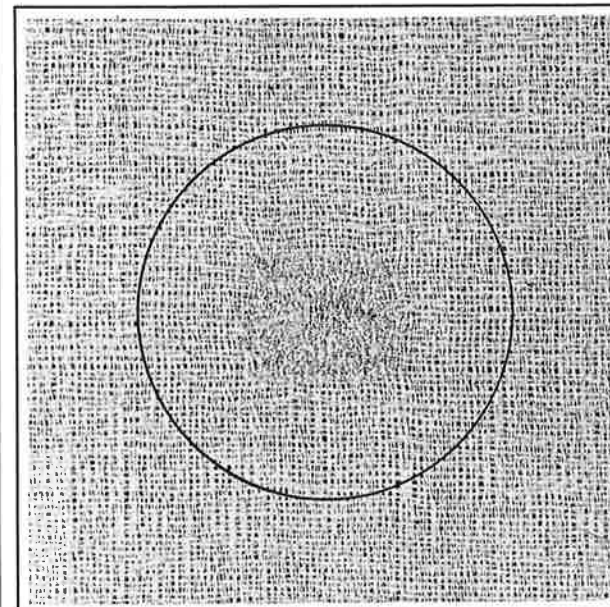
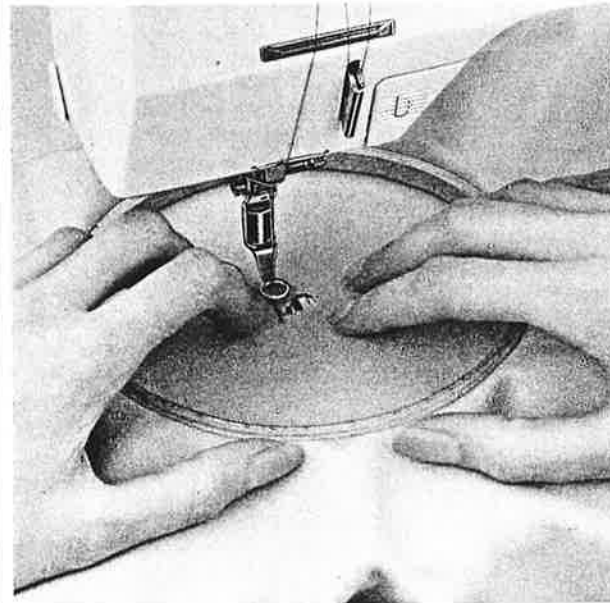
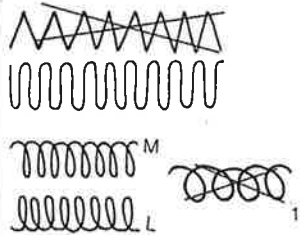
Stitch length: 0

Feed-dog: lowered

Presser foot: Darning foot No. 9

Important

Darn in a curved rather than a pointed shape, otherwise the fabric is liable to tear. Beginners often tend to prefer L and M movements, but care must be taken to ensure that this does not result in a circular movement (fig. 1).



Main faults:

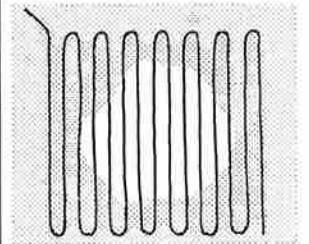
Thread frequently breaks:
- Fabric being guided unevenly.

Stitching unattractive, thread loose on top:
- Fabric being moved too quickly.

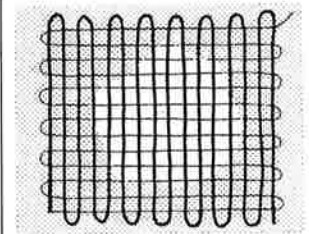
Small knots form on underside:
- Fabric being moved too slowly.

The three steps

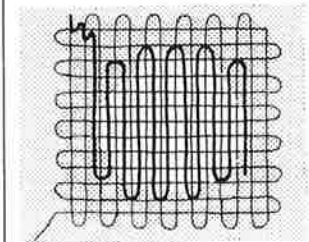
1. Start at top left of darn, work from left to right across hole, finishing at top right. Turn 90°.



2. Again work from left to right, filling in hole, but not too densely otherwise a ridge will form at the edges of the darn.

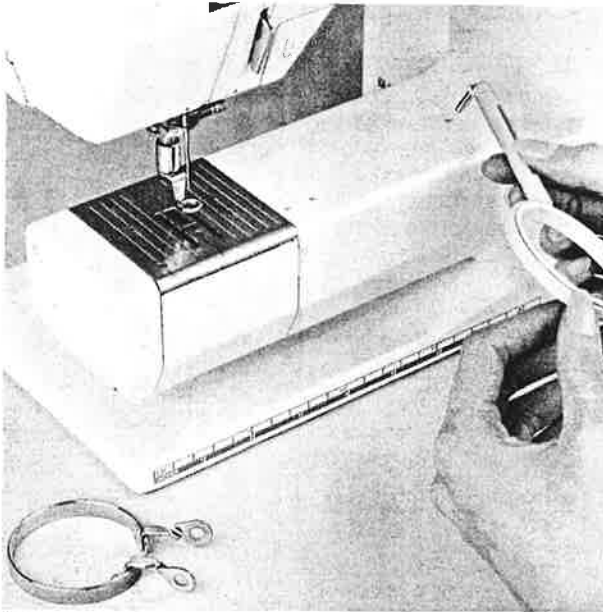


3. Fill in the darn, working in same direction as step 2, but only over the "hole", not to the edge of the darn.

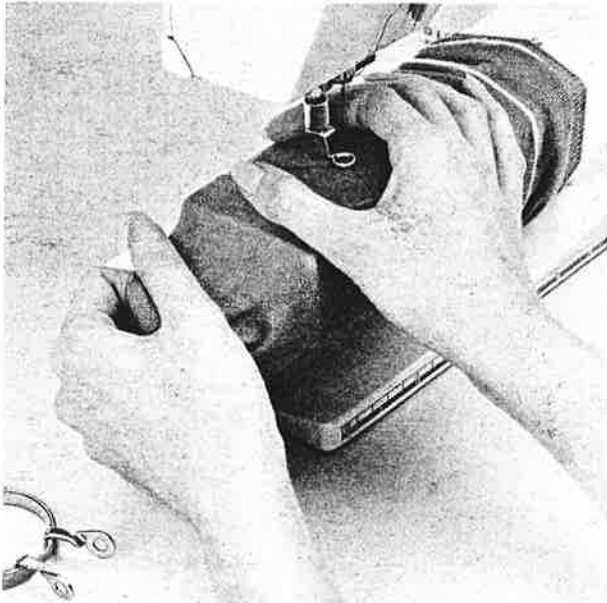


When the darning technique has been mastered, work the rows of stitches in irregular length so the darn blends into the fabric.

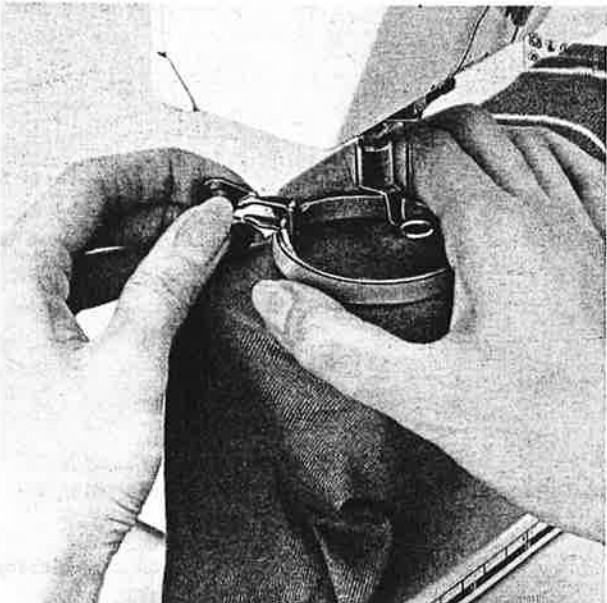
Darning with small darning ring



▲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, fine socks and pullovers, e.g. in Helanca, interlock, jersey.

Stretching the work

– Fit the darning ring, without the spring clip, on to the free arm (fig. 1).

– Slide the garment over the free arm going also over 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. Using the left hand, fit the spring clip as follows:

Close the spring clip, insert under the index finger of the ring 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.

Trouble-shooting Maintenance

Fault prevention	50
Changing the bulbs	51
Maintenance:	
Cleaning and oiling	52

Fault prevention

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

Check whether:

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

Upper thread breaks

- The upper thread 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.
- Stitch plate or hook tip damaged. Take to a BERNINA dealer.

Lower thread breaks

- The lower thread tension is too tight.
- The bobbin is jamming in the bobbin case. Replace bobbin.
- The hole in the stitch plate has been damaged by the needle. This must be re-polished by an expert.
- The needle is blunt or bent.

Faulty stitching

- Wrong needles. Use only 130/705 H 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 leather.

Needle breaks

- Needle clamping screw not sufficiently tightened.
- Fabric withdrawn forwards instead of backwards, under the presser foot.
- When sewing over a thick area, the fabric was pushed while the needle was still in the material. Use the Jeans foot.
- Poor quality thread, unevenly wound or knotted.

Faulty tension

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

Machine fails to sew full zig-zag width

- Check whether "Double needle limitation" button (48) is still selected.

Machine fails to run, or will only run slowly

- Plug is not properly inserted.
- Power switch in 0 position.
- Reduced speed button (32) is selected.
- Machine gummed up by unsuitable oil. Machine will have to be cleaned by a specialist.
- Machine has been standing in a cold room.

Machine stitching in reverse

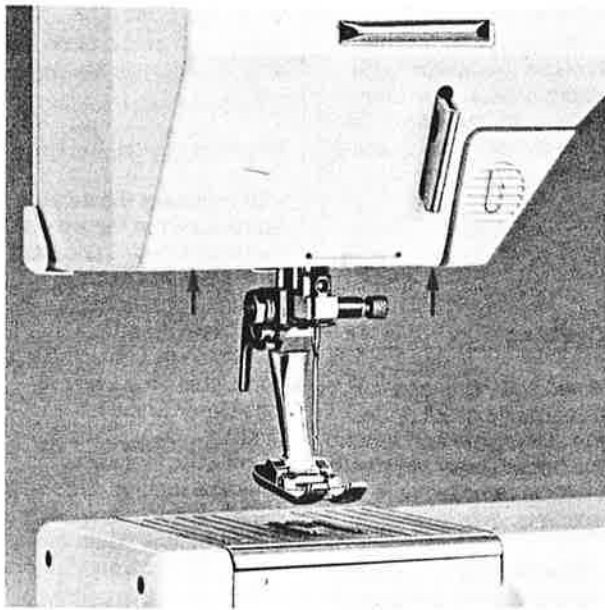
- Selector button (33), "Reverse sewing" is still engaged.

Machine is not sewing selected programme

- Switch machine off, then on again, using the power switch.

If you have occasion to take your machine to a specialist, always ensure that you also take the foot control and accessories!

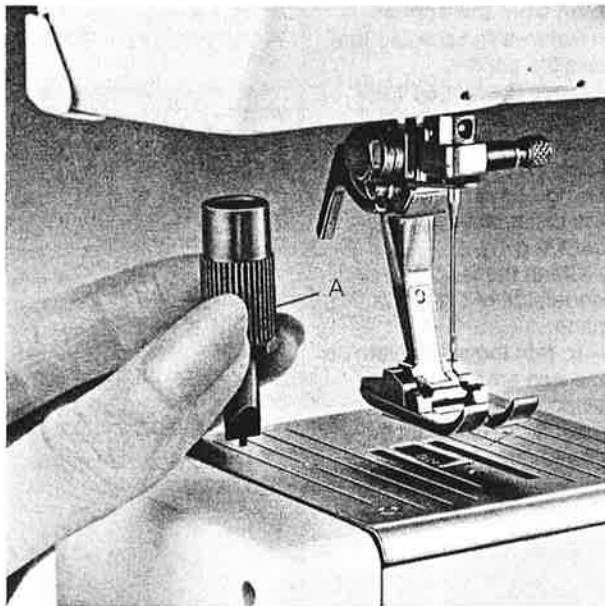
Changing the bulbs



Fitting the bulbs

There are 2 low voltage 6 volt/4 watt bulbs provided. The first is located in front to the left of the presser foot, the other behind, to the right.

Disconnect the machine from the mains by removing the mains cable from the socket!



Changing bulbs

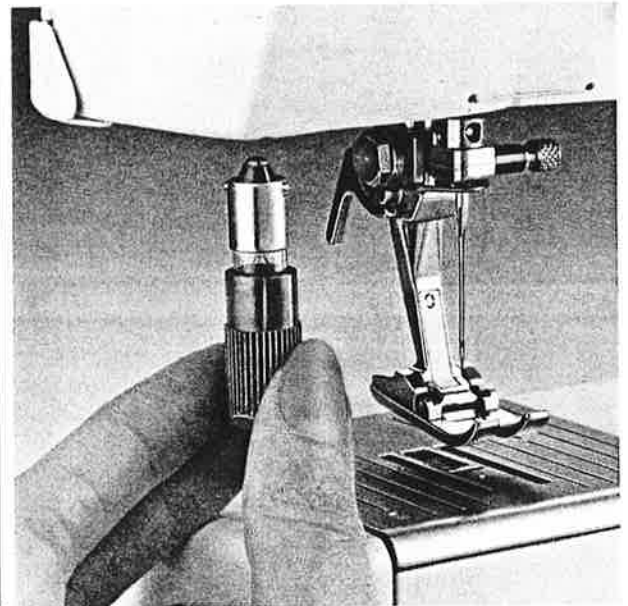
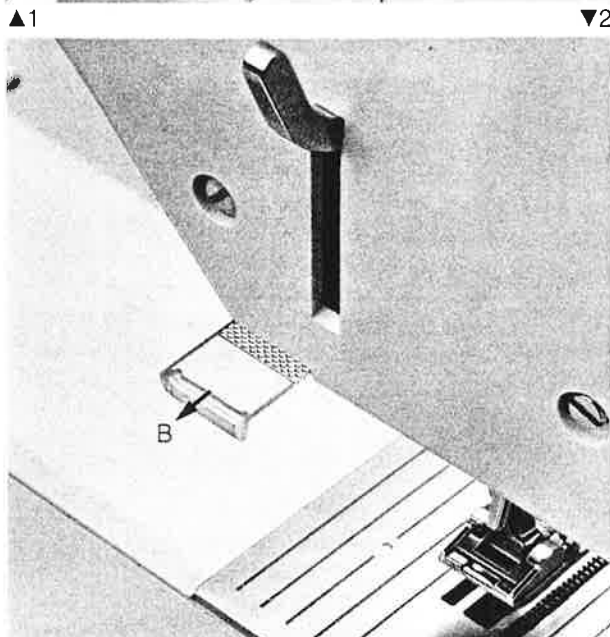
To change the front bulb: (fig. 1) Using special tool A, press the bulb upwards, twist to the left and withdraw.

To change the rear bulb (fig. 2)

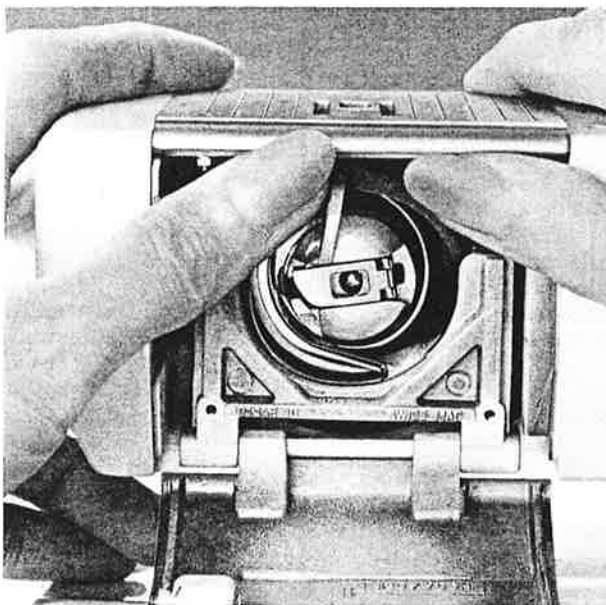
Remove diffuser B. The bulb can then be removed in the same way as the front bulb.

To insert new bulbs

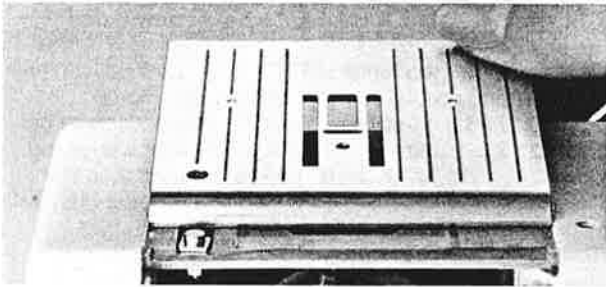
Place the new bulb on the special tool (fig. 3). Insert into holder with the bulb, press upwards and twist to the right, to the stop. For the rear bulb, refit diffuser B.



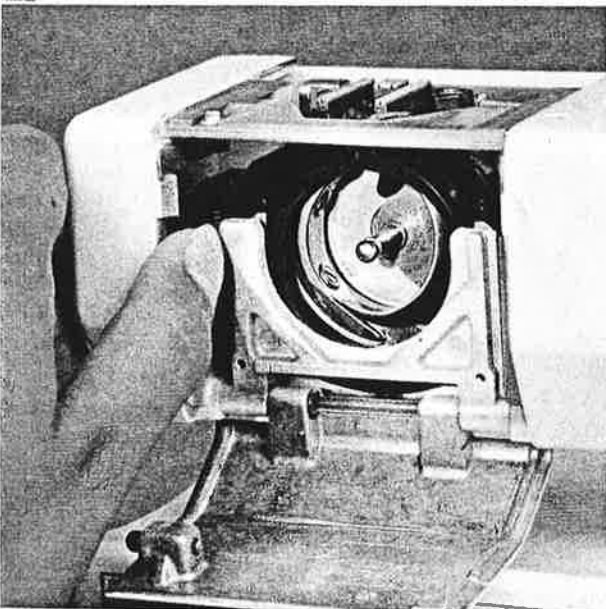
Maintenance: Cleaning and Oiling



▲1



▲2



▲3




▼4

If the machine is stored in a cold room, it should be brought to a warm room approximately one hour before use, 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 at regular intervals.

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

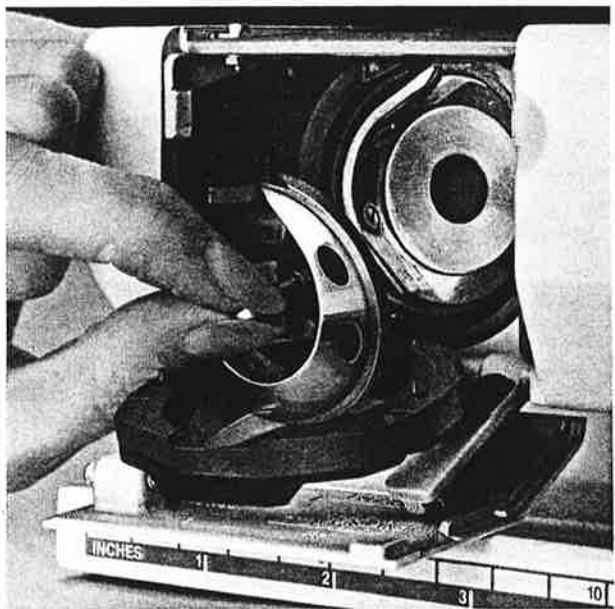
- Remove the presser foot and the needle.
- Open the hinged front cover on the free arm.
- Lower the feed-dog. Set knob 18 to position . Using both thumbs, press the stitch plate up and back (fig. 1).
- Clean the feed-dog and underside of the stitch plate.
- To refit the stitch plate on the free arm, insert the stitch plate from the rear, push forward until it engages (fig. 2).

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

To clean and oil the hook

- Disconnect the sewing machine from the power supply by pulling out the plug from the socket.
- Take out the bobbin case, see page 12.
- 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 etc. to remove remnants of thread.
- Lightly oil the hook race with 1–2 drops of oil (fig. 4).
- Insert the hook. If necessary, turn with 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.

▼5




Important

Safety instructions

The following safety instructions must be observed.

– The moving needle is a source of danger (risk of injury to the fingers). Always therefore keep your eyes on the area in which you are working.

– Any operations performed within the needle movement area, e.g. changing a needle or presser foot, must always be carried out with the machine switched off (power switch at ). The same applies to removing and replacing the lower thread bobbin.

– When carrying out maintenance (cleaning or oiling), whenever work is interrupted or finished and also for changing bulb, the sewing machine should be disconnected from the mains by removing the mains plug from the socket.

– All repairs to the machine, especially electrical repairs (for example, changing wiring connections) may only be carried out by one of our service agencies.