

# **SINGER\***

**Livre d'instructions  
Instruction book  
Gebrauchsanweisung  
Libretto istruzioni  
Libro de instrucciones  
Libro de instruções  
Handleiding**

**400/600**

# SINGER

Dear Madam,

Congratulations,

Thanks to your new SINGER® knitting machine, you will discover the pleasure of creating your own garments.

You will appreciate the simplicity of the settings and the many possibilities which will allow you to knit a very large variety of patterns.

Your SINGER® knitting machine shows the SIT initials (International Knitting Standardization). It is for you the guarantee of a very modern conception of technology and the high quality of the product.

This book will be your guide. Follow the instructions and as you go further, you will have the satisfaction of creating beautiful and exclusive garments.

Don't hesitate to visit your nearest SINGER® stockist for further information or to obtain the accessories you might need.

Enjoy knitting!

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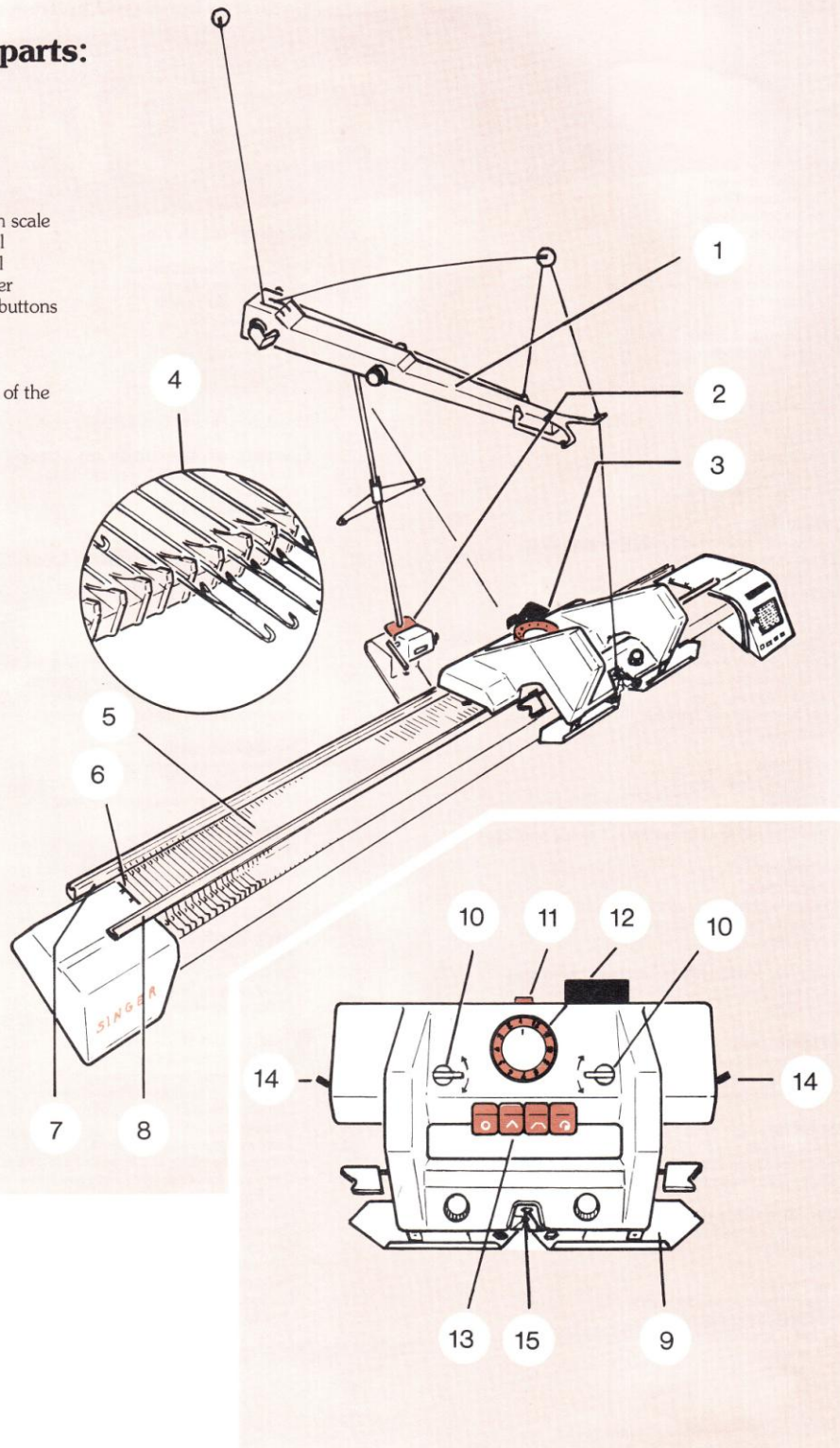
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# Getting to know your knitting machine

## Principal parts:

1. Tension unit
2. Row counter
3. Carriage
4. Needles
5. Needle bed
6. Needle position scale
7. Lower slide rail
8. Upper slide rail
9. Knitting retainer
10. Needle return buttons
11. Jacquard key
12. Stitch size dial
13. Keys
14. Locking levers of the carriage
15. Yarn guide

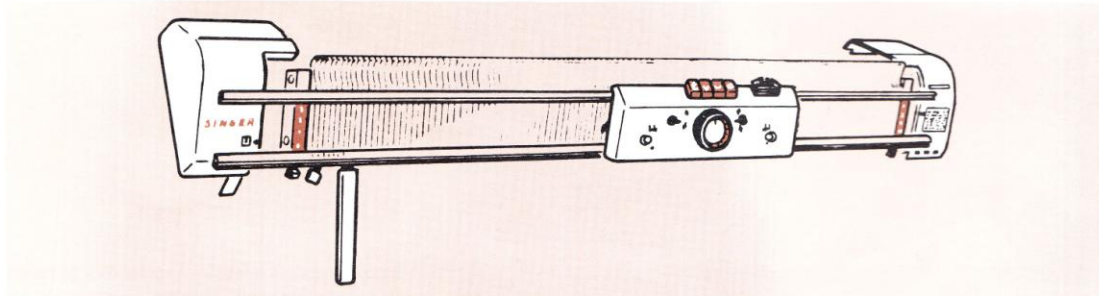




## The conversion kit

A machine which can be converted is the SINGLE BED.

- If you enjoy the possession of a SINGLE BED machine, you can whenever you like, CONVERT IT into a real DOUBLE BED machine by means of the conversion kit.
- The conversion kit is supplied with the front carriage and the appropriated end cover.
- Your dealer will show you how this very simple conversion is carried out. You only need a screwdriver to obtain, in three minutes, a true double bed machine. It will allow you to knit all kind of ribs as well as the true Norwegian Jacquard.

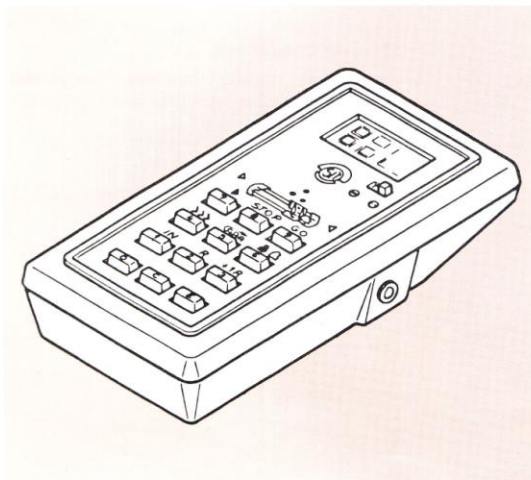


## The accessories

The following illustrated accessories are not necessarily provided with your machine. You may obtain them from your nearest SINGER\* stockist.

### Knitting computer

Allows you to create your own fashion and avoids tedious calculations. This accessory is delivered with a pattern book and explanations.

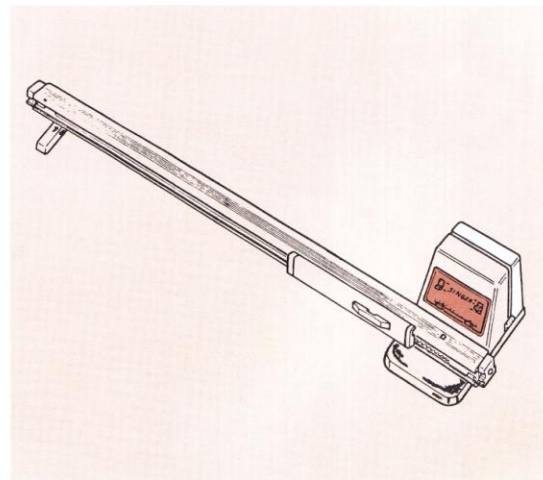


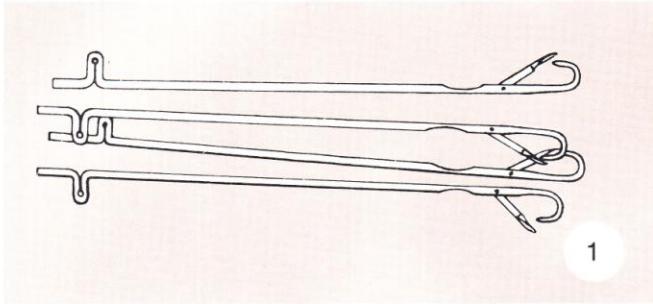
### Motor drive compact

For even better results, try the Motor Drive Compact at your nearest SINGER shop.

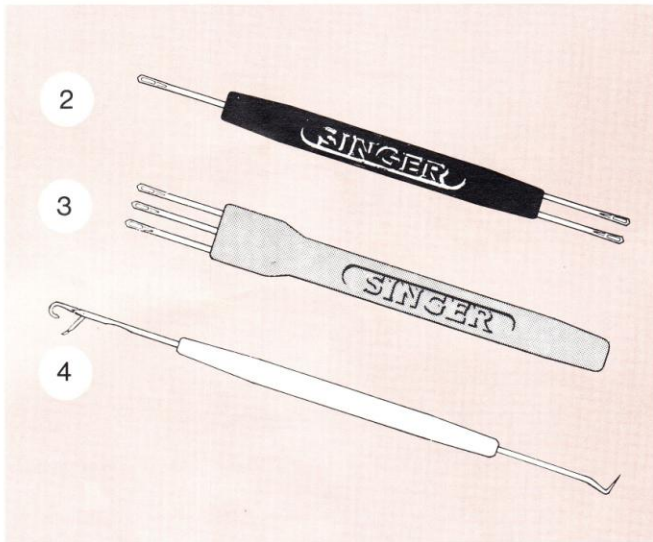
It is an electrical motor which fits easily to your SINGER knitting machine without any adjustment. It totally replaces the pushing of the carriages.

It allows a constant knitting speed whatever the thickness of the yarn or the stitch and ensures even knitting.

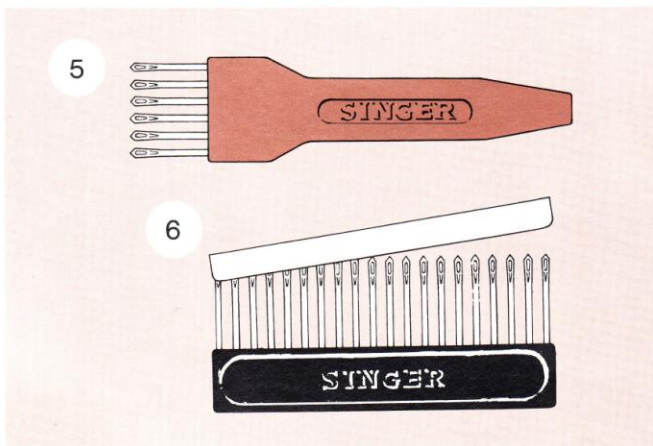




1. Spare needles



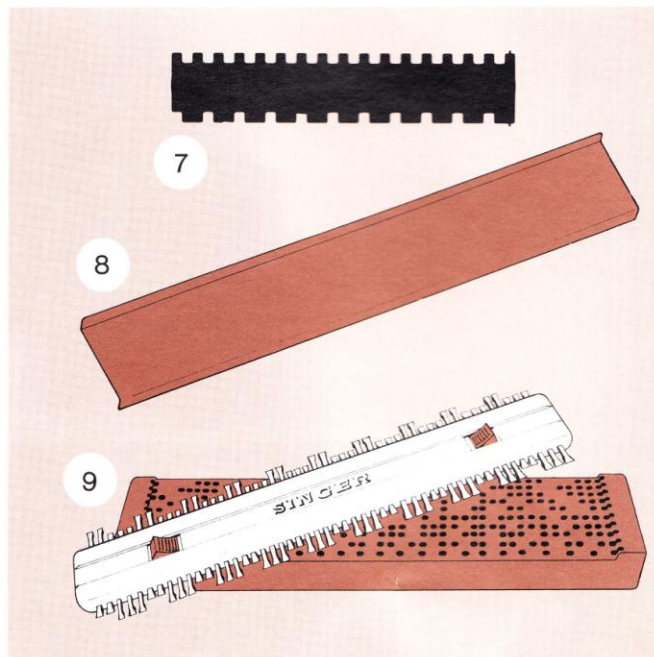
2. Single and double eyelet transfer tool to move 1 or 2 stitches when increasing, decreasing or making fancy stitches.  
 3. Three eyelet transfer tool to move 3 stitches.  
 4. Latch needle tool with hook for casting-on and off, picking up a dropped stitch, etc. ...



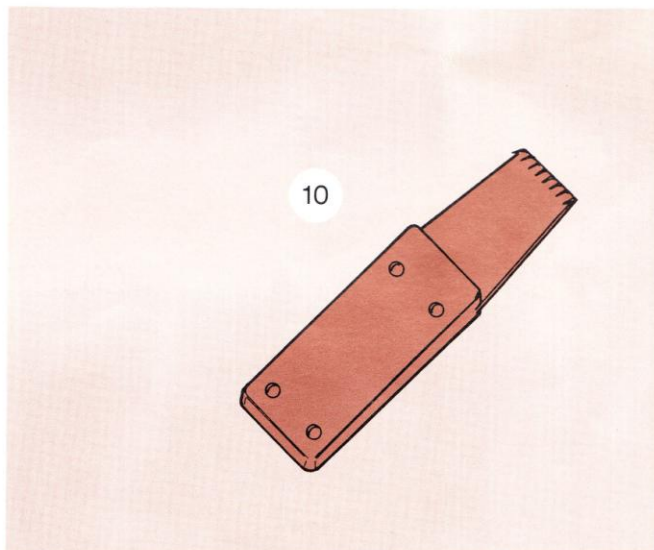
5. Six eyelet transfer tool  
 6. Twenty eyelet transfer tool. It makes the transfer of a group of stitches in the middle of a row easier.



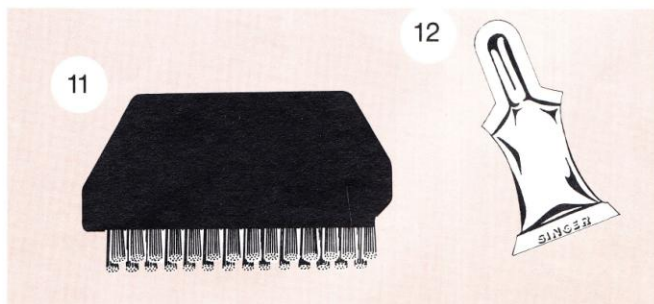
- 7. Needle selector to position one needle in two or two needles in three.
- 8. Needle pushing ruler
- 9. Universal needle selector with grid to select the required needles when knitting Fair Isle and fancy patterns (manual needle selection).

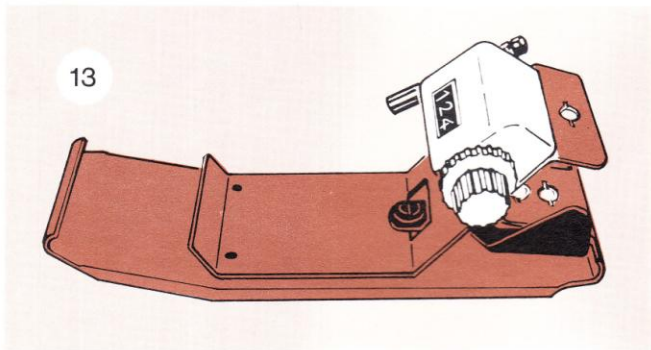


- 10. Edge claws.

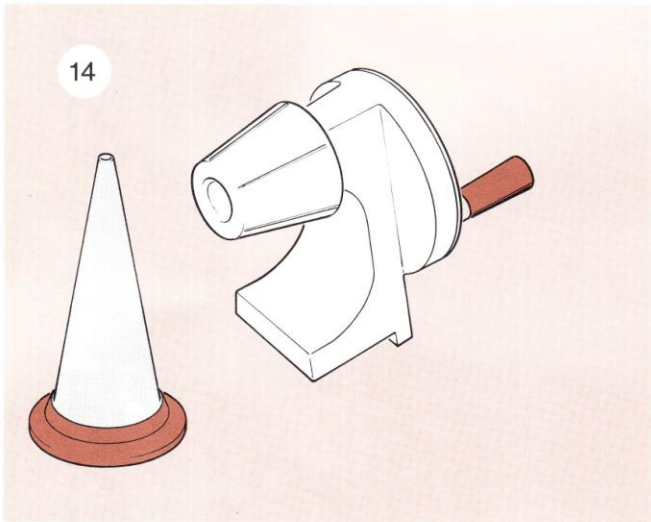


- 11. Lint brush.
- 12. SINGER® oil

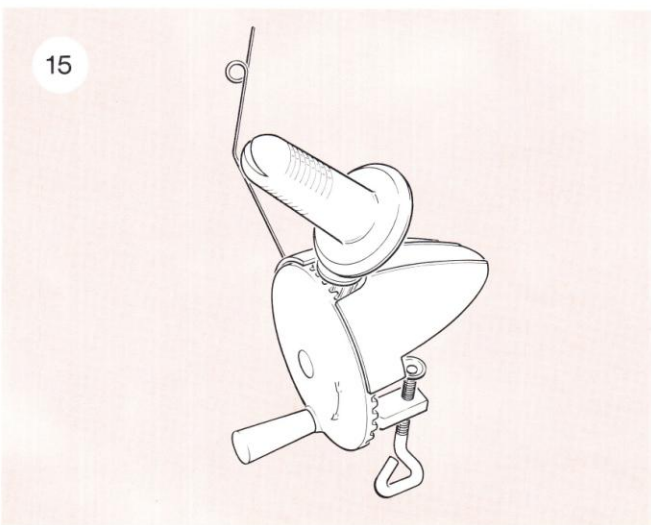




13. Tension unit stand with row counter.



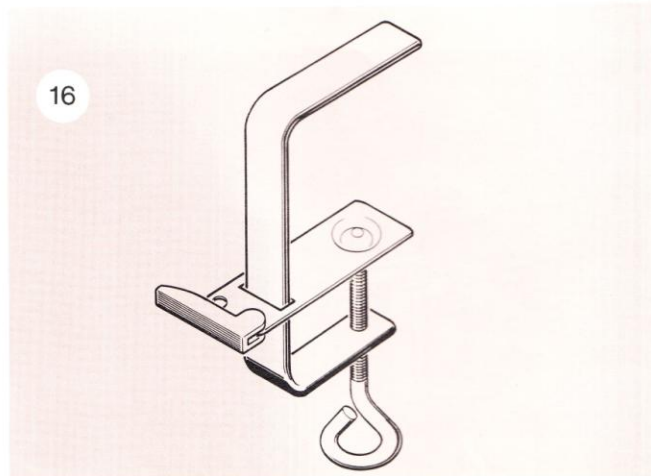
14. Cone winder with cones and collars to obtain an even distribution of the yarn.



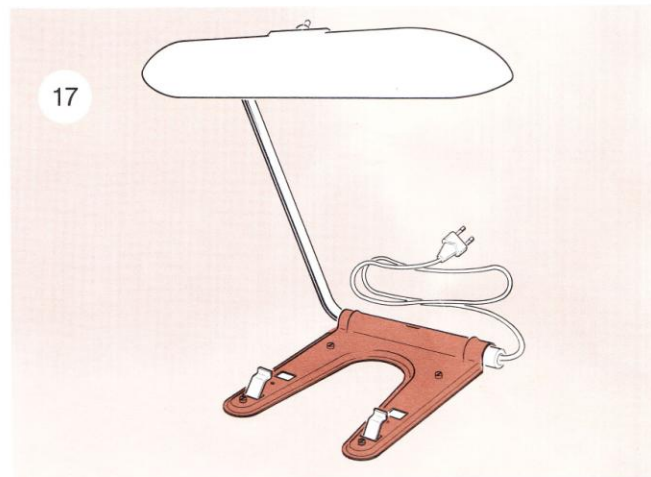
15. Wool winder to prepare yarn balls to be used directly. This accessory also allows you to wind odd yarns in order to put them away more easily.



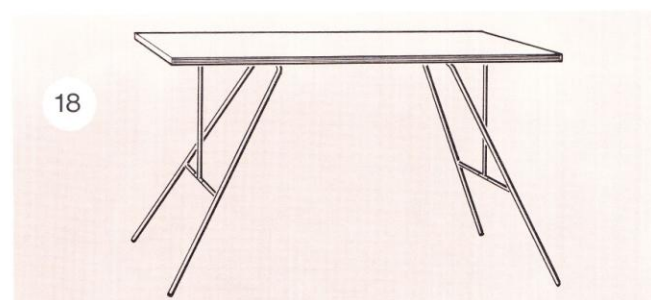
16. Extra-large table clamps to set up your SINGER® onto a thick table.



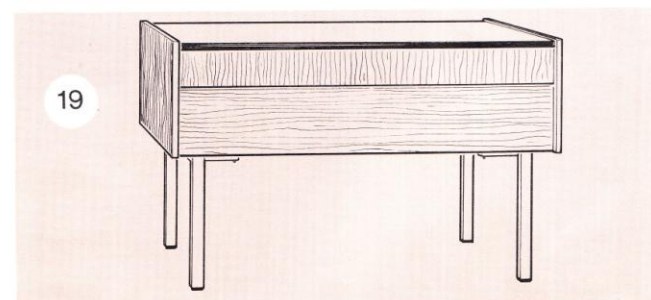
17. Lamp which gives the best lighting for your work.



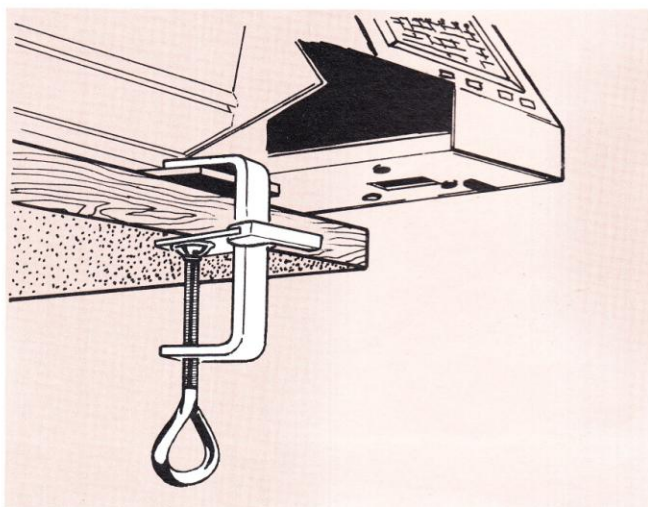
18. Folding table to give you an ideal support. It can be easily folded and needs, therefore, only a small storage space.



19. Cabinet which serves at the same time as a knitting table as well as a cabinet to put away the machine and the various accessories. Your machine will thus always be protected. When your knitting is finished, just fold the machine back inside.



# How to set up your knitting machine



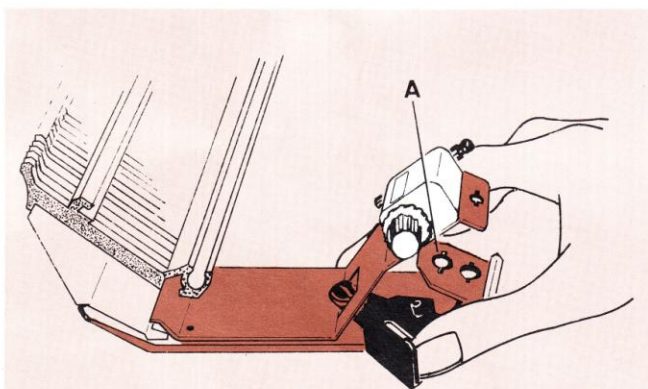
## Setting up of the machine

On a SINGER\* folding table:

- Place the machine on top of the table, making sure the table protectors are in line with the edge of the table.
- Attach the machine with the table clamps.

On other table:

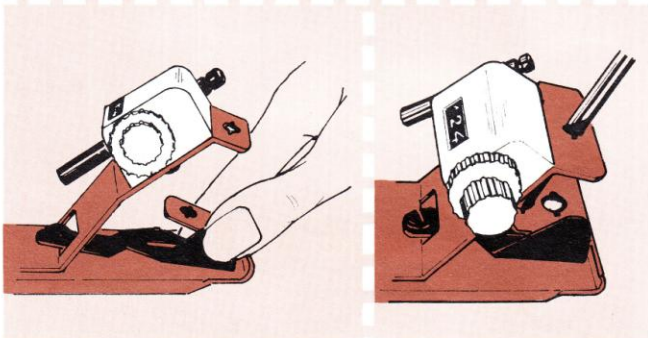
- Attach the machine in the same way as for the folding table.
- If the table top is very thick, you can obtain extra-large table clamps from your nearest SINGER\* stockist.



## How to attach the tension unit stand:

- Slide the tension unit stand under the needle bed, from behind, in the centre, at the 0 of the graduated scale.
- Hook the forward edge of the stand underneath the needle bed, onto its ridge.
- Lock the stand by pushing the lever towards the left-hand side.
- Fit the tension rod into the hole A.

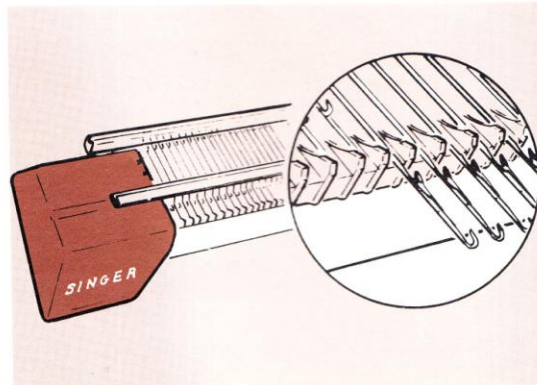
To attach the tension unit to the machine equipped with the motor, refer to the instructions supplied with the motor drive.





## The needle bed

The needle bed is made out of an anodized and totally rigid aluminium alloy. It has 180 grooves in which the needles slide. The upper part of the needle bed is composed of flow combs which allow the yarn to slide from one needle to the other.

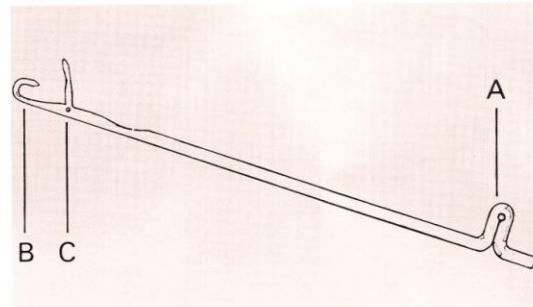


## The needles

EACH NEEDLE HAS THREE DISTINCTIVE PARTS:

- A – A heel: it is the part of the needle which is in contact with the carriage.
- B – A hook which holds the stitch or the yarn which just has been fed.
- C – A movable latch. It closes the hook when a stitch is being formed.

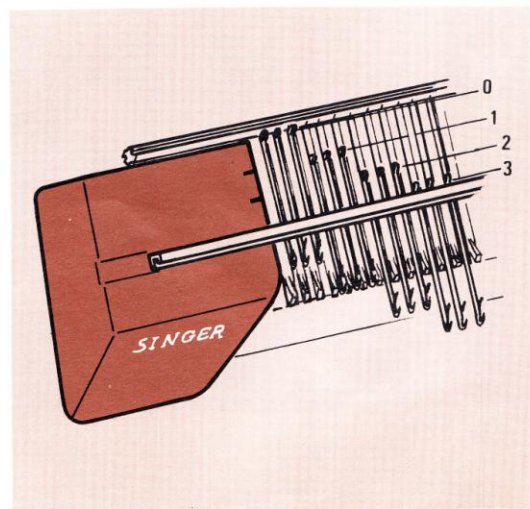
There are four needle positions. The two working positions are indicated at the end of the needle beds and are moulded onto the plastic end covers.



## Needle positions

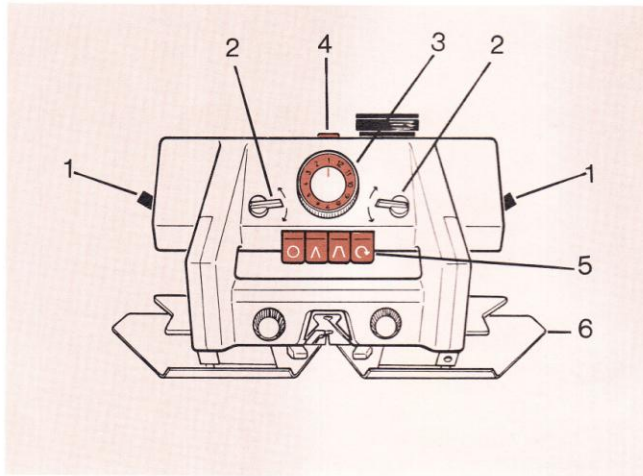
- Non-working position 0: it is the lowest position. The needle heel rests against the lower slide rail.
- Working position 1: the needle hook is level with the flow combs. It is the normal knitting position.
- Working position 2: the open needle latch is level with the flow combs. The stitches are lying behind the latches.
- Holding position 3: the needle heel rests against the upper slide rail.

To position the needles, use either needle pusher.



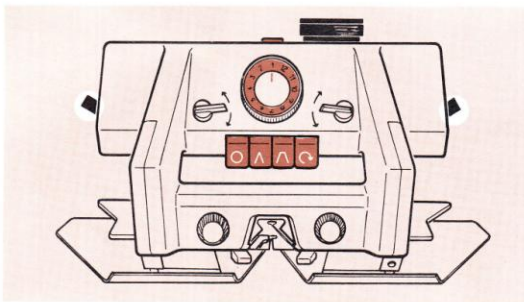
# The carriage

The to and fro movement of the carriage controls the movement of the needles.



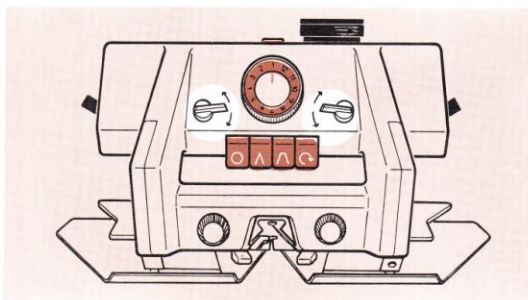
1. Locking levers
2. Needle return buttons
3. Stitch size dial
4. Jacquard key
5. Selection keys
6. Knitting retainer

## 1. The locking levers



The locking levers secure the carriage to the needle bed and allow it to move across without knitting or release it from the needle bed. To remove the carriage, push both levers upward, release the upper part of the carriage and move it in the required direction. Before knitting, make sure that the carriage is locked properly onto the upper slide rail in order not to damage the needle cams. Should you remove the carriage from the machine, always lay it upside down.

## 2. The carriage has two needle return buttons with three positions



The neutral position (centre) is used for normal knitting.  
 The lower position brings the needles from holding position 3 back to working position 1.  
 The upper position is used to bring needles from working position 2 (manual needle selection) into holding position 3.



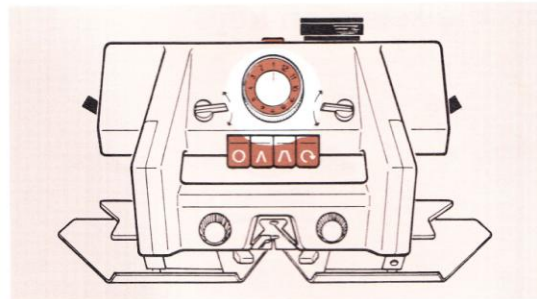


### 3. The stitch size dial

The stitch size dial determines the downward movement of the needle, thus the length of the stitch. Turn the button to bring the required number opposite to the arrow.

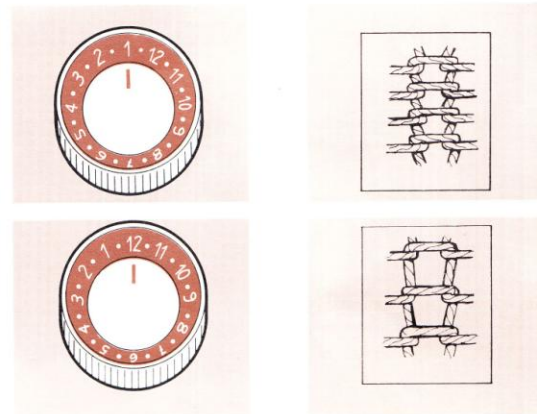
A smaller number = a smaller stitch

A larger number = a larger stitch.



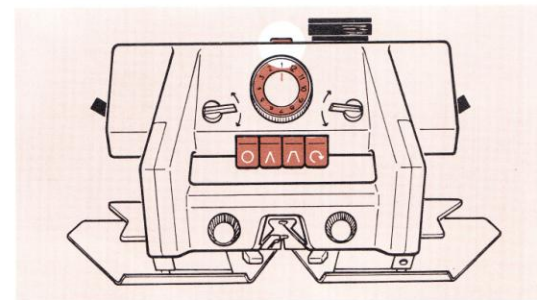
Adjustment of stitch size (stocking stitch) in comparison to hand knitting needles

Hand knitting needles	Stitch size dial
2 mm Fine Yarn .....	3-4
2½ mm 2 ply .....	4-7
3 mm ¾ ply .....	7-9
3½ mm Double Knitting .....	9-12
4 mm Thick yarn .....	10-12

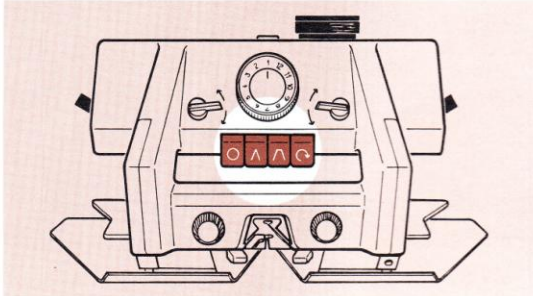


### 4. The Jacquard key


The Jacquard key helps to knit Fair Isle automatically.




## 5. The selection keys



The carriage has four basic keys

Key   
It cancels all other keys

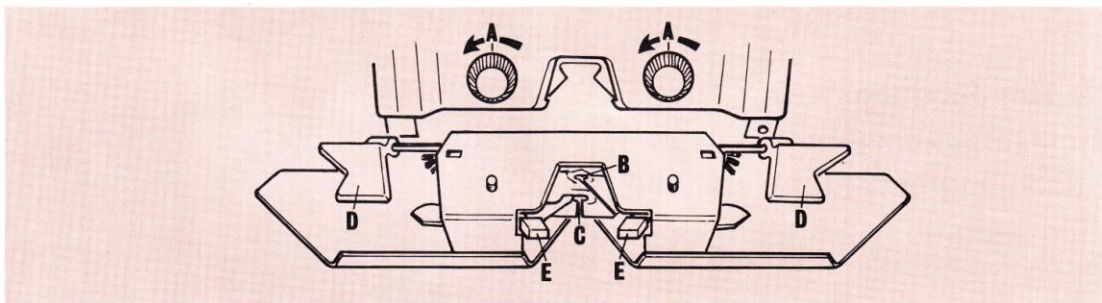
Key   
It allows the stitch formation after each passage of the carriage.

Key   
It allows tuck stitches to form.

Key   
It allows you to knit every alternate row in prevision for the use of a conversion kit, but allows also to knit, fancy patterns, in conjunction with the  tuck key.



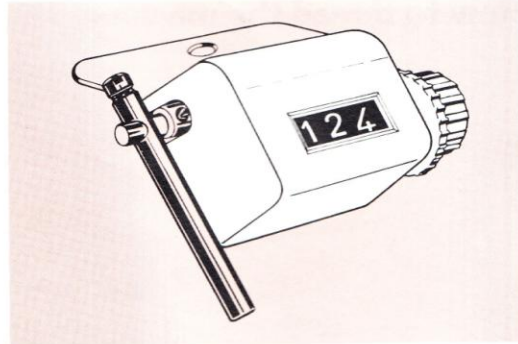
## 6. The knitting retainer



The knitting retainer allows you to knit without weights and without comb. To remove it from the carriage, loosen the two buttons A. The yarn guides B and C allow a well distribution of the yarn onto the needles. The main yarn guide B is permanently used, the knobs E are pushed inwards. The second yarn guide C is only used when knitting Fair Isle, the knobs E are pushed outwards. The weaving effect device D must always be in the upper position except when doing weaving effect. The brushes open the latches of the needles in working position when moving the carriage across.

## The row counter

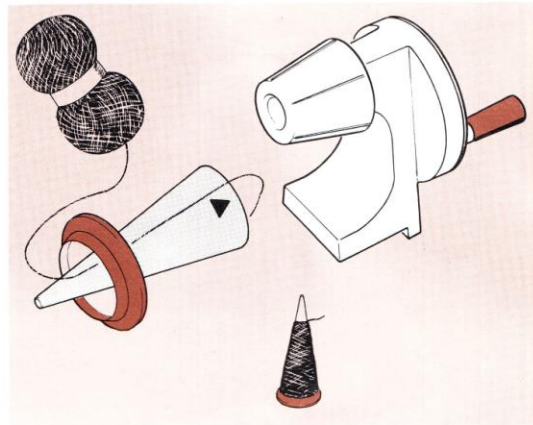
- The outer knob allows you to set the row counter to 000. It moves anti-clockwise.
- The inner wheel moves in both directions to add or subtract numbers individually.
- To subtract, move it away from you.
- To add, move it towards from you.



## How to wind the yarn onto a cone

- Take the inner end of the yarn which is easy to find at the bottom of the ball (compared to the paper label).
- Slide the collar onto the cone.
- Pass the yarn between collar and cone.
- Fold the end of the yarn inside the cone.
- Press the cone firmly onto the winder.
- Push the collar firmly to the base of the cone in order to keep it well in place.
- Turn the handle of the cone winder and starting from the base of the cone, guide the yarn in a criss-cross movement, winding only 2/3 of the cone.
- Remove the cone with its collar at the tip and place it on the table behind the tension unit.

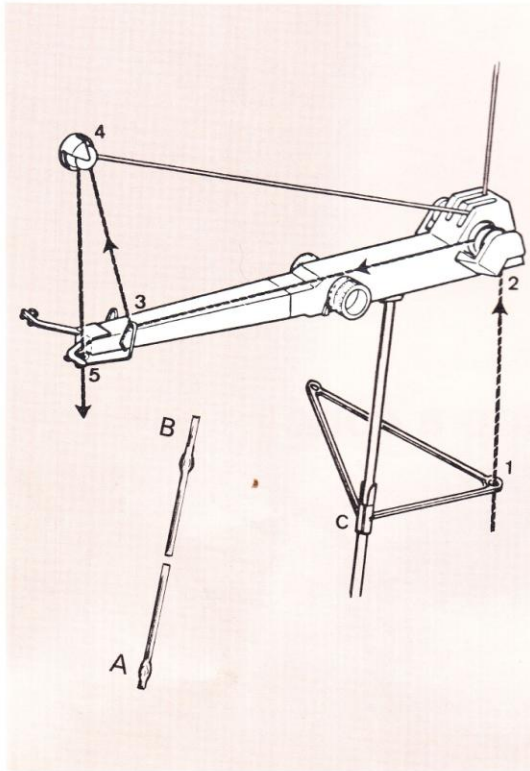
NOTE: You can obtain that accessory at your nearest SINGER® stockist.





# The tension unit

## How to thread the machine



THE TENSION UNIT has two yarn threaders

- To thread a single yarn, use the right-hand side of the tension unit.
- Place the cone with yarn on the table behind the tension rod.

### How to adapt the tension unit:

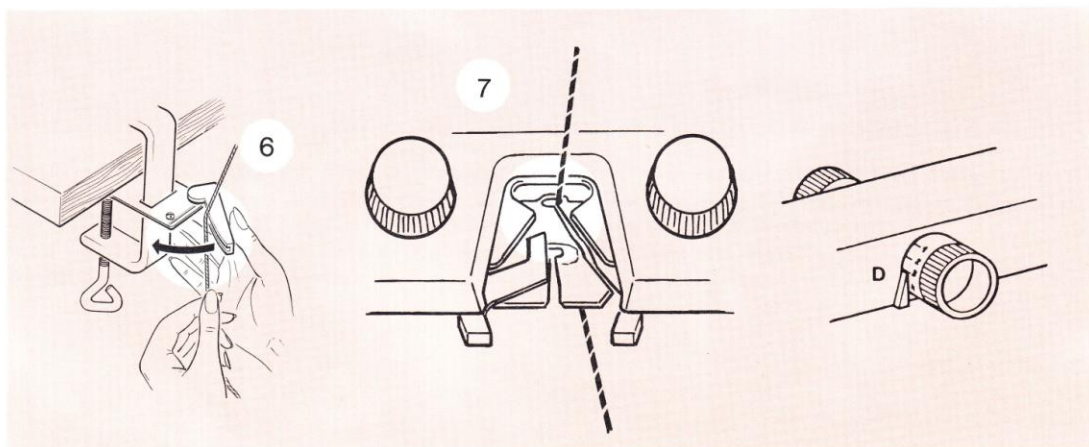
- Insert the end "A" into the tension unit stand.
- Clip the feeding guide "C" onto the tension rod.
- Fit the tension unit onto the end "B" of the tension rod.

### Pass the yarn:

1. Into the feeding guide
2. Between the two metallic discs
3. Under the guide in shape of an upside down V.
4. Onto the wheel
5. Into the last guide
6. Fasten the end of the yarn at the yarn clip located on the table clamp.
7. Into the yarn guide of the carriage.

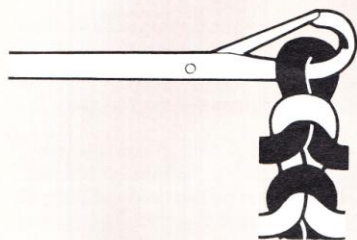
### How to adjust the tension of the yarn:

The tension of the yarn can be adjusted by turning the knob "D" to bring the arrow opposite to number 1, 2, 3 for fine yarns, or opposite to a larger number for thicker yarns.

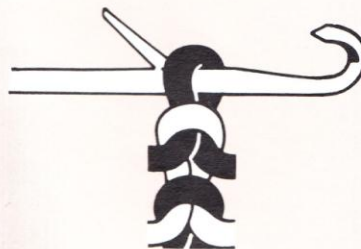


# Stitch formation

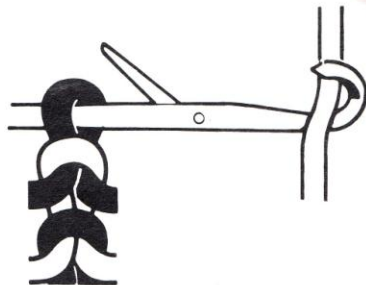
- 1 ● Before moving the carriage across, the needle is in working position 1. The stitch is held in the needle hook.



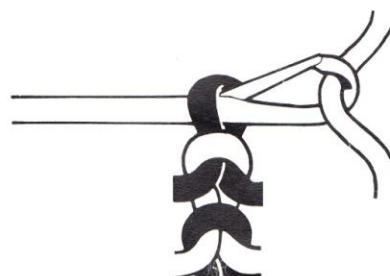
- 2 ● When the carriage is moved across, the needle is pushed upwards and the stitch behind the latch.



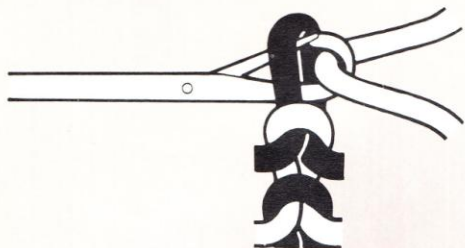
- 3 ● The yarn which has to knit the next stitch is layed onto the hook.



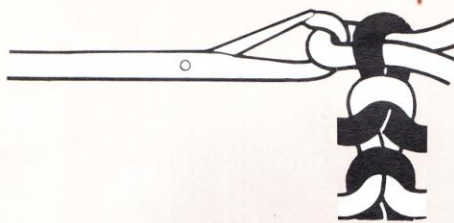
- 4 ● The needle starts its downward movement and the previous stitch closes the latch.



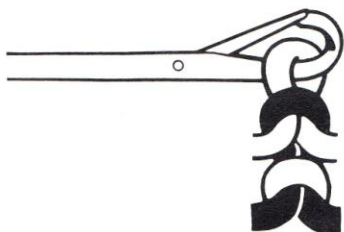
- 5 ● The needle goes further down. The previous stitch slips over the hook.



- 6 ● The previous stitch from the needle and is held by the loop of the new stitch.

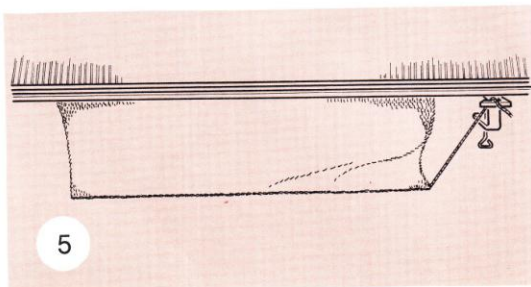
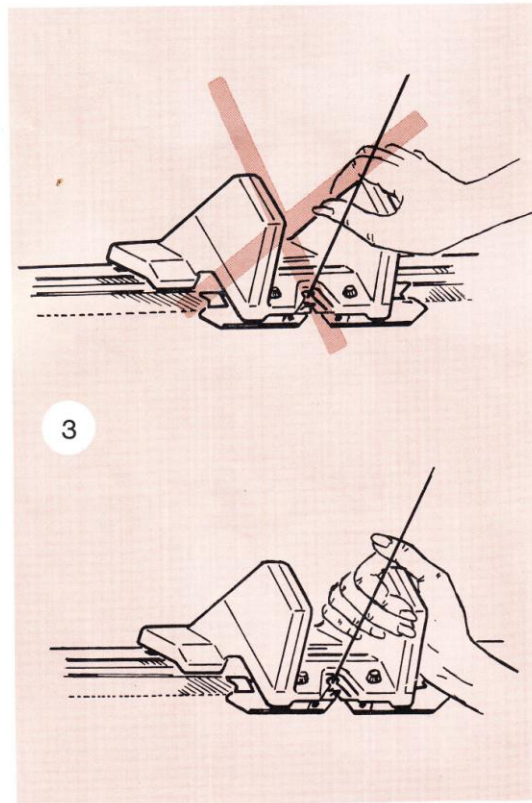
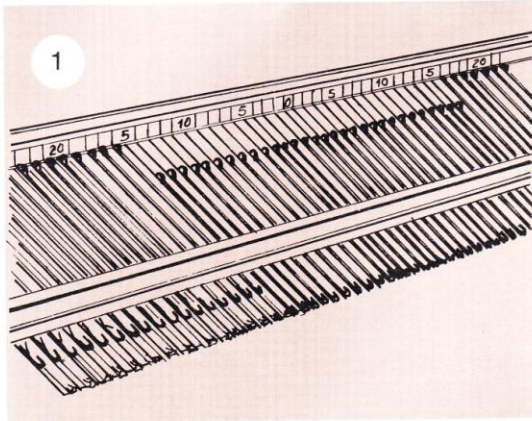


- 7 ● The new stitch has now replaced the previous one on the needle and is waiting for the next passage of the carriage.



- The more the needle goes down, the longer the stitch will be. The length of the stitch is adjusted by the stitch size dial which determines the downward movement of the needle.

# Hints before and during knitting



1. To centre your knitting, move an equal number of needles into working position on each side of 0 on the graduated scale. It will make counting increases and decreases easier.
2. The yarn wound onto a cone knits easier. The unwinding of the yarn will be more even as if you use it directly from the ball (See page 13).
3. Move the carriage without pressing on the handle. Move it as illustrated opposite.
4. Never reverse the carriage once it is engaged on the needles.
5. Remember to unfasten the yarn from the yarn clip after a few rows.
6. Do not push your carriage too far. A clicking noise informs you when the last needle has knitted. If the carriage has been pushed too far away from the first knitting needle, slightly pull on the yarn, behind the tension unit, to correct the tension of the yarn.
7. Watch your yarn. It runs out quickly when you are knitting.  
CAUTION: if you pass the carriage across without yarn and with a key depressed, the knitting will drop from the machine.
8. To avoid knots in your knitting when a cone runs out and you do not think you have enough yarn to knit one row, fasten the end of the yarn at the yarn clip and rethread the machine with another cone of yarn.
9. To remove a half-knitted piece of work from the machine, you only have to move the unthreaded carriage across with key depressed.
10. If when casting-on the last stitches are too tight, lower the needle by the heel to pull the yarn. Re-align the needles.
11. When you unlock a carriage after having jammed it, never replace it onto the needles in working position.



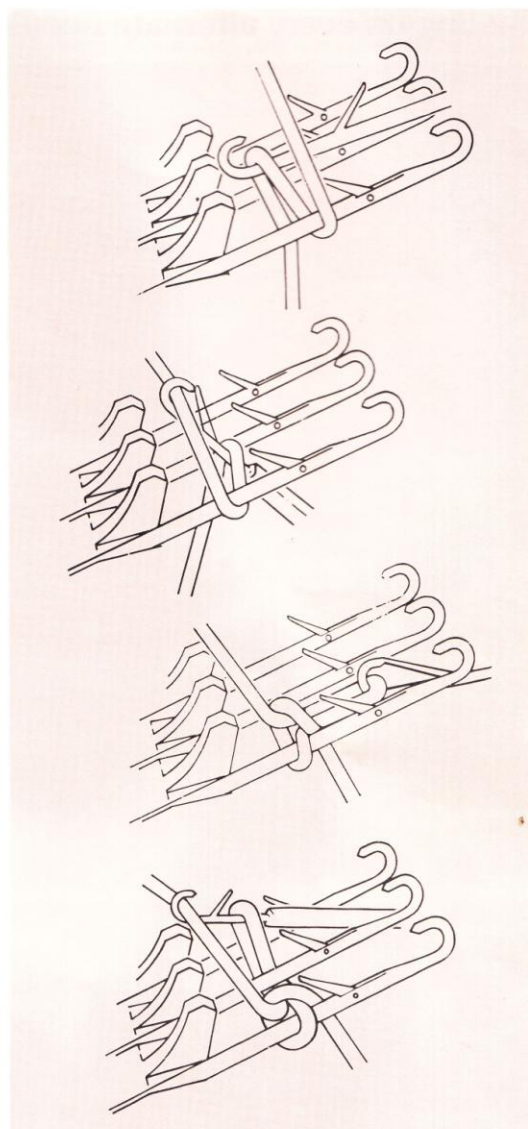
# Casting-on methods

## Chain casting-on

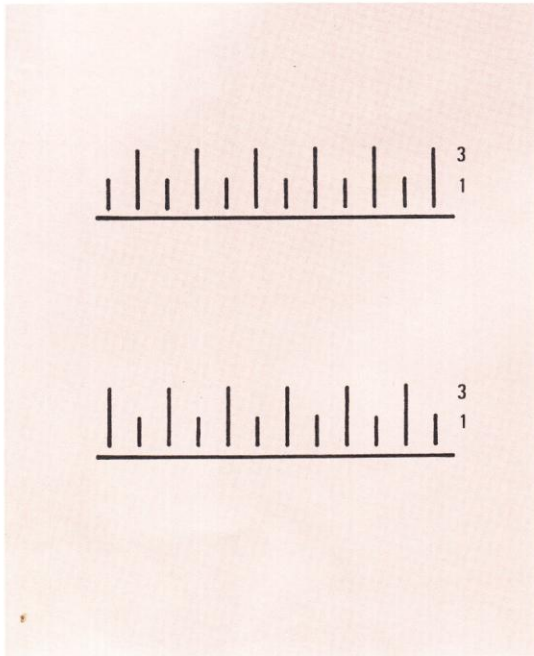
- Carriage on the right-hand side.
- Bring the required number of needles into holding position 3.
- Thread the tension unit but not the carriage and fasten the yarn at the left-hand yarn clip.

Crochet loosely the following chain:

- With your left hand, hold the yarn above the needles.
- Catch the yarn with the latch tool.
- Pass the tool with the loop under the first left-hand needle.
- Push the tool up between the first and the second needle.
- Make the loop slide behind the latch of the tool.
- Catch the yarn from above the second needle and pull the tool downward to form a loose stitch.
- Pass the tool under the second needle and push it up between the second and the third needle.
- Continue in this way until the needle before the last.
- Hang the last loop onto the last needle.
- Thread the carriage.
- Depress key  $\square \wedge$ .
- Set needle return buttons to lower position.
- Set stitch size as for stocking stitch (see p. 11).
- Set row counter to 000.
- Knit one row.
- Move the needles into holding position 3 again to knit the second row.
- Knit.



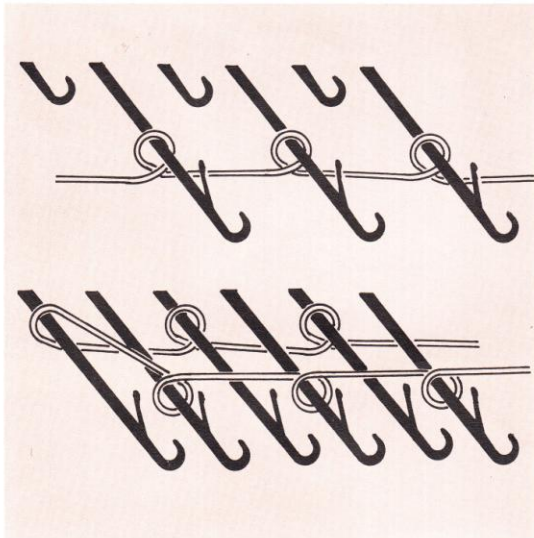
## Casting-on every alternate needle



- Carriage at right-hand side.
- Move the required number of needles into working position 1.
- Thread the tension unit and the carriage and fasten the yarn to the right-hand yarn clip.
- Cancel all keys on the carriage, but set the needle return buttons in lower position.
- With the needle selector, move every alternate needle into holding position 3.
- Knit one row.
- Move the needles which did not knit then into holding position 3.
- Knit one row.
- Repeat these two rows selecting every alternate needle as before.
- Knit

PLEASE NOTE: We recommend you knit the first four rows with stocking stitch size less 2 sizes.

## Manual casting-on



- Carriage at right-hand side.
- Thread the tension unit and the carriage.
- Move the required number of needles into position 1, then move every alternate needle into holding position 3.
- Loop the yarn around each needle, going from right to left, taking care to pass the yarn **under**, then **above** the needle.
- Move the intermediary needles into holding position 3, i.e. the ones which were not selected before.
- Loop the yarn around each empty needle going from left to right, taking care to pass the yarn **above**, then **under** the needle.
- Depress key  $\square \wedge$ .
- Set needle return buttons in lower position.
- Knit.

PLEASE NOTE: All casting-on methods can be done using an auxiliary yarn which will be removed when closing the hem.

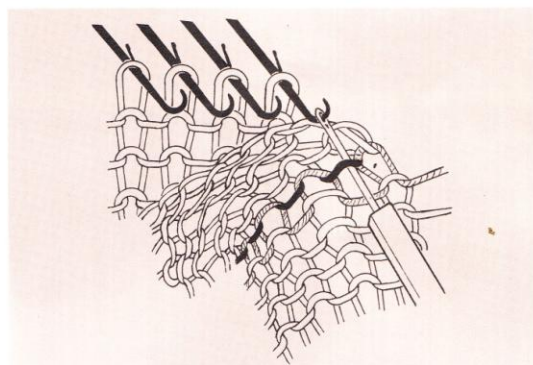
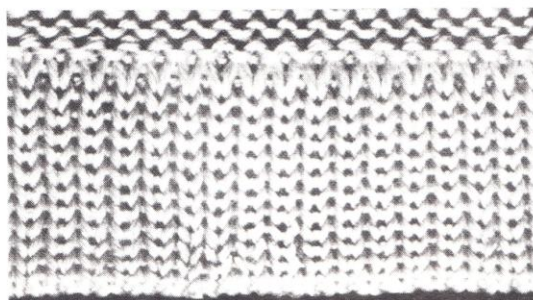
# The hems

## HINTS

To guarantee perfect closing of the hems, we recommend you cast-on the knitting with an auxiliary yarn. Take a contrasting yarn and knit four rows. This will be enough. Then knit only one row with a strong knitting yarn. When the knitting is finished, you will only have to pull out that yarn (yarn for the separation) to separate your knitting from the contrasting yarn.

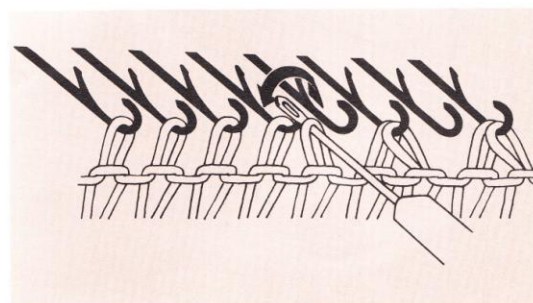
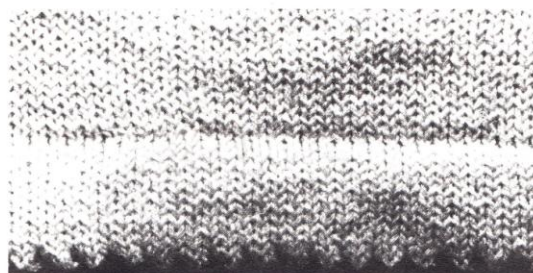
## Simple hem

- Select the required number of needles for your garment. Cast-on to your choice, knit some rows with an auxiliary yarn and one more row with a stronger yarn.
- Using the main yarn, knit twice the required depth for your hem. If for example you want a hem of 10 rows, knit 20 rows.
- Move the needles into position 2, make sure that the stitches are lying on the needle latches.
- Using the hook of the latch needle tool or the single eyelet transfer tool, pick up the stitches knitted in main yarn and hang them onto the needles of the machine.
- Move the needles up to holding position 3.
- Pull on the yarn which separates your knitting from the auxiliary yarn.
- Increase the stitch size by one size and knit one row with the needle return buttons set in lower position.
- Reset the row counter to half the number of knitted rows.
- Reset the stocking stitch size.
- Knit.



## Picot edge hem

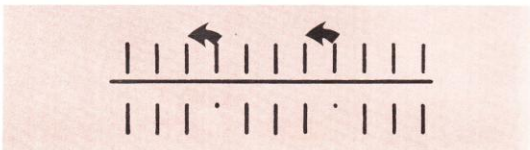
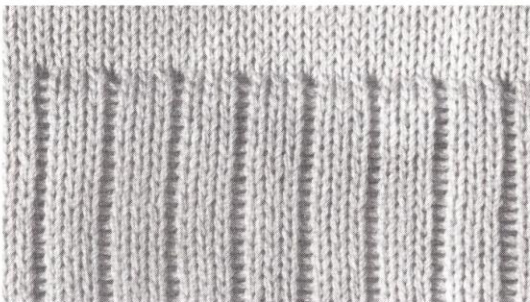
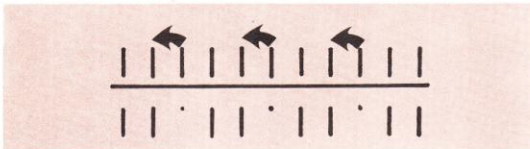
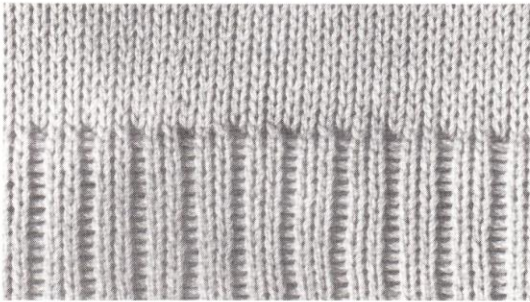
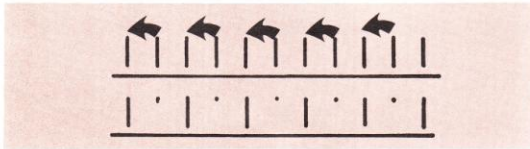
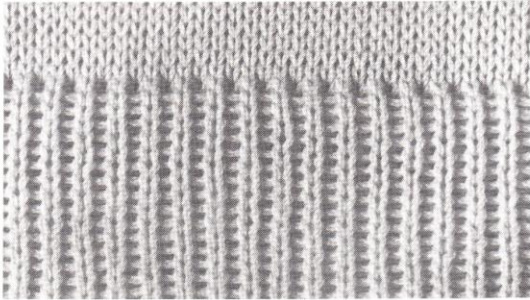
- Cast-on to your choice, knit a few rows with an auxiliary yarn and one more row with the separation yarn.
- Knit the number of rows required for the depth of your hem.
- Using the single eyelet transfer tool, transfer every second stitch onto the next left-hand needle.
- Leave the empty needles in position 1 so that they will knit on the next row.
- A row of holes is formed. It will give the picot effect once the hem is folded.
- Knit the second half of the hem, plus one extra row.
- Rehang your knitting as for the simple hem.
- Knit.





## Hem in 1/1 mock rib

To give a different appearance to the welts of your knitting, it is easy to make a hem in 1/1 mock rib, but also hems in 2/1, 3/1 mock rib.

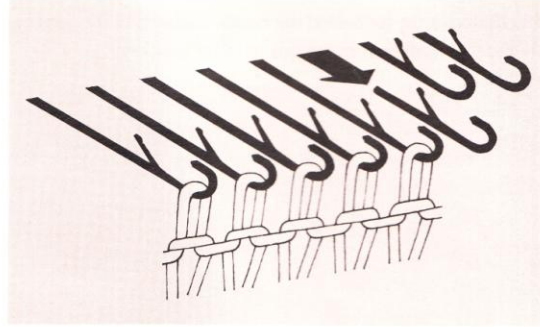
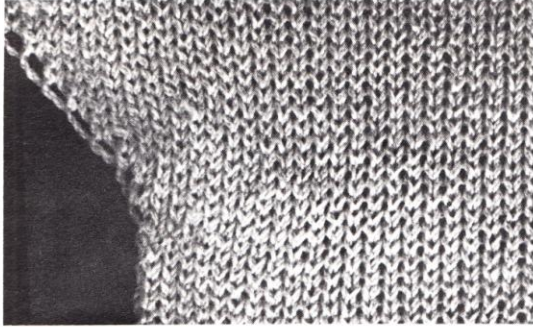


- Cast-on to your choice, knit with an auxiliary yarn and one more row with the separation yarn.
- Knit two rows with the main yarn.
- Using the single eyelet transfer tool, transfer every 2nd stitch (welt in 1/1 mock rib) onto the next left-hand stitch 3rd stitch (welt in 2/1 mock rib) onto the next left-hand stitch 4th stitch (welt in 3/1 mock rib) onto the next left-hand stitch.
- Lower the empty needles to non-working position 0.
- Decrease the stocking stitch size by one or two sizes.
- Knit twice the depth of the hem. If for example you wish a hem of 10 rows, knit 20 rows.
- Bring the needles in working position into position 2, as well as the intermediary empty needles, making sure that the stitches are lying on the needle latches.
- Using the single eyelet tool, transfer all stitches onto the needles.
- Reset stocking stitch size.
- Reset the row counter to half the number of rows knitted.
- Knit.

# Increasing

## Simple increase in stocking stitch (one stitch)

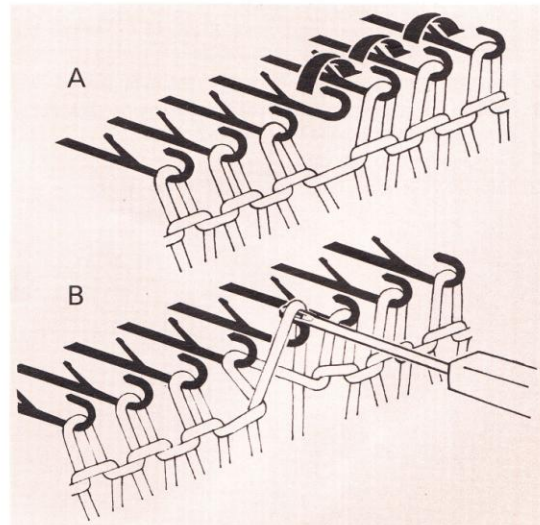
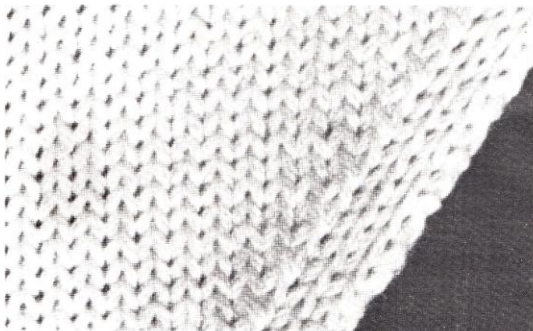
- Move one needle into position 1, simultaneously on both sides of the knitting, when moving the carriage across, these needles will knit.



## Italian increase (one stitch)

This method allows you to increase inside the knitting, two, three or more stitches from the edge. It can be done, regardless of the position of the carriage, every two or four rows according to the stitch and the measurements.

- Using the 2 or 3 eyelet transfer tool, move the 2 or 3 edge stitches one needle out.
- Using the single eyelet transfer tool or the hook of the latch needle tool, take the heel of the next stitch and hang it onto the just emptied needle.



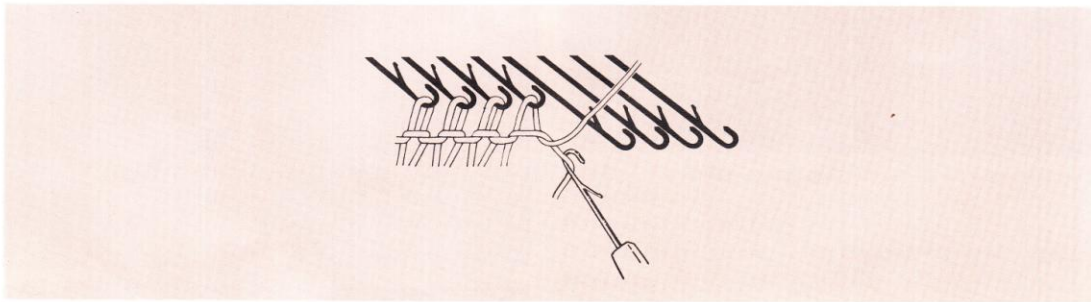


## Increasing several stitches

- On the carriage side, move the needles to be increased into holding position 3.
- Using the latch needle tool, take the heel of the first stitch and crochet a chain around the needles in holding position or make a manual casting-on (see pages 17–18).

The stitches must lay behind the needle latches and the yarn must come under the last needle.

- Set the needle return buttons to lower position.
- Knit.



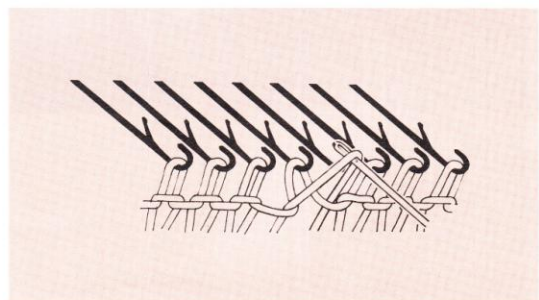
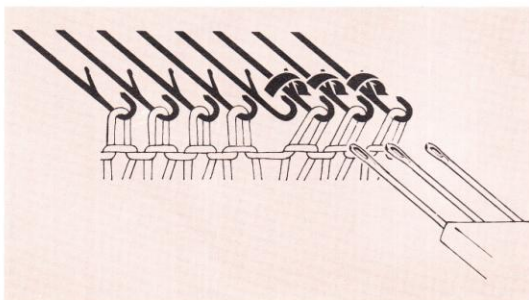
## Mid-row increase

This increase is done inside the knitting. It is therefore necessary to create a space.

- Move all stitches one needle outwards from the place where you wish to make the increase.
- Take the heel of the next stitch and hang it onto the empty needle.

If you wish to make several increases on the same row:

- Knit some rows with an auxiliary yarn.
- Unthread the carriage and move it across to remove the knitting from the machine.
- Bring the carriage to the same side as the main yarn.
- Rehang the knitting onto the machine leaving needles empty where you wish to make the increases.
- Remove the auxiliary yarn.
- Take the heel of the next stitch to fill the empty needles.



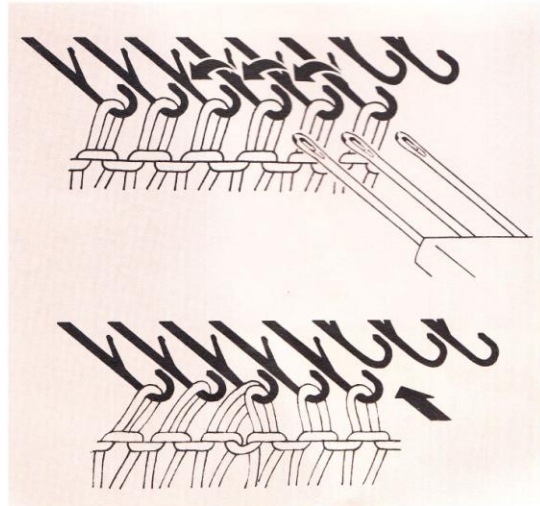
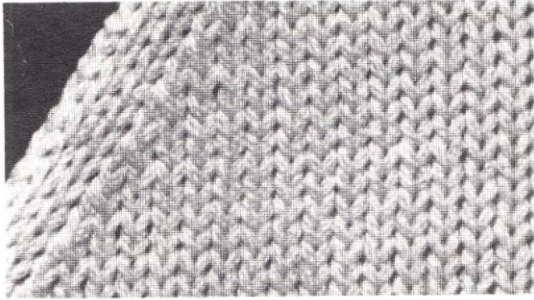


# Decreasing

## Italian decrease (one stitch)

This method allows you to decrease inside the knitting, three or more stitches from the edge, regardless of the position of the carriage.

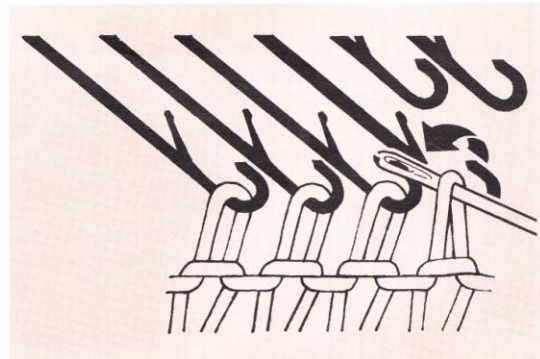
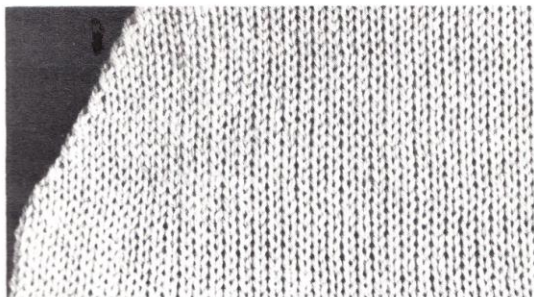
- Using the 2 or 3 eyelet transfer tool, move the three edge stitches one needle in. The fourth needle then carries two stitches.
- Bring this needle into position 2.
- Lower the empty needle to non-working position 0.



## Simple decrease (one stitch)

This decrease can be done on either side of the knitting or at both sides, regardless of the position of the carriage.

- Using the single eyelet transfer tool, transfer the edge stitch one needle in.
- Lower the just emptied needle to non-working position 0.

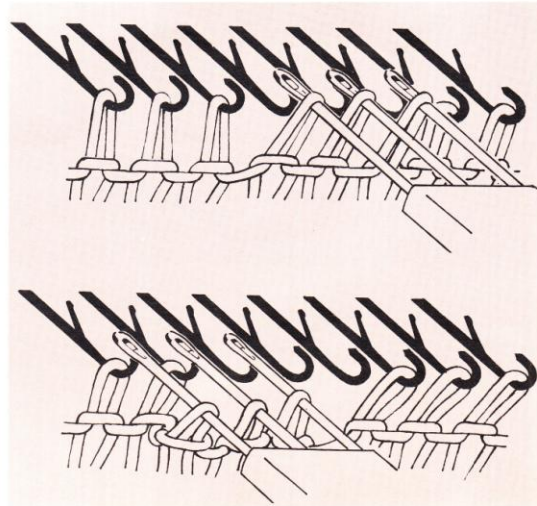
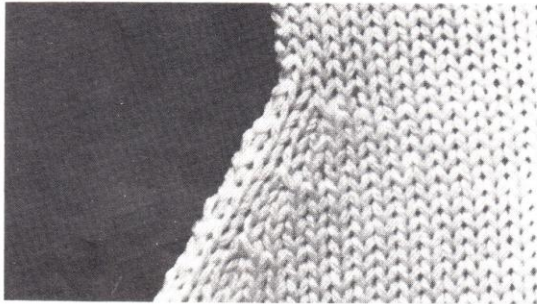


## Italian decrease (two stitches)

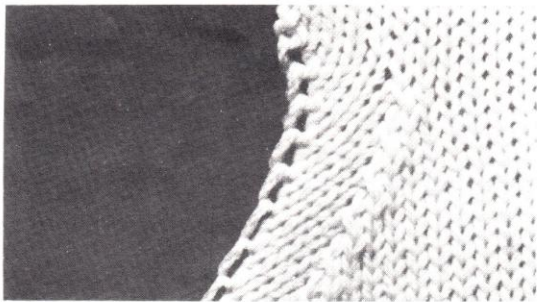
This decrease can be done every four rows or more, at both sides of the knitting, at two, three, four or more stitches from the edge.

Example:

- Using the 3 eyelet transfer tool, transfer the fourth, the fifth and sixth stitch onto the sixth, the seventh and eighth needles respectively.
- Move the 2 edge stitches two needles in.
- Bring the needles carrying two stitches into position 2.
- Lower the empty needles to non-working position 0.

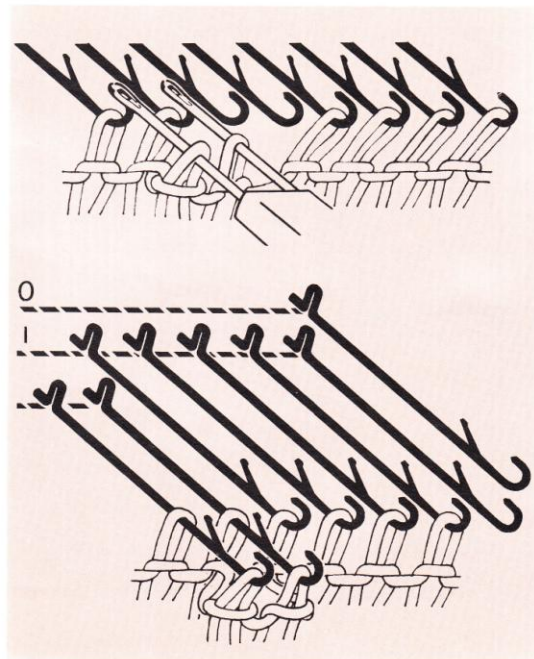


## Bias decreasing



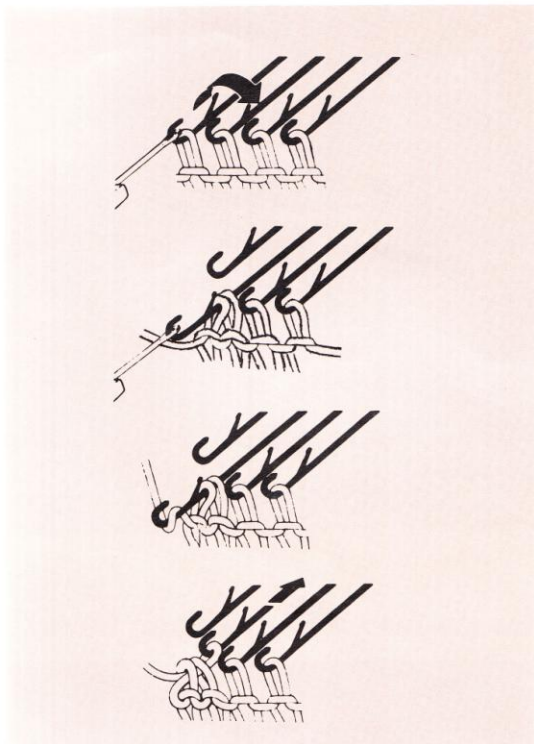
This decreasing is done every two rows, at the carriage side

- Using the two eyelet transfer tool, transfer the fifth and the sixth stitch onto the seventh and eighth needles respectively.
- Move the four edge stitches in.
- Bring the needles carrying two stitches into position 2.
- Lower the first empty needle (at the outside) to non-working position 0.
- Leave the second empty needle (at the side of the knitting) in position 1. It will knit when you move the carriage across, thus giving the bias effect.





## Decreasing several stitches



This decreasing is done on the carriage side.

It allows you to obtain a sharp angle when shaping the armhole for example. Proceed as follows:

- Move the first needle into position 2.
- Lay the yarn manually into the needle hook.
- Pull the needle by the heel, back to position 1, to form a new stitch.
- Transfer this stitch onto the next needle.
- Move this needle into position 2 to make the two stitches slide behind the latch.
- Lay the yarn manually into the needle hook.
- Lower the needle to form a new stitch.
- Remember to lower the empty needles to non-working position 0.
- Repeat this operation until the required number of stitches has been decreased.
- To avoid a tight cast-off, hang the knitting onto some empty needles when decreasing. Remember to unhook it and to lower the empty needles to non-working position 0 before you resume knitting.

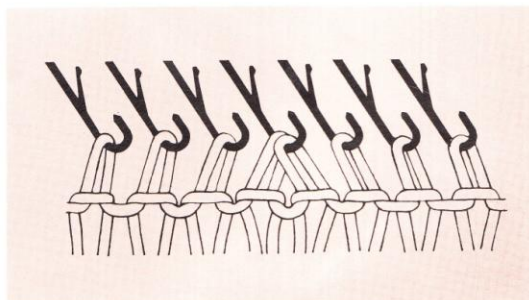
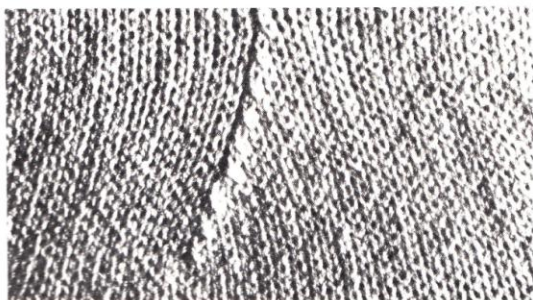
## Mid-row decrease

To decrease one stitch in the middle of a row:

- At the place where you wish to make the decrease, transfer one stitch onto the next needle inwards.
- Move all other stitches one needle in.
- Lower the empty needle to non-working position 0.

If you wish to make several decreases on the same row:

- Knit some rows with an auxiliary yarn.
- Unthread the carriage and move it across to remove the knitting from the machine.
- Bring the carriage to the same side as the main yarn.
- Rehang the knitting onto the machine placing two stitches onto one needle where you wish to make the decreases.
- Withdraw the auxiliary yarn.
- Knit.





# Necklines

## Straight vertical opening

This opening is mainly used when a zip is required.

When you reach the row where you wish to start the opening:

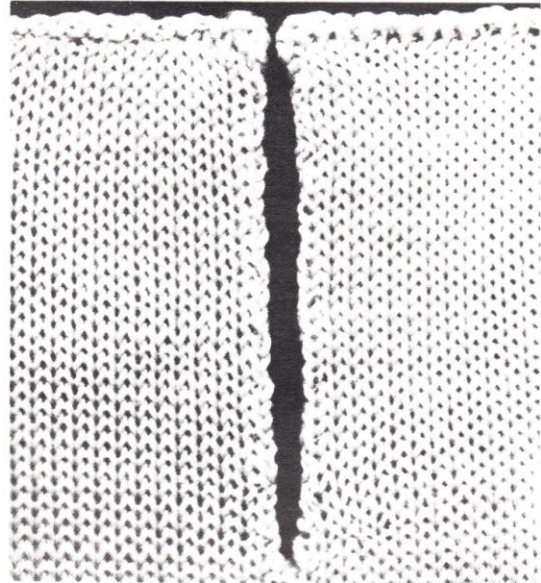
- At the side opposite to the carriage, move all needles, from the place where you want to start the opening, into holding position 3. When you move the carriage across, these needles will not knit when knitting the first side.

### First side:

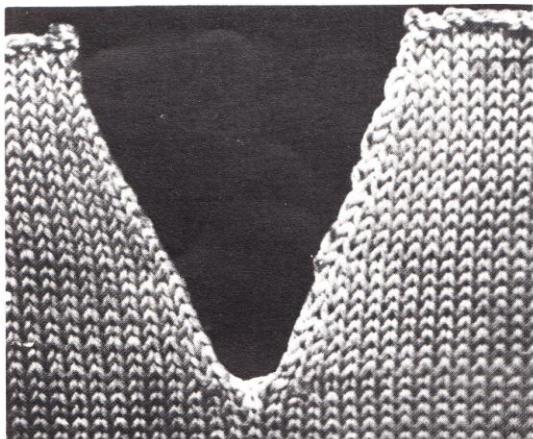
- Take a note of the number shown on the row counter.
- Knit the number of rows corresponding to the depth of the opening, but remember to shape the armhole, if required.
- Finish knitting the first side.
- Cast-off the stitches.
- Lower the empty needles to non-working position 0.
- Take a note of the number shown on the row counter.

### Second side:

- Move the carriage to the armhole side.
- Rethread the machine and fasten the yarn, under the yarn clip, at the carriage side.
- Check the stitch size.
- Reset the row counter to the same number as when you started to knit the first side.
- Set the needle return buttons to lower position.
- Knit one row.
- Knit the second side.



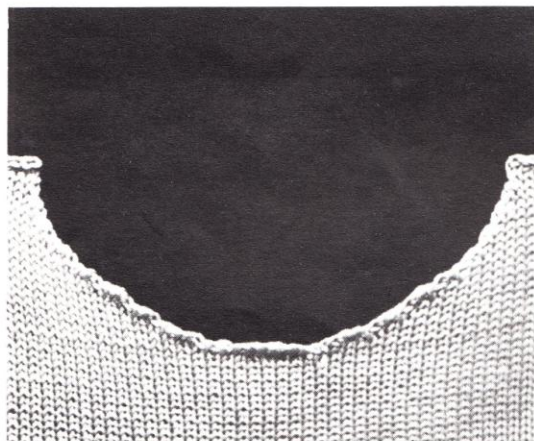
## V-neckline



At the side opposite to the carriage:

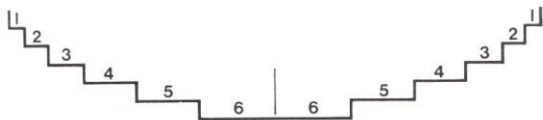
- Move half the number of needles of your garment into holding position 3.
- Proceed as for the straight vertical opening, but decrease one stitch in the centre every 4 or 8 rows at 2, 4 or 6 stitches from the edge on the neck side.
- Simultaneously, shape the armhole according to the selected garment.

## Curved neckline with cast-off stitches



To obtain an even shape, decrease, for example, 12 stitches in the centre, then 5, 4, 2, 1 stitches on each side.

- At the side opposite to the carriage, move half the number of needles into holding position 3.
- Knit one row.
- Cast-off the amount of stitches corresponding to the first central decrease, i.e. 6.
- Knit two rows.
- Continue in this way until the number of stitches corresponding to the first half of the neckline have been decreased.
- Knit the number of rows corresponding to the depth of the neckline, but remember to shape the shoulder at the same time if required.
- To knit the second side, rethread the carriage at the armhole side.
- Set the needle return buttons to lower position.
- Knit one row.
- Decrease and continue in the same way as for the first side.



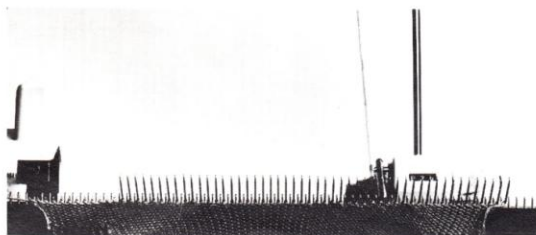
## Curved neckline with needles in holding position

This neckline is done using the method for “part-row knitting” (see page 32) and allows you to knit the neckband directly from the neck edge.

- Proceed as for a curved neckline with cast-off stitches, but instead of casting-off the stitches, move the needles corresponding to each decrease into holding position 3.
- Pass the yarn under the last needle in holding position 3 to prevent a gap when knitting back (see picture, page 32).
- Continue your garment and shape the shoulder.

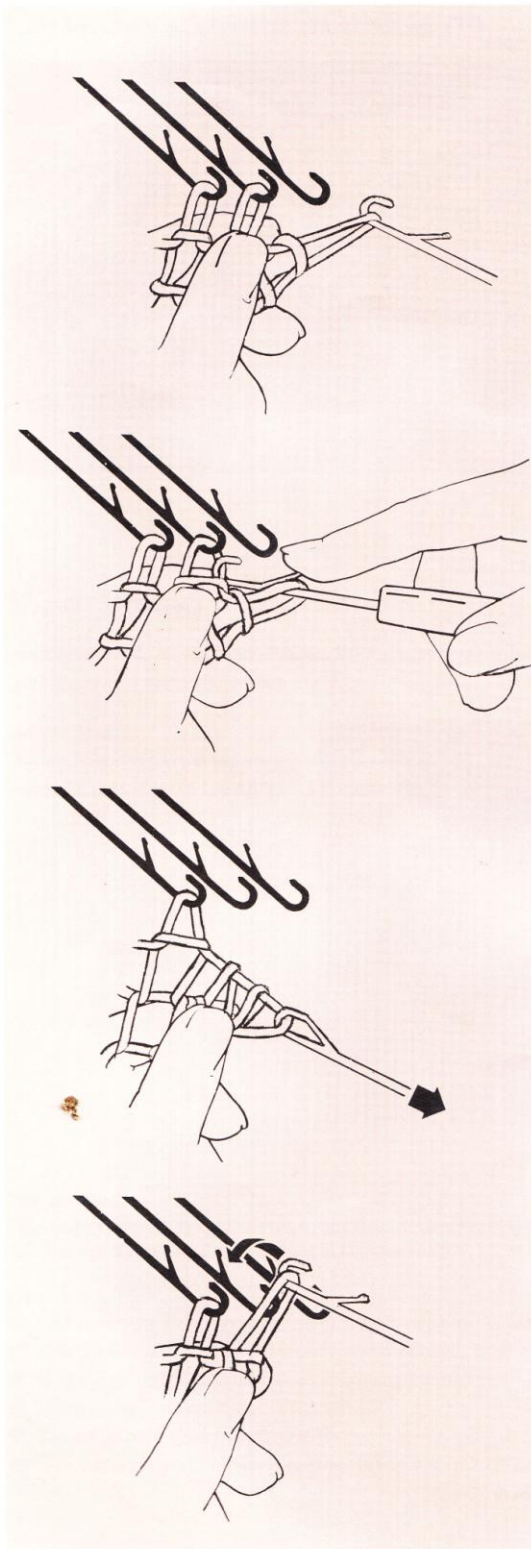
To knit the second side:

- Thread the carriage at the armhole side.
- Lower the needles of the second side less the ones corresponding to the first decrease, i.e. 6 to position 2.
- Continue as for the first side.
- Then transfer the necessary edge stitches from the neck edge (after the needles in holding position) up to the shoulder onto empty needles.
- Bring all these needles into holding position 3.
- Set the needle return buttons to lower position.
- Knit one row.
- Either cast-off the stitches or if you wish to knit the neckband directly onto the knitting, set the stitches to knit the required type of neckband.
- Knit the required number of rows for the neckband or the welt and cast-off the stitches.





# Casting-off



## 1st method:

### CHAIN CASTING-OFF:

- Carriage at right-hand side (or at the left-hand side if you are left-handed).
- Increase the stitch size by at least half the stitch size used.
- Knit one row.
- With your left hand, hold the knitting as illustrated.
- Slightly pull on the knitting to open the stitches.
- With the latch needle tool, unhook the first stitch at the side opposite to the yarn.
- Make the stitch slide behind the latch of the tool.
- Keeping the latch open, take the second stitch.
- Pull the tool to make this second stitch slide through the first stitch.
- Continue in this way until the last stitch.
- Break the yarn and pull it through the loop of the last stitch.

## 2nd method:

You can also cast-off using the method "decreasing several stitches" (see page 25).

## 3rd method:

For particular reasons, you may finish your garment by knitting some rows with an auxiliary yarn and assemble it by grafting the stitches together manually.

# Neckbands

The neckbands can be done in three different ways:


- Knit the neckband separately and sew it afterwards onto the garment.
- Pick up the edge stitches of the neckline, transfer them onto the needles and knit the neckband directly from the garment.
- Knit the neckband directly from the knitting after having done “a curved neckline with needles in holding position”.

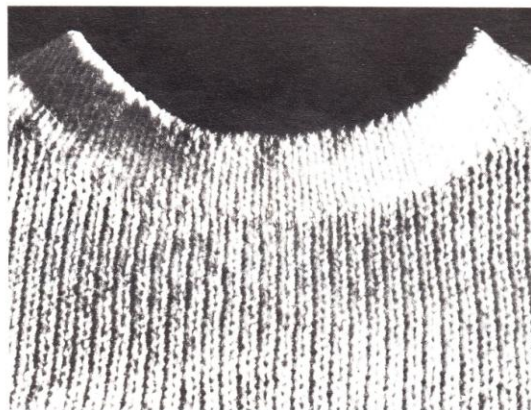
## Curved neckband in stocking stitch

### 1st method:

The neckband is knitted separately and folded as when closing a hem. Sew it manually, stitch by stitch, on top of the curved neck edge.

### 2nd method:

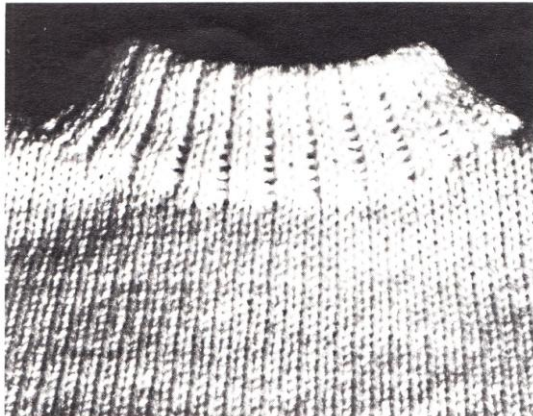
- With the wrong side of the knitting facing you, pick up the edge stitches of the neckline and transfer them onto the needles without stretching the knitting.
- Move these needles into position 2.
- Thread the machine.
- Depress key .
- Set the needle return buttons to neutral position.
- Set the stitch size to 1 or 2 sizes lower than the size used for your garment.
- Knit twice the number of rows required.
- Knit some rows with an auxiliary yarn.
- Remove the garment from the machine, fold half the neckband inside the garment, sewing it with a slip stitch as you undo the auxiliary yarn.



### 3rd method:

The neckband is knitted directly from the open stitches of the neckline (see curved neckline with needles in holding position, page 28).

## Curved neckband in mock rib



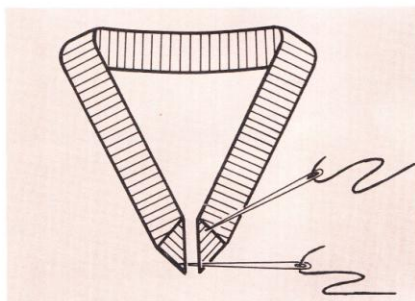
The knitting methods are the same as for the neckbands in stocking stitch, but the needle selection has to be done as for the hems in 1/1, 2/1, 3/1 mock rib.

## V-neckband

The V-neckbands can be knitted as the curved neckbands in stocking stitch or in mock rib. We suggest two methods to finish the V.

### 1st method:

The neckband is knitted separately, closed manually as for a hem and assembled. Assemble both ends of the neckband in order to mitre the corner.



### 2nd method:

The neckband is knitted separately and assembled manually. Stitches are decreased on one side and increased at the other side to form the V.

How to knit:

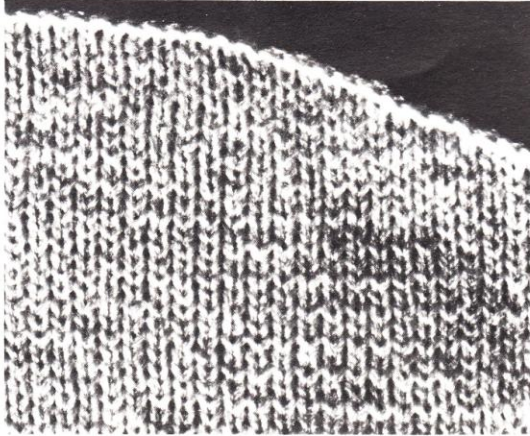
- Knit a neckband separately in mock rib, slightly shorter than the neck measurement.
- Knit the required depth of the neckband decreasing one stitch at each side every row.
- Knit the second half of the neckband (second part of the hem), but now increasing every row one stitch at each side.
- Remove the knitting from the machine.
- Assemble both sides to form the V.
- Sew the neckband onto the neckline folding half of it inside the knitting.



# Part-row knitting (shortened rows)

Part-row knitting is used for shoulder shaping, bust darts (horizontal), etc. ...

Part-row knitting is obtained by moving one or several needles at the side opposite to the carriage into holding position 3, every two rows.

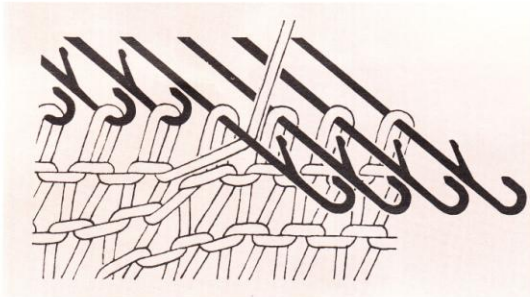


## Shoulder shaping

On a garment showing a neckline, the shoulders are shaped first on one side, then on the other. On a garment without neckline, the shoulders are simultaneously shaped on both sides.

Proceed as follows:

- At the side opposite to the carriage, move the number of needles required for your garment, starting from the edge, into position 3.
- Knit one row.
- To prevent a gap, pass the yarn under the first needle in holding position, then up in between it.
- If you shape both shoulders at the same time, move, at the opposite side, the required number of needles into holding position 3.
- Knit one row.
- Pass the yarn under the first needle put in holding position, then up in between it.
- Continue in this way until the required number of needles to shape the shoulder are in holding position 3.
- At the side opposite to the carriage, lower the needles to position 2.
- Knit one row.
- Cast-off the stitches.



## Bust darts

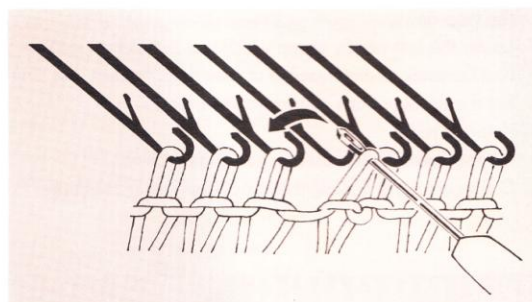
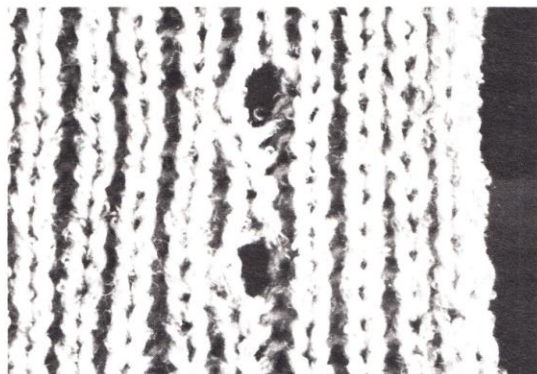
- According to your pattern instructions, move the required number of needles into holding position 3 at the side opposite to the carriage.
- Knit one row.
- Pass the yarn under the first needle in holding position, then up in between it to prevent a gap.
- At the opposite side, move the same group of needles into position 3.
- Knit one row.
- Repeat this operation until the length of the dart is reached.
- At the side opposite the carriage, lower all needles from holding position 3 to position 2.
- Knit one row.
- At the opposite side, lower the needles to position 2.
- Knit one row.
- Continue to knit.

# Buttonholes

## Round buttonholes

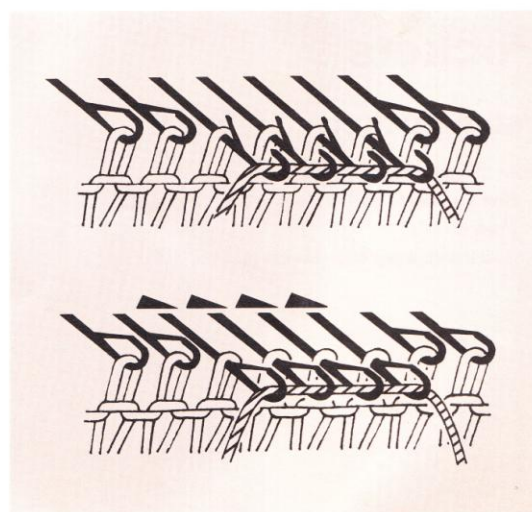
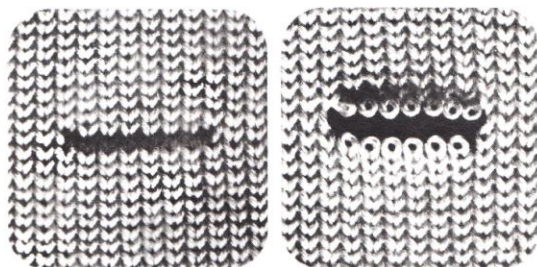
They are used for small buttons in stocking stitch bands.

- Using the single eyelet transfer tool, transfer one stitch onto the next needle. Leave the empty needle in position 1; it will knit on the next row.
- Knit repeating the operation to make the buttonholes at the required place.



## Horizontal buttonholes

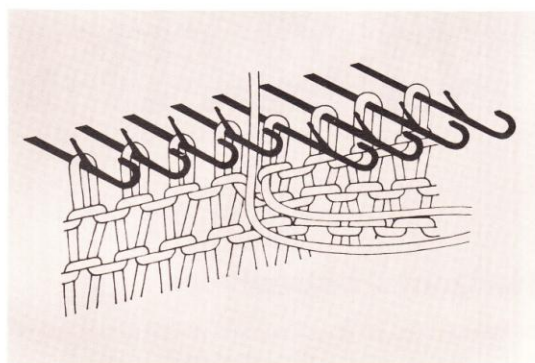
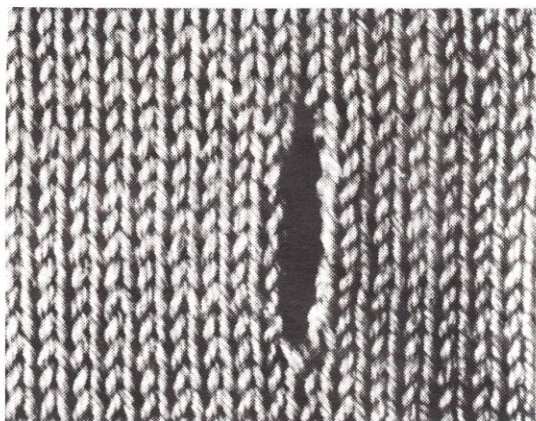
- Move the number of needles corresponding to the required length of the buttonhole into position 2.
- Lay auxiliary yarn into the selected needle hooks.
- Lower the needles by pulling on the heel to close the latches and to knit the auxiliary yarn.
- Reset the needles into position 1.
- Continue to knit.
- When the garment is finished and pressed, remove the auxiliary yarn.
- Finish the buttonholes off by hand, stitch by stitch.





## Vertical buttonholes

- At the side opposite to the carriage, move all the needles from the position of the buttonhole up to the edge of knitting into holding position 3.
- Knit an uneven number of rows corresponding to the depth of the buttonhole.
- The carriage is now on the side of the needles in holding position.
- Move the needles which have just knitted into holding position 3.
- Move the carriage across.
- Where the buttonhole is to be placed, pull the yarn to form a loop long enough to finish the buttonhole off by hand afterwards. Hold this loop down.
- Lower the first needle group which was in holding position 3 to position 2, to knit the second side.
- Knit the same uneven number of rows as for the first side. The carriage is now at the side opposite to the needles in holding position.
- Set the needle return buttons to lower position.
- Knit one row.
- Set the needle return buttons to neutral position.
- Continue to knit making the buttonholes where required.

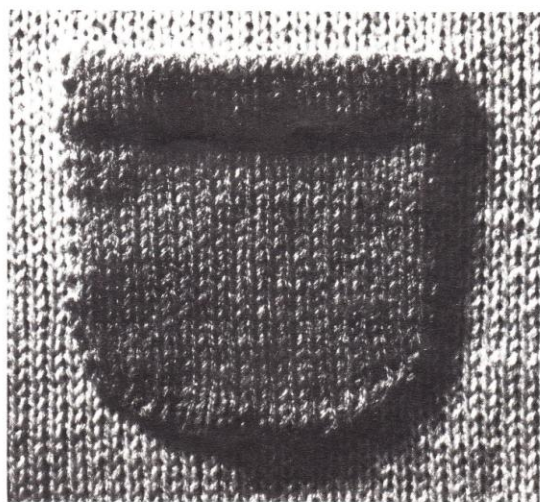


## Pockets

### Patch pocket

When the garment is finished:

- Knit a separate pocket piece of the required shape.
- Press it.
- Sew it with a slip stitch on the required place.





## Single pocket piece with welt in stocking stitch

To make the pocket opening:

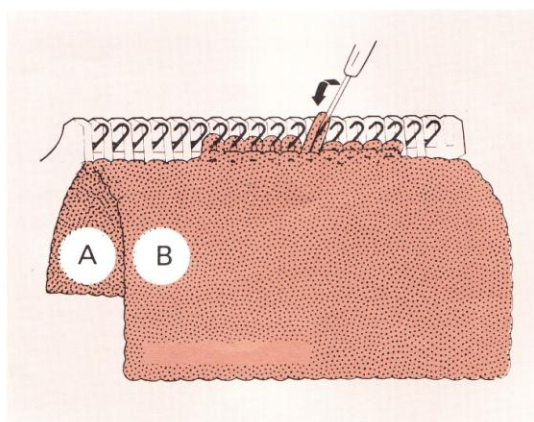
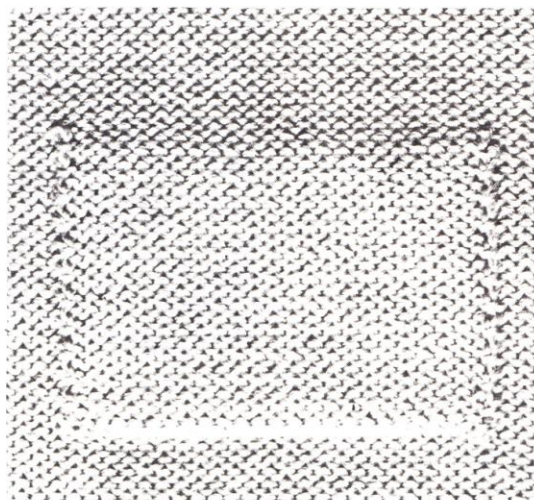
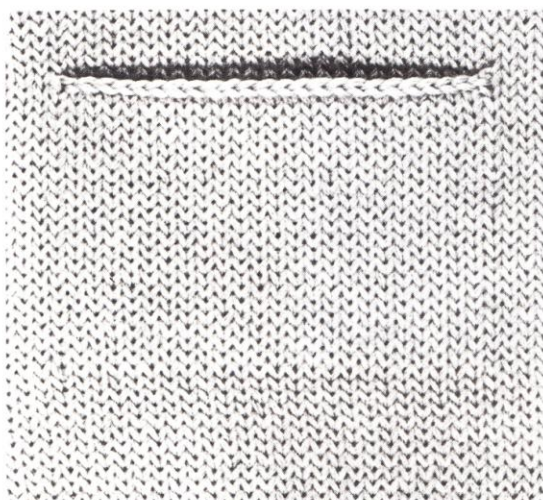
- At the required place, proceed as for a horizontal buttonhole (see page 33).
- When the garment is finished, remove the auxiliary yarn.
- Place the open stitches from the two rows onto stitch holders, hand knitting needles, or remove them by using an auxiliary yarn.

To make the pocket piece:

- With the wrong side of the knitting facing you, fold the knitting towards you in position for the pocket.
- Using the single eyelet transfert tool, take the stitches from the upper row of the opening and hang them onto the needles (A).
- Knit the number of rows corresponding to the depth of the pocket piece.
- Cast-off the stitches.

To make the pocket piece in stocking stitch:

- With the wrong side of the knitting facing you, pick up the stitches from the lowest row (B) and hang them onto the needles.
- Increase one stitch at each side by hanging the heel of the first and the last stitch onto the next empty needle.
- Knit six to eight rows to form the welt of the pocket.
- Cast-off the stitches (see page 29).
- Attach the pocket piece and the sides of the pocket welt with a slip stitch.

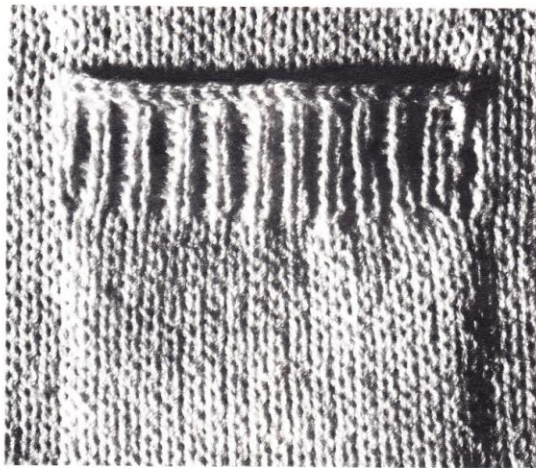


## Single pocket piece with welt in mock rib

- Knit the pocket piece as explained on page 35.

To make the welt of the pocket:

- Pick up the stitches from the lower row of the opening, hang them onto the needles, increase one stitch at each side as for the welt in stocking stitch.
- Transfer every alternate stitch onto the next needle.
- Lower the empty needles to non-working position 0.
- Decrease the stocking stitch size by 1 or 2 sizes.
- Knit 16 to 20 rows to form the welt.
- Cast-off the stitches.
- Fold the welt inside and attach it with a slip stitch, do the same for the pocket piece.



# How to finish your garments

## Pressing and assembling

A well finished garment enhances it and the more simple the stitch, the more important the making up.

### Preparation

- Before sewing the seams, for flat stitches like stocking stitch, press carefully, if required.
  - If pressing is required, pin the knitted pieces to a blocking board every two centimeters.
  - Stretch the knitting, but not the welts in mock rib.
  - Give the shape by checking the side measurements of the design of your model.
  - For wool, use a damp cloth and a warm heat in order to obtain the correct amount of steam.
  - Gently place the iron from place to place in order to cover the whole surface. The more raised the pattern, the more it is necessary to steam slightly above the knitting to allow a better steam penetration, without crushing the knitting.
  - Let the knitting dry before removing the pins: the knitting pressed and dried in this way will have a good shape before assembly.
- CAUTION: synthetics and other man-made fibres have particular rules concerning the pressing. Refer to the instructions shown on the yarn label. Do not steam stretchy welts or processed baby wools.

### Seams

To obtain neat seams, avoid assembling with a slip stitch.

Each piece of knitting has to be treated as a fabric considering that each part corresponds to a particular pattern shape.

- First of all, carefully tack the knitted pieces.
- Try it on before joining the seams.  
Select a sewing thread in a similar shade to the yarn. Slightly slacken the tension on your sewing machine in comparison to a normal sewing stitch in order for the stitch to fasten the knitting without stretching. If you have a sewing machine that will do a chain stitch, sew the knitting with a short chain stitch.
- Flatten the seams using a damp cloth.
- When the whole garment is made up, give it a final press.
- Generally, the welts knitted in mock rib, are assembled manually using an invisible seam. It gives a neater finish.
- A neat finish for a raglan sweater is obtained by assembling the raglan parts with an invisible seam (see page 39).
- The sleeve and side seams are joined by a sewing machine or by hand with a back stitch.

### Buttonholes

#### Horizontal buttonhole:

- Remove the auxiliary yarn.
- Using the main yarn, sew the buttonhole stitch by stitch.

#### Vertical buttonhole:

- Using a buttonhole stitch, finish the buttonhole by hand. You may also do a sewing machine buttonhole on your knitting. In this case, use a strong fabric on the wrong side of the knitting.

### Button and buttonhole bands

- When you knit them separately, make them shorter than the garment.
- Slightly stretch the band when sewing it.
- Press it afterwards.

### Stocking stitch edges

To prevent the edge of a garment from curling, even if it is well pressed, you may either:

- Bind the edge using a crochet stitch.
- Bind the edge with a bias band.
- Use a facing in fabric.

For armholes, necklines, if you do not use a bias band:

- Cut a facing in fabric.
- Stitch it by hand or by machine.
- Fold the facing inside the garment.
- Attach it with a slip stitch.



## To cut knitted fabric

If you wish to fit a garment that is too large.

- Mark the new outlines with a basting thread.
- Sew a zig-zag stitch on your sewing machine along the basting line.
- Cut off the excess knitting.
- Make up your garment in the usual way.

## Cut and sew

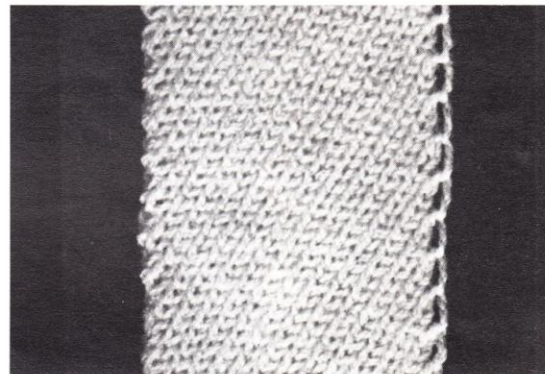
The cut and sew method is used widely in the industry. If you wish to make up sophisticated and personalized clothing with a detailed cut like suits, coats, costumes, dresses, you must first, knit the fabric.

Press the fabric (see page 37) and use it with a pattern as normal material.

## Bias bands

Bias bands give a neat finish. At the left-hand side of the machine, cast-on the required number of stitches. If the knitting reaches the right-hand side of the needle bed before the band is finished, transfer the stitches to the other side of the needle bed.

- Cast-on the required number of stitches.
- Knit one row.
- At the second row and every alternate row, decrease one stitch at the opposite side of the carriage and increase one stitch at the carriage side.
- Continue until you reach the required length.



## Lining

You will obtain a better finish if you line jackets, dresses and shirts.

- Press each piece of knitting.
- Pin them onto the lining material.
- Cut the lining allowing for the seams and darts.
- Sew the lining with your sewing machine and attach it to the garment.

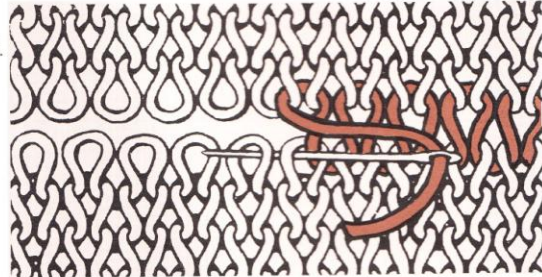
For a skirt, cut the lining slightly smaller than the garment to stop the knitting stretching.

## Grafting

The grafting method allows you to join two parts of knitting horizontally showing open stitches by forming a row of stitches. Use a tapestry needle threaded with the same yarn as the one used for the garment.

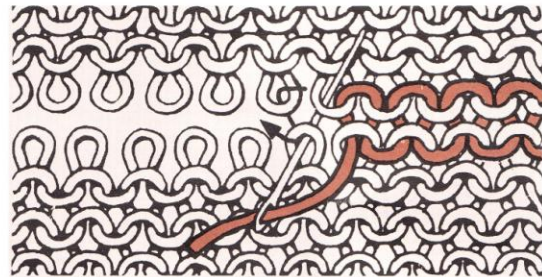
### PLAIN SIDE OF STOCKING STITCH

The open stitches are taken one by one, horizontally, as illustrated.



### PURL SIDE OF STOCKING STITCH

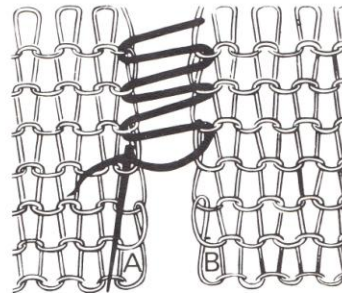
- The open stitches are taken from the bottom to the top, then from the top to the bottom as shown by the arrow on the second picture. You can proceed as for the plain side of stocking stitch by turning your knitting.



## Invisible seams

To assemble two pieces of knitting with an invisible vertical seam:

- Put the edges of the two pieces side by side.
- Start with the right-hand edge. Pass the tapestry needle threaded with a matching yarn through the loop formed between the edge stitch and the second stitch.
- Pull the yarn.
- Pass the needle through the loop formed between the left-hand edge stitch and the second stitch.
- Continue in this way taking the loops at each side, one after the other. Pull the yarn to join the edge of both sides.









The vertical columns show the measurements in centimeters (from 1 to 74).

Where both lines meet, you will read the required number of stitches or rows needed to knit your garment.

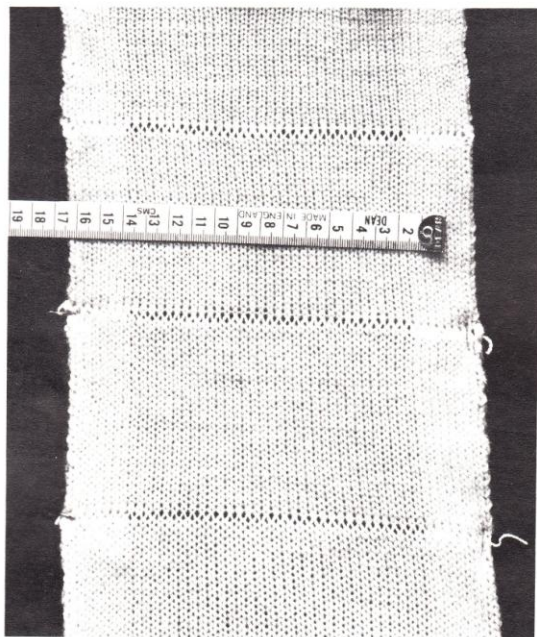
In the reverse way, the conversion table immediately lets you know the measurement of your knitting when you have knitted a number of stitches or rows, in relation to the figures resulting from your test sample.

cm										cm										cm									
10	33	34	35	36	37	38	39	40	41	42	43	10	44	45	46	47	48	49	50	51	52	53	54	10					
1	3	3	4	4	4	4	4	4	4	4	4	1	4	4	5	5	5	5	5	5	5	5	5	1					
2	7	7	7	7	7	8	8	8	8	8	8	2	9	9	9	9	10	10	10	10	10	10	11	2					
3	10	10	10	11	11	11	12	12	12	13	13	3	13	13	14	14	14	15	15	15	16	16	16	3					
4	13	14	14	14	15	15	16	16	16	17	17	4	18	18	18	19	19	20	20	20	21	21	22	4					
5	16	17	17	18	18	19	19	20	20	21	21	5	22	22	23	23	24	24	25	25	26	26	27	5					
6	20	20	21	22	22	23	23	24	25	25	26	6	26	27	28	28	29	29	30	31	31	32	32	6					
7	23	24	24	25	26	27	27	28	29	29	30	7	31	31	32	33	34	34	35	36	36	37	38	7					
8	26	27	28	29	30	30	31	32	33	34	34	8	35	36	37	38	38	39	40	41	42	42	43	8					
9	30	31	31	32	33	34	35	36	37	38	39	9	40	40	41	42	43	44	45	46	47	48	49	9					
10	33	34	35	36	37	38	39	40	41	42	43	10	44	45	46	47	48	49	50	51	52	53	54	10					
11	36	37	38	40	41	42	43	44	45	46	47	11	48	50	51	52	53	54	55	56	57	58	59	11					
12	40	41	42	43	44	46	47	48	49	50	52	12	53	54	55	56	58	59	60	61	62	64	65	12					
13	43	44	46	47	48	49	51	52	53	55	56	13	57	58	60	61	62	64	65	66	68	69	70	13					
14	46	48	49	50	52	53	55	56	57	59	60	14	62	63	64	66	67	69	70	71	73	74	76	14					
15	49	51	52	54	55	57	58	60	61	63	64	15	66	67	69	70	72	73	75	76	78	79	81	15					
16	53	54	56	58	59	61	62	64	66	67	69	16	70	72	74	75	77	78	80	82	83	85	86	16					
17	56	58	59	61	63	65	66	68	70	71	73	17	75	76	78	80	82	83	85	87	88	90	92	17					
18	59	61	63	65	67	68	70	72	74	76	77	18	79	81	83	85	86	88	90	92	94	95	97	18					
19	63	65	66	68	70	72	74	76	78	80	82	19	84	85	87	89	91	93	95	97	99	101	103	19					
20	66	68	70	72	74	76	78	80	82	84	86	20	88	90	92	94	96	98	100	102	104	106	108	20					
21	69	71	73	76	78	80	82	84	86	88	90	21	92	94	97	99	101	103	105	107	109	111	113	21					
22	73	75	77	79	81	84	86	88	90	92	95	22	97	99	101	103	106	108	110	112	114	117	119	22					
23	76	78	80	83	85	87	90	92	94	97	99	23	101	103	106	108	110	113	115	117	120	122	124	23					
24	79	82	84	86	89	91	94	96	98	101	103	24	106	108	110	113	115	118	120	122	125	127	130	24					
25	82	85	87	90	92	95	97	100	102	105	107	25	110	112	115	117	120	122	125	127	130	132	135	25					
26	86	88	91	94	96	99	101	104	107	109	112	26	114	117	120	122	125	127	130	133	135	138	140	26					
27	89	92	94	97	100	103	105	108	111	113	116	27	119	121	124	127	130	132	135	138	140	143	146	27					
28	92	95	98	101	104	106	109	112	115	118	120	28	123	126	129	132	134	137	140	143	146	148	151	28					
29	96	99	101	104	107	110	113	116	119	122	125	29	128	130	133	136	139	142	145	148	151	154	157	29					
30	99	102	105	108	111	114	117	120	123	126	129	30	132	135	138	141	144	147	150	153	156	159	162	30					
31	102	105	108	112	115	118	121	124	127	130	133	31	136	139	143	146	149	152	155	158	161	164	167	31					
32	106	109	112	115	118	122	125	128	131	134	138	32	141	144	147	150	154	157	160	163	166	170	173	32					
33	109	112	115	119	122	125	129	132	135	139	142	33	145	148	152	155	158	162	165	168	172	175	178	33					
34	112	116	119	122	126	129	133	136	139	143	146	34	150	153	156	160	163	167	170	173	177	180	184	34					
35	115	119	122	126	129	133	136	140	143	147	150	35	154	157	161	164	168	171	175	178	182	185	189	35					
36	119	122	126	130	133	137	140	144	148	151	155	36	158	162	166	169	173	176	180	184	187	191	194	36					
37	122	126	129	133	137	141	144	148	152	155	159	37	163	166	170	174	178	181	185	189	192	196	200	37					
38	125	129	133	137	141	144	148	152	156	160	163	38	167	171	175	179	182	186	190	194	198	201	205	38					
39	129	133	136	140	144	148	152	156	160	164	168	39	172	175	179	183	187	191	195	199	203	207	211	39					
40	132	136	140	144	148	152	156	160	164	168	172	40	176	180	184	188	192	196	200	204	208	212	216	40					
41	135	139	143	148	152	156	160	164	168	172	176	41	180	184	189	193	197	201	205	209	213	217	221	41					
42	139	143	147	151	155	160	164	168	172	176	181	42	185	189	193	197	202	206	210	214	218	223	227	42					
43	142	146	150	155	159	163	168	172	176	181	185	43	189	193	198	202	206	211	215	219	224	228	232	43					
44	145	150	154	158	163	167	172	176	180	185	189	44	194	198	202	207	211	216	220	224	229	232	238	44					
45	148	153	157	162	166	171	175	180	184	189	193	45	198	202	207	211	216	220	225	229	234	238	243	45					
46	152	156	161	166	170	175	179	184	189	193	198	46	202	207	212	216	221	225	230	235	239	244	248	46					
47	155	160	164	169	174	179	183	188	193	197	202	47	207	211	216	221	226	230	235	240	244	249	254	47					
48	158	163	168	173	178	182	187	192	197	202	206	48	211	216	221	226	230	235	240	245	250	254	259	48					
49	162	167	171	176	181	186	191	196	201	206	211	49	216	220	225	230	235	240	245	250	255	260	265	49					
50	165	170	175	180	185	190	195	200	205	210	215	50	220	225	230	235	240	245	250	255	260	265	270	50					
51	168	173	178	184	189	194	199	204	209	214	219	51	224	229	235	240	245	250	255	260	265	270	275	51					
52	172	177	182	187	192	198	203	208	213	218	224	52	229	234	239	244	250	255	260	265	270	276	281	52					
53	175	180	185	191	196	201	207	212	217	223	228	53	233	238	244	249	254	260	265	270	276	281	286	53					
54	178	184	189	194	200	205	211	216	221	227	232	54	238	243	248	254	259	265	270	275	281	286	292	54					
55	181	187	192	198	203	209	214	220	225	231	236	55	242	247	253	258	264	269	275	280	286	291	297	55					
56	185	190	196	202	207	213	218	224	230	235	241	56	246	252	258	263	269	274	280	286	291	297	302	56					
57	188	194	199	205	211	217	222	228	234	239	245	57	251	256	262	268	274	279	285	291	296	302	308	57					
58	191	197	203	209	215	220	226	232	238	244	249	58	255	261	267	273	278	284	290	296	302	307	313	58					
59	195	201	206	212	218	224	230	236	242	248	254	59	260	265	271	277	283	289	295	301	307	313	319	59					
60	198	204	210	216	222	228	234	240	246	252	258	60	264	270	276	282	288	294	300	306	312	318	324	60					
61	201	207	213	220	226	232	238	244	250	256	262	61	268	274	281	287	293	299	305	311	317	323	329	61					
62	205	211	217	223	229	236	242	248	254	260	267	62	273	279	285	291	298	304	310	316	322</								

# How to determine the stitch size

To make a garment successfully, you must, first, knit a test sample in order to determine the correct stitch size according to the selected yarn and pattern. Indeed, if the stitches are too tight, your knitting will lose its elasticity and will felt during washing. If the stitches are too large, the knitting will stretch out of shape.

The test sample is also necessary to measure the number of stitches and rows you will have to knit, in order to ensure the measurements shown on your pattern.



## HOW TO MEASURE YOUR TEST SAMPLE

- Press the sample, if required.
  - Carefully mark a square of 10 cm to count the amount of stitches and rows.
  - Count exactly the number of stitches in the width.
  - Count exactly the number of rows in the height.
  - Choose the sample where figures correspond to the instructions given for your pattern or calculate the required number of stitches and rows according to the measurements of your garment.
- Example: if your sample shows on 10 cm : 28 stitches and 40 rows and your pattern indicates:

a) width of front part 50 cm, you will cast-on

$$\frac{28 \times 50}{10} = 140 \text{ stitches}$$

b) length up to the armhole 40 cm, you will knit

$$\frac{40 \times 40}{10} = 160 \text{ rows}$$

- You will have to calculate in this way all required measurements. The conversion table on page 40 and 41 will make the conversion easier.

## STITCH SIZE CHART

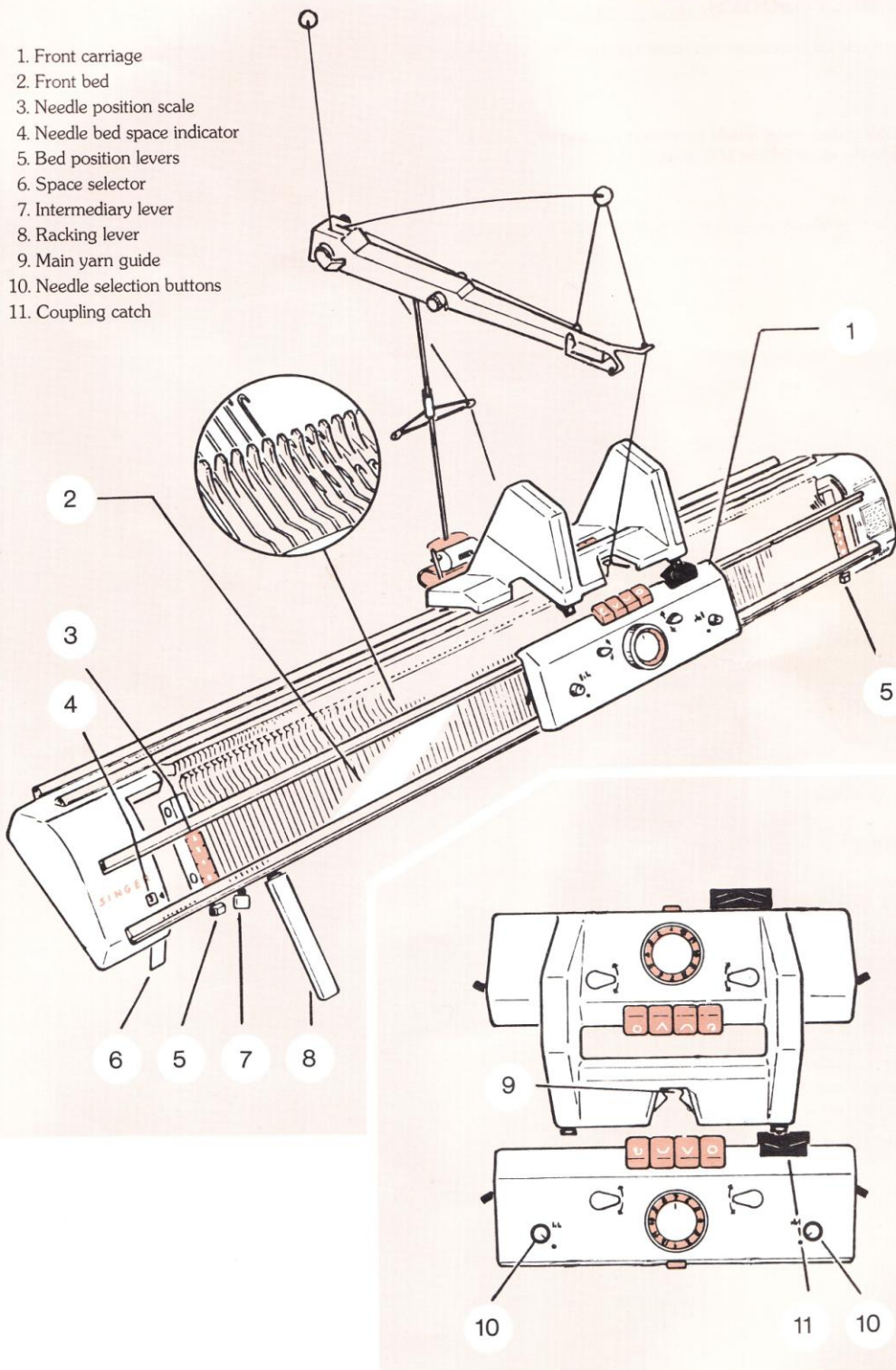
	YARN	STITCH SIZE
Stocking Stitch	2 ply	4 – 6
	3 ply	6 – 7
	4 ply	7 – 10
	Heavy yarn	10 – 12

## HOW TO KNIT THE TEST SAMPLE

- Cast-on 50 stitches with the main yarn.
- Depress the required keys.
- Select the lowest stitch size shown on the opposite chart according to the selected yarn and pattern.
- Knit 50 rows (sample 1).
- Knit one row with stitch size 12 to mark the end of sample 1.
- Increase the stitch size by one size.
- Knit 50 rows (sample 2).
- Knit one row with stitch size 12.
- Increase the stitch size by one size again.
- Knit 50 rows (sample 3).
- Unthread the carriage.
- Move the carriage across holding the knitting to make it drop.
- Let the sample settle for several hours allowing it to return to its correct size.



# The conversion kit or double bed machine



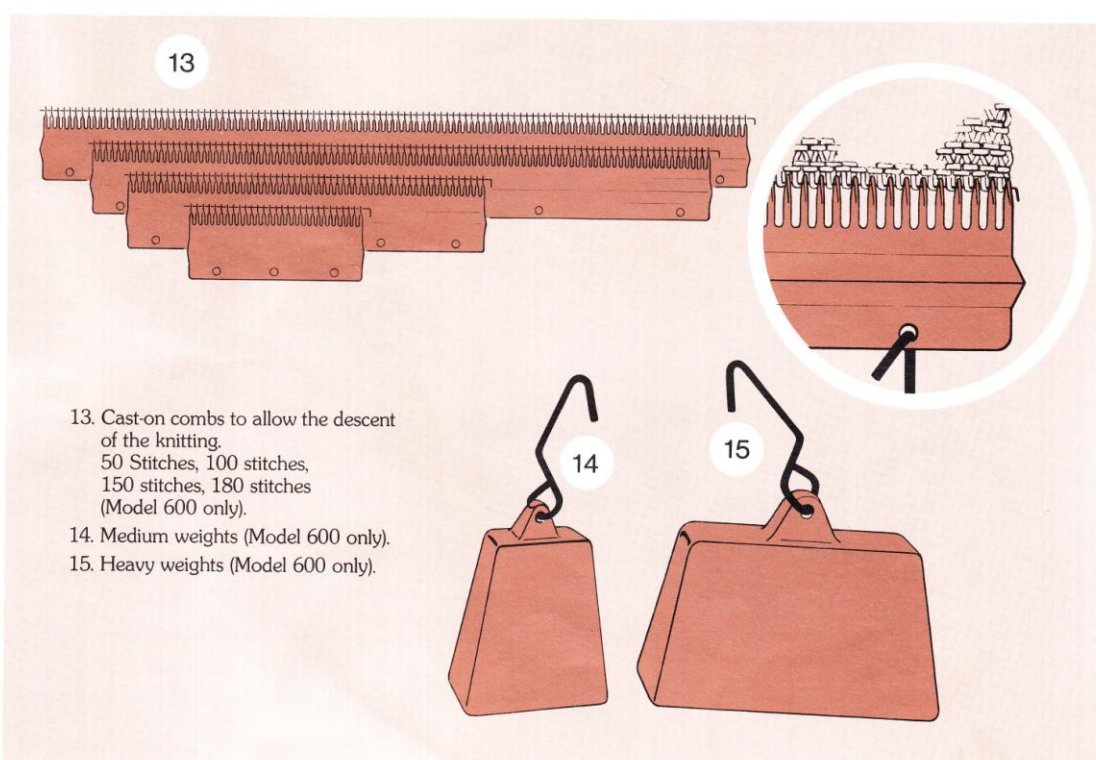


# Getting to know your knitting machine

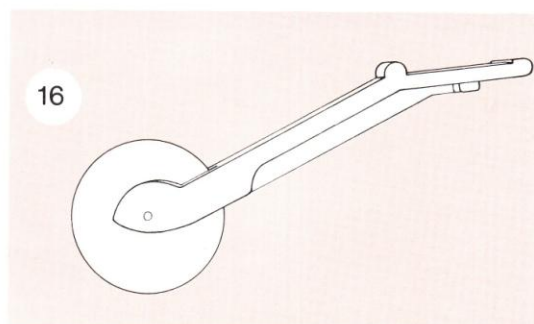
## The accessories

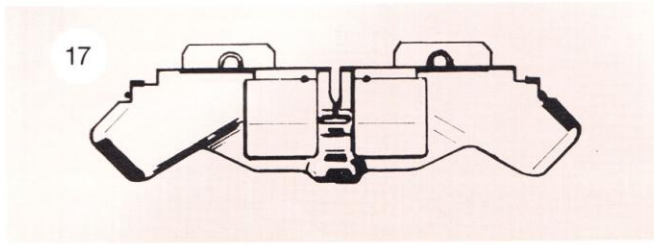
The illustrated accessories are not necessarily provided with your machine. You may obtain them from your nearest SINGER® stockist.

12. Double ended eyelet needle to transfer the stitches from one bed to the other (Model 600 only).

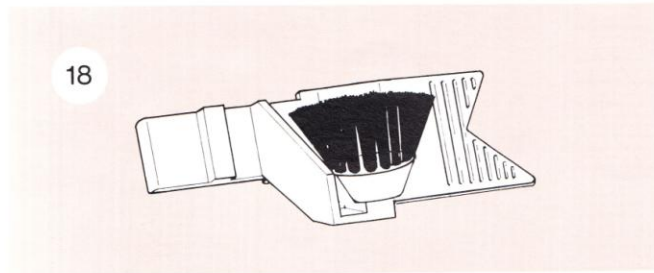


16. Pushing-down wheels for knitting heavy yarns on double bed (Model 600 only).

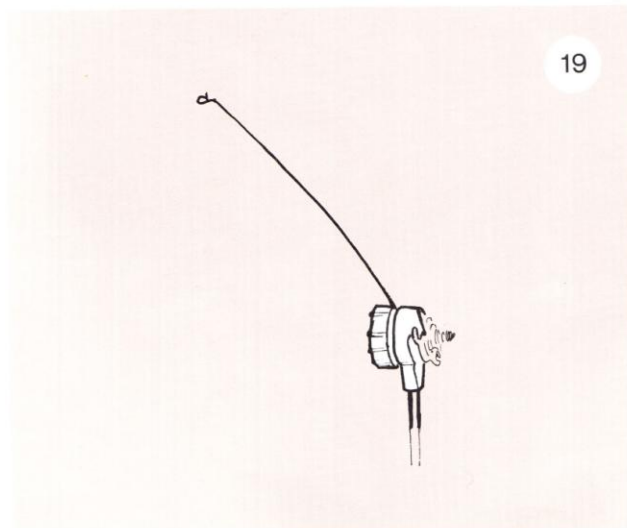




17. Second yarn guide when knitting Fair Isle (Model 600 only).



18. Weaving effect brushes (Model 600 only).



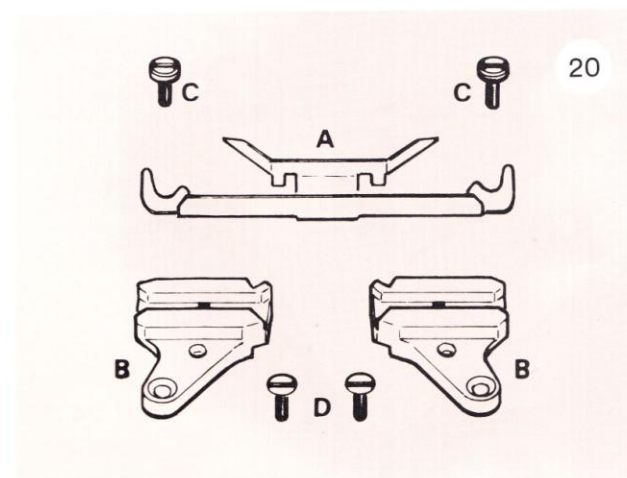
19. Single tension head.

The machine can knit two different yarns simultaneously. That is why it comes with a tension which allows 2 yarns to be threaded.

Nevertheless, for:  
 – one-colour work  
 – for fast knitting

We recommend you use the SINGLE TENSION HEAD shown opposite. Because of its light weight and simplicity, it will make knitting easier.

When using the single tension head, fit the end "B" of the tension rod into the bracket, but do not use the feeding guide "C" (see page 14)



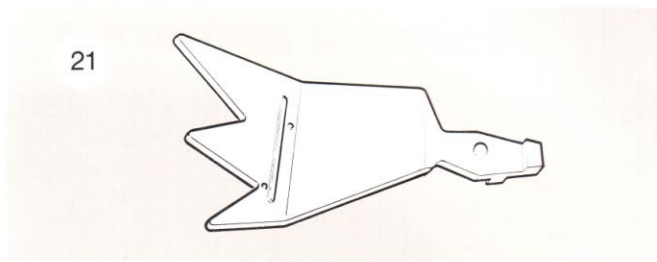
20. High speed unit.

Our knitting machines are designed to knit a large variety of basic stitches, fancy patterns, Fair Isle and others regardless of the type of yarn used. Furthermore, to knit very fast, even semi-industrially, basic stitches like stocking stitch and simple rib with a single yarn by simply adding some parts to the carriage.

These parts are used with the single tension head (see above) and can be removed at any time to return the machine to its normal function.

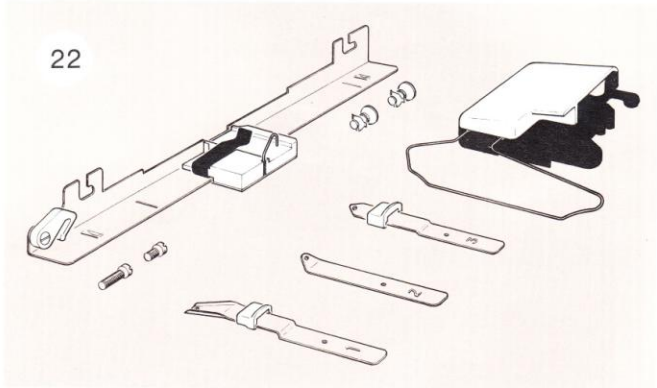
The instructions to fit these parts are given with the high speed unit.

21. Jacquard claw (Model 600 only).



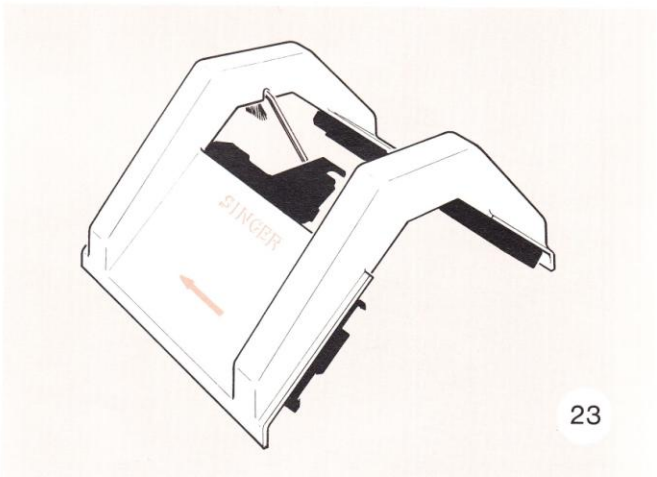
22. P.T.V.

This unit is used to knit Pile knitting with or without designs, weft insertion to obtain a fabric suitable for Cut-and-Sew, Plaiting to obtain a fancy effect on stocking stitch (Model 600 only).



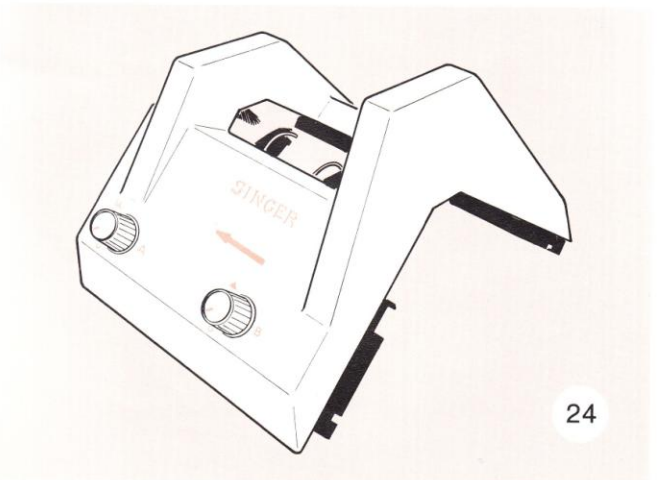
23. Transfer carriage.

It transfers any kind of rib to stocking stitch easily and quickly (Model 600 only).



24. Garter stitch and lace carriage.

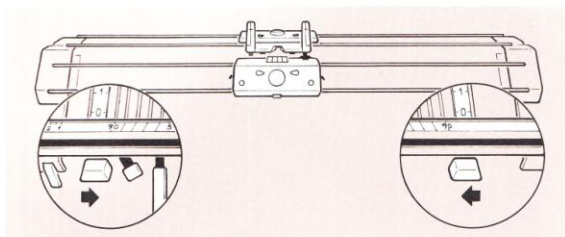
It allows you to knit garter stitch and its derivatives as well as fancy lace patterns (Model 600 only).





# The needle bed (Model 600)

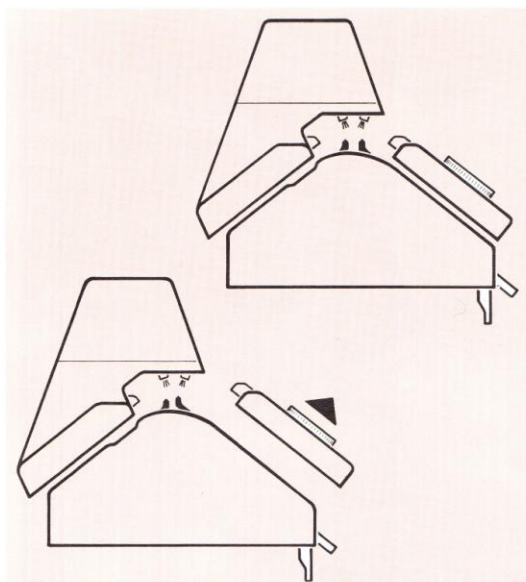
The back bed is fixed, but the front bed can be moved. It can be placed into two working positions and two non-working positions.



To change the position of the front bed:

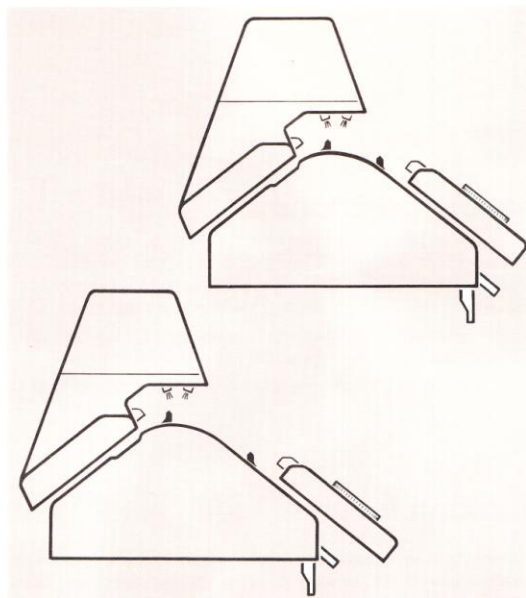
- Push both bed position levers located at the lower end of the needle bed inwards and release them. The needle bed is unlocked.

## The different positions



### WORKING POSITIONS

- **Normal position:** both needle beds are at the same level. This position is used when casting-on and when using both carriages.
- **Upper position:** the front bed is higher than the back bed. This position is only used when knitting stocking stitch, its derivatives and when using the back carriage only. The flow combs must always be opposite.

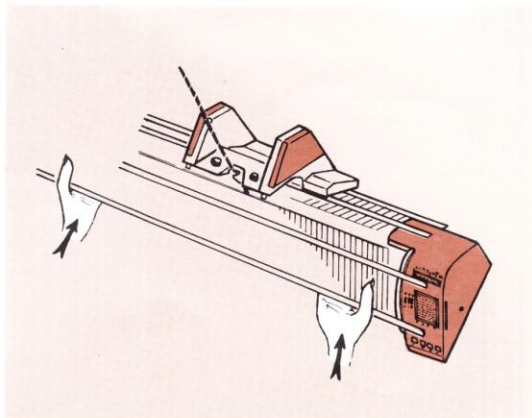


### NON-WORKING POSITIONS

- **Intermediary position:** this is used when checking the knitting on a double bed.
- **Lower position:** checking your knitting becomes even easier and makes some operations like casting-on and off, counting the rows, etc., easier.

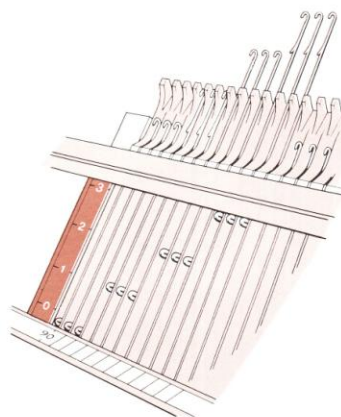
## How to close the front bed

- Slightly push the front carriage to the side to avoid knocking back carriage. Place your hands under the front bed and simply push up to bring it back to the normal position.



## Needle positions

The four needle positions are shown at each end of the front bed on two needle position scales marked 0-1-2-3.



## Racking lever

The racking lever allows you to move the front bed sideways to knit certain types of rib, racking patterns (zig-zag effect) or fancy patterns.

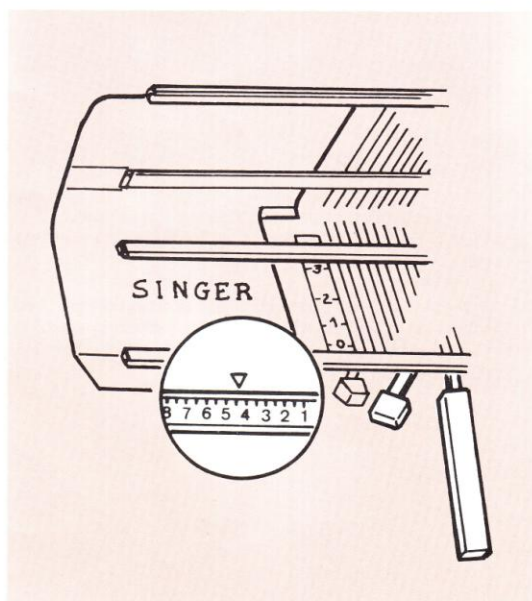
The front bed moves 8 positions shown on a scale at the left-hand side of the lower side rail.

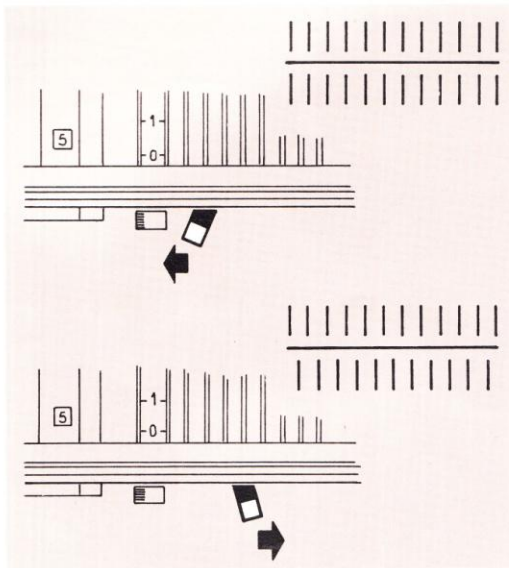
Each notch to the right or the left-hand side corresponds to one racking.

When the needle beds are parallel, i.e. flow combs opposite, the index pointing to the racking scale is opposite position 4½.

When the racking lever is not used, it can be folded away between the needle beds.

- To put the lever into position, simply swing it downwards until it clicks into the locking bracket.
- To fold the lever away, pull on the locking bracket (visible under the needle bed) and push the lever upwards.

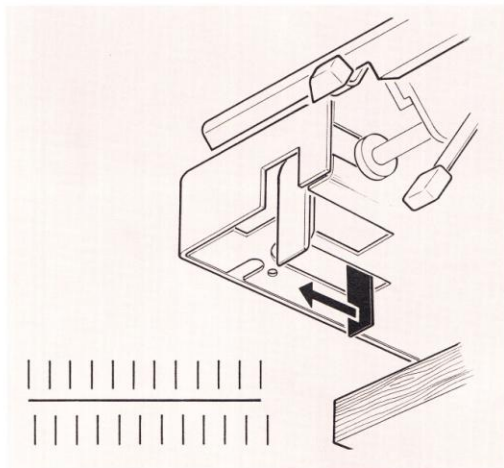




## Intermediary lever

The intermediary lever is used in conjunction with the racking lever. It moves the front bed by half a notch allowing you to set the flow combs either opposite or alternate.

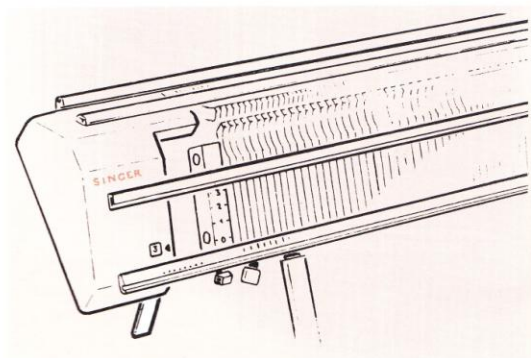
- When the intermediary lever is pushed towards the left, 1/1, the racking lever moves the front bed to flow combs opposite. This position is used when knitting rib, circular, stocking stitch, etc.
- When the intermediary lever is pushed towards the right, 1/2, the racking lever moves the front bed to flow combs alternate. This position is used when knitting certain types of rib, close rib and racking patterns.



## Transfer lever

It allows you to move the flow combs a quarter of a pitch when transferring stitches from one bed to the other using the transfer carriage or the garter stitch carriage. This lever is located under the left-hand end cover of the machine.

- Flow combs opposite or alternate: the lever is positioned towards the front, when not using the transfer position.
- Transfer position: the lever is positioned towards the back.



## Space selector

With this lever, the needle beds can be spaced from 3 to 6 according to the thickness of the yarn.

Type of yarn	Space
Fine	3
Medium	4 or 5
Heavy	6

**IMPORTANT:** Before putting the machine away, position the space selector on 6 in order not to damage the space selector.

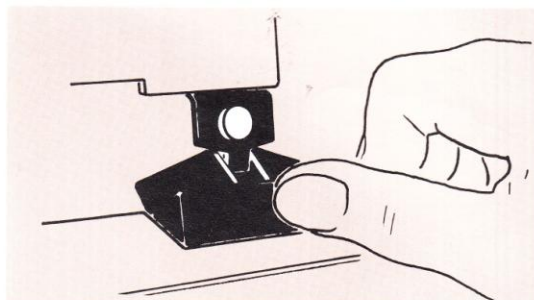


## Front carriage

The front carriage is coupled to the back carriage when knitting any type of rib, circular stocking stitch, fancy patterns with a basic close rib.

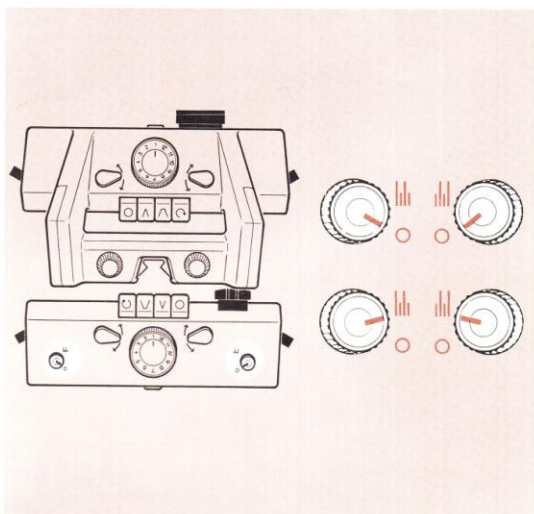
The coupling is done by a catch located on the front carriage and fits onto a clip located on the back carriage. To separate the carriages, press the coupling catch down.

The keys and the buttons on the front carriage have the same functions as the ones on the back carriage (see page 10–12).



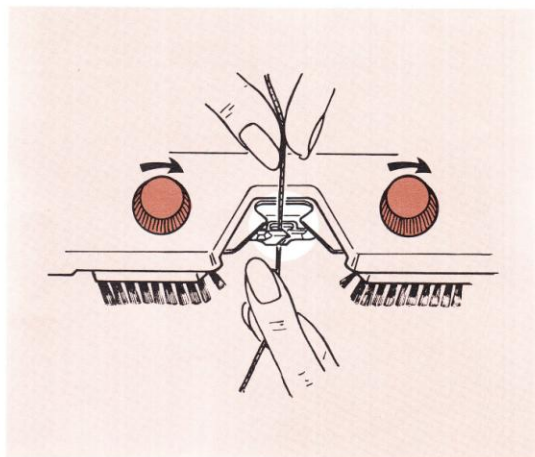
Particular feature: THE SELECTION BUTTONS

- The lower position or neutral is used for normal knitting.
- The upper position is used to select every alternate needle on the front bed when knitting Jacquard, close rib or fancy rib. You must then use an even number of needles on the front bed. The carriage keys are generally cancelled. To obtain the required position, press and turn the selection buttons up.



THE MAIN YARN GUIDE – THE BRUSHES (Model 600)

1. The yarn guide fits where the knitting retainer is located (see page 12).
2. The for brushes open the latches of the needles being in working position when the carriage is moved across.

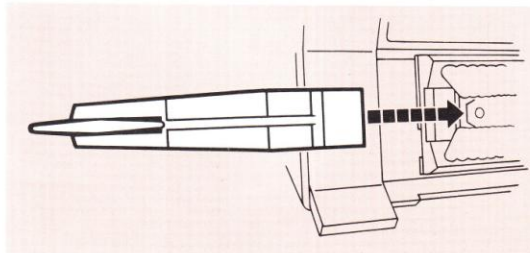


## Pushing down wheels

They are used to improve the descent of the work when knitting rib with a heavy yarn.

To attach the wheels:

- Separate the carriages.
- Unlock and lift the back carriage.
- Insert the support of the wheels in the fixing springs located between the brushes.
- Lock the carriage and couple it to the front carriage.

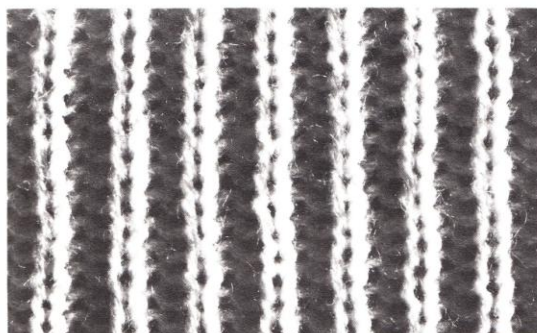


# Casting on in rib (Model 600)

There are several methods of casting-on in rib explained on the following pages. We recommend that you begin with 1/1 rib and refer to the heading "How to determine the stitch size" page 42 before you start knitting your first garment.

You may start your work with either the carriages on the right or the left-hand side. Nevertheless, the instructions are always given for carriages on the right-hand side.

## 1/1 rib



This kind of rib shows a purl and a plain stitch:

### NEEDLE SETTING:

- Use both beds, carriages on right-hand side.
- Front bed in normal position (see page 47).
- Set space selector according to the thickness of the yarn (see page 49).
- Set intermediary lever to the left, 1/1.
- Set racking lever to 4½, flow combs opposite (see page 48).
- Taking the 0 on the graduated scale as the centre reference, with the needle selector, move every alternate needle into working position 1 on the back bed.
- On the front bed, select the needles in working position 1 in the same way, as illustrated.

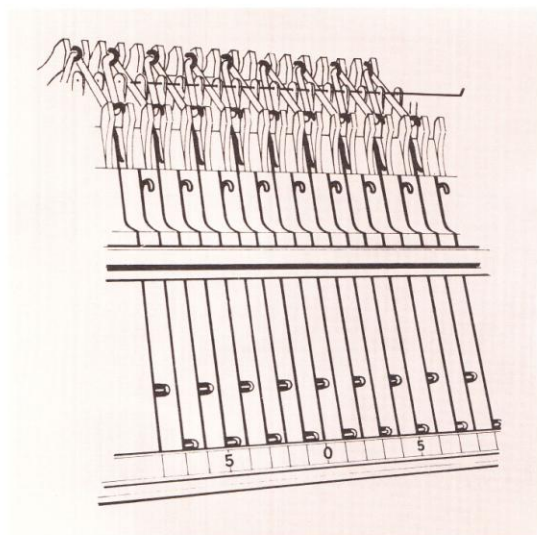
Lower the front bed and pass the yarn:

- Between the needle beds.
- Into the yarn guide located on the back carriage, between the brushes.
- Fasten the yarn to the right-hand yarn clip located on the table clamp.
- Gently pull the yarn behind the tension unit to correct the tension.



If necessary, turn the knob backwards to increase the tension or forward to slacken it.

- Gently move the carriages across with keys  $\wedge$  depressed, from right to left, then from left to right to align the needles.
- Thread the tension unit (see page 14).



### CASTING-ON

- Depress key  $\wedge$  on both carriages.
- Set needle return buttons to neutral position on both carriages.
- Set selection buttons on front carriage to neutral position.
- Set stitch size 1 or 2 on both carriages according to the thickness of the yarn.
- Move the carriages to the left-hand side. A zigzag row is formed between the needle beds.
- Select a cast-on comb long enough to hold all the stitches.
- Remove the wire.
- Take the comb, pass it underneath the needle beds, with the coloured dot in the centre facing you, so that the comb teeth slide through the zigzag row.
- Take the yarn and pass it between the comb tooth corresponding to the left-hand edge needle.
- Replace the comb wire, lower the comb making sure not to catch the needle hooks.
- Hang the weights into the holes on the comb.

### HOW TO KNIT IN RIB:

- To obtain a firm cast-on edge, knit a circular row first as follows.
- Depress key  $\square$  on both carriages.
- Set needle return buttons to neutral position on both carriages.
- Set selection buttons on front carriage to neutral position.
- Set stitch size 2 or 3 on both carriages.
- Knit one row, that is to say one to and fro movement of the carriages.
- Depress key  $\wedge$  on both carriages.
- Set needle return buttons to neutral position on both carriages.
- Set selection buttons on front carriage to neutral position.
- Set stitch size according to the thickness of the yarn (see page 11).
- Set row counter to 000.
- Knit moving the carriages evenly across.

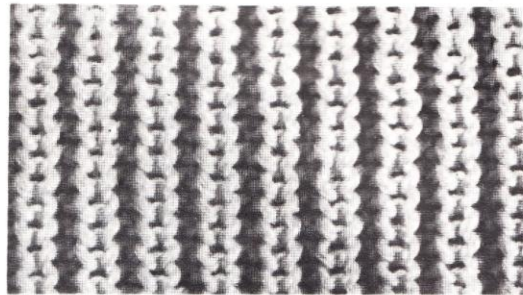


## 1/1 single fisherman rib

Same casting-on as for 1/1 rib (see page 51).

### HOW TO KNIT

- Depress keys  $\wedge$   $\boxtimes$  on back carriage.
- Depress key  $\wedge$  on front carriage.
- Set needle return buttons to neutral position on both carriages.
- Set selection buttons on front carriage to neutral position.
- Set stitch size 2 sizes higher than for 1/1 rib on both carriages.
- Set front bed to normal position.
- Set flow combs opposite.
- Set space selector according to the thickness of the yarn (see page 49).
- Set row counter to 000.
- Knit.

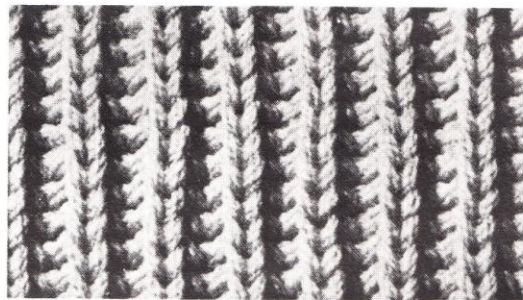


## 1/1 double fisherman rib

Same casting-on as for 1/1 rib (see page 51).

### HOW TO KNIT

- Depress keys  $\wedge$   $\boxtimes$  on both carriages.
- Set needle return buttons to neutral position on both carriages.
- Set selection buttons on front carriage to neutral position.
- Set stitch size 2 sizes higher than for 1/1 rib on both carriages.
- Set front bed to normal position.
- Set flow combs opposite.
- Set space selector according to the thickness of the yarn (see page 49).
- Set row counter to 000.
- Knit.



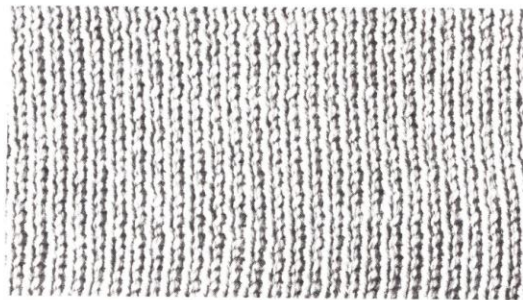
## Close rib (fine yarn)

- Set intermediary lever to the right-hand side 1/2.
- Set racking lever to the left-hand side to position 4. (Flow combs alternate).
- Set the needles as illustrated.
- Depress key  $\wedge$ .
- Set needle return buttons to neutral position on both carriages.
- Set selection buttons on front carriage to neutral position.
- Set front bed to normal position.
- Set space selector to 3 or 4.

Same casting-on as for 1/1 rib (see page 51).

### HOW TO KNIT

- Set stitch size 1 size less than for 1/1 rib.
- Leave the other settings as they are.
- Knit.





## Fancy close rib

Same casting-on as for close rib, but for knitting, set the selection buttons on front carriage in upper position and cancel the front carriage keys.

Set stitch size 1 size less than for 1/1 rib.

PLEASE NOTE: Always cast-on an EVEN number of stitches on the front bed. When knitting, make sure to clear the last needles.

## 2/2 simple rib



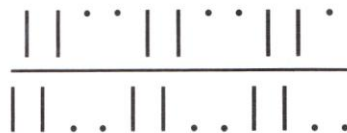
### NEEDLE SETTING

- Set intermediary lever to the left-hand side 1/1.
- Set racking lever to 4½ (flow combs opposite).
- Set front bed to normal position.
- Set the needles as follows:



### CASTING-ON

- Set intermediary lever to the right-hand side 1/2.
- Set racking lever to 6 (flow combs alternate).
- The needles are now positioned as follows:



- Thread the machine, carriages on right-hand side.
- Depress key  $\square$  on both carriages.
- Set needle return buttons to neutral position on both carriages.
- Set selection buttons on front carriage to neutral position.
- Set stitch size 1 or 2 on both carriages.
- Set front bed in normal position.
- Set space selector according to the thickness of the yarn (see page 49).
- Move the carriages from right to left. A zigzag row is formed between the needle beds.
- Insert the comb (see page 51).
- Hang the weights.

### FOR A FIRM CAST-ON EDGE

- Set stitch size 2 or 3 on both carriages.
- Knit one circular row as for 1/1 rib (see page 51).

### HOW TO KNIT

- Set intermediary lever to the left-hand side 1/1.
- Set racking lever to 4½ (flow combs opposite).
- The needles are now in the initial position again:



- Depress key  $\square$  on both carriages.
- Set needle return buttons to neutral position on both carriages.
- Set selection buttons on front carriage to neutral position.
- Set stitch size 2 sizes higher than for 1/1 rib.
- Set front bed to normal position.
- Set row counter to 000.
- Knit.

## 2/2 industrial rib

### NEEDLE SETTING

- Set intermediary lever to the right-hand side 1/2.
- Set racking lever to 4 (flow combs alternate).
- Set the needles as follows:



- Set front bed to normal position.
- Set space selector according to the thickness of the yarn (see page 49).

### CASTING-ON

- Set racking lever to the right-hand side on 5 (flow combs alternate).
- The needles are now positioned as follows:



- Thread the machine, carriages on right-hand side.
- Depress key  $\wedge$  on both carriages.
- Set needle return buttons to neutral position on both carriages.
- Set selection buttons on front carriage to neutral position.
- Set stitch size 1 or 2 on both carriages.
- Move the carriages from right to left.
- Insert the comb as for 1/1 rib (see page 51).
- Hang the weights.

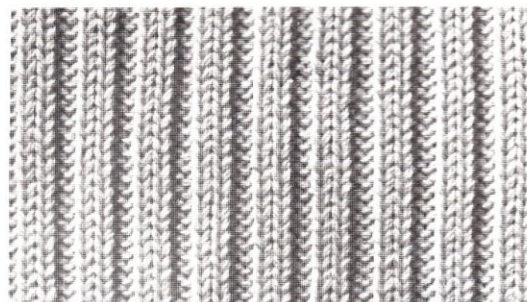
## 2/2 double fisherman rib

- Same needle setting as for 2/2 simple rib.
- Same casting-on.

After that operation:

- Depress keys  $\wedge$   $\square$  on both carriages.
- Set stitch size 2 sizes higher than for 1/1 rib.

CAUTION: the row counter shows twice the number of rows really knitted.



### FOR A FIRM CAST-ON EDGE

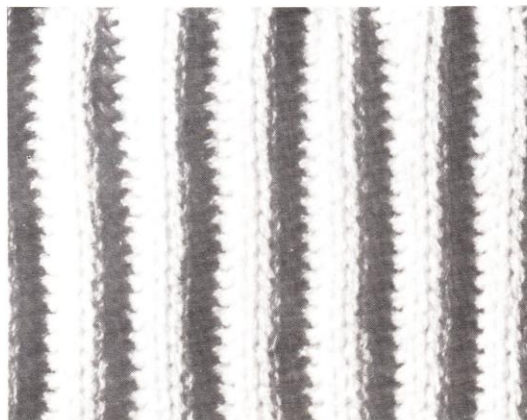
- Set stitch size 2 or 3 on both carriages.
- Knit one circular row (see page 51).

### HOW TO KNIT

- Set racking lever to 4 (flow combs alternate).
- The needles are now in the initial position again.



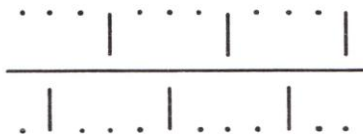
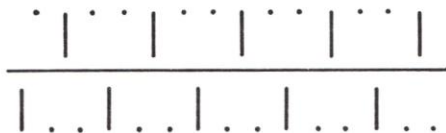
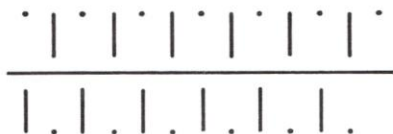
- Depress key  $\wedge$  on both carriages.
- Set needle return buttons to neutral position on both carriages.
- Set selection buttons on front carriage to neutral position.
- Set stitch size 2 sizes higher than for 1/1 rib on both carriages.
- Set front bed to normal position.
- Knit.



## How to knit heavy yarn

The machine has, on the left-hand side, a device to vary the needle bed space from 3 to 6 mm.

- To knit heavy yarn, set space selector to 6. That lever is located under the left-hand side of the front bed.
- Set the needles to knit in rib. According to the thickness of the yarn, select every 2nd, 3rd or 4th needle. The settings are illustrated below:



**CAUTION:** The second needle setting (flow combs alternate) can only be used to knit in rib, but does not allow the transfer into stocking stitch.

- Depress key  $\square \wedge$  on both carriages.
- Set stitch size 2, 3 or 4 according to the thickness of the yarn.
- Move the carriages from right to left.
- Insert the comb and the wire and hang the weights (use more weight than for normal knitting).
- Increase the stitch size by 2 sizes.
- Depress key  $\square \ominus$  on both carriages.
- Knit 2 rows.
- Depress key  $\square \wedge$  on both carriages.
- Increase again the stitch size by 2 sizes and knit one row.
- Using the locking levers, unlock the back carriage and fit the two pushing-down wheels between the brushes, under the spring clips (see picture, page 50) (Model 2310 or 600 only).
- Lock the back carriage and knit.


**CAUTION:** When the pushing-down wheels are attached, make sure that the needles are not above the flow combs so they will not interfere with the passage of the wheels. Therefore, never use the needle positions 2 or 3.

- When using a very heavy yarn to knit stocking stitch, select every alternate needle. If you want to transfer the stitches from rib to stocking stitch, cast-on the ribs on 1 needle in 4 instead of 1 needle in 2.
- When knitting stocking stitch, remove the pushing-down wheels and set the front bed in the upper position.



## Transferring from rib to stocking stitch (Model 600)

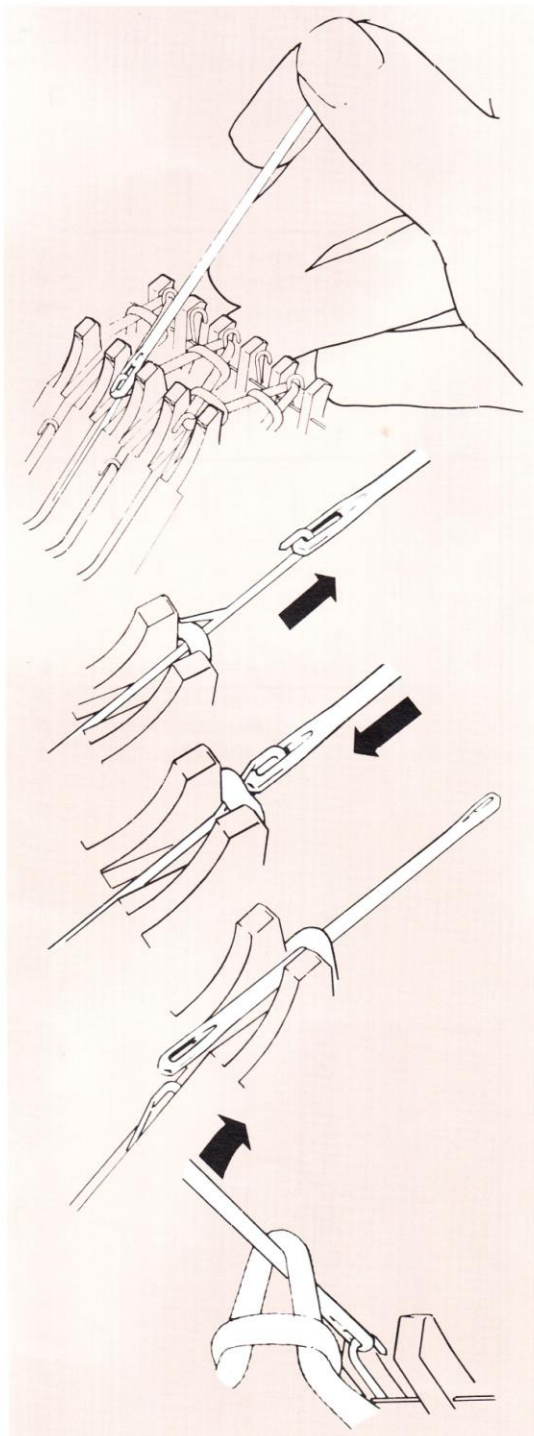
If you use the transfer carriage, refer to the instructions provided with it. If you use the double ended eyelet needle, transfer the front bed stitches onto the empty back bed needles.

- Place the double ended eyelet needle into the hook of the first front bed needle, keeping the eyelet needle in line with the main needle.
- Pull the needle up to holding position 3. The stitch slides behind the latch.
- Keep the eyelet in the needle hook and push it back to non-working position 0, still keeping the eyelet needle in line with the needle.
- Remove the eyelet from the needle hook.
- Tilt the eyelet needle backwards. The stitch is now on the eyelet needle.
- Place the opposite eyelet into the empty needle hook on the back bed.
- Pull the needle up slightly and tilt the eyelet needle backwards to make the stitch slide into the needle hook.
- Proceed in the same way to transfer all front bed stitches.
- Lower all front bed needles to non-working position 0.
- Remove the front carriage.
- Set the intermediary lever to the left-hand side.
- Set the racking lever to 4½ (flows combs opposite).
- Set the front bed to upper position.
- Set the space selector to 5 or 6 according to the thickness of the yarn.
- Depress key .
- Set needle return buttons to neutral position.
- Set the stitch size according to the thickness of the yarn (see page 11).

You are now ready to knit in stocking stitch.

When knitting certain types of rib, you may have more stitches than empty needles. In this case, transfer two stitches onto one back bed needle.

In the reverse way, if you have empty needles on the back bed, hang the heel of the nearest stitch onto the empty needle.



# Casting-on methods and hems (Model 600)


You can, after having attached the conversion kit, cast-on and make hems as explained at the beginning of the instruction book once the knitting retainer has been attached.

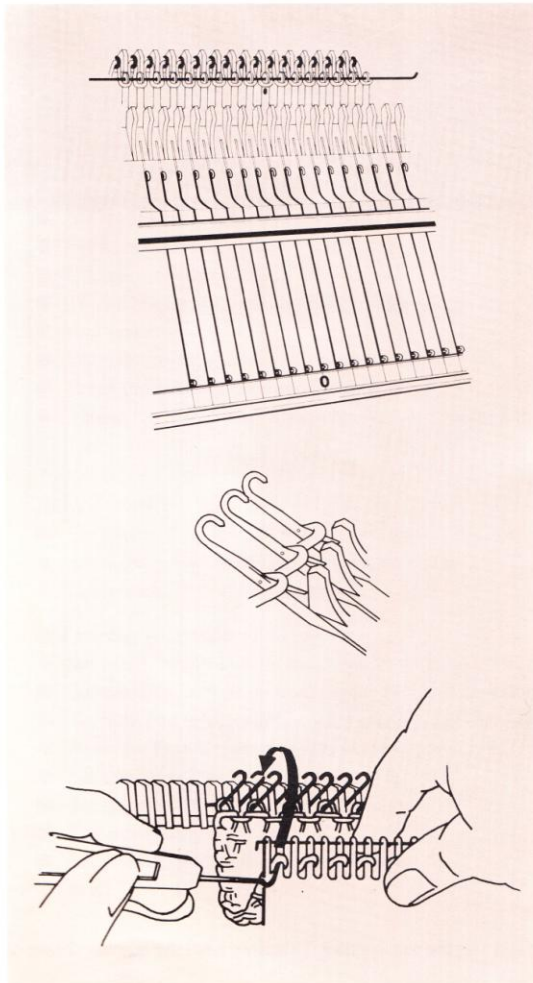
Just set the front bed to lower position to leave the passage free for the knitting retainer.

But if you want to knit with a cast-on comb and weights, we are going to explain how to cast-on and how to close the hems.

## Hems in stocking stitch and mock rib

### Open casting-on

- Carriage at right-hand side.
- Thread the machine.
- Fasten the yarn at the right-hand clip.
- Using the needle selector, move the required number of needles into working position 1 on the back bed.
- Depress key .
- Set needle return buttons to neutral position.
- Set stocking stitch size (see page 11).
- Set front bed to normal position.
- Set flow combs opposite (intermediary lever on the left-hand side 1/1).



- Hold the cast-on comb with wire against the back bed, coloured dot in the centre, facing you.
- Position the comb teeth opposite to the flow combs to leave a free passage for the needles.
- Bring the edge needles up to working position 2 to steady the comb.
- Move the carriage to the left-hand side making sure that the needle hooks do not catch the cast-on comb or the wire.
- Lower the comb.
- Hang the weights.

#### HOW TO KNIT

- Set front bed to upper position.
- Set row counter to 000.
- Knit.

Proceed in the same way when casting-on for a hem in 1/1, 2/1, 3/1 mock rib.

#### HOW TO KNIT A HEM IN MOCK RIB

- Knit twice the depth of the hem.
- Move the needles in working position and the intermediary empty ones into working position 2, making sure that the stitches are lying on the needle latches.
- Remove the weights.
- Lower the front bed.
- Bring the comb up so that it is level with the needles.
- With the hook of the latch needle tool, pick up the stitches from the comb and hang them onto the empty needles.
- Rehang the weights.
- Lower the needles to working position 1.
- Set the front bed to upper position.
- Set stocking stitch size.
- Reset the row counter to half the number of knitted rows.
- Continue to knit.

## Chain casting-on

- Carriage at right-hand side.
- On the back bed, move the required number of needles into holding position 3.
- Hang the cast-on comb with wire onto these needles.
- Crochet a loose chain around these needles (front bed in lower position).
- Thread the carriage.
- Depress key  $\square \wedge$ .
- Set needle return buttons to lower position.
- Set stocking stitch size (see page 11).
- Reset the front bed to normal position.
- Bring the comb up and hold it high enough so that the needle hooks cannot catch the wire.
- Hold the lower part of the comb towards you.
- Knit one row.
- Lower the comb.
- Hang the weights.
- Knit.

## Circular hem

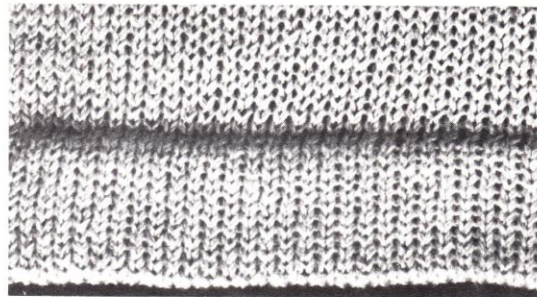
### CASTING-ON

- On both beds.
- Carriages at right-hand side.
- Set intermediary lever to the right-hand side 1/2.
- Set racking lever to 4 (flow combs alternate).
- Select the required number of needles on each needle bed. If for example your garment has 120 stitches, select 120 needles on the back bed and 120 needles on front bed.
- Depress key  $\square \wedge$  on both carriages.
- Set needle return buttons to neutral position on both carriages.
- Set selection buttons on front carriage to neutral position.
- Set stitch size 1 on both carriages.
- Set front bed to normal position.
- Set space selector to 5.
- Thread the machine.
- Knit one row.
- Insert the comb and wire and hang the weights.

### HOW TO KNIT

- Set intermediary lever to the left hand side 1/1.
- Set racking lever on 4½ (flow combs opposite).
- Depress key  $\square \supset$  on both carriages.
- Set stocking stitch size on the back carriage.
- Knit one row.
- Set stocking stitch size on the front carriage.
- Knit the number of rows corresponding to the depth of the hem.
- With the double ended eyelet needle, transfer the front bed stitches onto the opposite back bed needles.
- Lower the empty front bed needles to non-working position 0.
- Remove the front carriage.
- Move the back bed needles into working position 2.
- Increase the stitch size by one size.
- Knit one row.
- Reset stocking stitch size.
- Continue to knit.

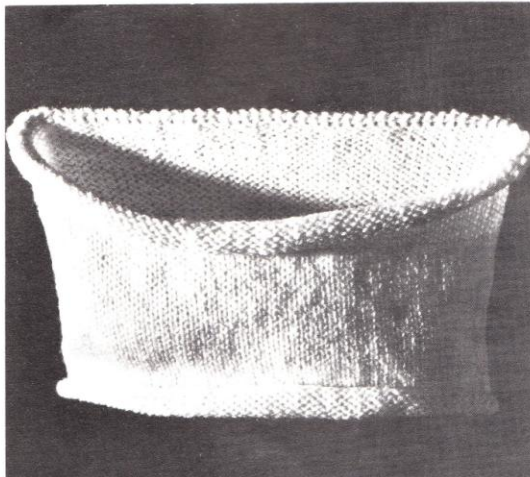
PLEASE NOTE: Remember that one circular row corresponds to two rows on the row counter. Therefore reset the number shown on the row counter.





# Casting-on and knitting in circular (Model 600)

## Casting-on in circular Open casting-on with an auxiliary yarn



- On both beds
- Set intermediary lever to the right-hand side 1/2.
- Set racking lever to 4 (flows combs alternate).
- Carriages at right-hand side.
- Move the same number of needles on both beds into position 1.



One circular row is obtained by moving the carriages to and fro. Two rows on the row counter correspond therefore to one circular row. Circular knitting is used when making socks, seamless scarves and sleeves.

- Depress key  $\square \wedge$  on both carriages.
- Set needle return buttons to neutral position on both carriages.
- Set selection buttons on front carriage to neutral position.
- Set stitch size 1 on both carriages.
- Set front bed to normal position.
- Set space selector to 5.
- Thread the tension unit and the carriage with an auxiliary yarn.
- Knit one row.
- Insert the comb, the wire and hang the weights.
- Break the auxiliary yarn and fasten it to the left-hand yarn clip.
- Thread the machine with the main yarn and fasten it to the left-hand yarn clip.

### HOW TO KNIT

- Set intermediary lever to the left-hand side 1/1.
- Set racking lever to 4½ (flow combs opposite).
- Depress key  $\square \curvearrowright$  on both carriages.

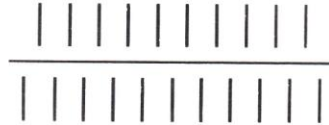


The needles are positioned as follows:

- Set needle return buttons to neutral position on both carriages.
- Set selection buttons on front carriage to neutral position.
- Set front bed to normal position.
- Move the back bed needles into working position 2.
- Set stitch size 1 on front carriage.
- Set stocking stitch size on back carriage.
- Knit one row.
- Set stocking stitch size on both carriages.
- Knit.

## Closed casting-on


- Use both beds.
- Carriages at right-hand side.
- Set intermediary lever to the right-hand side 1/2.
- Set racking lever to 4 (flow combs alternate).
- Select the same number of needles on each needle bed.
- Thread the machine with an auxiliary yarn.
- Cast-on as for open casting-on in circular page 59.
- Insert the comb.
- Hang the weights.
- Break the auxiliary yarn and fasten it to the left-hand clip.

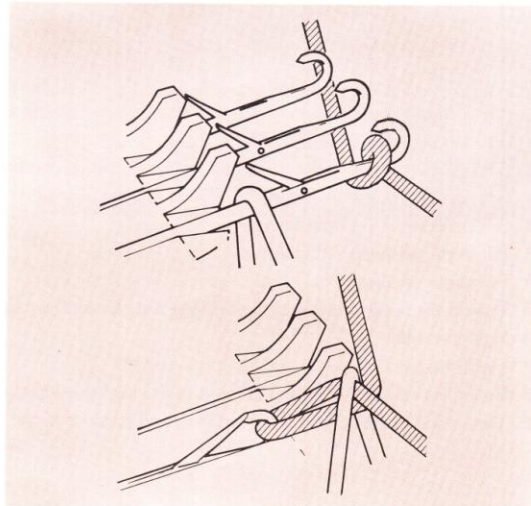


### TO OBTAIN A CLOSE CAST-ON EDGE

- Thread the tension unit with the main yarn, but not the carriage.
- Fasten the yarn to the left-hand yarn clip.
- Move the back bed needles into working position 2.
- The auxiliary yarn slides behind the latch.
- Take the main yarn, pass it under the needle and loop it back towards the left so that the yarn lays into the needle hook.
- Lower the needle, by the heel, to position 1 in order to form a loose stitch.
- Repeat the operation for all back bed and front bed needles.

### HOW TO KNIT

- Set intermediary lever to the left-hand side 1/1.
- Set racking lever to 4½ (flow combs opposite).
- Depress key  on both carriages.
- Set needle return buttons to neutral position on both carriages.
- Set selection buttons on front carriage to neutral position.
- Set space selector to 5.
- Thread the machine.
- Move the back bed needles into working position 2.
- Set stocking stitch size on back carriage.
- Set stitch size 1 on front carriage.
- Knit one row.
- Move the front bed needles into position 2.
- Set stitch size 1 on the back carriage.
- Set stocking stitch size on the front carriage.
- Knit one row.
- Reset stocking stitch size on the back carriage.
- Continue to knit.








## Semi-circular knitting

When 180 needles on the back bed are not enough to knit the full piece of knitting, you can knit it in semi-circular using both beds.

### CASTING-ON

- Cast-on as for open or closed circular casting-on (see pages 59 or 60).

### HOW TO KNIT

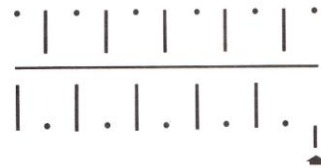
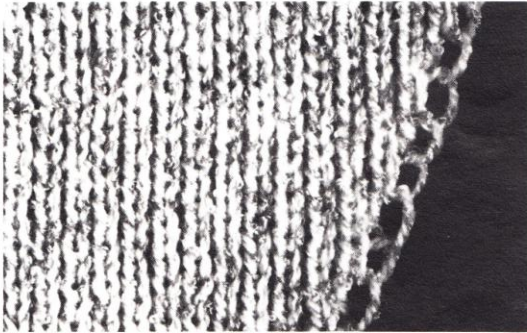
- Thread the machine with the main yarn.
- Depress key 0 on the back carriage.
- Depress key  on the front carriage.
- Knit one row. The carriage are now on the right-hand side.
- Depress key  on the back carriage.
- Depress key  on the front carriage.
- Knit two rows.
- Depress key  on the back carriage.
- Depress key  on the front carriage.
- Knit two rows.
- Repeat these four rows: two rows on the back bed, two rows on the front bed, finishing with the carriages at the left-hand side.

# Increasing and decreasing in rib

The various types of increasing in rib are done in the same way as for the ones on the single bed. Take care to keep the needle setting on the back bed as on the front bed. This is also the case when decreasing.

Example: simple increase in rib (one stitch).

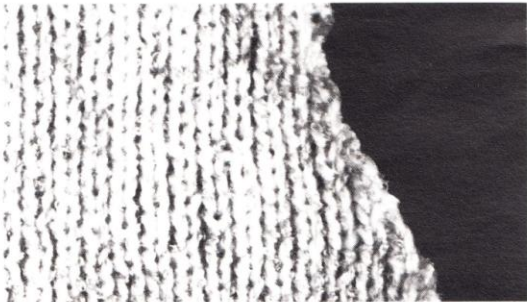
- On the carriage side, move one needle into position 1 following the needle setting for rib.



Example: simple decreasing in rib (one stitch).

This decrease can be done on either side of the knitting or simultaneously on both sides.

- Using the single eyelet tool, transfer the edge stitch onto the opposite needle which already carries a stitch.
- Lower the empty needles to non-working position 0.

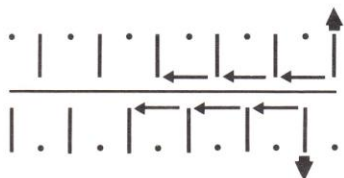




## Italian decrease in rib (two stitches)

This decrease is done on the carriage side

- Transfer the stitches to be decreased to the back bed.
- Cast-off as explained page 25 (decreasing several stitches).



## Decreasing several stitches in rib

This decrease is generally done every four rows.

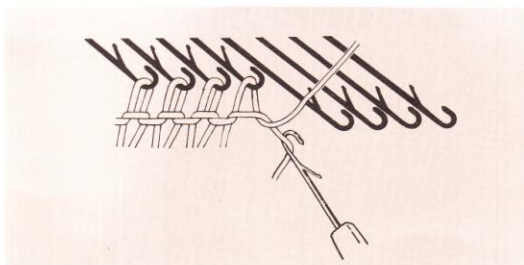
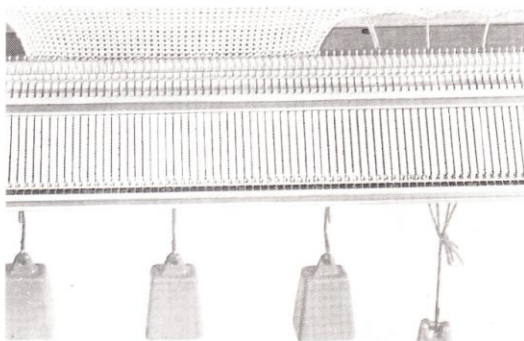
- Keeping the needle setting in rib, transfer the third stitch onto the fourth needle on each needle bed.
- Move the two edge needles on each needle bed inwards to fill the empty spaces.
- Lower the empty needles to non-working position 0.



## Increasing several stitches in stocking stitch

- On the carriage side, move the needles to be increased into holding position 3.
- With the hook of the latch needle tool, take the heel of the first stitch and crochet a chain around the needles in holding position (see instructions for chain casting-on on page 17 or 58).
- The stitches must be behind the needle latches and the yarn under the last needle.
- Lower the needles to position 2.
- Knit one row.
- Hang the edge claws.
- Continue to knit.

If you have many stitches to increase, use the small cast-on comb and proceed as for a chain casting-on, or thread an auxiliary yarn through some chain stitches to make long loops in which you can hang a weight.

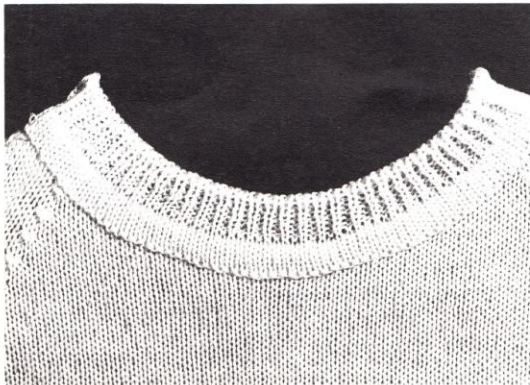


# The neckbands


To make the neckbands for curved or V-necklines, you can use the same methods explained on pages 30, 31, but then, knit them in rib, as you like.

New possibilities:

## Curved neckband in close rib



This band is knitted separately, partly in close rib and partly in circular:

- Cast-on in close rib (see page 52).
- Knit the required depth.
- Set the intermediary lever to the left-hand side 1/1.
- Set the racking lever to 4½ (flow combs opposite).
- Set space selector to 5.
- Depress key  on both carriages.

- Set stocking stitch size on both carriages.
- Knit 4 or 5 circular rows (8 or 10 rows on the row counter).
- Knit some circular rows with a contrasting yarn.
- Unthread the carriages and move them across to release the knitting from the machine.
- Slide the neckline inside the circular knitted section.
- On the right side, sew the neckband with a back stitch, fastening each stitch knitted in main yarn.
- On the left side, sew the neckband with a slip stitch, fastening each stitch of the last row knitted in main yarn.
- Remove the auxiliary yarn as you sew the neckband.

## V-neckband in 1/1 rib

### 1st method:

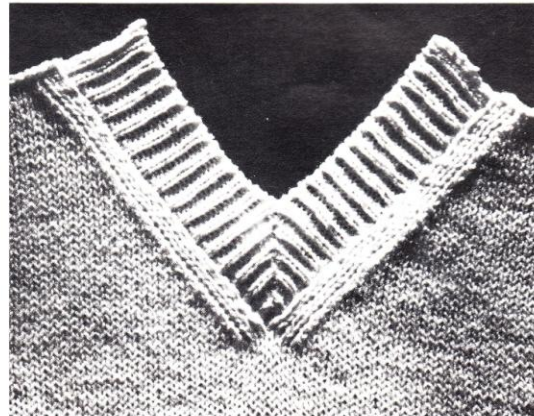
The band is knitted separately.

- Open cast-on stocking stitch (page 57) with an auxiliary yarn.
- Knit some rows.
- Thread the machine with the main yarn and knit two or three rows in stocking stitch.
- Transfer every alternate stitch onto the front bed.
- Knit the required depth in rib decreasing one stitch at each side on every row.
- Chain cast-off.
- Assemble both sides to form the V.
- Sew the band along the neck edge, right at the bottom of the rib.
- Inside the knitting, sew the two or three stocking stitch rows with a slip stitch, fastening each stitch.

### 2nd method:

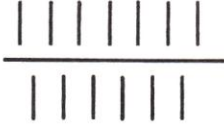
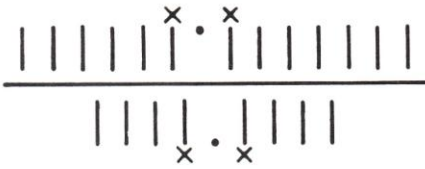
The band is knitted partly in 1/1 rib, partly in stocking stitch.

- Measure around the neck and knit a test sample to determine the number of stitches and the required stitch size. Remember that you will slightly stretch the neckband when you sew it onto the garment.
- Cast-on in 1/1 rib (see page 51).
- Knit the required depth.
- Transfer the front bed stitches onto the empty back bed needles.
- Set stocking stitch size.
- Knit three rows in stocking stitch.
- Cast-off loosely.
- Sew the neckband along the neck edge, placing the stocking stitch section inside the garment.



## V-neckband in close rib (fine yarn)

This band starts at the middle of the back and is knitted side after side up to the V where both sides meet. Proceed as follows:

- On the back bed, move, left of 0, an uneven number of needles into position 1 corresponding to the depth of the band.
  - On the front bed, move an even number of needles to obtain the setting as illustrated:
- 
- Cast-on in the usual way, then depress key  $\square$  on both carriages.
  - Set stitch size as for 1/1 rib less one size.
  - Knit two rows.
  - On the back bed, add an empty needle at the left-hand edge.
  - Knit two rows.
  - On the back bed, add again an empty needle at the left-hand edge.
  - Knit the required number of rows up to the beginning of the V.
  - Move these needles into holding position 3 and break the yarn.
  - Rethread the carriage at the right-hand side.
  - Proceed in the same way for the right side of the band, but increasing at the right-hand edge. One empty needle will remain on the front bed, the one being between the two bands.
  - Set needle return buttons in lower position and move the carriages across.
  - Transfer the central stitch on the back bed onto the opposite front bed needle which already carries a stitch.
- 
- Knit two rows.
  - On the front bed, using the six eyelet tool, make an Italian decrease at each side placing one stitch onto each central needle, (needles marked by a cross on the picture).
  - On the back bed, make the same decrease at the right-hand side.
  - For the left-hand side, transfer with the single eyelet tool, the stitch marked by a cross onto the needle which carries the right-hand decrease. That now carries three stitches. Move it into position 2.
  - Lower the empty needle to non-working position 0.
  - Continue in this way until only the two central needles on the front bed and five needles on the back bed remain.
  - Break the yarn and thread the double ended eyelet needle.
  - With that needle, remove the stitches.
  - Sew the band to the neckline.



## Casting-off in rib

- Set twice the stitch size used and knit one row.
- With the double ended eyelet needle, transfer all front bed stitches to the back bed needles.
- Cast-off using one of the casting-off methods in stocking stitch (see pages 25, 29).

## Button bands in close rib or 2/2 rib

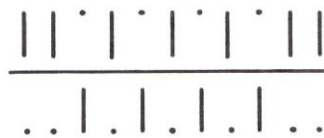
These bands can be knitted sideways either in close rib (see page 52) or in 2/2 industrial rib (see page 54) as follows:

- Knit the required depth in rib.
- If you want to continue in circular (see page 59) move the intermediary empty needles into position 1.
- Knit 4 circular rows, i.e. 8 on the row counter.
- Break the yarn leaving a piece long enough for the sewing.
- Rethread the machine with an auxiliary yarn.
- Knit some circular rows.
- Close the circular by knitting some rows in close rib to make pressing easier.
- Break the yarn and let the knitting drop.
- Press the band and undo the auxiliary yarn.
- Slide the neckline inside the section knitted in circular.
- Baste the band and sew it with a back stitch.

## Button bands in 1/1 rib showing a neat finish

After a normal cast-on:

- Add a needle on the back bed for two rows.
- Knit.



# Socks

Socks are composed of:



- The leg.
- The ankle.
- The heel.
- The foot.
- The toe.



## The leg

- Carriages on right-hand side.
- Cast-on the required number of stitches in 2/2 industrial rib (see page 54 as well as the chart of sizes).
- Knit the required number of rows (see the chart of sizes).

## The ankle

- Transfer the two front bed stitches onto the empty back bed needles.
- Lower the front bed needles to non-working position 0.
- Remove the front carriage.
- Set the intermediary lever to the left-hand side 1/1.
- Set the racking lever to 4½ (flow combs opposite).
- Depress key .
- Set needle return buttons in neutral position.
- Set stocking stitch size.
- Set the front bed to upper position.
- Set space selector to 5.
- Knit one row, the carriage is now on the left-hand side.
- At the opposite side of the carriage, i.e. right-hand side, move a quarter of the number of needles into holding position 3.
- Knit one row, the carriage is on the right-hand side.
- At the opposite side of the carriage, i.e. left-hand side, move the same number of needles into holding position 3.
- On the front bed, opposite to the back bed needles being in position 1, move the same number of needles into position 1.
- Reduce the number of weights.
- Set the front bed to intermediary position.
- Open all needle latches on the front bed.
- Using the twenty eyelet transfer tool, cover removed, remove the stitches in holding position on the right-hand side.
- Replace the cover. Let the tool drop between the needle beds.
- Take the tool by the plastic part (the stitches will be against the little cover) and bring it up to the level of the back bed.
- Push the stitches against the plastic part of the tool and remove the little cover.
- Hang the eyelets of the tool into the needle hooks on the front bed, placing the edge stitch onto the central needle.
- Tilt the tool forward to make the stitches slide into the needle hooks whilst you are holding your knitting with the other hand.
- Proceed the same way for the left-hand side.
- Lower the empty back bed needles into non-working position 0. The knitting forms a circle.
- Replace the front carriage on the right-hand side of the machine and couple it with the back carriage.
- Reset the front bed to normal position.
- Depress key  on both carriages.
- Set needle return buttons to neutral position.
- Set selection buttons on front carriage to neutral position.
- Set stocking stitch size on both carriages.
- Set space selector to 5.
- On the first circular row, decrease on each needle bed, at equal distance, the number of stitches indicated on the chart of sizes.
- Knit the required number of rows (see chart of sizes), finishing with carriages at the right-hand side.

## The heel

- The heel is knitted on the front bed only.
- Depress key 0 on the back carriage.
- Depress key  $\square \wedge$  on the front carriage.
- Set stitch size 1 on the back carriage.
- Reduce the front stitch size by one size to reinforce the heel.
- On the front bed, move the last right-hand needle (on carriage side) into holding position 3.
- Move the carriages to the left-hand side.
- Move the last left-hand needle into holding position 3.
- Move the carriages to the right-hand side.
- Hang the edge claws on the central part of the heel to prevent the stitches from jumping up.
- Raise the edge claws regularly.
- Continue in this way until one third of the needles are in holding position 3 on each side. There are only one third of the needles left in the centre in position 1.
- At the opposite side of the carriages, lower the first left-hand needle to position 2 (it is the last one which was put into holding position).
- Move the carriages to the left-hand side.
- Lower the first right-hand needle to position 2.
- Move the carriages to the right-hand side.
- Continue in this way until one needle remains on each side in holding position.
- Lower these needles simultaneously to position 2.
- Pass the yarn under the last right-hand needle on the carriage side.
- Move the carriages to the left-hand side.

## The foot

- Continue to knit in circular.
- Depress key  $\square \diamond$  on both carriages.
- Set stocking stitch size on both carriages.
- Knit the required number of rows for the length of the foot (see chart of sizes).

## The toe

- With the two eyelet tool, transfer (on the four sides) the first and second stitch onto the second and third needle.
- Lower the empty needles to non-working position 0.
- Knit 2 circular rows, i.e. 4 on the row counter.
- Continue to knit 2 circular rows between each decrease according to the selected size (see chart of sizes).
- Continue to knit 1 circular row between each decrease until only a few stitches remain in the centre (see chart of sizes).
- Break the yarn and thread it in the double ended eyelet needle.
- Remove the stitches one by one passing the yarn through each of them.
- Close the sock by pulling the yarn. Sew it inside the sock.
- Sew the leg knitted in rib with an invisible seam (see page 39).

## Chart of sizes

The measurements may change according to the stitch size and to the thickness of the yarn.

Metric Sizes	15	18	21	24	27	30	33	36	39	42	45
British Sizes	1	2½	4½	7	9½	11½	1	3½	5½	8	10½
Figure on each side of 0 on the graduated scale for casting-on in 2/2 Industrial Rib.	16	20	24	28	28	32	32	36	36	38	38
Number of rows in 2/2 Industrial Rib for the leg	35	45	54	60	80	90	100	90	100	110	120
Decreasing to be made for the ankle on the first circular row at equal distance, on each bed	2	3	3	3	3	3	3	3	4	4	3
Number of circular rows for the ankle (x 2 on the row counter)	5	5	5	8	8	8	12	12	16	16	16
Number of circular rows for the foot (x 2 on the row counter)	25	30	33	36	39	42	45	48	52	56	60
Decreasing to be made every 2 circular rows (x 2 on the row counter)	3	4	4	5	5	6	6	6	6	7	7
Number of remaining stitches to be taken on each end	3	3	3	3	3	3	5	5	5	5	5
Length of the foot in cm according to the size	10	12	15	16	18	20	21	22	24	26	27



# Fancy patterns

The casting-on methods already explained can be adapted to suit the pattern you have selected. If for example, you want to knit a welt in rib, knit it normally and transfer the stitches from one bed to the other to obtain one of the following patterns. If necessary, change the flow comb position before transferring the stitches.

Some patterns require a chain cast-on on the back bed. In this case, transfer the stitches accordingly. The empty needles in the middle of the knitting will take the yarn normally to form new stitches if you did not cast-on enough stitches at the beginning on your garment.

A welt in rib or a hem can easily be knitted after a fancy pattern is finished. Hang the edge stitches onto the back bed needles. Continue to knit in stocking stitch to make the hem or transfer some stitches onto the front bed to continue in rib.

## Pattern with needles in holding position

Back bed only

3 ply yarn


Space selector 5

Stitch size 7

Intermediary lever to the left-hand side 1/1

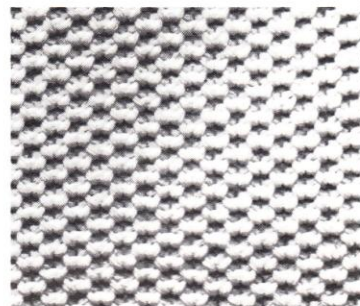
Racking lever 4½ (flow combs opposite)

Set the needles as follows:

Depress key .



- Move all even needles 2, 4, 6, 8, etc. ... into position 3.
- Knit 2 rows.
- Move all uneven needles 1, 3, 5, 7, etc. ... into position 3 and lower all even needles to position 2.
- Knit 2 rows.
- Repeat.



## Lace pattern

Back bed only

3 ply yarn


Space selector 5

Stitch size 7 or 8

Intermediary lever to the left-hand side 1/1

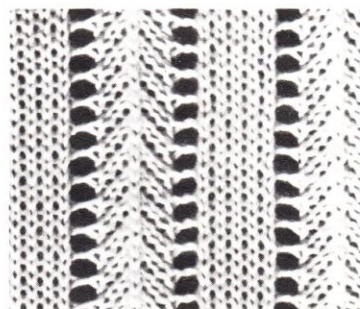
Racking lever 4½ (flow combs opposite)

Set the needles as follows:

Depress key .



- With the three eyelet tool, transfer stitches 1, 2, 3 onto needles 2, 3, 4 and stitches 5, 6, 7 onto needles 4, 5, 6. Needle 4 carries now 3 stitches; bring it to position 2. Leave 5 stitches plain and repeat the pattern on the required width.
- Knit 2 rows.
- Repeat.



## Cable pattern on both beds

2 or 3 ply yarn

Space selector 4 or 5

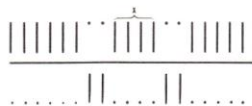
Stitch size 7 or 8 on both carriages

Intermediary lever to the left-hand side 1/1

Racking lever 4½ (flow combs opposite)

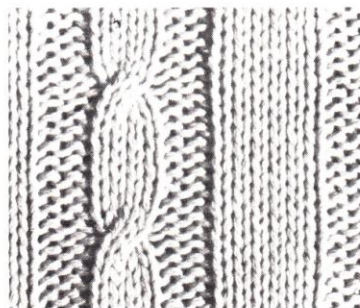
Set the needles as follows:

Depress key  on both carriages

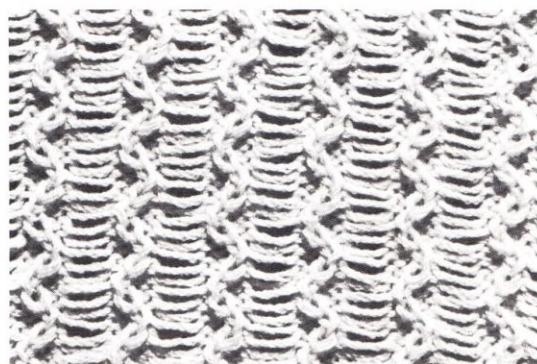
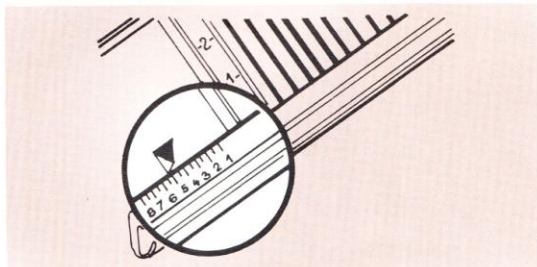


Every 10 rows, cross the stitches marked by an X as follows:

- With two 2 eyelet tools, place the two left-hand stitches onto the two right-hand needles and the two right-hand stitches onto the left-hand needles.
- Move these four needles into position 2.
- Knit 10 rows.
- Repeat.





## Racking patterns



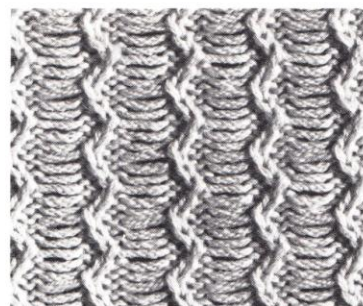
These very decorative patterns are obtained by moving the front bed with the racking-lever either to the left- or the right-hand side. **IMPORTANT:** the flow combs must always be alternate, i.e. intermediary lever to the right-hand side (see page 49).

To obtain a racking effect, the back bed stitch must be twisted through the movement of the front bed stitch.

- To obtain a zigzag pattern, move the front bed one racking to the left- or right-hand side, once every row or every two rows.

Plenty of variations can be obtained by changing the needle setting. The nicest soft and raised patterns will be knitted with keys   depressed on the front carriage.

For an easy reference during racking you will see on the lower slide rail of the front bed, at the left-hand side, a scale graduated from 1 to 8. An index is located on the left-hand cover and shows the position of the front bed at any time, in relation to the numbers printed on that scale. When the index is opposite a full number, the flow combs are alternate.

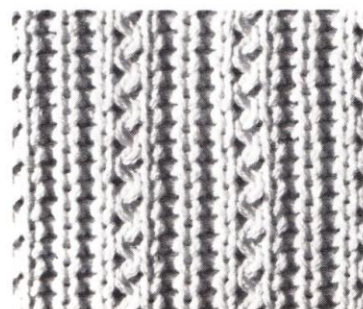
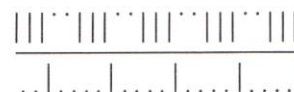


### On both beds

3 ply yarn  
Space selector 5  
Stitch size 5½ on both carriages  
Intermediary lever to the right-hand side 1/2  
Racking lever 4 (flow combs alternate)  
Set the needles as follows:


Depress key  on both carriage.

- Make one racking to the left-hand side.
- Knit 1 row.
- Repeat 3 times.
- Make one racking to the right-hand side.
- Knit 1 row.
- Repeat 3 times.
- Repeat from the beginning.



### On both beds

3 ply yarn  
Space selector 5  
Stitch size 6 on both carriages  
Intermediary lever to the right-hand side 1/2  
Racking lever 4 (flow combs alternate)  
Set the needles as follows:

Depress key  on back carriage.

Depress keys   on front carriage.

- Carriages on right-hand side.
- Knit 2 rows.
- Make one racking to the right-hand side.
- Knit 2 rows.
- Make one racking to the left-hand side.
- Knit 2 rows.
- Repeat.





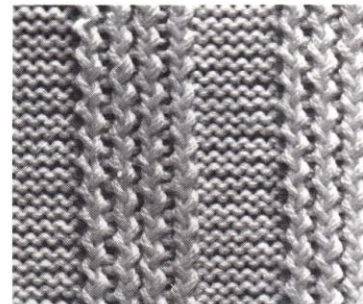
**On both beds**

Yarn 2 or 3 ply.  
Space selector on 5  
Stitch size 7 on both carriages  
Intermediary lever to the right-hand side 1/2  
Racking lever 4 (flow combs alternate)  
Set the needles as follows:



Depress key  $\wedge$  on both carriage.

- Knit 1 row.
- Make one racking to the right-hand side.
- Knit 1 row.
- Make one racking to the left-hand side.
- Knit 1 row.
- Repeat.



**On both beds**

3 ply yarn.  
Space selector 5  
Stitch size 7 on both carriages  
Intermediary lever to the right-hand side 1/1  
Racking lever 4 (flow combs alternate)  
Set the needles as follows:



Depress keys  $\square$   $\wedge$  on both carriages.

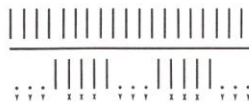
Carriages at right-hand side.

- Make one racking to the left-hand side.
- Knit 2 rows.
- Make one racking to the right-hand side.
- Knit 2 rows.
- Repeat.



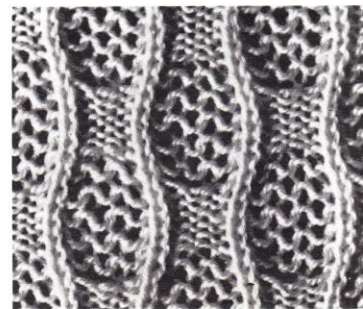
**On both beds**

2 ply yarn.  
Space selector 3  
Stitch size 5 on both carriages  
Intermediary lever to the right-hand side 1/2  
Racking lever 4 (flow combs alternate)  
Set the needles as follows:



Depress key  $\wedge$  on both carriages.

- Knit 6 rows.
- On the front bed, make the 3 central stitches (X) of the groups with 5 needles drop and move the 3 needles (Y) into position 1.
- Repeat from the beginning.



**On both beds**

3 ply yarn.  
Space selector 5  
Stitch size 6 on both carriages  
Intermediary lever to the right-hand side 1/2  
Racking lever 4 (flow combs alternate)  
Set the needles as follows:

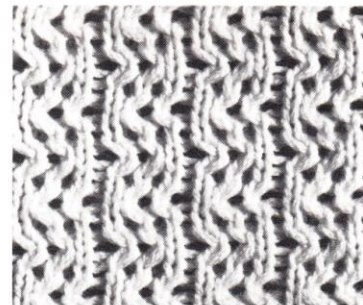


Depress key  $\wedge$  on back carriage.

Depress keys  $\square$   $\wedge$  on front carriage.

Carriages at right-hand side.

- Make one racking to the right-hand side.
- Knit 2 rows.
- Repeat 2 times.
- Make one racking to the left-hand side.
- Knit 2 rows.
- Repeat 2 times.
- Repeat from the beginning.

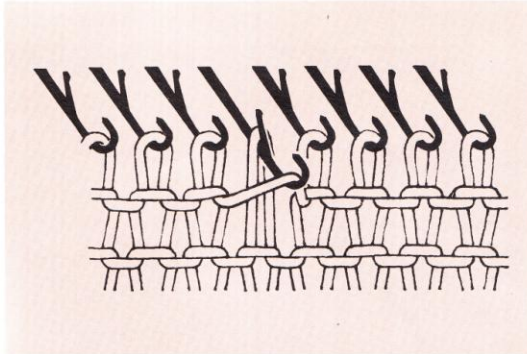




## What to do if . . .

The following instructions can be used either for a single bed or a double bed machine.  
The instructions printed on a grey background correspond to the double bed machine.

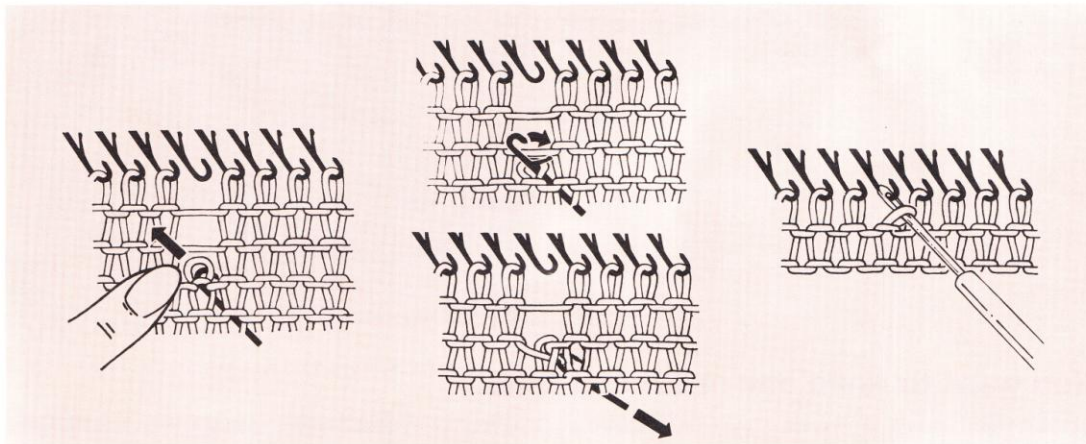
### A stitch drops one row



- Set the front bed to intermediary position.
- Replace the dropped stitch and the unknitted yarn onto the needle.
- Pass the stitch behind the needle latch.
- Place the yarn into the needle hook.
- Lower the needle by the heel to form a stitch.
- Reset the front bed to upper position.
- Continue to knit.

### A stitch drops several rows

- Set the front bed to lower position.
- Insert the latch needle tool a few rows under the dropped stitch, from the back of the knitting if it dropped on the back bed, from the front of the knitting if it dropped on the front bed.
- Push the tool up until the stitch slides behind the needle latch.
- Take the yarn from the row above into the hook of the tool.
- Pull the tool downwards until the latch of the tool closes and a new stitch is formed.
- When the last loop of yarn has been knitted, transfer the stitch onto the needle with the single eyelet tool.



### You want to remove half-knitted work from the machine

- Thread the machine with an auxiliary yarn.
- Knit a few rows.
- Unthread the carriage.
- Remove the weights.
- Move the carriage across and hold your knitting.
- The knitting will come off.

### You want to rehang half-knitted work onto the machine

- With the single eyelet tool, pick up the stitches of the last row knitted in main yarn.
- Place the stitches into the needle hooks.

## Stitches drop at the edge

- Check that the tension unit is correctly adjusted and threaded. An incorrect tension can cause loops, thus dropped stitches (see page 14).
- Check that the edge claws are regularly raised every 10 or 12 rows.
- Check the stitch size.
- Check the space selector.

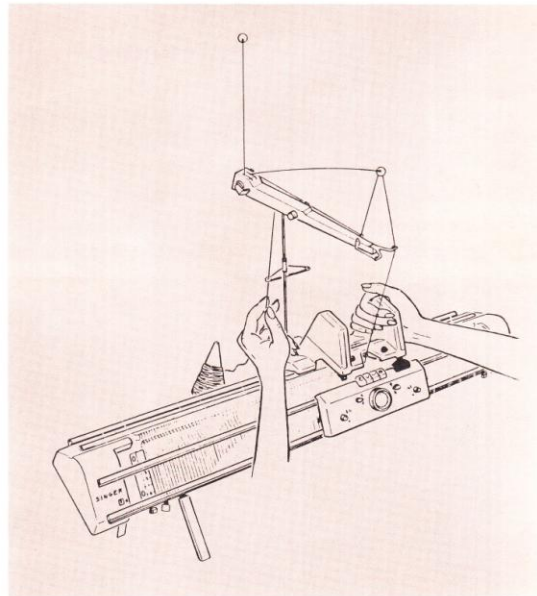
## Stitches drop inside the work

If stitches always drop at the same place:

- Check that the needles or needle latches are not damaged.
- If necessary, change the needles (see page 74).
- When knitting Fair Isle, check that the second yarn guide is correctly attached.
- Check that the main yarn has not slipped out of the second yarn guide.

## A loop is forming at the beginning of a row

- The carriage has probably been moved too far away from the last needle.
- Check the threading and pull on the yarn behind the tension unit before resuming knitting.
- Check that the tension spring is correctly positioned.



## You want to undo one or several rows

- Pull the yarn upwards to make the stitch of the previous row come up into the needle hook.
- Subtract each row you have undone from the row counter.

## You have undone an uneven number of rows

The yarn will be at the opposite side of the carriage.

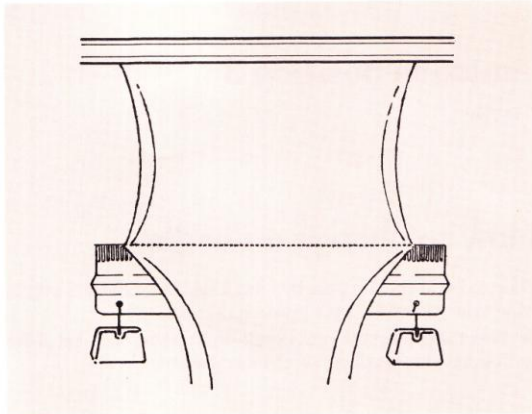
- Depress key 0.
- Set front bed to normal position.
- Move the carriage to the side of the yarn.
- Subtract one more row from the row counter.
- Depress the required keys.
- Rethread the carriage.



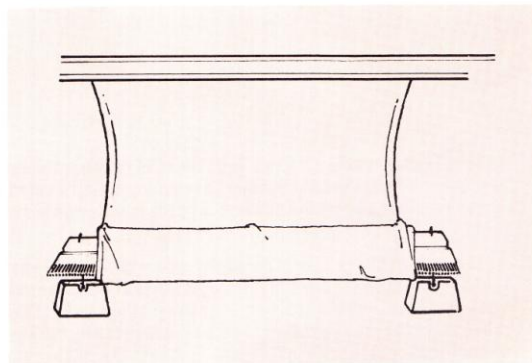
## The carriage is hard to push

- Check that the flow combs are really opposite when doing basic knitting or stocking stitch.
- Check that the front bed is not in upper position when using both carriages.
- Check that the stitch size is correct for the yarn you are using.
- Check that the machine does not need cleaning or lubricating.

## The weights reach the floor



- Move the needles up so that the stitches are laying on the latches.
- Remove the weights.
- Remove the wire from the cast-on comb and remove from the knitting.
- Insert the comb as high as possible in the knitting.
- Replace the wire.
- Rehang the weights.
- Lower the needles to position 1.



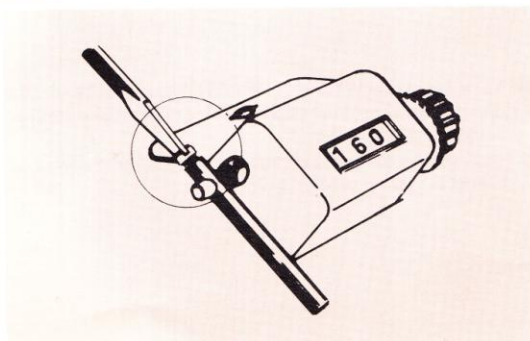
You can also:

- Move the needles up so that the stitches are laying on the latches.
- Remove the weights.
- Wrap the knitting around the comb.
- Rehang the weights from the back at each side of the comb.

## You cannot cast-on

- Check that the Jacquard keys have been cancelled.

## The row counter does not register anymore



- Loosen the screw of the row counter lever.
- Slightly move the lever downwards.
- Tighten the screw.

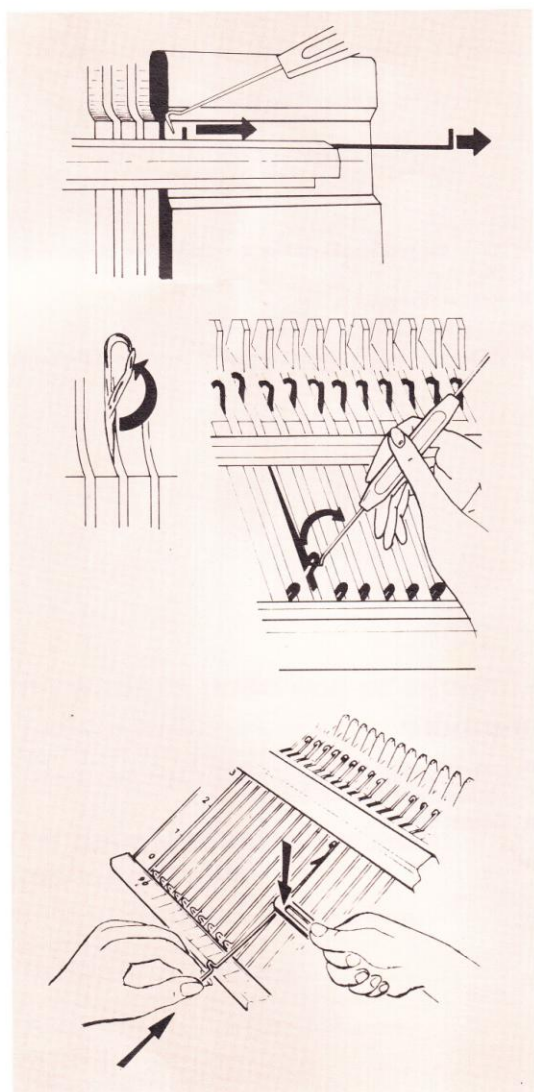


## The carriage jams during knitting

- Move the locking levers upwards and lift the upper part of the carriage.
- Slide the carriage to bring it back to its starting point.
- Using a transfer tool, rehang the stitches which are behind the needle latches into the needle hooks.
- Undo the partly knitted row.
- Reset the row counter, if necessary.
- Lock the carriage back to the slide rail.
- Resume knitting.

## The needles selected for Fair Isle remain in position 3

- With the single eyelet tool, replace the needles from position 3 to position 1.
- Undo one row.
- Replace the carriage on the side of the yarn.
- Check that the Jacquard key is correctly depressed.




## How to change a needle

The needles are held in place by a rod. It has a bent end at the right-hand side, under the upper slide rail.

- With the hock of the latch needle tool, pull the bent end of the rod until the needle to be changed becomes free.
- To remove the needle: CLOSE THE LATCH (it prevents the needle hook from catching the needle retaining spring located under the slide rail). Pull the needle out by the heel, towards the back.
- If the needle to be changed is damaged too much, if the needle hook is bent or if the needle latch is caught in the hook, snip the hook off with a pair of pliers before removing the needle. This prevents the needle from catching the retaining spring hidden under the slide rail.
- To replace a needle: OPEN THE LATCH and slide it under the upper slide rail pressing on the needle body to make insertion under the spring easier.
- Push the needle rod back into place (bent end showing upwards) to lock all needles again.

# Maintenance and care of your machine

Your machine will give many years of satisfaction if from time to time, you take care to clean and lubricate it.

- Periodically, remove the dust and the fluff of the yarn from the needle grooves, the slide rails and the inside of the carriages with a lint brush.
- After cleaning, lubricate the needle beds, the inside of the slide rails and the needle heels with a cloth impregnated with SINGER oil (needles in position 1).
- Move the carriages across the needles in position 1 with key  depressed to evenly distribute the oil.
- If necessary, clean the top of the carriages parts and machine with a moist cloth. Never use washing powder or any other abrasive product.
- Never pour oil directly onto the machine. Use an impregnated cloth.
- Never oil the inside of the carriages.

