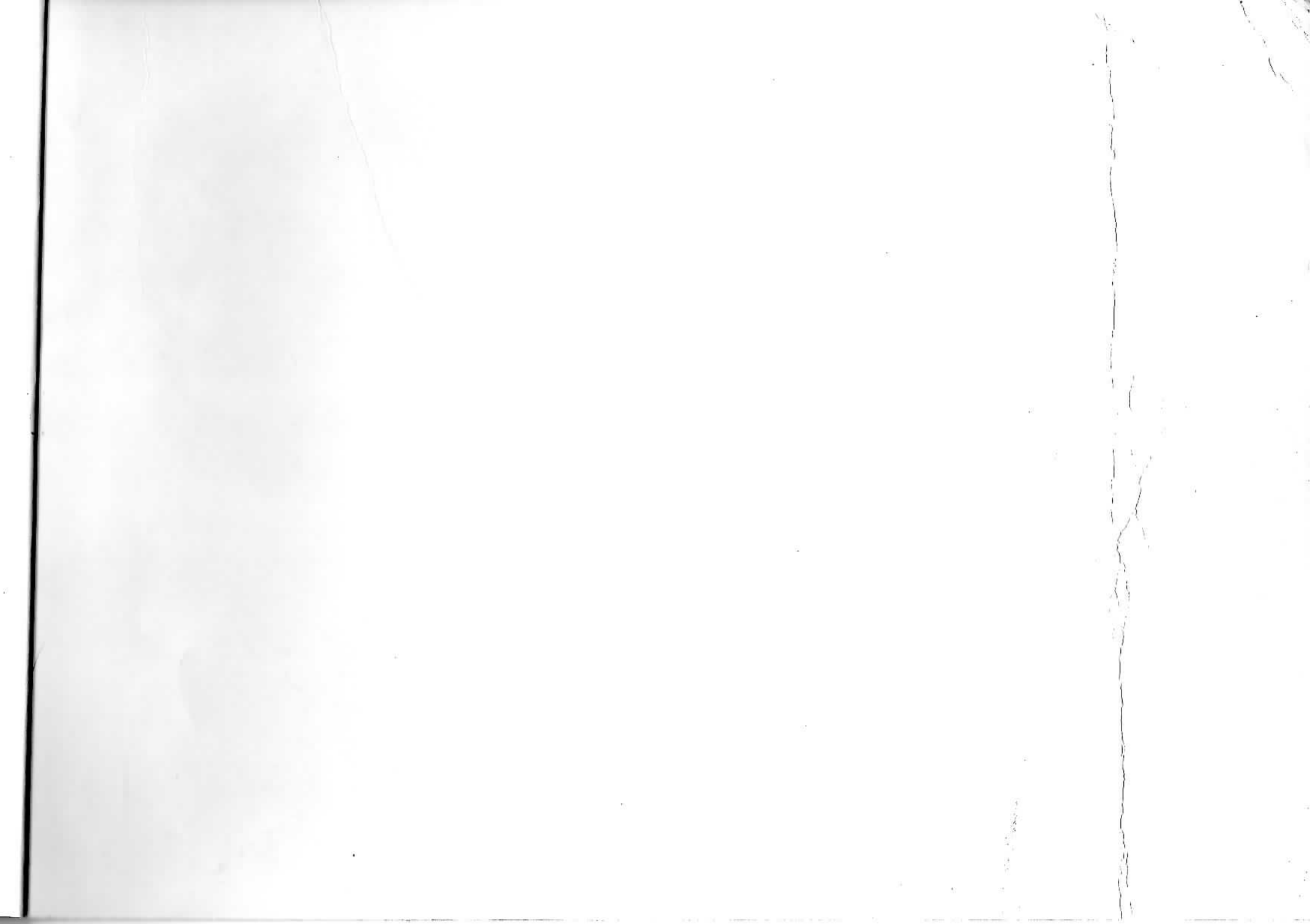


Knitting Machine



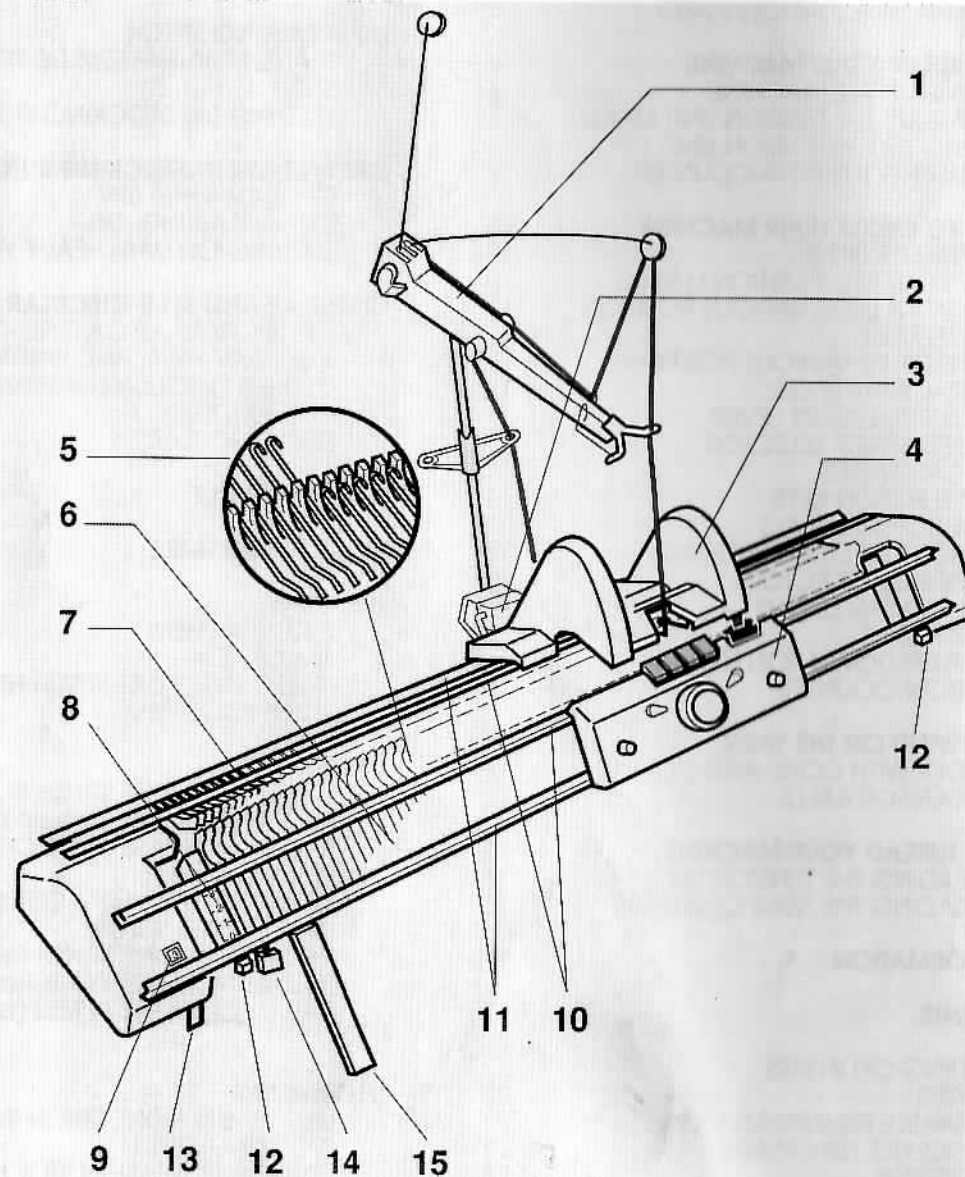
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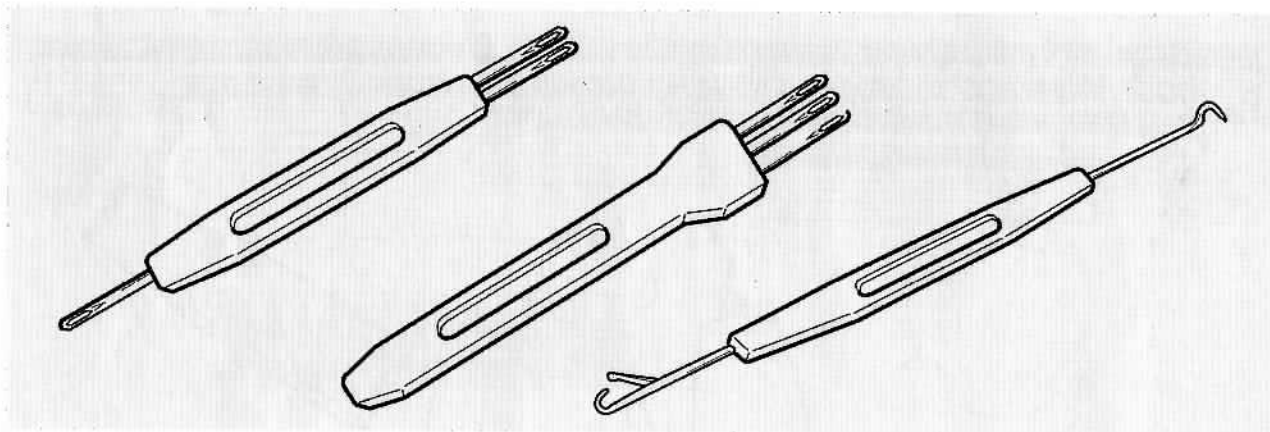
THE DOUBLE BED MACHINE

DESCRIPTION

1. Tension unit
2. Row counter
3. Rear carriage
4. Front carriage
5. Needles
6. Front bed
7. Rear bed
8. Needle position scale
9. Space selector indicator
10. Upper slide rails
11. Lower slide rails
12. Front bed position lever
13. Bed space selector
14. Intermediary lever
15. Racking lever

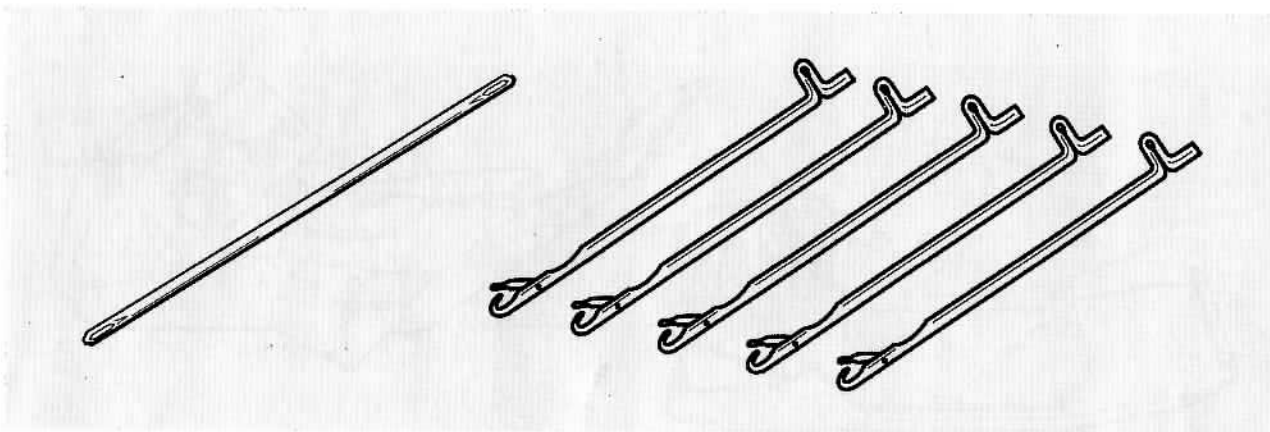


THE MACHINE'S ACCESSORIES

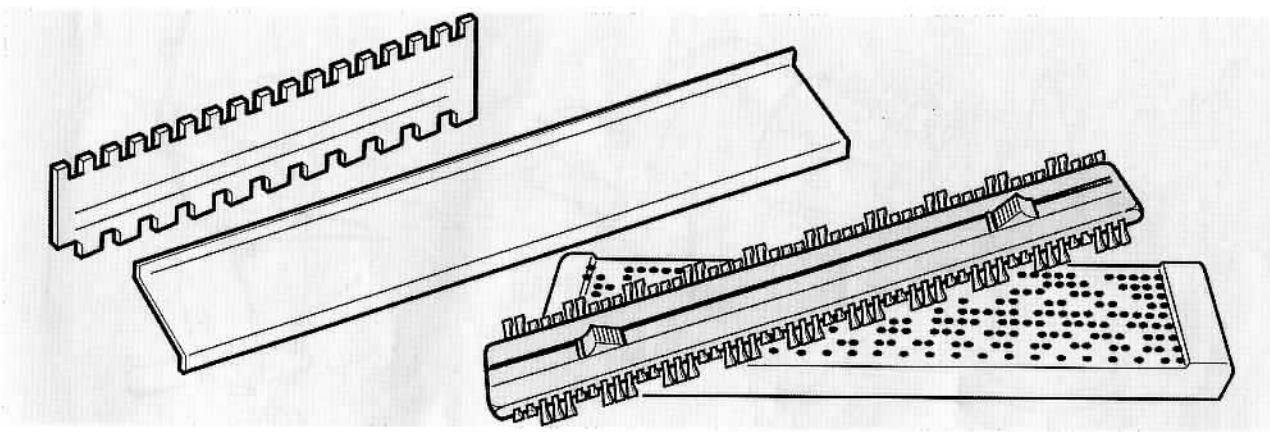


Not all the accessories illustrated in this brochure are necessarily supplied with your machine. You will be able to obtain them from your retailer.

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



- Double-eyelet needle for transferring the stitches of one bed onto the other.
- Spare needles.

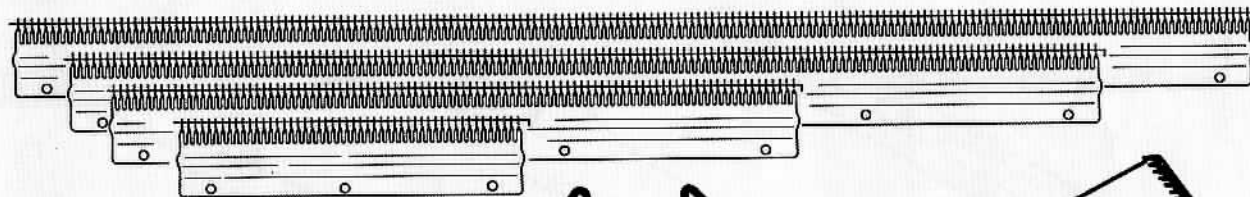


- Needle selector to position one of two needles or two of three needles.
- Needle pushing ruler.
- Universal needle selector with grid to select the required needles when knitting Fair Isle and fancy patterns.

THE MACHINE'S ACCESSORIES

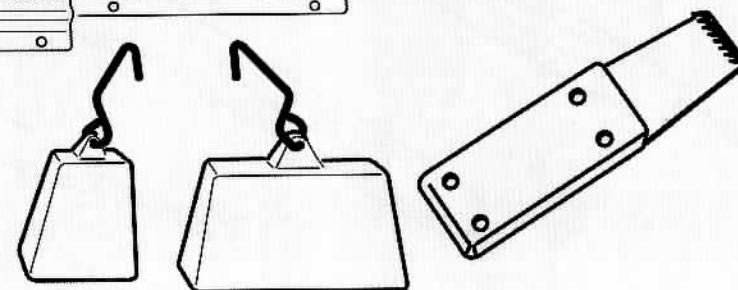
- Knitting cast-on combs

- 50 stitches
- 100 stitches
- 150 stitches
- 180 stitches



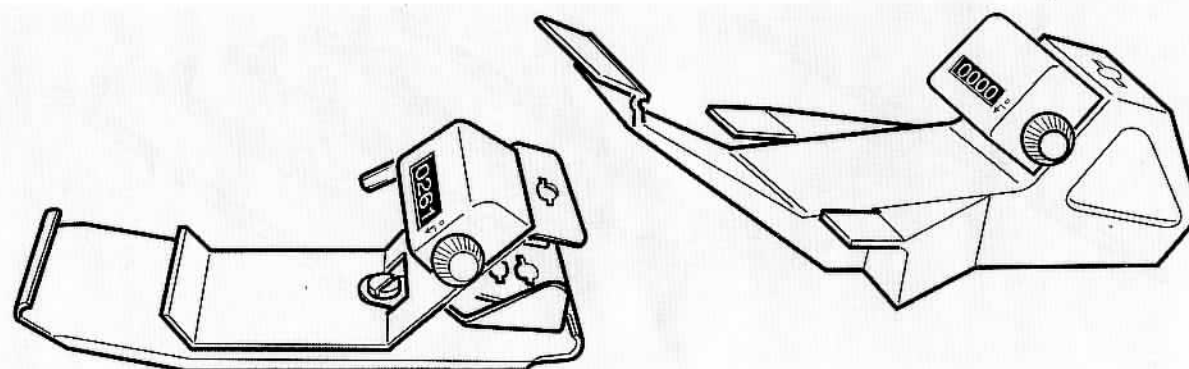
- Weights to keep down the knitting

- Medium weights
- Large weights
- Edge claw



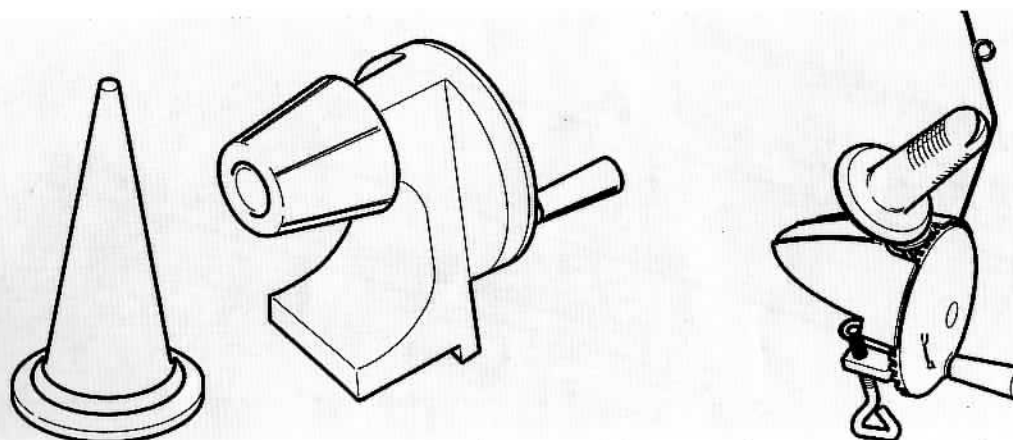
- Tension unit stand with row counter.

Depending on the type of machine, you will have one of the two row counters.

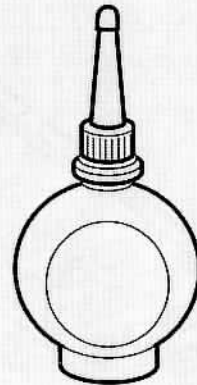
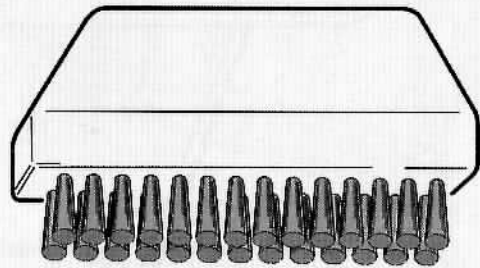


- Cone winder with cones and collars for the yarn to be distributed evenly.

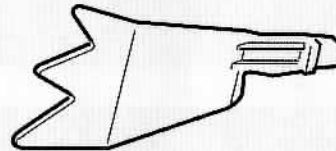
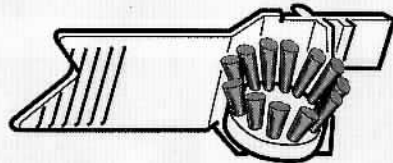
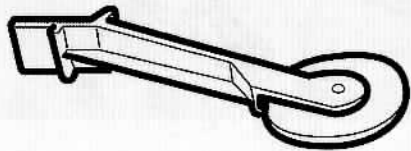
- Winder to prepare yarn balls to be used directly. This accessory also allows you to wind on odd yarns in order to put them away more easily.



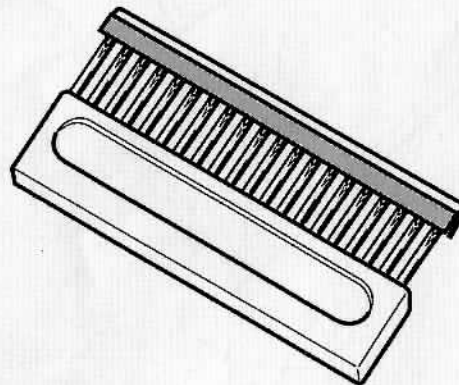
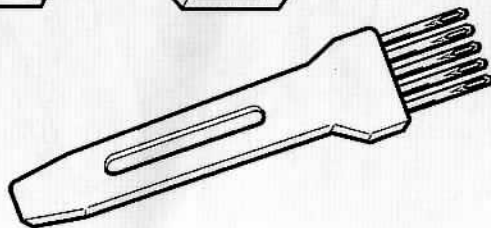
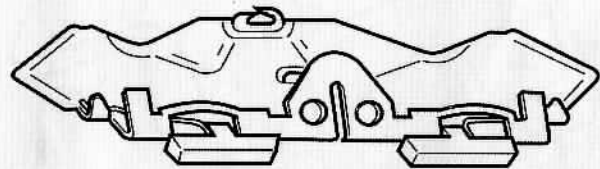
THE MACHINE'S ACCESSORIES



- Lint brush
- Oil dispenser.



- Push down rollers for knitting ribs with heavy yarn.
- Weaving effect brushes.
- Jacquard claw used for some knitting with two yarns.



- Second yarn guide when knitting Fair Isle.
- 6-eyelet transfer tool
- 20-eyelet transfer tool. It makes it easier to transfer a group of stitches in the middle of the row or from one bed to the other.

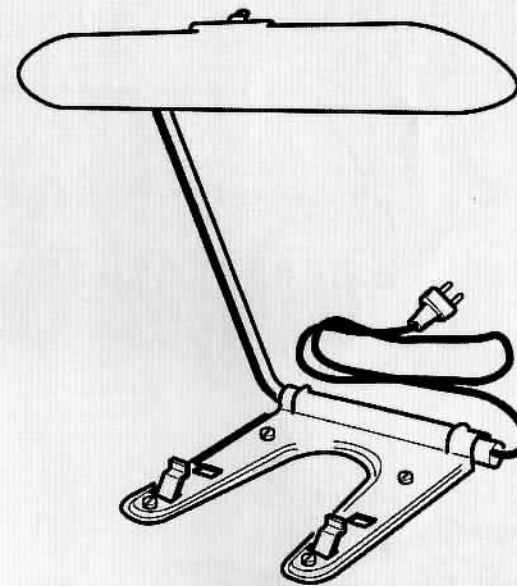
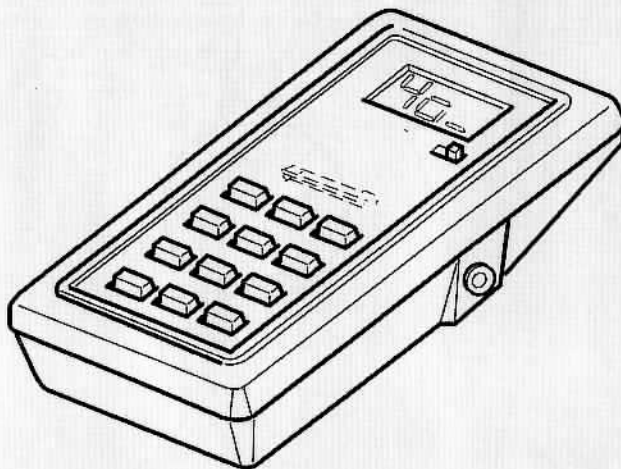
THE MACHINE'S ACCESSORIES

- Knitting computer

Allows you to create your own fashion whilst avoiding all tedious calculations. This accessory is delivered with a book of patterns and an instructions manual.

- Lamp

Provides perfect lighting for your machine's work area.

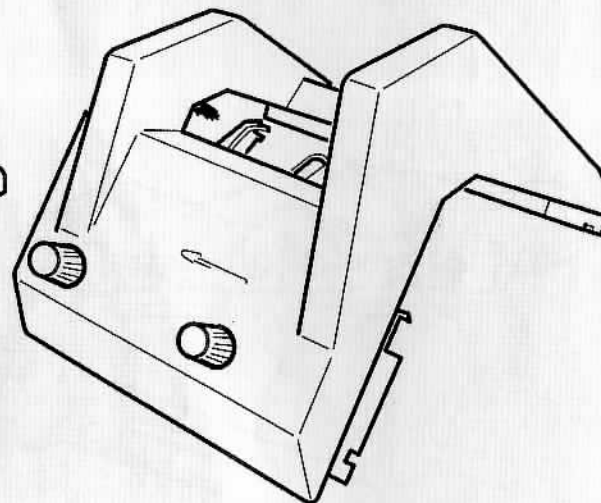
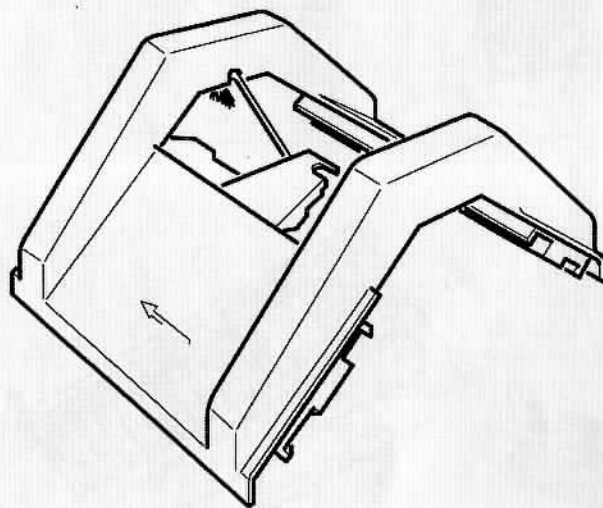


- Transfer carriage

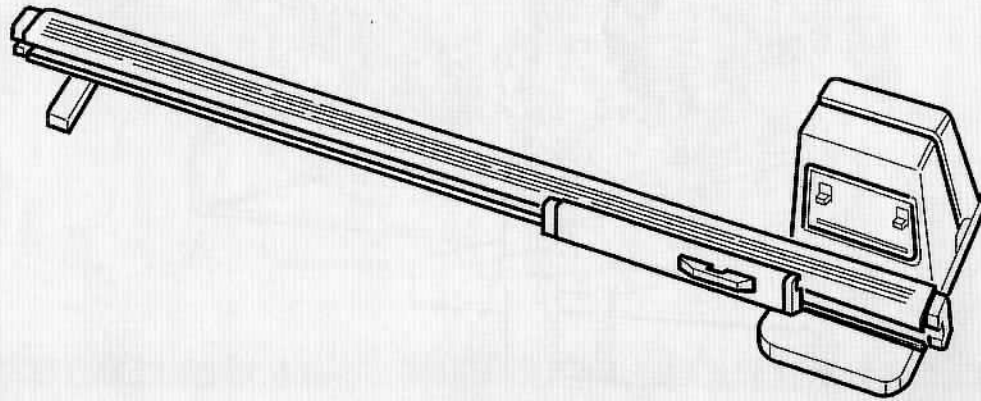
Facilitates the transfer of all kinds of ribs to stocking stitch.

- Double garter stitch carriage

Allows you to quickly get the double garter stitch and its derivatives as well as fancy lace patterns.



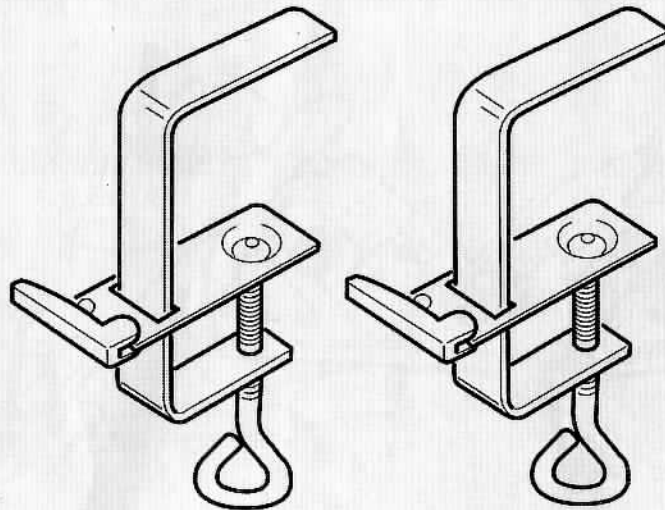
THE MACHINE'S ACCESSORIES



- **Motor-Drive**

Electric motor which can be fitted easily onto your knitting machine without any adjustments being necessary. It fully replaces the manual carriage drive. It allows a constant knitting speed whatever the thickness of the yarn and the stitch being knitted. It ensures perfectly even knitting.

For better results, try the Motor Drive at your nearest retail shop.



- **Extra-large table clamps to set up your machine on a thick table.**

HOW TO SET UP YOUR MACHINE

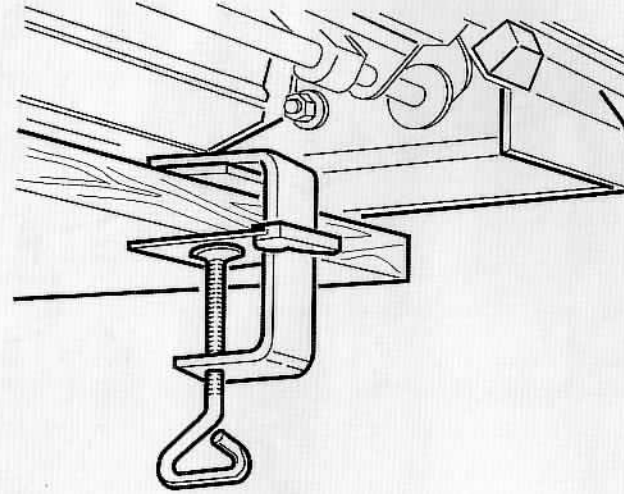
SETTING UP THE MACHINE

If you have a folding table :

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

If you have another type of table :

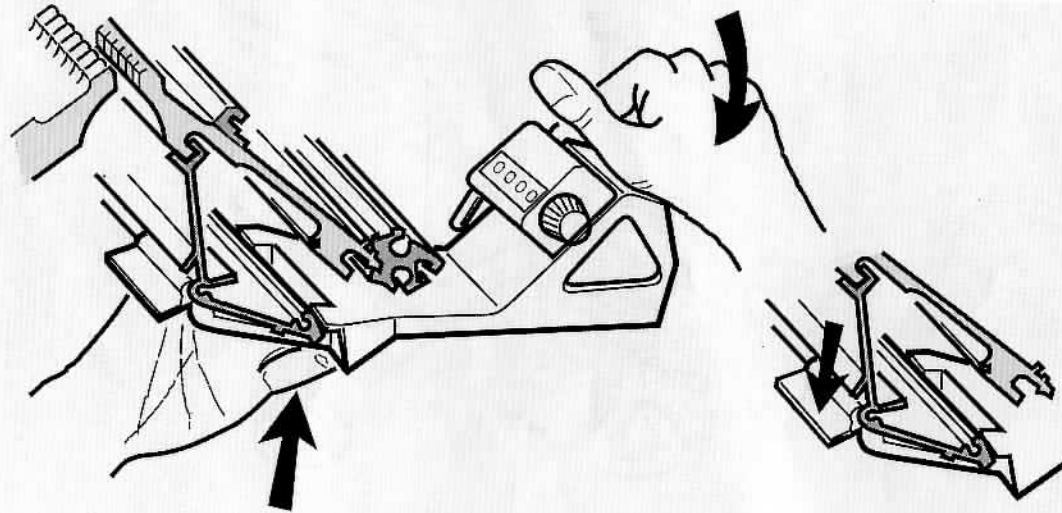
- Fix the machine in the same way as for the folding table.
- If the table top is very thick, you will be able to obtain extra-large table clamps from any retailer.



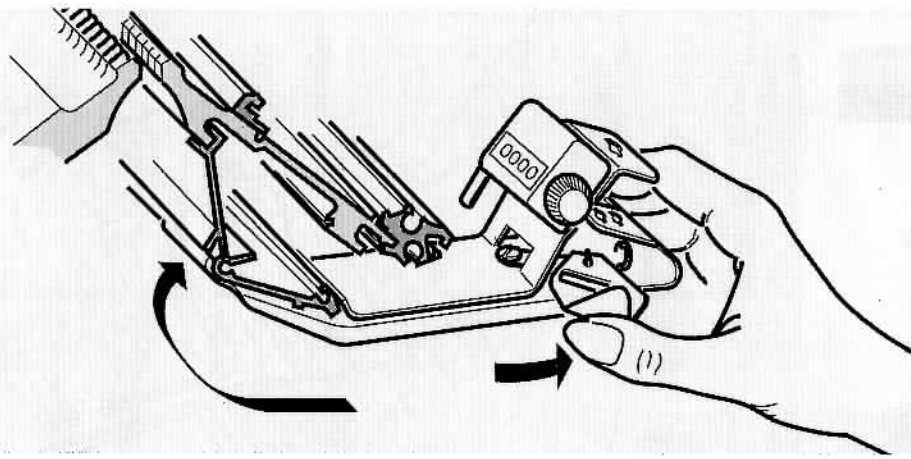
SETTING UP THE TENSION UNIT STAND

Setting up the plastic tension unit stand :

- Slide the tension unit stand under the rear needle bed, in the centre, in line with the 0 on the graduated scale.
- Insert the two small wings located on either side of the row counter base under the needle bed.
- Pass your hand under the front needle bed and hold the front of the row counter base up.
- At the same time, press the rear of the row counter base to lock it.
- To remove the tension unit stand, press the clip down.



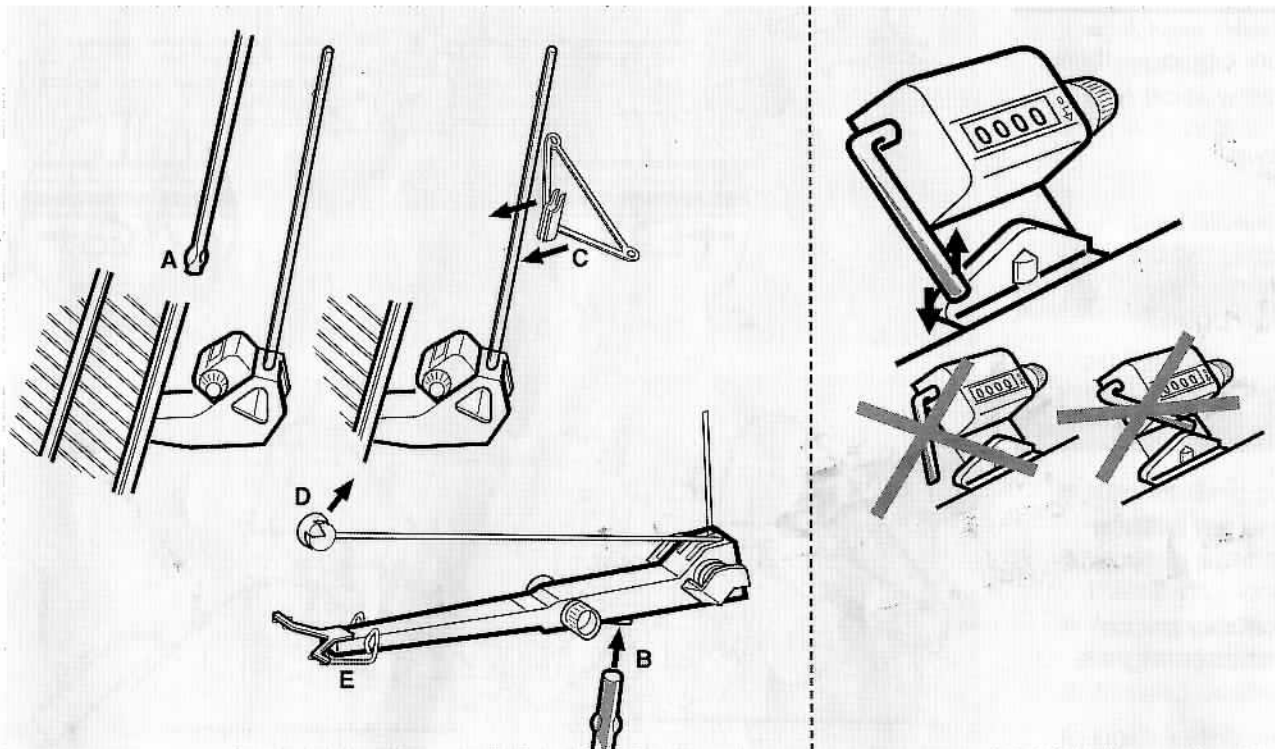
SETTING UP THE TENSION UNIT STAND



Setting up the metal tension unit stand :

- Slide the tension unit stand under the rear needle bed, in the centre, in line with the 0 on the graduated scale.
- Insert the forward edge of the stand underneath the needle bed.
- Lock the tension unit stand by pushing the lever to the left.

SETTING UP THE TENSION UNIT AND ADJUSTING THE ROW COUNTER



Setting up the tension unit :

- Insert the tension rod (A) in the hole at the rear of the tension unit stand.
- Clip the feed guide (C) onto the tension rod.
- Fit the tension unit onto the end (B) of the tension rod.
- Free the wheels (D) located under the guides in an upside-down V shape.

Adjusting the row counter :

- Move the counter's arm down or up.
- Move the carriage along to check if the counter works.

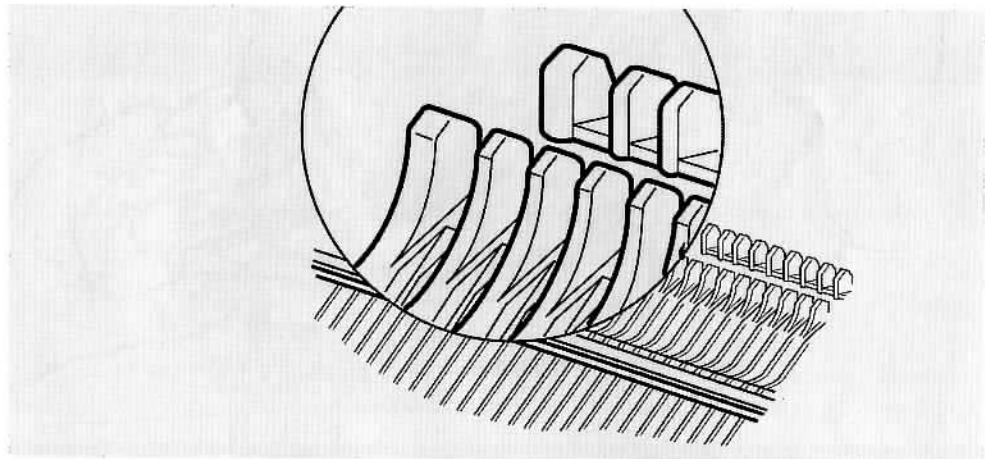
GETTING TO KNOW YOUR MACHINE

THE NEEDLE BEDS

- Both the needle beds are made out of totally rigid aluminium alloy.
- Each bed has 180 grooves into which the needles slide.
- The upper part of the needle bed is comprised of a series of flow combs which allow the yarn to slide from one needle to another.

The rear needle bed, REB is fixed.
The front needle bed, FRB is mobile.

It can be adjusted for two working positions and two non-working positions.

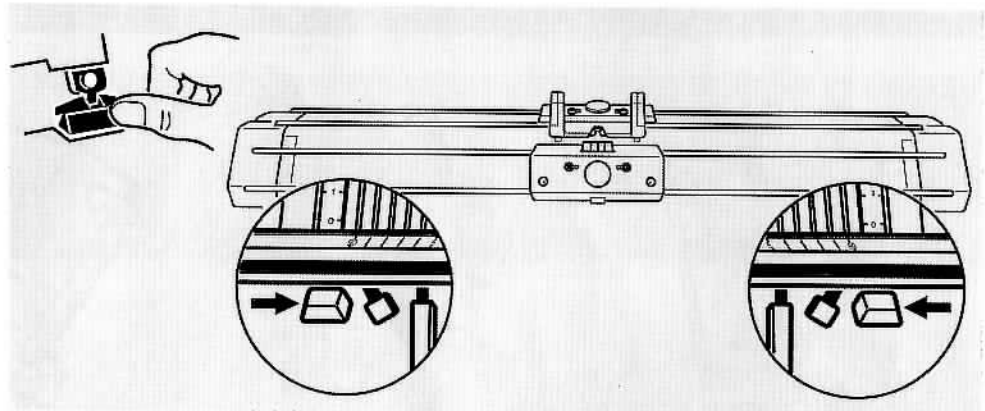


THE FRONT BED POSITION LEVERS

- The carriages are coupled by a catch located on the front carriage. It fits into the clip located on the rear carriage.

To separate the two carriages, press the coupling catch down.

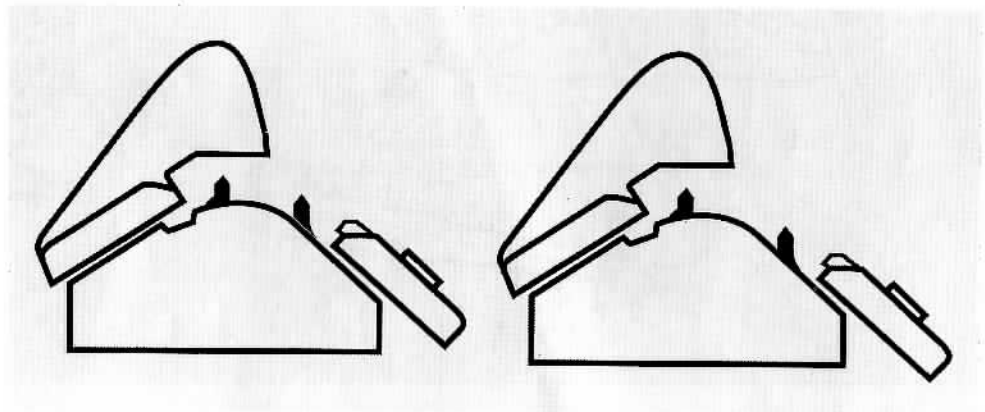
- Push both the position levers located at the ends of the needle bed towards the middle and release them. The needle bed can now be moved freely.
- Press and release the levers each time you want to change position.

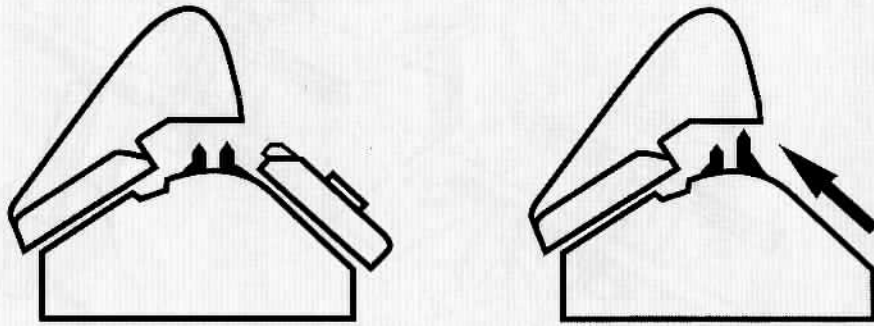


THE FRONT BED'S VARIOUS POSITIONS

NON-WORKING POSITIONS

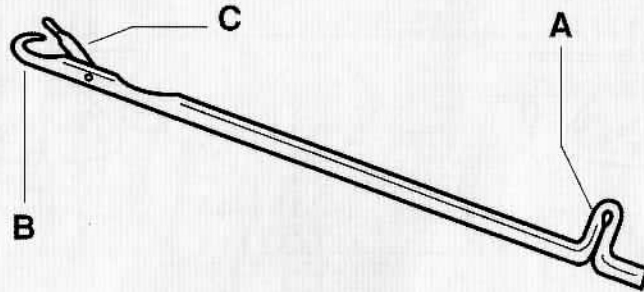
- Intermediary position, used to check the work in progress when knitting on two beds.
- Down position, checking your knitting in progress is made easier as are some operations like casting-on, casting-off, checking and counting the rows, etc.





WORKING POSITIONS

- Normal position : both the needle beds are at the same height. This position is used for casting-on and when both carriages are coupled.
- Up position : the front bed is higher than the rear bed. This position is only used for stocking stitch knitting and its derivatives and when only the rear carriage is used. The flow combs must always be opposite each other.

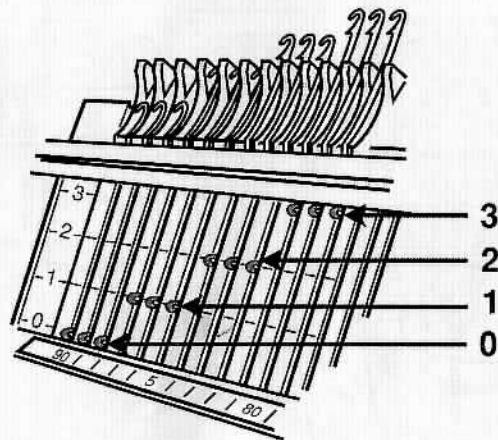


THE NEEDLES

Each needle bed has 180 needles.

EACH NEEDLE IS COMPRISED OF THREE DISTINCT PARTS :

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



THE NEEDLES' VARIOUS POSITIONS

There are 4 needle positions marked 0-1-2-3 on the ends of the front needle bed. The two working positions are marked on the ends of the rear needle bed.

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

To position the needles, use the needle pushing ruler or one of the selectors.

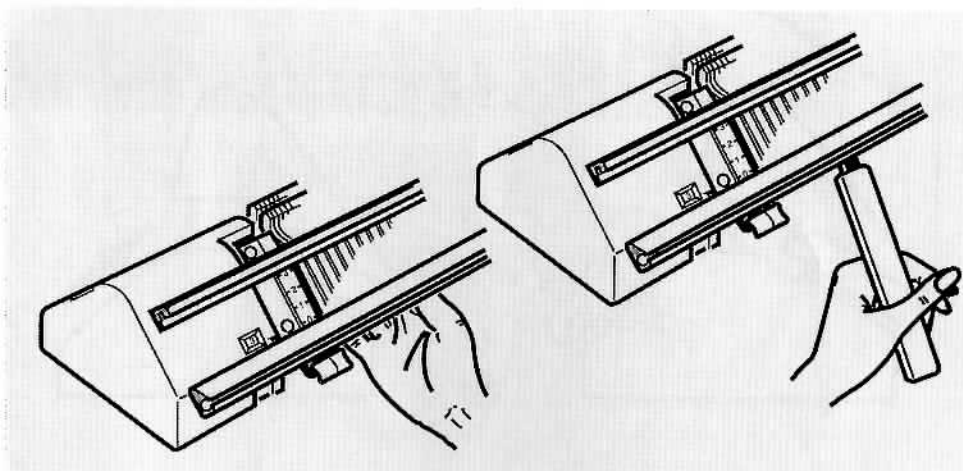
THE RACKING LEVER

The racking lever is used to move the front bed sideways to knit some types of ribs, racking patterns (zig-zag effect) or fancy patterns.

The front bed thus moves in 8 positions shown on the left of the lower slide rail.

Each notch to the right or to the left corresponds to a racking.

- 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.



THE INTERMEDIARY LEVER

- The various positions of the front needle bed.
- The big racking lever allows the front bed to move sideways but with the flow combs set in various positions.
- The intermediary lever is used to change the position.

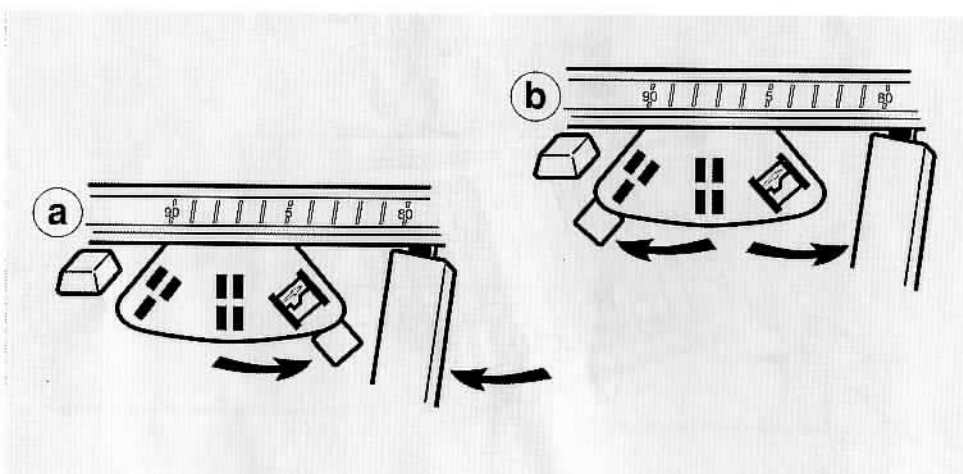
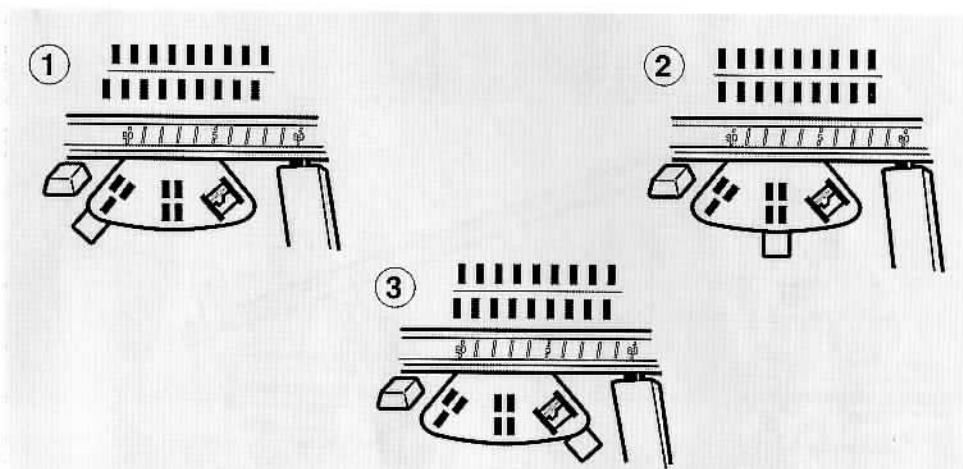
The intermediary lever's various positions :

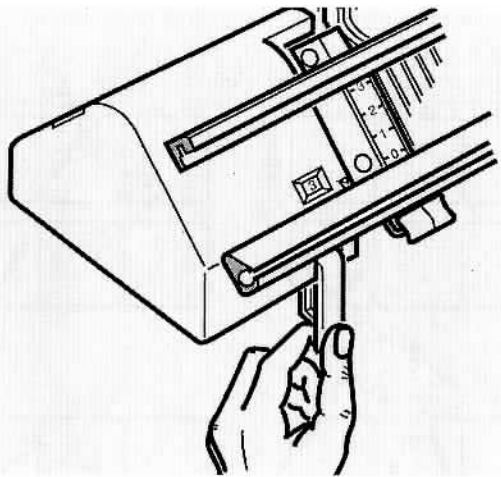
1. 1/2 position :
The front needle bed's needles are half alternated.
2. Face-to-face position :
The needles are opposite each other.
3. 1/4 position :
This is the position used to transfer the stitches from one bed to the other (using the special carriage).

Handling operations :

The small intermediary lever moves easily together with the big racking lever.

- a) To move it to the right : place your hand on the small and big levers (as if you were holding a set of pliers) and then squeeze them.
- b) To move it to the left : use both hands to separate both the levers.



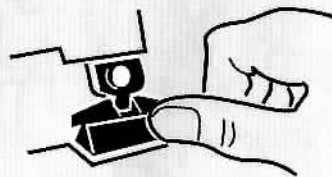
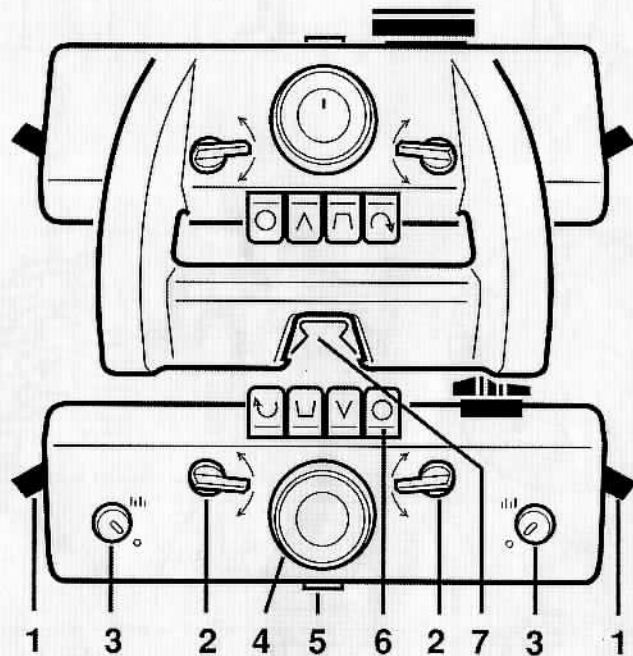


THE BED SPACE SELECTOR

- Using this lever, the two needle beds can be spaced out at a distance of from 3 to 6 mm from each other depending on the thickness of the yarn.

TYPE OF YARN	NEEDLE BED SPACE
Fine	3
Medium	4 or 5
Thick	6

- Before putting the machine away, set the space selector to 6 to prevent the lever from being damaged.



THE CARRIAGES

Your knitting machine has two carriages : one for each needle bed. The to and fro movement of the carriage controls the movement of the needles.

You will be using :

- either both the carriages together for all the types of ribs, the circular stocking stitch, and the fancy patterns,
- or the rear carriage alone for the stocking stitch and its derivatives.

1. Locking levers
2. Needle return buttons
3. Selection buttons
4. Stitch size dial
5. Jacquard key
6. Selection keys
7. Yarn guide

To separate the two carriages, flip the coupling latch backwards.

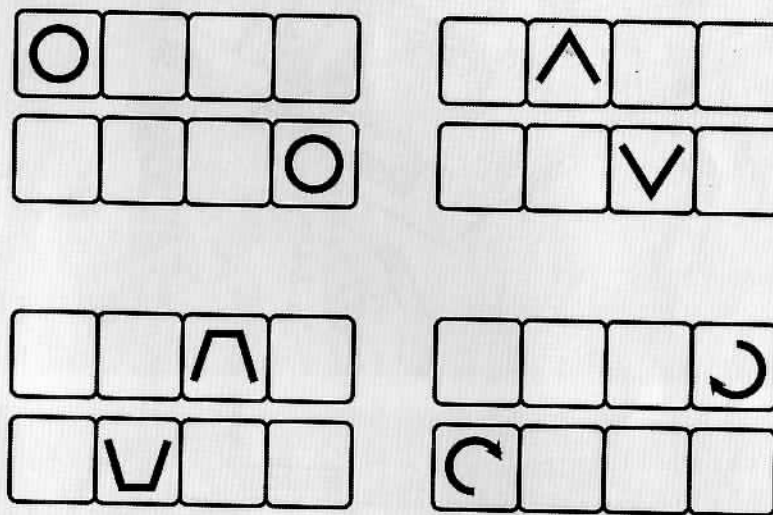
THE SELECTION KEYS

● Each carriage has four keys.

- key : It cancels all the other keys
- ^ key : It is used to form the stitch after the carriage passes each time.
- ∧ key : It is used to form tuck stitches.
- ↻ key : It enables you to knit alternately on the front needle bed (from right to left) and on the rear bed (from left to right). When used alone, it is used for circular or tubular knitting (socks, sleeves).

The ∧ and ↻ keys can be pressed at the same time to knit some ribs or fancy patterns.

Both carriages also have a Jacquard key. It is used with the ^ or ↻ key.

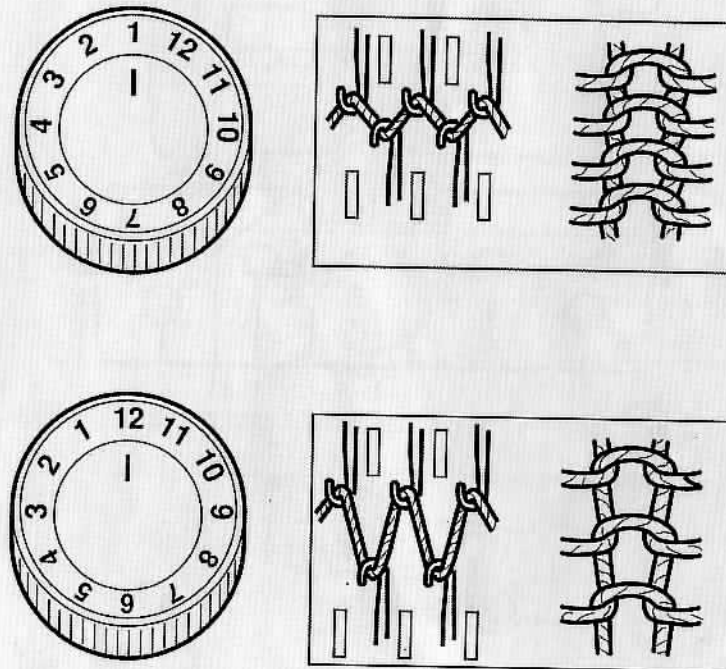


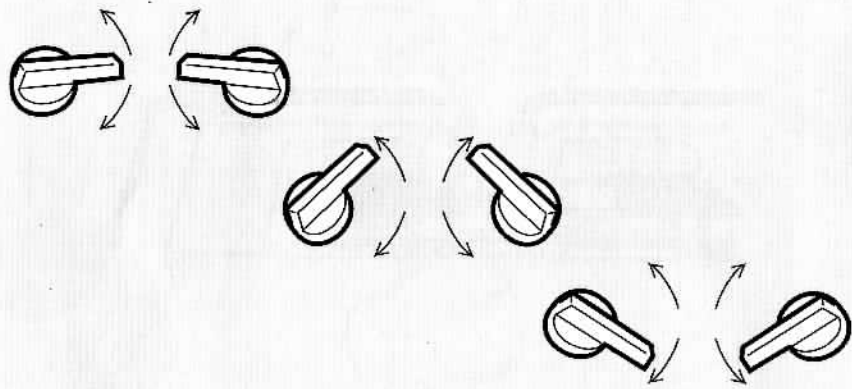
THE STITCH SIZE DIALS

- The stitch size dial of each of the carriages determines the downward movement of the needle and thus adjusts the length of the stitch.
- Turn the dial to bring the required stitch size level with the arrow.
- The higher the number, the looser the stitch
- The lower the number, the tighter the stitch.

ADJUSTING THE STITCH SIZE (STOCKING STITCH) IN RELATION TO HAND KNITTING NEEDLES

Hand knitting needles		Stitch size dial
N° 2	Very fine yarn	3 - 4
N° 2 1/2	2-ply	4 - 7
N° 3	3/4-ply	7 - 9
N° 3 1/2	Double knitting	9 - 10
N° 4	Thick yarn	10 - 12

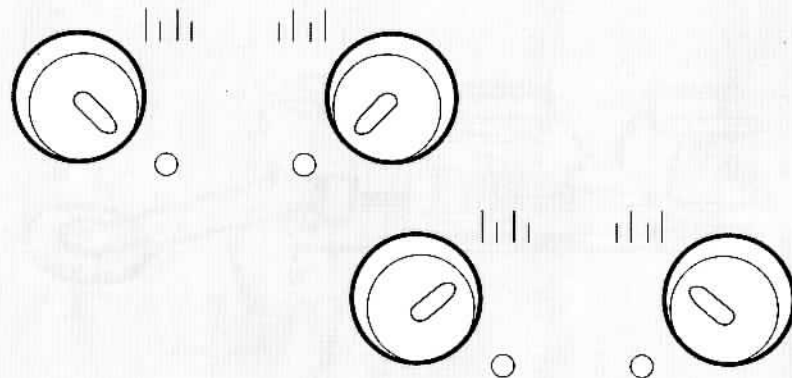




THE NEEDLE RETURN BUTTONS

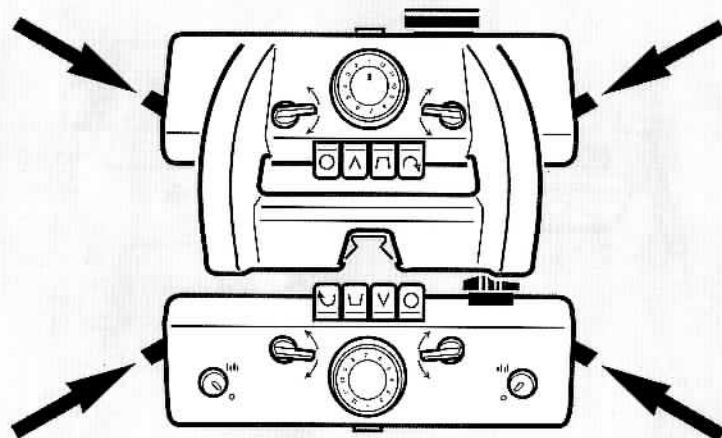
Each carriage has two needle return buttons with three positions :

- The central (neutral) position is used for normal knitting.
- The lower position brings down the needles from holding position 3 to working position 1.
- The upper position, on the front carriage, is used at the same time as the needle selectors. The needles selected will then be brought up from working position 1 to holding position 3.
- The upper position on the rear carriage is used for the Jacquard (close rib) stitches.



THE NEEDLE SELECTORS

- The lower position (or neutral) is used for normal knitting.
- The upper position is used to knit every other needle on the front needle bed for Jacquard, close rib or fancy close ribs. An even number of needles then has to be brought up to the front needle bed. Furthermore, the carriage's keys are generally cancelled. To obtain the desired position, press in and turn the selectors.

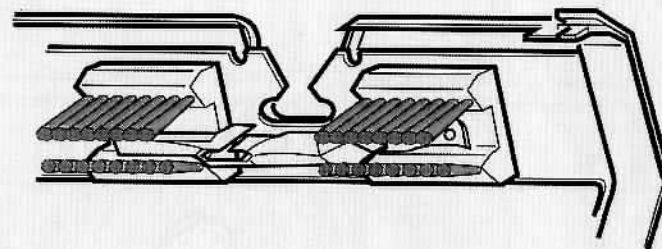


THE LOCKING LEVERS

- The locking levers make sure that the carriages are in the right position on the slide rails and make it possible to move them without knitting and to take them off the slide rails. To remove a carriage, press the two levers upwards, lift the upper part of the carriage and slide it in the required direction.
- Before knitting, always make sure that the carriages are securely locked onto the upper slide rails so as to avoid any damage to the cams.
- If you remove a carriage from the machine, always lay it upside down so as to not damage the cams.

THE BRUSHES

- The rear carriage's four brushes open the needles' latches in working position when the carriage passes.

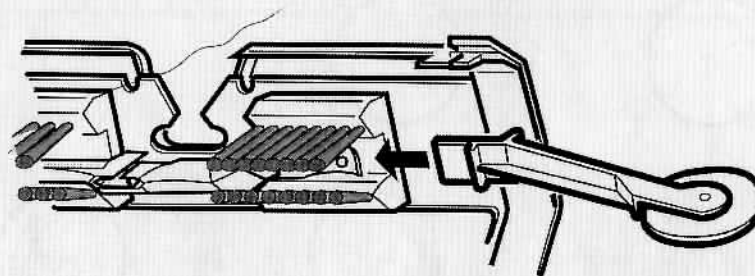


THE PUSH DOWN ROLLERS

These rollers are used to help the knitting to go down when knitting ribs with thick yarn and to improve the quality of the knitting with some materials.

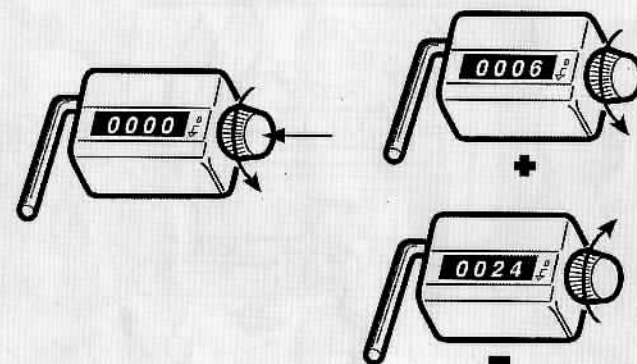
To fix the rollers :

- Separate the carriages.
- Unlock and lift the back carriage.
- Slide the roller supports into the springs ocated between the brushes.
- Lock the carriage and couple it to the front carriage.

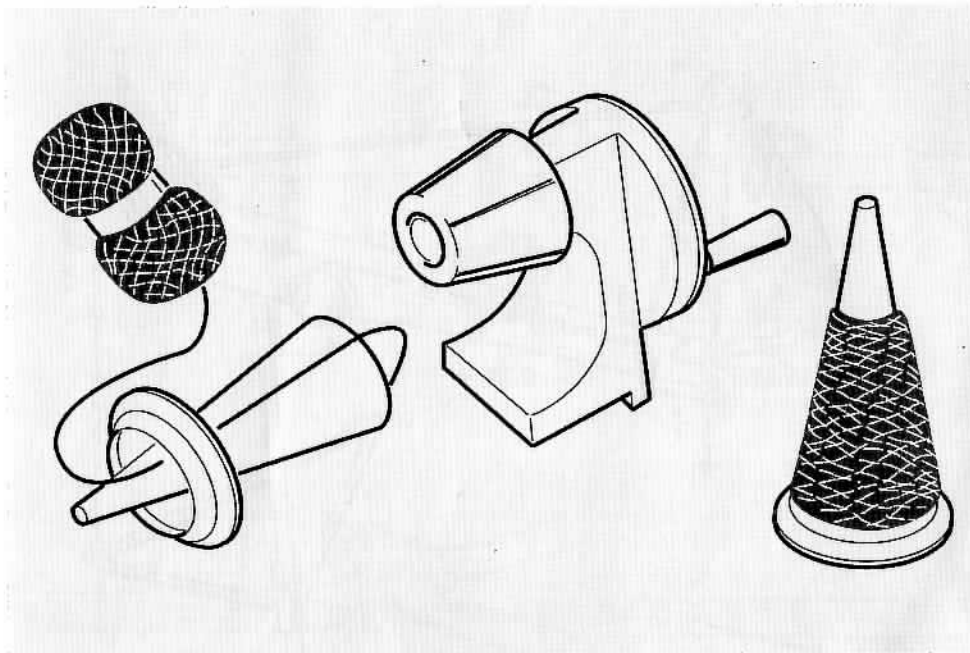


THE ROW COUNTER

- The knob is used to reset the counter to 0. Press and turn it towards you.
- The knob turns in both directions and adds or subtracts units.
- To subtract, turn the knob away from you.
- To add, turn the knob towards you.

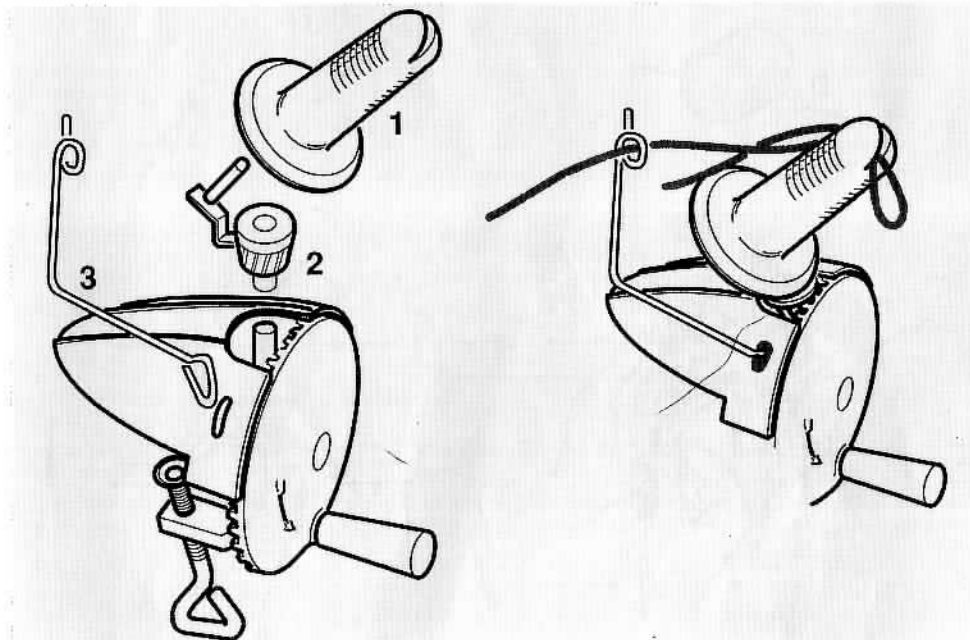


HOW TO WIND ON THE YARN



WINDER WITH CONE AND COLLAR

- Take out the inner end of the yarn which is easy to find at the bottom of the ball (in relation to the label).
- Slide the collar onto the cone.
- Pass the yarn between the collar and the 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 cone winder's handle and starting at the base of the cone, guide the yarn in a criss-cross movement filling up only 2/3 of the cone.
- Remove the cone with its collar by the tip and place it on the table behind the tension unit.



WINDER FOR BALLS

- Fix the winder. Mount the winder by placing spool 1 on the axis of part 2 and then on the axis sticking out from the winder. Press the yarn guide 3 into the groove provided.
- Pass the ball's yarn through the eyelet of the yarn guide and then pinch it in the slit on the top of the winder.
- Turn the winder's handle while letting the yarn unwind in front of the yarn guide's eyelet.
- Remove the ball from the spool by pulling it upwards.

HOW TO THREAD YOUR MACHINE

THREADING THE TENSION UNIT

THE TENSION UNIT is comprised of two yarn threaders.

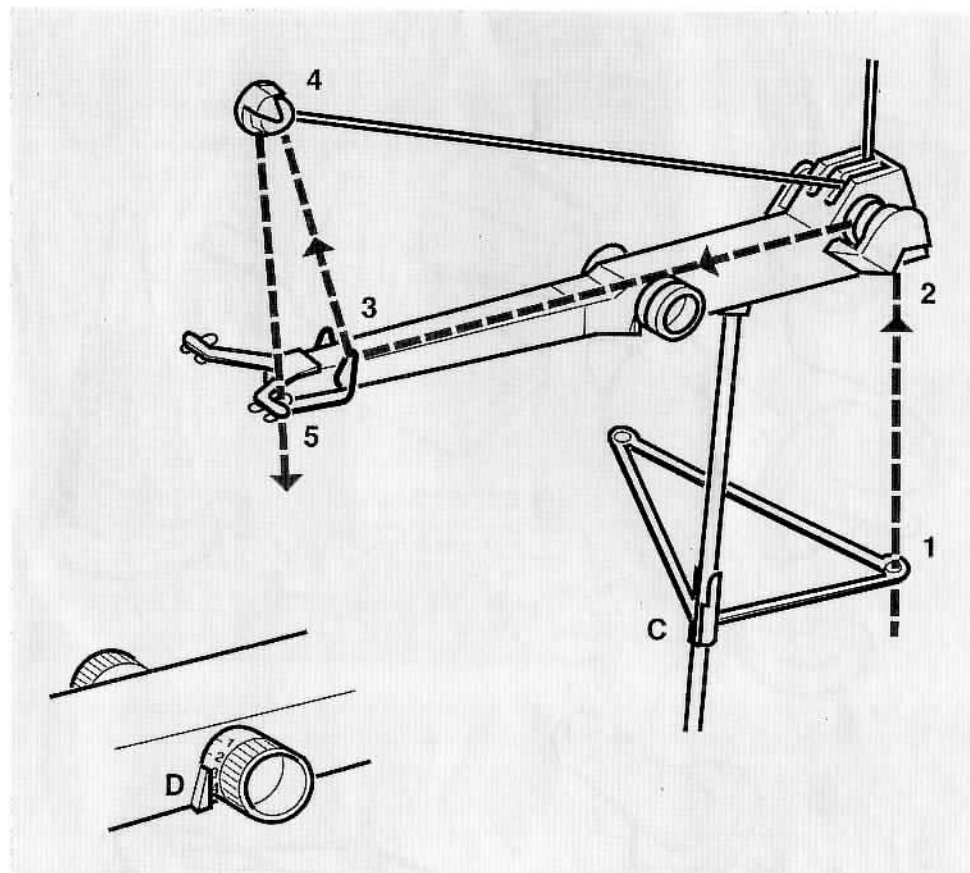
- To thread a single yarn, use either the right- or left-hand side of the tension unit.
- Place the cone with its yarn or the ball on the table behind the tension rod, under the feed guide.

Pass the yarn :

1. Into the feed guide
2. Between the two metal discs
3. Under the guide in the shape of an upside down V
4. Onto the roller
5. Into the last guide
6. Between the 2 needle beds.

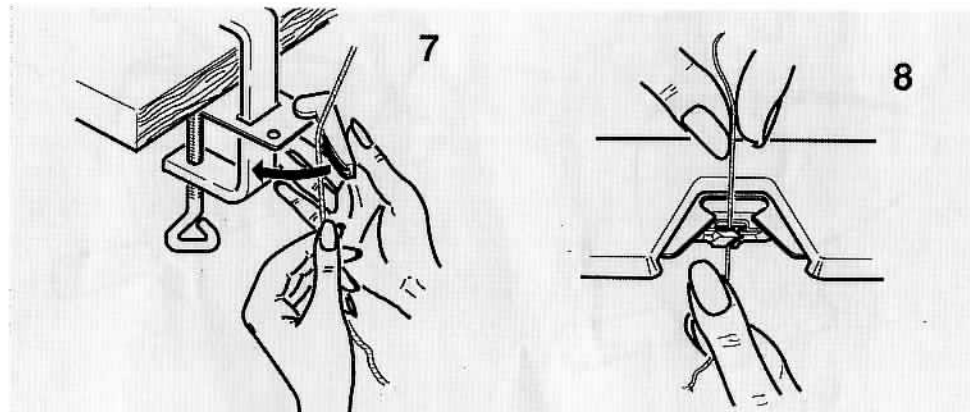
Adjusting the yarn's tension :

The yarn's tension can be adjusted by turning the "D" knob, with the arrow level with number 1, 2 or 3 for fine yarns or level with a higher number for thicker yarns.

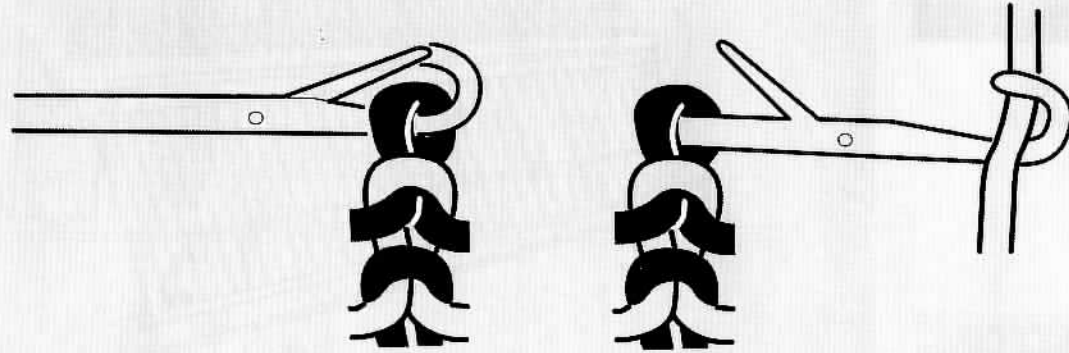


THREADING THE REAR CARRIAGE

7. Fix the yarn to the end of the yarn clip located on the table clamp.
8. Into the rear carriage's yarn guide.

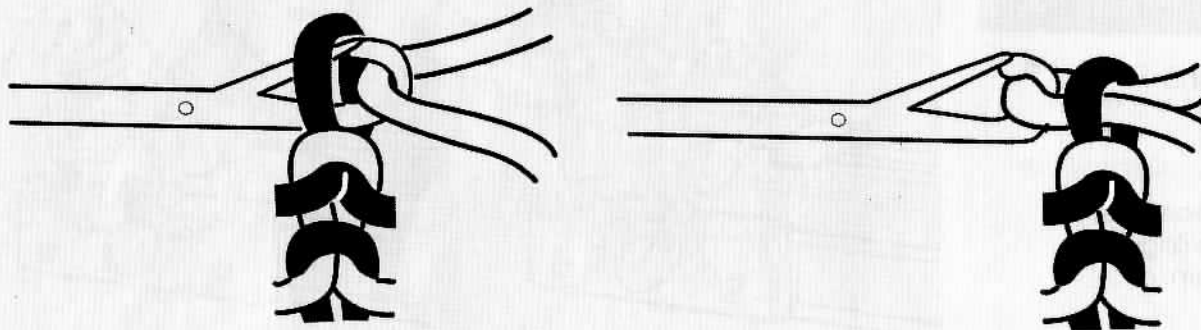


STITCH FORMATION



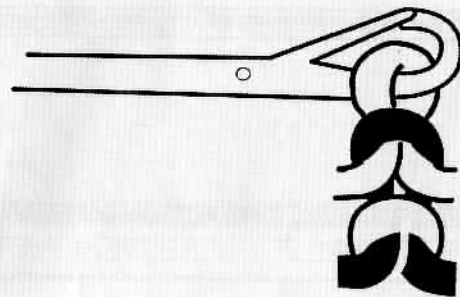
1. Before the carriage moves across, the needle is in working position 1. The stitch is held in the needle hook.

2. When the carriage moves across, the needle's heel is pushed up and the stitch slides behind the latch. The yarn to form the next stitch is placed on the hook.



3. The needle starts to go down and the previous stitch closes the latch again. The needle continues to go down. The previous stitch slides over the hook.

4. The previous stitch slips out of the needle and is held by the loop of the new stitch.



5. The new stitch has now replaced the previous one on the needle and is now waiting for the carriage to move across again.

The lower the needle goes into the needle bed, the looser the stitch will be. The length of the stitch is set using the stitch size dial which determines the movement of the needle down to the needle bed.

SOME HINTS

CENTRING THE KNITTING

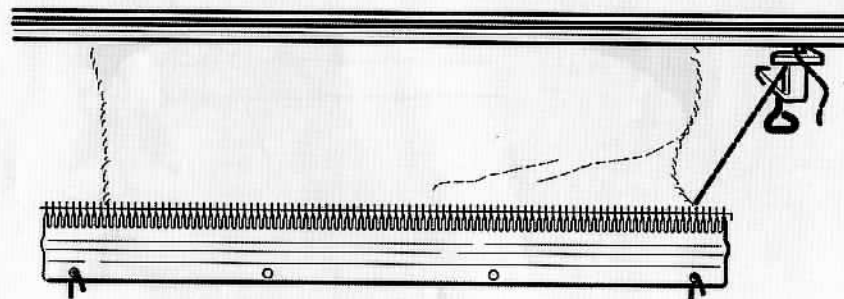
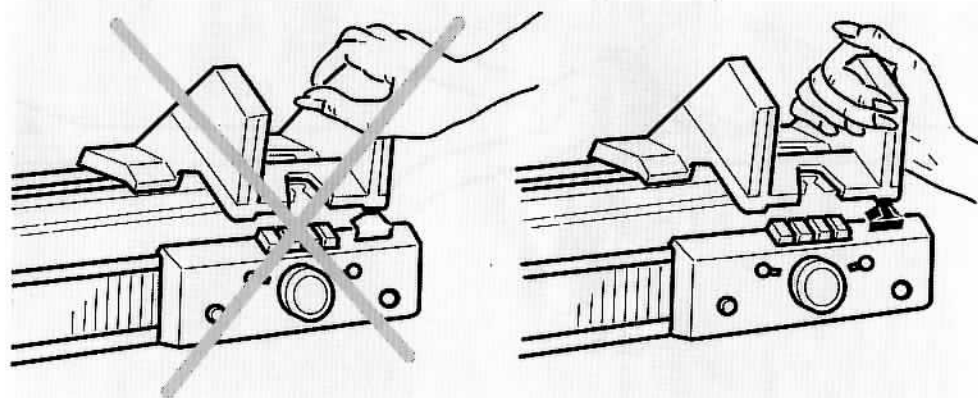
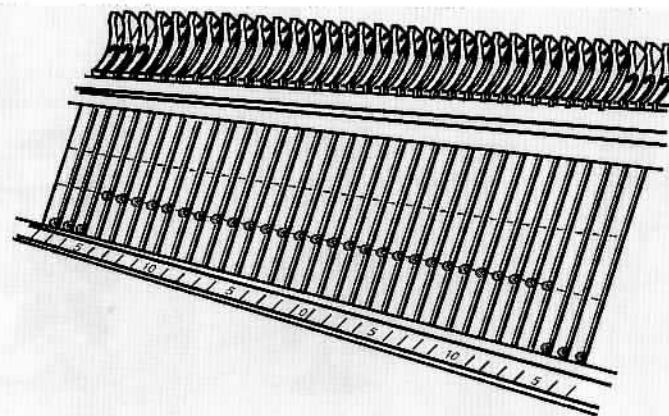
- Centre your knitting by moving up an equal number of needles into working position on either side of 0 on the graduated scale. This will make it easier to count stitches when increasing or decreasing.

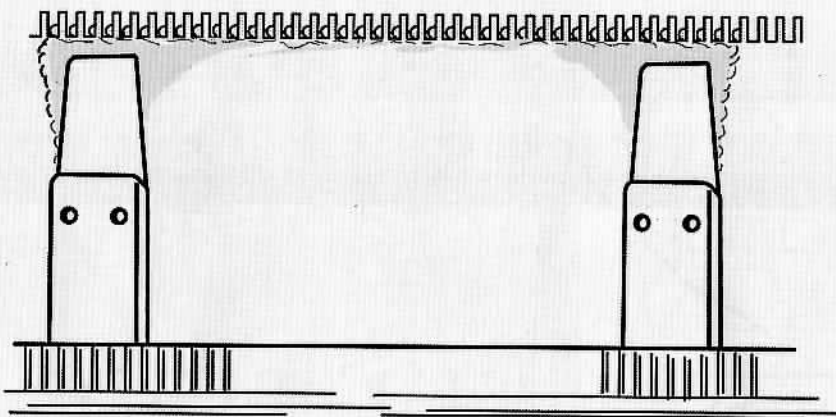
MOVING THE CARRIAGES

- Move the carriage without pressing the handle. Move it as shown opposite (push-pull).
- Never go backwards once the carriages have started on the needles.
- Do not push your carriage too far. A clicking noise coming from the cams will tell you when the last needle has knitted. If the carriages are too far from the first needle to knit, pull slightly on the yarn, at the back of the tension unit, to correct the yarn's tension.

THE YARN TO BE KNITTED

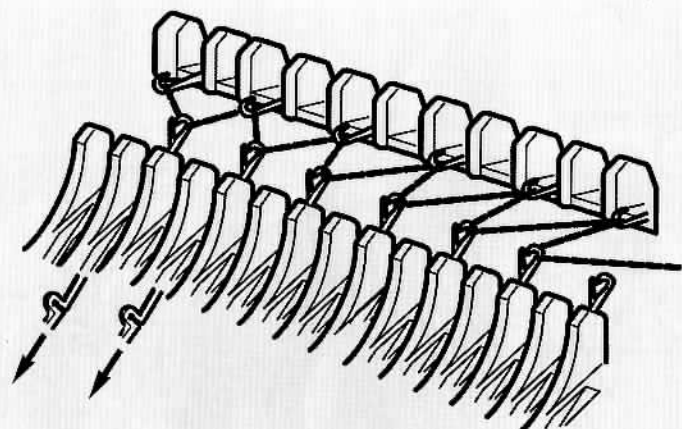
- Do not forget to detach the yarn from the yarn clip after a few rows.
- Watch your yarn. The cone or the ball unwinds very quickly when you knit. **Caution** : If you move the carriage across without any yarn, with a key pressed in, the knitting will drop off the machine.
- To avoid knots in your knitting, if you think that you do not have enough yarn to knit one row, fix the yarn in the yarn clip and thread the machine with another yarn.





EDGE CLAWS

- Keep an eye on the edge stitches and, if necessary, hang up edge claws which you will pick up every 10 to 12 rows.



STITCHES

- If, when casting-on, the last stitches are too tight, lower the needle by the heel to pull the yarn. Realign the needles.
- To remove some work in progress from the machine, you just have to move the carriage across with no thread, with the  key pressed in.
- If you unlock a carriage, never put it back on the needles in working position.

THE RIBS

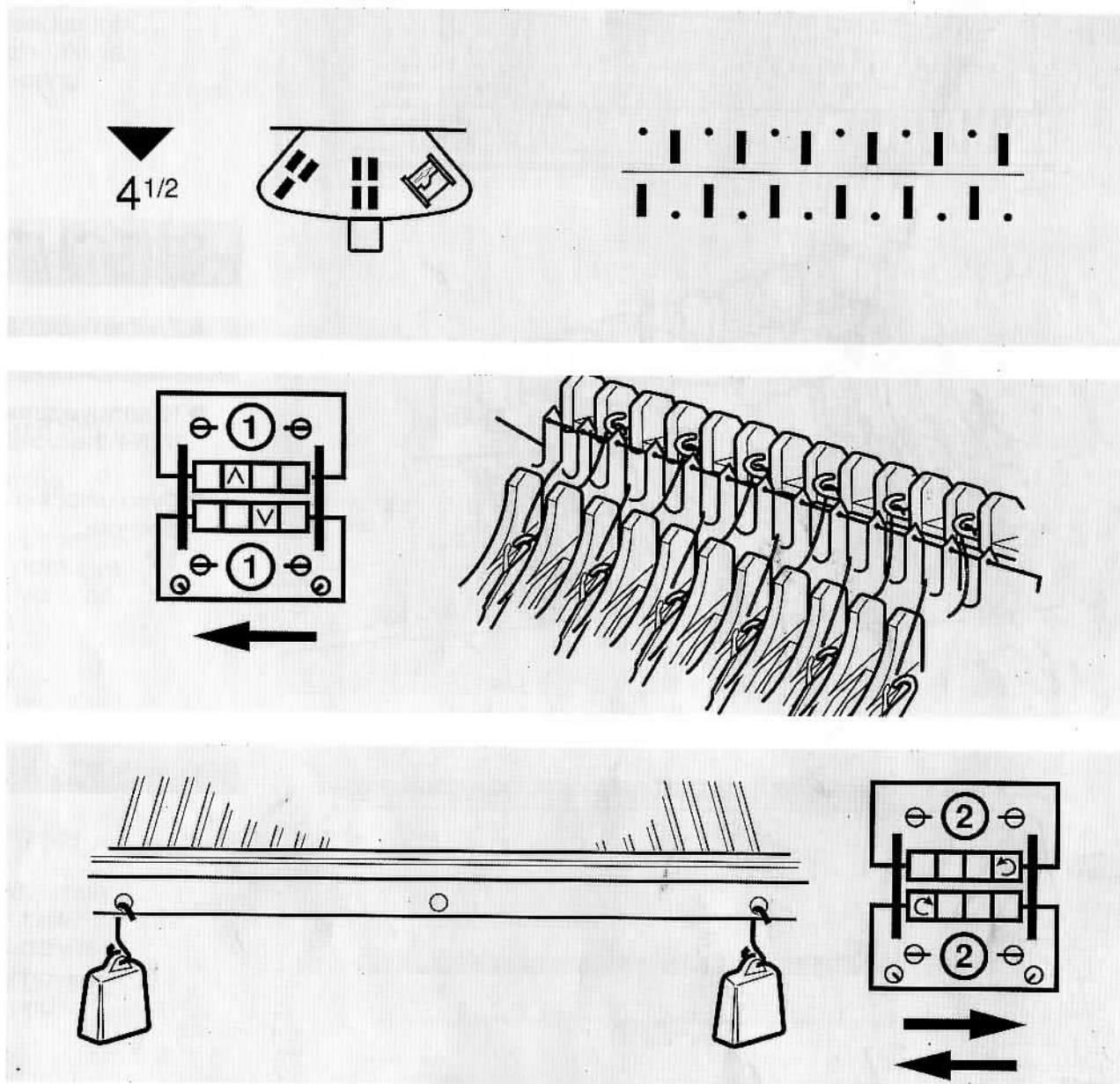
CASTING-ON IN 1/1 RIBS

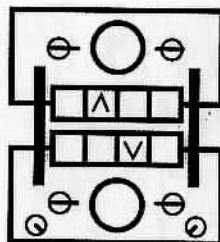
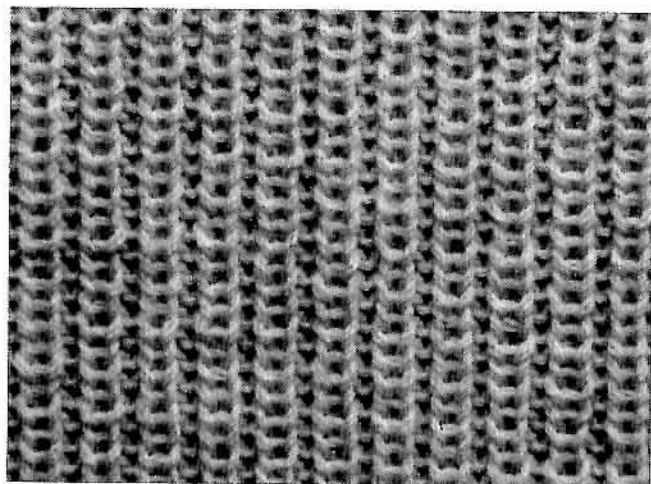
POSITION OF THE NEEDLES :

- Use both the needle beds, carriages on the right.
- Front needle bed in normal position.
- Space selector according to the yarn thickness.
- Intermediary lever at \parallel and racking lever at $4\frac{1}{2}$.
- The 0 on the graduated scale being the middle, on the rear needle bed select every second needle in working position 1, using the selector.
- Also select the needles on the front needle bed in working position 1, as shown.
- Move the carriages slowly across, the \triangle keys pressed in, from right to left and then from left to right, to align your needles.
- Thread the tension unit and the carriage.

CASTING-ON :

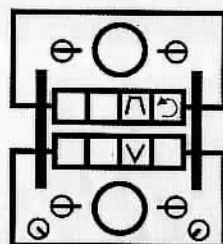
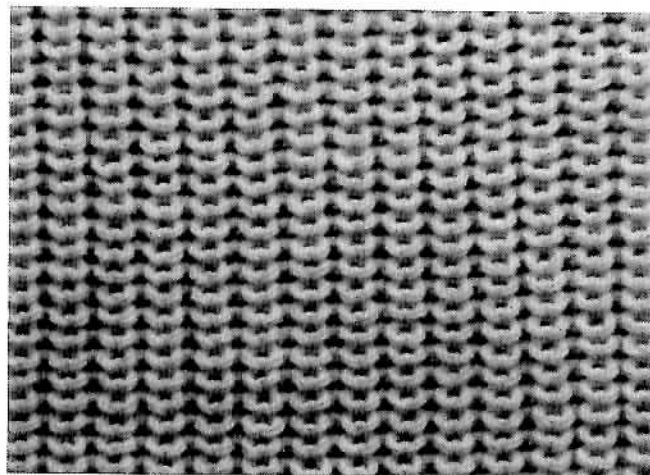
- Position the carriages as shown.
- Move the carriages across to the left. One row of zig-zag has formed between the two needle beds.
- Choose the comb with more teeth than the needles in position.
- Remove the comb wire.
- Place the comb between the needle beds (tooth with mark facing you in the middle), with the comb's teeth passing between the yarn's zig-zag pattern.
- Pass the yarn behind the last comb tooth corresponding to the edge needle on the left.
- Put the comb wire back and lower the comb making sure you do not catch the needles.
- Hang the weights on the comb.
- Adjust the carriages.
- Knit a row, i.e. the carriages go across and back once.





1/1 RIBS

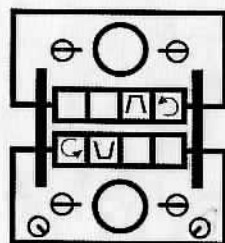
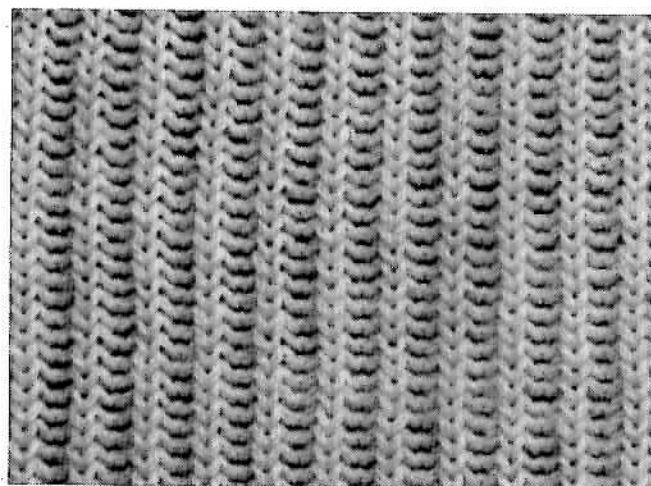
- Set the carriages : according to diagram.
- Stitch size according to the yarn thickness.
- Row counter set to 0.
- Knit while moving the carriages evenly across.



1/1 SINGLE FISHERMAN RIBS

Same casting-on as for the 1/1 Ribs

- Set the carriages : according to diagram.
- Stitch size : 2 sizes bigger than for the 1/1 Ribs on both carriages.
- Front needle bed : normal position.
- Flow combs opposite each other **||**
- Space selector set according to the yarn thickness.
- Row counter set to 0.
- Knit .



1/1 DOUBLE FISHERMAN RIBS

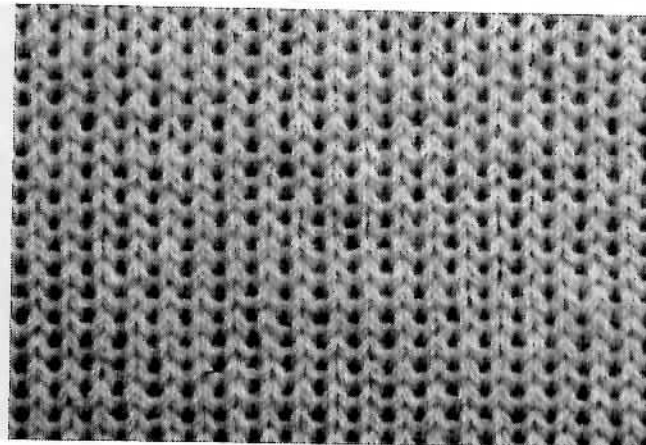
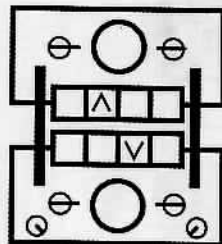
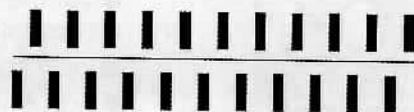
Same casting-on as for the 1/1 Ribs

- Set the carriages : according to diagram.
- Stitch size : 2 numbers bigger than for the 1/1 Ribs on both carriages.
- Front needle bed : normal position.
- Flow combs opposite each other **||**
- Space selector set according to the yarn thickness.
- Row counter set to 0.
- Knit .

CLOSE RIBS

- Intermediary lever :
 - Racking lever in position 4 (alternated flow combs).
 - Front needle bed : normal position.
 - Space selector set to 3 or 4.
- Same casting-on as for the 1/1 Ribs
- Stitch size : 1 size smaller than for the 1/1 Ribs
 - Set the carriages : according to diagram.
 - Knit

FANCY CLOSE RIB : Same casting-on as for the Close Ribs but for knitting, set the selection buttons and cancel the keys on the front carriage.



2/2 INDUSTRIAL RIBS

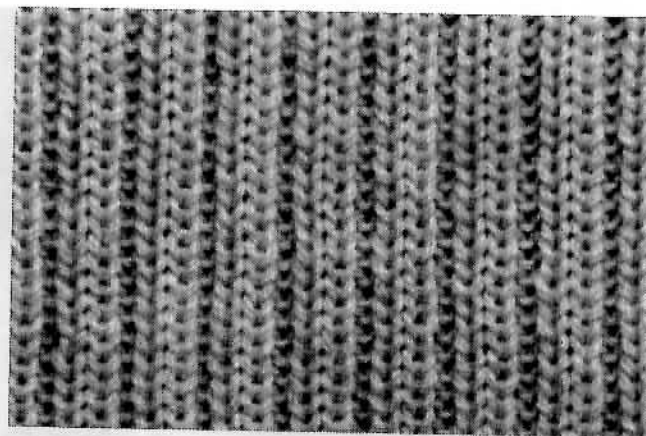
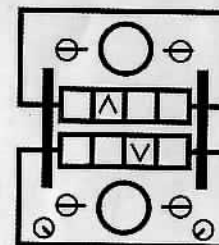
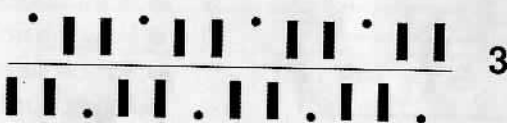
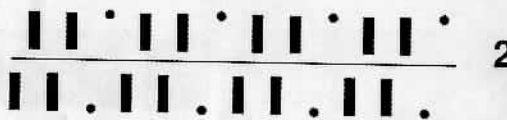
- Intermediary lever :
- Racking lever in position 4 (alternated flow combs).
- Select your needles like in diagram 1.
- Front needle bed : normal position.
- Space selector : set according to yarn thickness.

Same casting-on as for the 1/1 Ribs except :

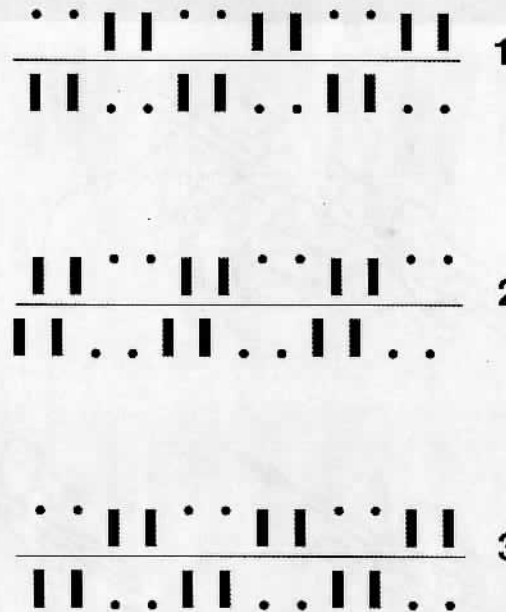
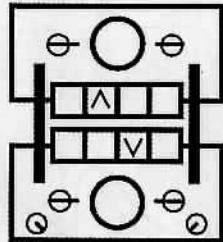
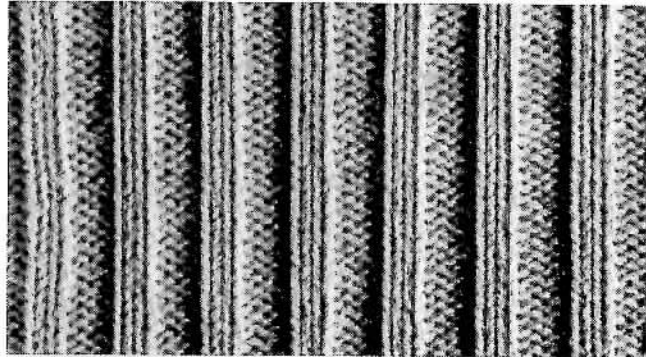
- Racking lever to the right in position 5 (alternated flow combs).
- The needles are now positioned as in diagram 2.

How to knit :

- Racking lever in position 4 (alternated flow combs).
- The needles are now back in their initial position : diagram 3.
- Set the carriages : according to diagram.
- Stitch size : 2 sizes bigger than for the 1/1 Ribs on both carriages
- Knit



2/2 SIMPLE RIBS



- Intermediary lever : ▮
- Racking lever in position 4 1/2 (flow combs opposite).
- Front needle bed : normal position.
- Select your needles like in diagram 1.

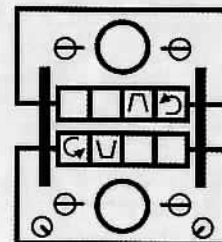
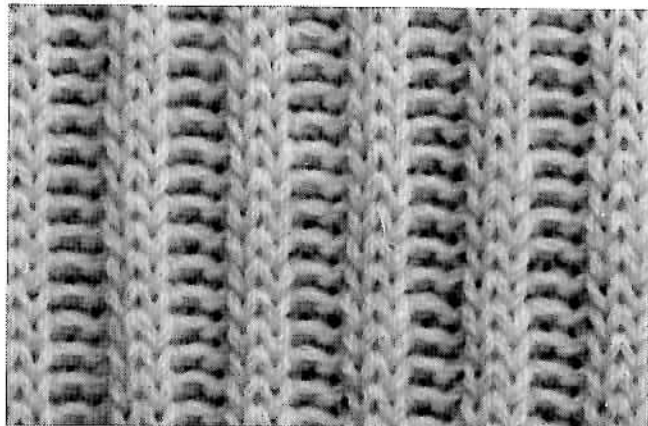
Same casting-on as for the 1/1 Ribs except :

- Intermediary lever : ▮
- Racking lever in position 6 (alternated flow combs).
- The needles are now positioned as in diagram 2.

How to knit :

- Intermediary lever : ▮
- Racking lever in position 4 1/2 (flow combs opposite).
- The needles are now back in their initial position : diagram 1.
- Stitch size : 2 sizes bigger than for the 1/1 Ribs
- Row counter
- Knit.

2/2 DOUBLE FISHERMAN RIBS



Same layout of needles as for the 2/2 simple ribs.
Same casting-on.

After this operation :

- Set the carriages : according to diagram.
- Stitch size : 2 sizes bigger than for the 1/1 Ribs

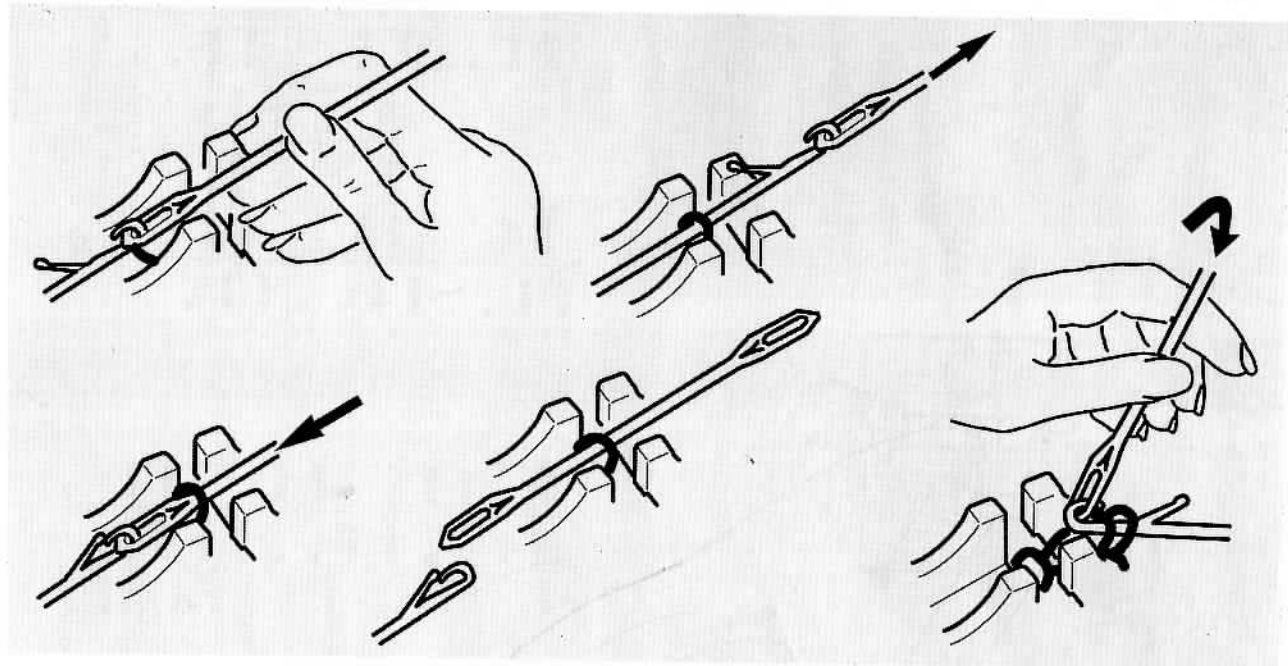
CAUTION : The counter shows twice the actual number of rows knitted.

THE STOCKING STITCH

TRANSFERRING FROM RIBS TO STOCKING STITCH

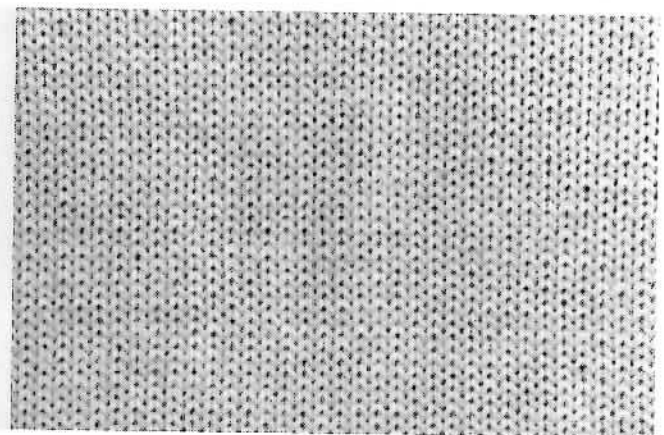
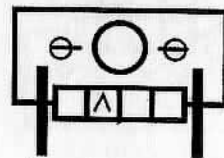
Using a double-ended eyelet needle, transfer the front needle bed's stitches onto the empty rear bed's needles.

1. Place the double-ended eyelet needle in line with the Front bed's needle, open the latch and insert the eyelet into the needle's hook.
 2. Pull the needle up to holding position 3 : the stitch slides behind the latch.
 3. While keeping the eyelet in the needle's hook and keeping the double-ended eyelet needle in line with the needle, push the needle down to non-working position 0.
 4. Remove the double-ended eyelet needle from the front needle's hook and tilt the double ended eyelet needle backwards : the stitch is now on the double-ended eyelet needle.
 5. Insert the second eyelet into the hook of the rear bed's needle. Pull the back needle up slightly and tilt the double-ended eyelet needle backwards to make the stitch slide into the rear needle's hook.
- Proceed in the same way for all the needles in the row.
 - Lower all the front bed's needles to non-working position 0.



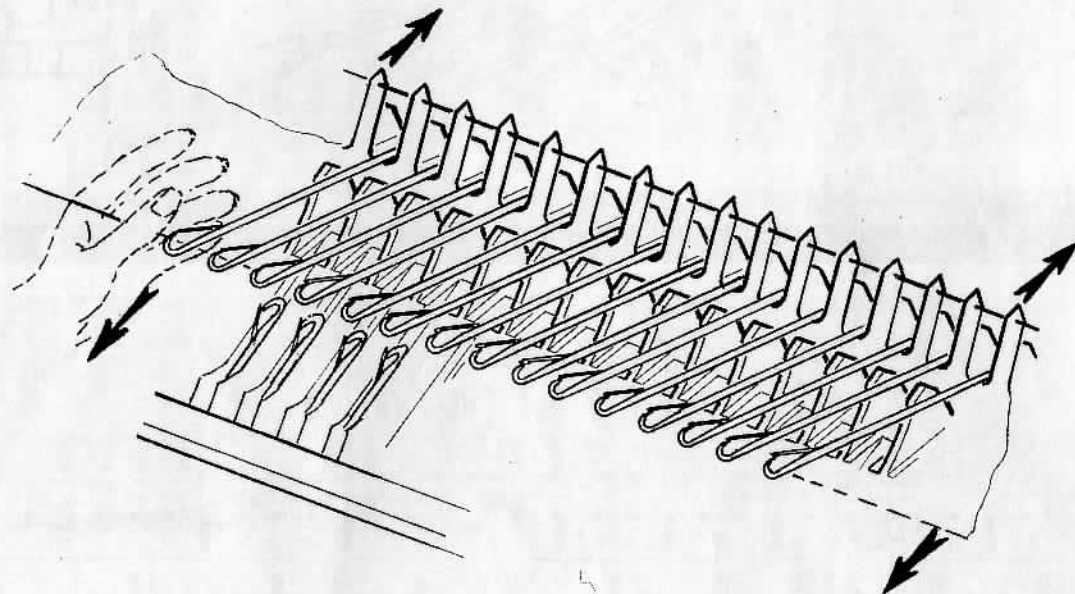
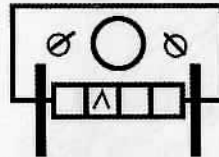
KNITTING THE STOCKING STITCH

- Intermediary lever : II
- Racking lever in position 4 1/2 (flow combs opposite).
- Front needle bed : upper position.
- Space selector set to 5 or 6 according to the yarn thickness.
- Set the carriage : according to diagram. Remove the front carriage.
- Stitch size dials according to the yarn thickness.
- Knit.



CASTING-ON IN STOCKING STITCH

OPEN CASTING-ON



You will be using this method especially in order to make a test sample to determine the stitch size according to your yarn before starting your knitting work, or to make a hem, to cast on open stitches again, or to knit an edge. However, the other methods do provide a neater casting-on.

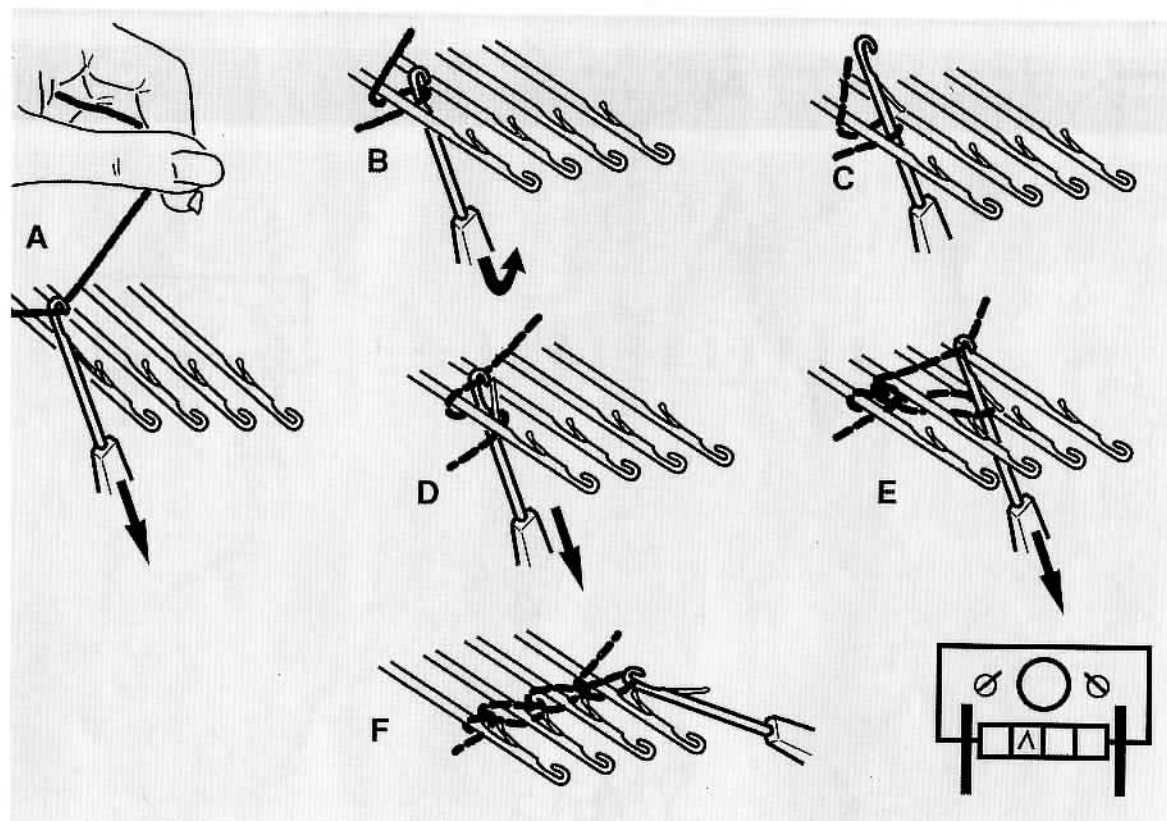
- Using the needle selector, move the required number of needles up into position 3 on the rear needle bed.
- The carriage is set : according to the diagram.
- Stocking stitch size.
- Front needle bed in normal position.
- Flow combs opposite each other (Intermediary lever : **||**)
- Place the comb with its wire against the rear bed, comb's tooth of a different colour in the middle of the machine facing you.
- Align the comb's teeth with the flow combs to allow the needles to pass through freely.
- Move up the edge needle on either side into position 2.
- Move the carriage to the left whilst making sure that the needles do not catch the comb or the wire.
- Lower the comb.
- Hang the weights.
- You can now knit in stocking stitch.

CHAIN CASTING-ON

- On rear needle bed only.
- Carriage on the right-hand side.
- Move up the required number of needles into position 3.
- Hang the comb with its wire on these needles
- Thread the tension unit (but not the carriage) and fix the yarn in the left-hand yarn clip.

Crochet a loose chain :

- With your left hand, hold the yarn above the needles.
- Hook the yarn with the latch needle tool.
- Pass the tool with the loop under the 1st needle on the left.
- Bring the tool up between the 1st and 2nd needle.
- Make the loop slide behind the tool's latch
- Hang the yarn above the 2nd needle and pull the tool down to form a loose stitch.
- Pass the tool under the 2nd needle and bring it back up between the 2nd and 3rd needle.
- Continue like this until you reach the last-but-one needle.
- Place the last loop on the last needle.
- Thread the carriage.
- Setting the carriage : according to diagram. Stocking stitch size.
- Front needle bed in normal position.
- Flow combs opposite each other.
- Lift up the comb and keep it high enough to prevent the needles' hooks from getting caught in the comb wire. Place the lower part of the comb towards you.
- Knit one row. Lower the row. Hang the weights.
- You can knit in stocking stitch.



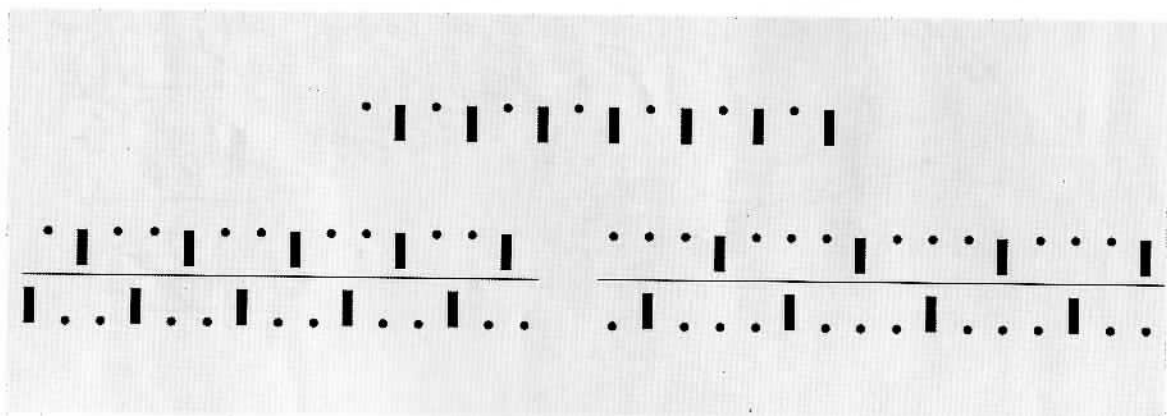
CASTING-ON WITH HEAVY YARN

IN STOCKING STITCH

- Cast-on every other needle using one of the methods above.
- Select a high number for the stitch size.

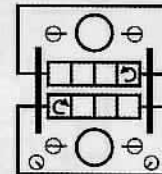
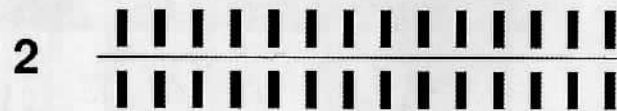
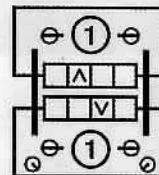
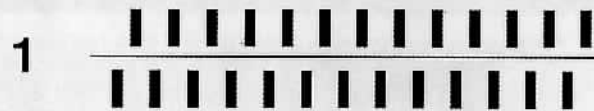
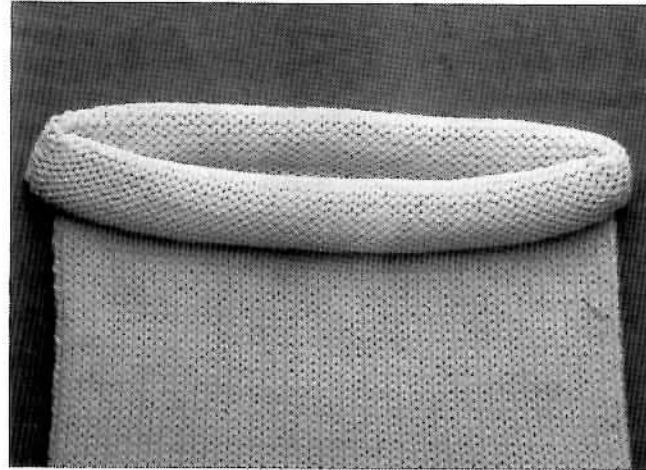
IN RIBS

- Same casting-on as for the 1/1 Ribs but the stitch size is increased by 2 or 4 sizes depending on the yarn thickness.
- Place the push-down rollers for knitting (see page 16).



CIRCULAR AND SEMI-CIRCULAR KNITTING

OPEN CIRCULAR CASTING-ON WITH AUXILIARY YARN AND KNITTING



One circular row is obtained by moving the carriage to and fro. Two rows on the counter therefore correspond to one circular row. Circular knitting in stocking stitch is used to make socks, scarves, sleeves, etc... without seams.

CASTING-ON :

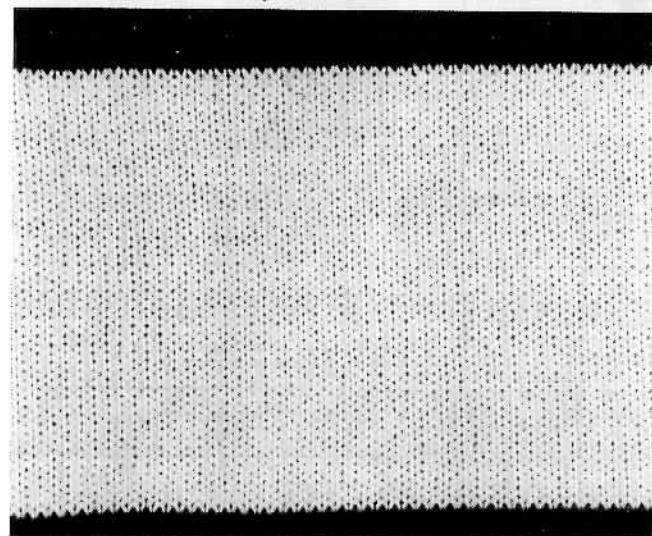
- Flow combs alternated (Intermediary lever : II)
- Carriages on the right-hand side.
- Move up the same number of needles on both beds into working position 1 : diagram 1.
- Setting the carriages : according to diagram. Stitch size 1 on both carriages.
- Front needle bed : normal position.
- Space selector set to 5.
- Thread the tension unit and the carriage with an auxiliary yarn.
- Knit one row.
- Fix the comb 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 then fasten it to the left-hand yarn clip.

HOW TO KNIT :

- Flow combs opposite each other (Intermediary lever : II) The needles are now positioned as in diagram 2.
- Setting the carriages : according to diagram.
- Front needle bed : normal position.
- Move up the rear bed's needles into working position 2.
- Stitch size 1 on front carriage
- Stocking stitch size on rear carriage.
- Knit one row.
- Set the stocking stitch size on both carriages.
- Knit .

THE TEST SAMPLE

Exemple: Point choisi: jersey.

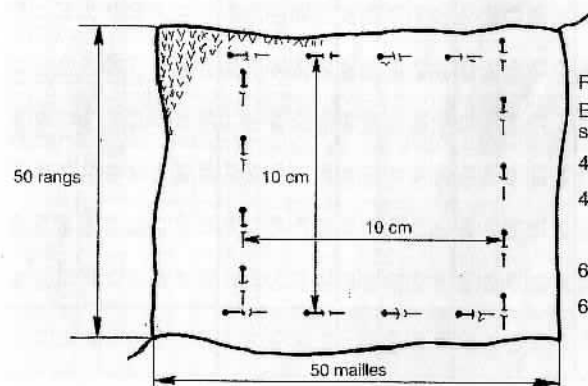


Fil auxilliaire

50 Rangs

Fil auxilliaire

50 mailles



Reconversion:

Exemple :
 si 10 cm sur 10 cm = 30 mailles sur 40 rangs
 $45 \text{ cm en largeur} = \frac{30 \text{ mailles} \times 45}{10}$
 45 cm = 135 mailles

$60 \text{ cm en hauteur} = \frac{40 \text{ rangs} \times 60}{10}$
 60 cm = 240 rangs

HOW TO KNIT YOUR TEST SAMPLE

In order to make your garment successfully, you must first of all knit a test sample in order to determine the right stitch size according to the selected yarn and the pattern chosen. In order to do so, you simply have to knit several samples with different stitch sizes and choose the one which best suits the garment you are going to knit.

The test sample is also essential to measure the number of stitches and rows which you will have to knit, in order to stick to the dimensions shown on your pattern.

N.B.: There may be a difference in relation to the test sample, depending on the width of the garment and the number of weights used.

If for example the test sample of 50 stitches is knitted with a medium weight, use two medium weights for 100 stitches, three medium weights for 150 stitches, a large weight and two medium weights for 180 stitches.

- Cast-on with auxiliary yarn. Knit a few rows.
- Knit 50 rows with the yarn for the garment following the chosen pattern. Finish off with a few rows of auxiliary yarn.
- Unthread the carriage.
- Remove the weight.
- Move the carriage gently across holding the knitting to take it out of the machine.
- Let the knitting settle for several hours so that it returns to its correct size.

HOW TO MEASURE YOUR TEST SAMPLE

- On each test sample, carefully mark out a 10 x 10 cm square to count the number of stitches and rows.
- Count the exact number of stitches width-wise.
- Count the exact number of rows height-wise.
- This process makes it easier to convert back the sizes chosen for the garment into stitches and rows.

Where the two lines cross, you will find the number of stitches and rows required to knit your garment.

Calculating the other way round, the conversion table enables you to immediately find out the size of the garment knitted when you have knitted a certain number of stitches or rows, according to the figures for your test sample.


cm											cm																									cm																																																																						
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100							
3	7	10	14	17	20	24	28	31	34	38	41	45	49	52	56	59	63	66	70	74	77	81	84	88	91	94	97	100	104	107	111	114	117	120	123	126	129	133	136	140	143	147	150	155	158	162	166	170	173	177	181	184	188	192	196	200	204	208	212	216	220	224	228	232	236	240	244	248	252	256	260	264	268	272	276	280	284	288	292	296	300	304	308	312	316	320	324	328	332	336	340	344	348	352	356	360	364	368	372	376	380	384	388	392	396	400

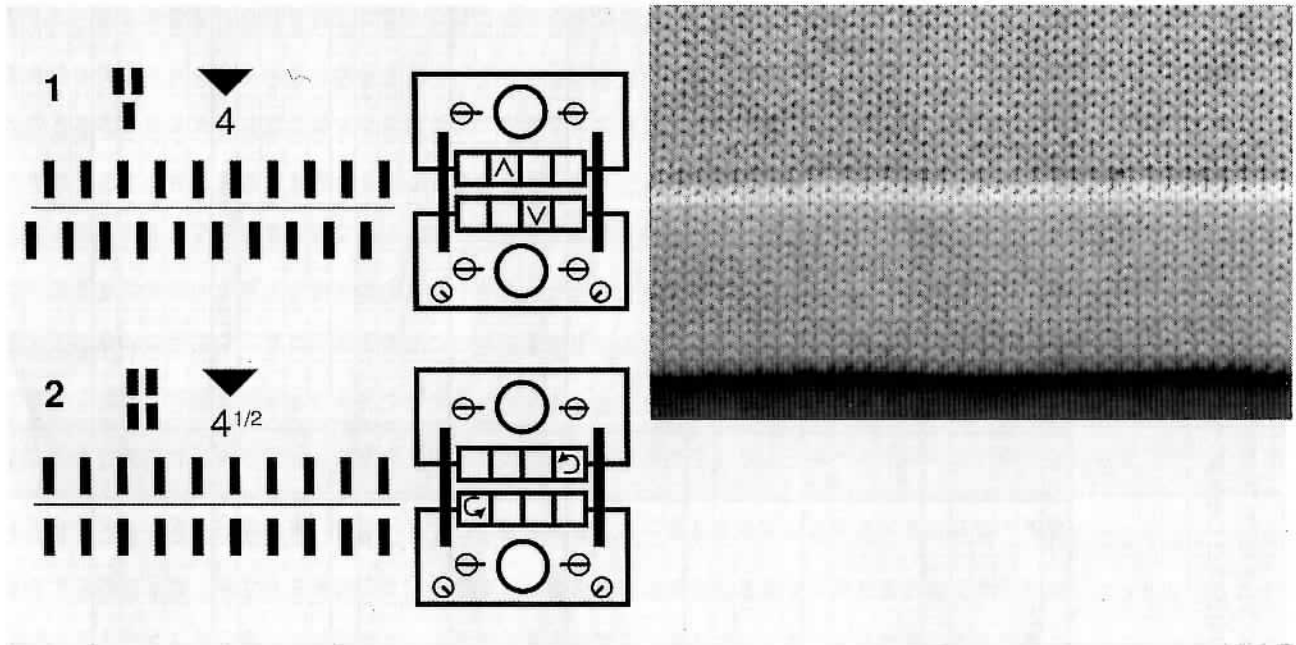
THE HEMS

CIRCULAR HEM

- Move the front and rear beds' needles into position 1.
- Adjust the various settings as shown (diagram 1).
- Knit a row.
- Place the comb, wire and weights.
- Adjust the various settings as shown (diagram 2).
- Stocking stitch size.
- Knit a number of rows corresponding to the height of the hem.

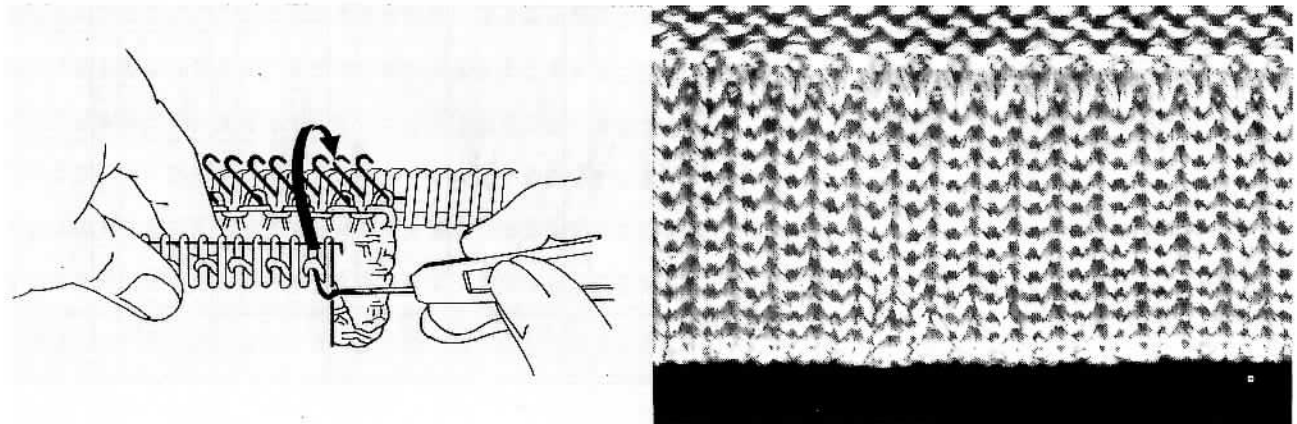
CAUTION : One circular row = two rows on the counter.

- To close the circular hem, transfer the front bed's stitches onto the rear bed's needles.
- Remove the front carriage.
-  key on the rear carriage.
- Knit a row.
- Place the front bed in the upper position.
- Continue knitting.

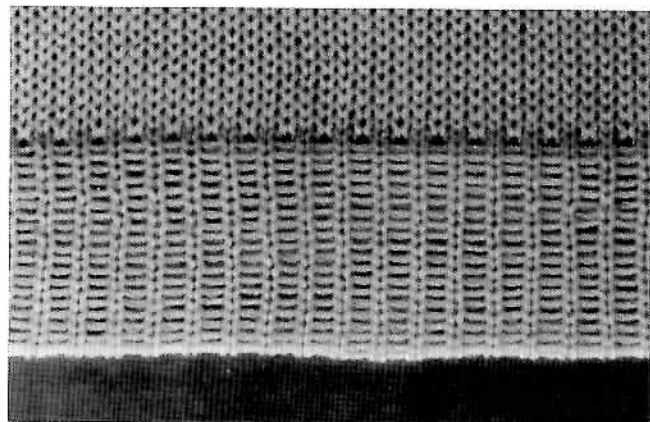


SIMPLE HEM IN STOCKING STITCH

- Make an open casting-on on the number of needles required.
- Knit twice the number of rows corresponding to the height of the hem.
- Move the needles up in holding position 3 and remove the weights, lower the front bed into the low position.
- Using the hook, transfer the comb's stitches onto the rear bed's needles.
- Lower the needles into position 2, bring up the front bed into the upper position and hang the weights again.
- Increase the stitch size by 3 sizes and knit a row.
- Reset the counter to the number of rows used for a hem height and lower the stitch size to the normal size.
- Knit.

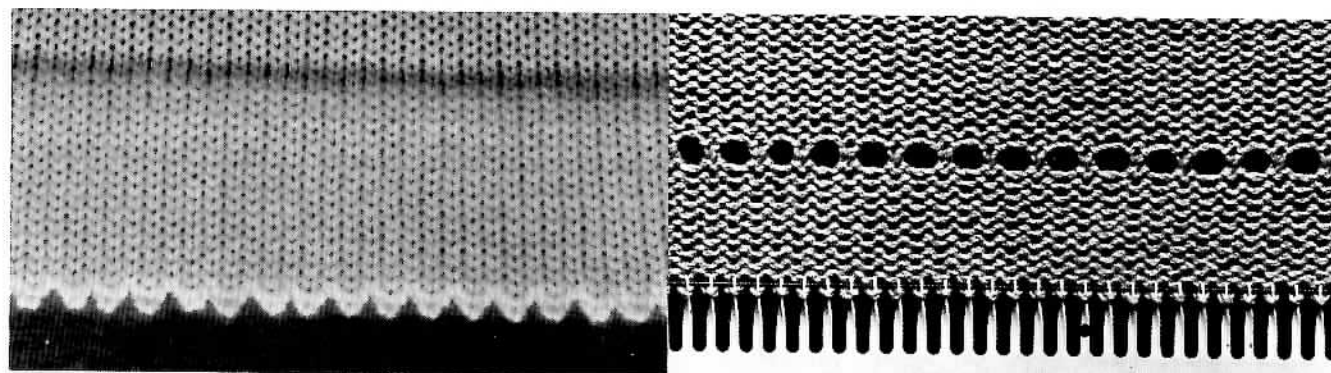


RIBBED STOCKING STITCH HEM

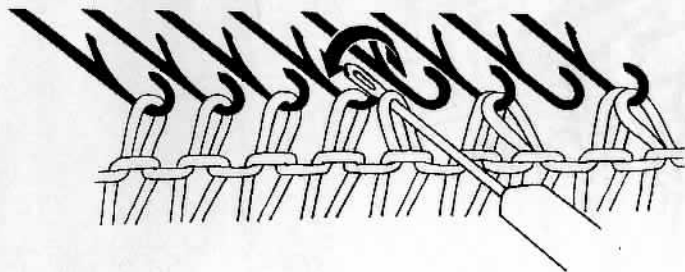


- Proceed in the same way as for a simple hem but select every other needle on the rear bed and a stitch size of one or two sizes smaller than the stocking stitch.
- To hang up the hem, transfer the comb's stitches onto the empty needles.

PICOT EDGE HEM



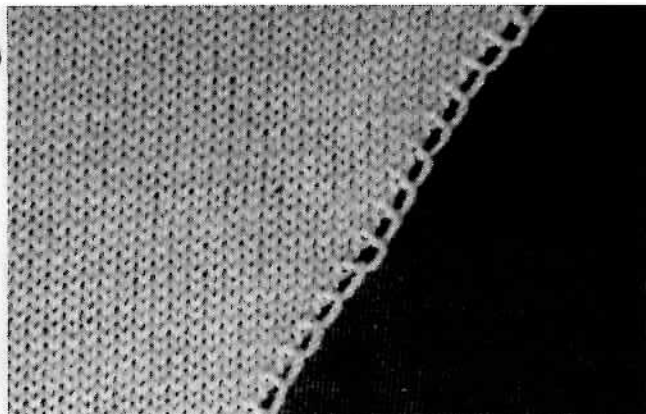
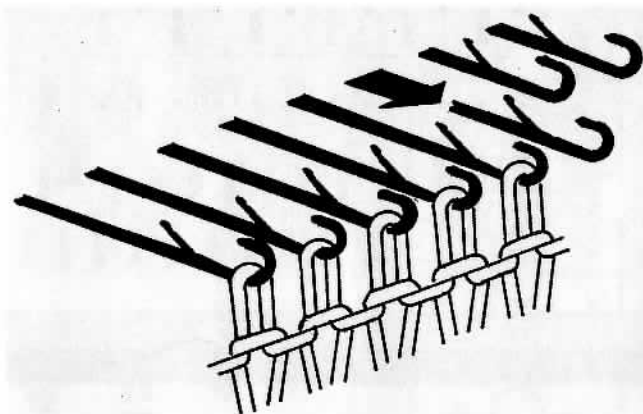
- Cast-on in open style.
- Knit half the number of rows required for the hem.
- Using the single eyelet transfer tool, transfer every second stitch onto the next lefthand needle.
- Leave the empty needles in position I so that they are knitted in the next row.
- A row of holes will then form. It will produce the picot effect when the hem is folded.
- Knit the second half of the hem, plus an additional row.
- Continue your knitting as for the simple hem.



INCREASING

INCREASING ONE STITCH IN STOCKING STITCH

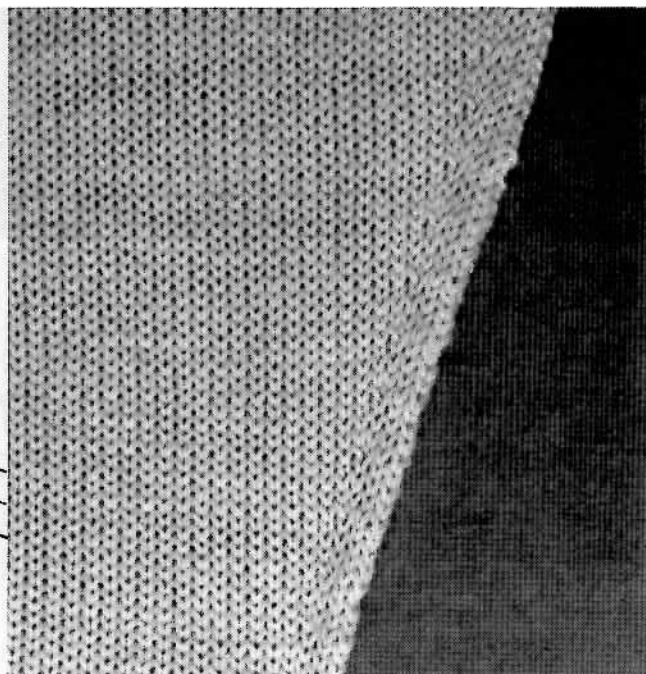
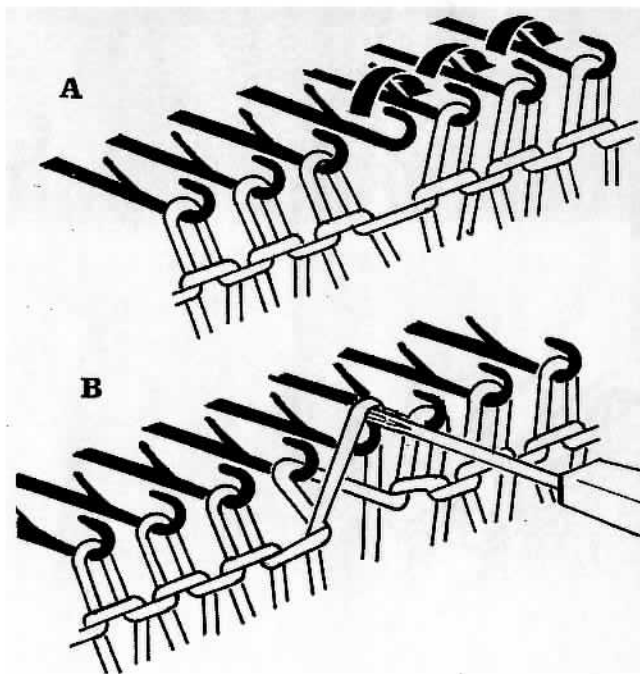
- Simultaneously on both sides of the knitting, move one needle up into working position 1; when the carriage moves across these needles will knit.



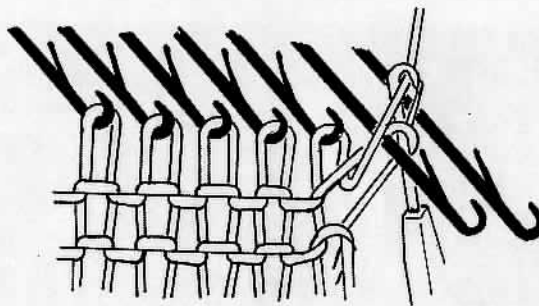
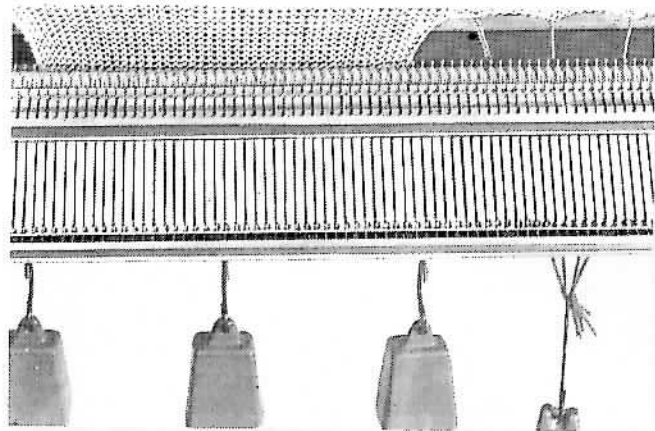
ITALIAN INCREASE IN STOCKING STITCH (one stitch)

This method enables increases to be made inside the garment being knitted, two, three or even more stitches from the edge. It can be done regardless of the position of the carriage and be repeated every two or four rows, according to the stitch and taking into account the dimensions.

- A. Using a 2- or 3-eyelet transfer tool, transfer the 2 or 3 edge stitches one needle out.
- B. Using the single-eyelet transfer tool or the hook of the latch needle tool, take the heel of the next stitch and place it on the needle which has been emptied.



INCREASING SEVERAL STITCHES IN STOCKING STITCH



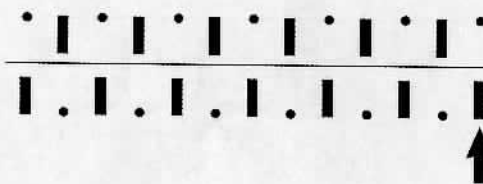
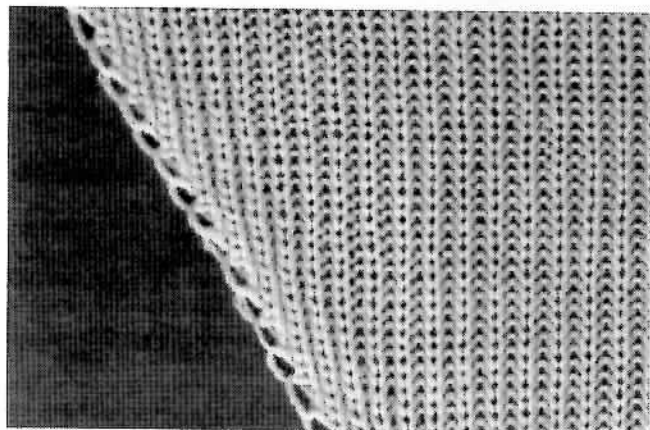
- On the carriage side, move the needles to be increased into position 3.
- Using the latch needle tool, take the heel of the first stitch and crochet a chain around the needles in holding position (you will find explanations on chain casting-on on page 28).

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

- Lower the needles into position 2.
- Knit a row.
- Hang on an edge claw.
- Continue to knit.

If there is a large number of stitches to be increased, use the small comb and proceed as for the chain casting-on or pass an auxiliary yarn in a few stitch heels in the chain to form big loops on which you will be able to hang a weight.

INCREASING ONE STITCH IN RIBS



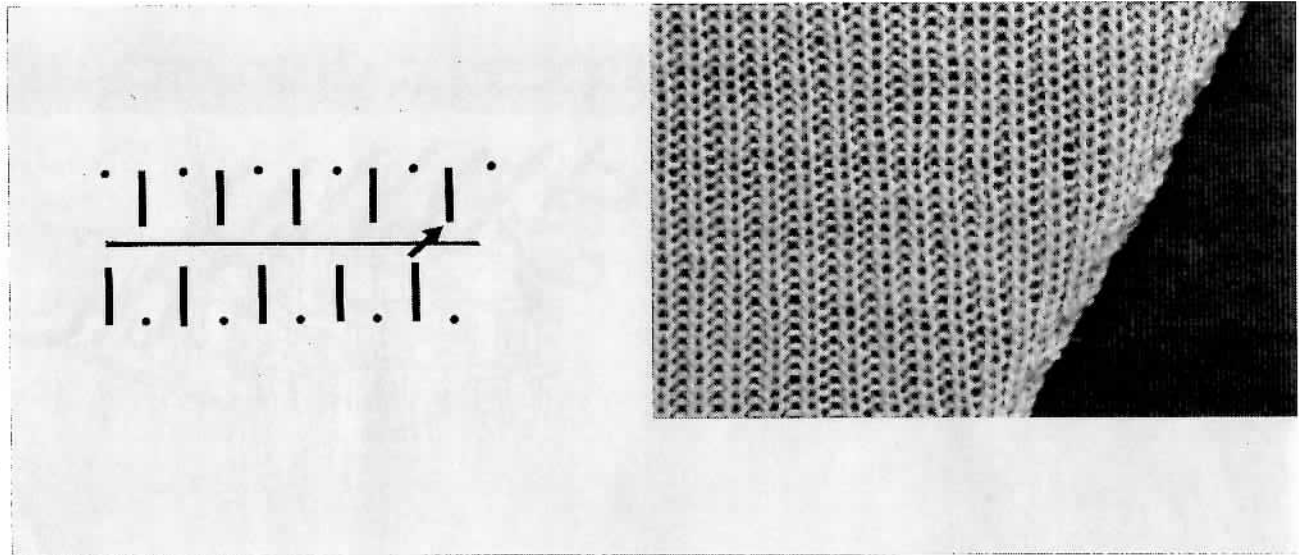
- On the carriage side, move a needle into working position 1, whilst taking into account the position of the needles in ribs.

ITALIAN INCREASE IN RIBS (one stitch)

This increase can be done regardless of the position of the carriage.

Respecting the position of the needles in ribs :

- Using the single-eyelet transfer tool, place the edge stitch on the next empty needle of the opposite bed.
- Take the heel of the next stitch and place it on the needle which has just been emptied.

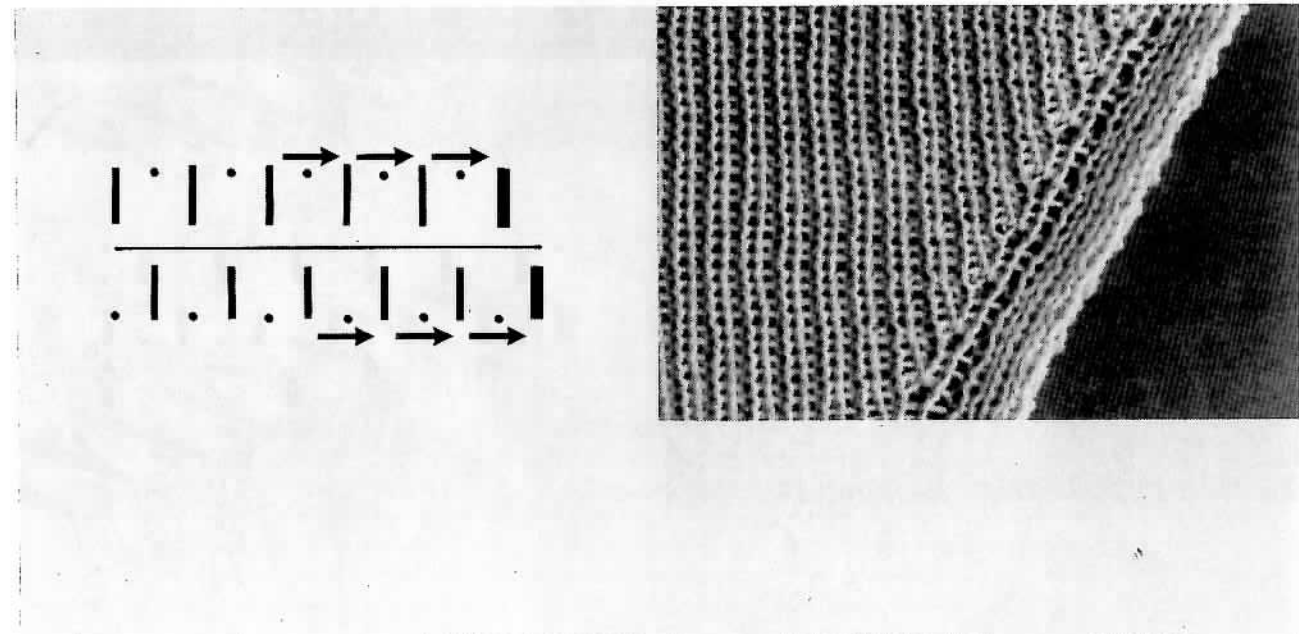


ITALIAN INCREASE IN RIBS (two stitches)

This increase is generally done every fourth row at either side of the knitting regardless of the position of the carriages.

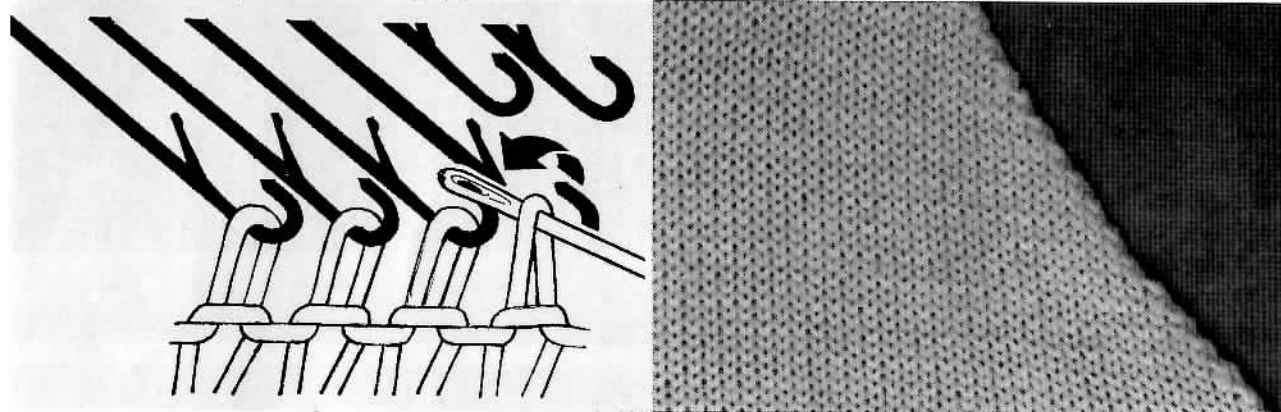
Respecting the position of the needles :

- Move the 3 edge stitches or more two needles out on both sides of the knitting on both the needle beds.
- On each bed, take the heel of the next stitch and place it on the empty needles.



DECREASING

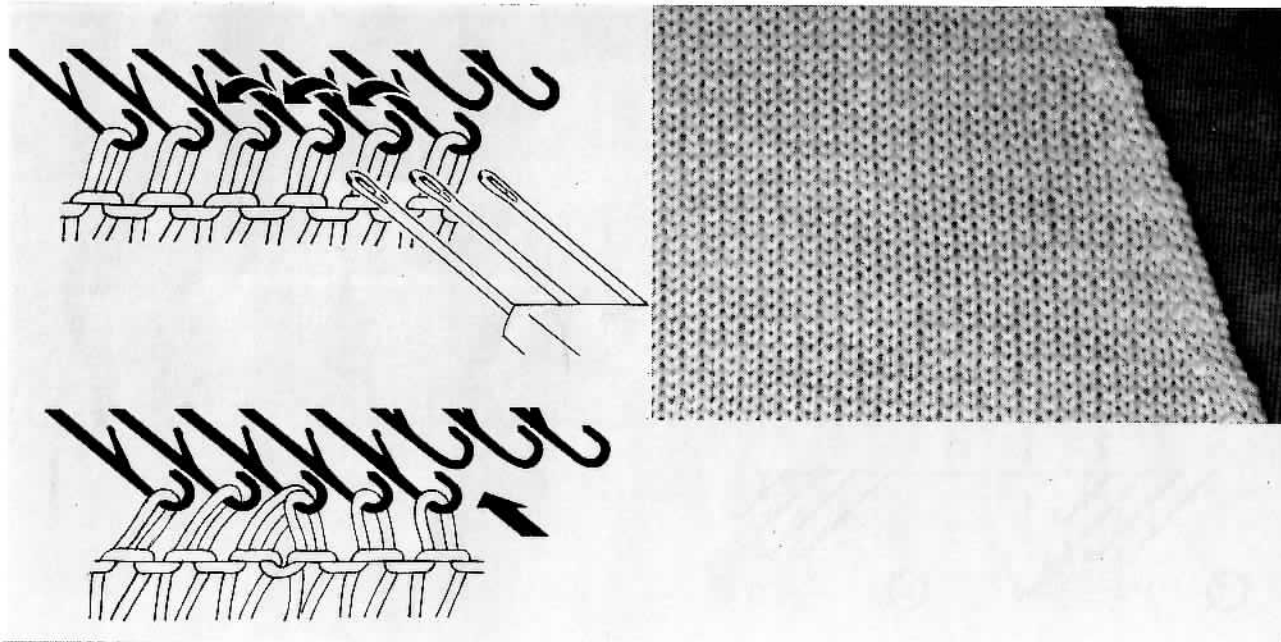
DECREASING ONE STITCH IN STOCKING STITCH



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

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

ITALIAN DECREASE IN STOCKING STITCH (one stitch)



This type of decrease can be done inside the knitting, three or more stitches from the edges, regardless of the position of the carriage.

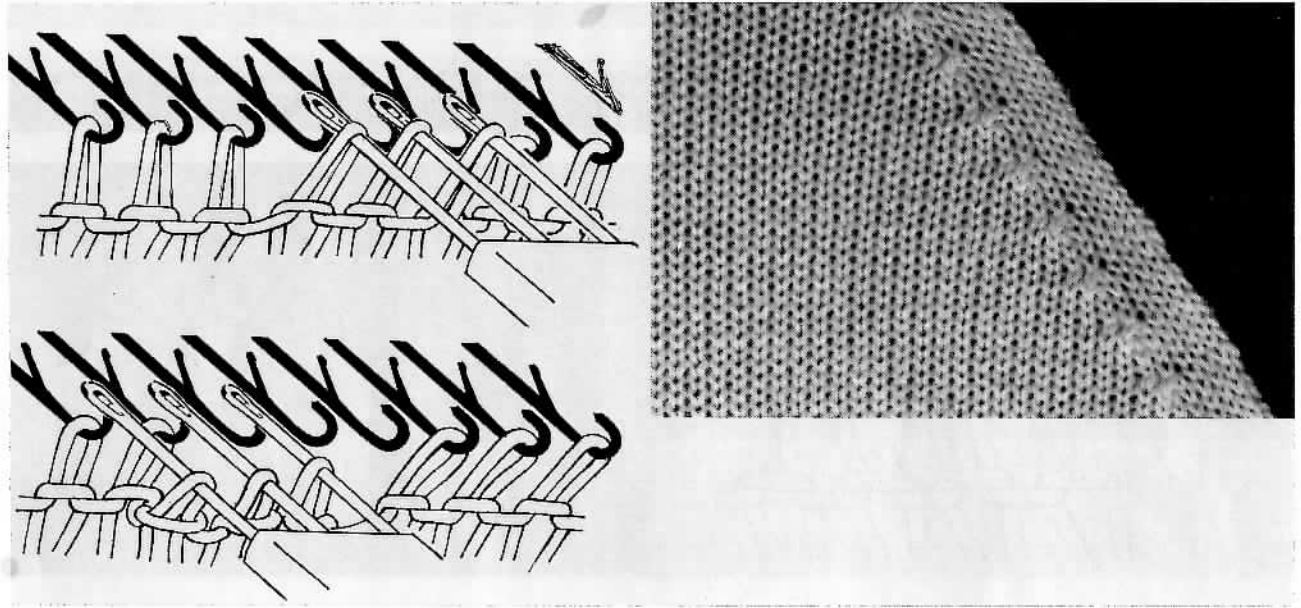
- Using the two- or three-eyelet transfer tool, move the three edge stitches one needle in. The fourth needle therefore carries two stitches.
- Move this needle up into position 2.
- Lower the empty needle to non-working position 0.

ITALIAN DECREASE IN STOCKING STITCH (two stitches)

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

Example :

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

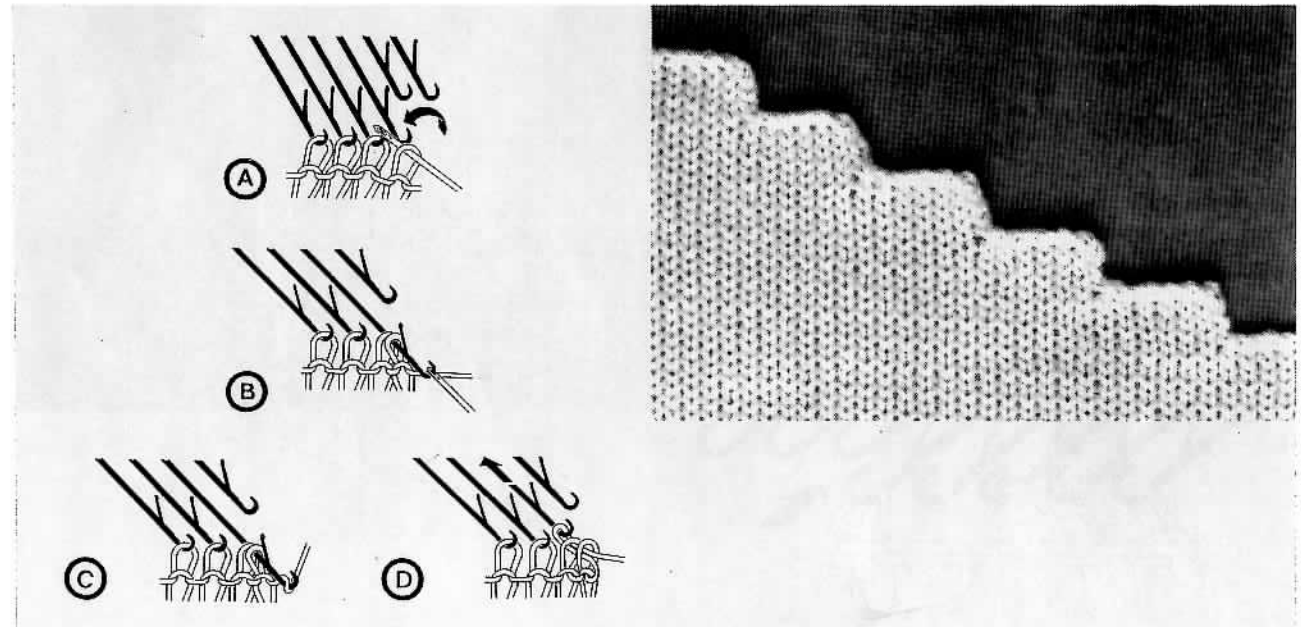


DECREASING SEVERAL STITCHES IN STOCKING

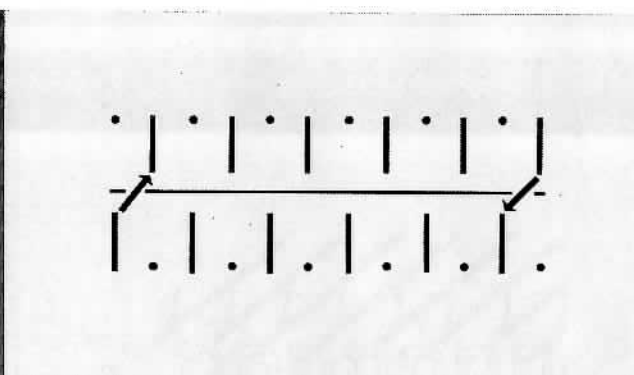
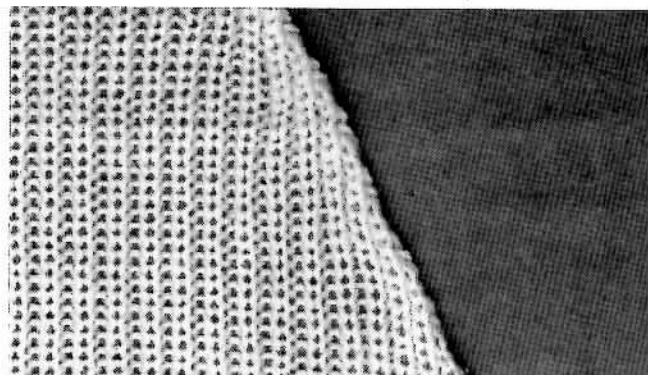
This decrease is done on the carriage side.

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

- Transfer the first stitch onto the next needle.
- Move this needle up into position 2 to make the two stitches slide behind the latch.
- Place the yarn manually in the needle's hook.
- Lower the needle to form a new stitch.
- Do not forget to lower the empty needles into position 0.
- Repeat this operation until the desired 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 lower the empty needles into position 0 before you start knitting again.



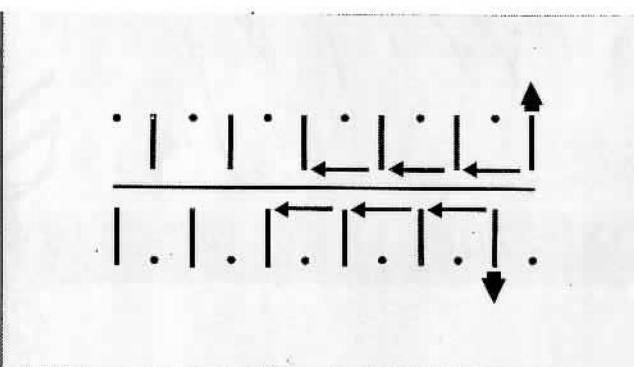
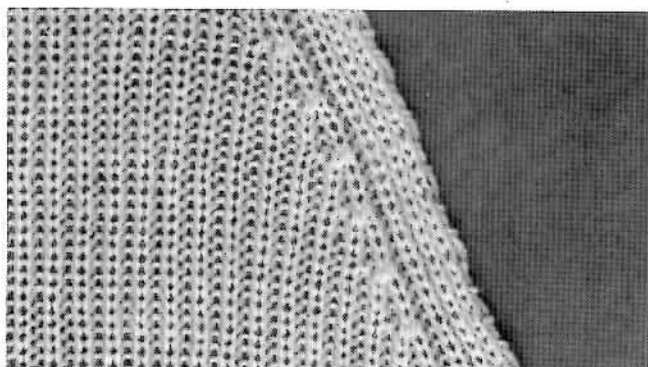
DECREASING ONE STITCH IN RIBS



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

- Using the single-eyelet transfer tool, transfer the edge stitch onto the closest needle of the other bed which already has a stitch.
- Lower the empty needle(s) into the non-working position 0.

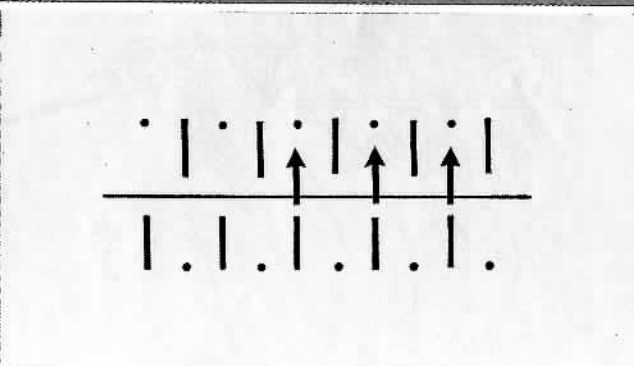
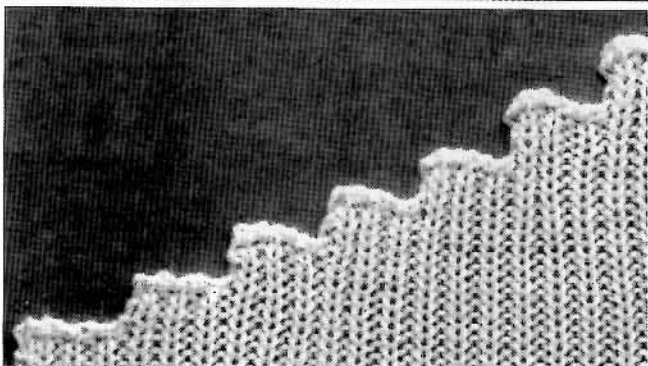
ITALIAN DECREASE IN RIBS (two stitches)



This decrease is generally done every four rows.

- Keeping the same needle layout for the ribs, transfer the third stitch onto the fourth needle on each needle bed.
- Move the two edge stitches on each needle bed inwards to fill the empty spaces.
- Lower the empty needles into the non-working position 0.

DECREASING SEVERAL STITCHES IN RIBS



This decrease is done on the carriage side.

- Transfer the stitches to be decreased onto the rear needle bed.
- Decrease as shown on page 40 (decreasing several stitches).

CASTING-OFF

CHAIN CASTING-OFF

IN STOCKING STITCH

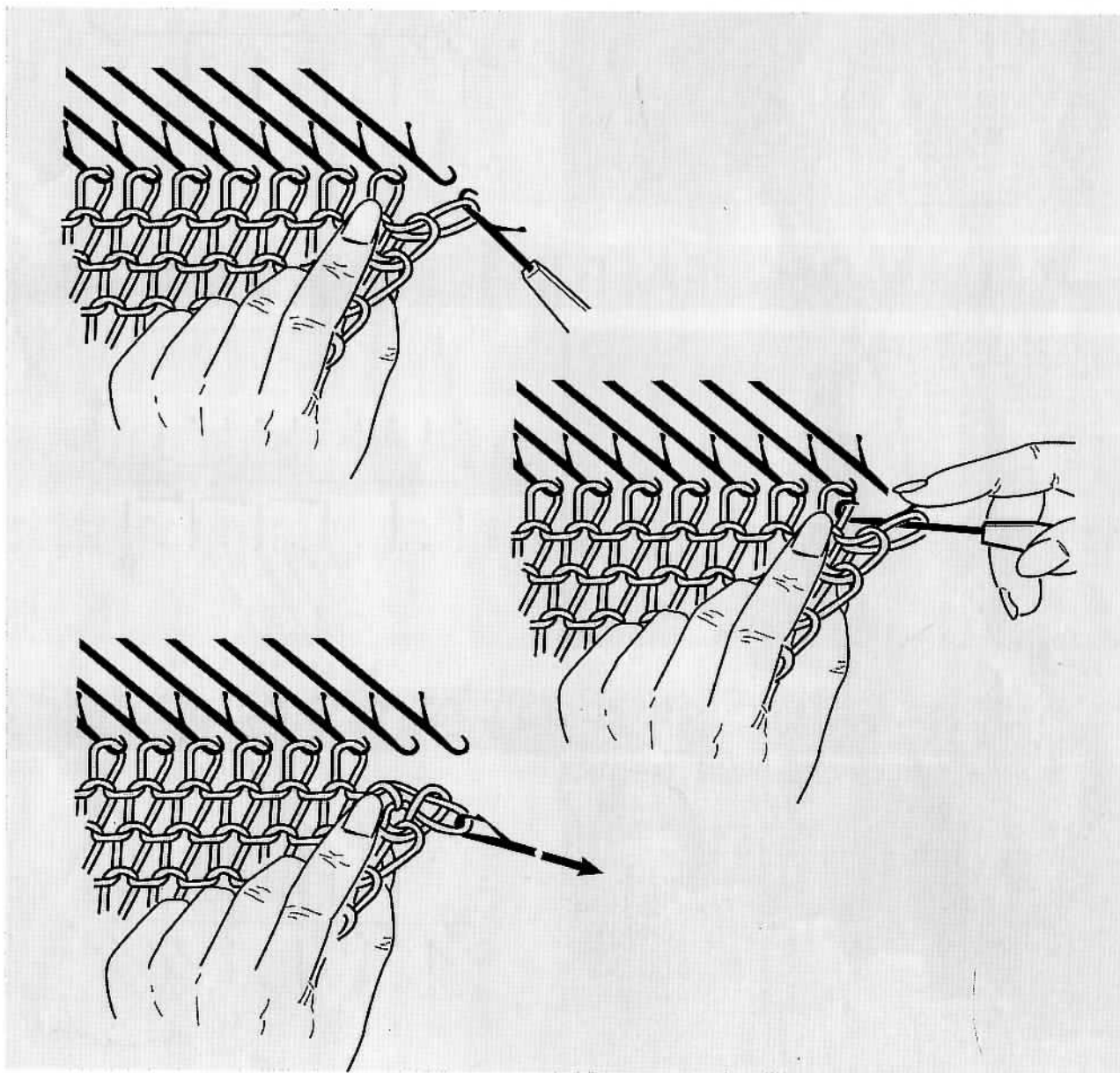
- On rear needle bed.
- Carriage on right-hand side (or on the left if you are left-handed).
- Increase the stitch size by at least half the stitch size used.
- Knit one row.
- Take off a few weights whilst making sure that the comb remains balanced.
- Lower the front needle bed.
- With your left hand, hold the knitting as shown in the illustration.
- Pull the knitting slightly to open the stitches.
- Using the latch needle tool, unhook the first stitch on the side opposite the yarn.
- Make the stitch slide behind the tool's latch.
- 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 up to the last stitch.
- Break the yarn and pull it through the loop of the last stitch.

IN RIBS

- Knit the last row with a stitch size twice that of the one used.
- Using the double-eyelet needle, transfer all the stitches from the front bed onto the rear bed.
- Cast-off using one of the methods for casting-off in stocking stitch.

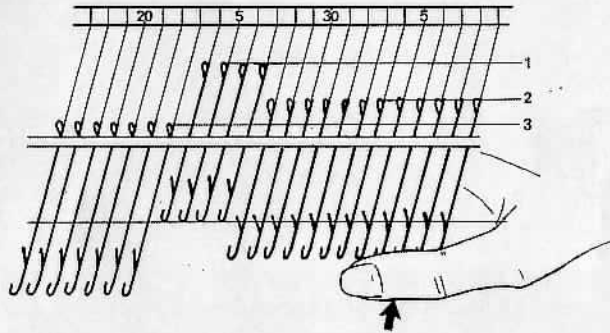
OTHER METHOD

You can also cast-off your knitting by using the method for decreasing several stitches.



SHORTENED ROWS

NEEDLES IN HOLDING POSITION



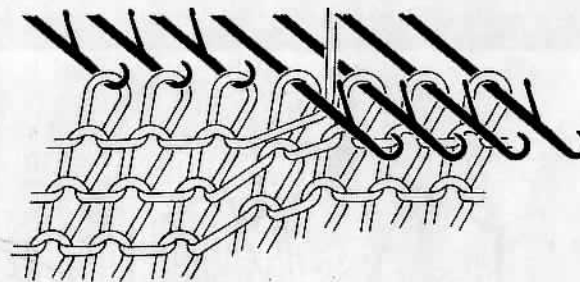
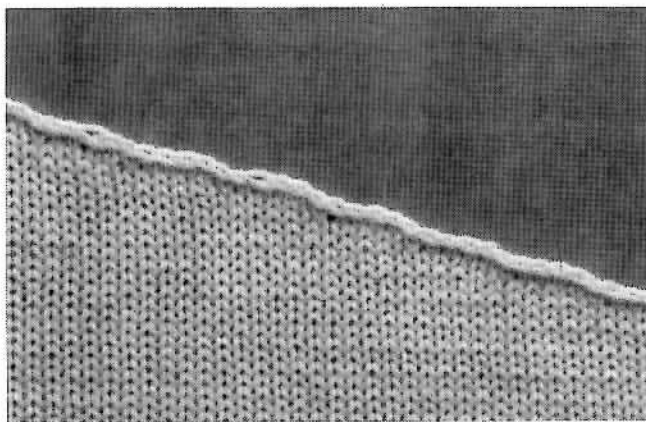
The needles are said to be in holding position 3 when they are in the highest position on the needle bed. These needles' heels rest on the upper slide rail.

In this position, the needles which carry the stitches do not knit but can be put back to work as soon as is necessary for knitting purposes (e.g. button holes, etc..).

In order to put the needles in holding position back to work :

- Place the needles in position 2, (to make use of just part of the needles in holding position).
- Knit the next row with the needle return buttons set in the lower position (to put back to work all the needles in holding position).

STITCHES IN HOLDING POSITION OR SHORTENED ROWS (PART-ROW KNITTING)



You will be using shortened rows for shoulder shaping, bust darts (horizontal), sock heels, curves for dresses or skirts, necklines, etc..

Shortened rows are obtained by placing one or several needles in holding position 3 every two rows on the side opposite the carriage.

- On the side opposite the carriage, move the needles you do not wish to knit with into holding position 3.
- Knit one row.
- To avoid making a hole, pass the yarn under the first needle in holding position, and then between that one and the next one.
- If you are shaping shoulders at the same time, move up on the other side the number of needles provided for in position 3 .

NECKLINES

STRAIGHT VERTICAL OPENING

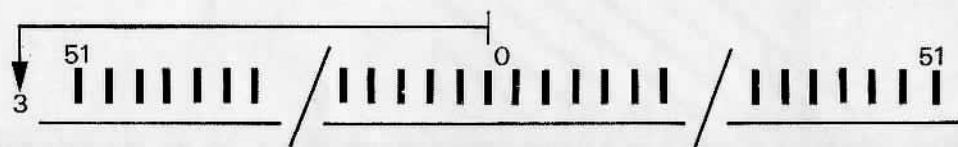
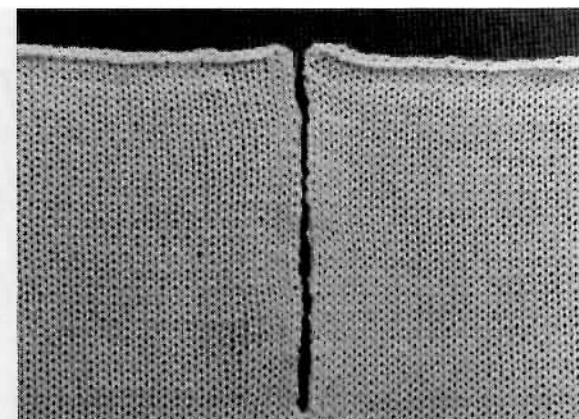
This opening is used especially for zips.
When you reach the row where the opening is to start

First side :

- On the side opposite the carriage, move all the needles from the place where you wish to start the opening into holding position 3.
- Hang the edge claws and weights on the first side to be knitted and bring them up frequently.
- Note the number of rows shown on the counter.
- Knit the number of rows corresponding to the height of the opening.
- Finish the first side and lower the empty needles into non-working position 3.

Second side :

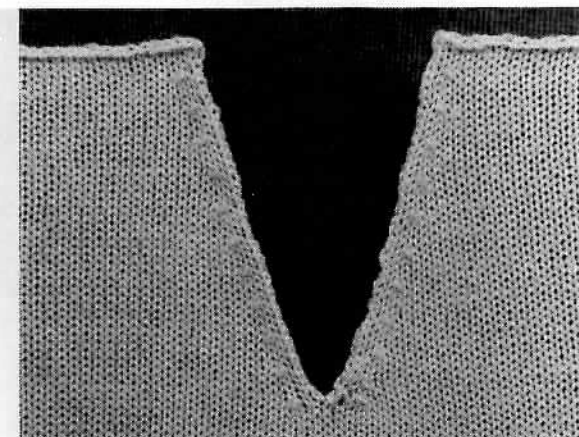
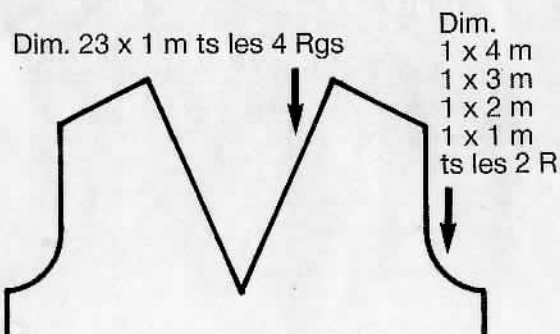
- Retread the machine. Reset the row counter to the same number of rows noted previously.
- Use the needles in holding position knitting one row with the needle return buttons in the lower position.



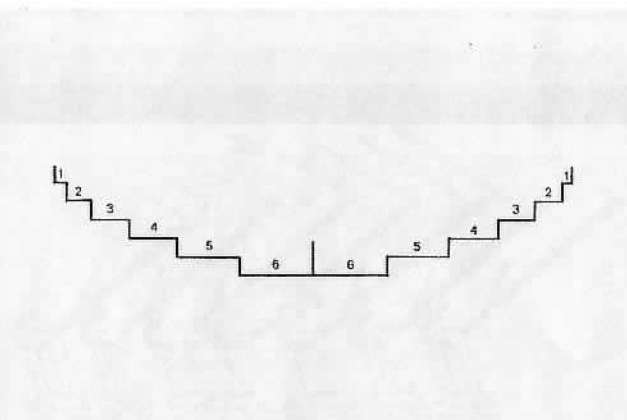
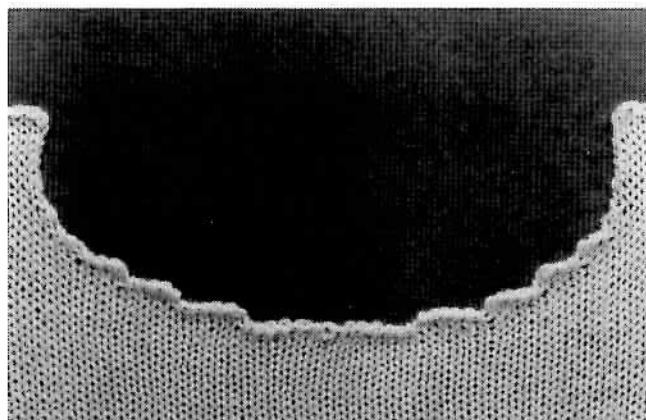
V-NECKLINE

- On the side opposite the carriage, move half the needles used for the knitting into holding position 3.
- Proceed as for the straight vertical opening but decrease one stitch in the middle every 4 or 8 rows, 2, 4 or 6 stitches from the edge on the neckline side.
Whilst doing so, shape the armhole according to the pattern chosen.

CAUTION : Remember to hang the edge claws and weights and to bring them up every 10 or 15 rows.



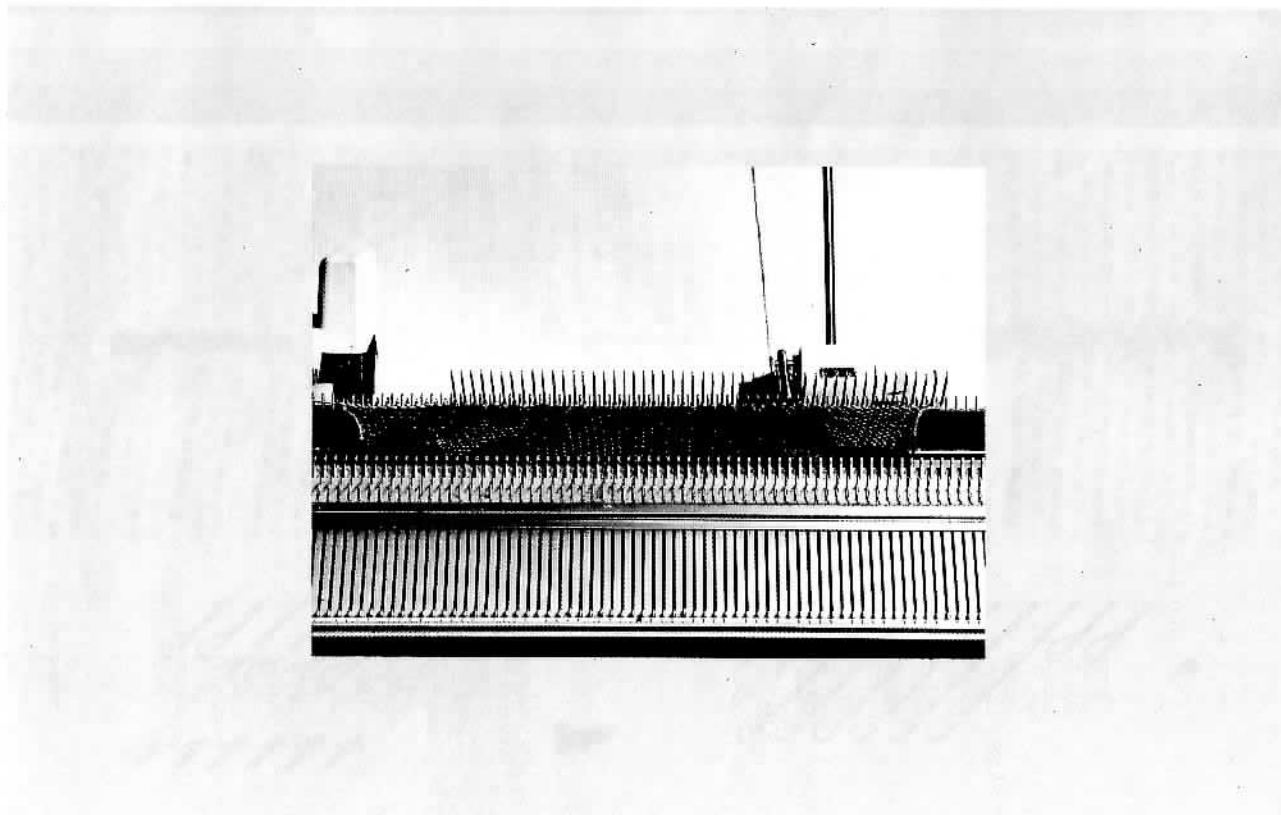
CURVED NECKLINE WITH CAST-OFF STITCHES



Apart from the neckline decreasing work, the work to be done is the same as for the V-neckline.

- Decrease according to the following indications given by way of example :
 - once 6 stitches — knit two rows
 - once 5 stitches — knit two rows
 - once 4 stitches — knit two rows
 - once 3 stitches — knit two rows
 - once 2 stitches — knit two rows
 - once 1 stitch — knit two rows

CURVED NECKLINE WITH NEEDLES IN HOLDING POSITION



- Proceed as for a normal curved neckline but instead of casting-off the stitches, move up the number of needles required for each decrease into holding position 3.
- Continue the garment and shape the shoulder.

To knit the second side :

- Thread the carriage on the armhole side.
- Lower into working position 2 the needles of the second side less the ones corresponding to the first decrease, i.e. 6.
- Continue as for the first side.
- Then transfer the necessary edge stitches which are between the neckline and the shoulder shaping, onto empty needles, after those with the stitches of the neckline.
- Move up all the needles into holding position 3.
- Set the needle return buttons to the lower position.
- Knit a row .
- Cast-off the stitches or if you wish, knit the neckband immediately and set the stitches in ribs if necessary.
- Knit the number of rows required for the neckband and the welt and then cast-off the stitches.

BUTTON HOLES

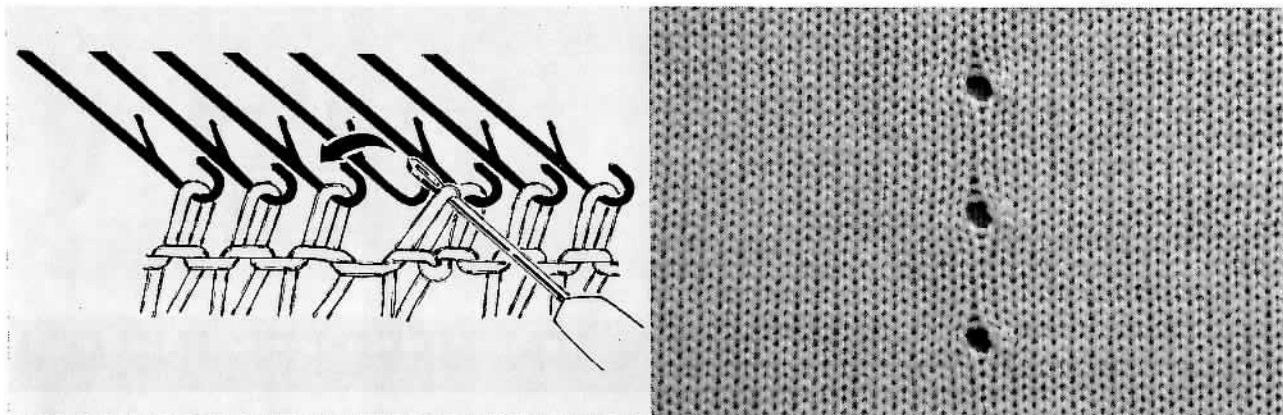
ROUND BUTTON HOLE

They are used for button bands in ribs or stocking stitch for small buttons.

- Using the single-eyelet transfer tool, transfer one stitch onto the next needle (for stocking stitch) or onto the nearest needle on the opposite needle bed (for the ribs).

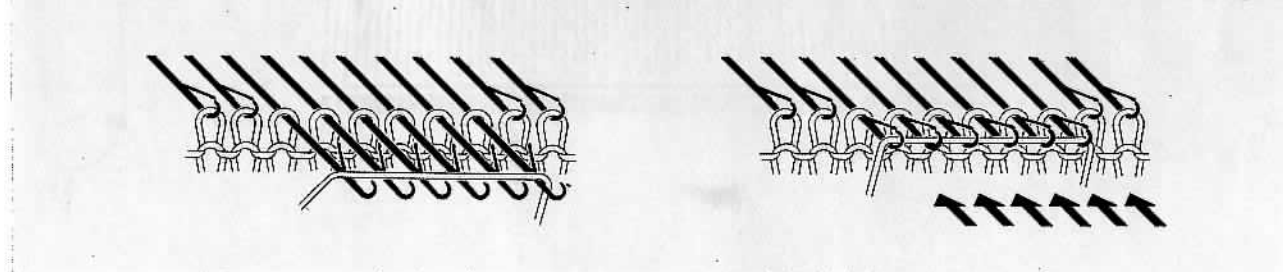
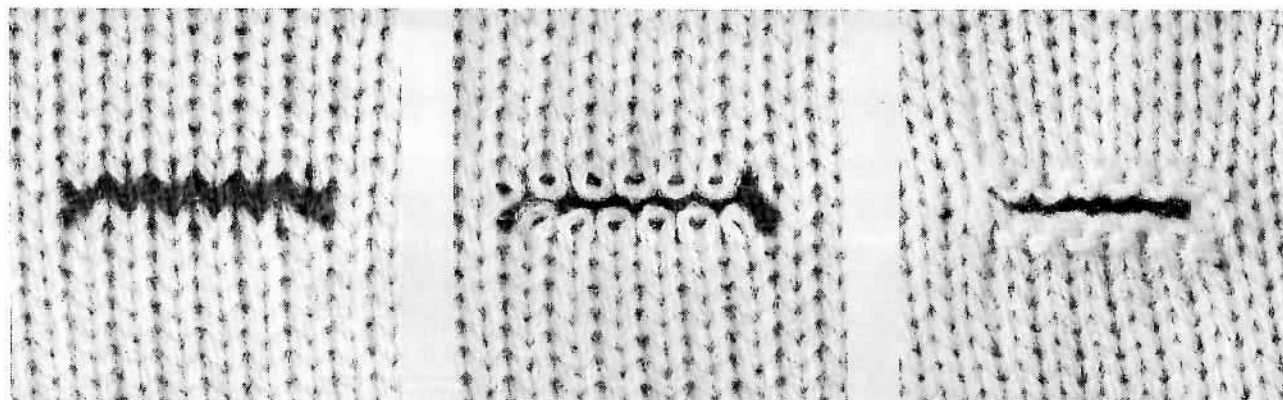
Leave the empty needle in position 1; it will be knitted in the next row.

- Continue knitting whilst repeating the same operation to make the button holes in the desired places.

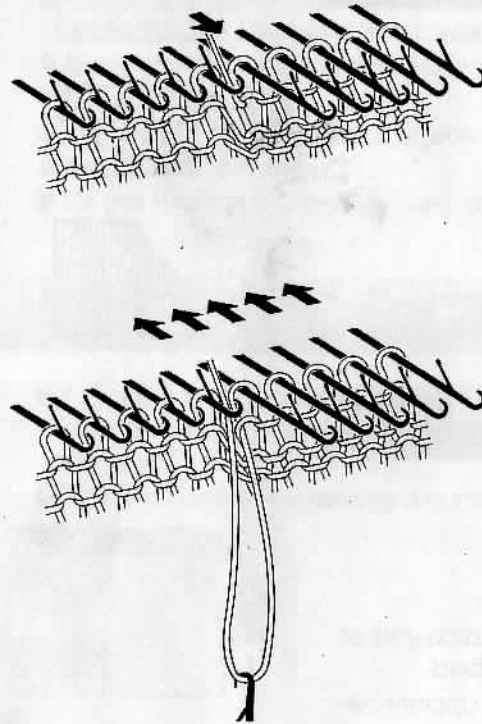
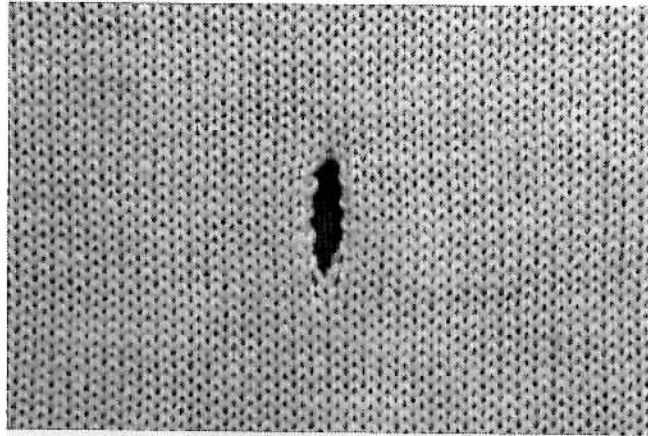


HORIZONTAL BUTTON HOLE

- Move the number of needles corresponding to the desired length of the button hole into working position 2.
- Place an auxiliary yarn into these needles' hook.
- Lower these needles by pulling them by the heel to close the latches and knit the auxiliary yarn.
- Put these needles back in position 1.
- Continue knitting.
- Once the garment is finished and pressed, take out the auxiliary yarn.
- Scallop the button holes by hand, stitch by stitch.



VERTICAL BUTTON HOLE



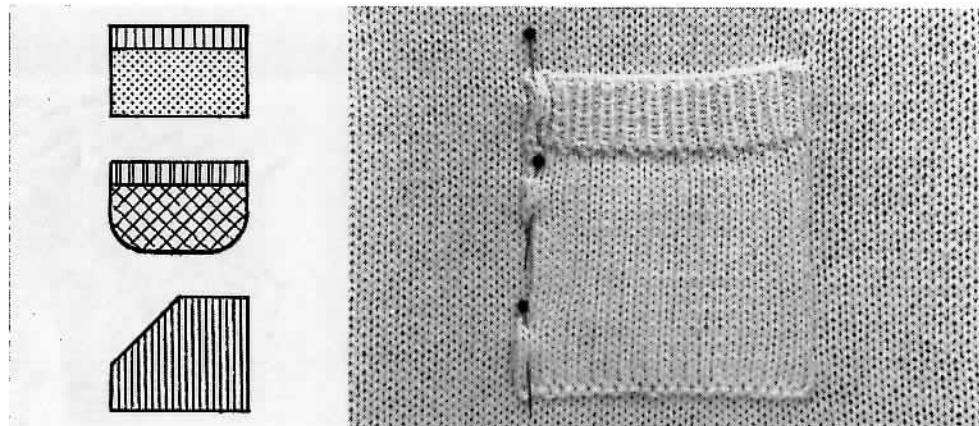
- On the opposite side to the carriage, move up into holding position 3 the needles situated between the edge of the knitting and the location of the button hole.
- Hang the edge claws and weights on the first side you wish to knit.
- Knit an uneven number of rows corresponding to the height of the button hole.
- The carriage is now on the side of the needles in holding position.
- Move the needles which have just knitted into position 3.
- Move the carriage across these needles.
- At the place where the button hole is due to be, pull a big loop of yarn which is long enough to then be able to embroider the button hole by hand. Keep this loop down between the needle beds or hang it onto one of the weights.
- Lower the first group of needles which was in position 3 into position 2 in order to knit the second side.
- Hang the edge claws and weights.
- Knit the same uneven number of rows as for the first side. The carriage is now on the side opposite the needles in holding position.
- Set the needle return buttons to the lower position.
- Knit one row.
- Set the needle return buttons to the lower position.
- Knit one row.
- Set the needle return buttons to the neutral position.
- Continue knitting while making the button holes in the desired places.

THE POCKETS

PATCH POCKET

When your garment is finished :

- Knit a separate pocket piece of the desired shape.
- Press it .
- Sew it in the required place with slip stitches.



SINGLE POCKET PIECE WITH WELT IN STOCKING STITCH

To make the pocket opening :

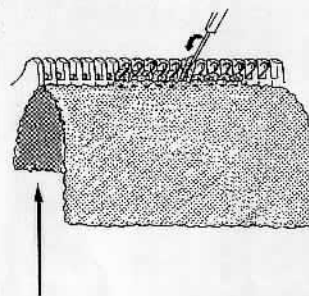
- At the required place, proceed as for a horizontal button hole.

To make the pocket piece :

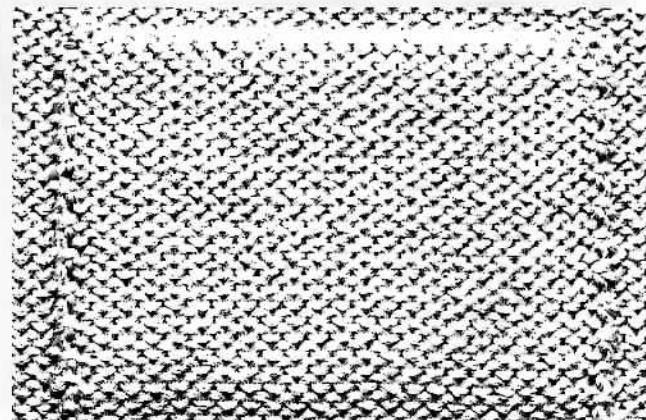
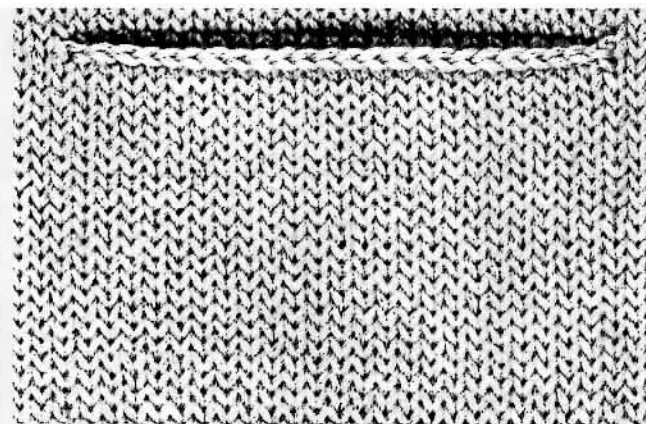
- With the right side of the knitting facing you, fold the knitting towards you at the pocket, the bottom of the knitting will be facing the needle bed.
- Using the single-eyelet transfer tool, transfer the stitches from the upper row in the opening onto the rear bed's needles.
- Hang the edge claws and weights along the width of the pocket.
- Knit the number of rows corresponding to the height of the pocket piece. Bring up the edge weights frequently.
- Cast-off the stitches.

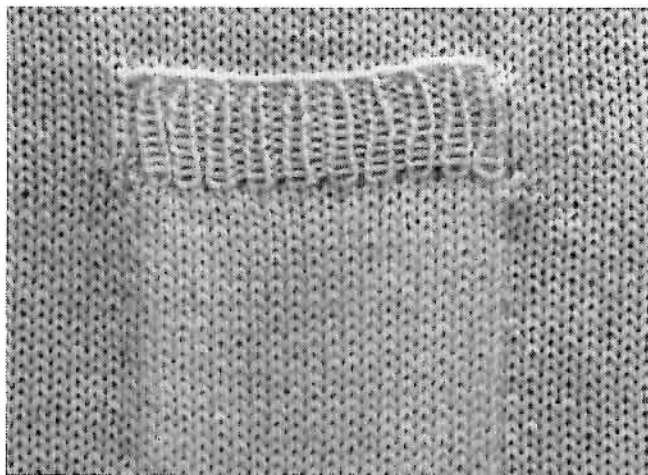
To make a pocket welt in stocking stitch :

- With the wrong side of the knitting facing you, move up the stitches from the lower row onto the needles.
- Increase one stitch on each side by hooking the heel of the first and the last stitch onto the next empty needle.
- Hang the edge claws and weights.
- Knit six to eight rows to form the welt of the pocket.
- Cast-off the stitches.
- Fix the pocket piece and the sides of the pocket welt with slip stitches.



Bas du tricot



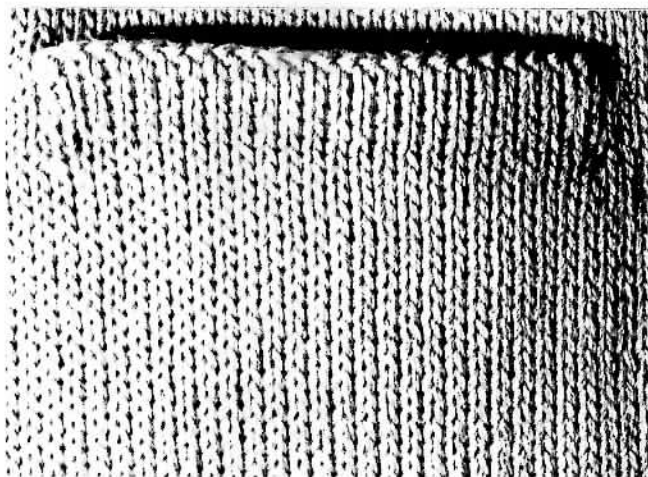


SINGLE POCKET WITH WELT IN RIBS

- Knit the pocket piece as for the simple pocket with stocking stitch welt.

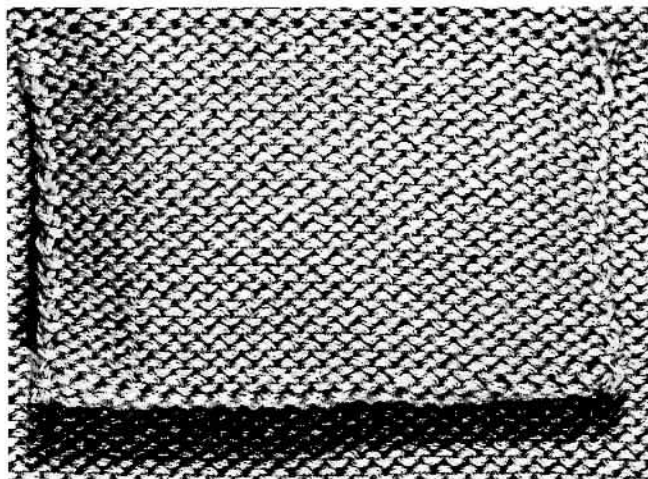
To make the pocket welt :

- Move up the stitches from the lower row of the opening onto the needles, plus one stitch on each side as for the stocking stitch welt.
- Transfer every second stitch onto the front bed's needles for the 1/1 ribs.
- 1/1 ribs stitch size.
- Knit 8 to 10 rows to form the welt.
- Cast-off the stitches.
- Fix the sides of the pocket welt and the pocket piece with slip stitches.



SINGLE POCKET WITH WELT IN CLOSE RIB

- Proceed in the same way as for the single pocket with welt in ribs but leave the stitches on the rear needle bed and move up the same number of needles into position 1 on the front bed. They will be knitted on the next row.
- Knit in close rib the required number of rows for the welt.



DOUBLE POCKET PIECE AND WELT IN CLOSE RIB

The double pocket piece is only used for fine yarns.

- Remove the auxiliary yarn and put the stitches of the lower row on a stitch holder or pass through an auxiliary yarn. Do likewise for the stitches of the upper row.
- Proceed as for the single pocket piece but fold the knitting backwards at the pocket. Knit in stocking stitch a number of rows corresponding to twice the depth of the pocket piece without casting-off the stitches.
- Transfer the stitches on the stitch holder onto the front bed, opposite the needles in working position on the rear bed.
- Shift the front bed one notch to obtain alternated flow combs.
- Knit a few rows in close rib.
- Cast-off the stitches.
- Sew the pocket welts together. Slip stitch the sides of the welts onto the garment.

NECKBANDS

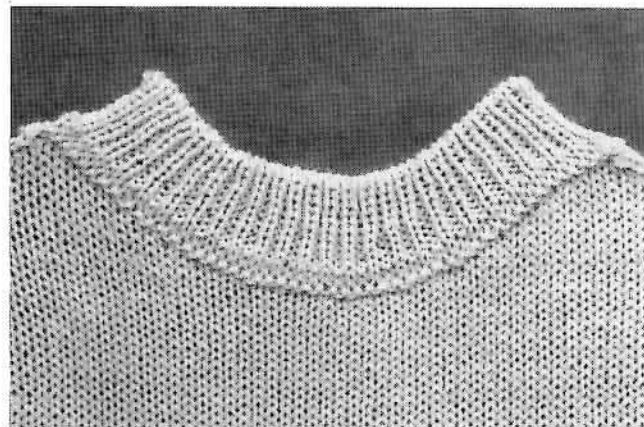
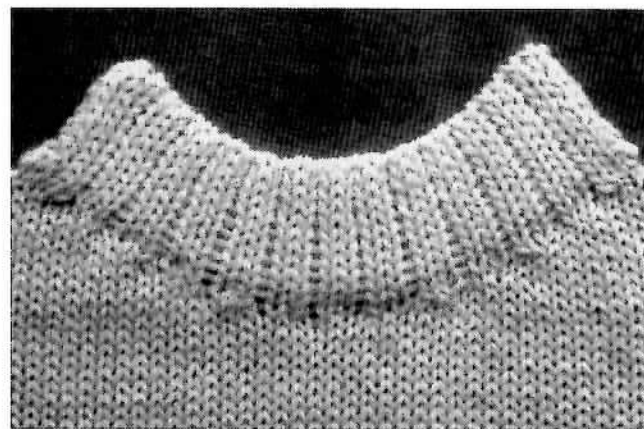
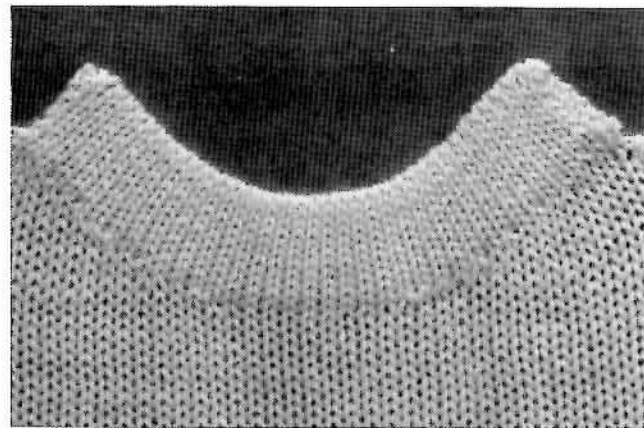
NECKBAND KNITTED WITH THE GARMENT

FIRST METHOD

- Sew a shoulder.
- 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 up the needles used into position 2.
- Knit a row of stocking stitch, and then continue in one of the two ways below :
 1. Reduce the stitch size by two sizes and continue to knit in stocking stitch twice the number of rows required for the height of the neckband.
Cast-off the stitches. Fold the neckband inwards and fix it.
 2. Set the needles for rib knitting and knit the number of rows required. Cast-off the stitches.

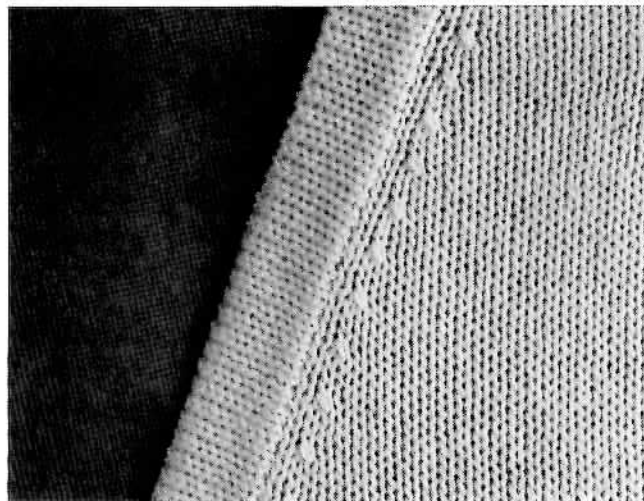
SECOND METHOD

- The neckband is knitted directly onto the neckline's open stitches according to the method shown on page 45.
- After having transferred the neckline's open stitches onto the machine, knit the neckband according to the first method.



NECKBAND KNITTED SEPARATELY

- Cast-on in ribs and knit the desired number of rows in ribs of your choice.
- Transfer the stitches onto the rear needle bed.
- Knit a row in stocking stitch and then a few rows of auxiliary yarn.
- Remove the garment from the machine.
- Sew the neckband manually stitch by stitch onto the top of the curved neckline (see page 55).



V-NECKBAND KNITTED IN STOCKING STITCH

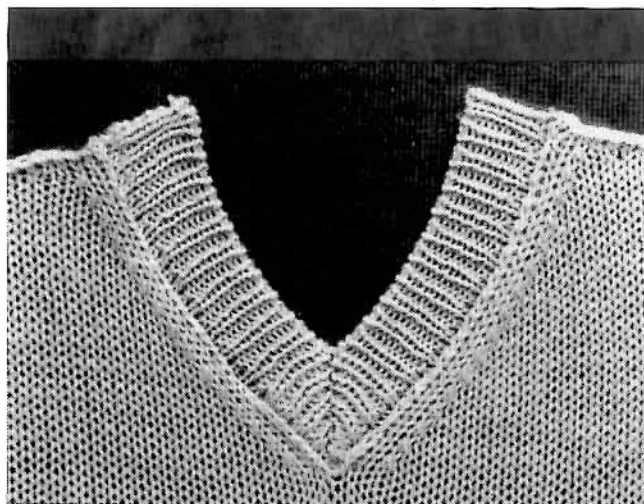
FIRST METHOD

The neckband is knitted separately and then folded to form the V. This method is only used with fine yarn.

- Knit a neckband separately in stocking stitch, slightly shorter than the neck measurement.
- Knit the number of rows required for the desired neckband depth.
- Then knit a row with stitch size 12 (place where the fold is made) and then knit the second half of the neckband.
- Cast-off with very loose stitching.
- Assemble both ends of the neckband in a "mitre" to form the V.
- Sew the neckband, either with a sewing machine or by hand, onto the neckline, folding half of it inside the knitting.

SECOND METHOD

- The neckband is knitted separately while decreasing stitches on the sides to form the V. This method is used for all yarn thicknesses.
- Knit a neckband separately in stocking stitch, slightly shorter than the neck measurement.
- Knit the desired neckband depth while decreasing one stitch on each row on each side (see page 39 on decreasing one stitch or Italian decrease).
- Knit one row with stitch size 12 (place where the fold is made)
- Knit a second neckband depth while this time increasing one stitch on each row on each side.
- Make a loose chain cast-off.
- Assemble both ends of the neckband to form the V.
- Sew the neckband onto the neckline folding half of it inside the knitting.



V-NECKBAND KNITTED IN RIBS

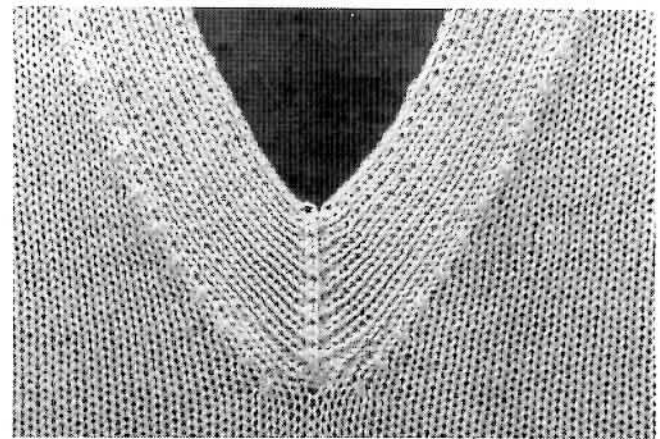
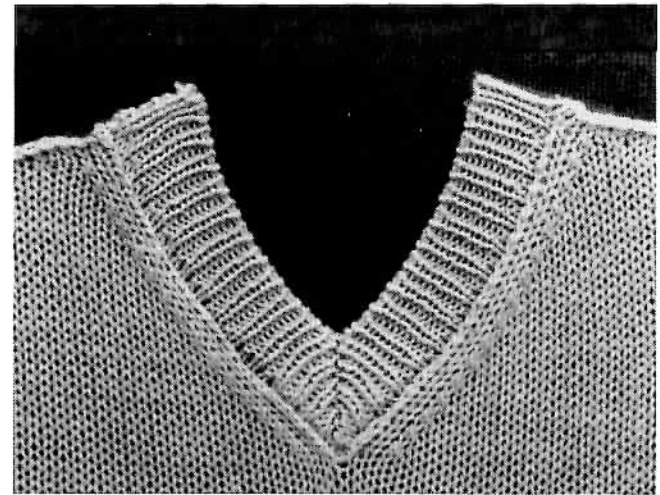
FIRST METHOD

The neckband is knitted separately :

- Make an open casting-on in stocking stitch (page 27) using an auxiliary yarn.
- Knit a few rows.
- Thread the machine with the yarn used for the garment and knit two or three rows of stocking stitch.
- Set up the stitches to knit in ribs.
- Knit the desired neckband depth while decreasing one stitch on each row on each side.
- Cast-off in chain stitch.
- Assemble both ends of the neckband to form the V.
- Sew the neckband onto the neckline at the base of the ribs.
- Fold it inside the knitting with slide stitching on the first row of stocking stitch.
- Undo the auxiliary yarn.

SECOND METHOD


- The neckband is knitted separately partly in 1/1 ribs and partly in stocking stitch.
- Measure the neckline measurement and make a sample to determine the number of stitches and the stitch size required. Remember that you will slightly stretch the neckband when you sew it onto the garment.
- Cast-on in 1/1 ribs.
- Knit the required neckband depth.
- Transfer the stitches from the front bed onto the rear bed's empty needles.
- Stocking stitch size.
- Knit three rows in stocking stitch.
- Cast-off loosely.
- Sew the neckband onto the neckline with the stocking stitch part inside the garment.

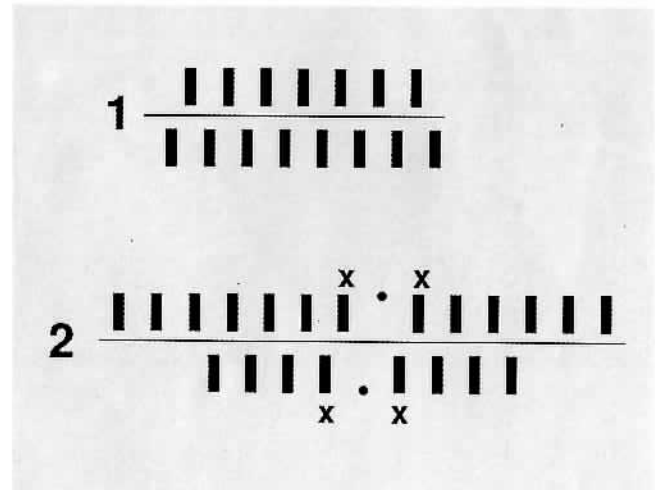


V-NECKBAND IN CLOSE RIBS (FINE YARN)

This neckband starts in the middle of the back and is knitted side after side up to the V where the two sides meet.

In order to do so :

- On the rear bed move up an uneven number of needles into position 1, to the left of 0, whilst doing the same with an even number of needles required for the width of the neckband on the front needle bed, to obtain the setting shown in (1).
- Cast-on in the usual way and then press the key  on both carriages.
- Set the stitch size to 1/1 ribs less one size.
- Knit two rows. Add a needle to the left-hand edge on the rear bed.
- Knit two rows. Again add a needle to the left-hand edge on the rear bed.
- Knit the number of rows required for the height of the neckband up to the start of the V. Move these needles into position 3 and then break the yarn.
- Rethread the carriage on the right-hand side.
- Proceed in the same way for the right-hand side of the band while increasing at the right-hand edge. There will be one empty needle left on the front bed, the one between the two bands.
- Set the needle return buttons to the lower position and move the carriages across.
- Transfer the left central stitch on the rear bed onto the opposite needle of the front bed which is already carrying a stitch. Lower the empty needle into position 0.
- Knit two rows.
- ★ On the front bed, using the 6-eyelet transfer tool, make an Italian decrease on each side placing one stitch onto each central needle (needles marked with a cross, see sketch).
- On the rear bed, make the same decrease on the right-hand side.
- For the left-hand side, using the single-eyelet tool, transfer the stitch marked with a cross onto the needle carrying the right-hand decrease. This needle will now carry three stitches. Move it into position 2.
- Using the 6-eyelet transfer tool, draw the left-hand side stitches one needle to the right, leaving the empty needle in the middle in non-working position 0 at all times.
- Knit two rows.★
- Repeat from ★ to ★ until there are only two central stitches left on the front bed and five stitches on the rear bed.
- Break the yarn and thread the double eyelet needle. Remove these stitches with the double eyelet needle. Sew on the neckband.



HOW TO FINISH YOUR GARMENTS

PRESSING AND ASSEMBLING

A well-finished garment enhances the knitting done and the simpler the stitch is, the more importance the assembly work has.

Preparation

- Before sewing the seams, especially for the flat stitches like stocking stitch, carefully press the knitting if necessary.
- If pressing is required, pin the knitted pieces to a blocking board every two centimeters.
- Stretch the knitting except for the welts in mock rib.
- Give it its shape by checking the sides of the model's diagram or those of the pattern chosen beforehand.
- For wool, use a very moist ironing cloth with a hot iron to obtain a good amount of steam.
- Gently place the iron from place to place in order to cover the whole surface. The more raised the pattern is, the more you have to steam slightly above the surface so that the steam penetrates the knitting better without crushing it though.
- Let the knitting dry before pulling out the pins : the knitting pressed in this way and dried in shape will have a good shape before it is assembled.

CAUTION : Mixtures and synthetics have some particular rules as far as pressing is concerned. Refer to the instructions given by the manufacturer on the yarn label. Do not steam stretchy welts or processed baby wools.

SEAMS

To get neat seams, avoid assembling by hand by simply oversewing edges.

Each piece of knitting must be treated as a material garment whilst considering that each part corresponds to each cutting from a pattern.

- To do the assembly work properly, carefully tack the knitted pieces.
- Try on the garment before joining the seams (choose a sewing thread of a similar shade to the knitting and slightly slacken the tension on your sewing machine in comparison with a normal fabric sewing stitch so that the stitch fastens the thickness of the knitting without stretching. If you have a sewing machine which will do a chain stitch, sew the knitting with a short chain stitch.
- Pin the seams and flatten them using a moist ironing cloth.

- Once the whole garment has been assembled, give it a final press.
- Generally, the rib parts will be assembled by hand using an invisible seam to give the garment a neater finish.
- A neat finish for a raglan sweater is obtained by assembling the raglan parts with invisible seams (see page 55).
- The sleeve and side seams will be joined using a sewing machine.

BUTTON HOLES

Horizontal button hole :

- Remove the auxiliary yarn.
- Using the main yarn, scallop stitch the lips of the button hole stitch by stitch.

Horizontal button hole :

- Using a button hole stitch, finish the button hole by hand. You can easily do a sewing machine button hole on your knitting. In this case, use a strong fabric on the wrong side of the knitting.

BUTTON AND BUTTON HOLE BANDS

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

BUTTON BANDS IN CLOSE RIBS OR 2/2 RIBS

These bands can be knitted width-wise either in close rib (page 24) or 2/2 industrial ribs (page 24) in the following way :

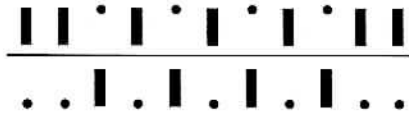
- Knit the required height in ribs.
- If required, cast-on the intermediary empty needles to knit in circular stocking stitch (page 29)
- Knit approximately 4 rows, i.e. 8 on the row counter.
- Break the yarn leaving a long enough strand of yarn for the sewing.
- Rethread the machine with an auxiliary yarn.
- Knit a few rows in circular stocking stitch.
- Cast-off the circular stitch with a few rows in close ribs to make the pressing easier.
- Break the yarn and remove the knitting.
- Press the band and undo the knitting in auxiliary yarn.
- Slide the edge of the garment into the circular knitting.
- Baste the band and sew it with back stitch.

HOW TO FINISH YOUR GARMENTS...

BUTTON BANDS IN 1/1 RIBS WITH AN IMPECCABLE FINISH

After casting-on normally :

- Add one needle onto the rear needle bed on two rows.
- Knit.



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 knitted bias band :

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

TO CUT KNITTED FABRIC

If you wish to adjust a garment which is too big :

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

CUT AND SEW

The "Cut and Sew" method is widely used in industry. If you wish to make sophisticated and personalized clothing with a detailed cut, like outfits, coats, suits, dresses, you must knit the fabric first :

Press this fabric and use it with a pattern like a normal fabric by overcasting the seams in zig-zag stitch.

BIAS BANDS

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

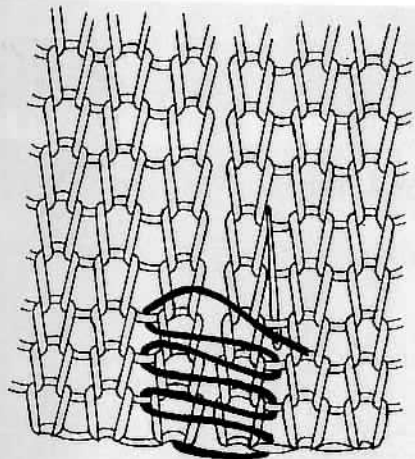
- Cast-on the required number of stitches.
- Knit one row.
- On the second row and on every alternate row, decrease one stitch on the opposite side of the carriage and increase one stitch on the carriage side.
- Continue until you reach the required length.

LININGS

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

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

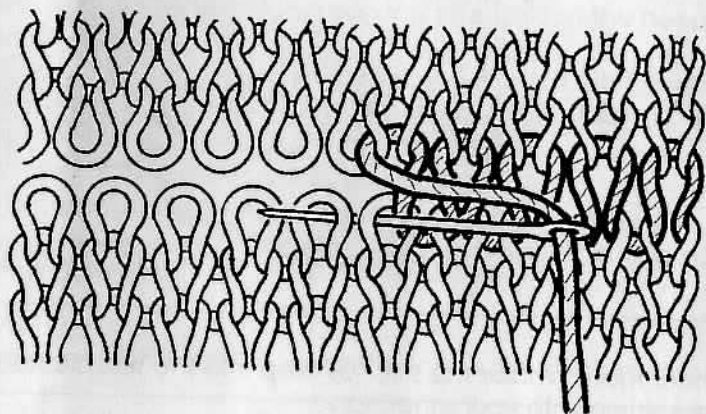
For a skirt, cut the lining slightly smaller than the garment to prevent the knitting from stretching.



INVISIBLE SEAMS

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

- Place the edges of the two pieces side by side.
- Start with the right-hand edge. Pass the double-eyelet needle threaded with the main yarn through the loop formed between the edge stitch and the second stitch.
- Pull the yarn.
- Pass the needle through the loop formed by 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.

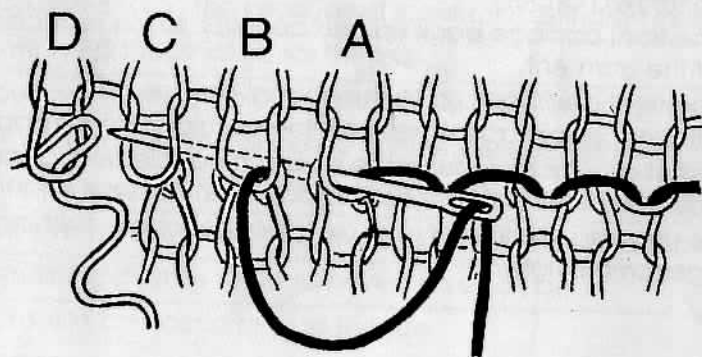


GRAFTING

The grafting method allows you to horizontally join two parts of knitting whose stitches are open, by forming a row of stitches.

Use a tapestry or wool needle threaded with the same yarn as the one used for the garment.

Stocking stitch : the open stitches are taken one by one, horizontally, as illustrated.



COLLAR SEAMS, FINISHING BANDS

The joins are generally made with back stitch. The needle goes in stitch A and the knitting comes out in stitch C and then it goes in stitch B and the knitting and then comes out again in stitch D.

N.B. : Before casting-on each time, it is preferable that you prepare your work by tacking the parts to be assembled.

SOCKS

THE LEG

- Carriages on the right-hand side.
- Cast-on the required number of stitches in 2/2 industrial ribs (see page 24 as well as the sizes chart)
- Knit the required number of rows (see the sizes chart), finishing with the carriages on the right.

THE ANKLE



- Transfer the group of two front bed stitches onto the empty back bed needles.
- Lower the front bed needles into non-working position 0.
- Remove the front carriage.
- Knit one row of stocking stitch with the carriage on the left.
- On the opposite side to the carriage, i.e. on the right, move a quarter of the number of needles into holding position 3.
- Knit one row with the carriage on the right.
- On the opposite side to the carriage, i.e. on the left, move the same number of needles already in holding position on the right into holding position 3.
- On the front needle bed, opposite the needles in working position on the rear bed, move up the same number of needles into working position 1.
- Reduce the number of weights.
- Lower the front bed into the intermediary position.
- Open all the needle latches on the front bed.
- Using the 20-eyelet transfer tool, which its cover off, remove the stitches in holding position on the right.
- Fix the safety cover and let the transfer tool drop between the two needle beds.
- Take it up again by the plastic edge (the stitches will then be against the safety cover) and bring it up level with the rear bed.
- Push the stitches against the plastic edge of the tool and remove the safety cover.
- Insert the transfer tool's eyelets in the needles' hooks on the front bed, placing the edge stitch on the middle needle.



- Tilt the transfer tool to make the stitches drop into the needle hooks whilst holding the knitting with your other hand.
- Proceed in the same way for the left-hand side.
- Lower the rear bed's empty needles into non-working position 0. The knitting forms a circle.
- Bring the front carriage back up and couple it to the rear carriage, on the right of the garment.
- Bring the front bed back up to the normal position.
- Make the necessary adjustments for the circular knitting (page 29).
- On the first circular row, decrease on each needle bed, at an equal distance, the number of stitches indicated on the sizes chart.
- Knit the required number of rows (see the sizes chart) finishing with the carriages on the right.

THE HEEL

It is knitted on the front bed only.

- Press the  key on the rear carriage.
- Press the  key on the front carriage.
- Set stitch size 1 on the rear carriage.
- Reduce the stocking stitch size by one size on the front carriage to reinforce the heel.
- On the front bed, move the last right-hand needle (on carriage side) into holding position 3.
- Move the carriages across to the left-hand side.
- Move the last left-hand needle into holding position 3.
- Move the carriages across to the right-hand side.
- Hang the edge claws and weights on the central part of the heel on the front bed to prevent the stitches from jumping up.
- Raise the edge claws and weights regularly.
- Continue in this way until one third of the needles are in holding position 3 on both sides and there is only one third of the needles left in the middle in position 1.
- On the opposite side to the carriages, lower the first left-hand needle into position 2. (i.e. the last one which was put into holding position).
- Move the carriages across to the left-hand side.
- Lower the first right-hand needle into position 2.
- Move the carriages across to the right-hand side.
- Continue in this way until there is only one needle left in holding position on both sides.

- Lower these two needles simultaneously into position 2.
- Pass the yarn under the last right-hand needle on the carriage side.
- Move the carriages across to the left-hand side.

THE FOOT

- Resume knitting in circular.
- Knit the required number of rows for the length of the foot (see sizes chart).

THE TOE

- Using the two-eyelet transfer tool, transfer, on the four sides, the first and second stitches onto the second and third needles.
- Lower the empty needles into non-working position 0.
- Knit two circular rows, i.e. four on the row counter.
- Continue to decrease knitting 2 circular rows between each decrease according to the size (see sizes chart).
- Continue to decrease knitting only 1 circular row between each decrease until there are only a few stitches left in the middle (see sizes chart).
- Break the yarn and thread it into the double-ended eyelet needle.
- Remove the remaining stitches one by one to pass the yarn through each of them.
- Cast-off the sock by pulling the yarn and sew it inside the sock.
- Sew the leg knitted in ribs with invisible seams (see page 55).

SIZES CHART

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

Metric sizes	15	18	21	24	27	30	33	36	39	42	45
British sizes	1	2 1/2	4 1/2	7	9 1/2	11 1/2	1	3 1/2	5 1/2	8	10 1/2
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
Decreases to be done for the ankle on the first circular row at equal distance on both beds	2	3	3	3	3	3	3	3	4	4	3
Number of circular rows for the ankle (x2 on the row counter)	5	5	5	8	8	8	12	12	16	16	16
Number of circular rows for the foot length (x2 on the row counter)	25	30	33	36	39	42	45	48	52	56	60
Decreases to be done every two circular rows (x2 on the row counter)	3	4	4	5	5	6	6	6	6	7	7
Number of remaining stitches to be removed on each bed	3	3	3	3	3	3	5	5	5	5	5
Length of the foot in cms according to the size	10	12	15	16	18	20	21	22	24	26	27

FANCY PATTERNS

The casting-on methods already mentioned can be adapted to suit the pattern you have chosen. If, for example, you wish 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 rear bed. In this case, transfer the stitches accordingly. The empty needles in the middle of the knitting will take the yarn in the normal way to form new stitches if you have not cast-on enough stitches at the beginning to complete your garment.

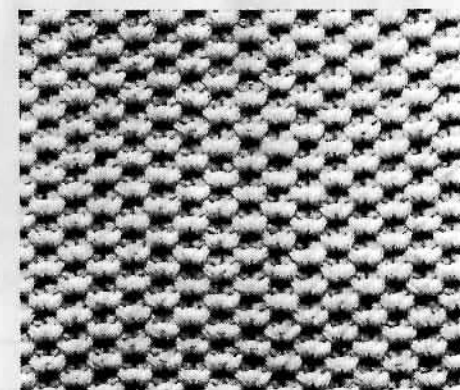
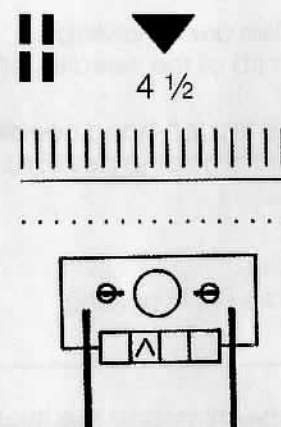
A welt in ribs or a hem can easily be knitted after a fancy pattern is finished. Hang the front bed's stitches onto the rear bed's needles. Continue to knit in stocking stitch to make the hem or transfer some stitches onto the front bed to continue in ribs.

PATTERN WITH NEEDLES IN HOLDING POSITION

3-ply yarn
Space selector 5
Stitch size 7 on rear carriage.

Move all the even needles 2, 4, 6, 8, etc. into position 3.
Knit 2 rows.

- Move all the odd needles 1, 3, 5, 7, etc. into position 3 and lower all the even needles into position 2.
- Knit 2 rows.
- Repeat.

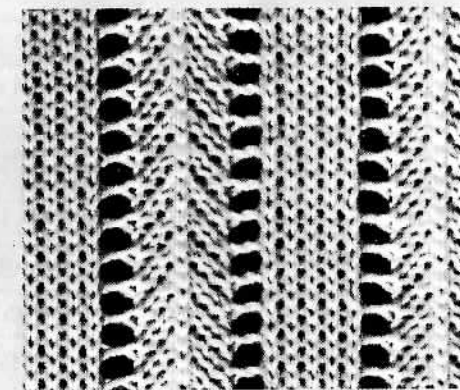
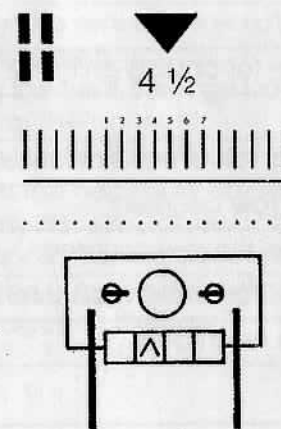


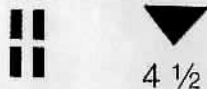
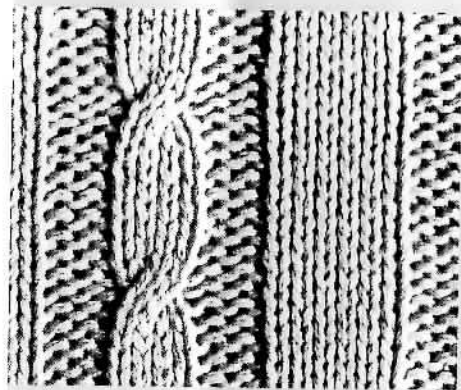
LACE PATTERN

3-ply yarn
Space selector 5
Stitch size 7 or 8 on rear carriage.

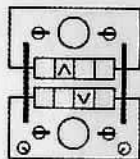
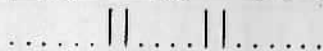
Using the three-eyelet transfer tool, transfer stitches 1, 2 and 3 onto needles 2, 3 and 4, and then stitches 5, 6 and 7 onto needles 4, 5 and 6. Needle 4 now carries 3 stitches, move it up into position 2.
Leave 5 stitches plain and repeat the pattern over the required length.

- Knit 2 rows.
- Repeat.





4 1/2



CABLE PATTERN ON BOTH BEDS

2- or 3-ply yarn.

Space selector 4 or 5.


Stitch size 7 or 8 on both carriages.

Every ten rows, cross the stitches marked with an X as follows :

- Using 2 double-eyelet transfer tools, place the two left-hand stitches on the 2 right-hand needles and the two right-hand stitches on the 2 left-hand needles.
- Move these 4 needles up into position 2.
- Knit 2 rows.
- Repeat.

RACKING PATTERNS



These very decorative fancy patterns are obtained by moving the front bed with the racking lever either to the left or to the right.

CAUTION : The flow combs must always be alternated, i.e. intermediary lever set to 

To obtain the racking effect, the rear bed stitch must be twisted by the movement of the front bed's stitch.

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

A wide range of variations can be obtained by changing the needle settings.

The nicest soft and raised patterns will be knitted with the  and  keys pressed in on the front carriage.

In order to have an easy reference during the racking operation, you will see on the lower slide rail of the front bed on the left a scale numbered from 1 to 8. An index located on the left-hand cover shows the position of the front bed at any time in relation to the numbers printed on this scale. When the index is opposite a full number, the flow combs are alternated.

3ply yarn

Space selector 5.

Stitch size 5 1/2 on both carriages.

Do a racking to the left.

Knit 1 row.

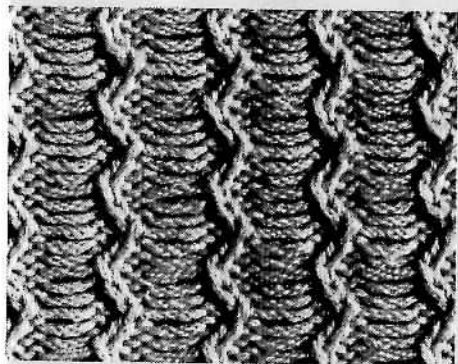
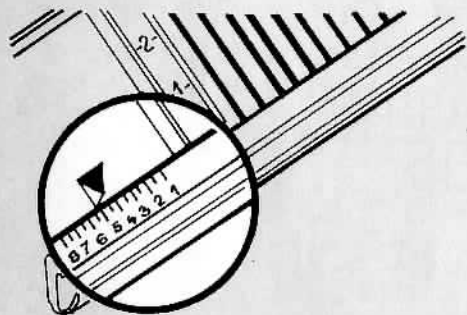
Repeat 3 times.

Do a racking to the right.

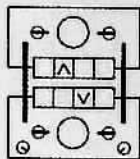
Knit 1 row.

Repeat 3 times.

Repeat from the beginning.



4



ON BOTH BEDS

3-ply yarn
Space selector 5.
Stitch size 6 on both carriages.

Carriages to the left.
Knit 2 rows.
Do a racking to the right.
Knit 2 rows.
Do a racking to the left.
Knit 2 rows.
Repeat.

ON BOTH BEDS

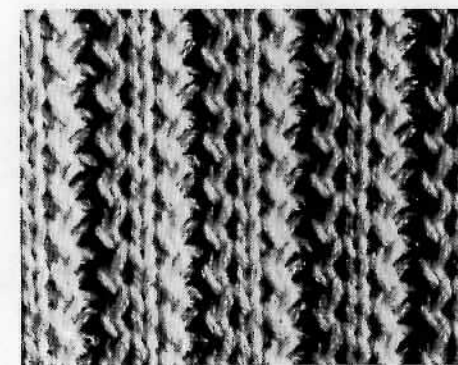
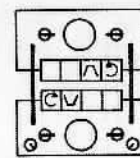
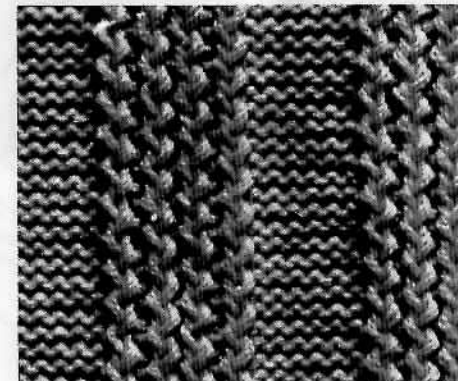
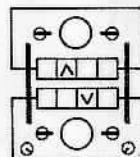
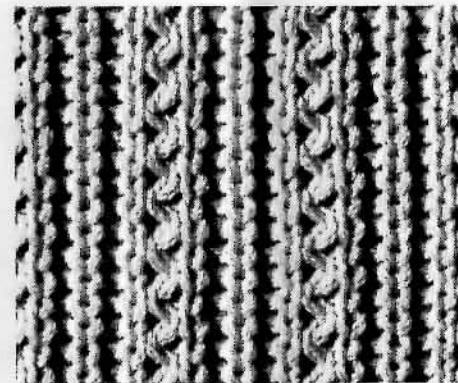
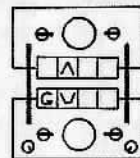
2- or 3-ply yarn
Space selector 5.
Stitch size 7 on both carriages.

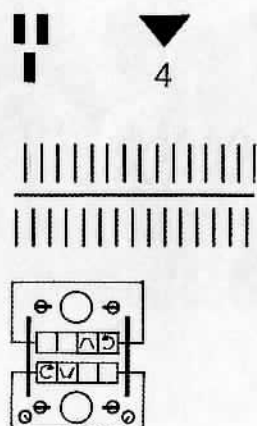
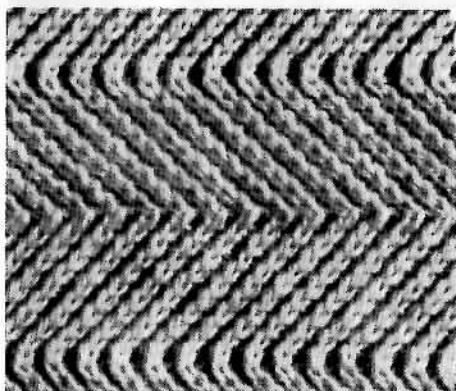
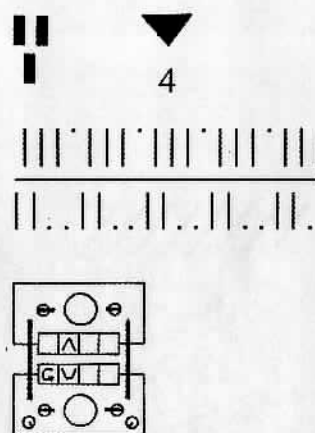
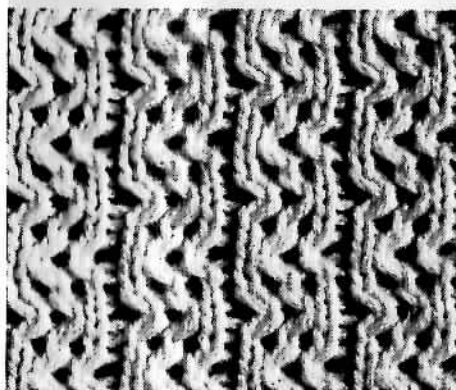
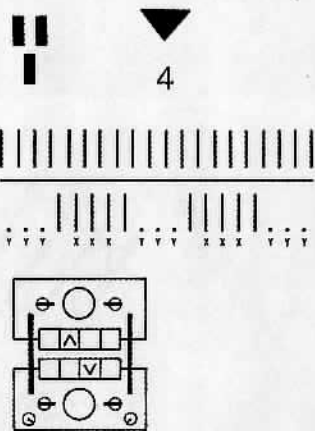
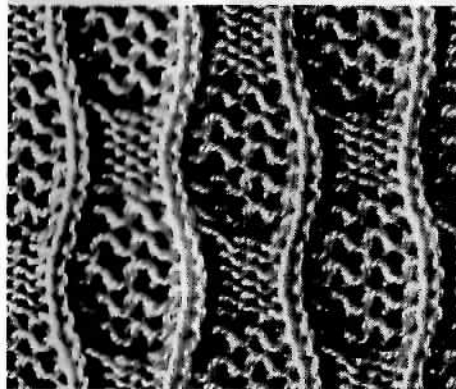
Knit 1 row.
Do a racking to the right.
Knit 1 row.
Do a racking to the left.
Knit 1 row.
Repeat.

ON BOTH BEDS

3-ply yarn
Space selector 5.
Stitch size 7 on both carriages.

Carriages to the right.
Do a racking to the left.
Knit 2 rows.
Do a racking to the right.
Knit 2 rows.
Repeat.





ON BOTH BEDS

2-ply yarn
Space selector 3.
Stitch size 5 on both carriages.

Knit 6 rows.
On the front bed, drop the stitches of 3 middle needles (X) from the groups of 5 needles and move up the 3 needles (Y) in position 1.
Repeat from the beginning.

ON BOTH BEDS

3-ply yarn
Space selector 5.
Stitch size 6 on both carriages.

Do a racking to the right.
Knit 2 rows.
Repeat twice.
Do a racking to the left.
Knit 2 rows.
Repeat twice.
Repeat from the beginning.

ON BOTH BEDS

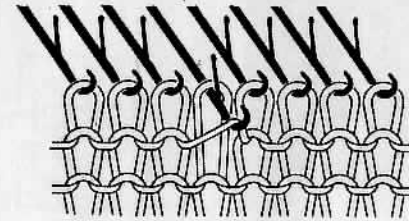
2-ply yarn
Space selector 4.
Stitch size 7 on both carriages.

Carriages to the right.
Do a racking to the left.
Knit 1 row.
Do a racking to the right.
Knit 1 row.
Repeat 10 times.
Do the 21st row without racking.
Repeat from the beginning.

TO WHAT TO DO IF...

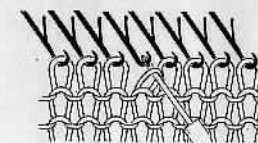
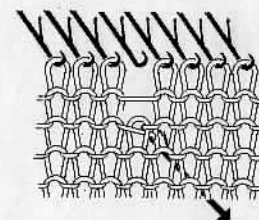
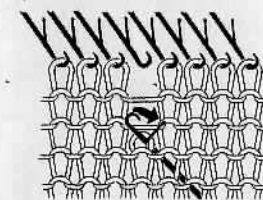
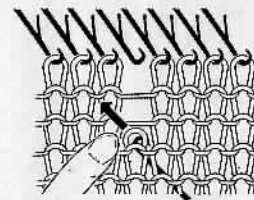
A STITCH DROPS ONE ROW

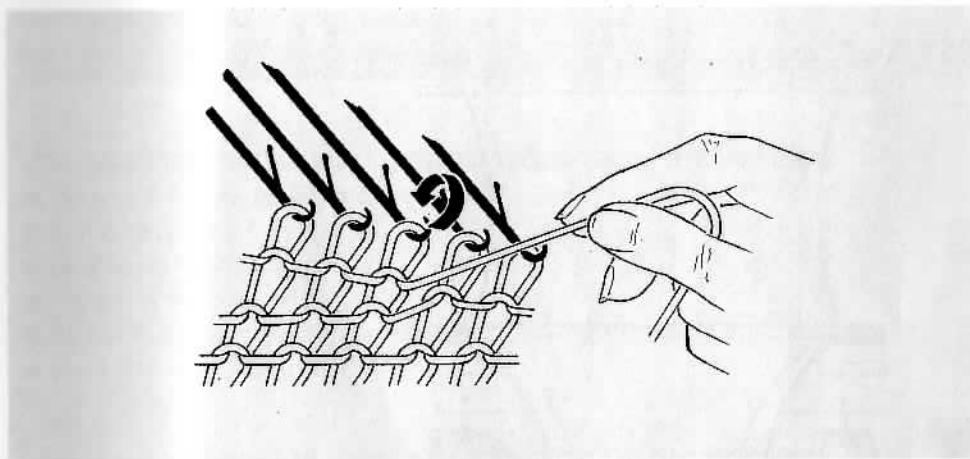
- Open the front needle bed in intermediary position.
- Place the stitch behind the latch.
- Place the yarn in the hook.
- Pull the needle by the heel to reform the stitch.
- Move the front bed up again.
- Continue knitting.



A STITCH DROPS SEVERAL ROWS

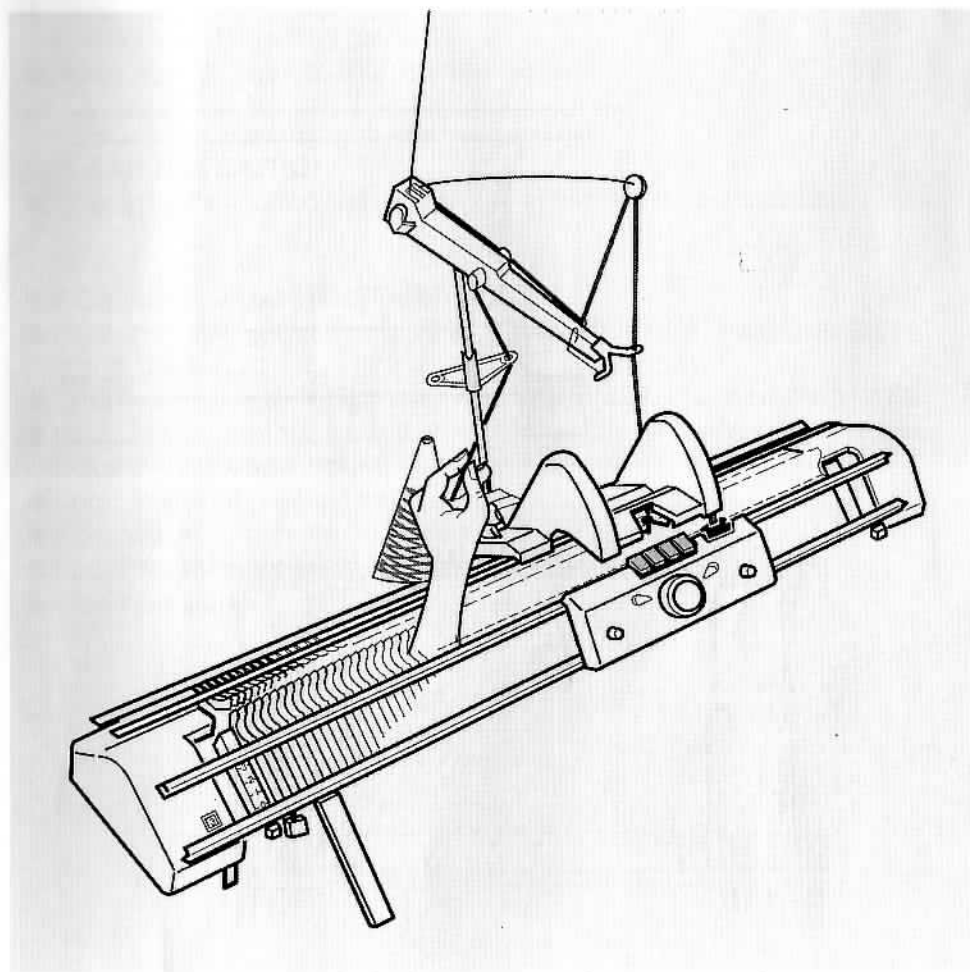
- Open the front needle bed
- Insert the latch needle tool a few rows under the dropped stitch, from the back of the knitting, if it was dropped on the rear bed, or from the front of the knitting, if it was dropped on the front bed.
- Push the tool up until the stitch slides behind the needle latch.
- Take the yarn from the row above in the hook.
- Pull the tool downwards until the latch of the tool closes and the 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 UNDO ONE OR SEVERAL ROWS

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



A LOOP FORMS AT THE BEGINNING OF THE ROW

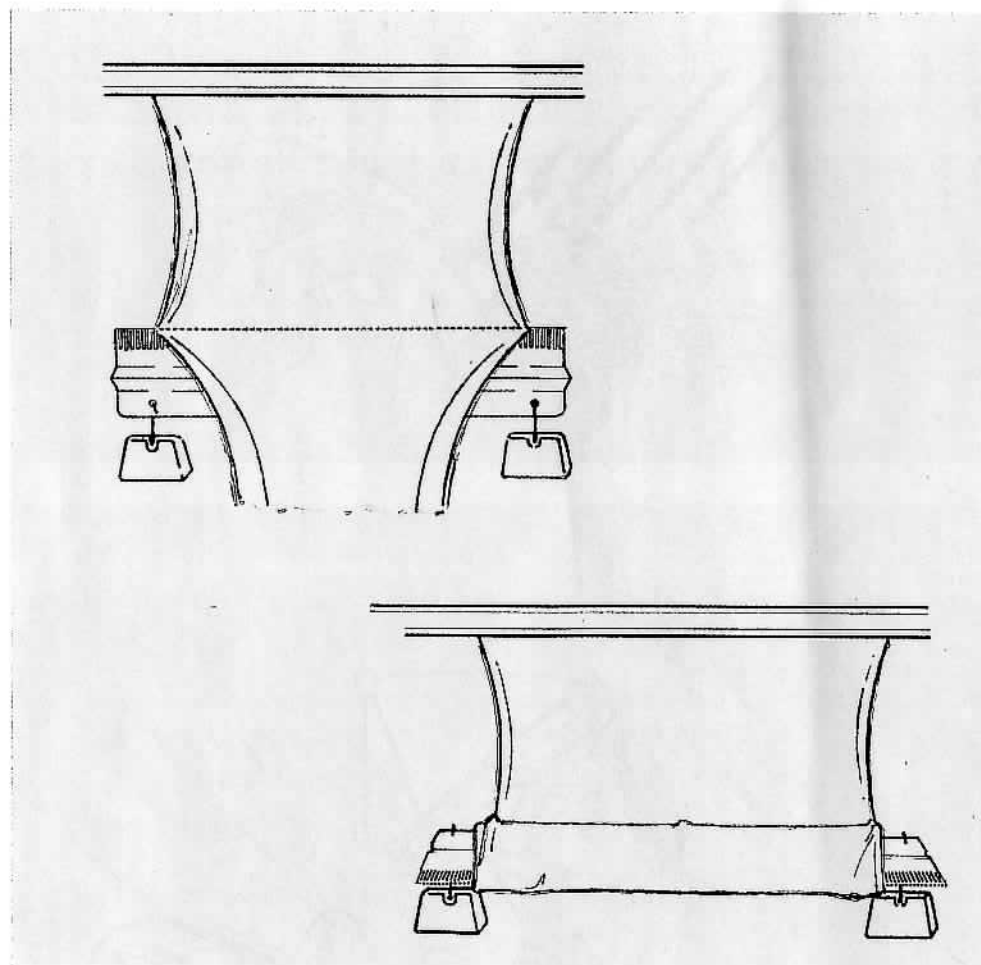
- The carriage has probably been moved too far from the last needle.
- Check the threading and pull on the yarn behind the tension unit before resuming knitting.
- Check if the tension spring is tight enough.

THE WEIGHTS REACH THE FLOOR

- Move the needles up so that the stitches are on the latches.
- Remove the weights.
- Remove the wire from the cast-on comb and release the knitting.
- Move the comb higher up the knitting.
- Put the wire back on.
- Rehang the weights.
- Lower the needles into position 1.

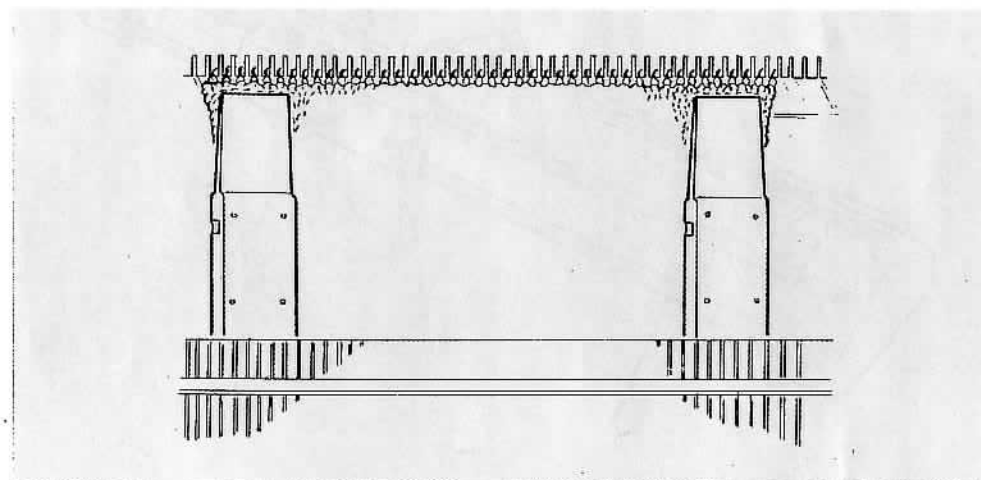
You can also :

- Move the needles up so that the stitches are on the latches.
- Remove the weights.
- Move the knitting up while wrapping it around the comb.
- Hang the weights (from the back to the front) on both sides of the comb.



STITCHES DROP AT THE EDGE

- Check that the tension unit is adjusted and threaded properly. The wrong tension can cause loops and thus stitches to be lost (see page 18).
- Check that the edge claws are regularly raised every 10 or 12 rows.
- Check the stitch size.
- Check the space selector.



TO WHAT TO DO IF...

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 the needles whilst holding your knitting.
- The knitting will drop off.

YOU WANT TO PUT HALF-KNITTED WORK BACK ON THE MACHINE

- Using the single-eyelet transfer tool, pick up the stitches of the last row knitted with the main yarn.
- Place the stitches into the needles' hooks.

YOU CAN NOT CAST-ON

- Check that the Jacquard keys have in fact been cancelled.

THE CARRIAGE JAMS WHILST KNITTING

- Press the locking levers and whilst holding them, lift the upper part of the carriage.
- Slide the carriage along the bed to bring it back to its starting point.
- Using the transfer tool, put the stitches which are behind the latches back in the needle hooks.
- Undo the partly knitted row.
- If necessary, rectify the numbers on the row counter.
- Lock the carriage again.
- Continue knitting.


STITCHES DROP INSIDE THE WORK

If the stitches always drop in the same place :

- Check that the needles or the latches are not damaged.
- If necessary, change the needle(s) (see page 66).

YOU HAVE UNDONE AN UNEVEN NUMBER OF ROWS

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

- Press the  key.
- Front bed in normal position.
- Move the carriage across to the side the yarn is on.
- Subtract one more row on the row counter.
- Press the key(s).
- Thread the carriage.

THE CARRIAGE HAS DIFFICULTY MOVING ACROSS

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

YOU HAVE MORE STITCHES THAN EMPTY NEEDLES WHEN TRANSFERRING FROM RIBS TO STOCKING STITCH

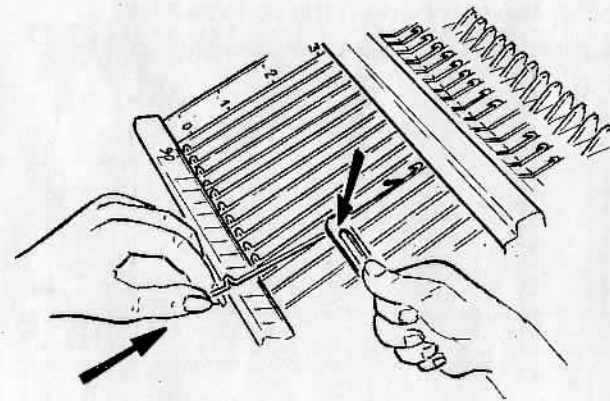
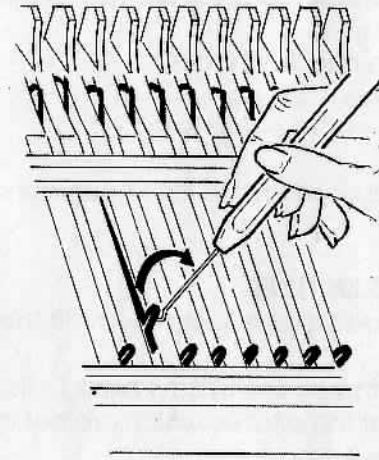
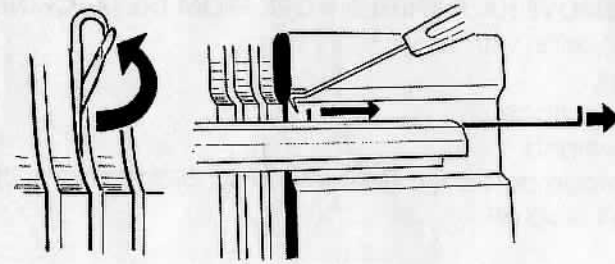
After having knitted some ribs, you may have more stitches than empty needles. In this case, transfer two stitches onto one needle on the rear bed.

If on the contrary, you have some empty needles on the rear bed, place the heel of the closest stitch onto the empty needle.

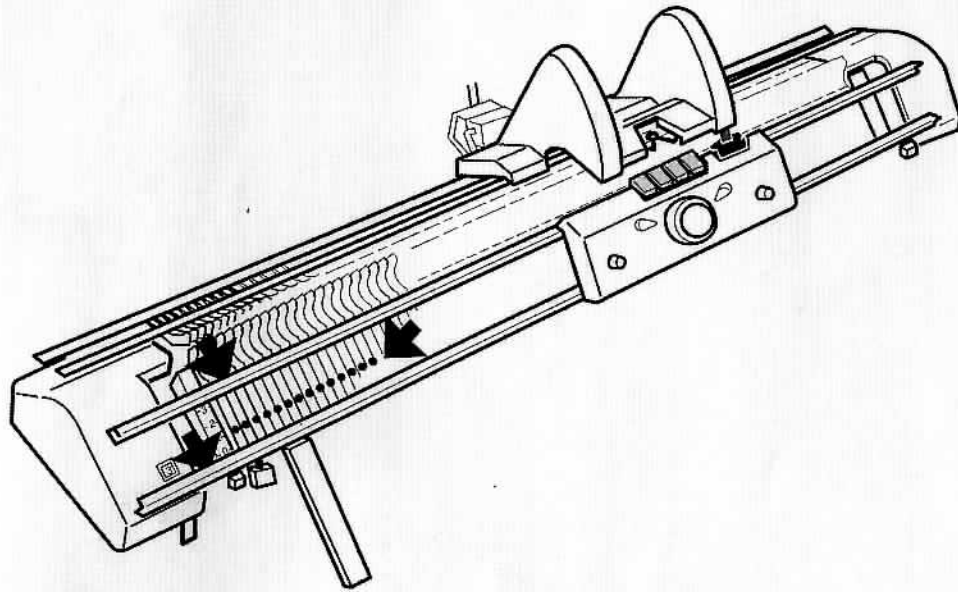
HOW TO CHANGE A NEEDLE

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


- Using the hook of the latch needle tool, pull the bent end of the rod to the right until the needle to be changed becomes free.
- To remove the needle, CLOSE THE LATCH, (this prevents the needle hook from catching the needle retaining spring located under the slide rail). Pull the needle out by the heel, downwards.
- 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 withdrawing 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 using a tool or your finger, to make it easier to insert it under the retaining spring.
- Push the needle rod back into place (bent end pointing upwards) to lock all the needles again.



MAINTENANCE AND CARE OF YOUR MACHINE



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

- Periodically remove the dust and the yarn fluff from the needle grooves, the slide rails and the inside of the carriages with a special lint brush.
- After cleaning the machine each time, lubricate the needle beds, the inside of the slide rails and the needle heels with a cloth impregnated with oil (needles in position 1).
- Move the carriages across the needles in position 1 with the  pressed in so that the lubricant is distributed evenly.
- If necessary, clean the top parts of the 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.

