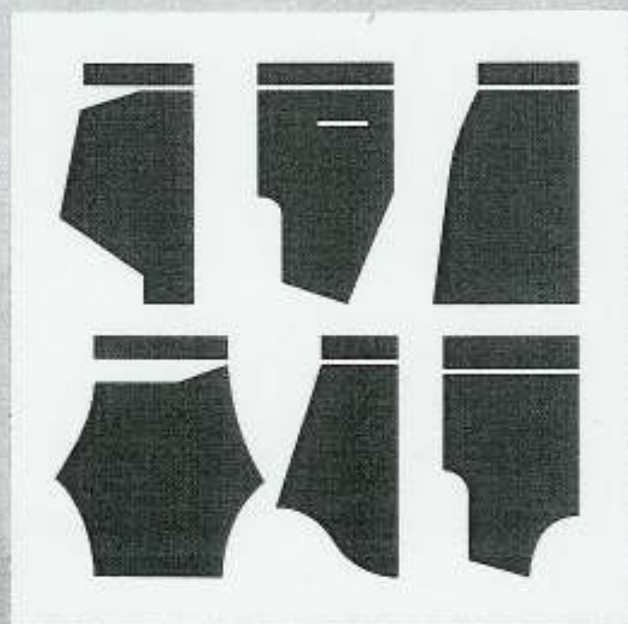
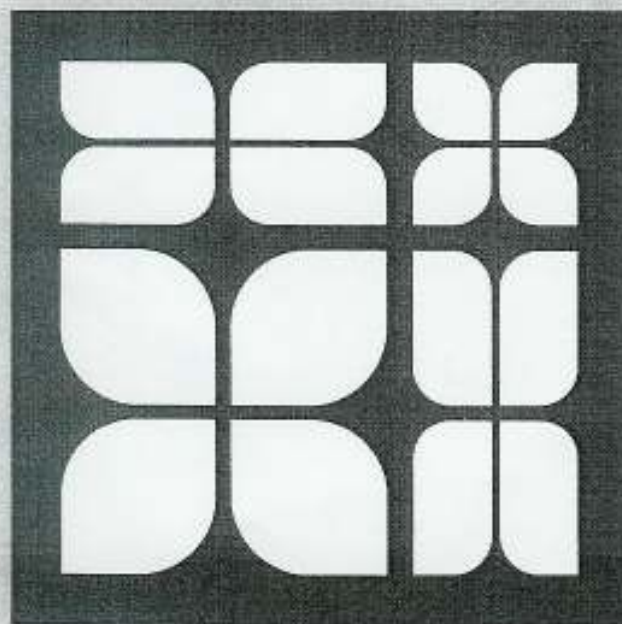
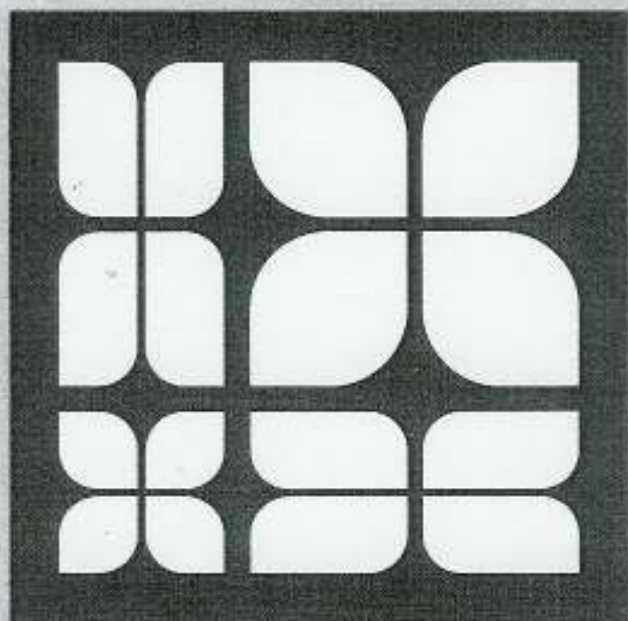
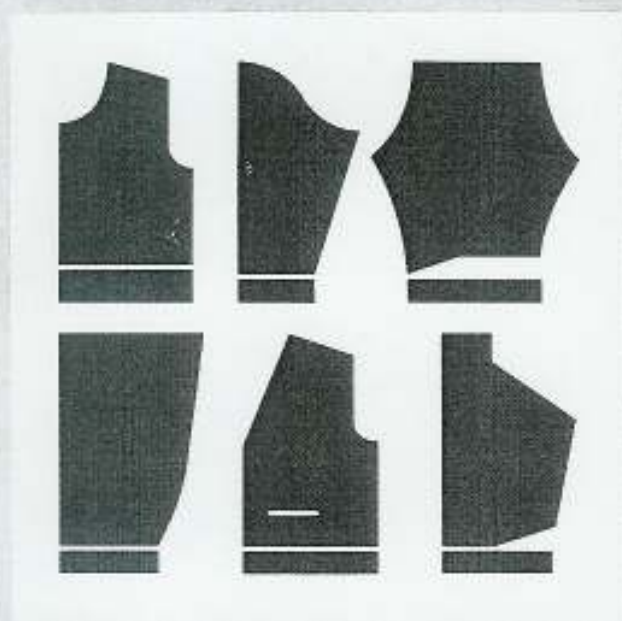


KNITTING MANUAL

MOD. 550



CONTENTS

	page
TAKING A TENSION GAUGE	1
KNITTING TECHNIQUES — on the knitter —	
Decreasing 1 stitch	6
Fully fashioned decrease	6
Increasing 1 stitch	7
Fully fashioned increase	7
Decreasing multiple stitches	8
Increasing multiple stitches using the Main Carriage	8
Increasing multiple stitches using the Lace Carriage	9
Partial knitting	
Decreasing stitches using the Main Carriage	10
Decreasing stitches using the Lace Carriage	11
Increasing stitches using the Main Carriage	12
Increasing stitches using the Lace Carriage	13
K1.P1. Rib	14
Mock Rib	16
Picot hem	17
Holding stitches	18
To mark yarn mark	20
To cast off with Transfer Tool	20
To cast off with Tappet Tool	21
Trimming	22
To make a buttonhole by transferring stitches	23
Seaming on the machine	
Stitch to stitch	24
Open stitches to side edge	24
Joining by hand	
Blind stitch	25
Grafting	26
Slip stitch	26
Cord knitting	27
Cable pattern	27
Garter stitch	28
Blocking and pressing	28
KNITTING TECHNIQUES — on the ribber —	
Increasing 1 stitch	29
Increasing multiple stitches	29
Decreasing 1 stitch	31
Decreasing multiple stitches	31
Partial knitting	
Partial knitting without involving "swing"	33
Partial knitting involving "swing"	35
Partial knitting in pile knitting and drive lace knitting	36
Partial knitting while knitting double jacquard	37
Waste knitting	38
Buttonhole	39
IF MISTAKE OCCUR DURING KNITTING	40

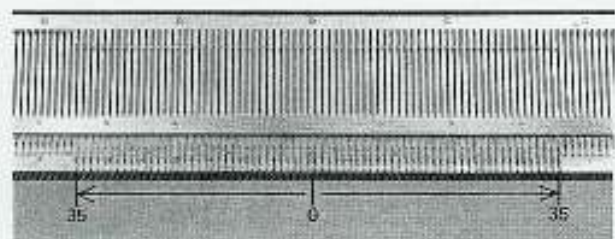
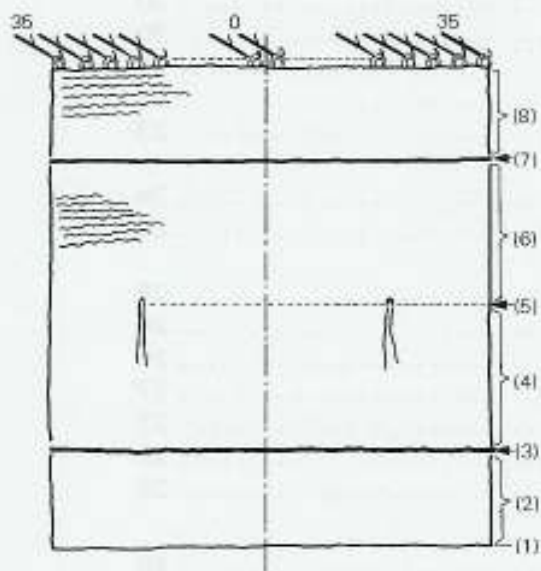
TAKING A TENSION GAUGE



Tension gauge

Tension Gauge indicates how many stitches you need to cast-on, and how many rows you need to knit to make a 10cm. square. It is very important to take a correct tension gauge to ensure that your garment to the correct size.

To take a correct tension gauge, the tension swatch must be knitted in the same stitch pattern, with the same yarn and Stitch Dial as to be used for the garment.





To knit a tension swatch:—

Prepare the yarn you selected and a small amount of contrasting colour yarn for marking the swatch.

Decide on the Stitch Dial number referring to page 10 in Operation Manual. It is recommended that you try different stitch dial settings till you obtain a suitable tension for the yarn and stitch pattern chosen.


Knit the swatch as instructed below.

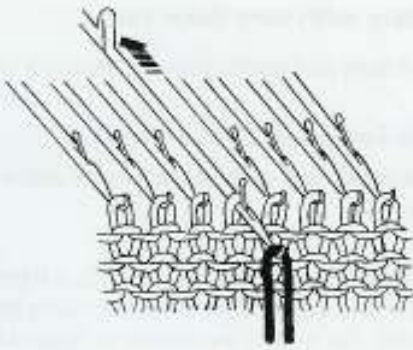
The method below is for knitting a tension swatch in stockinet, but if you knit the swatch in a pattern stitch using a Pattern Card, follow the additional instructions given after  mark as well.

- 1)  Push "ON" the Inspection Button and set the selected Pattern Card. Set the Pattern width Indicator.

Push 35 needles on both sides of the centre(0) to B position, 70 needles altogether, cast-on with main yarn.

For the lace stitch pattern, knit about 30 rows in stockinet ending with the Carriage at the right side of the fabric. Hook the Wide Claw Weights.

- 2)  Push "OFF" the Inspection Button.

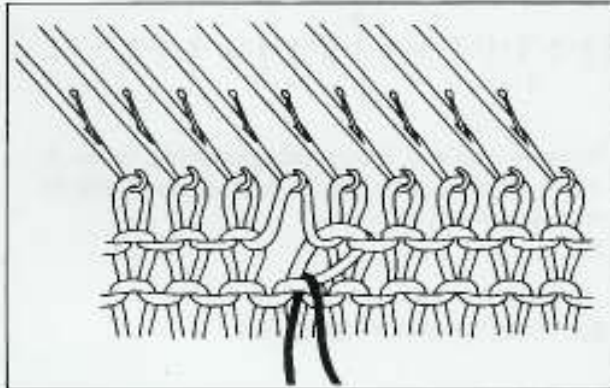


(2) Knit 10 rows in selected stitch pattern, with Stitch Dial on setting chosen.

☑ Push "ON" the Inspection Button.

(3) Change to the contrast yarn, and knit two rows in stockinet.

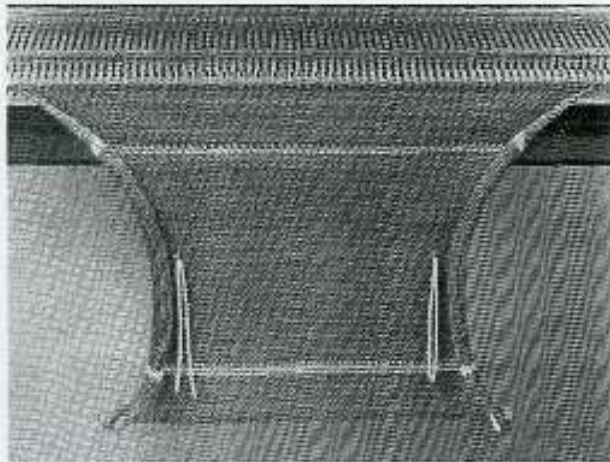
☑ Push "OFF" the Inspection Button.



(4) Remove contrast yarn and rethread the main yarn. Knit 30 rows in selected stitch pattern with correct stitch dial setting.

(5) Push the 21st needles on either side of centre(0) to D position and place a piece of contrast yarn in each of the needle hooks. Push the needles back to B position.

If the needle has an incomplete loop in lace pattern, put the yarn mark on the stitch of previous row.



(6) Knit another 30 rows.

☑ Push "ON" the Inspection Button.

(7) Thread the contrast yarn and knit 2 rows in Stockinet.

☑ Push "OFF" the Inspection Button.

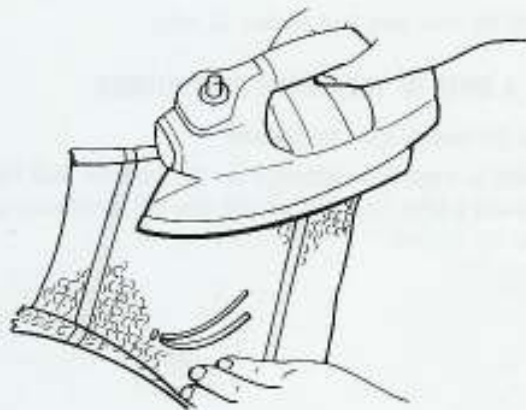
(8) With main yarn, knit 10 rows in selected stitch pattern with correct stitch dial setting.

Remove the yarn from the Yarn Feeder.

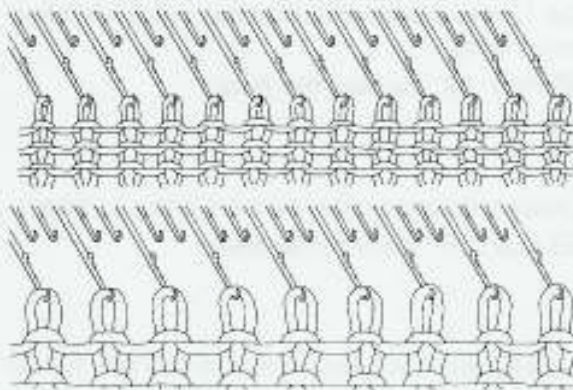
Set the Cam Lever to stockinet.

Remove the swatch from the machine.

MAKE A NOTE OF THE STITCH DIAL NUMBER.



Allow the swatch to rest for several hours, to return to its natural condition, after being stretched on the machine. Press lightly with a steam iron, or with an ordinary iron over a damp cloth. Allow to dry before taking tension gauge.



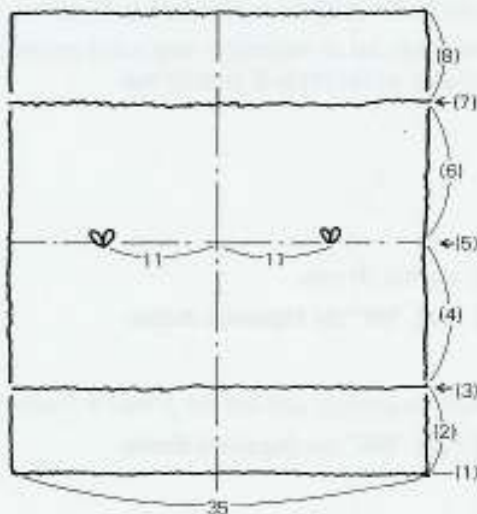
When knitting with very thick yarn...

Every alternate or every third needle selection is necessary for very thick yarn.

Select a suitable Pattern Card if pattern knitting.

Knit the tension swatch (e.g. every alternate needle selection) in the following way.

- (1) Push 35 needles on both sides of the centre(D) to B position. Push every alternate needle back to A position using the 1/1 Needle Pusher. The needles are arranged as shown below.



- (2) Using the main yarn, cast on and knit checking tension on the fabric, till you obtain a Stitch Dial number suitable for the stitch pattern and yarn chosen. Knit 10 rows.

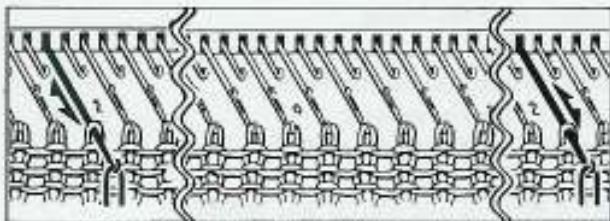
- (3) Knit 2 rows stockinet in contrast yarn.

- (4) Knit 15 rows with the main yarn.

- (5) Push the 11th B position needle on both sides of centre(D), marked by arrows as shown above to D position. Place contrast yarn in each of the needle hooks, and push the needles back to B position.

- (6) Knit another 15 rows with the main yarn.

- (7) With the contrast yarn, knit 2 rows stockinet.



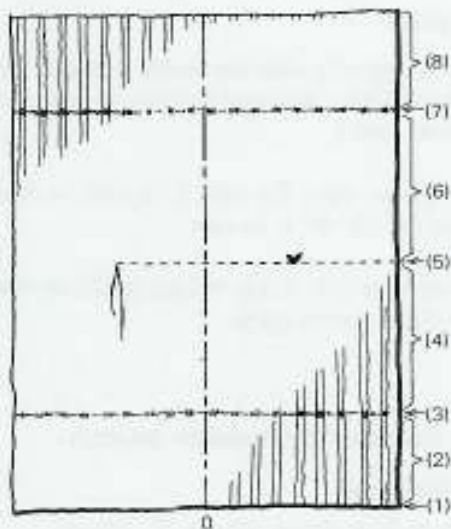
- (8) With the main yarn, knit another 10 rows.

MAKE A NOTE OF THE STITCH DIAL NUMBER.

Remove the swatch from the machine.

The fabric is stretched widthways on the machine. Roll the knitting into a tube, from side to side, and pull lengthways to close up the stitches.

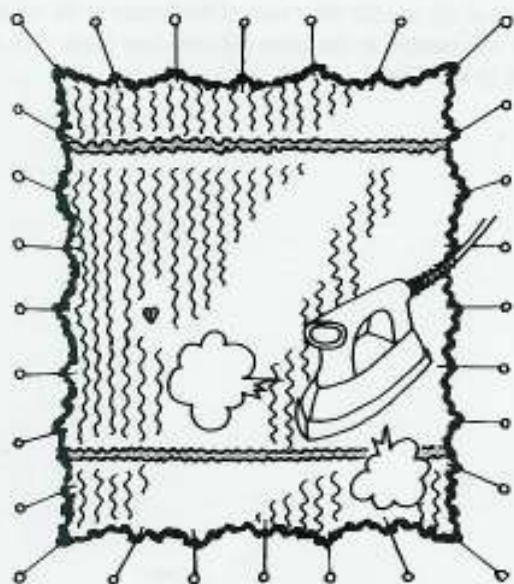
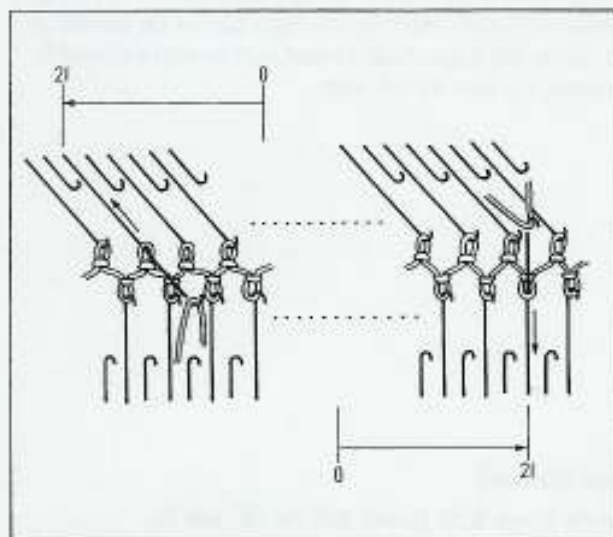




When the Ribber is used

The following instructions should be used when knitting the tension swatch and also taking a tension gauge.

- (1) Regardless of stitch type, always arrange needles between 35th needles on both sides of centre(0) on both beds.
- (2) Cast-on and knit 20 rows.
- (3) With contrast yarn, knit 2 rows.
- (4) With main yarn, knit 30 rows.
- (5) Put yarn marks on the 21st needles on both sides of centre(0) on either Knitter or Ribber.
- (6) Knit 30 rows.
- (7) With contrast yarn, knit 2 rows.
- (8) With main yarn, knit 20 rows.
- (9) Remove the swatch from the machine.

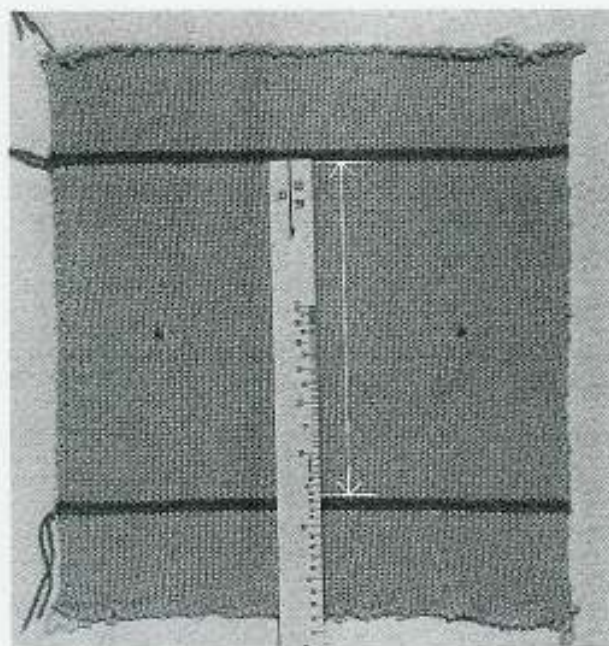
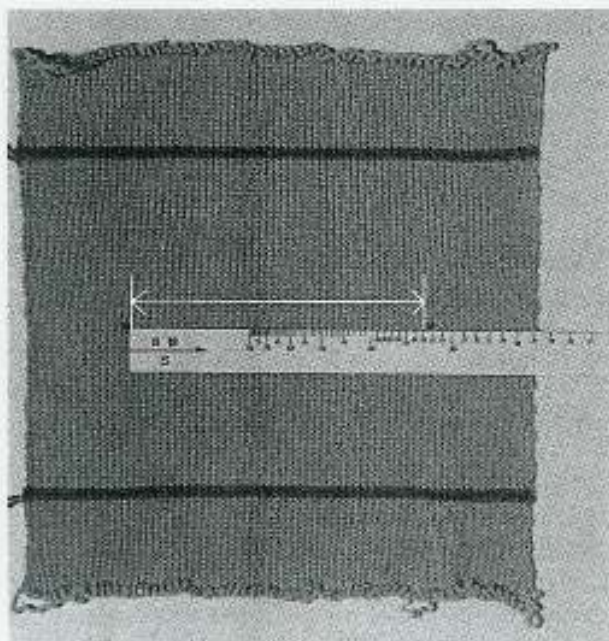


When the tension swatch is completed, remove it from the machine and leave it for several hours so that it can relax, then stretch the swatch widthways, until it looks how you want the finished garment to look.

Pin it flat and square.

Allow the swatch to dry, take a tension gauge over it as it is pinned down, following the instruction on page 5.

Hold a steam iron above the knitting, and blow steam evenly all over the swatch.



Gauge scale

This scale is designed to count the number of stitches and rows required to knit 10cms. measuring between contrast yarn marks on the tension switch.

The scale has two sides. The side "S" is used for measuring stitches and the side "R" is for rows.

Following the instructions below, measure the tension switch to obtain the correct tension gauge.

How to measure the tension switch

Stitches (Horizontal)

Use the Gauge Scale (green) with the "S" side up. Place the left end of the Scale inside the left stitch in contrast yarn. Measure to the inside of the right hand contrast stitch. The number at this point indicates how many stitches are required to knit 10cms. The Scale should be used from the edge indicated by the arrow, i.e. from the left edge.

Rows (Vertical)

Use the Gauge Scale (green) with the "R" side up. Place the arrow end of the gauge scale at the top of the tension square, just below the rows knitted in contrast yarn. Measure to the inside of the two stockinet rows at the bottom of the tension switch. The number at this point indicates how many rows are required to knit 10cms.

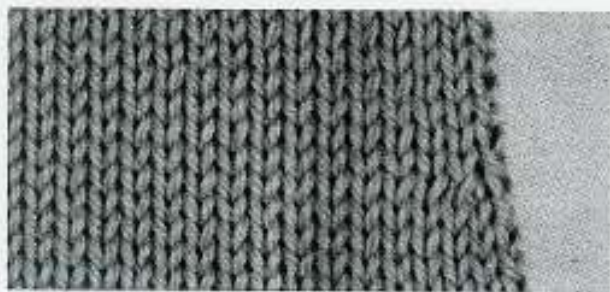
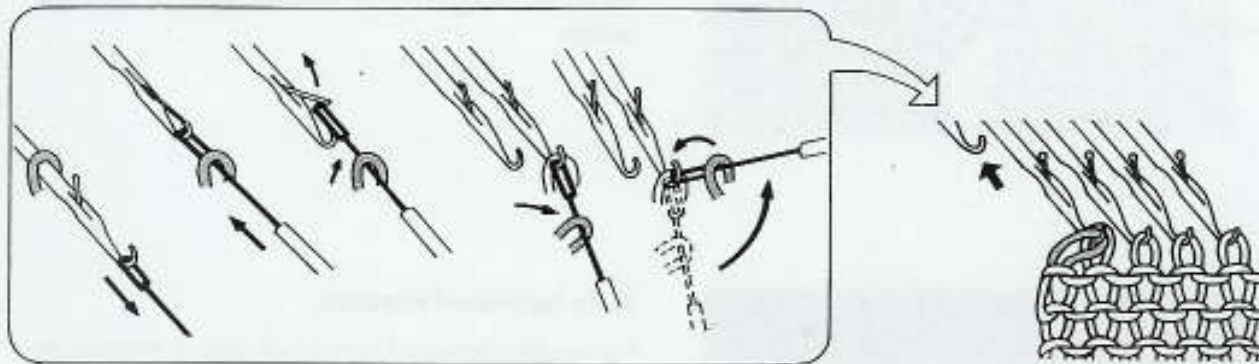
KNITTING TECHNIQUES — on the knitter —



Decreasing 1 stitch

You can decrease 1 stitch on both sides of the same row. Using a Transfer Tool, transfer the end stitch onto the adjacent needle. Push the empty needle to A position.

When Lace Carriage is in use, decrease the stitch at the edge opposite to the side of the Carriage, and move the Point Cam to the new position.



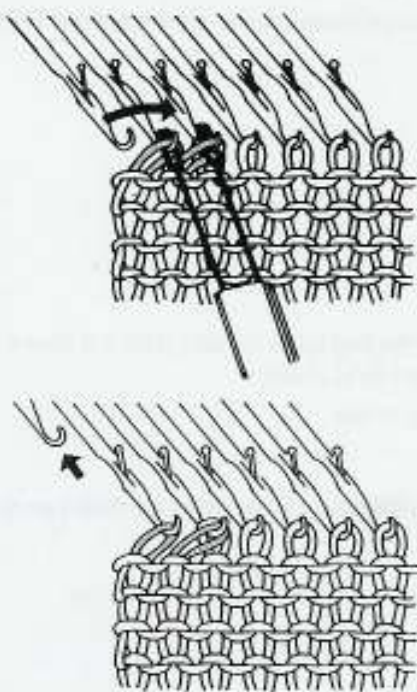
Fully fashioned decrease

It is possible to decrease 1 stitch at both ends of the row at the same time.

1. Using a two prong Transfer Tool, transfer the two end stitches one needle in.

When using alternate needles, use a three prong Transfer Tool.

2. Push the empty needle back to A position. Continue to knit.

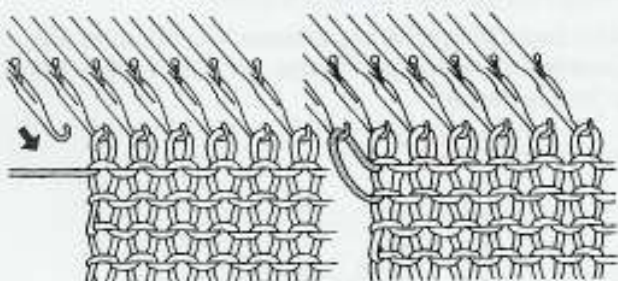


When Lace Carriage is in use, decrease the stitch at the edge opposite to the Carriage, and move the Point Cam to the new position.



Increasing 1 stitch

You can increase 1 stitch at a time only on the Carriage side of the knitting.



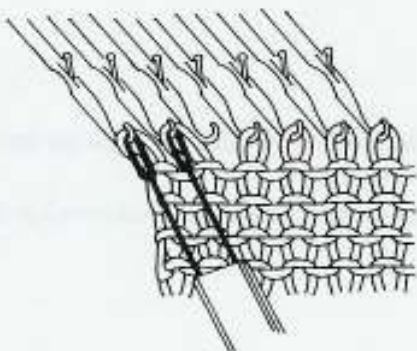
Push 1 needle at the Carriage side from A to B position and knit 1 row.

When Lace Carriage is in use, move the Point Cam to the new position.

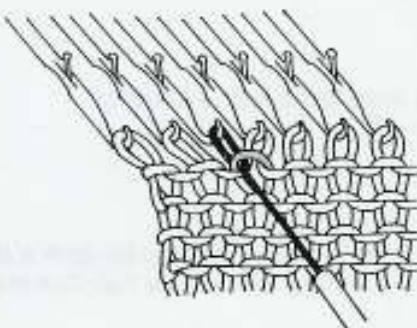


Fully fashioned increase

It is possible to increase 1 stitch at both edges of the row at the same time.



1. Push the adjacent empty needle to B position.
Using a two prong Transfer Tool, transfer the two end stitches one needle out.
When using alternate needles, use a three prong Transfer Tool.



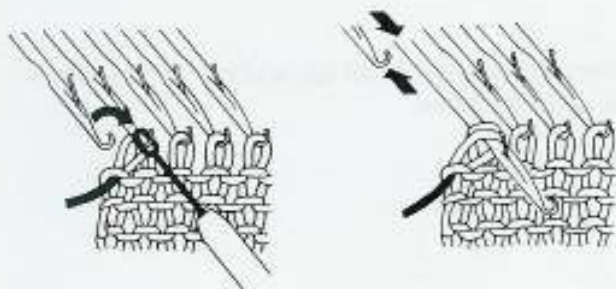
2. Pick up the loop below the third stitch and place it onto the empty needle as shown.
Continue to knit.

When Lace Carriage is in use, move the Point Cam to the new position.



Decreasing multiple stitches

You can only decrease on the Carriage side.



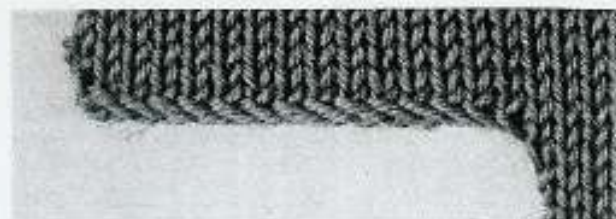
To decrease at the left edge.—

1. With the Carriage at the left, hold the fabric back towards the Knitter.
Transfer the end stitch to adjacent needle. Push the empty needle to A position.
2. Push the second needle to D position until both stitches are behind the latch.
3. Lay yarn from left to right in the open hook of the needle.
(When decreasing at the right edge, lay yarn from right to left.)
4. Hold yarn slightly down and push the needle back to B position.
The two stitches slip off the needle leaving a new stitch.
5. Continue the same procedure until the required number of stitches have been decreased.

Place the last decreased stitch onto its adjacent needle.

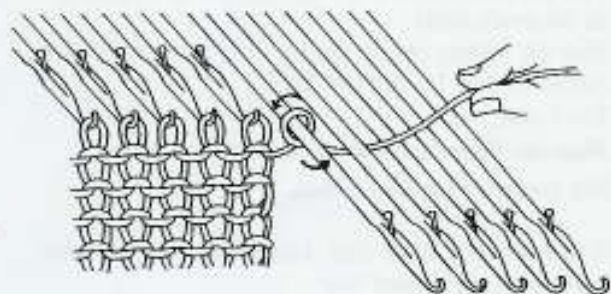
When Lace Carriage is in use, using a length of main yarn, decrease the stitches at the edge opposite the Carriage and move the Point Cam to the new position.

* Repeat in reverse to decrease at the right.



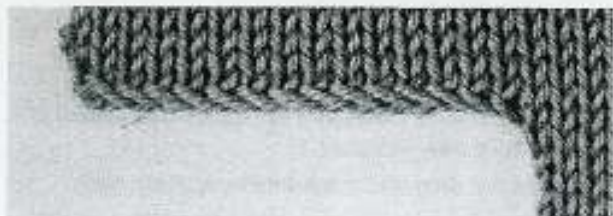
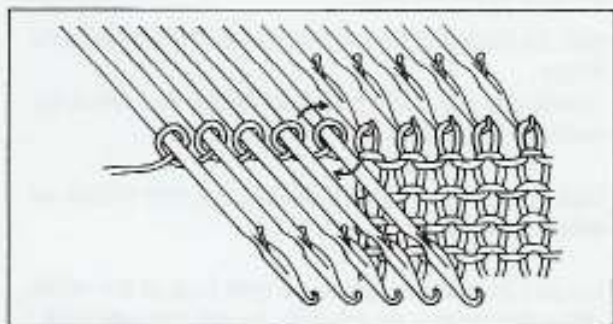
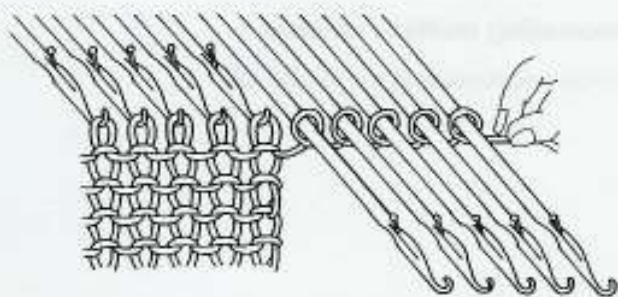
Increasing multiple stitches using Main Carriage.

You can increase only on the Carriage side.



When the Carriage is at right side.—

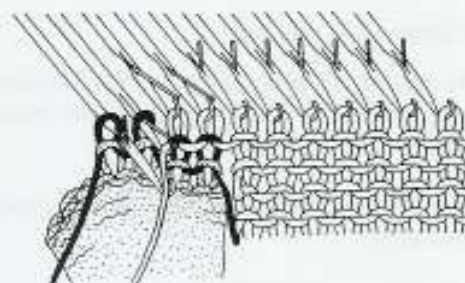
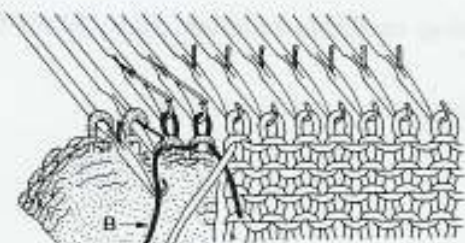
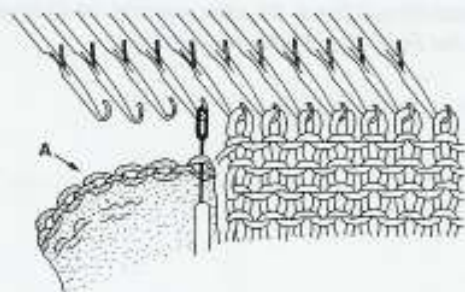
1. Push the required number of needles from A to D position. Pull some yarn from the Yarn Feeder and wind it loosely around the empty needles in the anti-clockwise direction.
2. Push loops against sinker posts, eliminate slack yarn, and continue knitting.



When the Carriage is at the left side, wind yarn around needles in the clockwise direction.

Increasing multiple stitches using the Lace Carriage

You can increase only on the Carriage side.



1. Push the required number of needles for increase from A to B position.

Take a piece of waste knitting, and using the Transfer Tool, pick up stitches from it and hook them on the needles.

2. Push the needles from B to D position and lay the Ravel Cord "B" on needle hooks.

(Stitches of the knitted piece are behind needle latches.)

Push the needles one by one back to B position to form loops.

3. Push the needles from B to D position and lay the main yarn on the needle hooks.

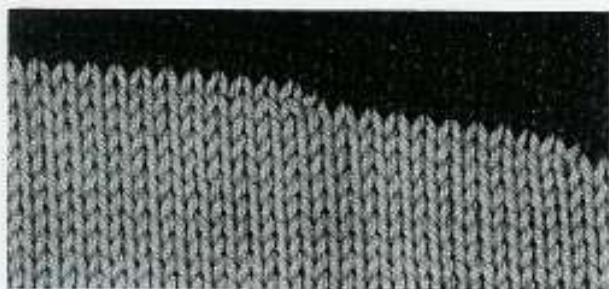
Push the needles one by one and form loops in the same manner as done for the Ravel Cord.

Knit 1 row.

Move the Point Cam to the new position.

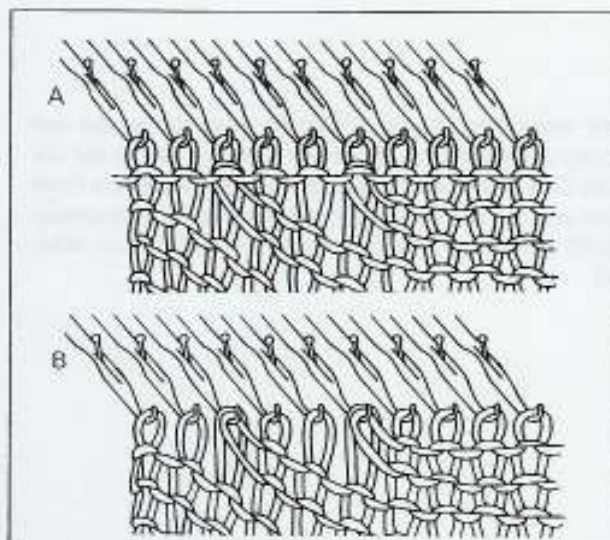
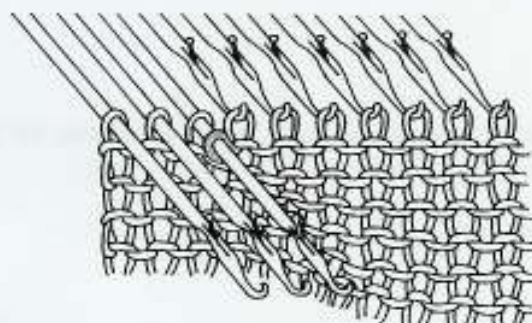
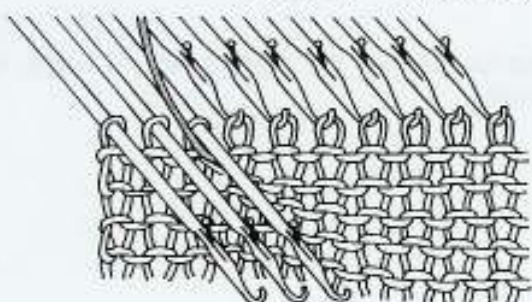
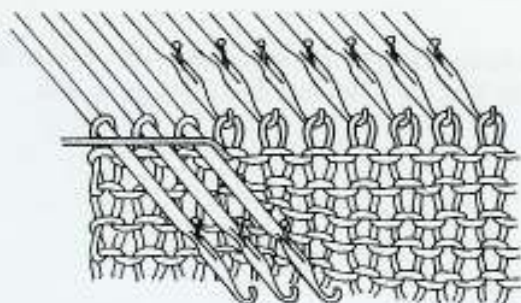
Knit the required number of rows.

4. Before removing Ravel Cord, back stitch through stitches immediately above Ravel Cord.



PARTIAL KNITTING is used to shape a gentle slope, such as shoulders, darts, etc.

You can do partial knitting only to the opposite end to the Carriage. If you wish to shape both sides, work left and right alternately.



Decreasing stitches using the Main Carriage

Set the Russel Levers to "1".

1. Push the needles to be decreased to D position at the opposite end to the Carriage.
2. Knit 1 row.
The needles in B position knit. The needles in D position remain inactive and the yarn passes over them.
3. To prevent a hole from being formed in the fabric, pass the yarn under the first inside needle in D position and over the remaining needles. (If partial knitting is required at both sides, repeat step 1 before knitting the next row.)
4. Knit 1 row.
This completes the first operation of partial knitting. (If partial knitting is required at both sides, apply step 3.)

Repeat steps 1 — 4.

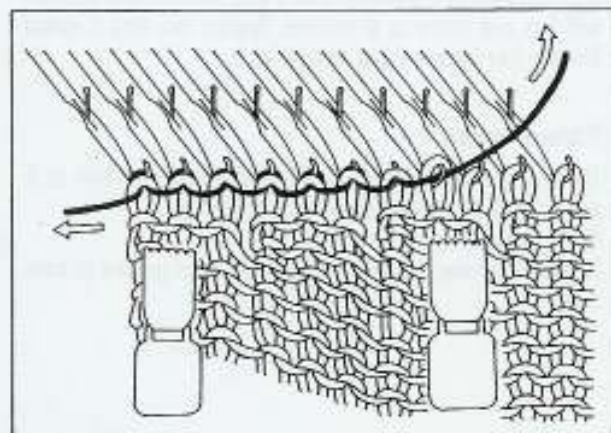
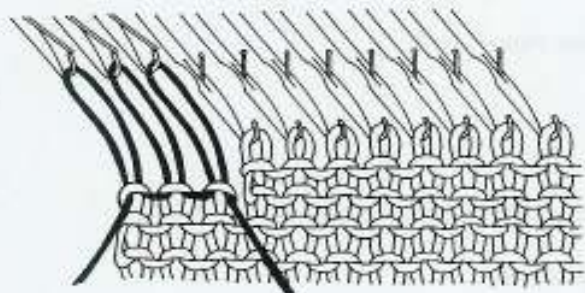
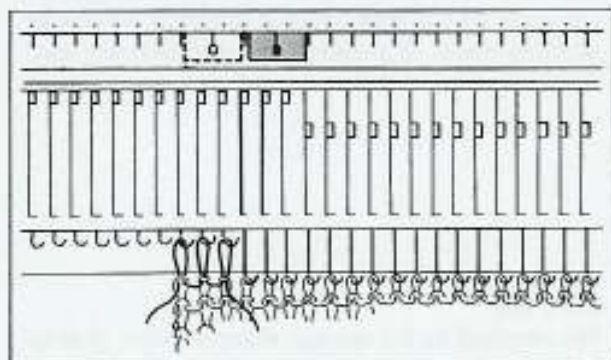
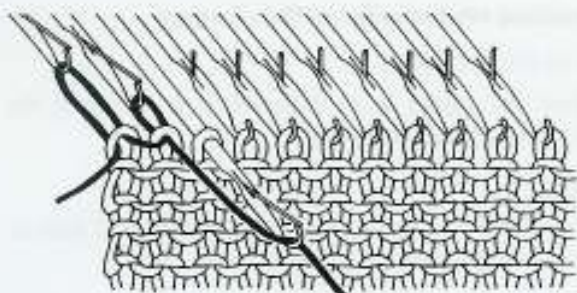
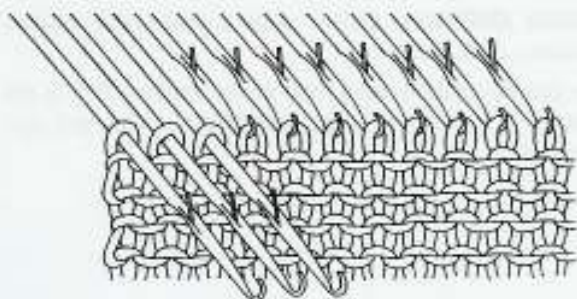
After completing partial knitting, continue as follows.

A. Stockinet

Push the needles in D position at the opposite end to the Carriage back to C position. Knit 1 row. Needles in C position will knit and return to B position. Repeat this step if partial knitting has been worked at both ends.

B. Pattern knitting

Using a Transfer Tool, return the needles in D position to B position, at the opposite end to the Carriage.
Knit one row.
Repeat this step if partial knitting has been worked at both ends.



Decreasing stitches using the Lace Carriage

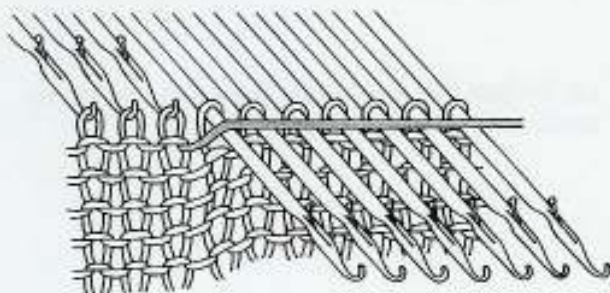
1. Push the needles to be decreased to D position at the opposite end to the Carriage.
2. Lay the Ravel Cord into the open needle hooks, and knit the needle back one by one from D to A position by hand.
3. Reposition the Point Cam over the two end needles in B position.
4. Knit 2 rows. (If partial knitting is required at both sides, knit 1 row only, then repeat steps 1 — 3. Knit 1 row.)
5. Repeat steps 1 — 4.

After completing the partial knitting, hang the weights and replace the stitches in the needle hooks by pulling out the Ravel Cord at the opposite end to the Carriage. Replace Point Cams over two end needles. If partial knitting has been worked at both sides, knit 1 row, then repeat this section at the other side.



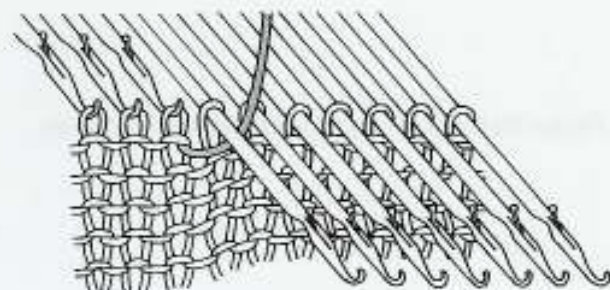
Increasing stitches using the Main Carriage

Set the Russel Levers to the "I" position,

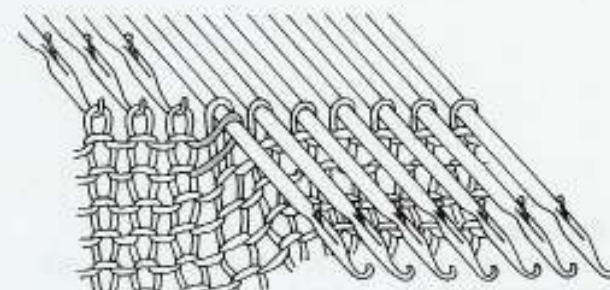


1. Push the required number of needles opposite the Carriage to D position.

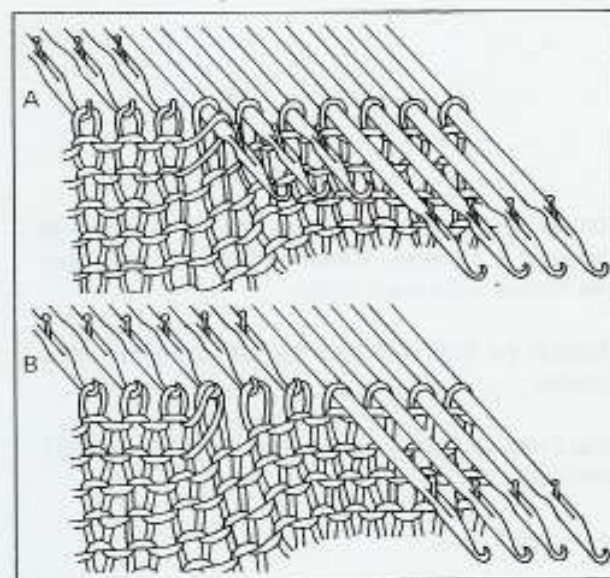
2. Knit 1 row.
(The needles in B position knit the yarn. The needles in D position remain inactive and the yarn passes over them.)



3. To prevent a hole forming, pass the yarn under the first inside needle in D position and over the remaining needles. (If partial knitting is required at both sides, repeat step 1 before knitting next row.)



4. Knit 1 row.



5. Before knitting the next row, work on the side opposite the Carriage as follows.

A. Stockinet knitting

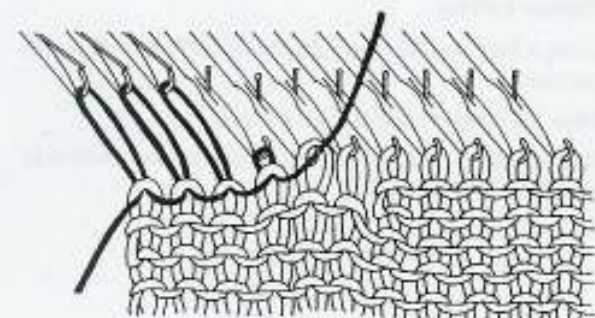
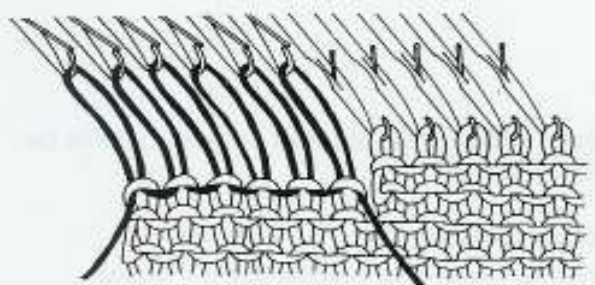
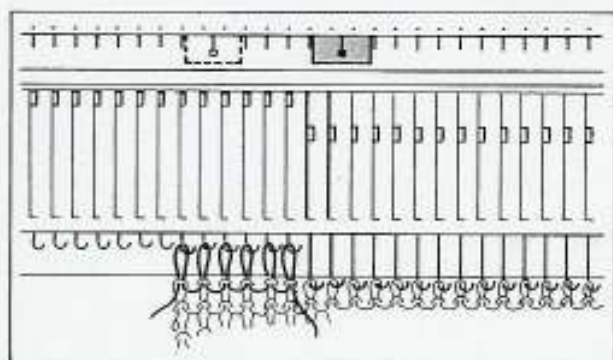
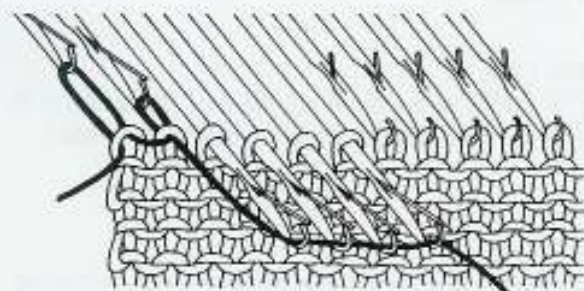
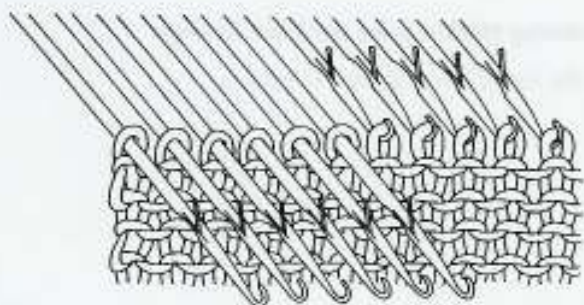
Push the needles to be increased back to C position.

B. Pattern knitting

Using a Transfer Tool, return the needles to be increased to B position.

Align the needles correctly in B position.

Repeat steps 2 — 5, but if partial knitting has been worked at both sides, repeat steps 2, 3 and 5 only.



Increasing stitches using the Lace Carriage

1. Push the required number of needles opposite the Carriage to D position.

2. Lay the Ravel Cord into the open needle hooks and knit the needles back one by one from D to A position.

3. Replace the Point Cam over the end two needles in B position.

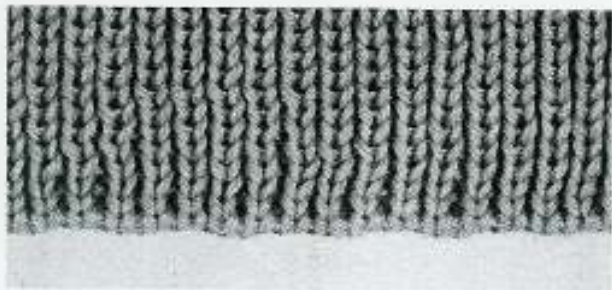
4. Knit 2 rows.
(If partial knitting is required at both sides, knit 1 row only, then repeat steps 1 — 3. Knit 1 row.)

5. On the side opposite the Carriage push the needles to be increased to B position. Unravel the Ravel Cord and replace the stitches in the needle hooks.

6. Replace the Point Cam over the end two needles in B position.

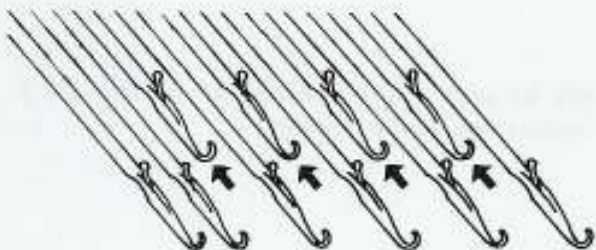
7. Knit 2 rows. (If partial knitting is required at both sides, knit 1 row only.)

Repeat steps 5 — 7.

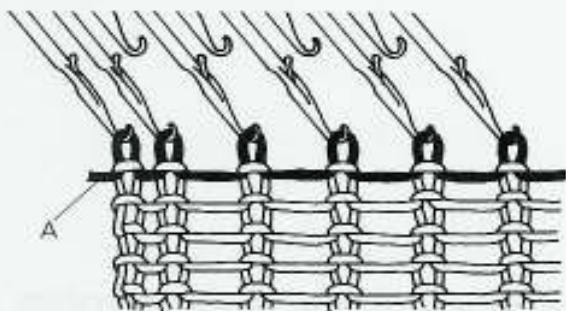


K1.P1. Rib

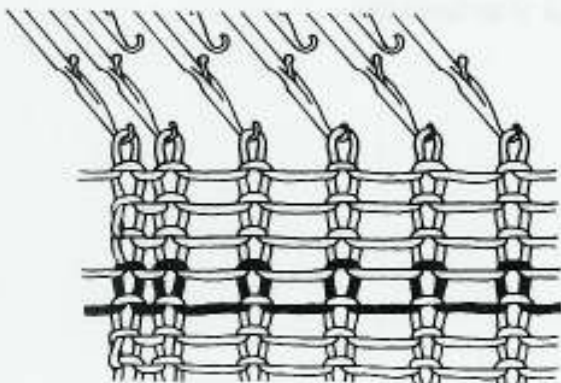
If you don't have a Ribber, this method of knitting ribs can be used for knitting cuffs, neckbands and welts.



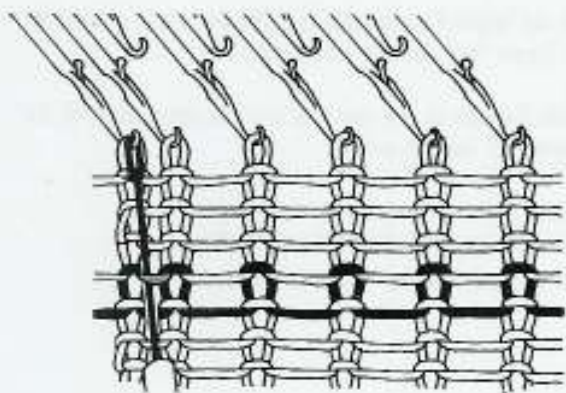
1. Push the required number of needle to B position. Push back every alternate needle to A position, starting with the third needle from the left side.



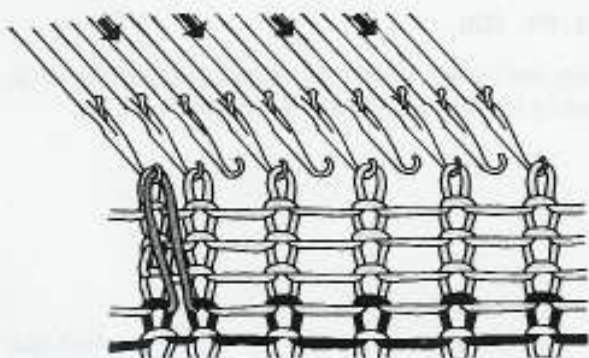
2. Cast-on and knit several rows of waste yarn. Hang Claw Weirhs at both edges of knitting. Knit 1 row with Ravel Cord "A".



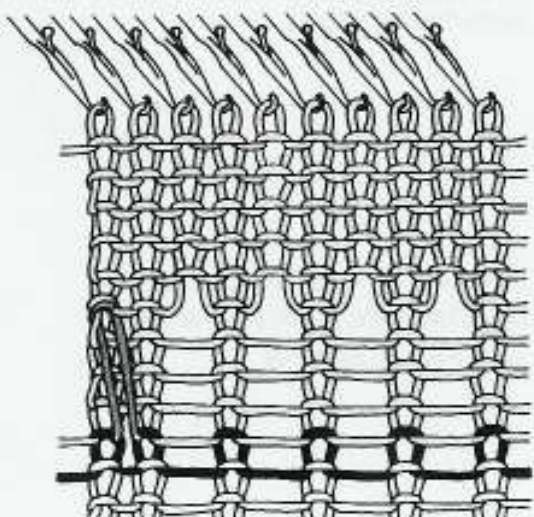
3. Thread the main yarn and knit 4 rows. Stitch Dial at 0.



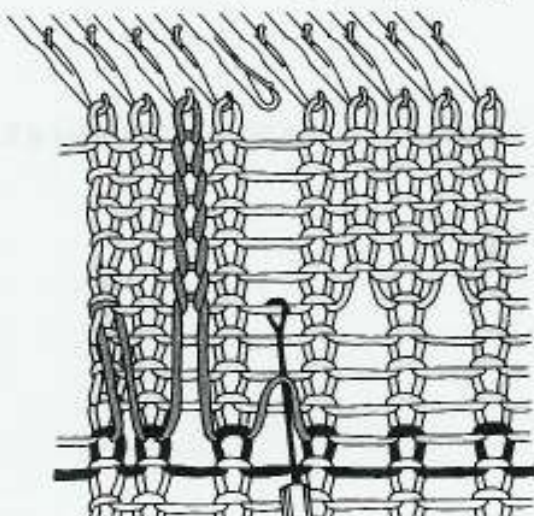
4. Insert the Transfer Tool into the left end sinker loop "B" on the first row of the main knitting. (Above the Ravel Cord)



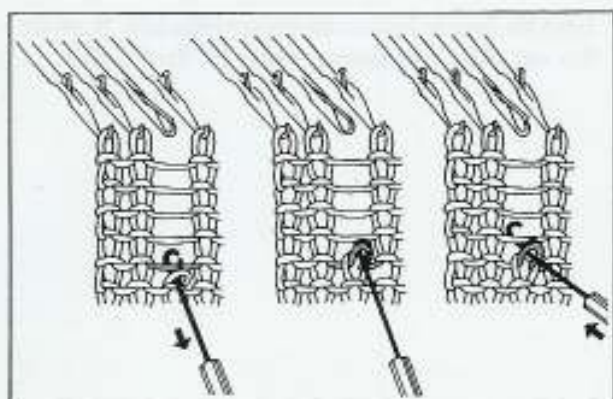
- Place the loop onto the end needle. Push the needles that were in A position in step 1, to B position.



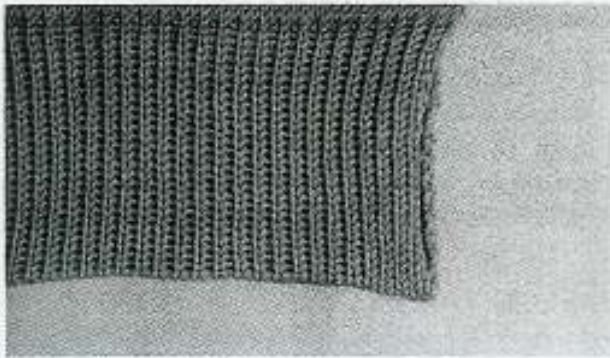
- Knit the length required for ribbing with the Stitch Dial 2 numbers lower than for Stockinet.



- Insert the Tappet Tool into the loop of the first row of main knitting and unravel the stitches as shown. Skip over the next 3 rows and catch the yarn on 5th row crossing above, in the hook of the Tappet Tool.

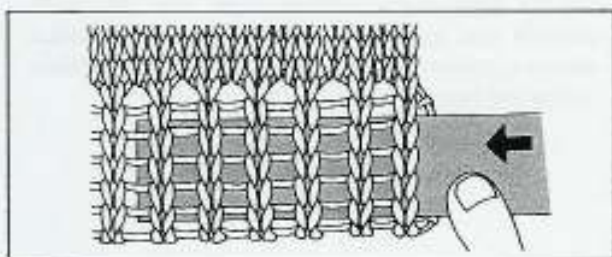
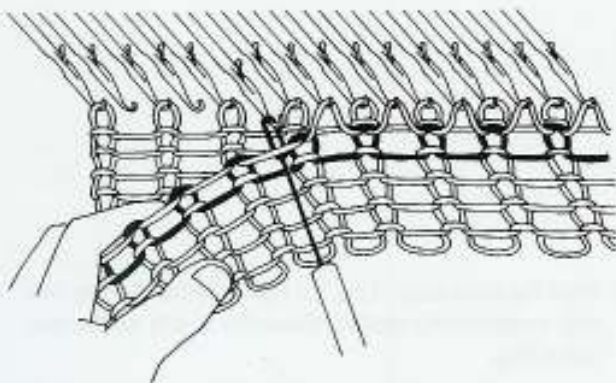
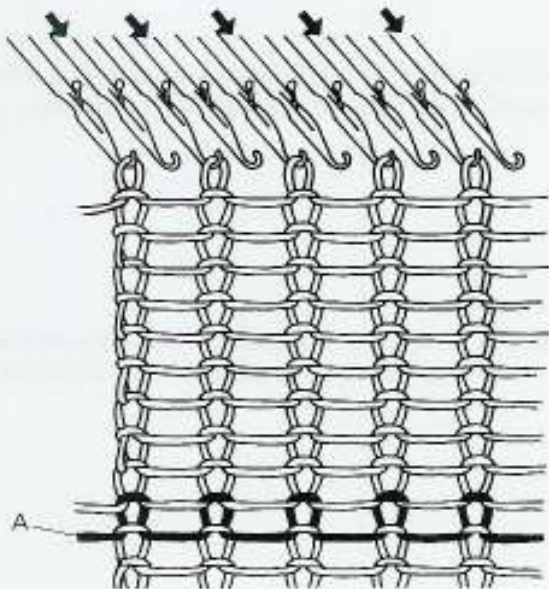
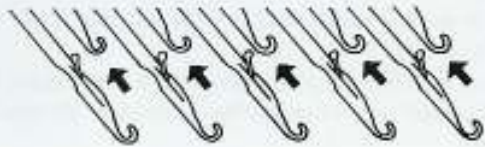


- Pull the Tappet Tool towards you. The first stitch will slip off the Tappet Tool, forming a new stitch.
- Catch the yarn on the next row crossing above and pull the Tappet Tool towards you.
- Repeat step 9 for every row. Place the last stitch back onto its needle. Reform every alternate stitch as above.



Mock Rib

Mock rib can be used instead of K1,P1 Rib.



1. Push the required number of needles to B position and push back every alternate needle to A position starting with the second needle from the left side.

2. Cast-on and knit several rows of waste yarn. Knit 1 row with Ravel Cord "A".

3. Thread the main yarn and set the Stitch Dial 3 — 4 number lower than for stockinet, and knit twice the number of rows required for the welt.

4. Push the needles that were in A position in step 1, to B position.

5. Using Transfer Tool, pick up the sinker loops on the first row of the main knitting above the Ravel Cord and place them onto the empty needles in B position.

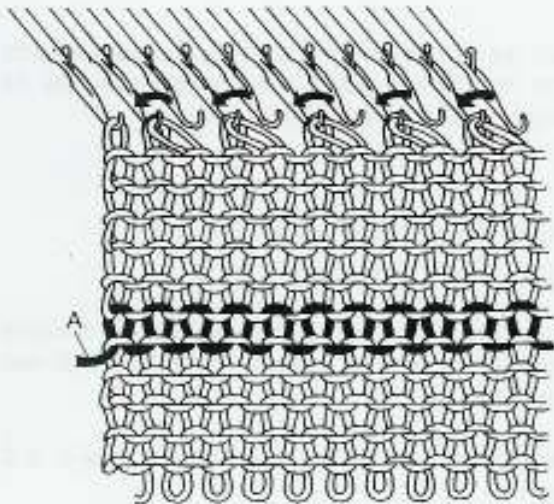
6. Re-set the Stitch Dial to the number used for stockinet knitting and continue to knit.

Pull out the Ravel Cord to remove the waste knitting.

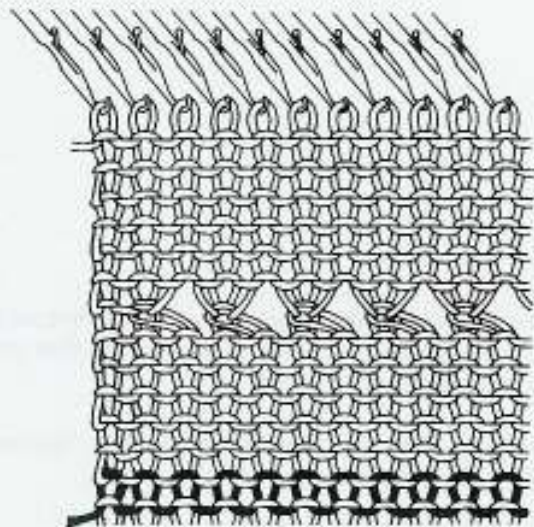
When pressing, insert a ruler into the side opening of the welt and pull the fabric vertically, to close up the stitches.



Picot hem

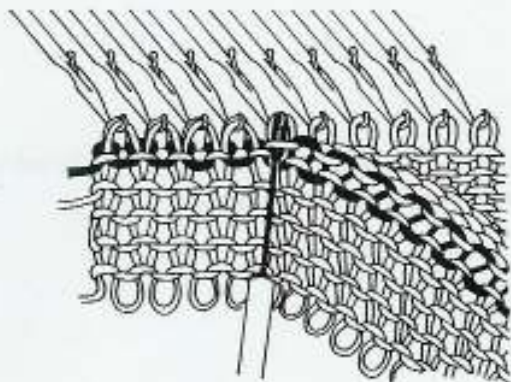


1. Arrange an odd number of needles in B position. Cast-on and knit several rows of waste yarn. Knit 1 row with the Ravel Cord "A". Set the Stitch Dial 1 number lower than for stockinet and knit with the main yarn, 1 row less than required for the depth of the hem.

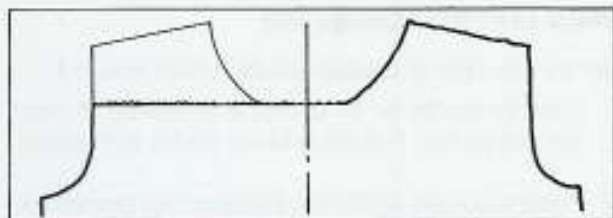


2. Make picot eyelets by transferring every alternate stitch to its adjacent needle. Leave the empty needles in B position.

3. Reset the Stitch Dial to the original stockinet setting, and knit the same number of rows required for the depth of the hem.



4. Place the sinker loops of the first row of the main knitting onto their corresponding needles. Remember to pick up the edge sinker loop.
5. Set the Stitch Dial 2 numbers higher than the number originally used and knit 1 row. Pull out the Ravel Cord to remove waste knitting. Reset the Stitch Dial to the stockinet setting and continue to knit.

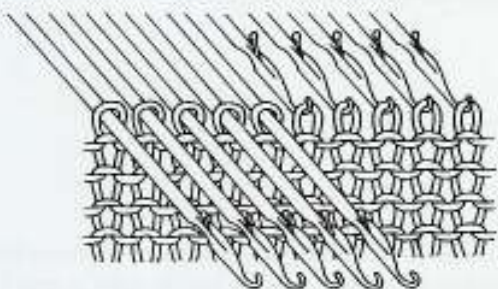


Holding stitches

If it is necessary to shape a garment in sections, use one of the following methods.

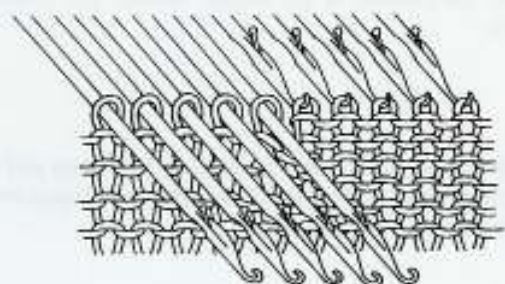
In D position (Main Carriage only)

1. Push the needles for the section to be held to D position.



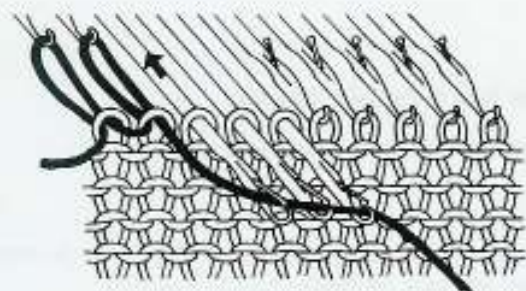
2. Set the Russel Levers to **I**, and continue to knit.

To continue knitting on the stitches which have been held, push the needles back to C position, and continue to knit. (Stockinet only)



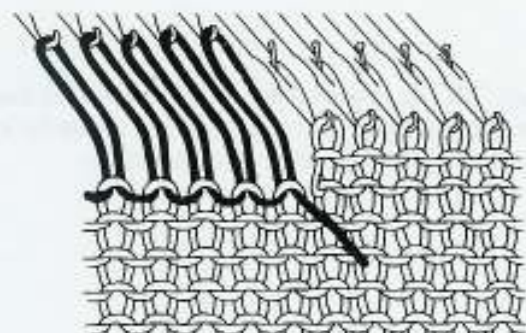
When pattern knitting

Return the needles which have been held to B position using a Transfer Tool. Replace the stitches in the needle hooks.

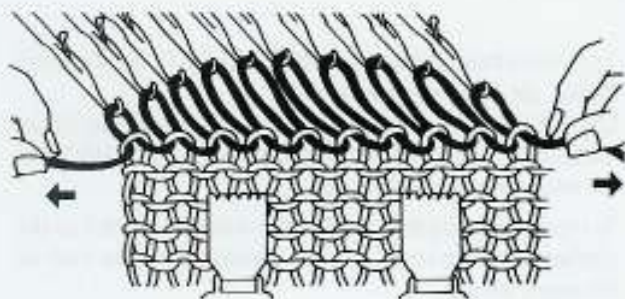


Using Ravel Cord

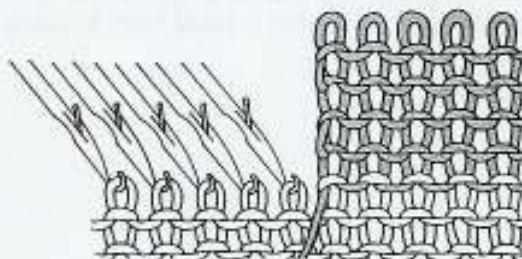
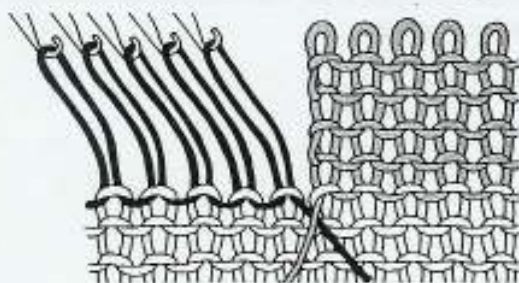
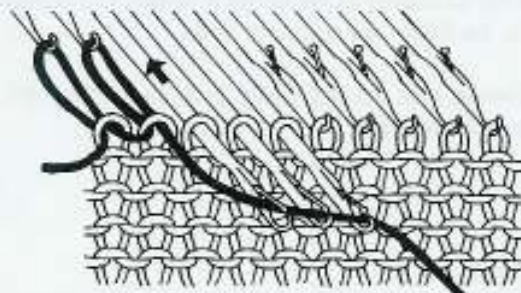
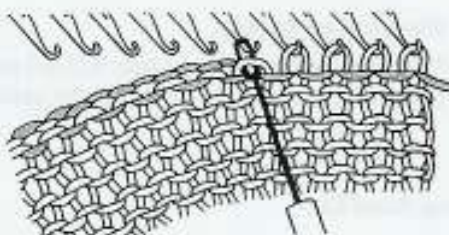
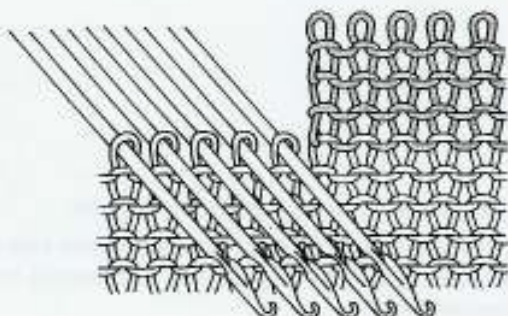
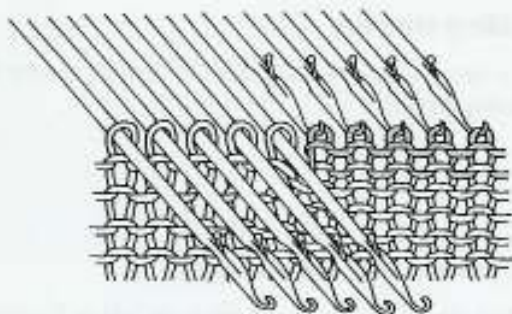
1. Push the needles for the section to be held, to D position, and lay the Ravel Cord across the hooks.
2. Starting from the end needle, push the needles back to A position manually.



3. Continue to knit.
Before starting each row, make sure that the needles are well back in A position.



To return the needles to B position, hang Claw Weights on the fabric and replace the stitches in needle hooks by pulling the Ravel Cord.



Waste yarn I (Main Carriage only)

Set the Cam Lever to stockinet and the Russel Levers to **I**.

1. Leave the needles for the stitches to be released on waste yarn in B position. Push the remaining needles to D position.
2. Thread waste yarn into the Yarn Feeder and knit several rows. Remove this section from the machine.
3. Push needles from D position back to C position for stockinet, or return to B position for pattern knitting (refer to page 12) Reset the Carriage to the original settings and continue to knit.

To continue knitting the stitches held on waste knitting, pick up the stitches on the last row of the main knitting and place them onto the corresponding needles.

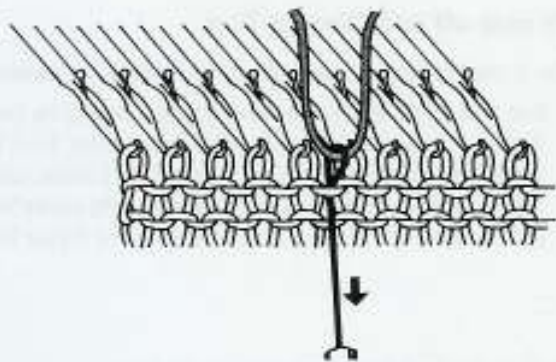
Waste Yarn II (for Lace Carriage)

1. Push the needles to be held to D position.
2. Starting with the end needle, lay the Ravel Cord in the needle hook and push the needles back to A position.
3. Push "ON" the Inspection Button, set Cam Lever for stockinet, and knit several rows of waste yarn on the needles in B position. Remove this section from the machine.

To continue knitting the held stitches, Push "OFF" the Inspection Button, set Cam Lever for Lace.

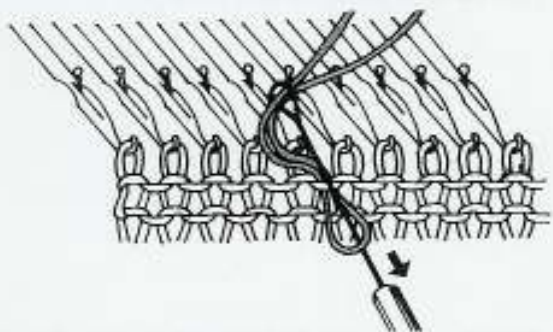
Check that the arrow on the Pattern Card in the same direction as the Carriage, and unravel the Ravel Cord to replace the stitches in the needle hooks. (refer to page 18)

To continue knitting the stitches held on waste yarn, pick up the stitches on the 1st row of the main knitting and replace them on the empty needles.

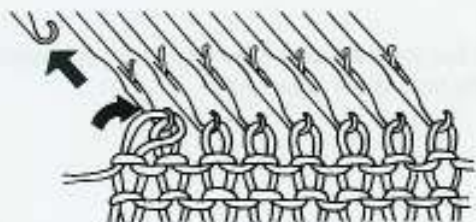
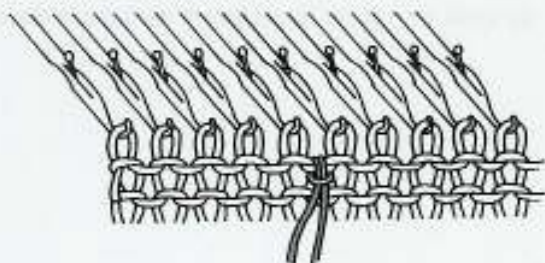


To make yarn mark

Insert the Tappet Tool into the sinker loop to be marked.
Take a length of waste yarn and make a loop on the Tappet Tool.
Pull the Tappet Tool through the sinker loop.

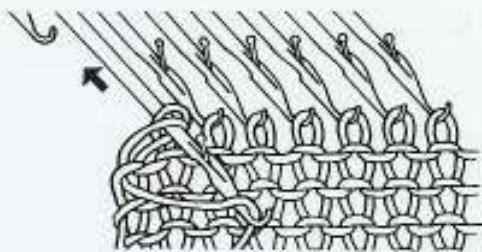


Catch both ends of the waste yarn and pull out the Tappet Tool through the loop.



To cast off with Transfer Tool

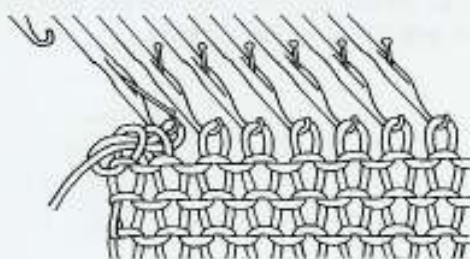
Knit last row and break the yarn leaving the end 3 times the width of the knitting.



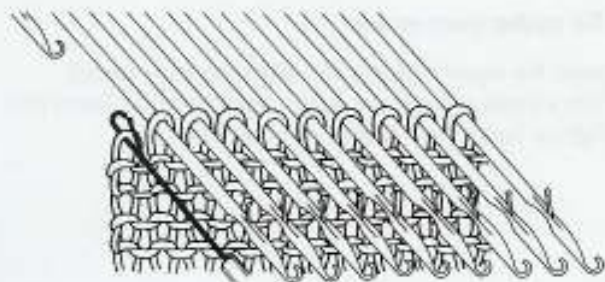
1. Transfer the first stitch to the second needle and push the empty needle back to A position.

2. Push the second needle to D position so both stitches are behind the latch and lay the yarn in the needle hook.

3. Push the needle back to A position.



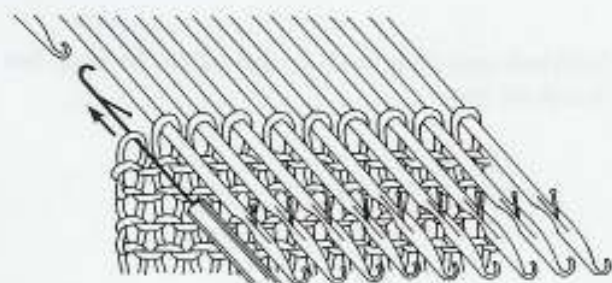
4. Repeat steps 1 — 3.



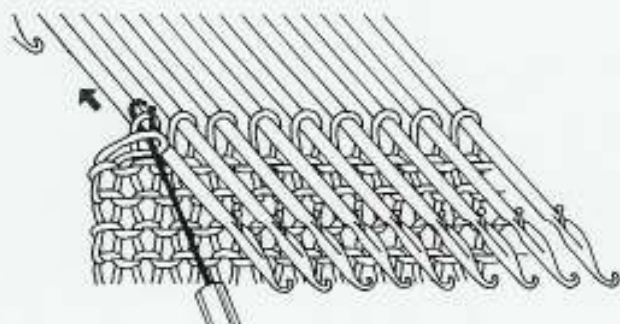
To cast off with Tappet Tool

This is used to make a closed edge when knitting is completed.

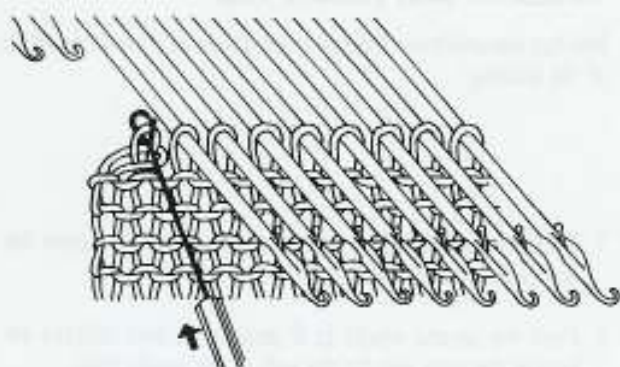
1. Knit the cast off row with the Main Carriage, setting the Stitch Dial 3 — 4 numbers higher than the main tension. Push the needles to D position. On the side opposite the Carriage, catch the first stitch with the Tappet Tool and push the needle back to A position. The stitch is transferred onto the Tappet Tool.



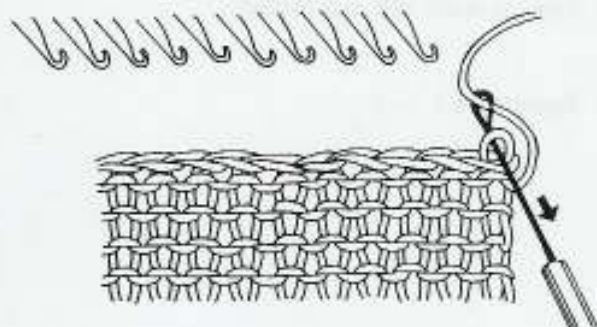
2. Push the stitch behind the latch of the Tool.



3. Catch the second stitch. Push the needle back as indicated by the arrow but pull the Tappet Tool in the opposite direction.



The first stitch will slip off the tool, leaving the second stitch in the hook of the Tappet Tool.

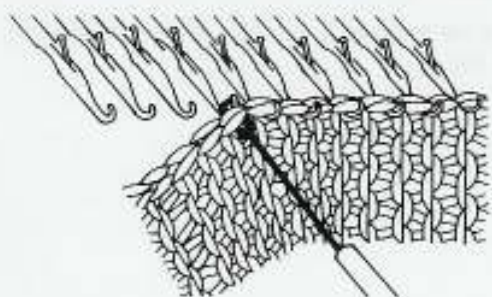


4. Repeat steps 2 — 3.
Cast off the last stitch by pulling the yarn end through the stitch with the Tappet Tool as shown.

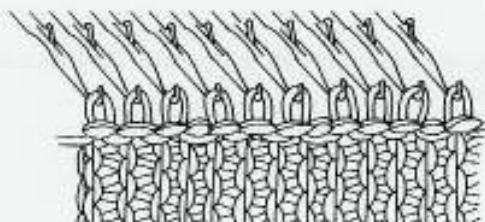


Trimming

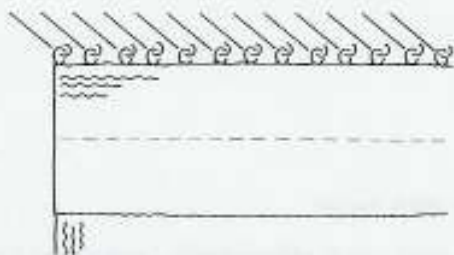
Used to trim neckbands, borders, etc.



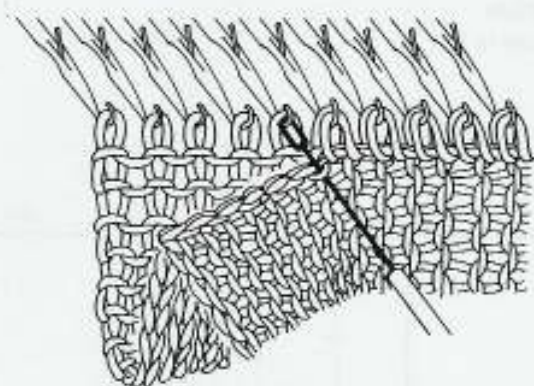
1. With the wrong side of the knitting facing you, pick up the edge stitches, and place onto the needles, omitting a stitch at appropriate intervals.



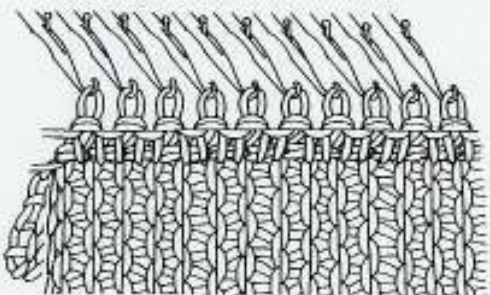
2. With the main yarn, knit 1 row in stockinet with the Stitch Dial 1 number lower than that used for stockinet.



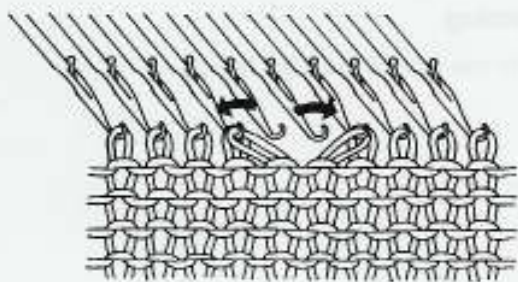
3. Reset the Stitch Dial to the original stockinet number and knit twice the depth of the hem required.



4. Pick up the sinker loops on the first row and place them onto the corresponding needles.



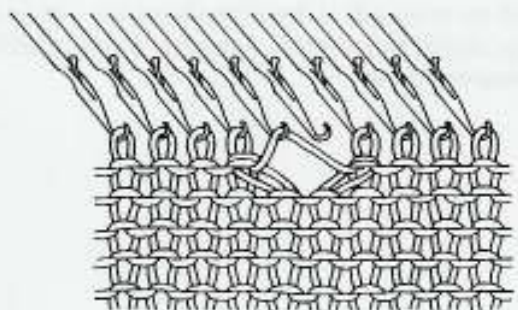
5. With the Stitch Dial set 2 numbers higher than stockinet setting, knit 1 row.
6. Cast off with Transfer Tool.



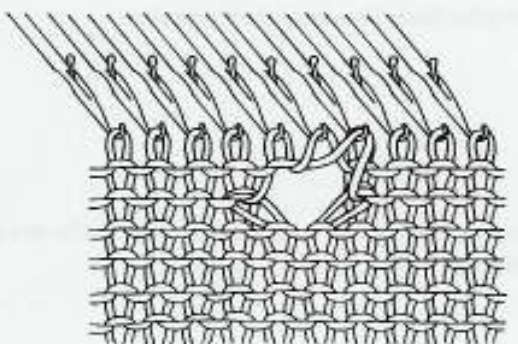
To make a buttonhole by transferring stitches

Double stitch eyelet

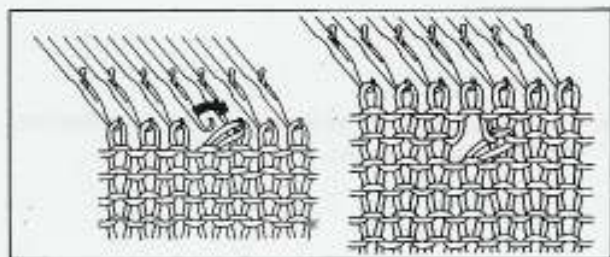
1. Transfer 2 stitches onto their adjacent needles as shown. Leave the empty needles in B position. Knit 1 row.



2. Remove the new loop of yarn from the right hand needle. Knit 1 row.



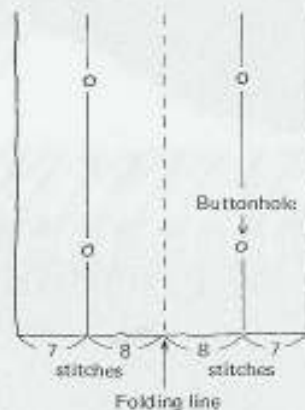
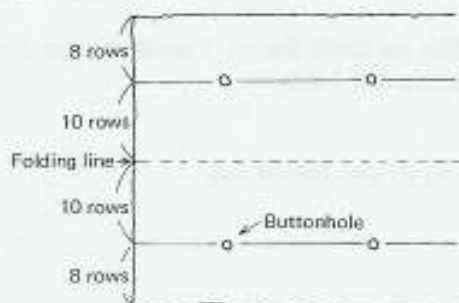
3. Pick up the yarn crossing above buttonhole and place it on the needle as shown. Continue to knit up to the next buttonhole.

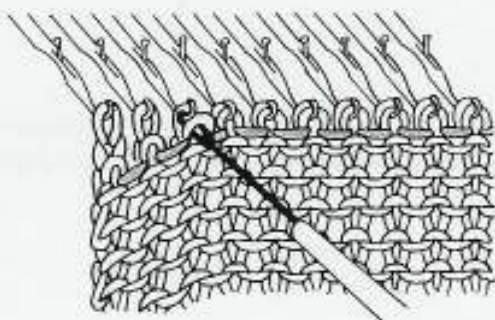
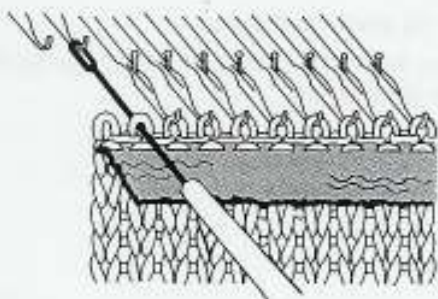


Single stitch eyelet

- Place 1 stitch onto its adjacent needle. Leave the empty needle in B position. Continue to knit.

When making buttonholes on a double border, adjust the number of rows or stitches between the inside buttonholes and outside buttonholes so that they match when the border is folded.



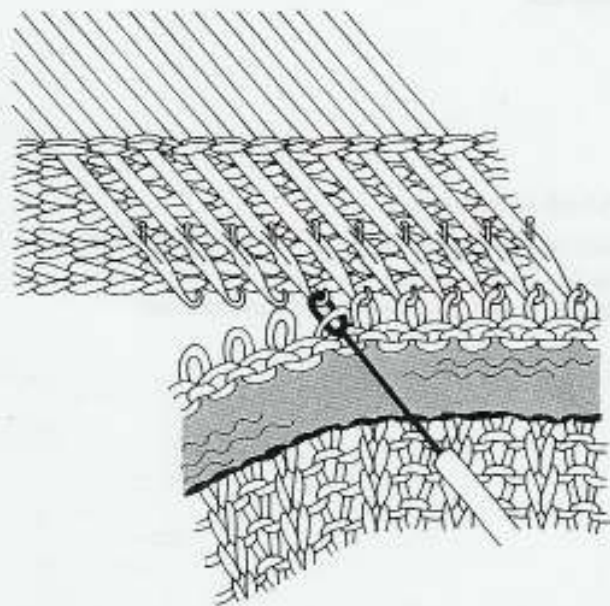
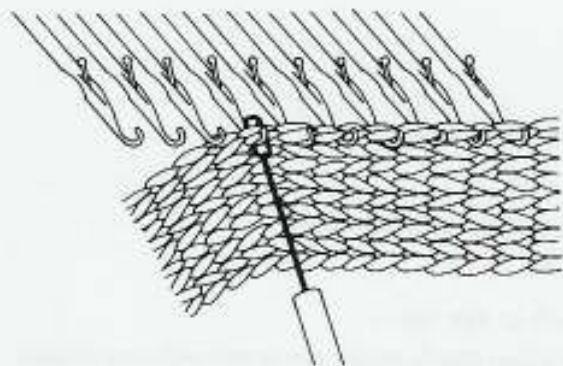


Seaming on the machine

Stitch to stitch

This is used for joining shoulders, joining a waistband to the waist edge, or joining a neckband to the neck edge.

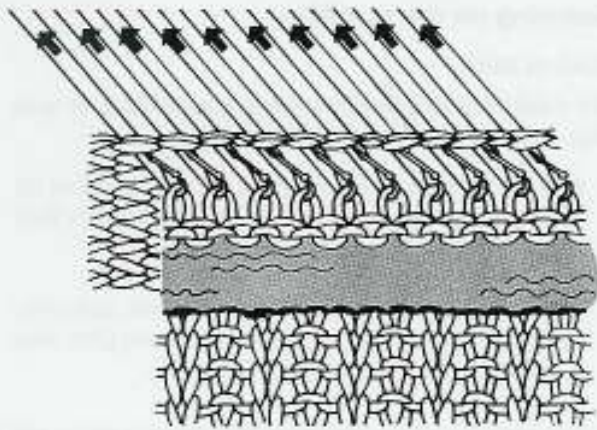
1. With the plain side of the first piece facing you, pick up the stitches on the last row of the main knitting and place them onto the needles. Unravel the waste knitting.
2. With the purl side of the second piece facing you, pick up the stitches on the last row of the main knitting and place them onto the needles. Unravel the waste knitting.
3. Knit 1 row 3 — 4 numbers looser than the main tension and cast off the stitches with the Tappet Tool. (Refer to page 20)



Open stitches to side edge

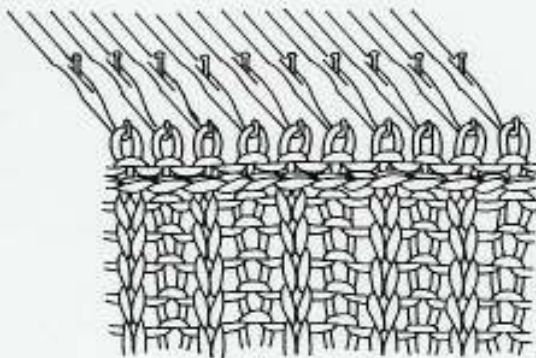
This is used for joining border to the front edge of a cardigan, neckband to the neck edge, etc.

1. With the plain side of the first piece facing you, pick up the edge stitches, omitting a stitch at appropriate intervals, and place them onto the needles.
2. Push up the needles to D position. With the purl side of the second piece facing you, pick up the stitches on the last row of the main knitting, and place them in the hooks of the needles.

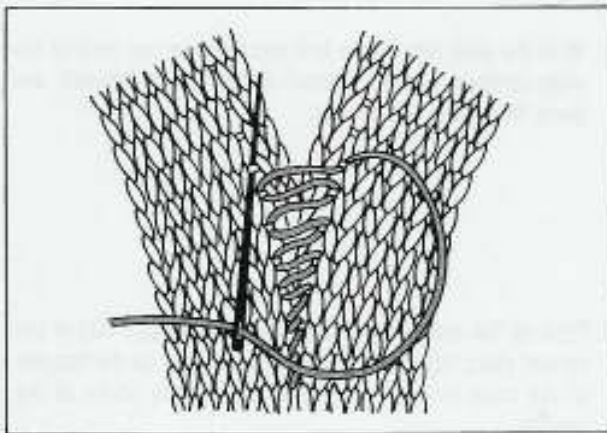


3. Push back the needles to B position.

The stitches behind the latches will slip off the needles.
Unravel the waste knitting.



4. Knit 1 row 3 — 4 numbers looser than the main tension and cast off the stitches with the Tappet Tool. (Refer to page 20)



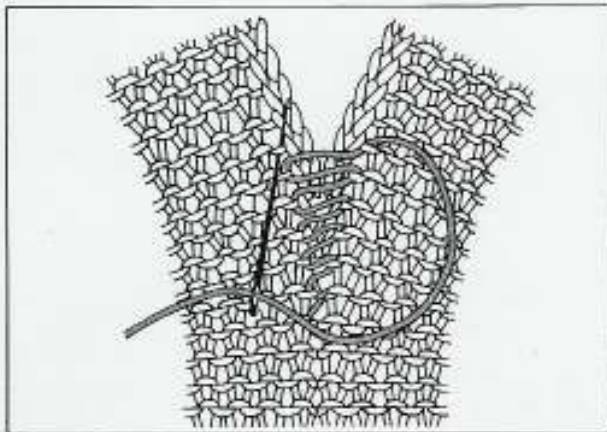
Joining by hand

Blind stitch

This is used for joining side seams.
Use a four ply yarn.

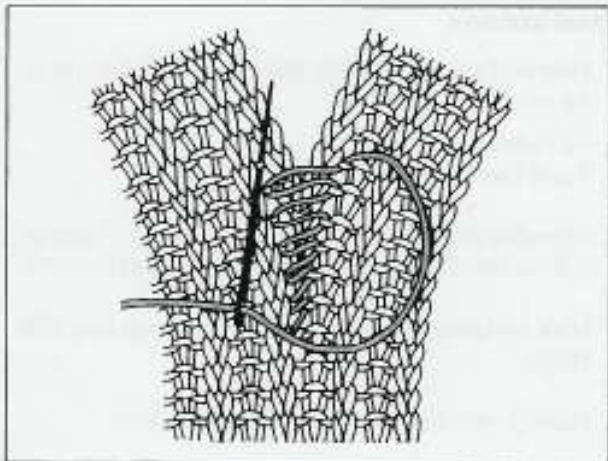
Plain side as right side.—

With the plain sides facing you, pick up each sinker loop between the last 2 edge stitches. Repeat, picking up the sinker loop from every row.



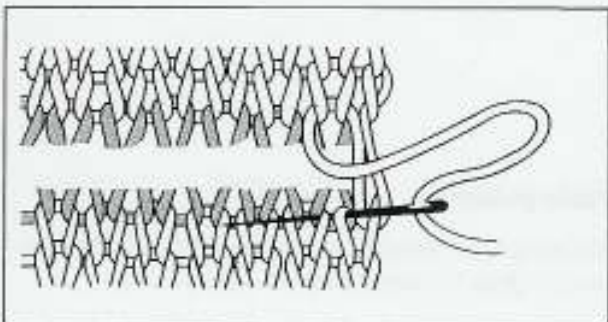
Purl side as right side.—

With the purl sides facing you, pick up each sinker loop between the last 2 edge stitches.
Repeat, picking up the sinker loop from every row.



K1, P1, Rib—

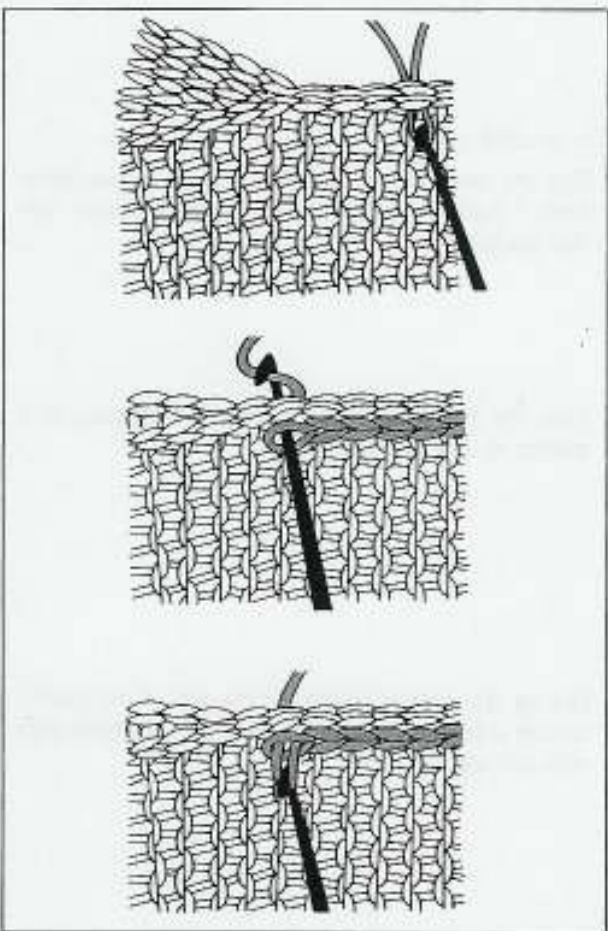
With the side to be used as the right side facing you, pick up the sinker loops between the last 2 edge stitches. Repeat on every row.



Grafting

This is used to join two open rows, where the seam should be soft to the touch.

Align both pieces as shown and thread the knitting yarn through the stitches with the Tapestry Needle.



Slip stitch

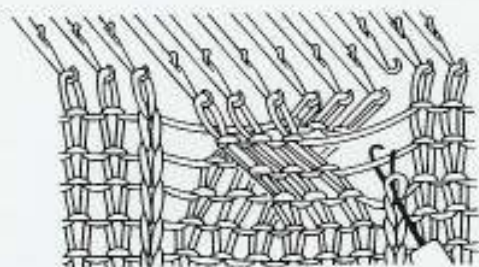
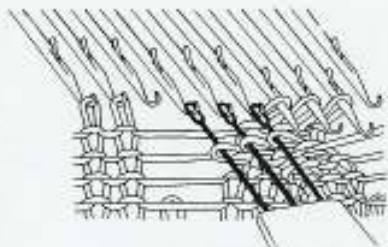
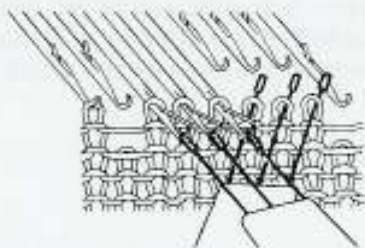
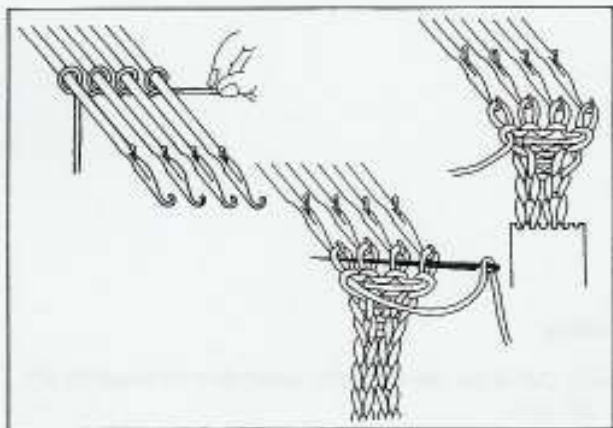
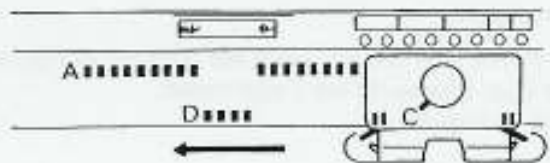
This is used for setting in sleeves or joining side seams.

1. Place the pieces to be joined with the right sides together. Insert the Crochet Hook into each sinker loop between the last 2 stitches from the edge. Catch the yarn and pull it through.

2. Insert the Crochet Hook into the next sinker loop and catch the yarn.

3. Pull back the Crochet hook.

Repeat steps 2 — 3.



Cord knitting

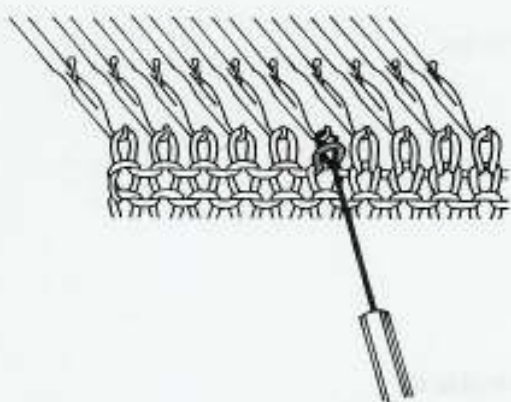
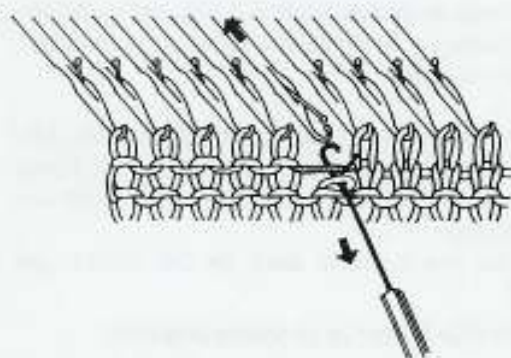
1. Place the Carriage at the right side of the Needle Bed and set the machine as follows.
Cam Lever..... C
Russel Levers..... II
2. Depending on the thickness of the cord, bring 3 — 5 needles to D position. Cast-on using the winding method as illustrated.
3. Move the Carriage back and forth five times, then hang Claw Weight.
4. Continue until the desired length has been knitted.

Cable pattern

Cable patterns are formed by crossing one group of stitches over a second group of stitches using two Transfer Tools.

Try a six stitch cable.

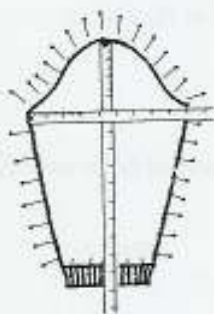
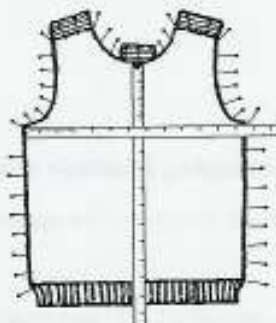
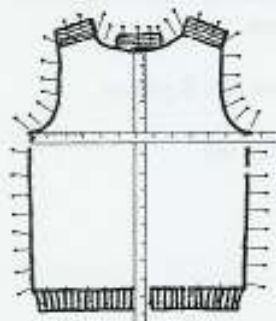
1. Drop one stitch at either side of the 6 stitches to be cabled. Using 2 3-prong Transfer Tool, remove the 6 stitches from their needles.
2. Cross the 2 Transfer Tools and replace each group of 3 stitches on their new needles.
3. Pick up the dropped stitches at the side of the crossed stitches as for ribbing using the Tappet Tool, and replace them onto their original needles.



Garter stitch

Garter stitch can be used for laps, collars, borders, etc. Knit stockinet, purling the stitches every alternate row.

1. Set the Stitch Dial 2 numbers lower than for stockinet knitting. Knit 2 rows stockinet.
 2. Insert the Tappet Tool into the stitch below the stitch on the needle, and push the needle to D position.
 3. Push the needle back to B position, allowing the stitch to come undone. Catch the loop in the hook of the Tappet Tool, and pull the loop through the stitch already on the Tappet Tool.
 4. Place the new stitch back on the needle.
- Repeat steps 2 — 4 for all stitches on the row.
5. Knit 2 rows stockinet and re-form the stitches on the second row following steps 2 — 4.

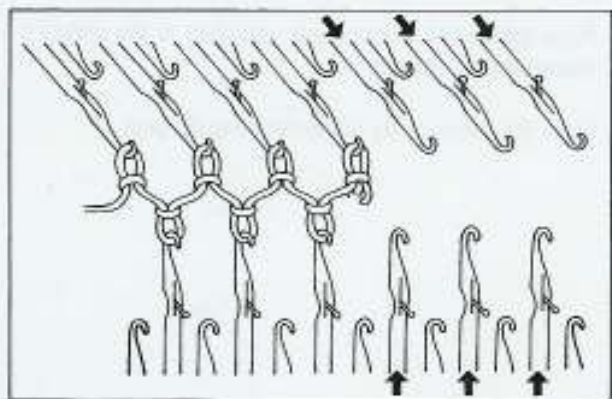
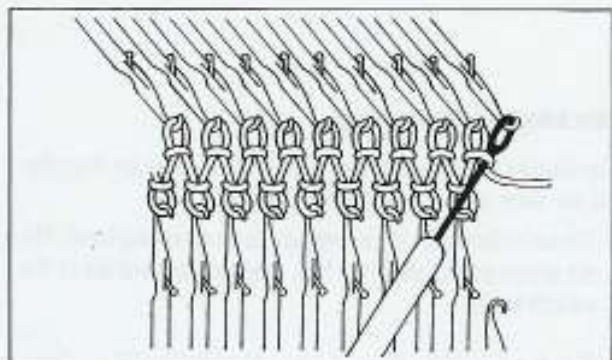
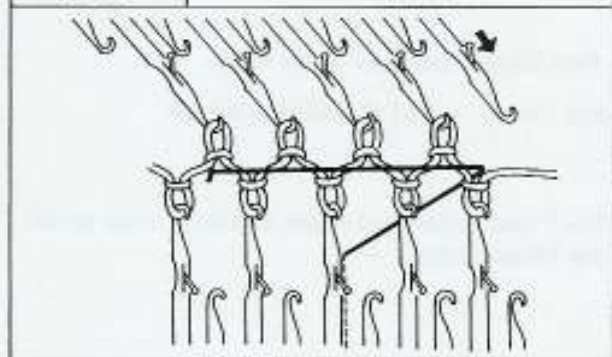
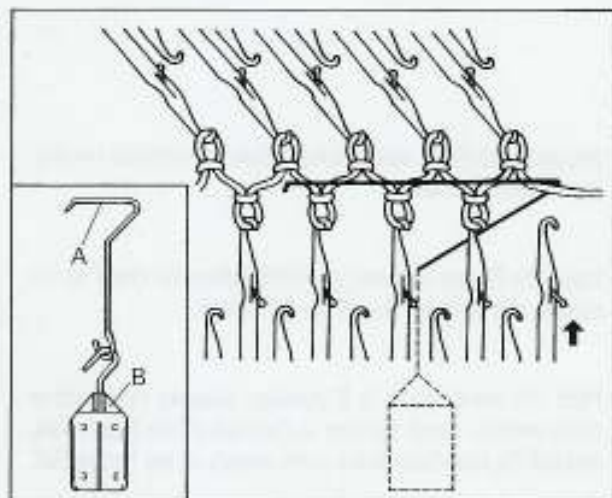


Blocking and pressing

After knitting the pieces of your garment, you must lay them flat and pin them out to their correct shape and size.

1. Pin out a piece with the wrong side up on an ironing board. Pin the widest part of the piece first, then measure and pin to the correct length.
2. Pin all around the edges, spacing the pins about 2 — 3cm. apart. (Place the pins inside the ribbed edge.)
3. Press lightly with a steam iron according to the spinner's instructions on the yarn band.
4. Leave the pieces to dry before removing the pins.

KNITTING TECHNIQUES — on the ribber —



Increasing 1 stitch

In case of K1.P1. and K2.P2. rib:

You can increase only on the Carriage side.

1. Push 1 needle on opposite needle bed of the end needle from A to B position, i.e. if end needle is on Knitter, push needle to B position on Ribber.
2. Use Side Hanger "A" with Edge Weight "B", hereafter called Edge Weight. From underneath, insert hook of Side Hanger between Knitter and Ribber needle bed and lay hook over zigzag stitches. Ensure the yarn is hooked inside the Side Hanger. (see diagram)

Move the Edge Weight up as knitting progresses.

3. Continue to knit.

In case of double rib:

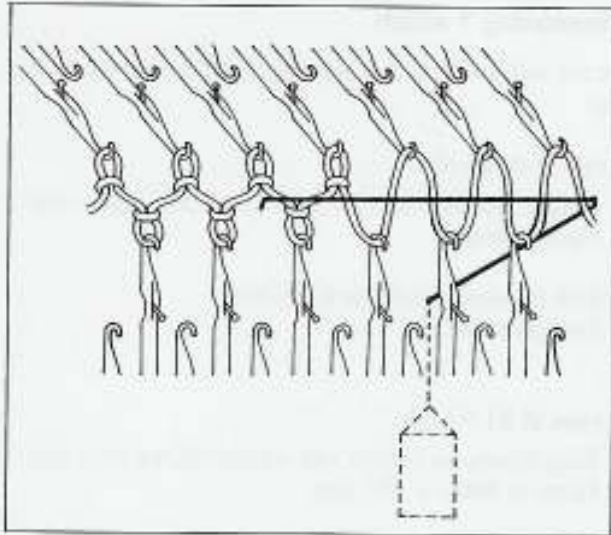
1. Push 1 adjacent Knitter/Ribber needle at Carriage side from A to B position. Pick up the loop below the end stitch and place it onto the empty needle as shown.
2. Push 1 Ribber/Knitter needle from A to B position.
3. Hang Edge Weight and continue to knit.

Increasing multiple stitches

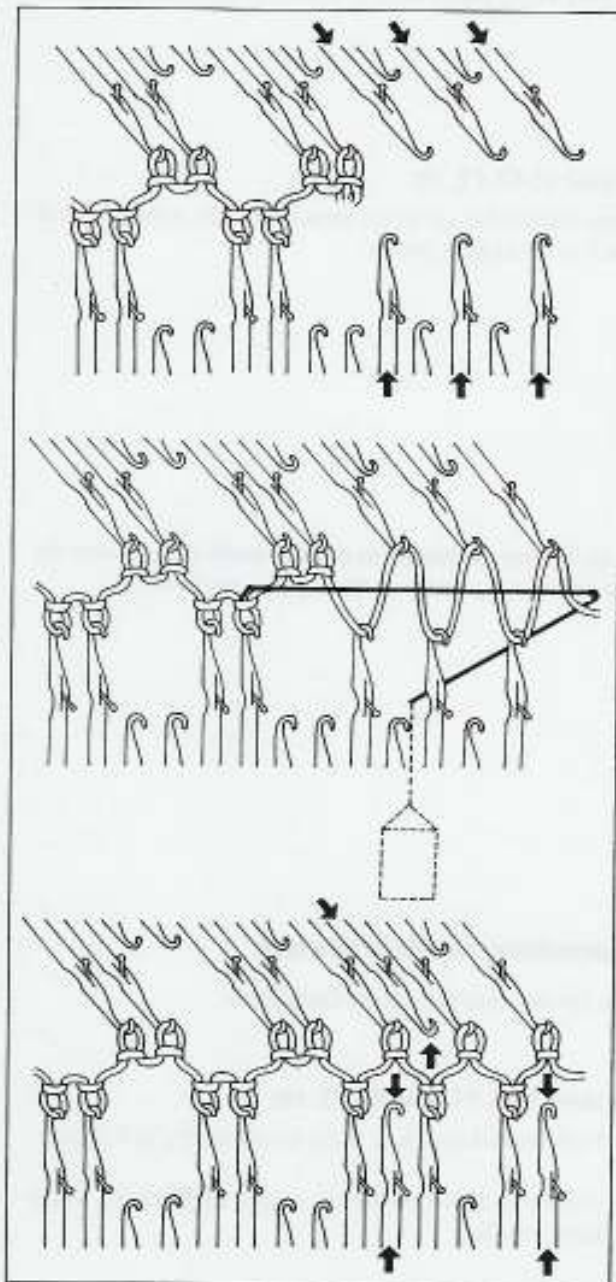
You can increase on the opposite side of the Carriage.

In case of K1.P1. and double rib:—

1. On opposite side of Carriage, push required Knitter and Ribber needles to B position.

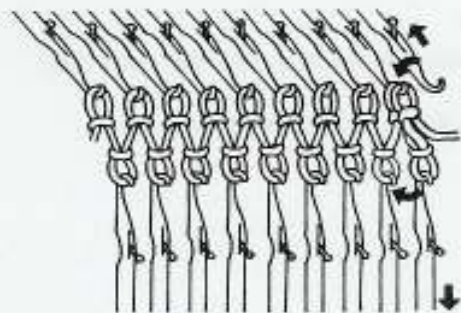


2. Knit 1 row.
Yarn lies alternately in Knitter and Ribber needle hooks.
3. Hang edge Weight and continue to knit.



In case of K2.P2. rib:—

1. On the side opposite the Carriage, push required Knitter and Ribber needles to B position as shown in diagram.
2. Knit 1 row and hang Edge Weight.
3. Knit 1 row and rearrange needles by transferring stitches as shown opposite.
4. Push empty needles back to A position.
Continue to knit.

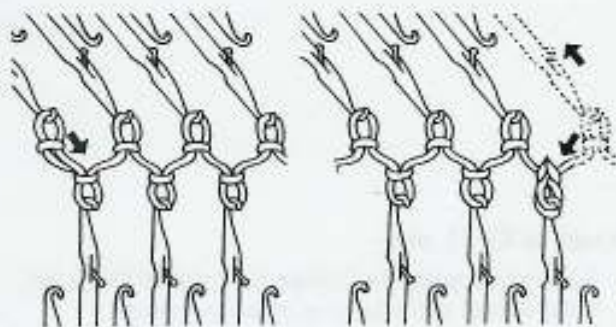


Decreasing 1 stitch

You can decrease 1 stitch at both edges of the row at the same time.

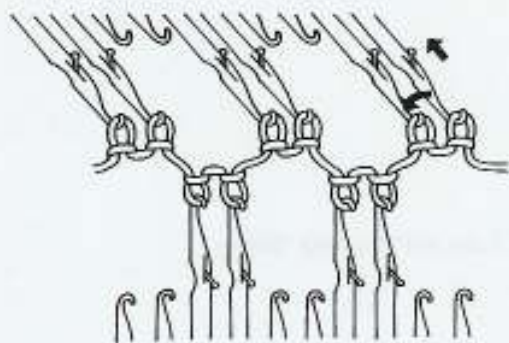
In case of double rib.—

1. Transfer the end stitch on both Knitter and Ribber onto adjacent needles.
2. Push the empty needles to A position. Continue to knit.



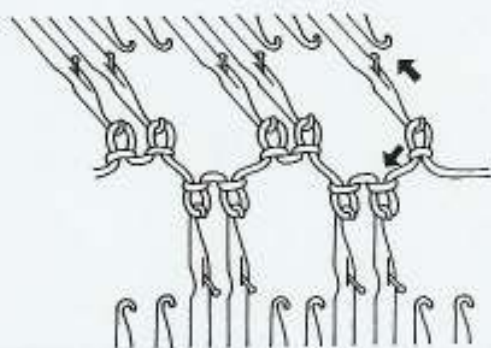
In case of K1.P1. rib:

1. Using Double-eye Transfer Tool, transfer the end stitch from Knitter to Ribber or vice versa.
2. Push empty needle back to A position and continue to knit.

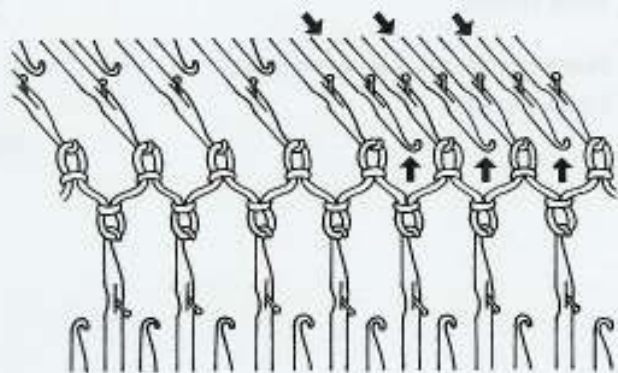


In case of K2.P2. rib:

If two end stitches are on the same needle bed, transfer the end stitch to its adjacent needle.



If the last two stitches are on different needle beds, transfer the end stitch to the needle on the opposite needle bed.

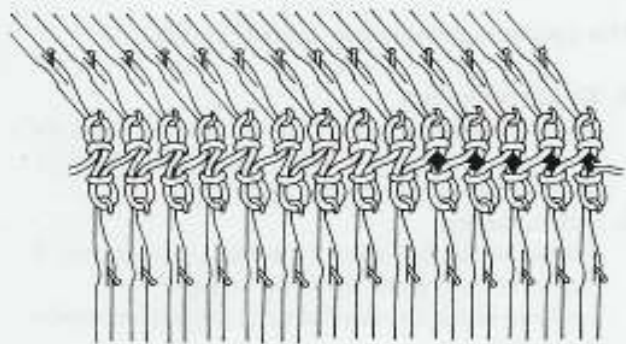
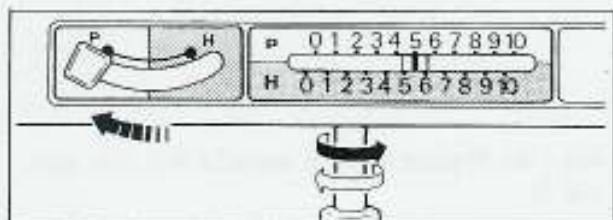
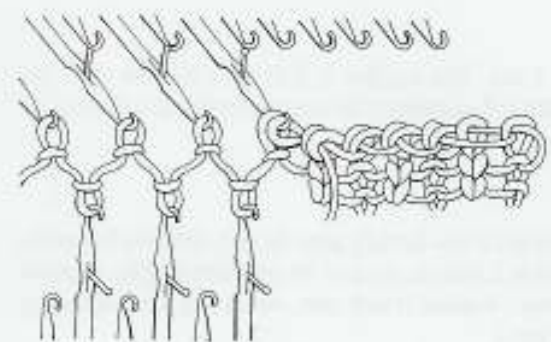
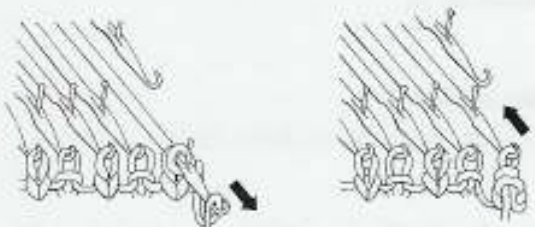
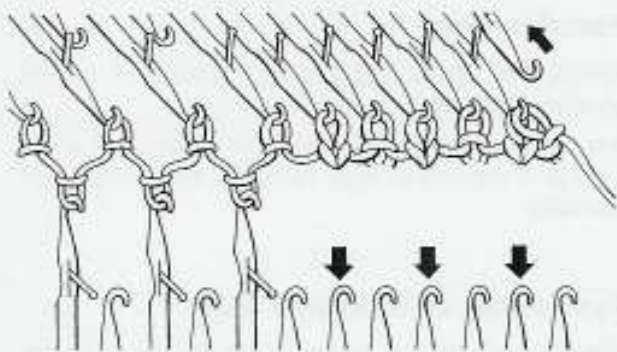


Decreasing multiple stitches

You can decrease only on the Carriage side.

In case of K1.P1. and K2.P2. rib:

1. Push required number of empty Knitter needles to B position.
2. Transfer stitches from Ribber to their corresponding empty Knitter needles.



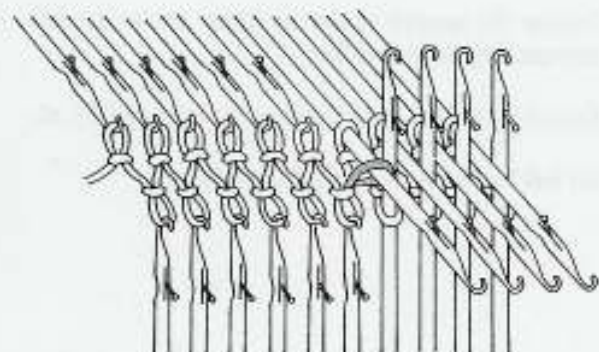
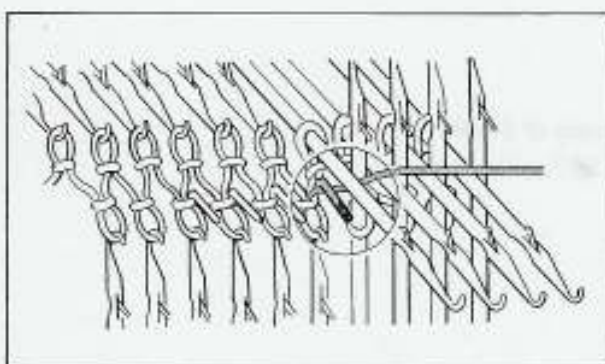
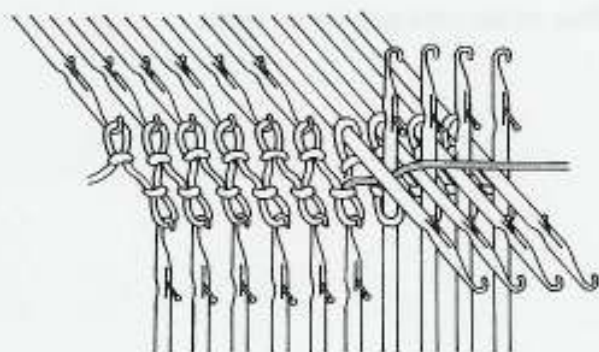
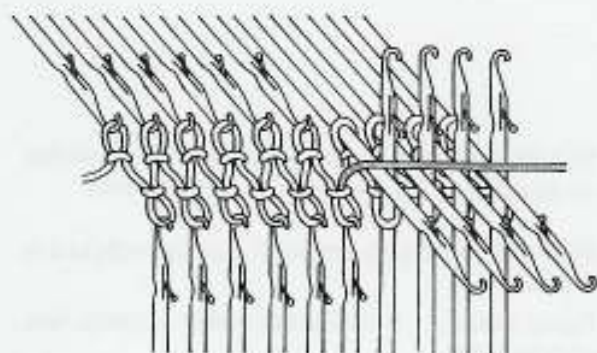
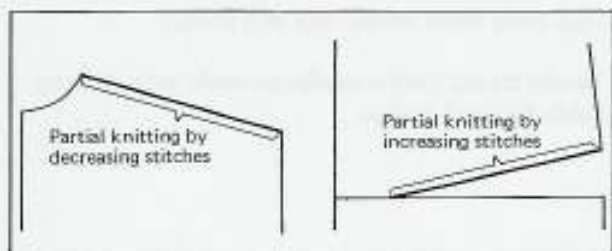
3. Push empty Ribber needles back to A position.
4. Transfer the end stitch to its adjacent needle and push empty needle back to A position.

5. Push the end working needle to D position. The two stitches are behind latch. Lay the yarn inside the needle hook.
6. Holding yarn end slightly downwards, push the needle back to B position.
Repeat steps 4 — 6 until required number of stitches have been decreased.

7. Place the last stitch onto adjacent needle.

In case of double rib:

1. Set Half-Pitch Lever to P.
2. Transfer the required number of Ribber stitches to their corresponding Knitter needles.
3. Cast off the stitches in the same way as given for K1.P1. rib.
Set Half-Pitch Lever to H to continue knitting.



Partial knitting

PARTIAL KNITTING is used to shape a gentle slope, such as shoulders, darts, etc.

You can do partial knitting only to the opposite end to the Carriage. If you wish to shape both sides, work left and right alternately.

Partial knitting without involving "swing"

This method applies to double rib, K1.P1. rib, K2.P2. rib, K3.P3. rib (wide ribbing), punch tuck rib, pin tuck, English and double English rib, etc.

Decreasing stitches

Set Russel Levers on Knitter and Ribber Carriage to **I** and **—** positions respectively.

1. On the side opposite the Carriage, push needles to be decreased to D position.
2. Knit 1 row. (The needles in B position knit the yarn. The needles in D position remain inactive and the yarn passes over them.)
3. To prevent a hole forming, pass the yarn under the first inside needle in D position and over the remaining needles. (If partial knitting is required at both sides, repeat step 1 before knitting next row.)

Be sure that yarn is not caught in Sinker Post "A".

4. Knit 1 row. (If partial knitting is required at both sides, apply step 3)
5. Repeat steps 1 — 4.

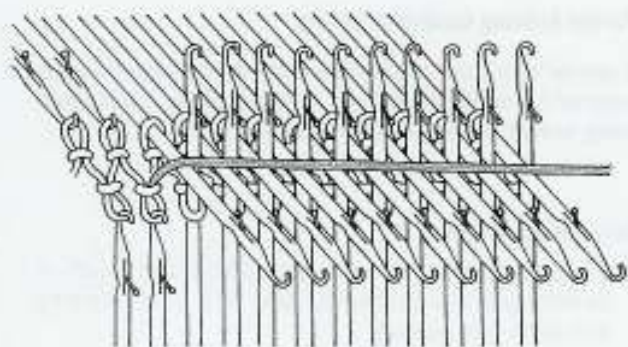
After completing partial knitting, continue as follows.

A. Rib without pattern.

Push the needles in D position at the opposite end to the Carriage back to C position. Knit 1 row. Repeat this step if partial knitting has been worked at both ends.

B. Pattern knitting.

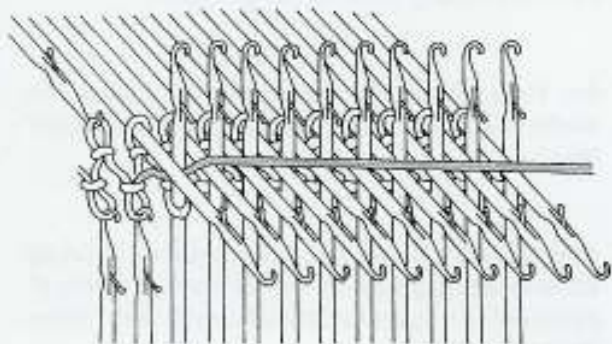
Using a Transfer Tool, return the needles in D position to B position, at the opposite end to the Carriage. Knit 1 row. Repeat this step if partial knitting has been worked at both ends.



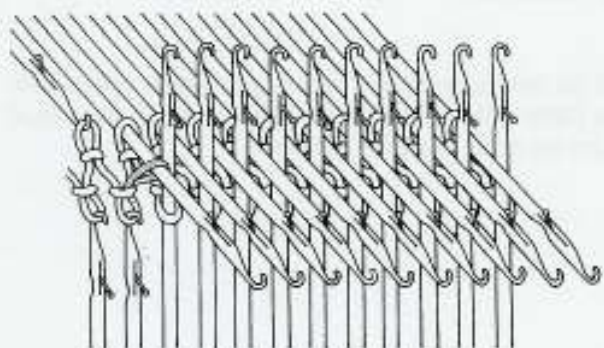
Increasing stitches

Set Russel Levers on Knitter and Ribber Carriage to **I** and **—** positions respectively.

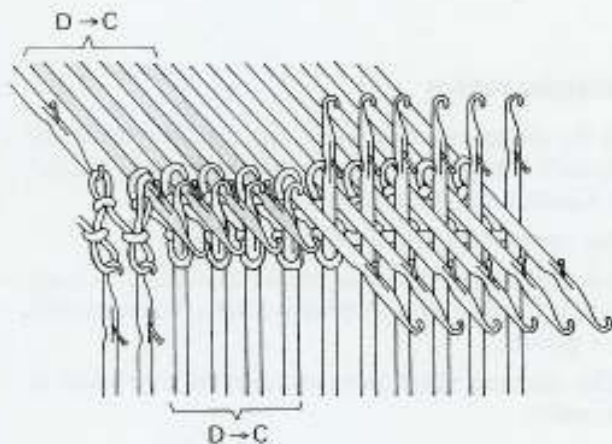
1. On the side opposite the Carriage, push needles for the width to be shaped by partial knitting to D position.
2. Knit 1 row. (The needles in B position knit the yarn. The needles in D position remain inactive and the yarn passes over them.)



3. To prevent a hole forming, pass the yarn under the first inside needle to D position and over the remaining needles. (If partial knitting is required at both sides, repeat step 1 before knitting the next row.)



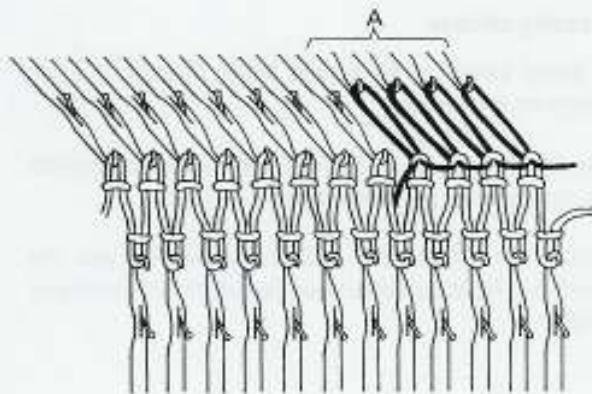
4. Knit 1 row.
(If partial knitting is required at both sides, apply step 3.)



5. On the side opposite Carriage, push needles in D position to be increased back to C position, and knit 1 row.

When the pattern knitting is required, using a Transfer Tool, return the needles to be increased to B position.

6. Repeat steps 3 — 5. (If partial knitting has been worked at both sides, repeat steps 3 and 5 only.)

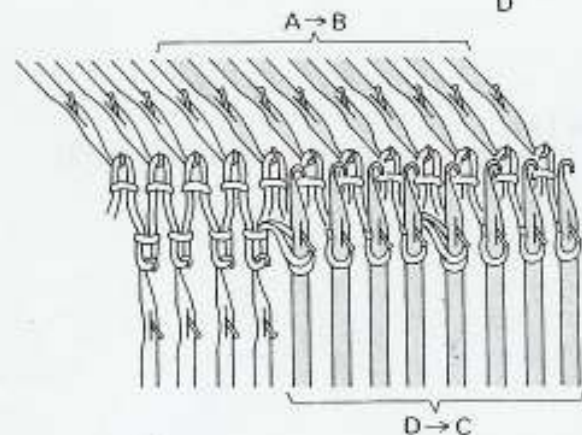
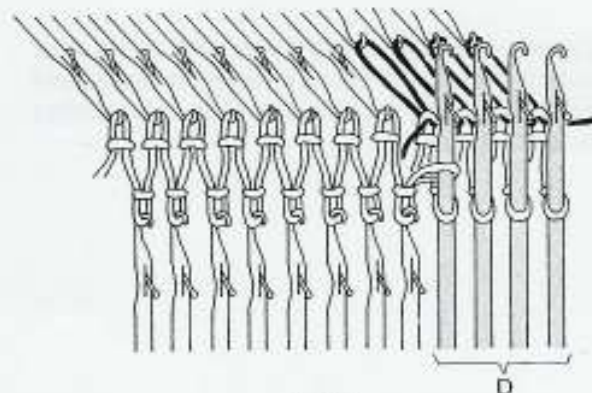


Partial knitting involving "swing"

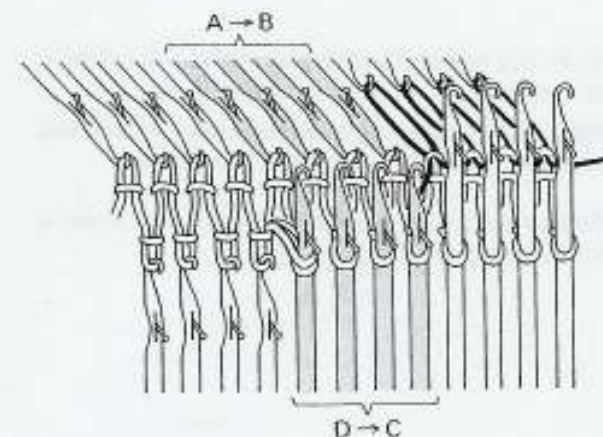
A special technique of partial knitting as undermentioned is required for swung English rib, variation swing, herringbone swing and all of stitches which involve "swing".

Decreasing stitches

1. On the side opposite the Carriage, push the Knitter needles to be decreased to D position and back to A position knitting with Ravel Card manually.
2. Push corresponding Ribber needles to D position.
3. Knit 1 row. (The needles in B position knit the yarn. The needles in D position remain inactive and the yarn passes over them.)
4. To prevent a hole forming, pass the yarn under the first inside Ribber needle in D position and over the remaining needles. (If partial knitting is required at both sides, repeat step 1 before knitting next row.)
5. Repeat steps 1 — 5.



At the completion of partial knitting, push needles in D position on Ribber back to C position and replace stitches held on Ravel Card into hooks of needles on Knitter.



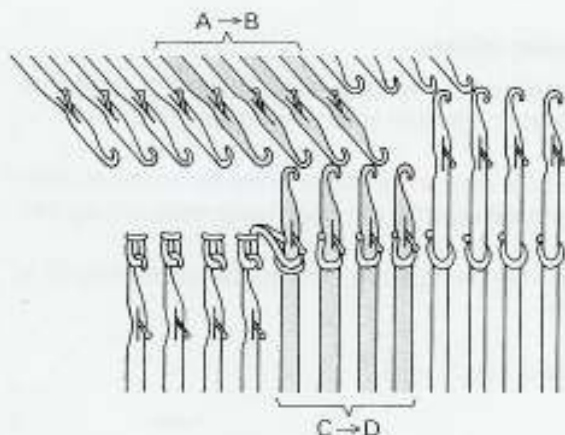
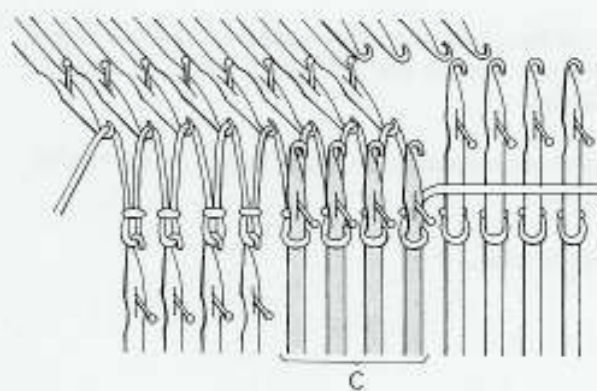
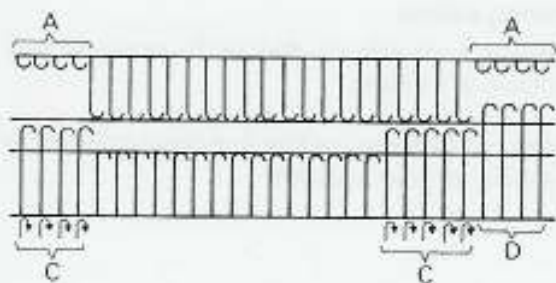
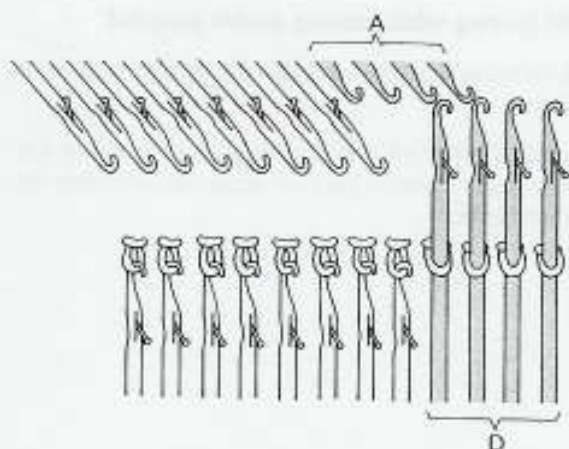
Increasing stitches

On the side opposite the Carriage, push the Knitter needles for the width to be shaped by partial knitting to D position and back to A position knitting with Ravel Card manually.

Push corresponding Ribber needles to D position.

To increase, replace the Knitter stitches to be increase in needle hooks and push corresponding Ribber needles in D position back to C position.

Other operations should be carried out in the same manner as decreasing.



Partial knitting in pile knitting and drive lace knitting.

Set Russel Levers on Knitter and Ribber Carriage to **I** and **—** positions respectively.
Begin partial knitting after removing stitches on knitter using P Carriage.

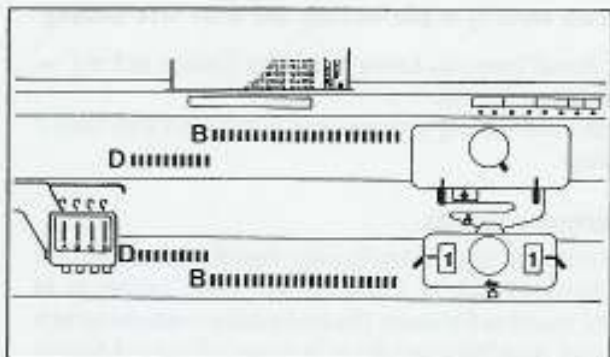
Decreasing stitches

1. On the side opposite the Carriage, Push Knitter needles to be decreased back to A position and Ribber needles to be decreased to D position. (If partial knitting is required on both sides, push Knitter needles to be decreased back to A position on the Carriage side.)
2. On both sides of Ribber Bed push the end 4 or 5 working needles up to D position and then back to C position (*) instead of bringing Ribber needles with P Carriage because it cannot be used in partial knitting.
3. Knit 1 row.
4. To prevent a hole forming, pass the yarn under the first inside Ribber needle in D position. (If partial knitting is required on both sides, push Ribber needles to be decreased to D position on the side opposite the Carriage.)
5. Repeat step 2 and knit 1 row.
6. Repeat step 1 — 5.

Increasing stitches

On the side opposite the Carriage, push Knitter needles back to A position and Ribber needles to D position for the width to be shaped by partial knitting.

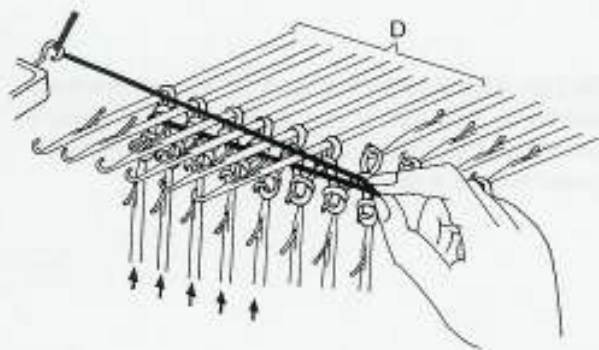
Push Knitter needles to be increased to B position and Ribber needles to be increased back to C position. Other operations should be carried out in the same way as for decreasing.



Partial knitting while knitting double jacquard

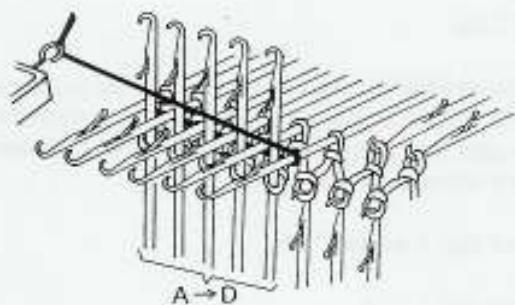
Partial knitting at right side is worked in the same way as given for double rib.

For partial knitting at left side, Set Russel Levers on Knitter and Ribber Carriage to **I** and **—** positions respectively and follow the instructions below.

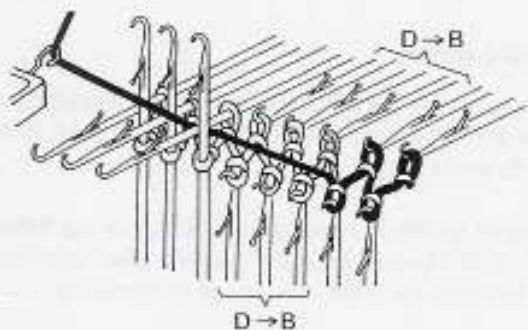


Decreasing stitches

1. Carriage is at the right side. Push the Knitter needles to be decreased to D position.
2. Pull yarns in the Holders and hook them around the needles in D position, as shown in diagram.

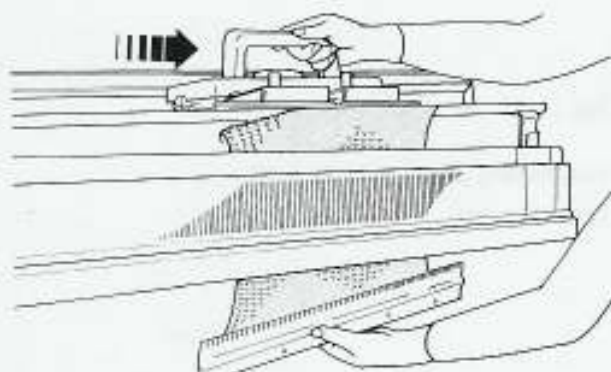
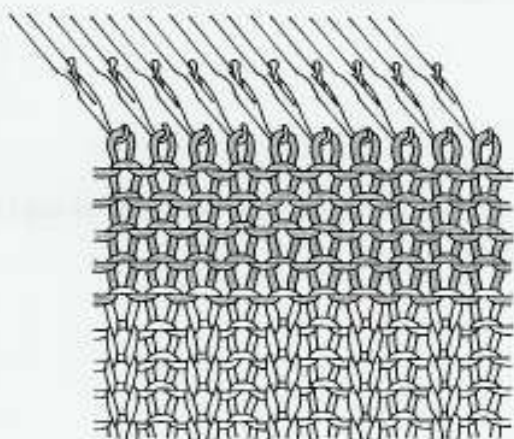
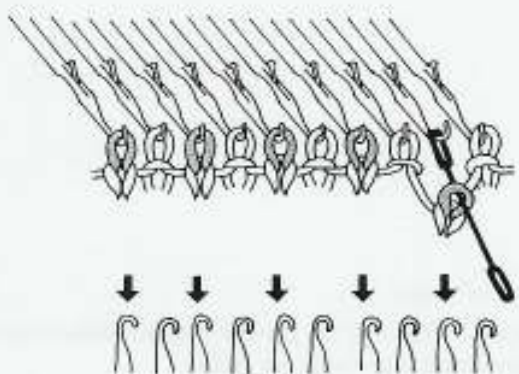
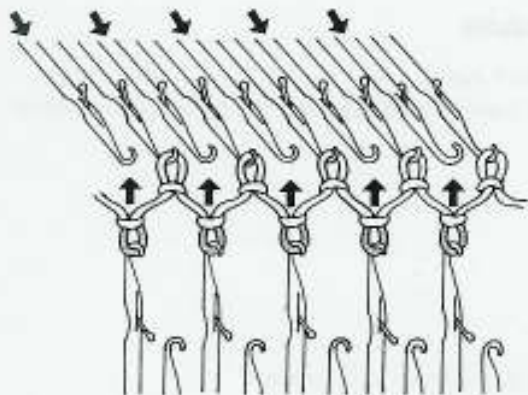


3. Push the corresponding Ribber needles to D position. Ensure that each yarn lies over both sets of needles as shown in diagram.
4. Knit 1 row from right to left. Change the yarn and knit from left to right.
5. Repeat steps 1 — 4.



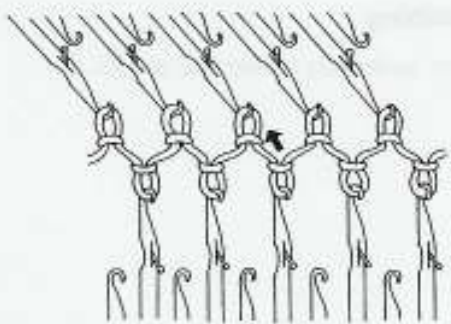
Increasing stitches

1. Carriage is at the right side. Using Transfer Tool, transfer the needles in D position to be increased, back to B position.
2. Bring the yarns in the Holders behind the first inside Ribber needle and under the first inside Knitter needle in D position.
3. Knit 1 row from right to left changing the yarn and from left to right.
4. Repeat steps 1 — 3.



Waste knitting

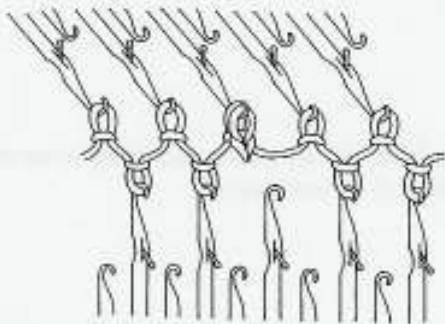
1. On Knitter, push empty needles to B position.
2. Transfer Ribber stitches to the corresponding Knitter needles. Drop Ribber to its lowest position.
3. Exchange Ribber Arm for Knitter Arm and thread contrast yarn into Yarn Feeder. Knit 9 — 10 rows with Stitch Dial 4 — 5 higher than for double bed knitting, with Cam Lever set to stockinet(O).
4. Remove yarn and Weights. Holding Cast-on Comb, move Carriage to remove fabric from machine.



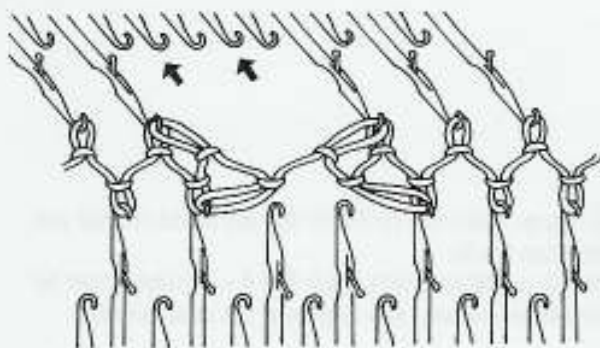
Buttonhole

Single stitch eyelet.

1. At the point for eyelet, transfer 1 stitch from Ribber to Knitter.

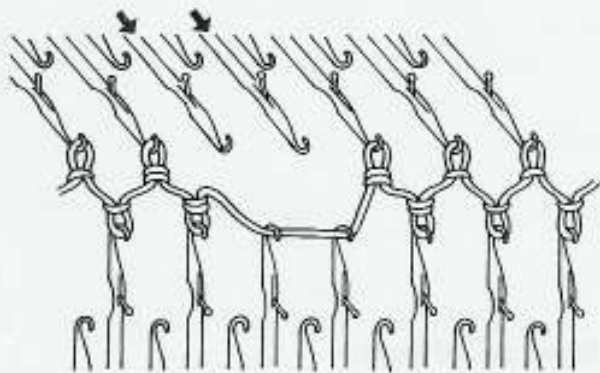


2. Leave empty needle in B position.
Continue to knit.

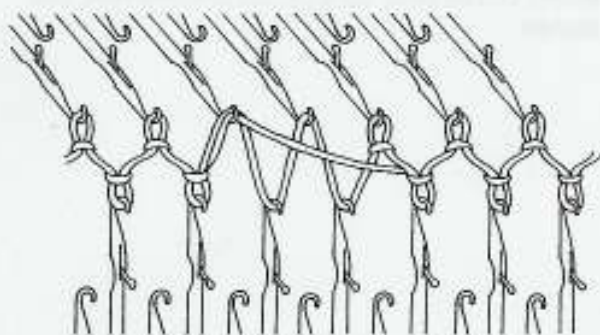


Double stitch eyelet.

1. Transfer 2 stitches at the point of the buttonhole to their adjacent needles on Knitter and Ribber.
2. Push empty needles on Knitter back to A position.
Leave empty needles on Ribber in B position.



3. Knit 1 row and push the needles left in A position on step 2 to B position.



4. Knit 1 row.
5. Hook handing yarn on a Knitter needle.
Continue to knit.

IF MISTAKE OCCUR DURING KNITTING

Stockinet knitting

Unravel the incorrectly knitted rows and align the needles in B position. Using Release Lever, move the Carriage to the yarn side.
(See page 99 of Operation Manual.)

Turn back the Row Counter by the same number of rows as you have unravelled.

Continue knitting.

Vertical expansion (Button 3 is used)

Unravel an even number of knitted rows and align the needles in B position.
(See page 99 of Operation Manual.)

Turn back the Row Counter by the same number of rows as you have unravelled.

Push "ON" the Inspection Button. Return the Pattern Card by half the number of rows unravelled.

Push "OFF" the Inspection Button and start knitting.

Pattern knitting

Unravel the incorrectly knitted rows and align the needles in B position.
In lace knitting, if there are empty needles on the row to be unravelled replace the stitches on their original needles before unravelling.

Turn back the Row Counter by the same number of rows as you have unravelled.

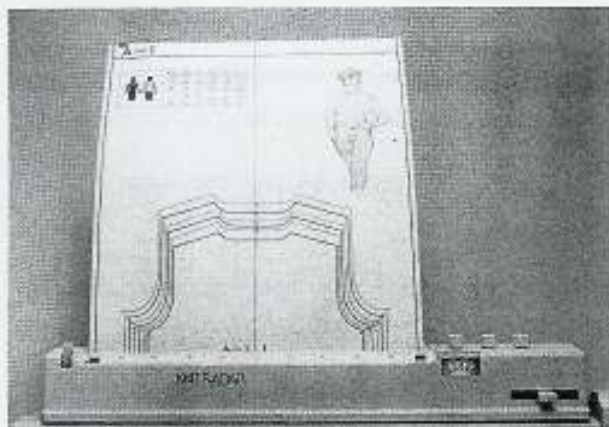
Push "ON" the Inspection Button.

Turn back the Pattern Card by the same number of rows as you have unravelled.
In fashion lace knitting, the row with the black Notation Column should NOT be counted as unravelling row.

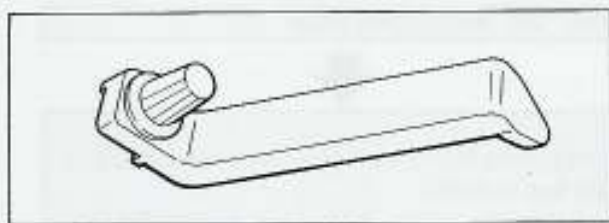
Using Release Lever, move the Carriage to the yarn side. (If the Lace Carriage is in use, set the Cam Lever to "N" and move it to the yarn side.)

Push "OFF" the Inspection Button and start knitting.

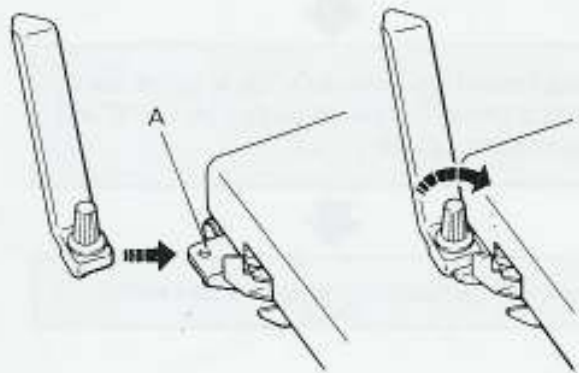
Knit Contour (Radar) Attachment KR7 (Option)



The Knit Contour (Radar) is a visual pattern system, which shows you how many stitches to cast on, and when and where to increase and decrease 17 different pre-printed pattern styles come with the attachment.



To feed a pattern paper, attach the Knit Contour (Radar) feeding cam contained in the accessory box.



Place a feeding cam onto the left extension plate "A".

Fasten the feeding cam to the extension plate by turning the knurled knobs clockwise.