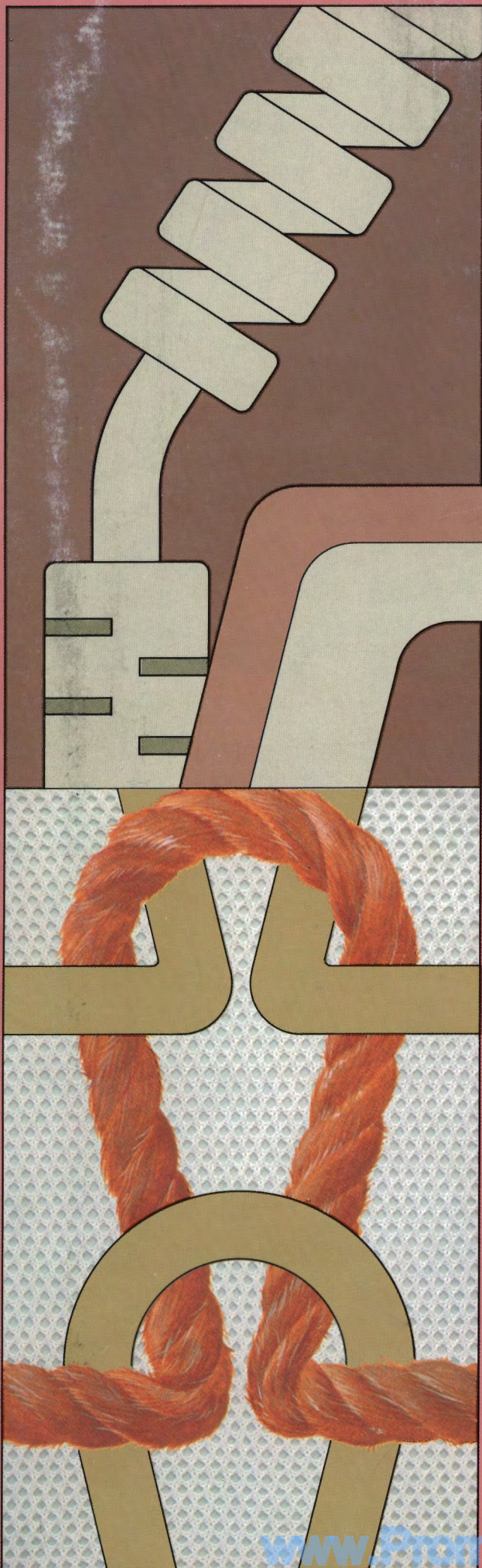


OPERATION MANUAL

MODEL 560



Congratulations on your purchase of this technologically advanced and sophisticated knitting machine.

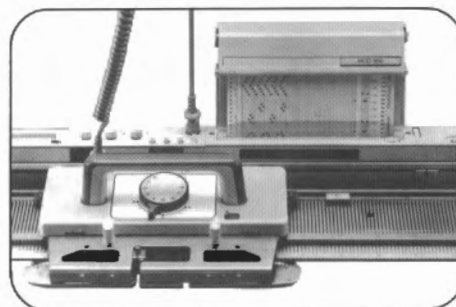
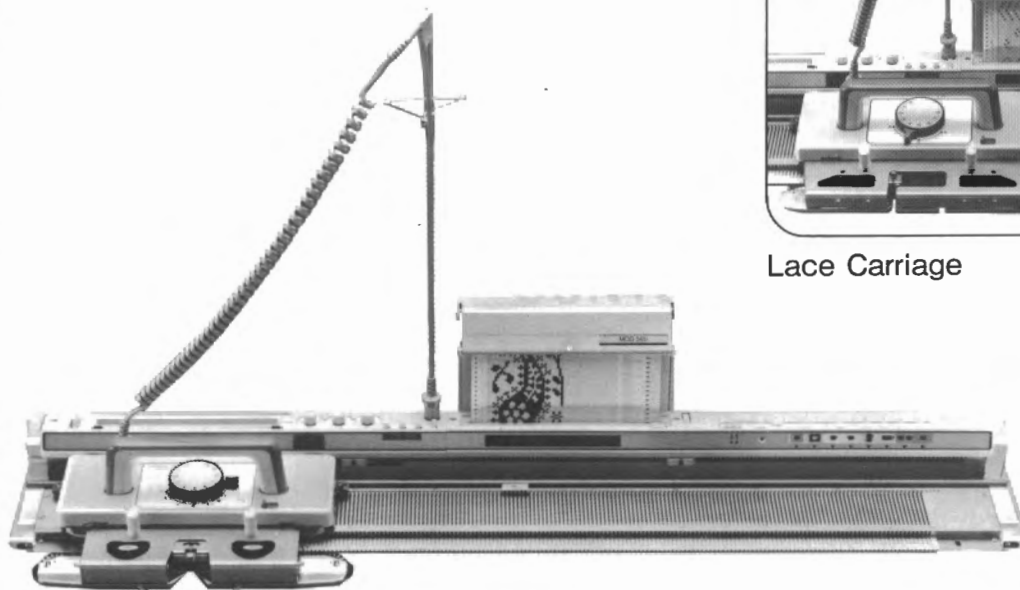
This Operation Manual is divided into sections — for the knitting machine, its combination with the Ribber, and with the Automatic Yarn Changer. So refer to the section according to the combination of the machine you own.

It is strongly advised to read this manual thoroughly so as to avoid any misuse of this machine, and which may cause the machine to be damaged irreparably.

Extensive use of this machine will be sure to satisfy your creativity in knitting and will invite you into the broader world of machine knitting.

MODEL 560 KNITTING MACHINE

pages 1–48

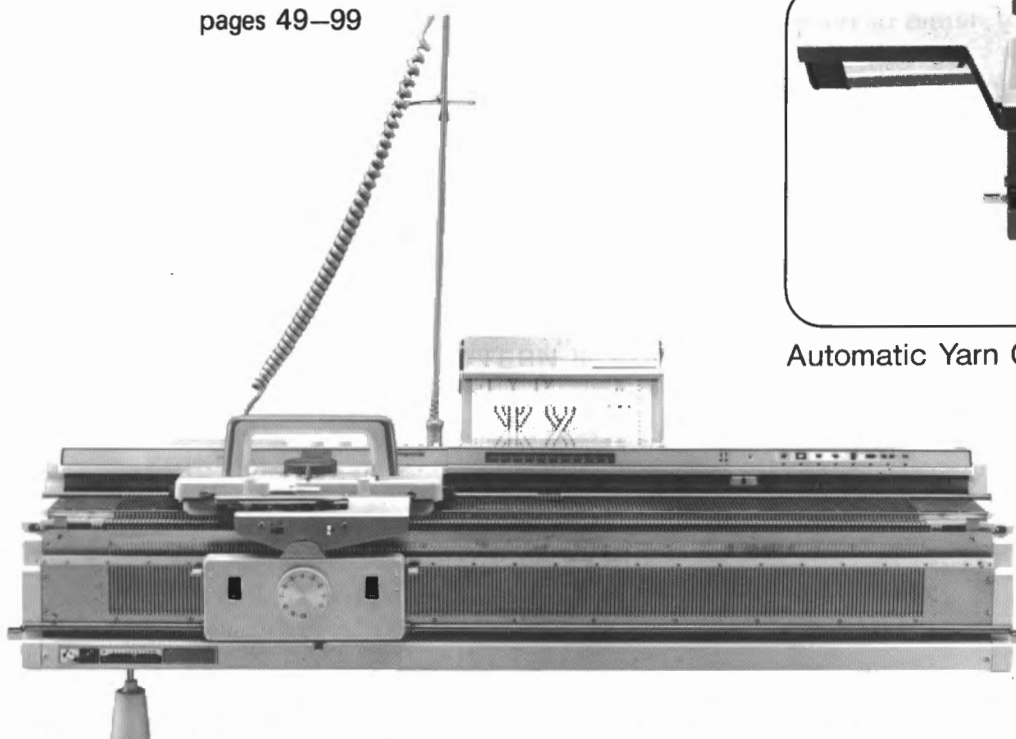


Lace Carriage

pages 34–48

MODEL 560 WITH RIBBER

pages 49–99



Automatic Yarn Changer

pages 86–99

TECHNICAL HINTS

pages 100–116

PRECAUTION

This machine must be kept away from the following places since electronic components are vulnerable to those conditions.

1. Direct and strong sun light.
2. Near to heater, or a place of excessively high temperature.
3. Excessively humid or dusty.

When the machine is not in use, disconnect the plug from the A.C. mains, otherwise the Transformer continues to consume electric power even if the ON-OFF switch is turned off.

TO USE THE KNITTER

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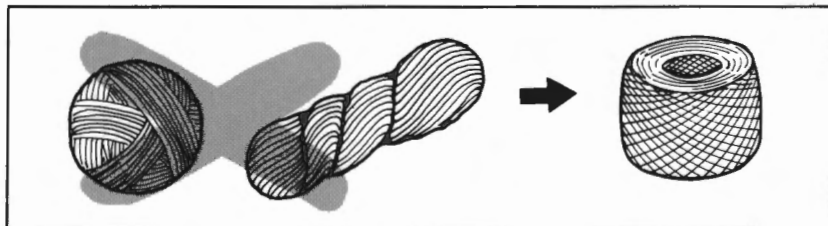
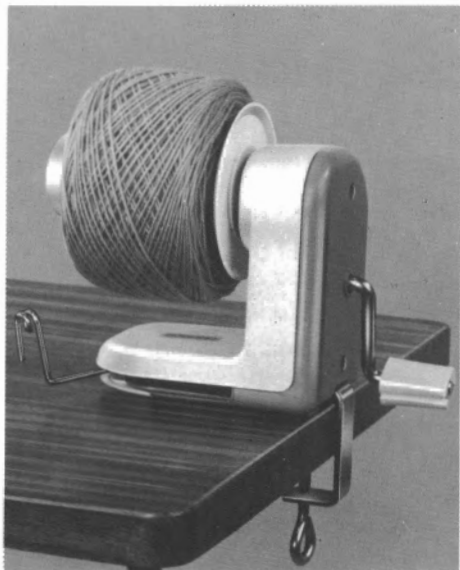
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YARN PREPARATION FOR KNITTING



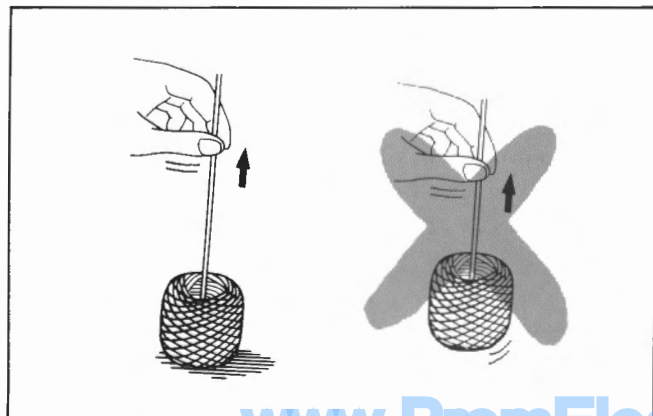
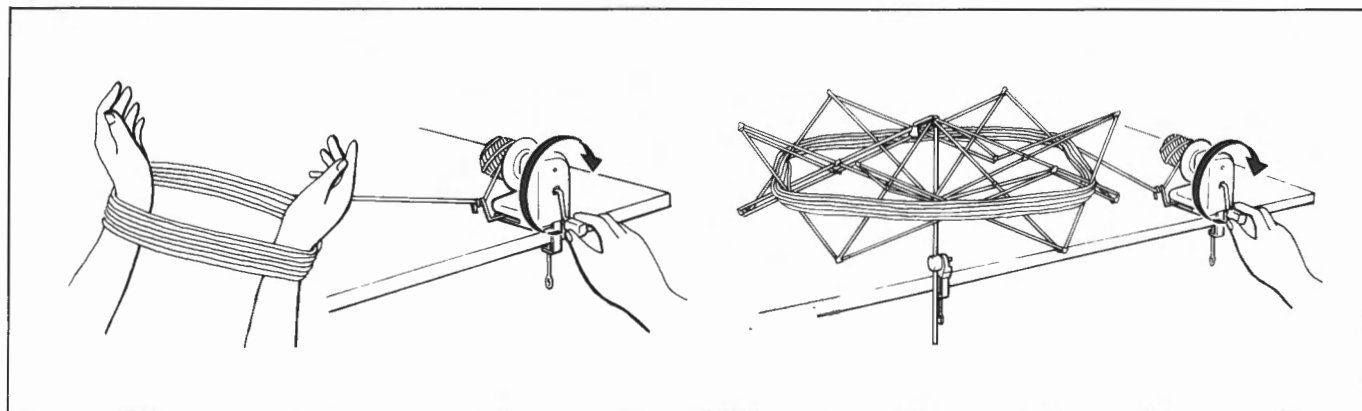
A yarn of suitable thickness or kind has to be used according to the type of knitting. For knitting on the Knitter, the yarn having the thickness close to the yarns (2–3) in the left photo is recommended. When the Ribber is connected, the yarn having the thickness close to the yarns (1–2) in the left photo is recommended.

Correct preparation of the selected yarn is also a very important step to assure proper knitting.



It is not possible to knit from a hank of yarn or hand wound ball, as for machine knitting it is essential for the yarn to feed into the machine freely. Place the hank onto your arms or a Skein Holder and wind into a ball using the Yarn Ball Winder.

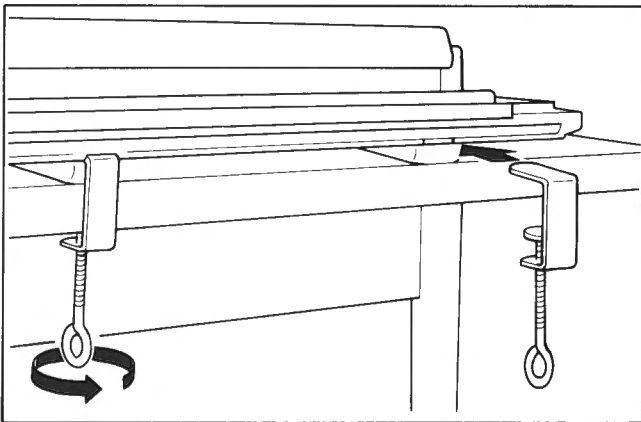
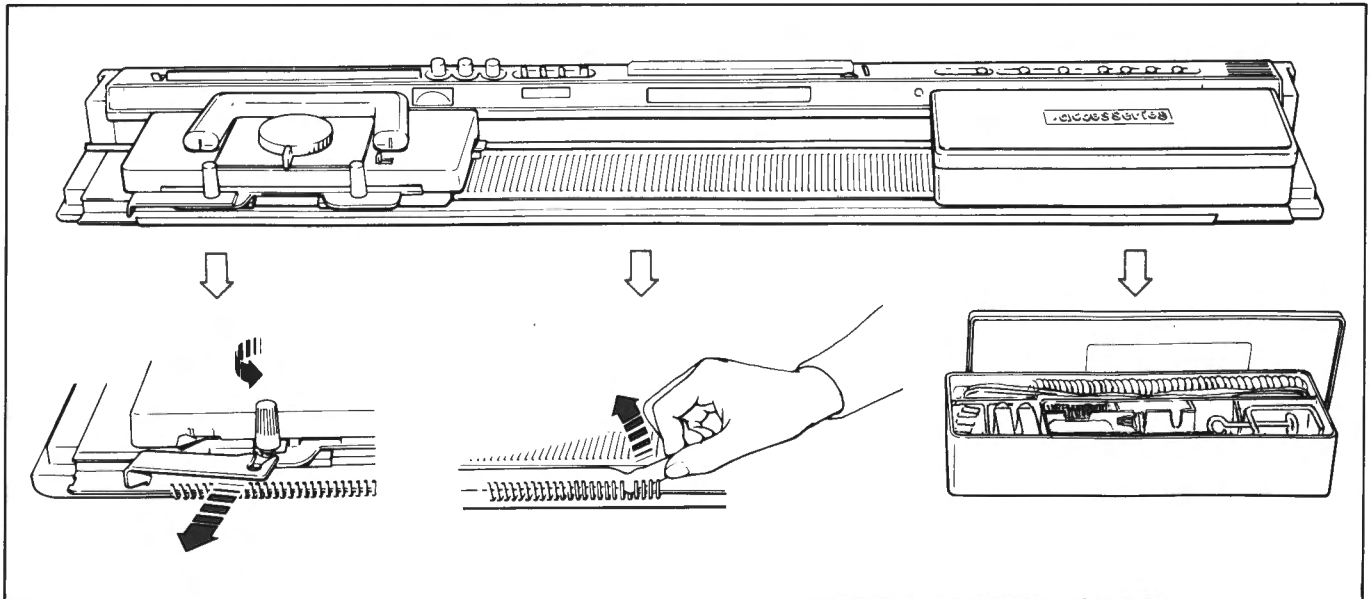
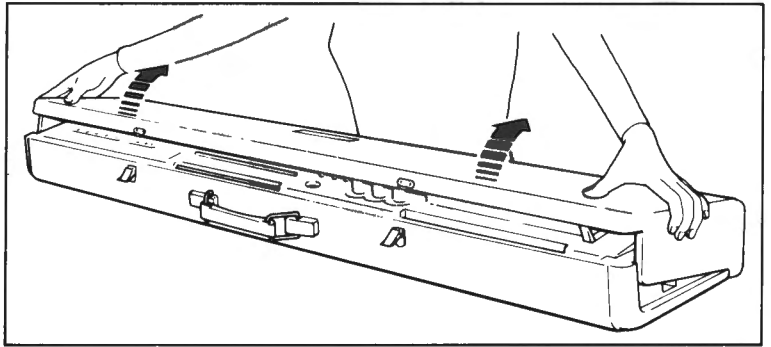
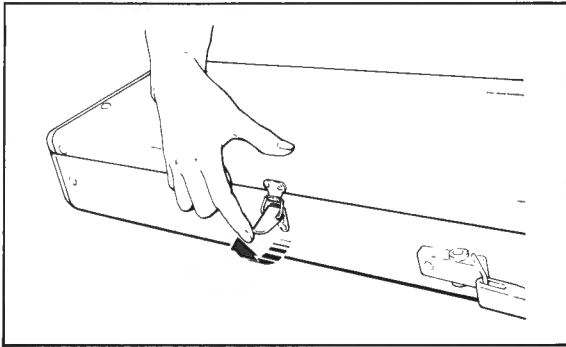
The Skein Holder and Yarn Ball Winder are useful optional accessories.



When yarn is rewound, ensure that the yarn end comes out freely without lifting the ball from the table.

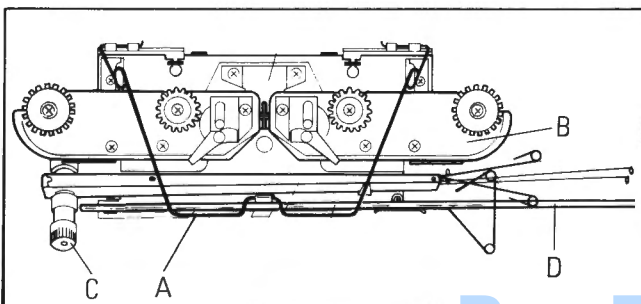
We recommend you to wax the yarn during winding by simply letting the yarn run over an ordinary white candle or knitting wax.

SETTING UP THE KNITTER

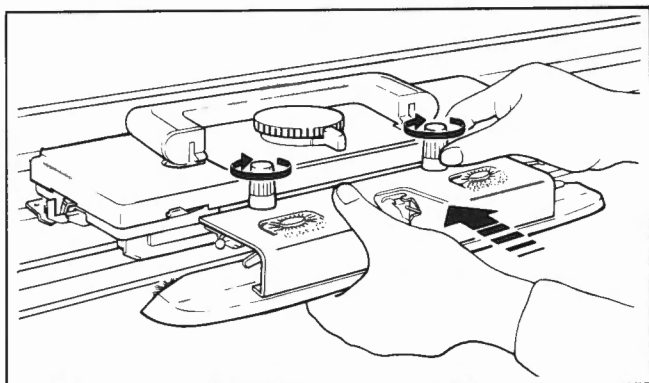


Place the machine on the table with its Carrying Handle away from you, and open the machine in the procedure illustrated above.

Open the Accessory Box, and take out two Clamps, and secure the Knitter on the table with them.

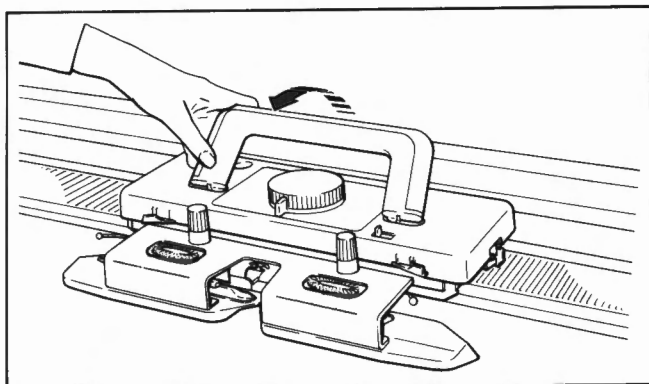


Release the Wire Spring "A", and take out the Arm "B", Auto-Tension "C" and Yarn Rod "D".



Loosen the two Arm Nuts, and insert the Arm under them.

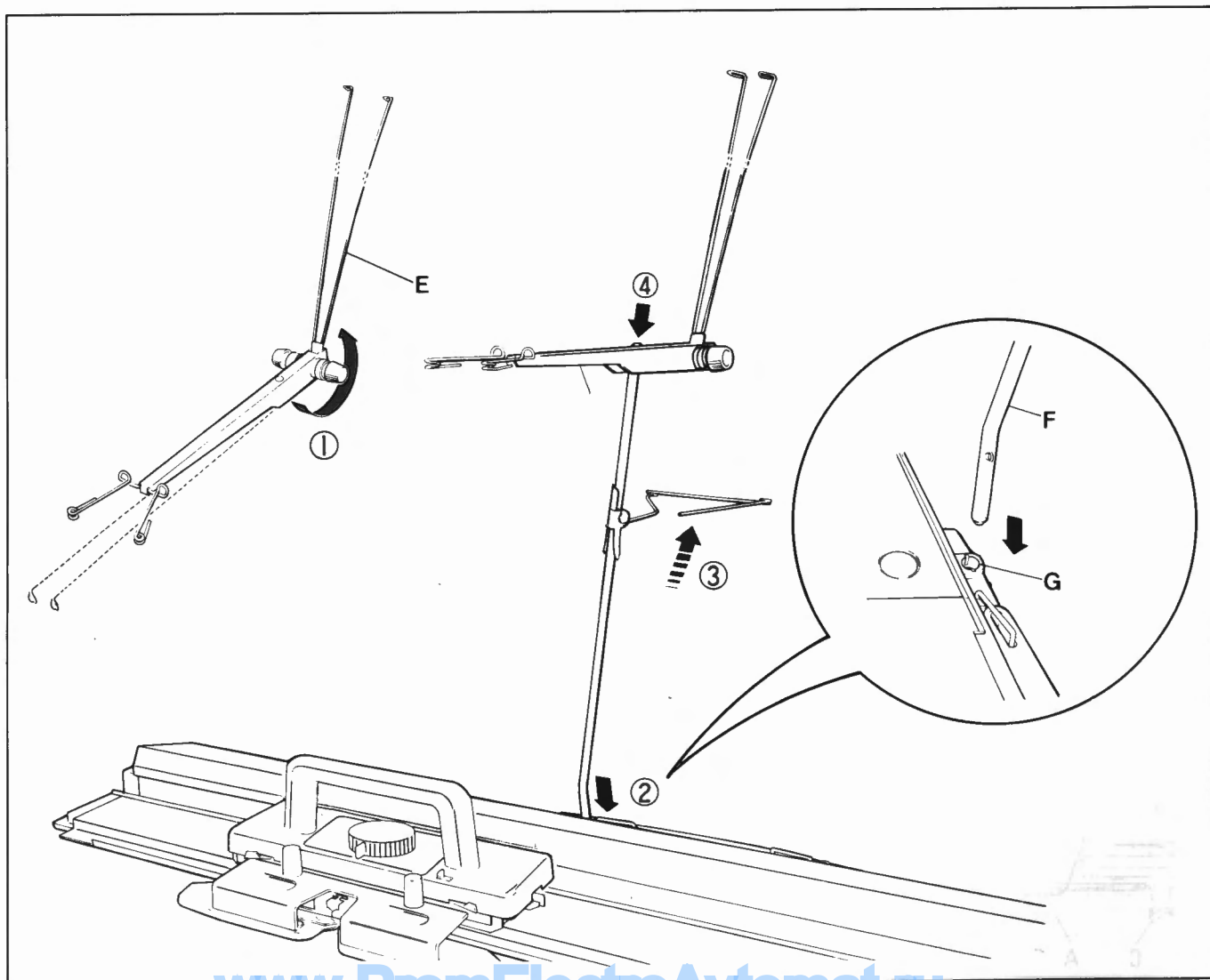
Push the Arm as far as it goes and tighten them in the arrowed direction.



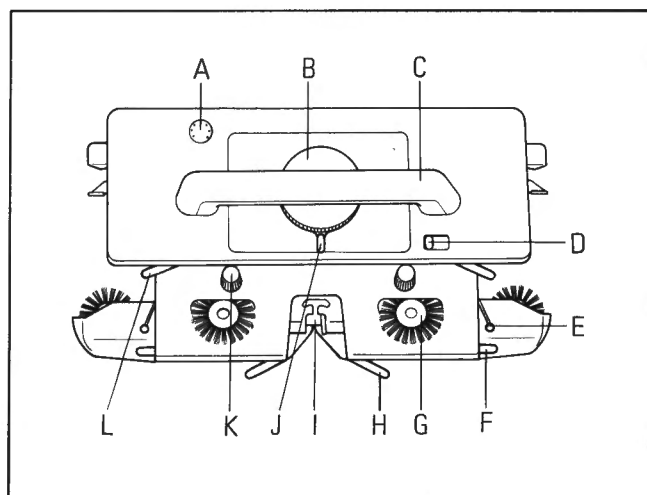
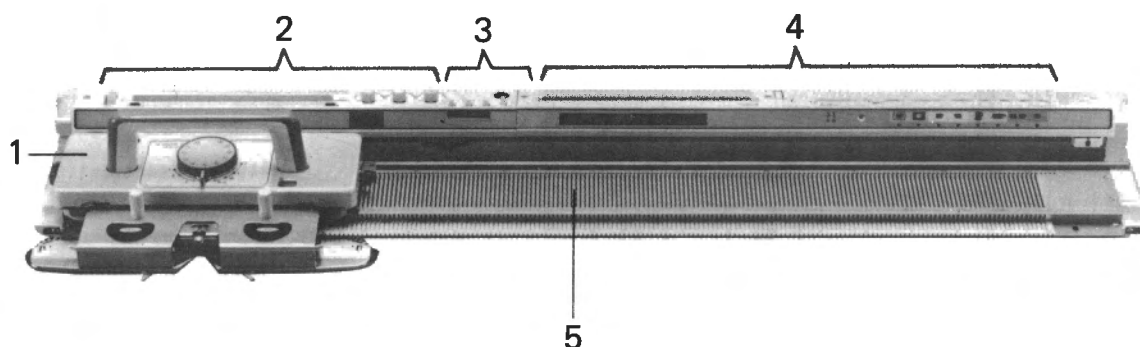
Raise the Carriage Handle.

Take out the Auto-Tension and Yarn Rod from the top cover, and set them on the machine in the following manner.

- ① Turn the two Tension Springs "E" until they snap into position.
- ② Insert the short bent end of the Yarn Rod "F" into the left side handle bracket socket "G".
- ③ Raise the Tension Guide.
- ④ Place the Auto-Tension onto the Yarn Rod.

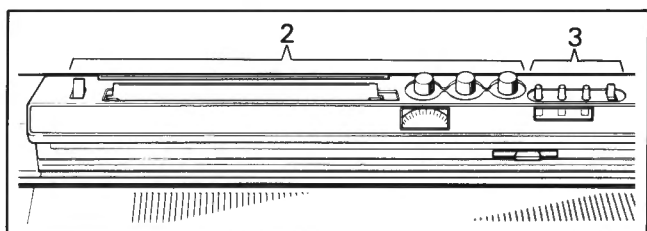


GET TO KNOW THE NAMES OF THE FUNCTIONAL PARTS



1. STANDARD CARRIAGE (with Arm)

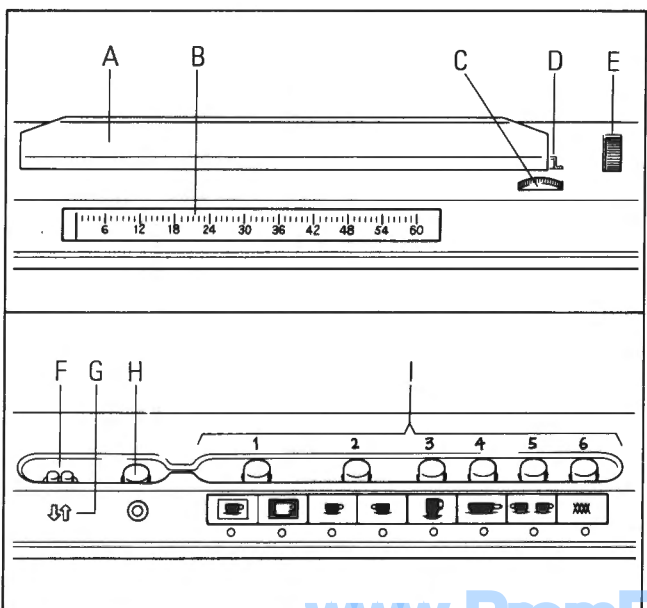
- A – Curl Cord Socket
- B – Stitch Dial
- C – Handle
- D – Release Lever
- E – Weaving Yarn Holder
- F – Weaving Knob
- G – Weaving Brush
- H – Tuck Lever
- I – Yarn Feeder
- J – Cam Lever
- K – Arm Nut
- L – Russel Lever



2. KNIT CONTOUR (RADAR)

See Knitting Manual.

3. ROW COUNTER

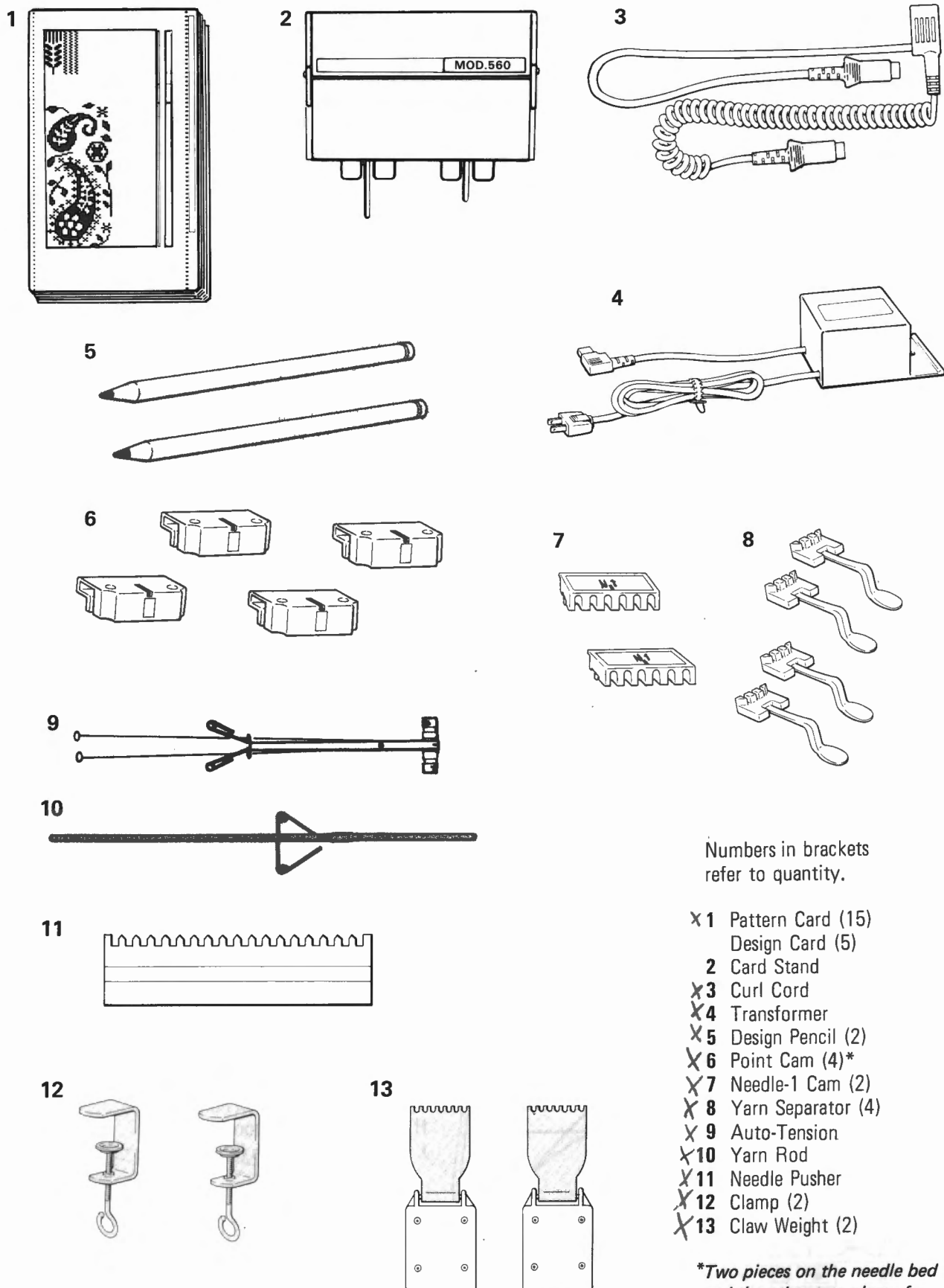


4. PATTERN PANEL

- A – Card Cover
- B – Pattern Width Indicator
- C – Pattern Dial
- D – Card Slit
- E – Card Dial
- F – Card Buttons
- G – Feeding Direction Pointer
- H – Inspection Button
- I – Pattern Buttons (1 – 6)

5. NEEDLE BED

ACCESSORIES

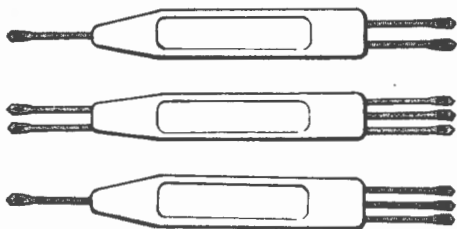


Numbers in brackets
refer to quantity.

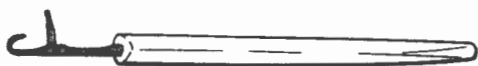
- X 1 Pattern Card (15)
Design Card (5)
- 2 Card Stand
- X 3 Curl Cord
- X 4 Transformer
- X 5 Design Pencil (2)
- X 6 Point Cam (4)*
- X 7 Needle-1 Cam (2)
- X 8 Yarn Separator (4)
- X 9 Auto-Tension
- X 10 Yarn Rod
- X 11 Needle Pusher
- X 12 Clamp (2)
- X 13 Claw Weight (2)

**Two pieces on the needle bed
and the other two pieces for
replacement.*

14



15



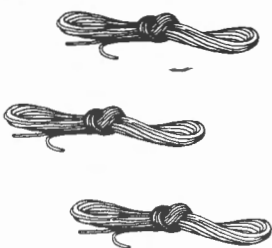
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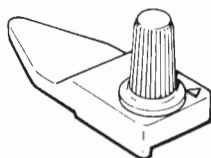
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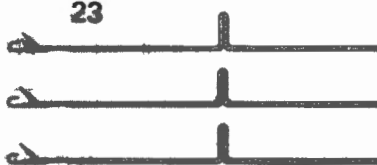
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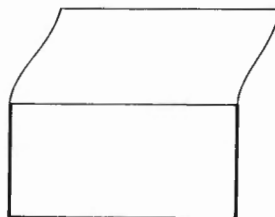
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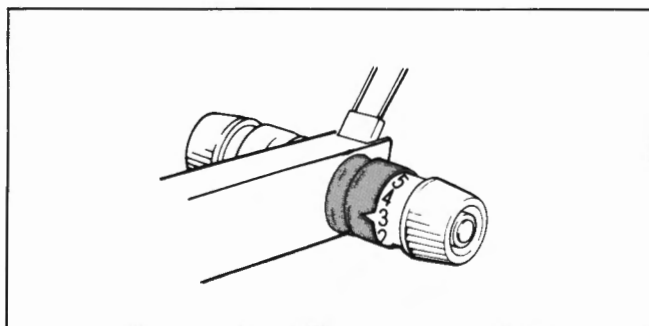
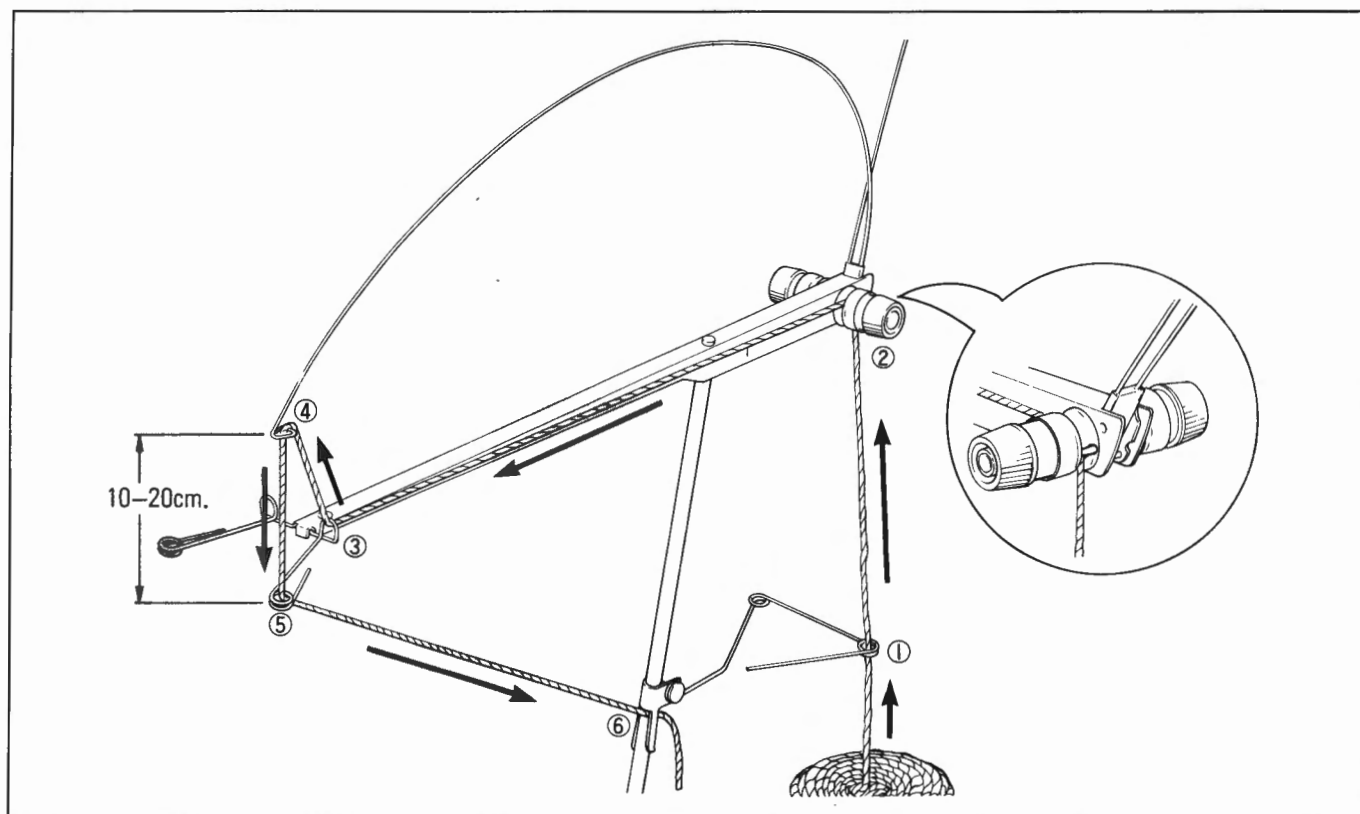
- ✓ 14 Transfer Tool (3)
- ✓ 15 Tappet Tool
- ✓ 16 Crochet Hook
- ✓ 17 Tapestry Needle
- 18 Pattern Paper (19)
- ✓ 19 Gauge Scale
- ✓ 20 Stitch Scale (7)/Center Scale (6)
- ✓ 21 Auxiliary Feeding Cam
- 22 Ravel Cord (3)
- 23 Spare Needle (3)
- 24 Cleaning Brush
- 25 Sensor Cleaner
- 26 Oil
- 27 Card Cleaner
- 28 Carriage Fastener

THREADING THE AUTO-TENSION

IMPORTANT:

Before threading the yarn, be sure to set the Card Stand referring to page 20. (Leave the Card Stand at its position even if you do not use the Pattern Card or Design Card or the knitting machine is not in use.)

Following the numbers given in the diagram below, guide the yarn through the Auto-Tension, and put its end in the Yarn Clips on the Yarn Rod. Guide the second yarn through the Auto-Tension in the same manner as done for the first yarn if needed.

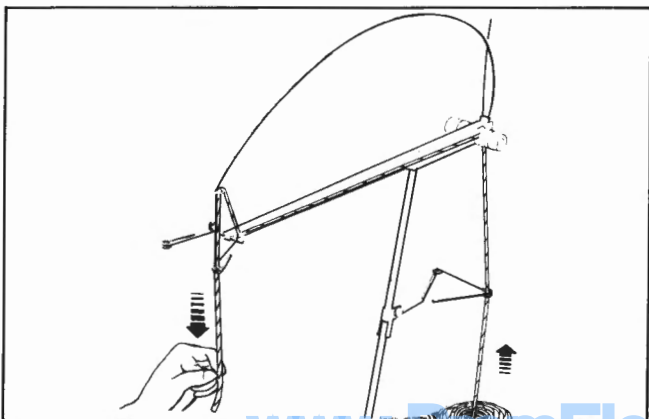


Adjusting the Tension Dial

According to the thickness of the yarn, select a suitable number and set it to the notch.

Recommended Tension Dial for the type of yarn:

Cotton or nylon thread.	6-7
Thin yarn (2-ply).	4-5
Medium yarn (4-ply).	3
Thick yarn	1-2



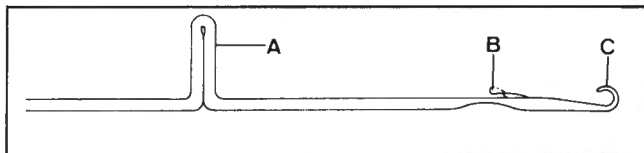
Incorrect threading of the yarn through the Auto-Tension will never assure a success in knitting.

Check following two points.

1. Correct tension is given to the yarn.
(Check the distance between the tension spring and the yarn guide – 10–20cm. must be maintained.)
2. Yarn comes out freely from the yarn ball.

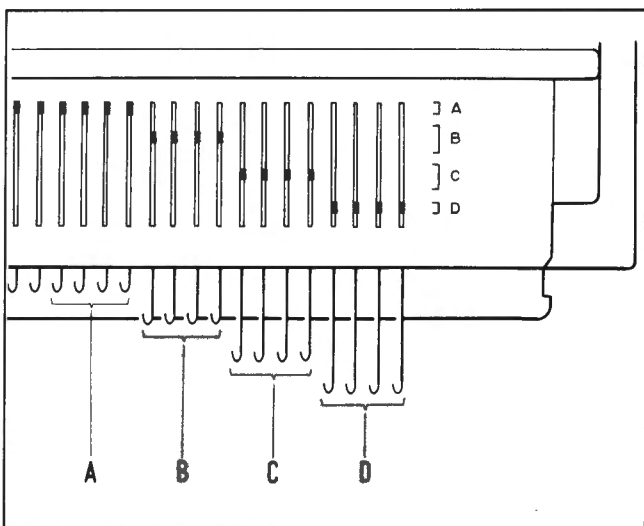
It is advisable to pull out a certain length of the yarn from the yarn ball before casting on.

NEEDLE AND NEEDLE POSITIONS



Needle

- A — butt
- B — latch
- C — hook



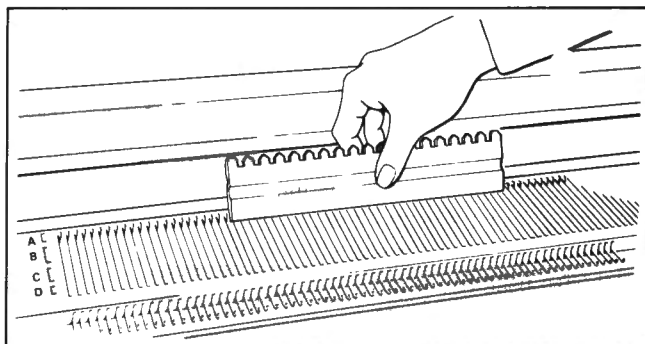
NEEDLE POSITIONS

On both left and right ends of the Needle Bed, the letters A, B, C and D associated with the corresponding brackets "J" are engraved.

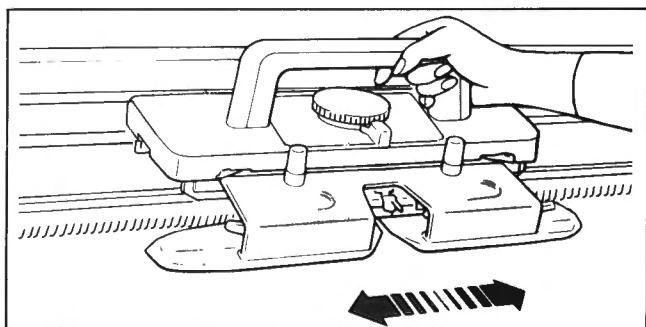
To operate the needles, align their butts within the brackets.

- A — needles do not knit.
- B — needles knit stockinet and stitch pattern.
- C — needles knit stockinet only.
- D — needles do not knit with Russel Levers at I.
needles are knitted back to B position with Russel Levers at II.

NOTE: NEEDLE POSITIONS C AND D ARE NOT TO BE USED WHEN KNITTING WITH THE LACE CARRIAGE.

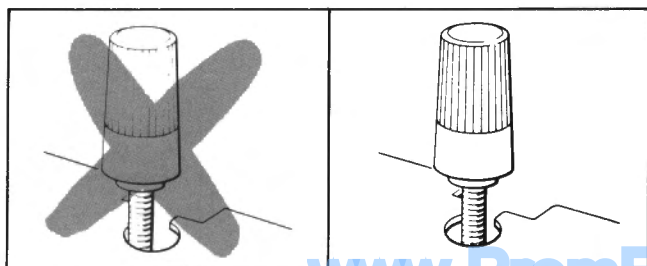


Using the straight edge of the Needle Pusher, align the needles correctly in A position.



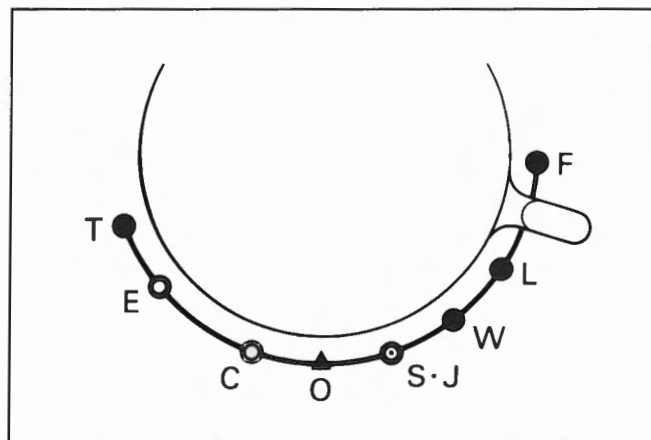
Slide the Carriage across the Needle Bed a few times to ensure it moves smoothly.

In this step, if the Arm is attached incorrectly, the Arm will drag the Sinker posts.



The staged part of the Arm Nut must correctly secure the Arm as shown.

CAM LEVER AND STITCH DIAL



Cam Lever

The Cam Lever is given 8 positions. By setting the Cam Lever to the selected position, various stitch types can be knitted when the Pattern Card is used together.

Each position is marked as shown below.

FKNIT-IN (FAIR ISLE)

LPUNCH LACE

W WEAVING

S.J. S for SLIP

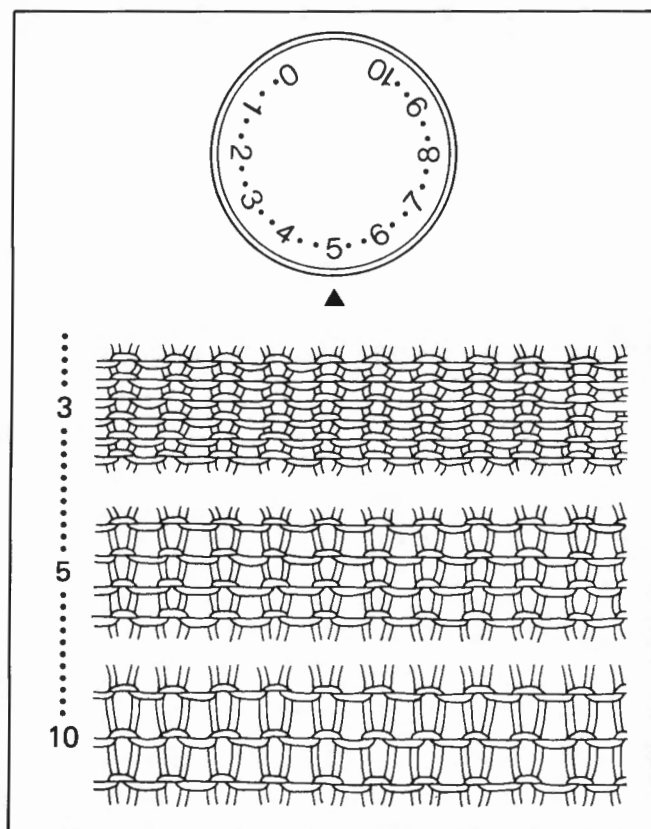
J for DOUBLE JACQUARD when the Yarn Changer is in use.

OSTOCKINET (No pattern Card is needed.)

CCIRCULAR KNITTING (only with the Ribber.)

EENGLISH RIB (only with the Ribber)

TTUCK



Stitch Dial

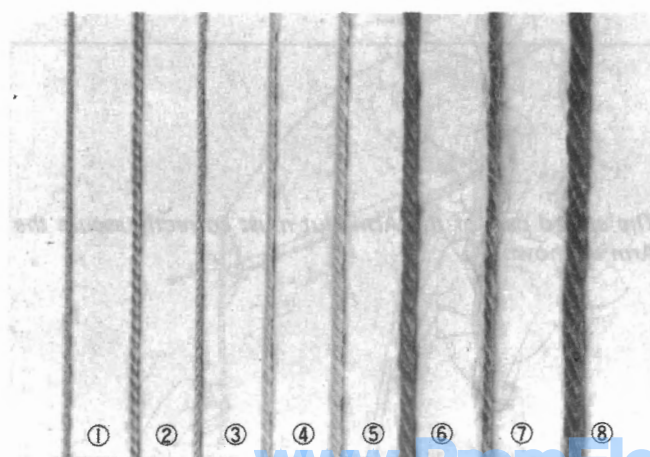
The Stitch Dial is provided on the same axis with the Cam Lever, and is given the graduation from 0 to 10 with an increment of 1/3 (represented by dot.).

The Stitch Dial is used to adjust the tension of knitted fabric as it regulates the size of stitch for a given type of yarn.

Smaller the number, tighter the tension of the knitted fabric because the stitch size becomes smaller and larger the number looser the tension of the fabric because the stitch size becomes larger.

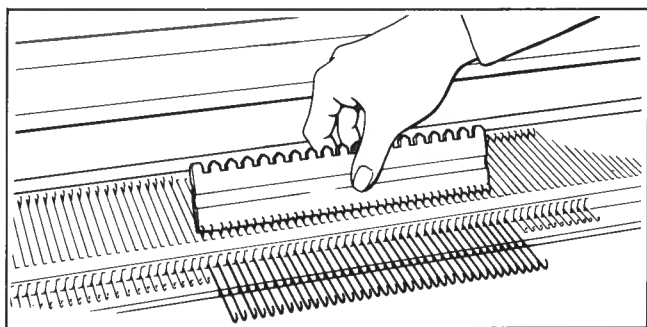
The photograph below shows various types of yarn in their actual size, and on the table below, recommended Stitch Dial settings are given.

The selected number of the Stitch Dial must be set at ▲ mark.

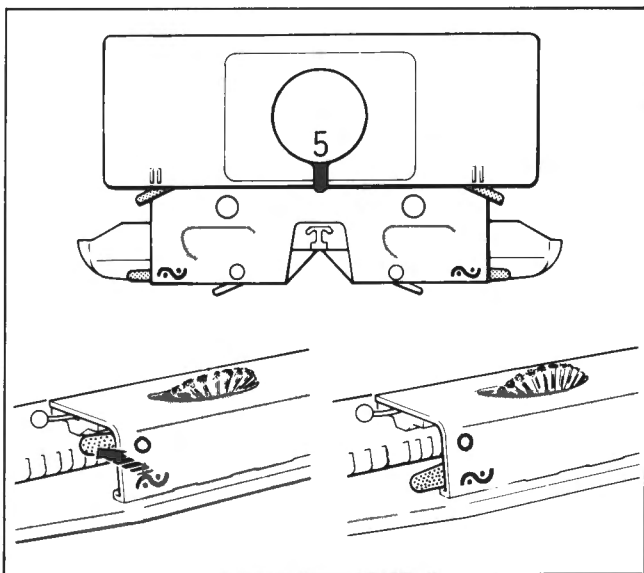


Type of yarn	Stitch Dial
① Cotton thread	2 – 3
② Thin yarn (2-ply)	2 – 3
③ Summer yarn	3 – 4
④ Light yarn (3-ply)	3 – 5
⑤ Medium yarn (4-ply)	4 – 6
⑥ Thick yarn	6 – 9
⑦ Mohair (every second needle)	8 – 10
⑧ Very thick yarn (every second needle)	6 – 9

CAST-ON AND STOCKINET KNITTING



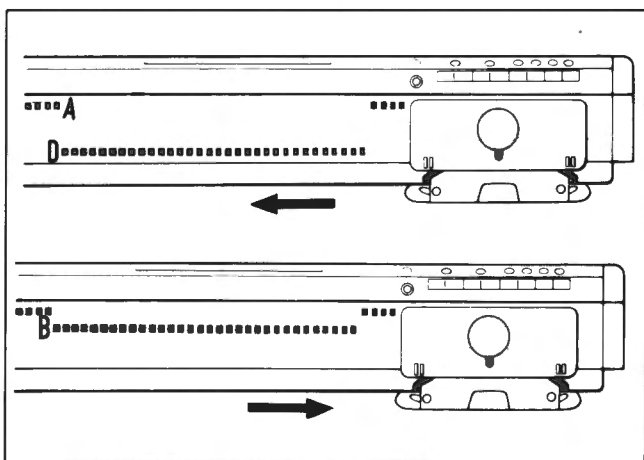
Using the Needle Pusher, align the needles in B position and D position alternately as shown.



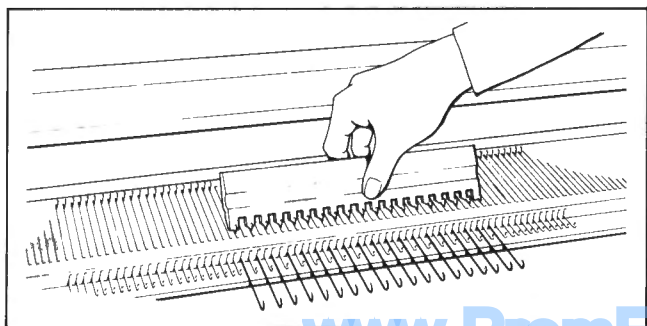
Set the Carriage as follows:

Cam Lever..... 0 (STOCKINET)
 Stitch Dial..... 5
 Russel Lever..... II (both)
 Weaving Knob*..... ~ (both)
 Tuck Lever O (both)

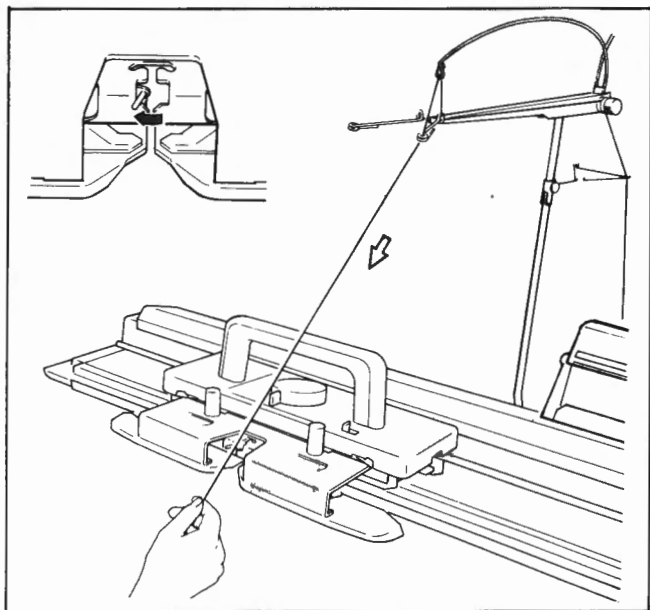
* To set the Weaving Knob to ~ mark, slightly push it forward, then it drops down.



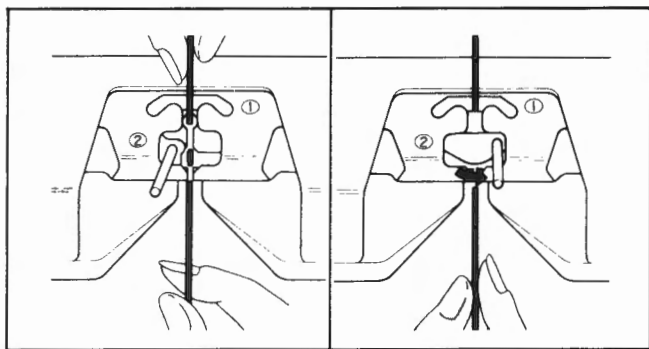
Slowly move the Carriage across the needles, and the needles will align in B position.
 Place the Carriage at the right side.



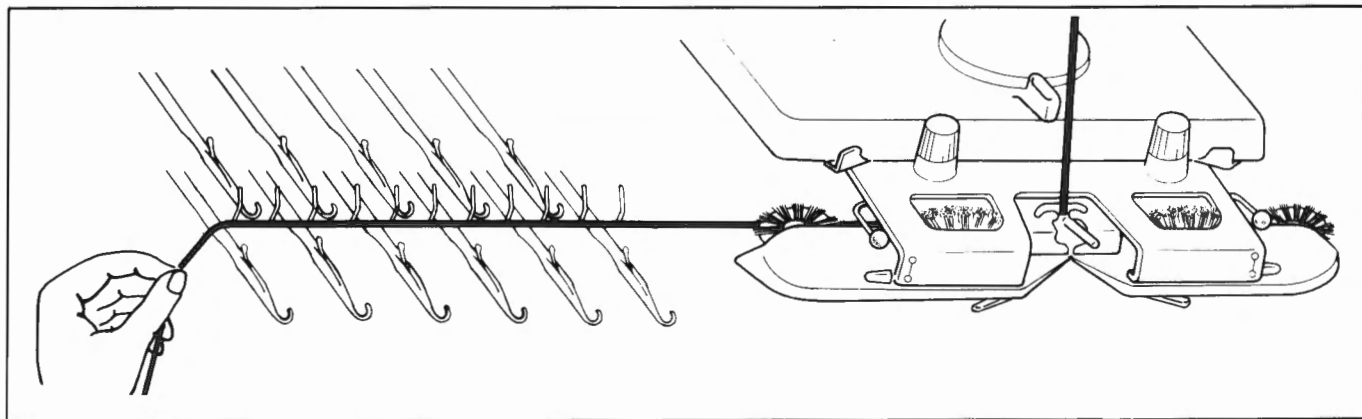
Using the Needle Pusher, push every 2nd needle from B to D position.



Open the Yarn Feeder Gate, and take the yarn from the Yarn Clip, and pull it down to the Yarn Feeder.



Guide the yarn into the Yarn Feeder, and holding the yarn end with your hand, close the Gate.

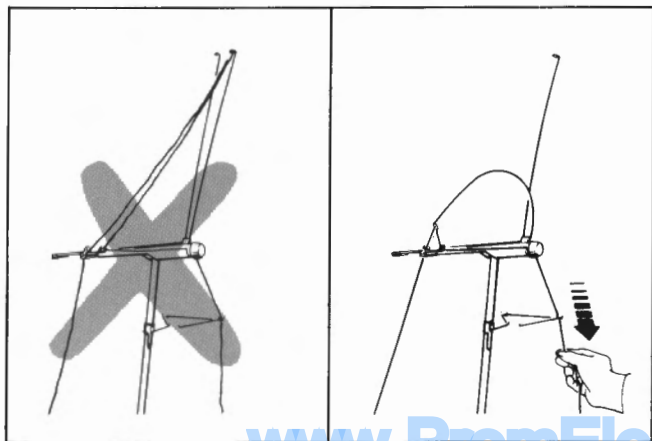


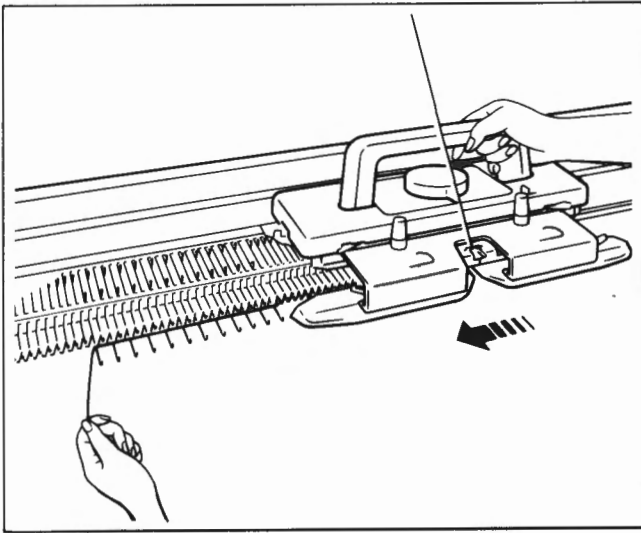
Pull the yarn down through the Yarn Feeder, and guide it under the Arm and over the needles in D position.

Check the tension on the yarn, and adjust it by pulling the yarn back towards the yarn ball at the back of the Yarn Rod.

If the yarn is threaded through the Auto-Tension incorrectly, it will not have tension on it, and the cast-on will be a failure.

Or, if the yarn has been slackened, pull the yarn back toward the yarn ball at the back of the Yarn Rod.

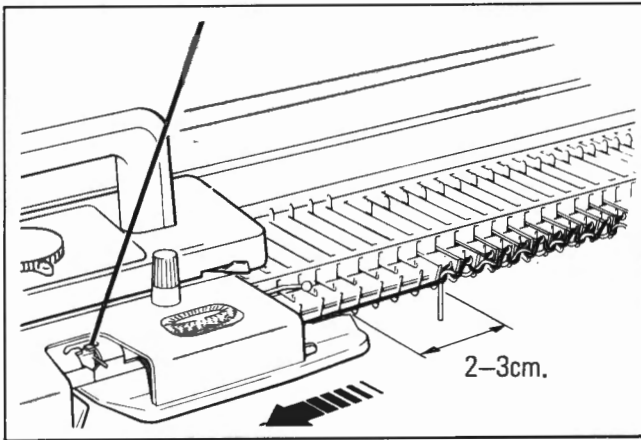




Holding the yarn at the left side of the needles, and make sure that latch of the needles in D position are open.

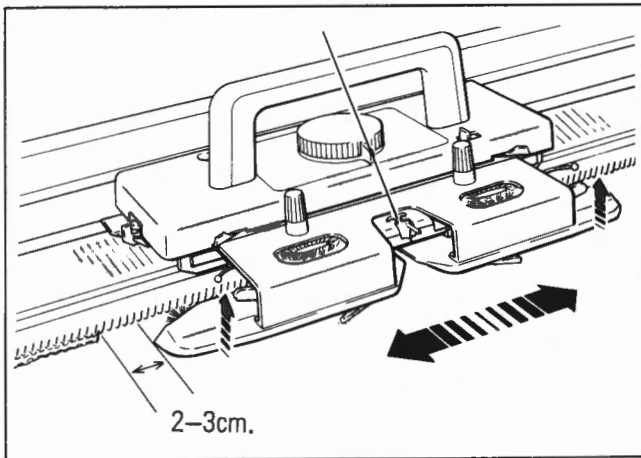
About 40cm. of length is required past the hand.

Move the Carriage slowly over the needles to the left side.



Ensure that the Arm has passed the last knitting needle by approximately 2–3cm.

Knit 4–5 rows more in the same manner.

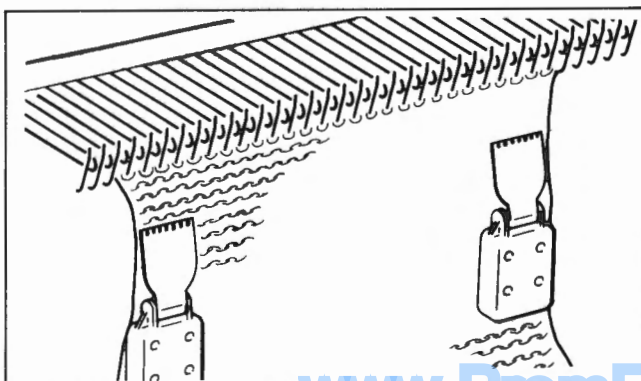


Set the Weaving Knobs back to O.

Move the Carriage back and forth to knit stockinet.

Move the Carriage at an even speed.

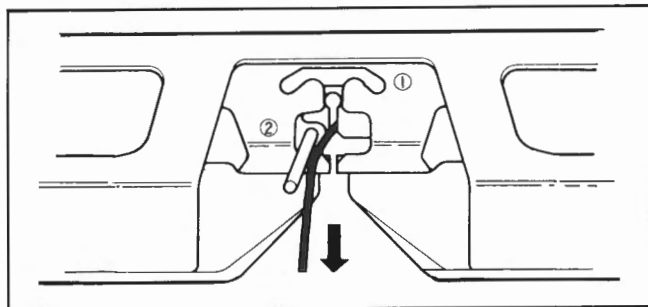
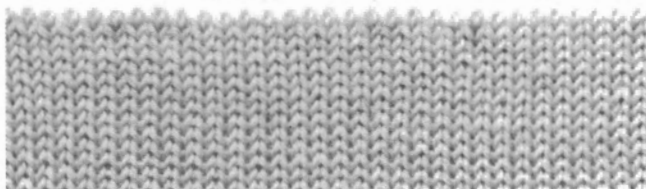
On each row, ensure that the Arm has passed the last knitting needle by approximately 2–3cm.



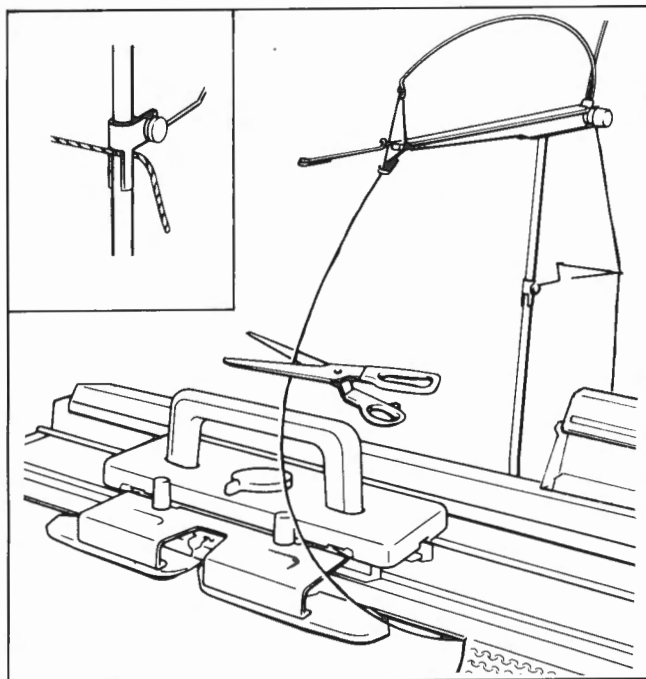
Take out the Claw Weights from the Accessory Box, and hang them on the fabric as shown, and continue to knit moving the Weights up at every 30–40 rows.

REMOVING THE FABRIC FROM THE MACHINE

To remove the knitted fabric from the machine without closing the stitches, follow the procedure below.

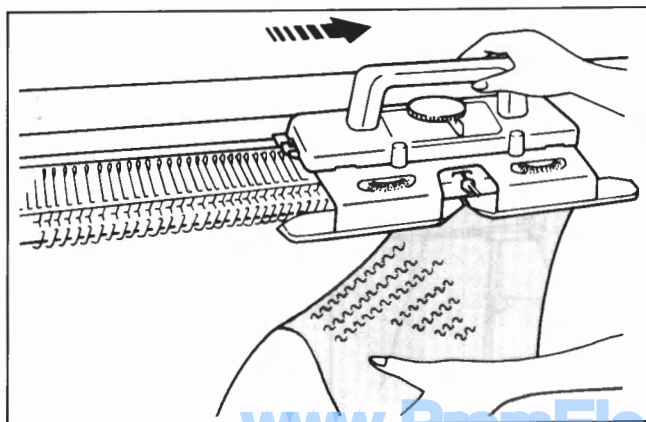


Open the Yarn Feeder and remove the yarn from it.



Cut the yarn above the Yarn Feeder, and place the top end in the clip on the Yarn Rod.

Let the bottom yarn end hang loosely on the side of the fabric.



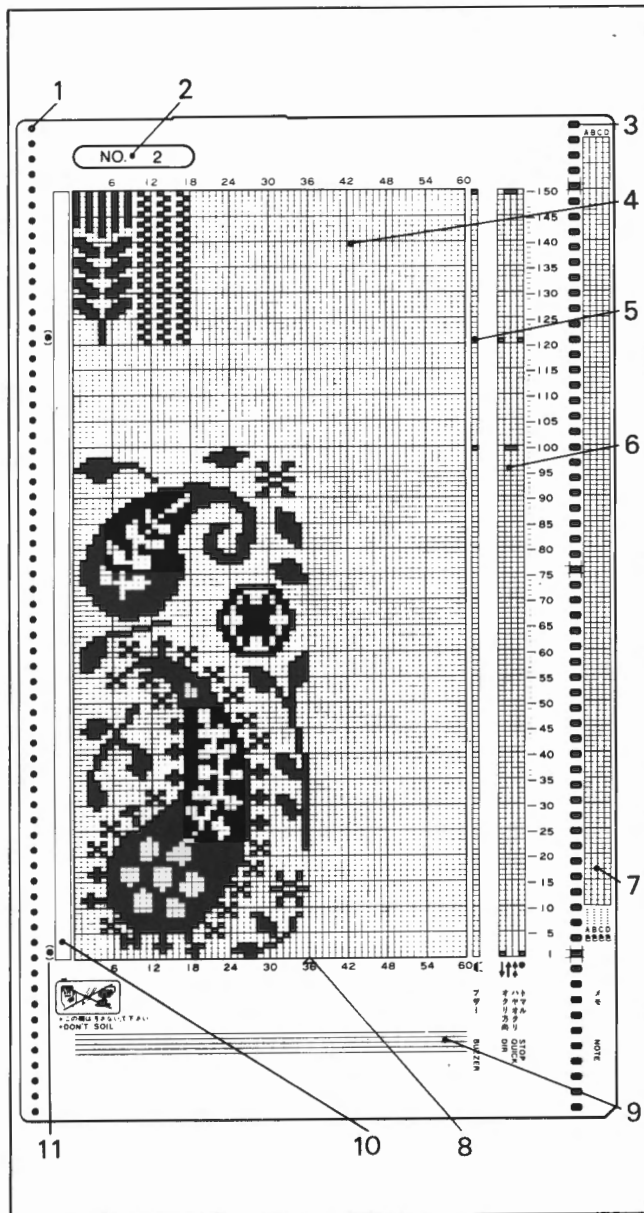
Set the Cam Lever to "0" (STOCKINET) and move the Carriage across the fabric.

The fabric will come off of the needles.

PATTERN CARD

PATTERN CARD is sectioned vertically and horizontally and each section is proportional to the size of a stitch.

The black area represent a pattern to be reproduced on a knitted fabric.



1 Feeding hole (left)

2 Card Number

3 Feeding hole (right)

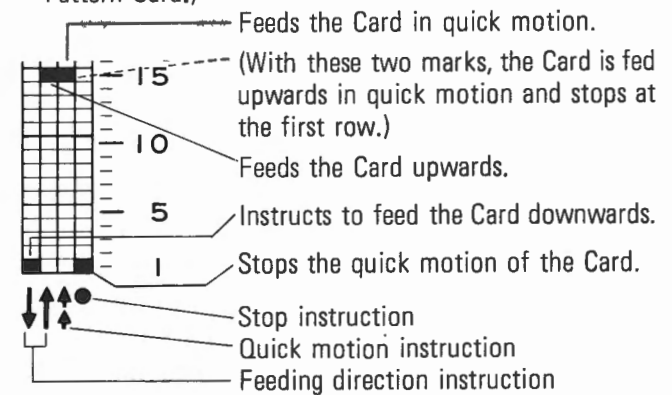
4 Pattern area

A pattern of 150 rows and 60 stitches can be drawn in this area.

5 Buzzer column

The mark in this column actuates the buzzer when the marked row is read.

6 Instruction columns (used to control the movement of Pattern Card.)



7 Notation column

Use this column to note the row to change yarn or other indication. (As there is a 10-row difference between the row to knit and the row visible above the Card Slit, be sure to mark at the tenth rows above the actual row.)

8 Pattern width setting mark

Tiny triangle is marked at the right edge of each pattern or mid of the pattern. Set the Pattern Width to correspond with the triangle mark.

9 The horizontal lines are provided as a guide to ensure that the card is correctly inserted.

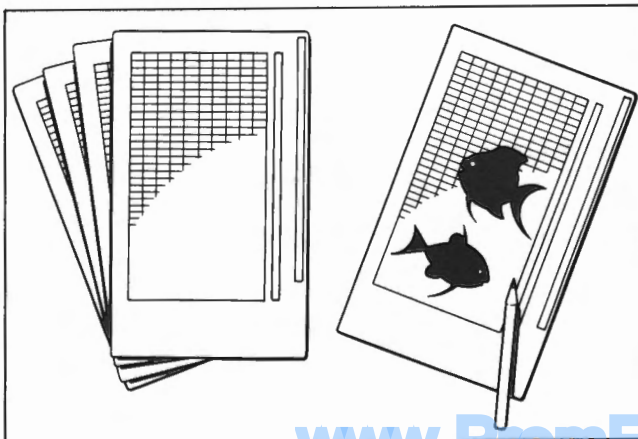
10 Do not soil this column.

11 Pattern number

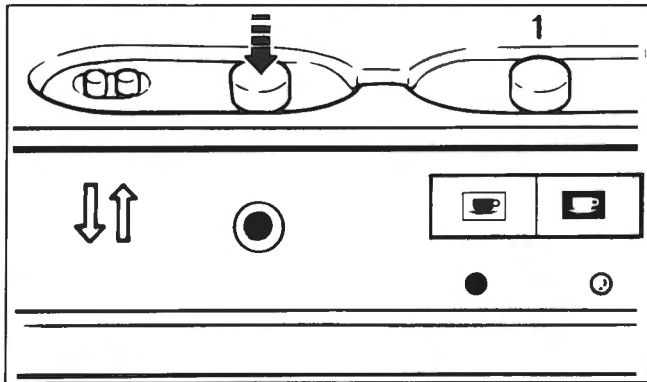
DESIGN CARD (5 sheets)

The Card is made of semi-transparent paper and has same sections as the Pattern Card. A pattern of your choice can be drawn on the Card using the Design Pencil.

Refer to page 115.



PATTERN CONTROLS

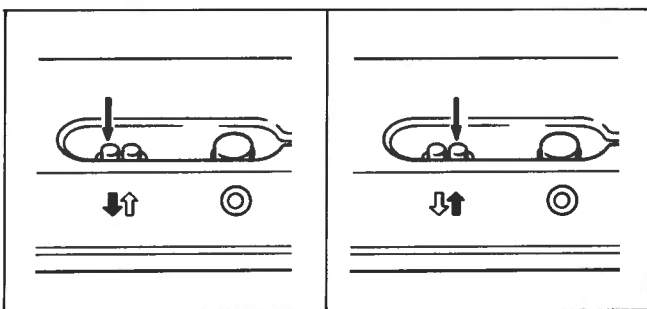


Inspection Button

When the Button is pressed down the light is turned on. The Pattern Card moves up by 10 rows and stops.

This position is used to knit the same rows repeatedly.

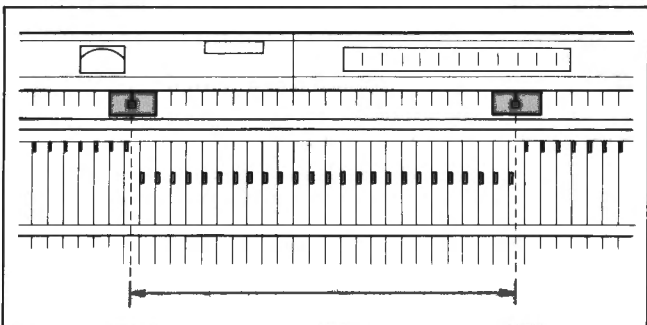
When the Button is pressed again, the light turns off. The Pattern Card will go down for 10 rows and the pattern row is memorized.



Card Buttons

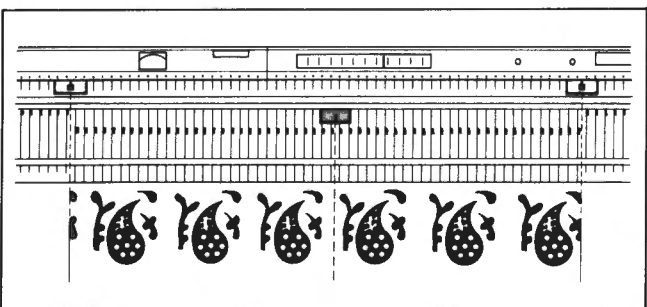
The two Buttons adjacent to the Inspection Button.

When either of these two buttons are pressed down, its associated arrow mark will be lit, and the Pattern Card will move in the direction indicated.



Point Cam

By setting a pair of Point Cam demarcates the area of pattern knitting on the fabric.



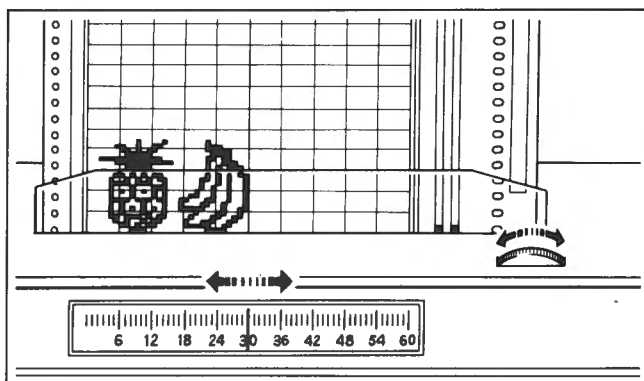
Needle-1 Cam

Set this Cam between the Point Cams to determine where the pattern begins and ends.



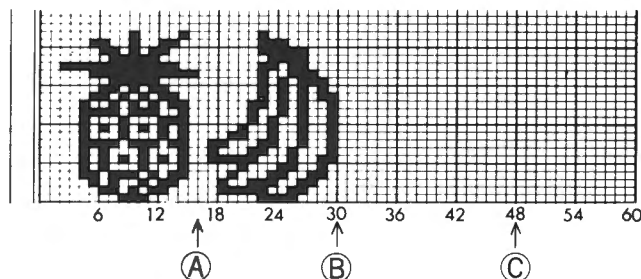
Card Dial

Used to set the Pattern Card to the starting position, or to remove the Card from the Card Slit.



Pattern Width Indicator

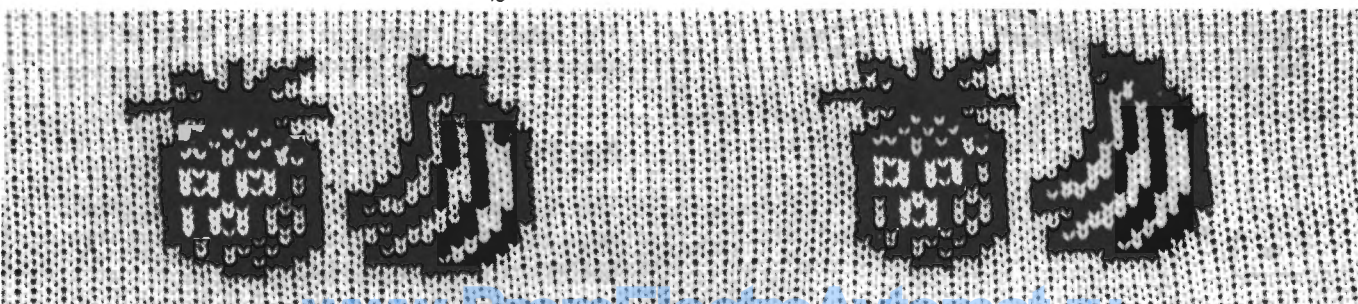
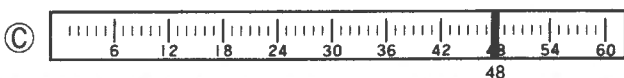
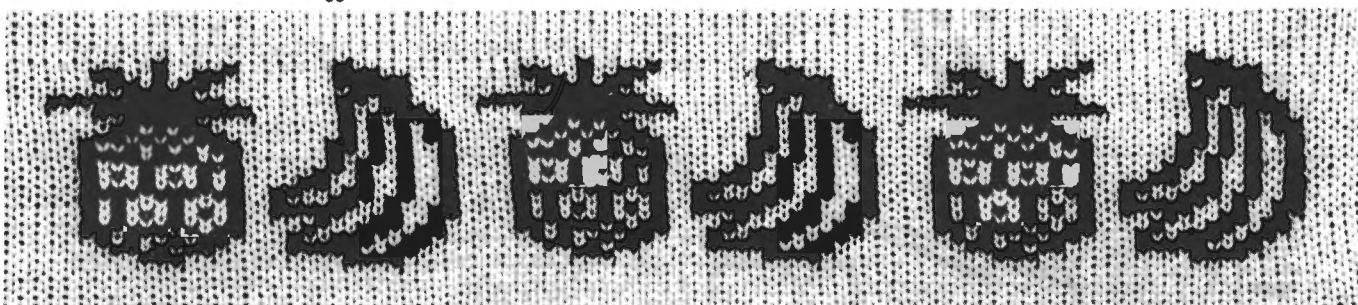
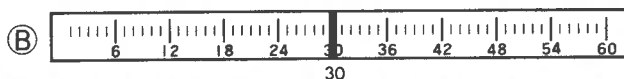
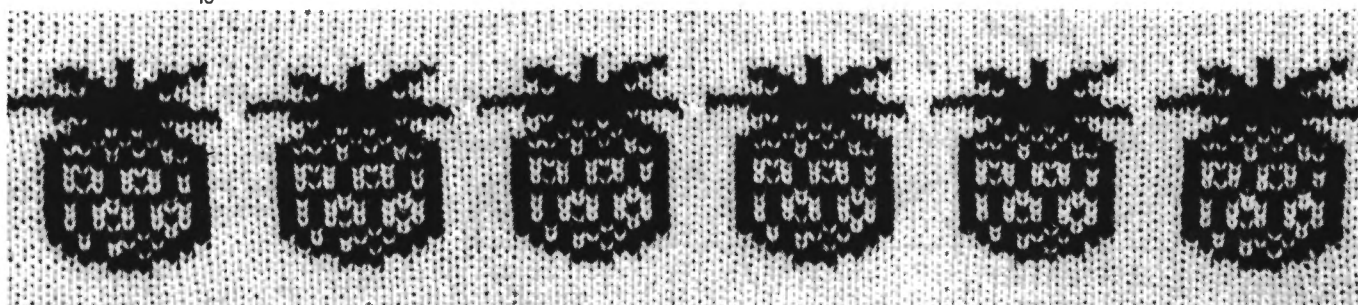
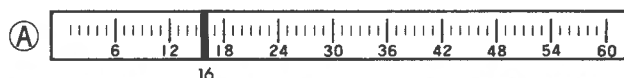
The pointer of the Pattern Width Indicator is set by turning the Card Dial, and will select part, or all of the pattern.

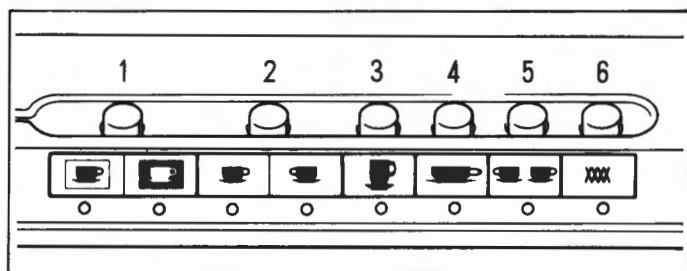


PATTERN WIDTH SETTING

The area of the Pattern Card at the left side of the Pointer is the width of one unit of pattern to be knitted.

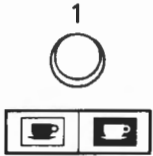
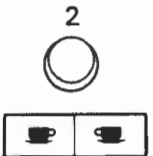
Samples below show patterns at various settings of the Pattern Width.



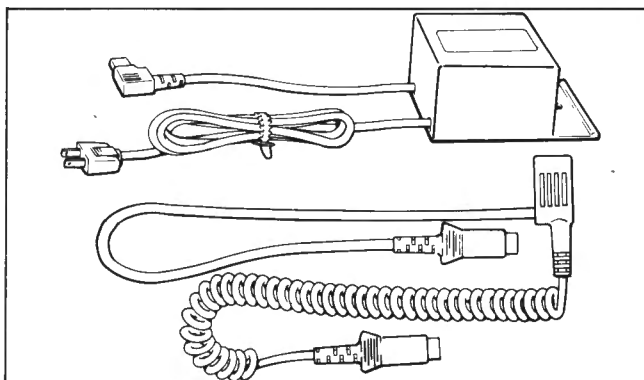


Pattern Buttons

Six Pattern Buttons, numbered 1 through 6, are associated with "coffee cup" marks denoting the function of each Button, and with lamp to indicate the state of the Buttons.

		BUTTON 1 (Colour Normal/Inverse) Colour Normal: Yarn in Yarn Feeder ① knits the ground colour. Yarn in Yarn Feeder ② knits the contrast colour. Colour Inverse: Colour of ground and contrast yarns are exchanged.
		BUTTON 2 (Direction Normal/Reverse) Direction Normal: The pattern is reproduced on the knit side of the fabric in the same direction as on the Card. Direction Reverse: The Pattern is reproduced on the purl side of the fabric in the same direction as on the card.
		BUTTON 3 (Vertical Expansion) Expands the pattern on the Card twice its normal size vertically.
		BUTTON 4 (Horizontal Expansion) Expands the pattern on the Card twice its normal size horizontally.
		BUTTON 5 (Mirror Image) The pattern is reproduced on the fabric as if it were reflected in the mirror.
		BUTTON 6 This Button is used only when knitting double jacquard with the use of the Automatic Yarn Changer. (Refer to page 94.)

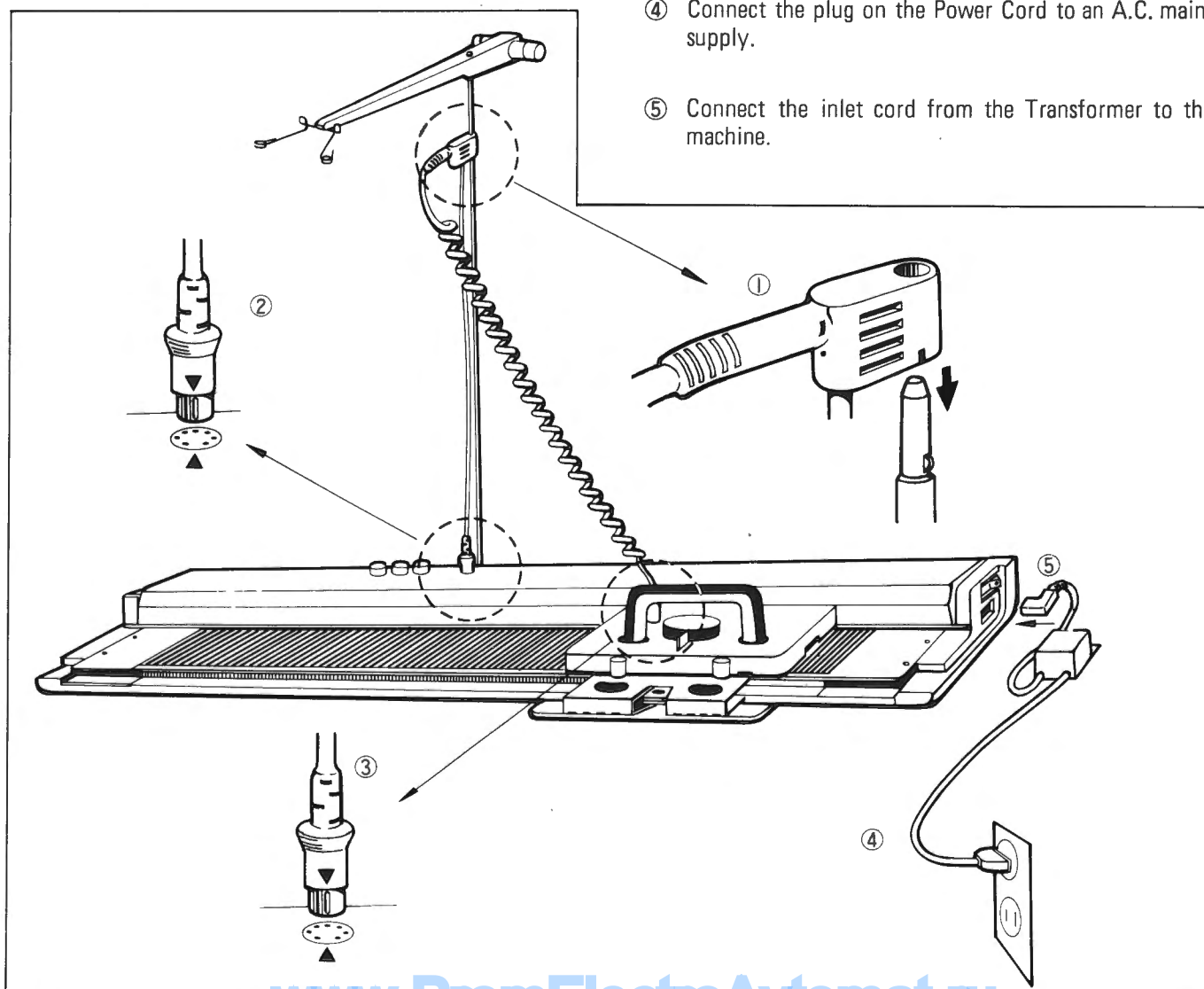
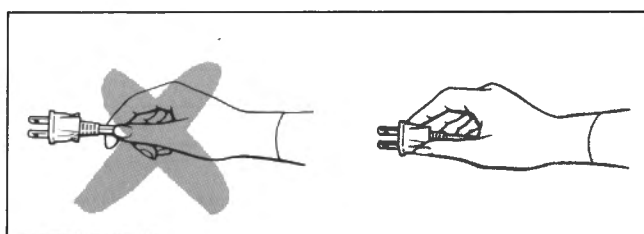
PREPARATION FOR PATTERN KNITTING

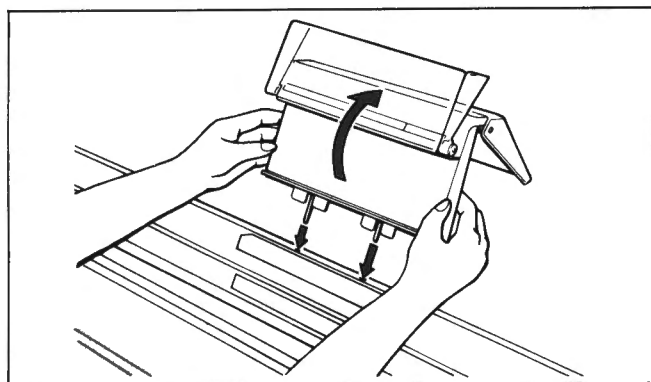


A micro-computer is incorporated in the machine and takes on full control of needle selection for pattern knitting.

SETTING UP THE MACHINE FOR PATTERN KNITTING

- ① Take off the Auto-Tension from the top of the Yarn Rod. Fit the Curl Cord Support Block on top of the Yarn Rod, and bring it down till it stops. Set the Auto-Tension on the Yarn Rod again.
- ② Connect the plug at the end of the straight cord to the socket on the machine so as the triangle marks correspond.
- ③ Connect the plug at the end of the Curl Cord to the socket on the Carriage so as the triangle marks correspond.
- ④ Connect the plug on the Power Cord to an A.C. mains supply.
- ⑤ Connect the inlet cord from the Transformer to the machine.



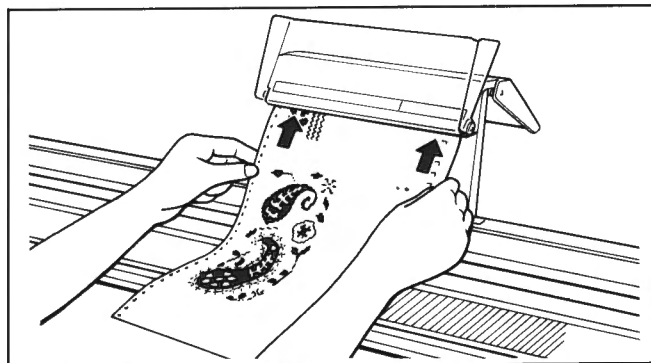


SETTING THE CARD STAND AND PATTERN CARD

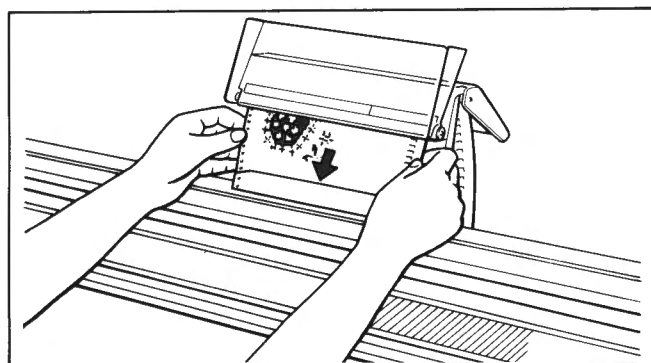
Hold the Card Stand with the transparent flap facing you, and open up the flap as shown.

Fit the two pegs of the Card Stand into two holes behind the Card Slit.

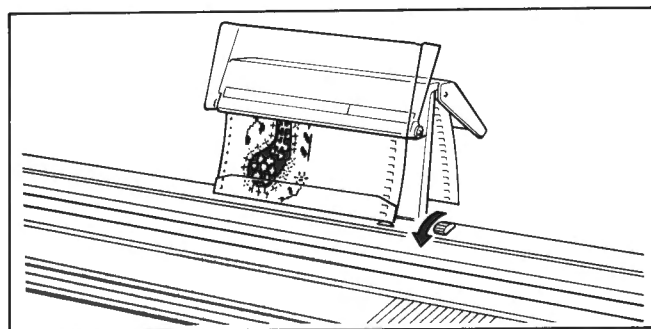
If a Pattern Card is not used, close down the flap of the Card Stand.



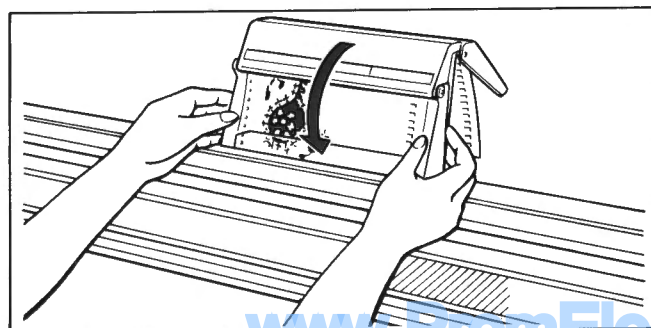
Insert the top end of a Pattern Card into the Card Stand.



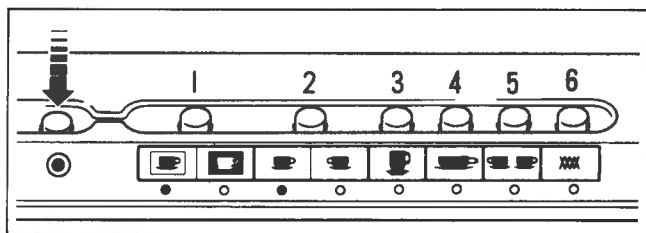
Insert the bottom end of the Pattern Card into the Card Slit.



Using the Card Dial insert the Card further into the Slit and set it to the starting line.



Close down the transparent flap of the Card Stand.

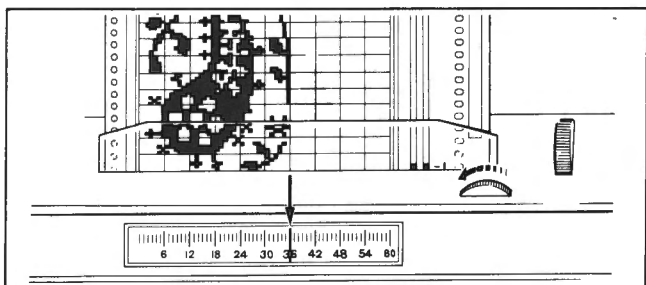


SETTING THE PATTERN CONTROLS

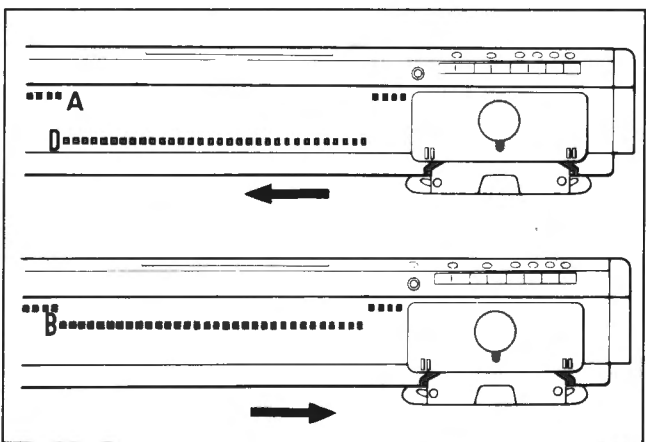
Switch ON the machine. (Press the  side of the ON-OFF Switch.)

The Buzzer sounds once, and either of the two lights on each Buttons 1 and 2 are on.

Push the Inspection Button on. (Light is on.)



As instructed at the bottom of each photograph in the Pattern Book, select the Pattern Buttons and the pattern width by turning the Pattern Dial.



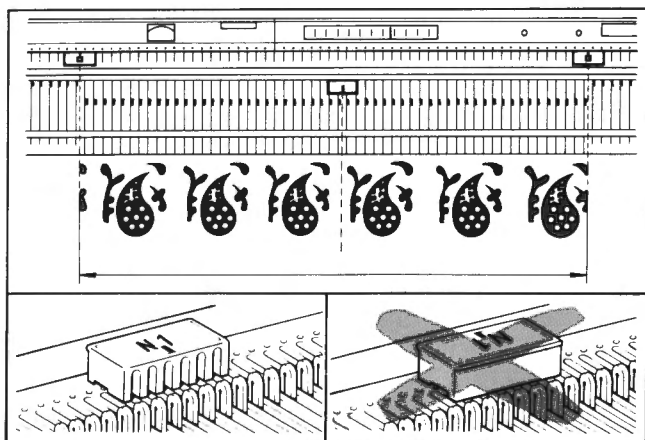
Push the required number of needles into D position.
Set the Carriage as below.

Cam Lever..... 0 (STOCKINET)

Russel Levers II

Move the Carriage across the needles to align them in B position.

(In case knitting has already been started, this step can be skipped.)

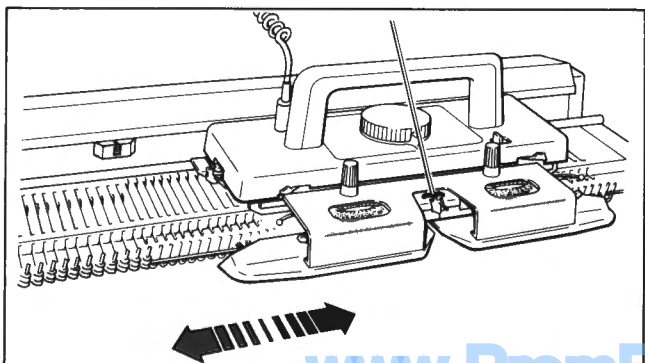


Set the Point Cams at both end needles in B position so as their red marks come to the outside of those end needles.

Set the Needle-1 Cam at any position desired between the Point Cams.

The Needle-1 Cam must be placed behind the selected needle.

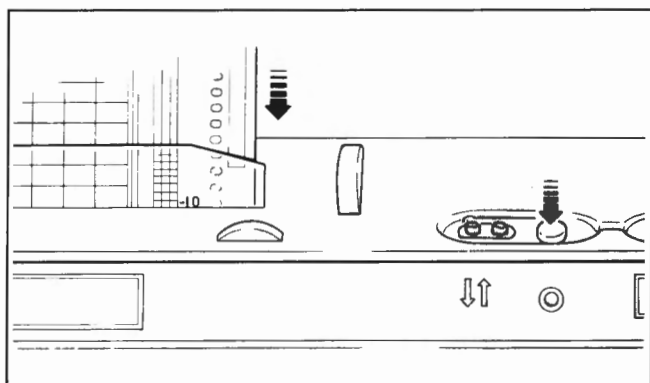
Note: Red line on the Needle-1 Cam must face you.



Thread yarn through the Auto-Tension and into the Yarn Feeder ①.

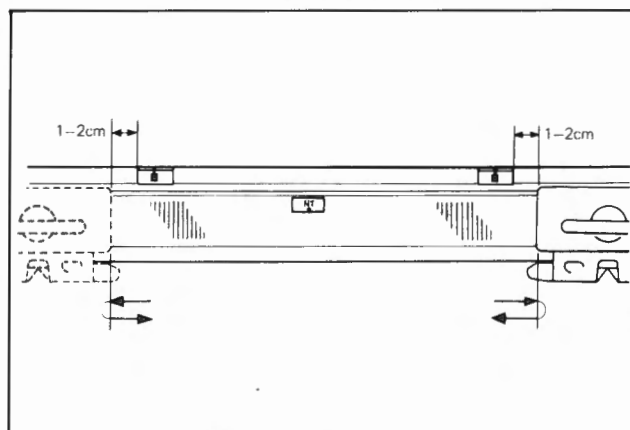
Cast on and knit several rows in stockinet, finishing with the Carriage at the right (Refer to page 11.).

If there is already knitting on the needles, move the Carriage across twice without knitting, by using the Release Lever.



Push the Inspection Button OFF. (Light is off and the Card is fed by 10 rows downwards and the pattern on the first row is memorized. While memorizing the pattern, you will hear a scanning noise.)

PREPARATORY STEPS FOR PATTERN KNITTING HAS BEEN COMPLETED.



PRECAUTION IN PATTERN KNITTING

Carriage operation

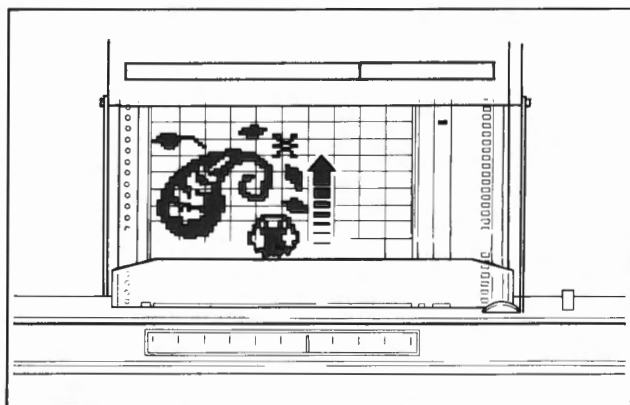
Move the Carriage until it clears both Point Cams and then return it.

If you return the Carriage before clearing the Point Cam, the memory of pattern will be deformed, and the pattern will be knitted incorrectly.

To correct the memory, turn off the machine and then follow the instructions given under "To turn off the machine during knitting" on page 103.

Knitting speed must not exceed the reading speed of patterns, follow the scanning noise.

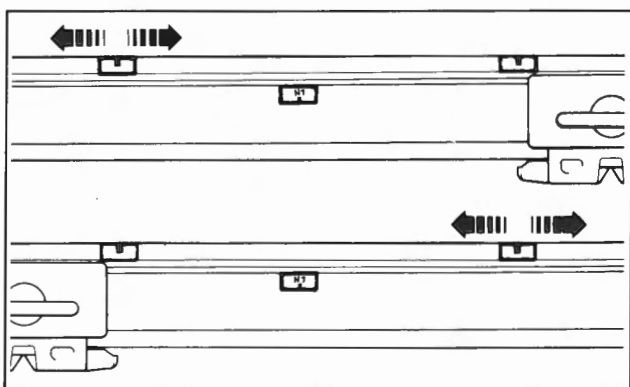
If the carriage is moved back and forth too quickly, it may cause the reader to skip a pattern row.



Card returning

When the last row of the pattern has been read, the buzzer sounds once, and when the last row of the pattern has been knitted, the Pattern Card returns to the first row of the pattern in a quick motion.

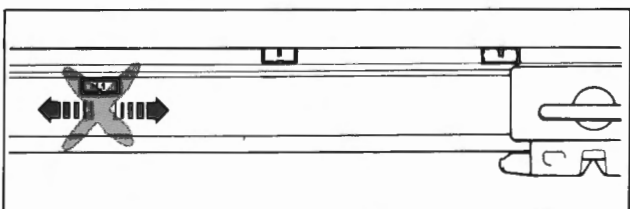
While the Card is in quick motion hold the Carriage outside the Point Cams till the Card stops, and memorizing the pattern is completed.



Point Cams and Needle-1 Cam

Move the Point Cam at the opposite side to the Carriage before knitting the next row, and at the end of knitting the row, move the Point Cam opposite to the side with the Carriage.

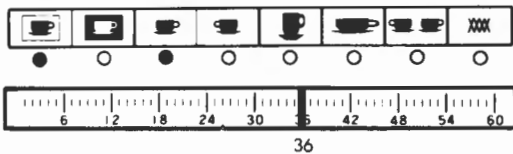
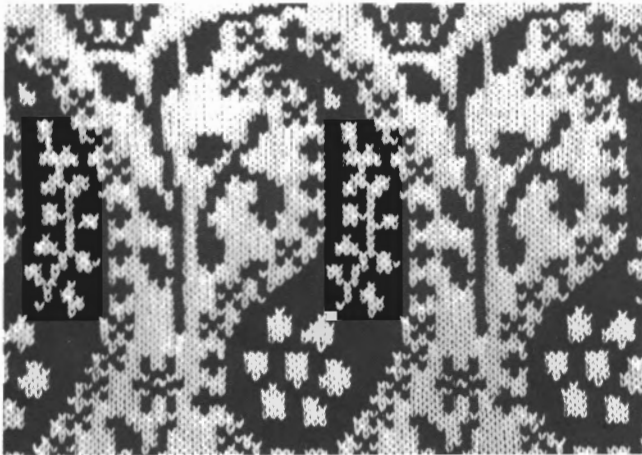
(If the Point Cams are away from the edge of the knitted piece as a result of decreasing, move the Carriage passed the Point Cams.)



Do not move the Needle-1 Cam.

If the Needle-1 Cam is left on the outside of the point Cam as a result of garment shaping, leave it as its original position, but ensure that the Carriage passes it on each row.

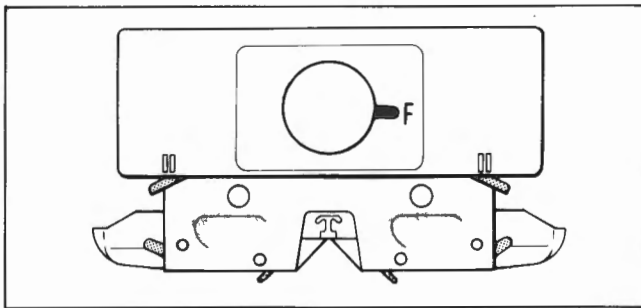
KNIT-IN (FAIR ISLE)



Two yarns of different colours are knitted simultaneously and form patterns on the fabric.

The sample is knitted with the Pattern No.2—(8).

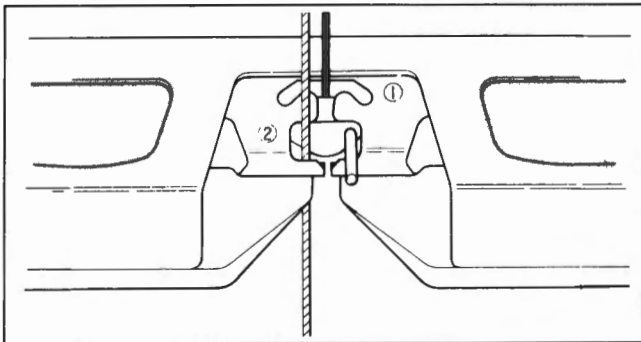
Before starting to knit the patterns, follow the preparatory steps given on pages 19–22, and additional cares instructed below.



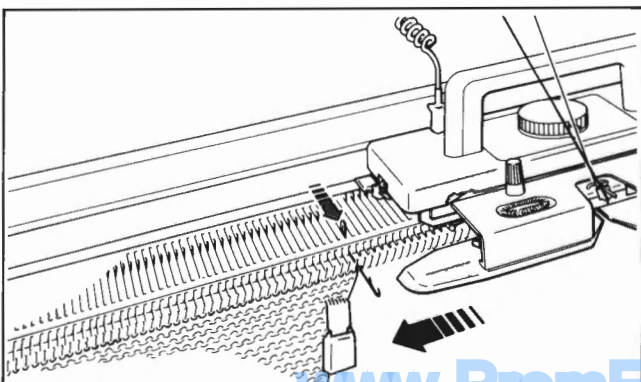
BEFORE KNITTING THE PATTERN

Set the Carriage controls:

Cam Lever..... F (FAIR ISLE)
 Russel Lever..... II (both)
 Tuck Lever..... O (both)
 Weaving Knob..... O (both)



Put the contrast yarn through the Auto-Tension and into the Yarn Feeder ② as shown opposite.

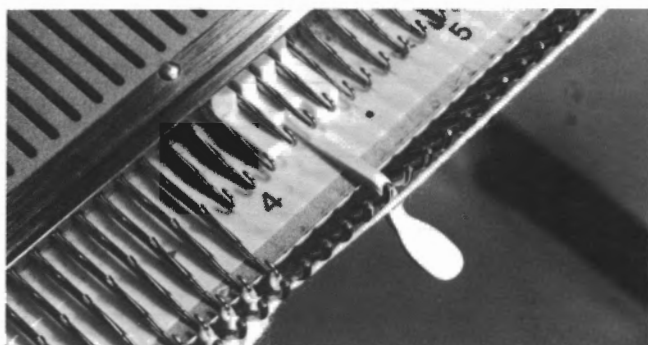
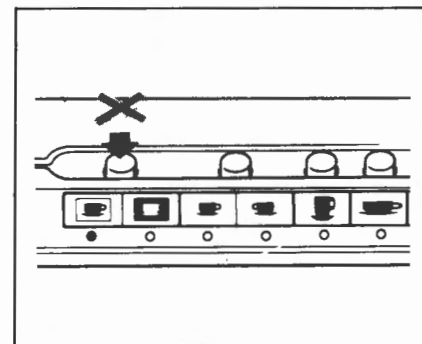
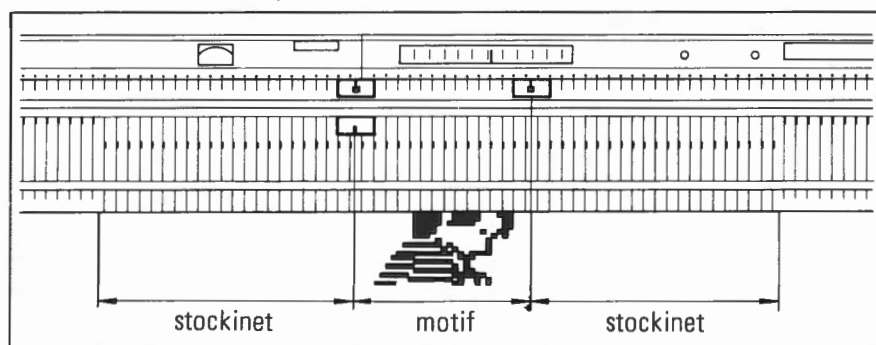
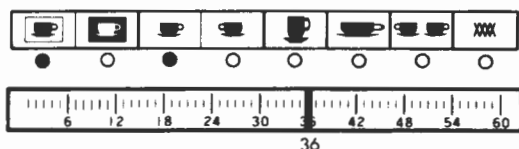
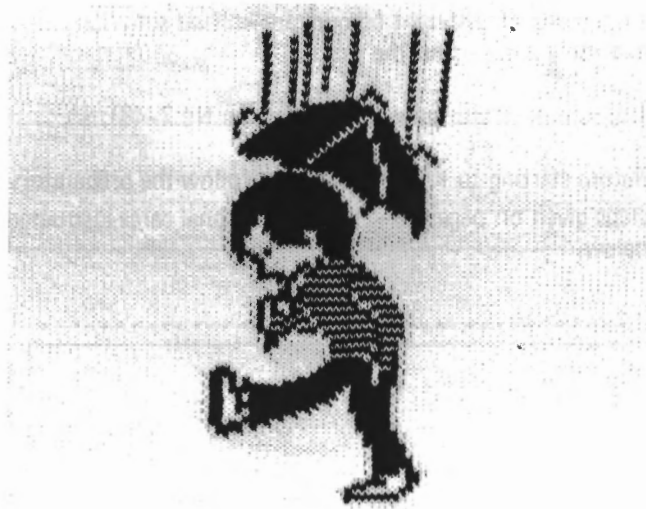


WHILE KNITTING THE PATTERN

To make both edges of the fabric neat, push up the first needle to D (or C in partial knitting) position before knitting the next row.

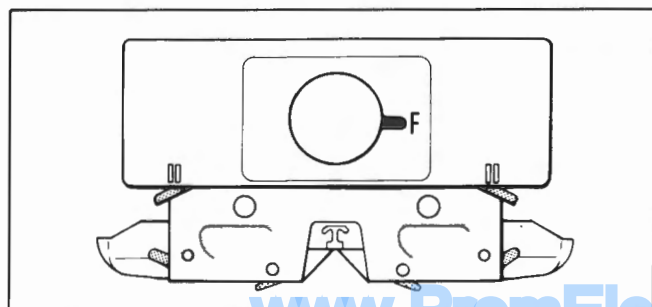
Suspend the Claw Weights at both sides of the fabric.

SINGLE MOTIF



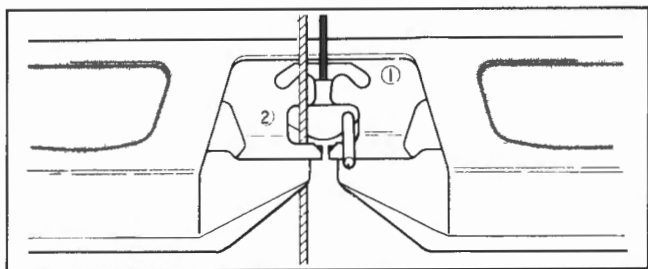
Open the latches of the 4th, 5th and 6th needles on the outsides of the knitting needles.

Insert the Yarn Separator under those needles on both sides as far as they go.

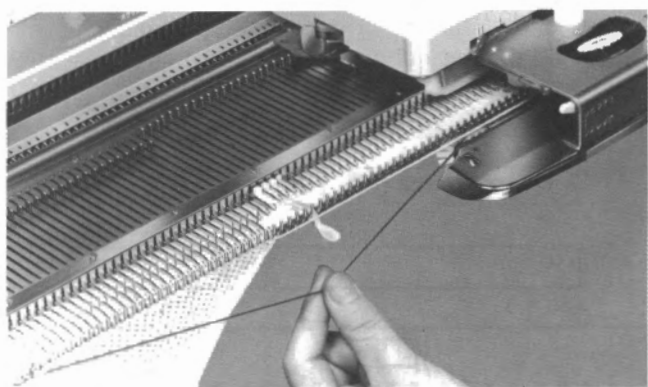


Set the Carriage controls.

Cam Lever F (KNIT-IN)
 Russel Lever..... II (both)
 Tuck Lever..... O (both)
 Weaving Knob..... O (both)



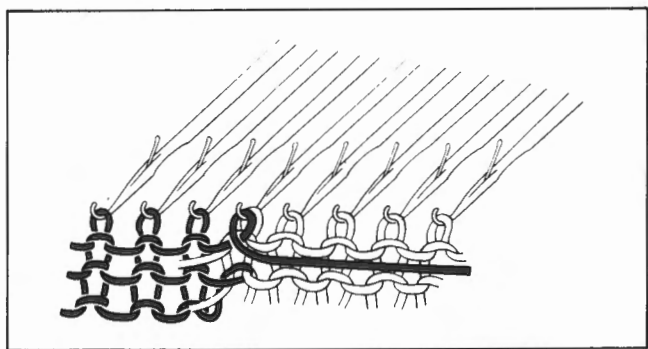
Put the contrast yarn into the Yarn Feeder ②, and start knitting.



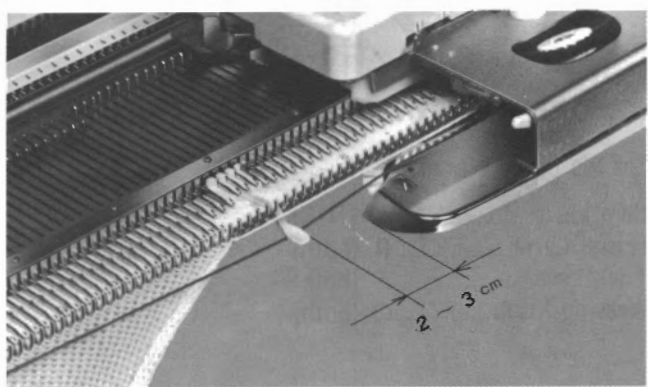
WHILE KNITTING THE PATTERN

Make sure that the main yarn comes above the Separator and the contrast yarn below the Separator before knitting the next row.

If they are not, correct them by hand.



To prevent separation of ground yarn from the contrast yarn at the edge of pattern, wind the contrast yarn around the needle adjacent to the edge needle of the contrast yarn. (To wind the yarn, push the needle to C position, the stitch must remain in front of the latch, and wind the yarn around the needle.)

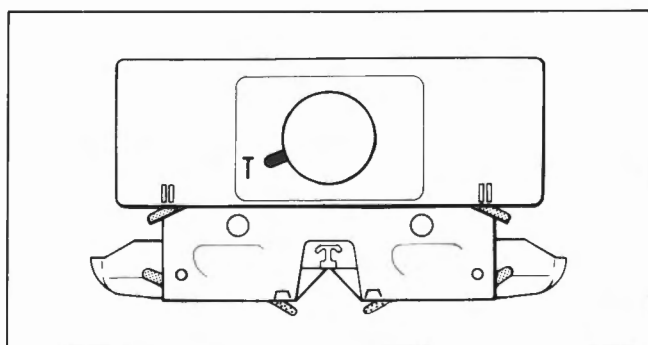
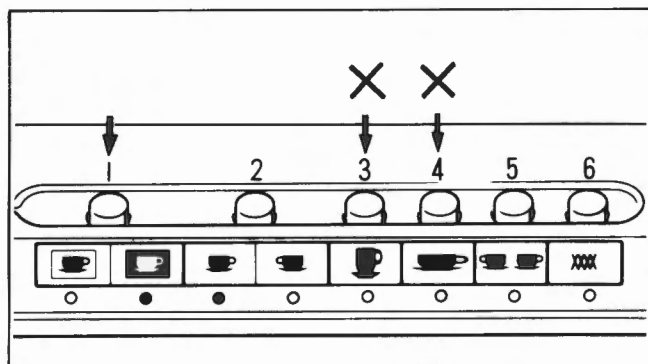
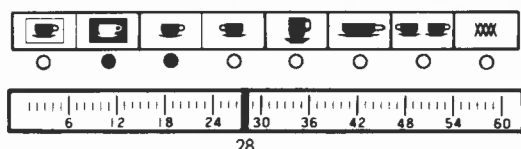
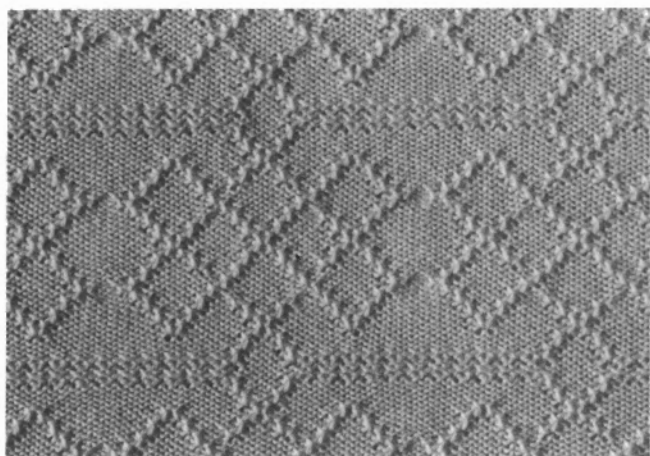


When moving the Carriage back and forth, move it until it passes at least 2–3cms. off the Separator.



Hang the Claw Weights on the fabric at the position corresponding to the edge of the single motif pattern.

TUCK STITCH



A selected needle holds the yarn in the hook till it receives new yarn and on the following row the needle knits the yarns together forming a tuck stitch.

The sample is knitted with the Pattern No.6—(17).

Before knitting pattern in this stitch type, follow the Preparatory Steps given on pages 19–22, and additional cares instructed below.

PRECAUTION

In tuck knitting, Pattern Button 1 must remain in “DOWN” position. (Right light is on.)

Pattern Buttons 3 and 4 must remain in “OFF” position.

BEFORE KNITTING THE PATTERN

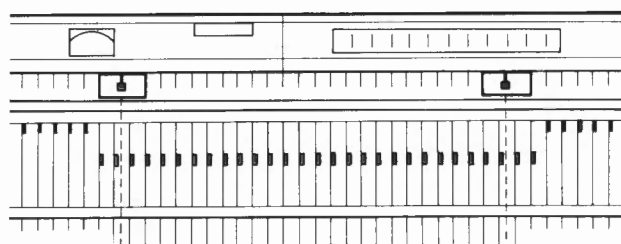
Set the Carriage controls.

Cam LeverT (TUCK)

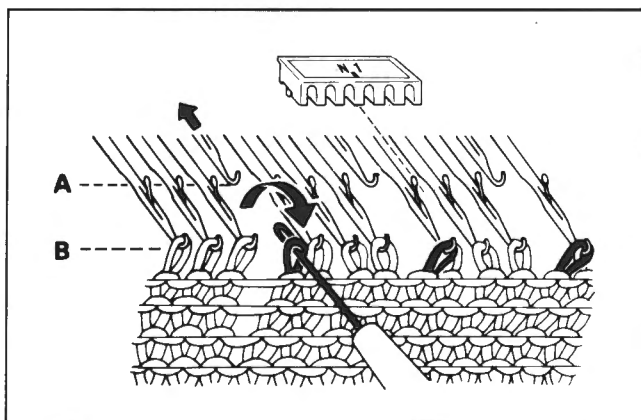
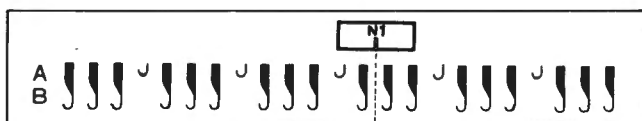
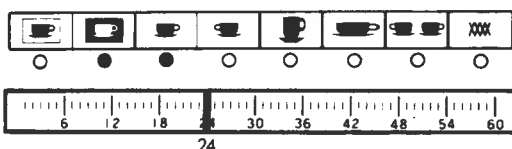
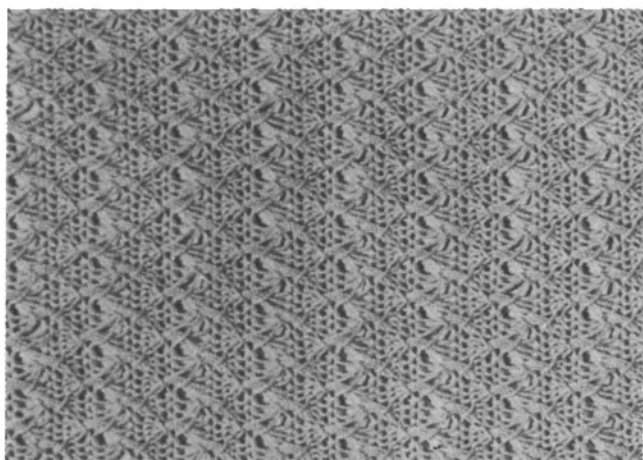
Russel Lever.....II (both)

Tuck Lever^ (both)

Weaving Knob.....O (both)



If the edge stitches tend to be knitted improperly, set the Point Cams to exclude two edge needles on both sides.



TUCK LACE

Arrange the needles as instructed below the photograph, and knit in the same setting for Tuck Stitch, you will have lacy fabric.

The sample is knitted with the Pattern No.1—(3).

Before knitting pattern in this stitch type, follow the Preparatory Steps given on pages 19–22, and additional cares instructed below.

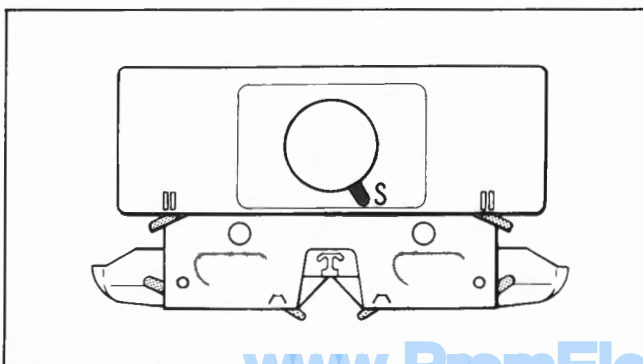
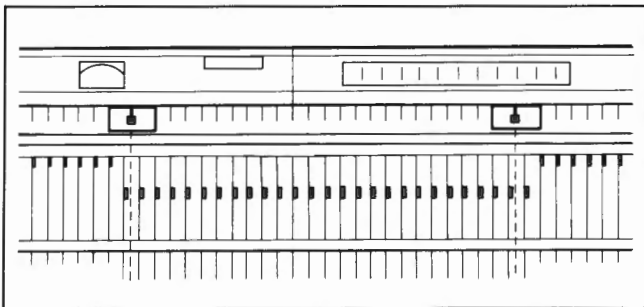
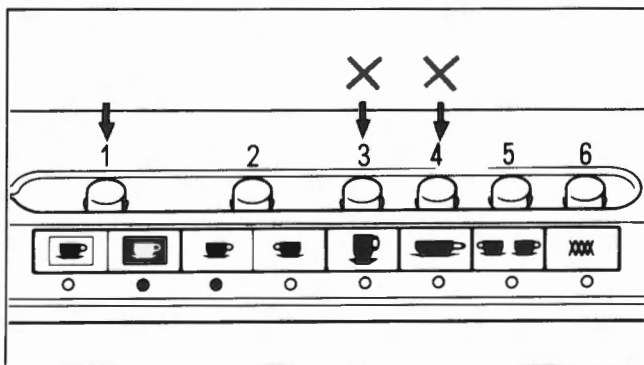
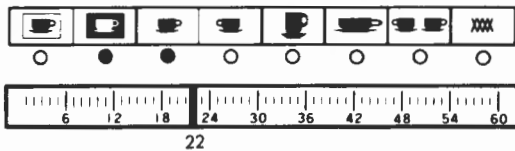
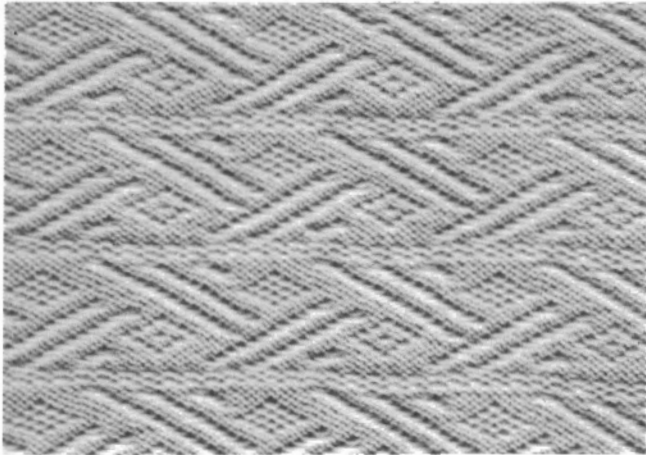
BEFORE KNITTING THE PATTERN

Rearrange the needles as instructed, by transferring the stitches using a Transfer Tool.

In the Pattern Book, needle arrangement is instructed for each pattern in Tuck Lace.

Push the empty needles back into A position.

SLIP STITCH



A selected needle remains inactive and the yarn passes in front of the needle. And the non-selected needles knit ordinary stitches.

The sample is knitted with the Pattern No.8—(24).

Before knitting pattern in this stitch type, follow the Preparatory Steps given on pages 19–22, and additional cares instructed below.

PRECAUTION

Pattern Button 1 must be pushed "DOWN".
(Its right lamp must be on.)

Do not push ON the Buttons 3 and 4.

To prevent the end stitches from being knitted incorrectly, place the Point Cams to exclude the edge needle from the pattern knitting area.

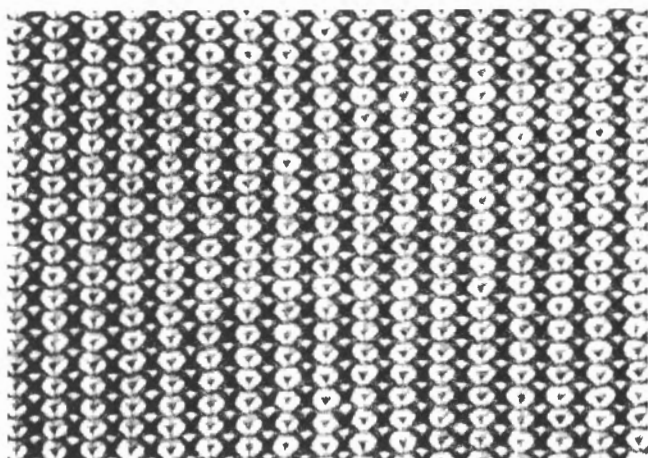
BEFORE KNITTING THE PATTERN

Set the Carriage controls.

Cam Lever.....S (SLIP)
Russel Lever.....II (both)
Tuck Lever.....(both)
Weaving Knob.....O (both)

It is recommended to set the Stitch Dial 1 number higher than the other stitch types.

TUCK / SLIP STITCH PATTERN IN COLOURS

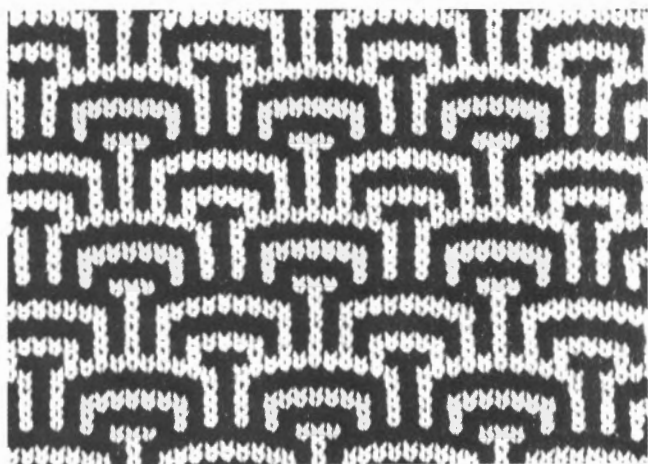


Tuck stitch pattern or slip stitch pattern knitted using more than two yarns of different colour.

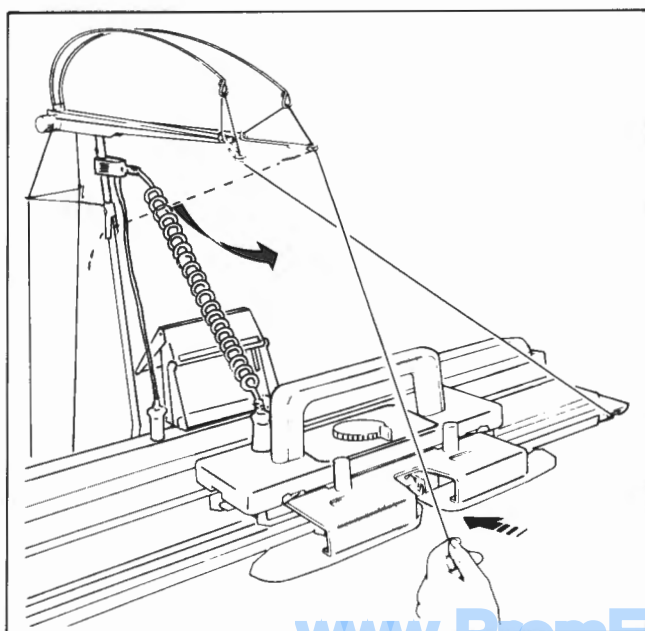
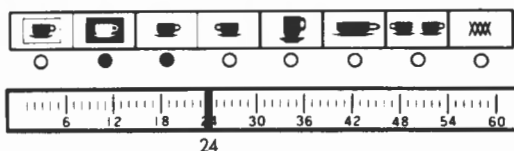
For these stitch types, the use of the Automatic Yarn Changer will be a practical method.

The photograph on top shows the pattern knitted in TUCK with the Pattern No.1—(5) and the second photograph in SLIP with the Pattern No.1—(6).

These are only a few samples, but you try on the other pattern cards to create more fantastic designs.



Preparatory steps and Carriage controls for knitting the pattern are same for each TUCK and SLIP stitches.



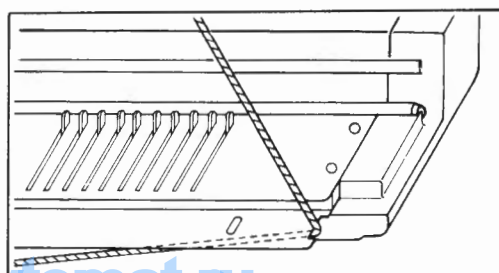
WHILE KNITTING THE PATTERN

With the first yarn in Yarn Feeder ① and knit first two rows.

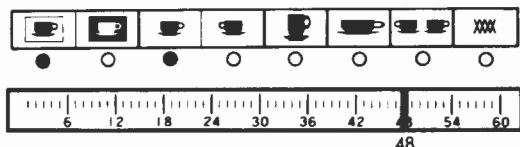
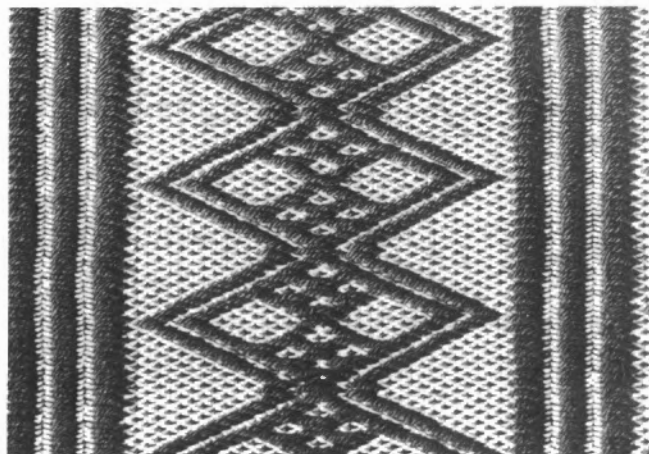
Exchange the yarn for the second yarn and knit subsequent two rows.

Knit exchanging two yarns every two rows.

Place the yarn to be rested at the end of needle bed as illustrated below.



WEAVING



On the purl side of a fabric of stockinet knitted in medium yarn, a thick yarn is woven through the stitches giving a weaving effect.

Select a thin yarn for knitting. yarn and thick yarn for weaving yarn.

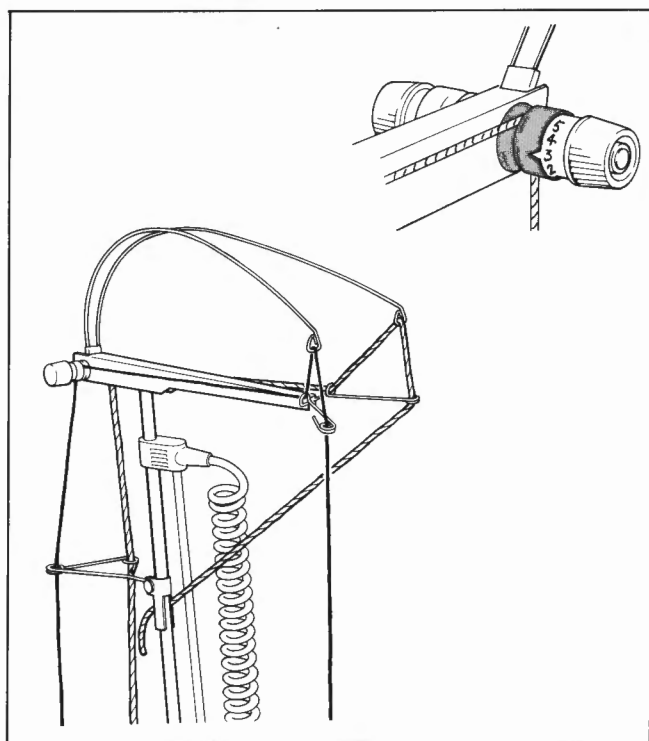
The sample is knitted with the Pattern No.10—(27).

Before knitting pattern in this stitch type, follow the Preparatory Steps given on pages 19–22, and additional cares instructed below.

SETTING THE YARN

Thread thick yarn (weaving yarn) into the Auto-Tension and hook it into the Yarn Clip.

Set the Tension Dial for weaving yarn as follows:—
medium/thick yarn.....2–3

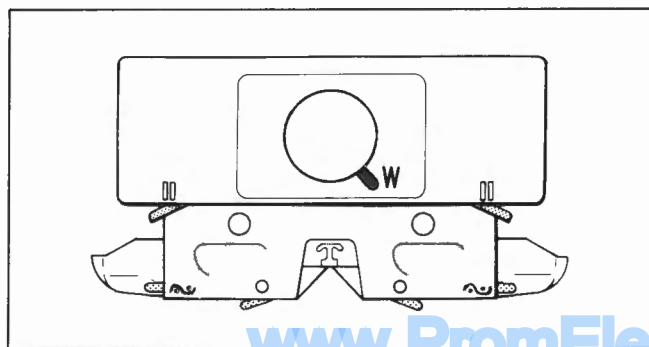


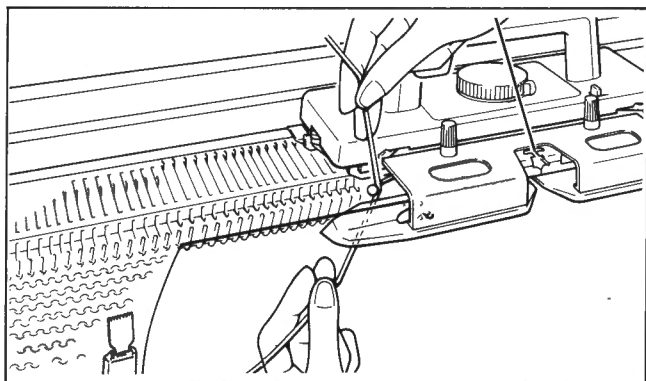
BEFORE KNITTING THE PATTERN

Set the Carriage controls.

Cam Lever.....W (WEAVING)
Russel Lever.....II (both)
Tuck Lever.....O (both)
Weaving Knob.....~ (both)

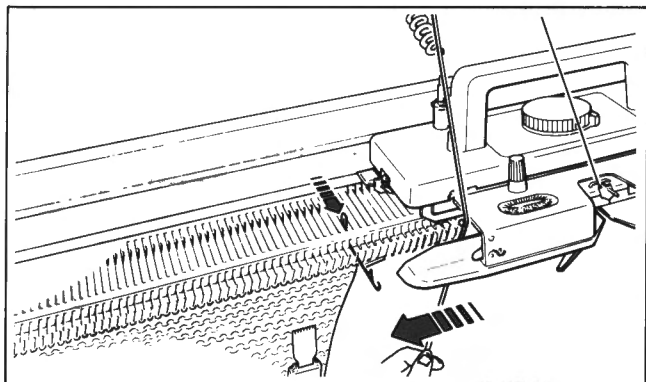
Set the Stitch Dial one number higher than the one used for stockinet knitting.



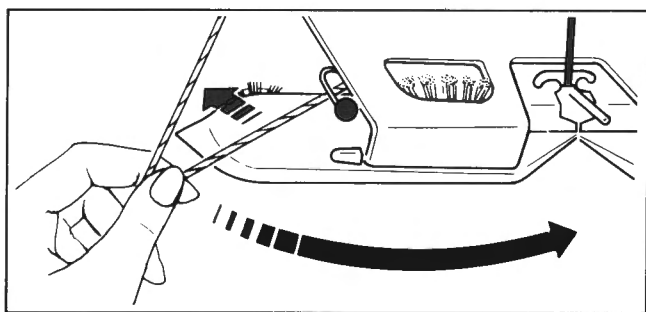


To start pattern knitting, follow the procedure below.

Take the thick yarn from the Clip on the Yarn Rod, and place it inside the Weaving Yarn Holder on the leading side of the Carriage.



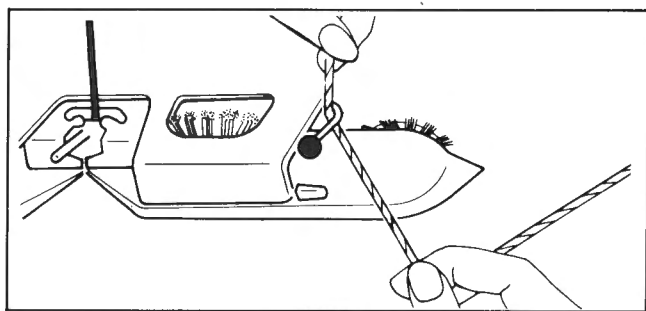
Holding the weaving yarn under the Arm, push the first knitting needle into D position, and then move the Carriage to the other side.



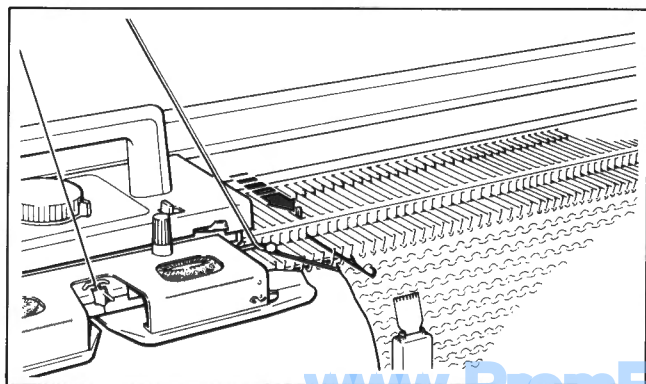
Before knitting the next row, bring the weaving yarn to the other side, and place it inside the Weaving Yarn Holder.

Guide the weaving yarn under the Holder and then under the Arm to the other side of the Carriage.

At this step, push the Carriage in the direction it moved, the weaving yarn becomes free from the Brushes under the Arm easily.



Place the weaving yarn inside the Holder on the leading side of the Carriage.

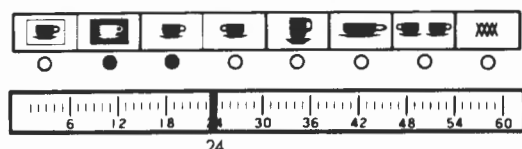


Push the first needle, and move the Carriage to the other side of the needle bed.

Repeat in the same manner, placing the weaving yarn into the Holder on the leading side before knitting the next row.

To do partial knitting in the weaving pattern, push the first knitting needle into C position.

PLATING



Two different colour yarns are knitted together. One yarn appears on one side whilst the second yarn appears on the other side of the fabric.

Plating in stockinet is predominant, but if you knit the yarns in Tuck stitch, you can enjoy different effect of fabric.

The sample is knitted with the Pattern No.1—(6).

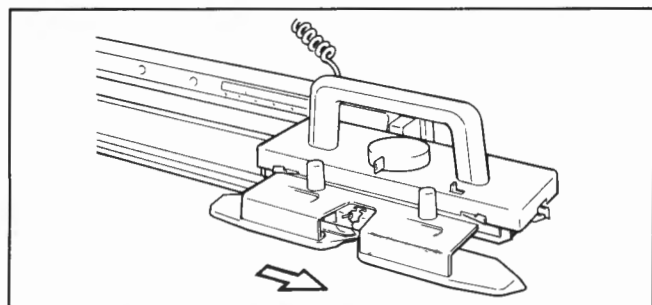
Before knitting patterns in this stitch type, follow the Preparatory Steps given on pages 19–22, and the additional instructions given below.

BEFORE KNITTING THE PATTERN

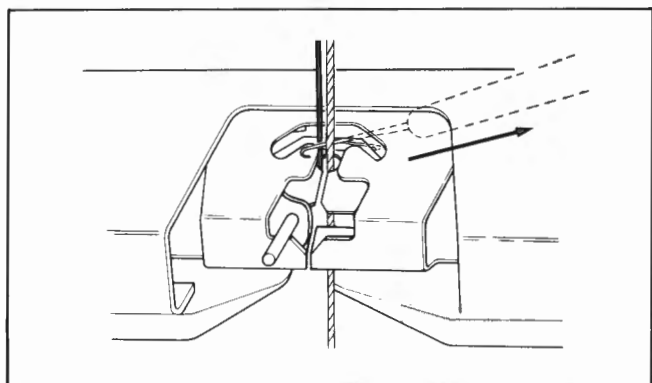
Set the Carriage controls as for the Tuck stitch patterns, but the Stitch Dial must be set higher by 1–2 numbers than the Tuck knitting since two yarns are knitted together.

Thread the Plating Yarn Feeder as follows.

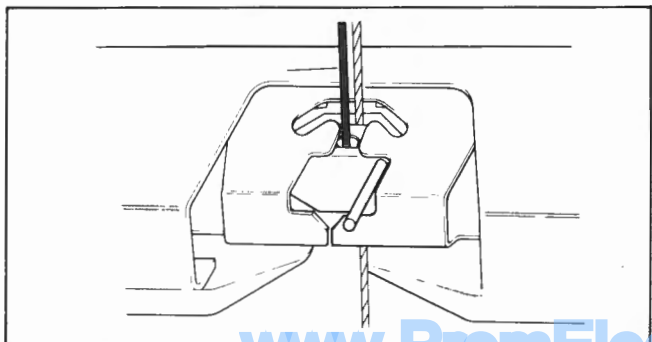
1. Move the Carriage to the either end of the Needle Bed till the rear of the Yarn Feeder is visible. Open the Yarn Feeder Gate.



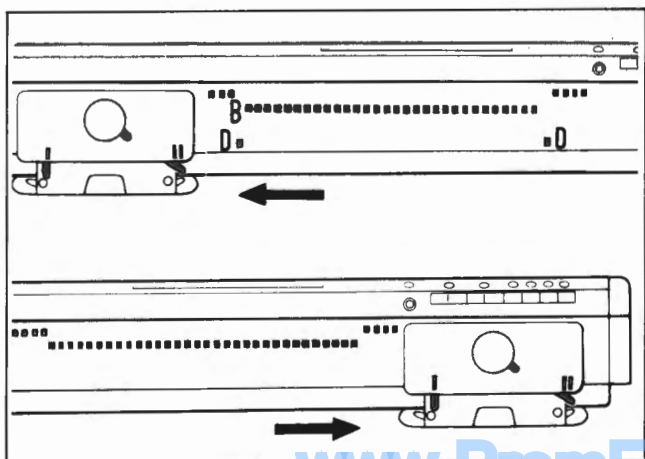
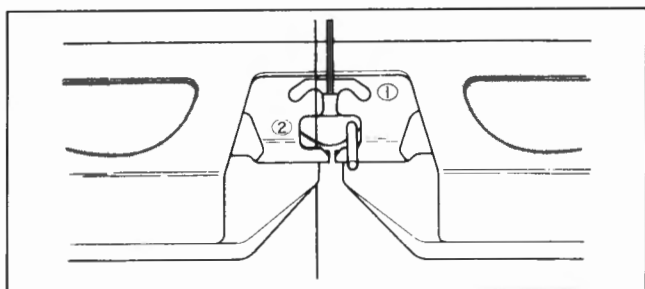
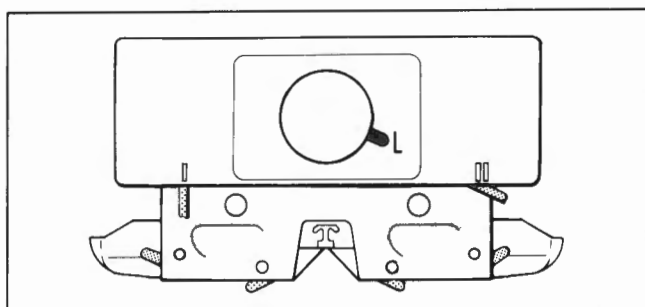
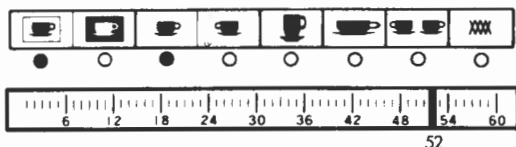
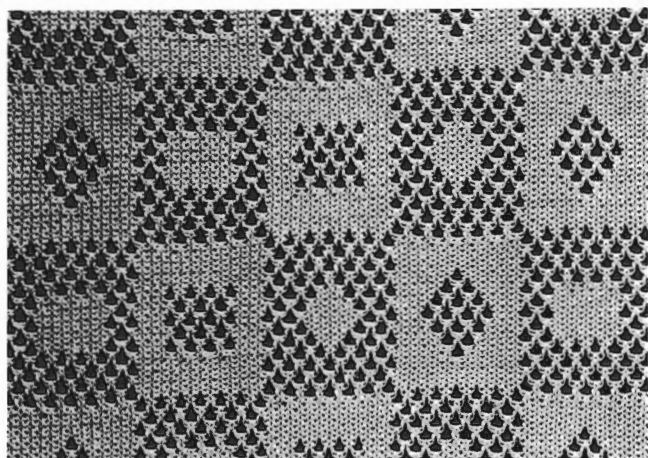
2. Put the plating yarn into the Yarn Feeder ①, insert the Tappet Tool from the rear of the Yarn Feeder and catch the plating yarn, and guide it to the rear of the Yarn Feeder ①, Plating Yarn Feeder.



3. When the main yarn and the plating yarn are set in the Yarn Feeder properly, close the Yarn Feeder Gate.



PUNCH LACE



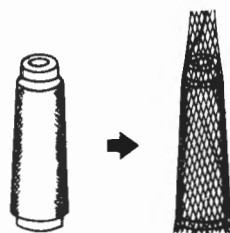
This is a type of lacy stitch — knitted with wool or synthetic yarn together with a transparent nylon thread.

The sample is knitted with the Pattern No.9—(26).

Before knitting pattern in this stitch type, follow the Preparatory Steps given on pages 19—22, and additional cares instructed below.

HINT IN KNITTING

To prevent the nylon thread becoming loose, cover the cone with the stop-net or with the piece of stocking cloth.



BEFORE KNITTING THE PATTERN

Set the Carriage controls.

Cam Lever L (PUNCH LACE)
 Russel Lever..... I (left)
 II (right)
 Tuck Lever..... O (both)
 Weaving Knob..... O (both)

Thread nylon thread into the Auto-Tension and into the Yarn Feeder ②.
 (Tension Dial for nylon thread.....7)

WHILE KNITTING THE PATTERN

Push one end needle at both sides of the fabric to D position.

Knit from right to left. (The end needles will not knit.)

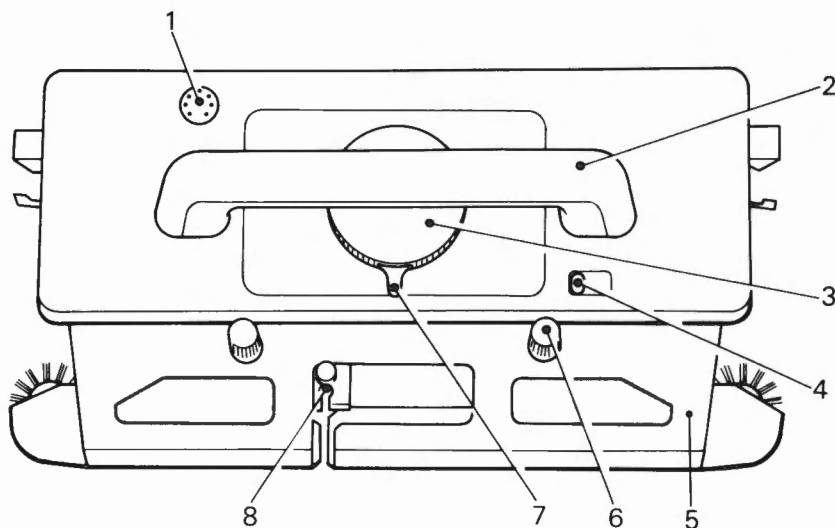
Knit from left to right. (The end needles will be knitted back to B position.)

Do not fail to push the two end needles to D position before you move the Carriage from right to left.

LACE CARRIAGE AND ACCESSORIES

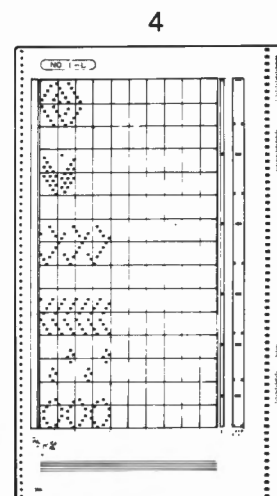
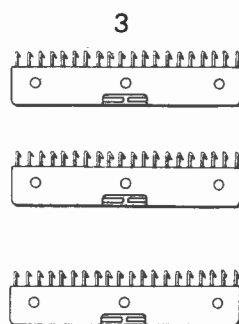
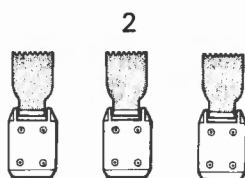
LACE CARRIAGE

- 1 Curl Cord Socket
- 2 Handle
- 3 Stitch Dial
- 4 Release Lever
- 5 Lace Arm
- 6 Arm Nut
- 7 Cam Lever
- 8 Yarn Feeder

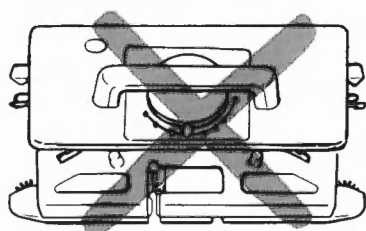


ACCESSORIES

- 1 Ribber Joiner Screw (2)
- 2 Claw Weight (3)
- 3 Comb Weight (3)
- 4 Lace Pattern Card (5)

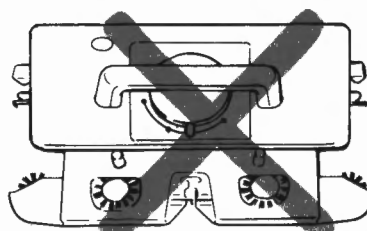


Do not use the Carriages in the following combination.
(If you use them in the following combination, you will break the Arm or needles.)



... Standard Carriage

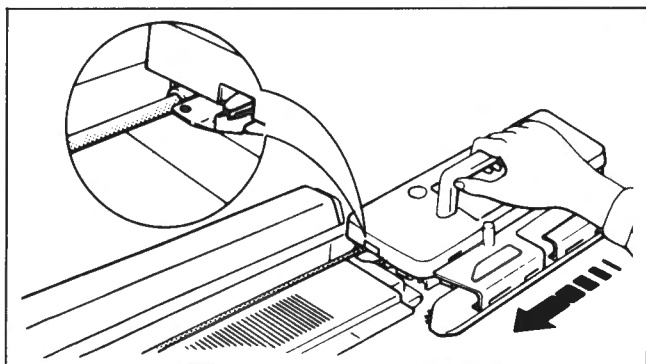
... Lace Arm



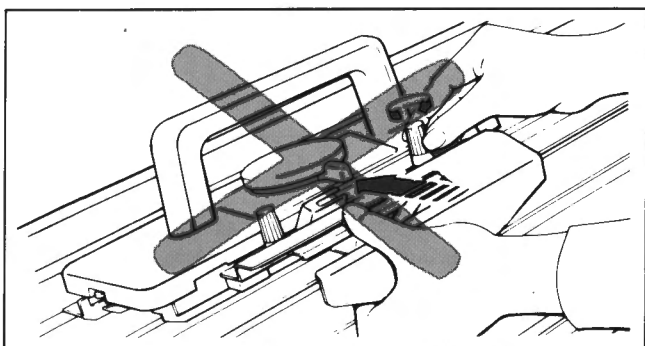
... Lace Carriage

... Standard Arm

SETTING THE LACE CARRIAGE ON THE NEEDLE BED

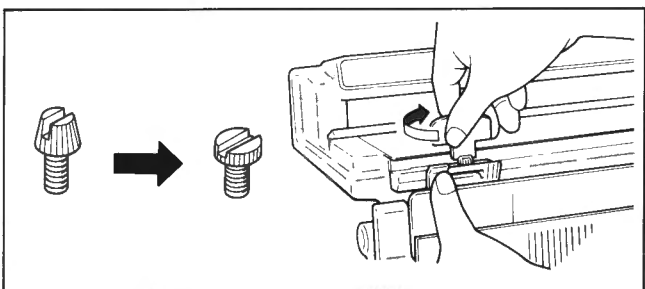


Switch "OFF" the machine, disconnect the Curl Cord from the standard Carriage and remove it from the needle bed. Take out the Lace Carriage with Lace Arm attached from the Box, raise the Handle and set it on the Needle Bed as shown.

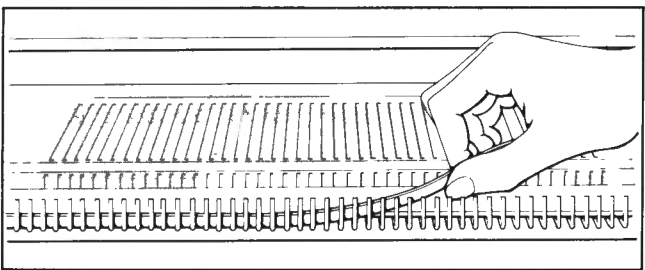


IF THE RIBBER HAS ALREADY BEEN CONNECTED WITH THE KNITTER, follow the instruction and caution given below to use the Lace Carriage on the Knitter.

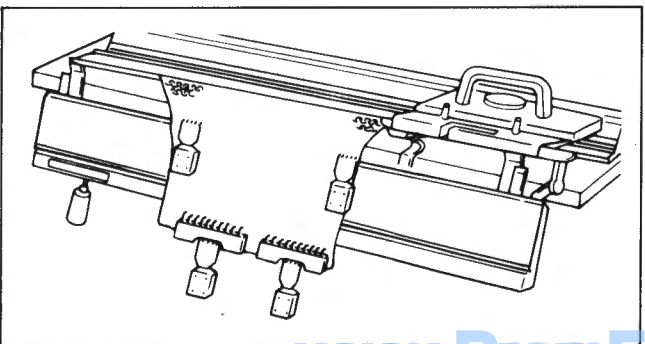
- DO NOT attach the Ribber Arm to the Lace Carriage.



- If the Ribber is attached with the high-head Ribber Joiner Screws, replace them with the low-head screws packed with the Lace Carriage.

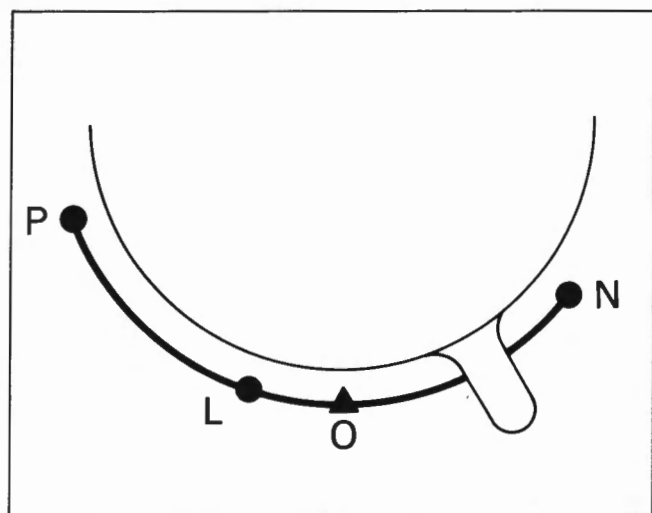


- Remove the Close Knit Bar from the Knitter Needle Bed if it is in use.



- To knit the lace fabric as the Ribber is attached, drop the Ribber to its fullest extent and cover the needle bed with card board.
(Ribber Bed Cover is available for optional purchase.)

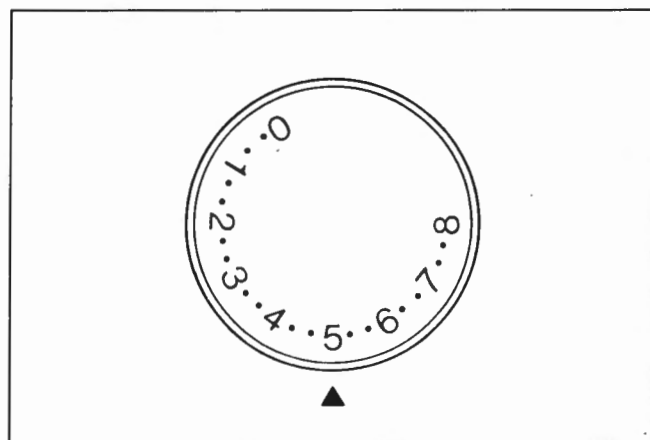
CAM LEVER AND STITCH DIAL



Cam Lever and its four positions

Set the knob of the Cam Lever on the selected position.

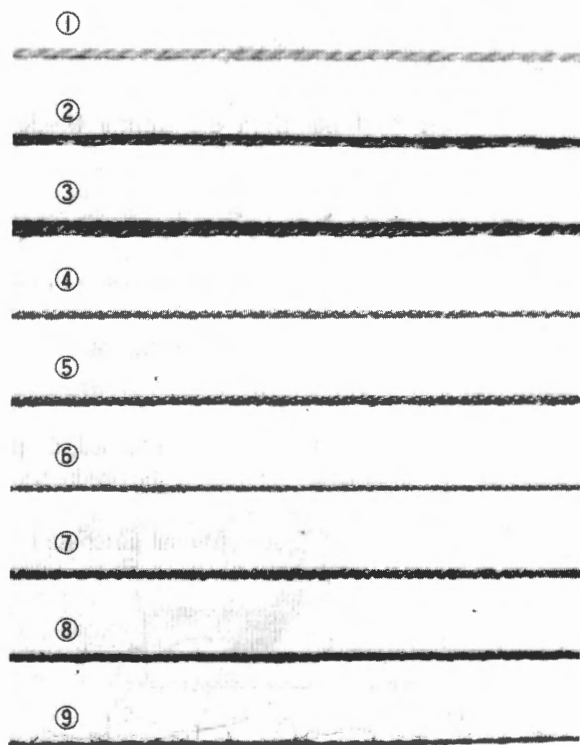
- N – (NON-KNITTING)
used to pass the Carriage without knitting over the needles in B position.
- O – (STOCKINET)
used to knit in stockinet only.
(No Pattern Card is used.)
- L – (NORMAL LACE)
used to knit normal lace stitch patterns.
(Pattern Card must be used.)
- P – (FASHION LACE)
used in fashion lace patterns.
(Pattern Card must be used.)



Stitch Dial

Stitch Dial for the Lace Carriage has the graduations 0 through 8 with an increment of 1/3 (represented by a dot).

Set the selected graduation of the Stitch Dial to ▲ mark.



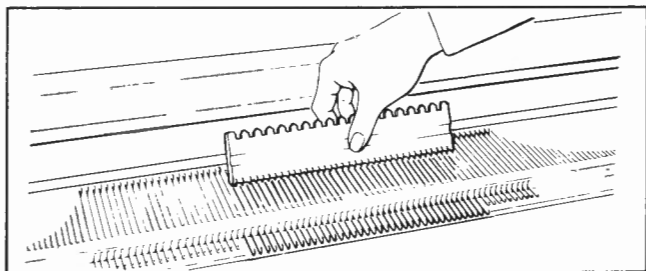
TYPE OF YARN AND RECOMMENDED STITCH DIAL SETTING

Recommended types of yarns are shown opposite in actual size, and recommended Stitch Dial settings are shown in the table below.

Do not use knobly or thick mohair yarn for the lace stitch patterns.

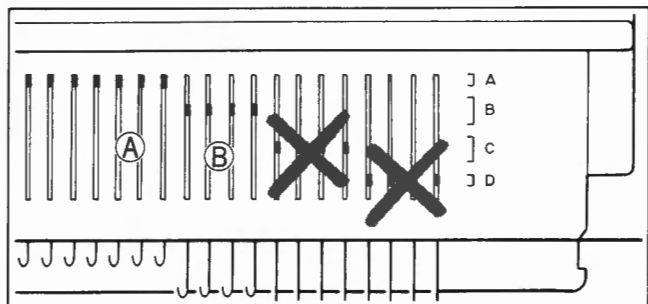
Type of yarn	Stitch Dial (stockinet)	Stitch Dial (lace knitting)
① Thin yarn (2-ply)	2–3	3–4
② Light yarn (3-ply)	3–5	4–5
③ Medium yarn (4-ply)	4–6	5–6
④ Cotton thread (thin)	3–4	4–5
⑤ Cotton thread (regular)	4–5	5–6
⑥ Synthetic (thin)	2–3	3–4
⑦ Synthetic (regular)	3–4	4–5
⑧ Synthetic (regular)	3–4	4–5
⑨ Mohair (thin)	3–5	4–5

CAST-ON AND STOCKINET KNITTING



Using the Needle Pusher, push up 70 needles (35 needles on both sides of the centre(0) to B position.

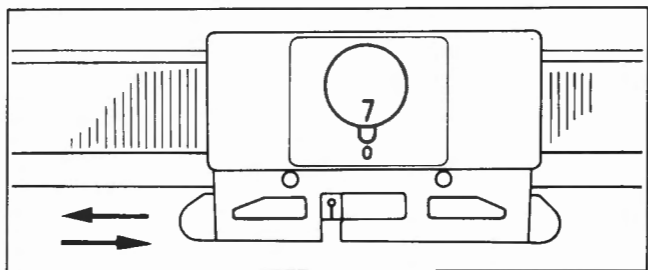
To knit in stockinet using the Lace Carriage, the machine needs not be connected to A.C. mains.



IMPORTANT

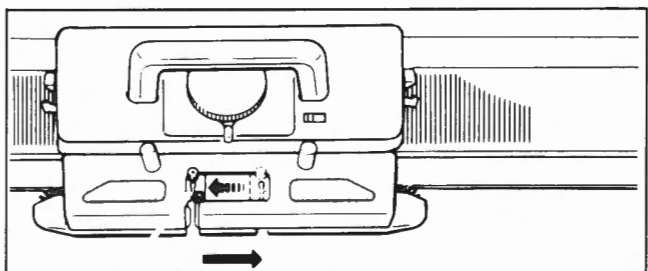
When you knit with the Lace Carriage, the needles must be aligned in B position only, and the position A is used for holding position.

Do not push the needles into C or D position. Otherwise you will damage the needles.

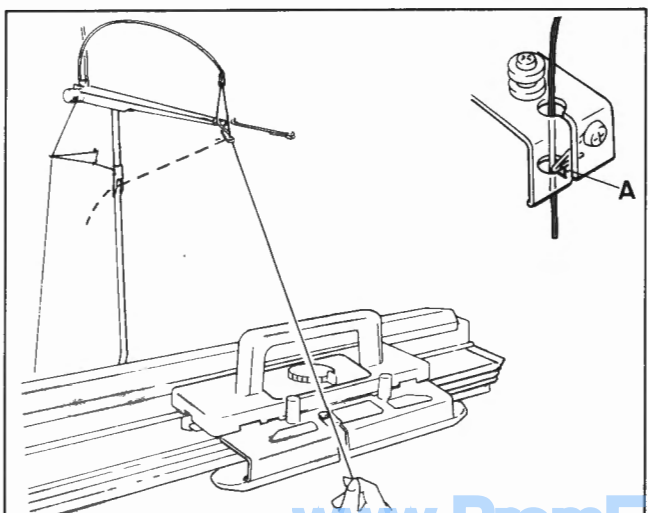


Set the Carriage as follows and move it twice across the needles to align them correctly into B position.

Stitch Dial.....7
Cam Lever.....0 (STOCKINET)

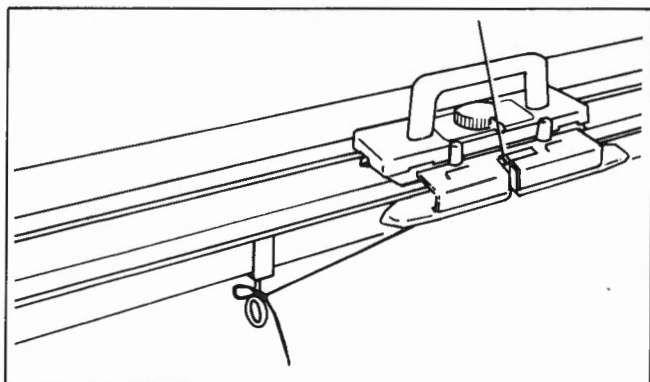


Slide the Carriage slightly to the right to have the Yarn Feeder at the left side.

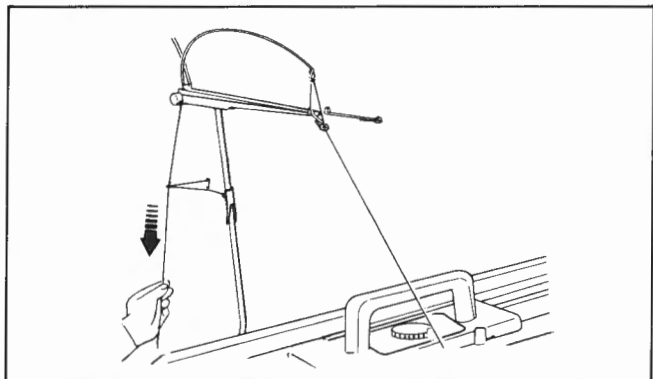


Thread the yarn through the Auto-Tension and into the Yarn Feeder.

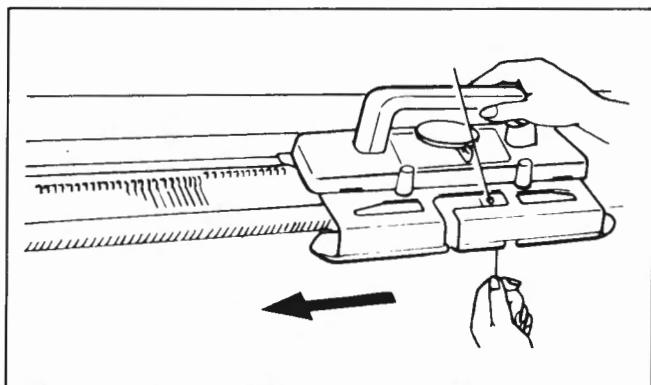
The yarn must be correctly set behind the Guide Pin "A" in the Yarn Feeder.



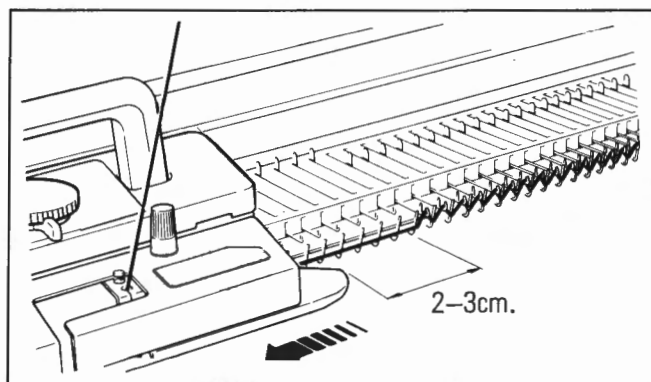
Fasten the yarn to either Clamp.



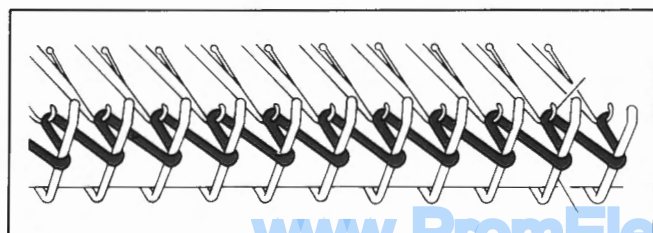
Take up the slack on the yarn by pulling the yarn back into the yarn ball till the Tension Spring is nearly in a horizontal position.



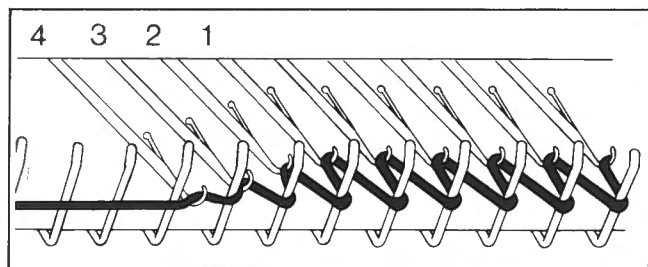
Move the Carriage across the needles in B position.



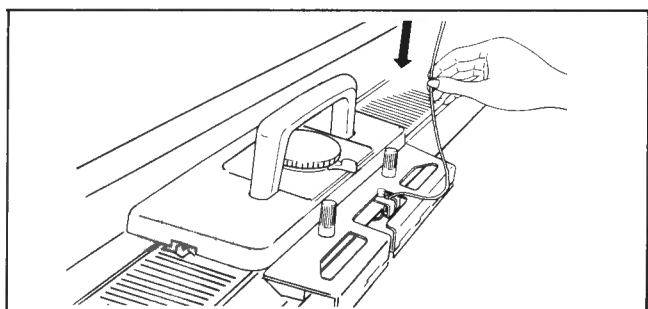
Pass the Carriage beyond the end needle about 2-3cm.



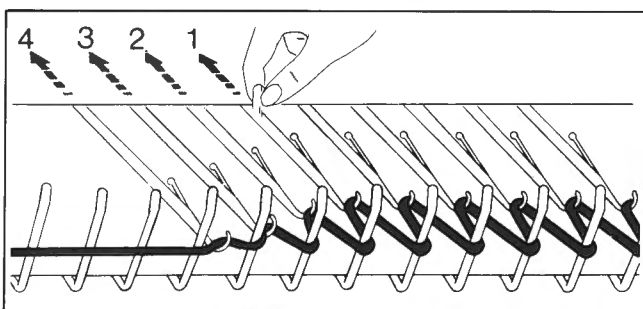
The yarn is hooked on the needle and sinker post alternately, in a zigzag line.



At the end of the cast-on row, the yarn tends to be pulled up by the Tension Spring, and the yarn is hooked by the needles and the sinker posts irregularly, as shown.

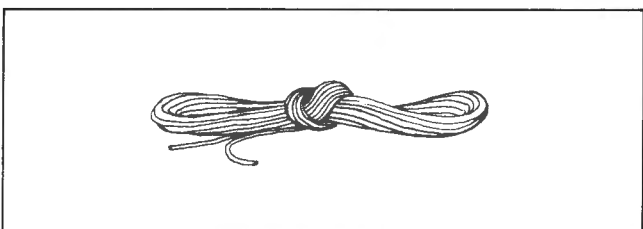


To correct the irregular zigzag yarn, pull down the yarn from the Tension-Spring toward the Yarn Feeder.



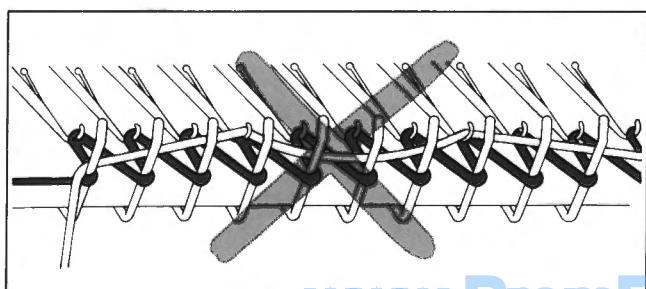
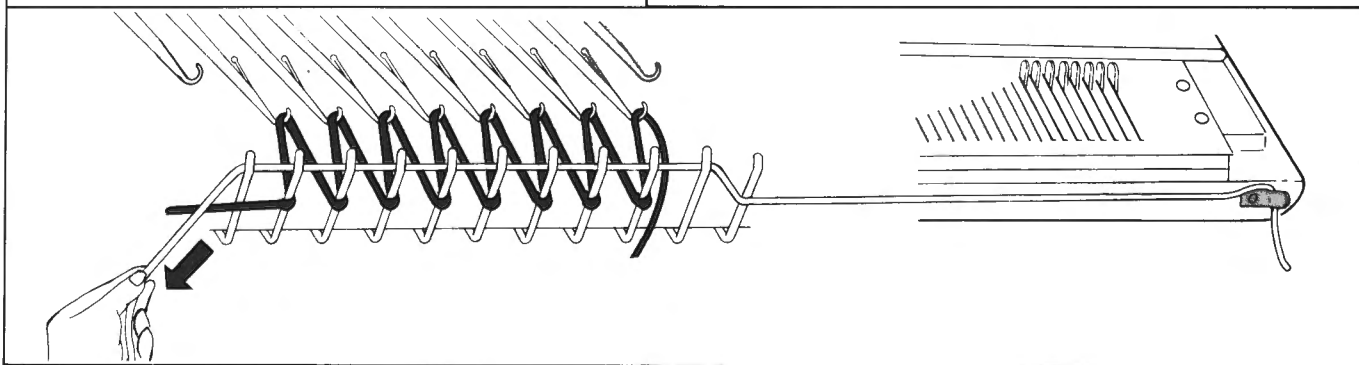
Push the needles by hand one by one in the order from inner needle to outer needle.

Hint: To eliminate the irregular hooking of the yarn at the end of the cast-on row, pull down the yarn from the Tension-Spring with your hand before the Carriage completes the cast-on row.

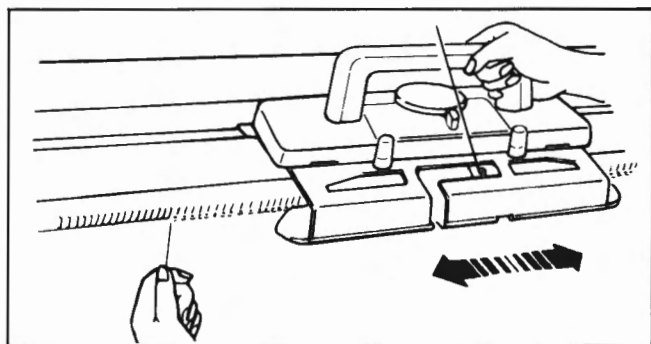


Take out the Ravel Cord from the Accessory Box, and untie.

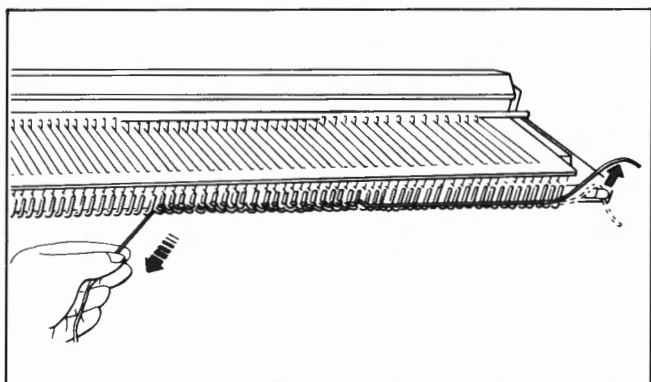
Place one end of the Ravel Cord in the yarn clip at the end of the needle bed, and lay the Cord over the zigzag yarn between the sinker posts and the needle hooks.



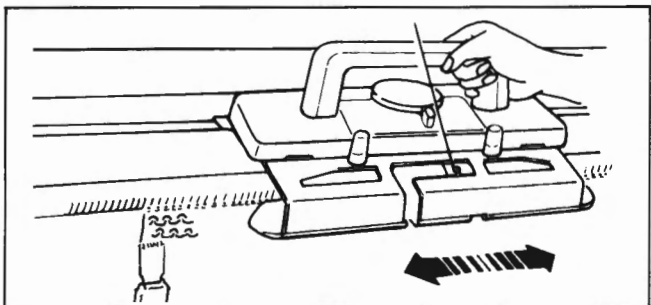
If the Ravel Cord is hooked by the needle hook, the cast-on will be a failure.



Pulling down the Ravel Cord tightly, move the Carriage slowly to the other side, passed the end needle by 2–3cm. Then continue to move the Carriage to and fro several times.

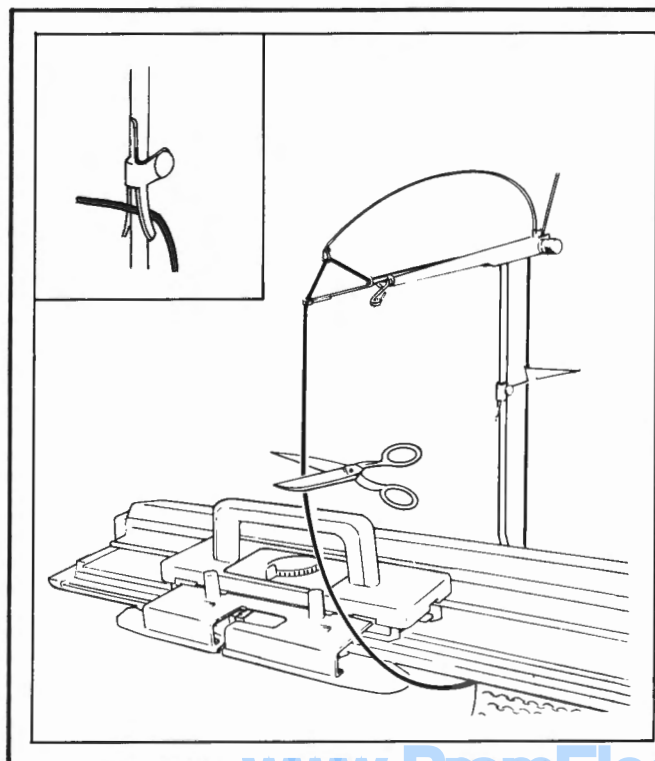


Release the end of the Ravel Cord from the Yarn Clip, and pull it out from the other end.



Cast-on (open edge) is completed. Continue to knit in stockinet about 30 rows by moving the Carriage back and forth.

Hang the Claw Weights on both sides of the fabric.

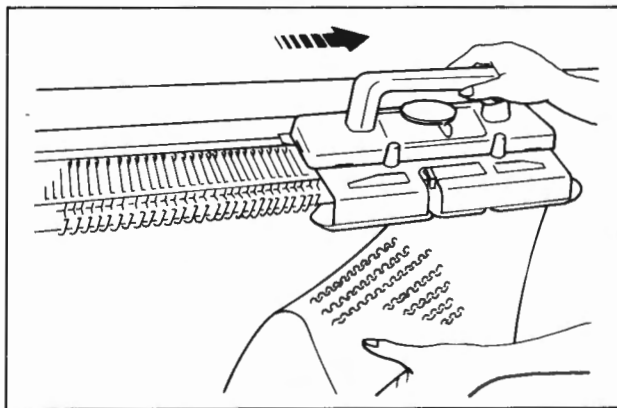


REMOVING THE FABRIC FROM THE MACHINE

Take out the yarn from the Yarn Feeder, and cut it above the Carriage.

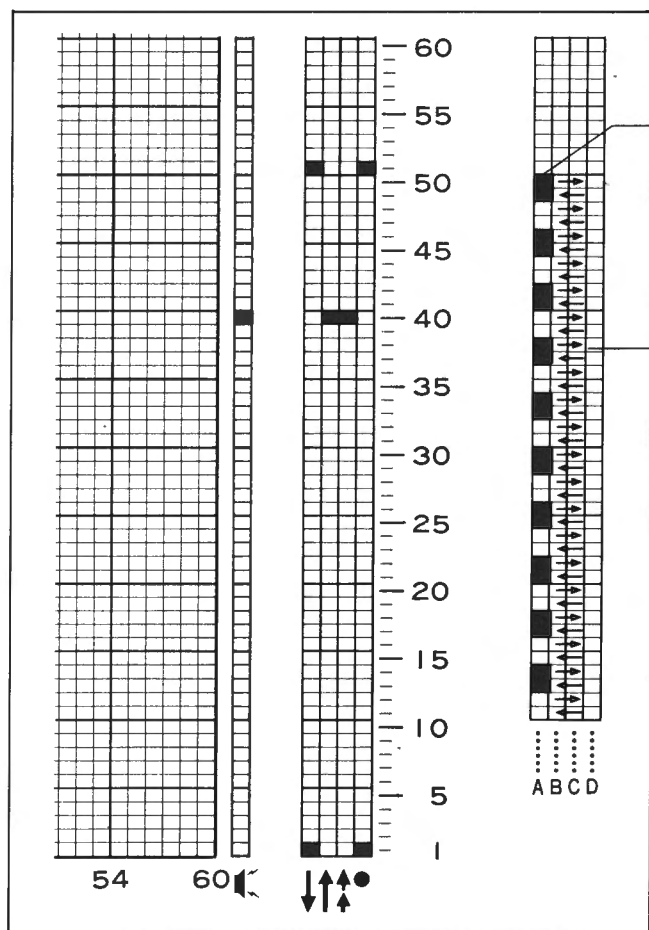
Set the Cam Lever to 0 mark, and move it across the needles.

The fabric will be released from the needles.



KNITTING LACE STITCH PATTERNS

Five sheets of Pattern Card, containing 20 patterns in total, for lace stitch patterns are packed with the Lace Carriage.



The Pattern Cards for the lace stitch pattern have the following notations on them.

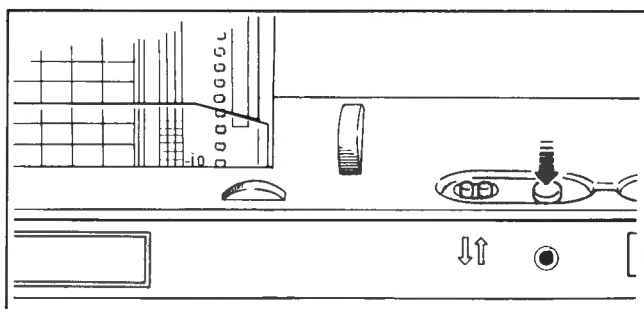
FASHION LACE ROWS

The pattern rows corresponding with the marks in the Notation Column perform the needle selection only for transferring stitches.

KNITTING DIRECTION MARK

The knitting direction of the Carriage must correspond with the arrow marks.

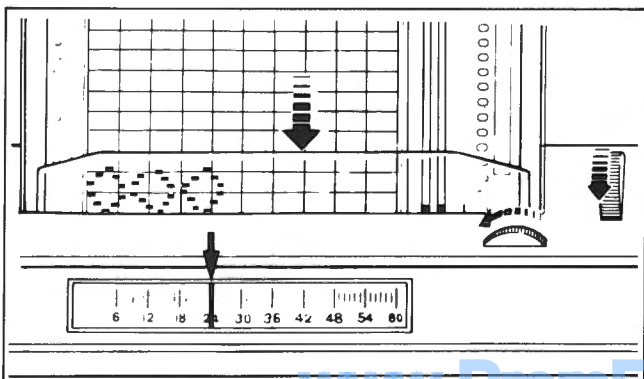
In lace stitch patterns, the needles corresponding with the black area of the Pattern Card are selected and their stitches are transferred onto adjacent needles.



PREPARATORY STEPS FOR LACE KNITTING

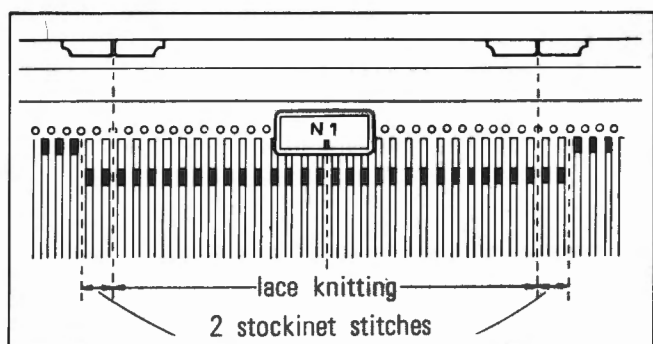
Connect the Curl Cord to the Lace Carriage and set the Card Stand referring to pages 19, 20.

Switch "ON" the machine, and push "ON" the Inspection Button.



Set the Pattern Card, and set the Pattern Width.

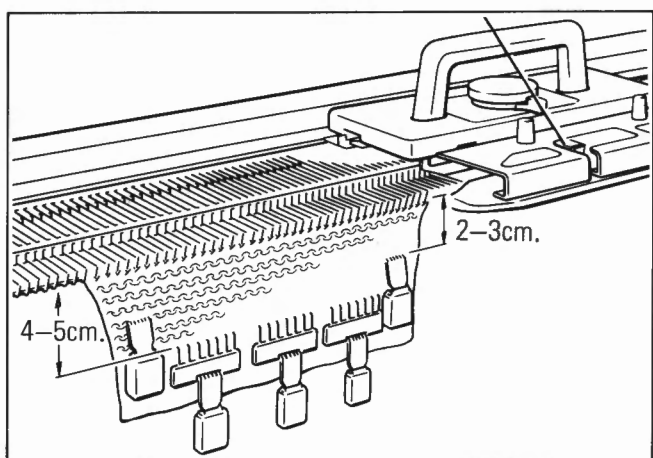
The Pattern Width Pointer must correspond with the Δ mark given for the selected pattern.



Align the needles in B position.

Set the Needle-1 Cam.

Set the Point Cams at the position to mark off two working needles at both edges.



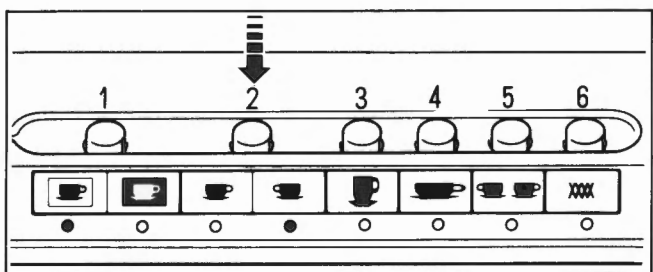
Set the Carriage controls.

Cam Lever.....0 (STOCKINET)

Stitch Dial.....(refer to page 36)

Cast on using the Ravel Cord and continue to knit in stockinet about 30 rows ending at the right side of the fabric.

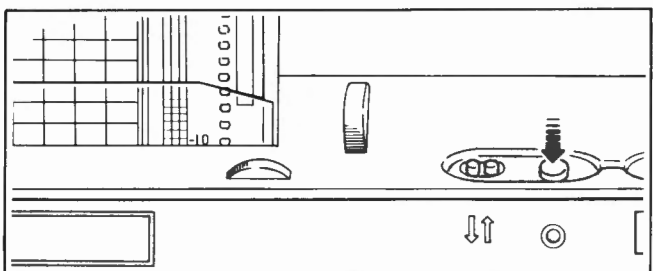
Hang the Claw Weights, and the Comb Weights on them as shown.



Push "DOWN" the Button 2.

The other Pattern Buttons must be in "UP" position.

Pattern Buttons 1, 3, 4, 5, 6 can not be used for the lace knitting.



Push "OFF" the Inspection Button.

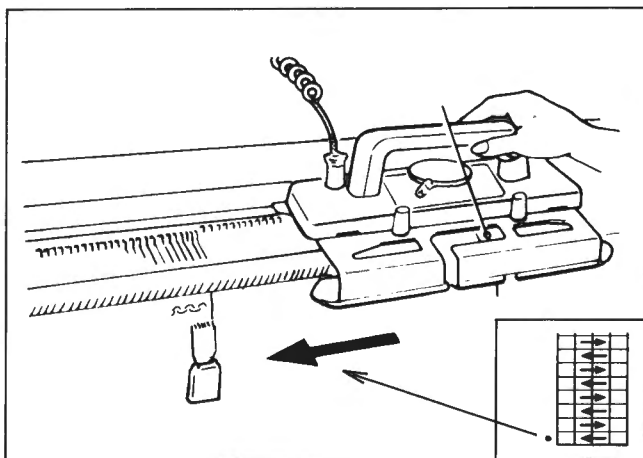
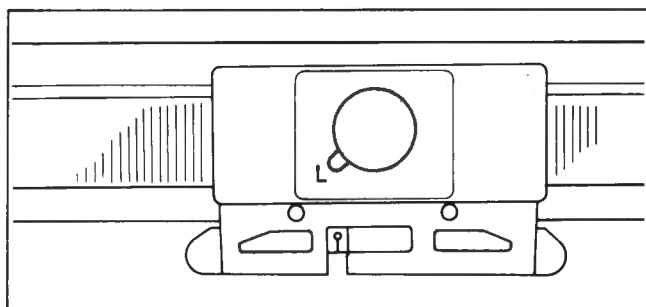
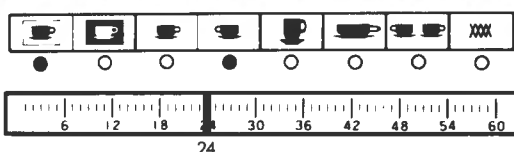
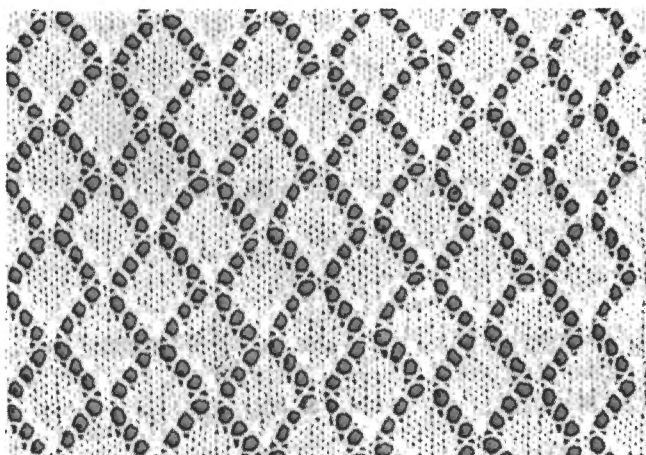
PREPARATORY STEPS FOR KNITTING LACE STITCH PATTERN HAS BEEN COMPLETED.

YOU ARE READY TO KNIT THE LACE PATTERNS.

IMPORTANT TO NOTE:

- When knitting in lace stitch pattern, the Pattern Button 2 must be in "DOWN" position in principle, and the other Buttons must be in "UP" position.
- Set the Point Cams at the position to exclude two working needles at both edges.
- Be sure to have the Carriage at the right side of the working needles before starting to knit lace stitch patterns, to correspond with the knitting direction arrow marks on the Pattern Card.

PLAIN LACE



By moving the Lace Carriage back and forth as you knit stockinet fabric, lace stitch pattern is easily produced on the fabric.

The sample is knitted with the Pattern No.1—L—(1).

Following the Preparatory Steps given on pages 41—42, prepare for knitting the lace stitch pattern, and have the Carriage at the right side of the working needles.

BEFORE KNITTING THE PATTERN

Set the Carriage controls.

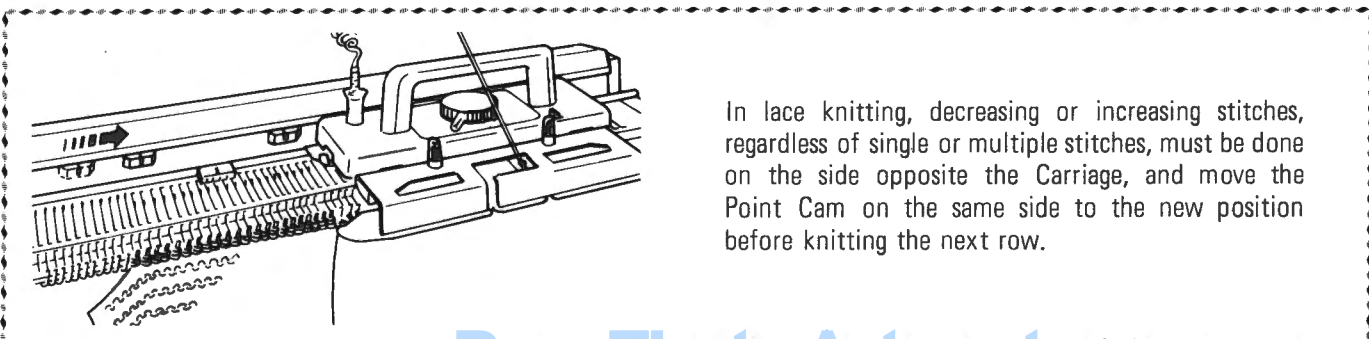
Cam Lever..... L

Stitch Dial..... refer to page 36.

WHILE KNITTING THE PATTERN

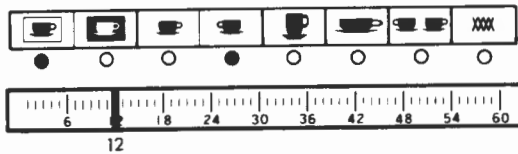
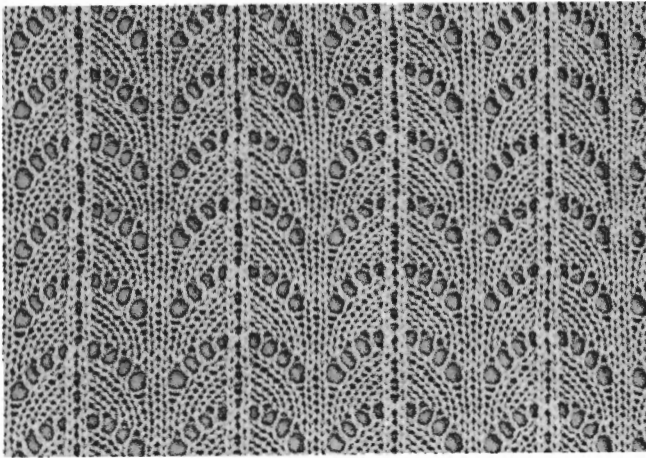
Knit slowly and in a even speed following the arrow mark given on the Pattern Card.

If the direction of knitting is not corresponding with the arrow marks, the lace stitch pattern will be knitted differently or will not be formed.



In lace knitting, decreasing or increasing stitches, regardless of single or multiple stitches, must be done on the side opposite the Carriage, and move the Point Cam on the same side to the new position before knitting the next row.

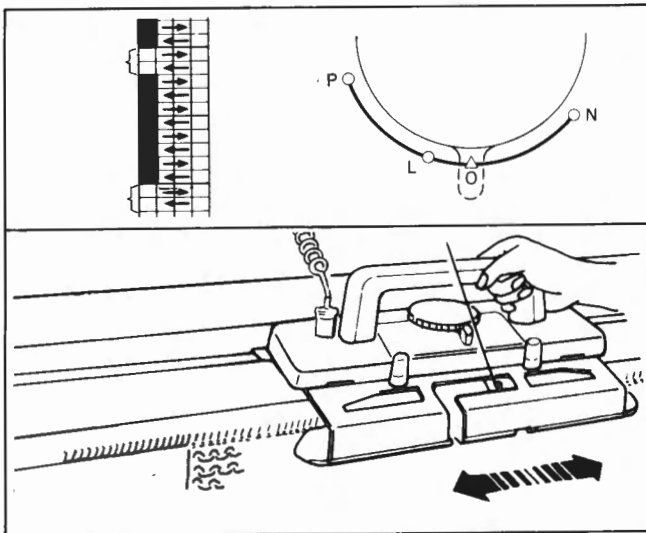
FASHION LACE



On a certain row, only transferring stitches proceeds without knitting.

The sample is knitted with the Pattern No.4-L-(15).

Following the Preparatory Steps given on pages 41–42, prepare for knitting the lace stitch pattern, and have the Carriage at the right side of the working needles.

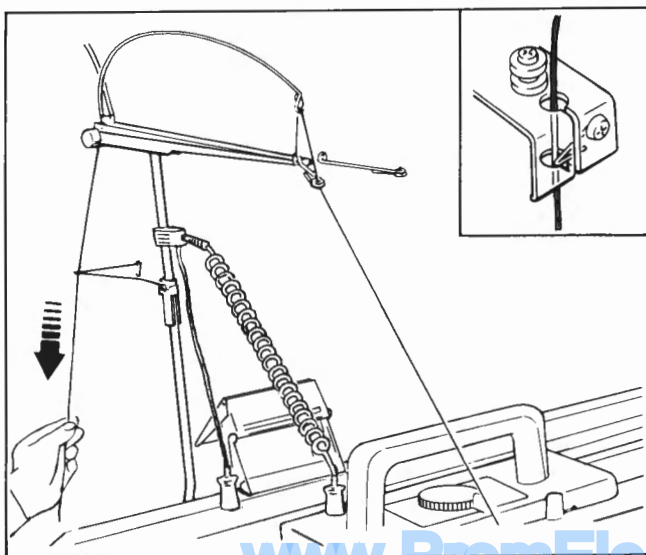


BEFORE KNITTING THE PATTERN

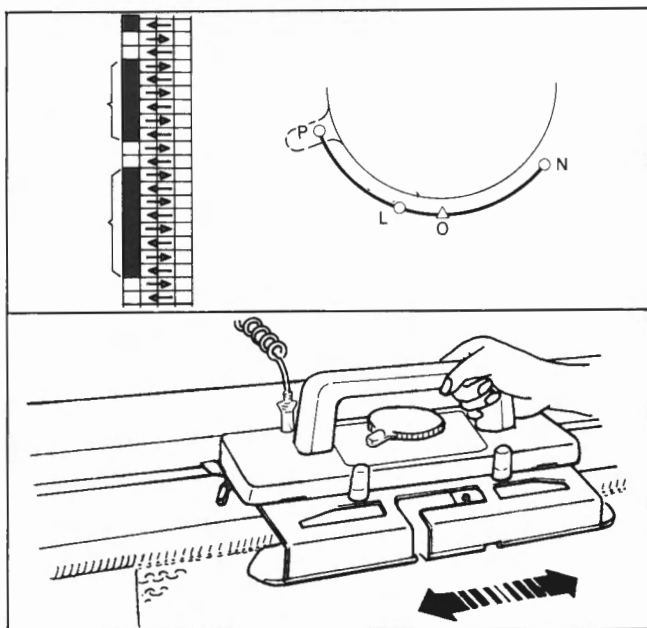
Set the Stitch Dial to the suitable number for the knitting yarn referring to page 36.

WHILE KNITTING THE PATTERN

For the pattern rows corresponding with the white rows in the Notation Column, knit with the Cam Lever set at "0".

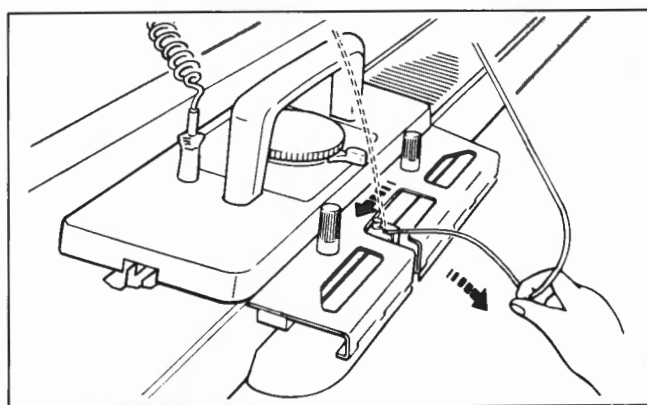


When the yarn is put again into the Yarn Feeder, set it behind the Guide Pin correctly, and pull up the slack on the yarn at the back of the Yarn Rod.

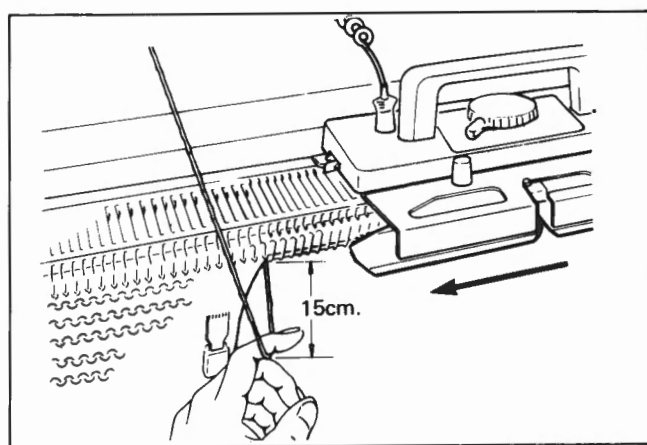


For the pattern rows corresponding with the black marks in the Notation Column, move the Carriage back and forth with its Cam Lever set at "P", and without yarn in the Yarn Feeder.

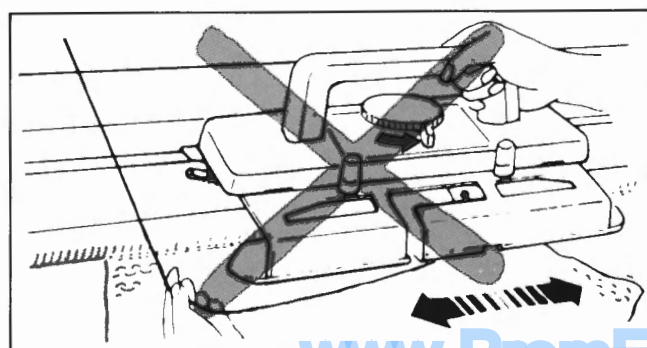
Only the selected stitches are transferred onto their adjacent needles, and the Knit Contour and Row Counter will stop while transferring stitches only is in progress.



When the black mark in the Notation Column reaches the Card Slit, (the Carriage should be at the right side) remove the yarn from the Yarn Feeder.

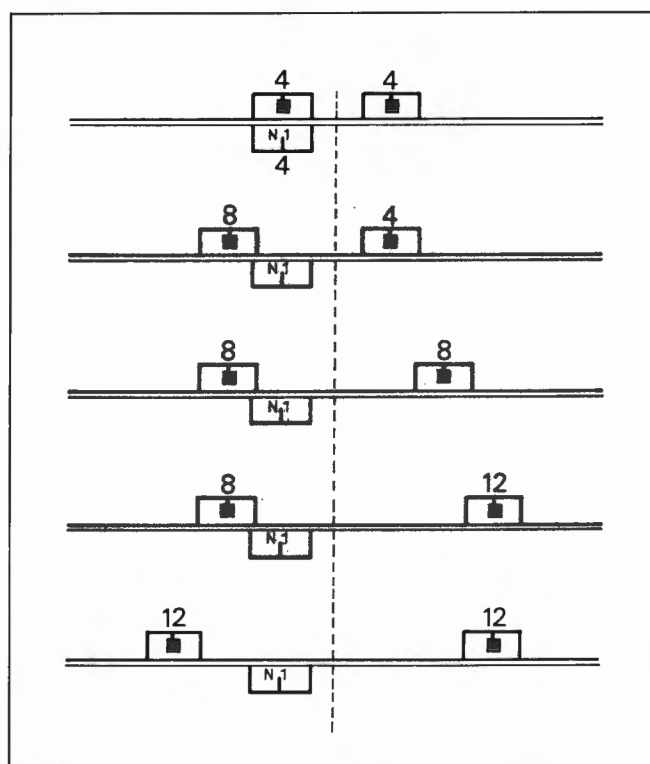
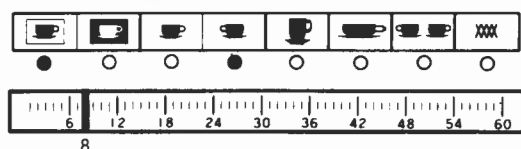
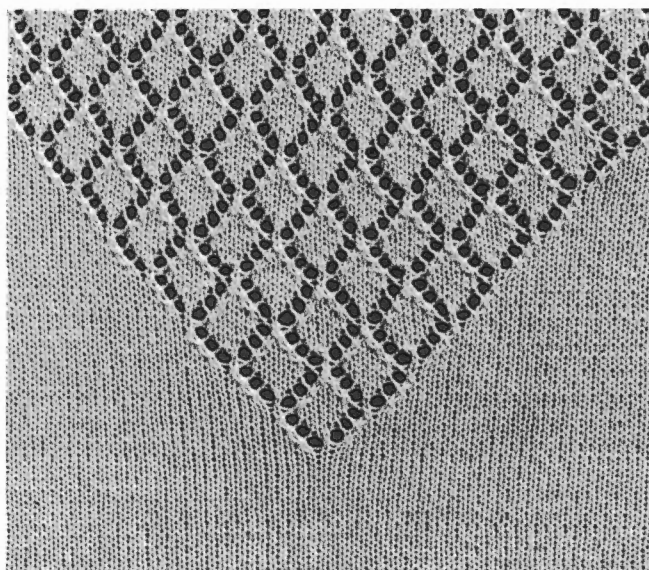


The yarn removed from the Yarn Feeder must be held on your finger and kept away from the Arm to prevent it from entangling into it.



When the yarn is removed from the Yarn Feeder, DO NOT move the Carriage with the Cam Lever set at "L", the fabric will be released from the needles.

SECTIONAL KNITTING



By changing the positions of the Point Cams, single motif or sectional knitting can be worked on the fabric in lace stitch.

The sample is knitted with the Pattern No.1—L—(1).

Pattern row number 1 – 6

Set the Point Cam and Needle-1 Cam as shown opposite. With the Cam Lever at "L", start from the right side to knit 6 rows.

Change the position of the Point Cam.

Pattern row number 7

Knit 1 row from right to left.

Change the position of the right Point Cam.

Pattern row number 8 – 13

Knit 6 rows.

Change the position of the right Point Cam.

Pattern row number 14

Knit 1 row.

(Pattern Card moves back to the row 1.)

Change the position of the left Point Cam.

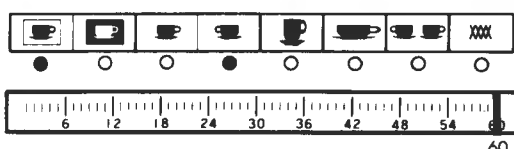
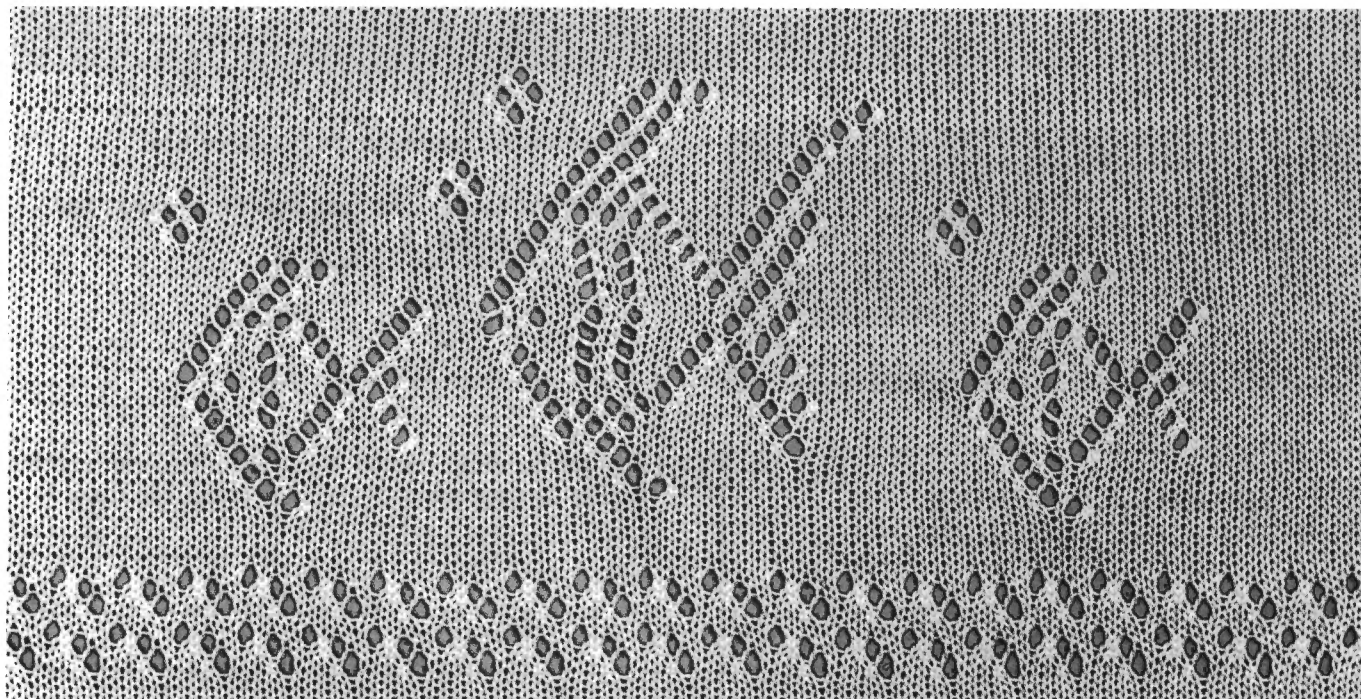
Pattern row number 1 – 6

Knit 6 rows.

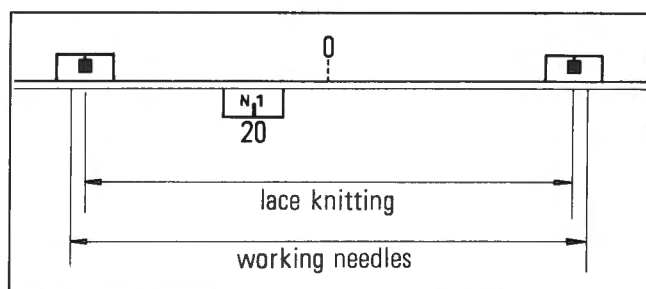
Change the position of the Point Cam.

Repeat the above steps.

By changing the position of the alternate Point Cam at the side opposite the Carriage, expand the section to be knitted in lace stitch.

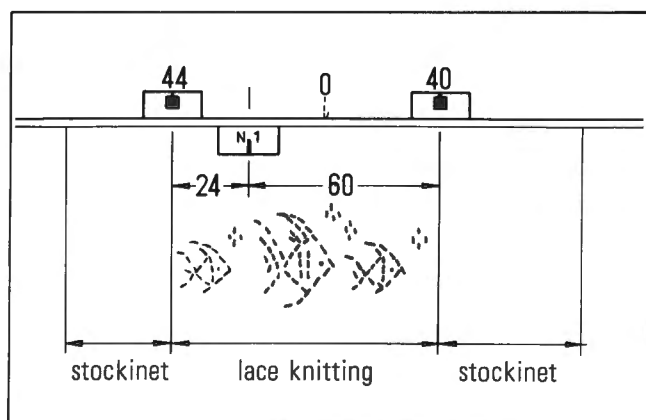


The sample is knitted with the Pattern No.3-L-(11).



Pattern row number 1 – 11

Set the Point Cams and the Needle-1 Cam as shown opposite. Knit with the Cam Lever at "L".



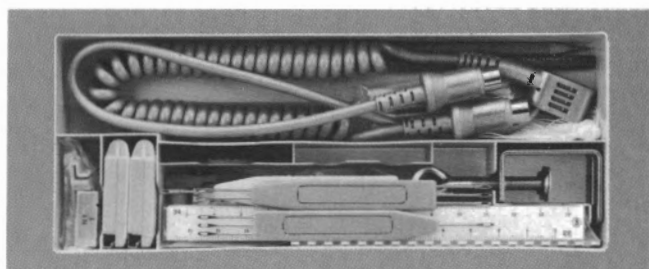
Pattern row number 12 – 68

Change the position for the Point Cams and the Needle-1 Cam as shown opposite and continue to knit in the same Cam Lever setting.

(It is not necessary to move the Carriage without knitting to memorize the new position, because there are 7 rows for stockinet before the lace pattern start again.)

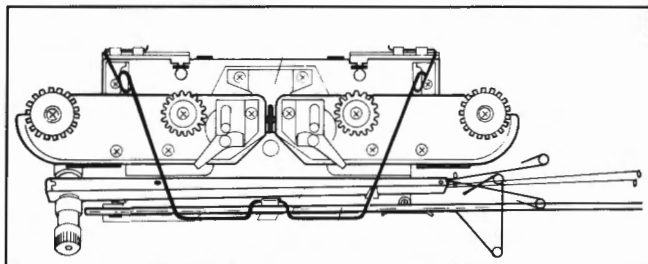
When the Pattern Card has returned to the first row, set the Cam Lever to "0", and knit in stockinet as many rows as you desire.

REPACKING THE KNITTER

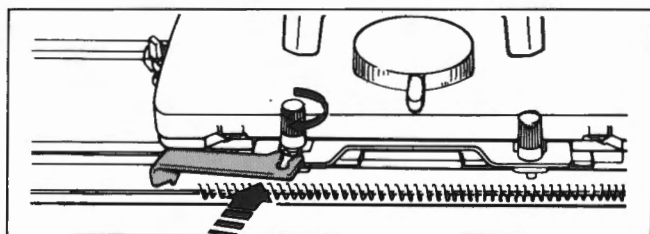


Replace the Accessories in the Accessory Box.

Remove the Pattern Card from the Pattern Card Panel.
Do not fold or bend it.



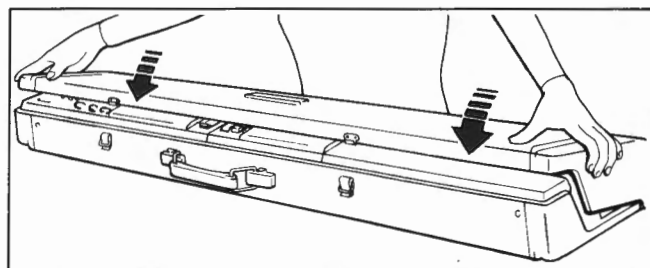
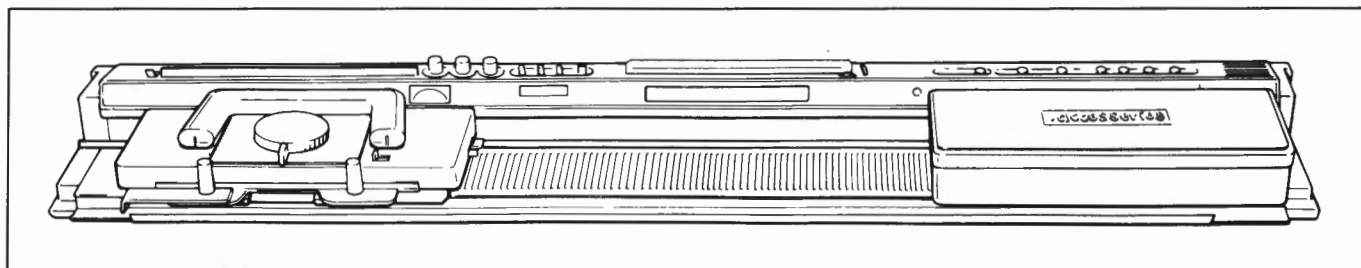
Remove the Auto-Tension and the Knitter Arm from the Knitter Carriage and pack them inside the Top Cover.



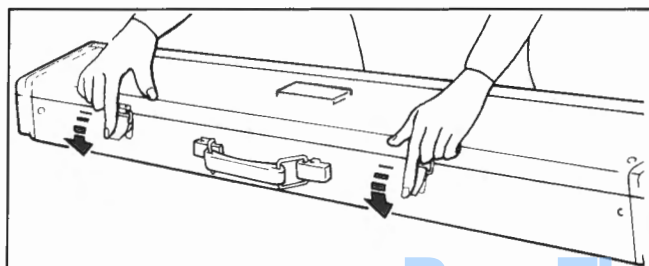
Secure the Carriage to the Needle Bed with the Carriage Fastener.

Lay the Carriage Handle down.

Replace the Accessory Box on the right end of the needle bed.



Place the Top Cover onto the Needle Bed.



Fasten the latches.

TO STORE THE MACHINE

Keep the machine away from.

1. Too much moisture.
2. Abnormal change of temperature.
3. Salt or chemicals.

TO USE THE RIBBER

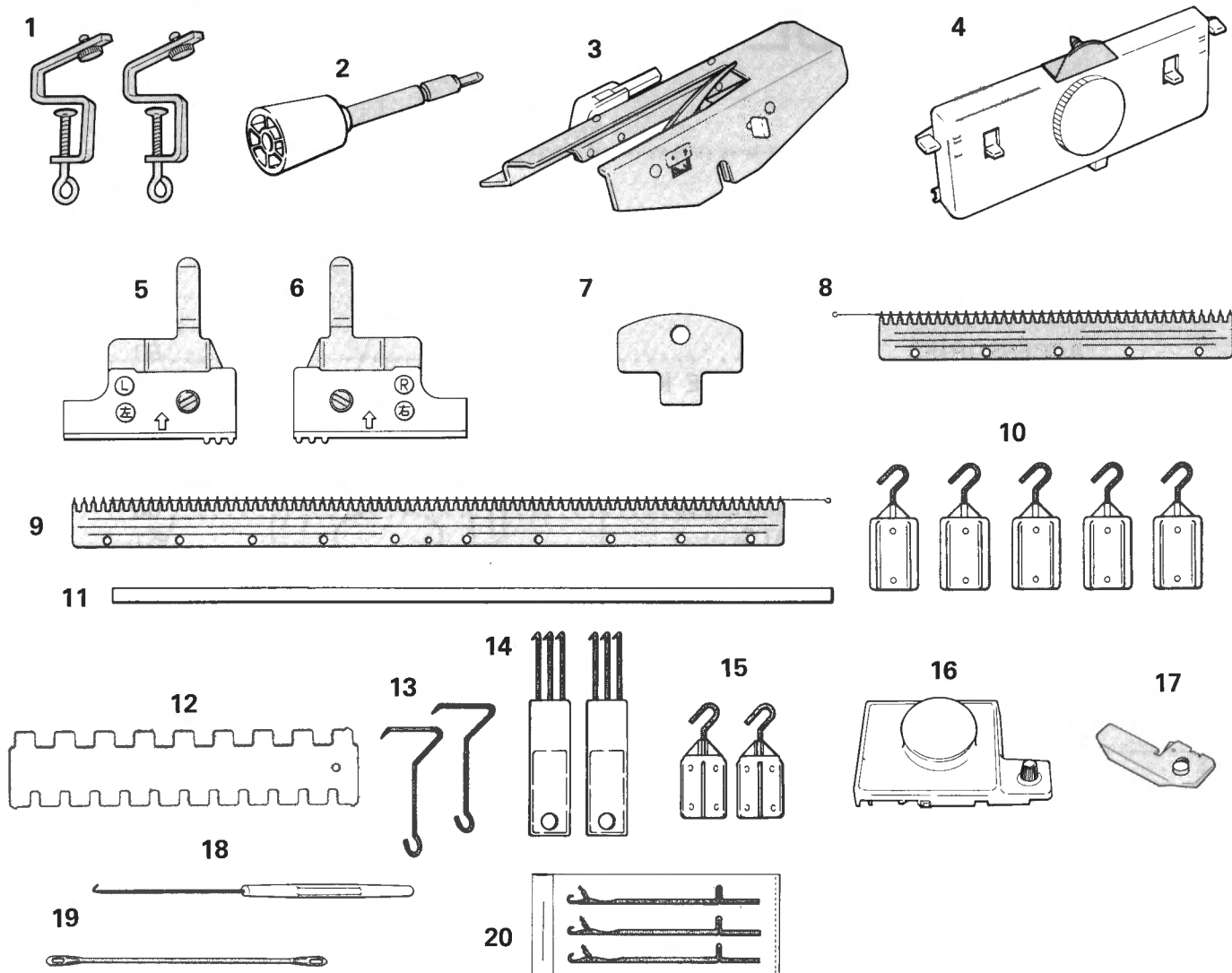
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ACCESSORIES

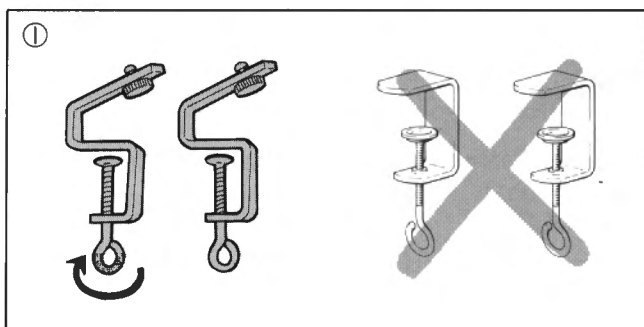
Of the accessories included with the Ribber, followings are needed when you use the Ribber on the Model 560 knitter.

Please be careful, when unpacking accessories, not to lose Close Knit Bar (No.11).



- | | |
|--------------------------|--|
| 1 Ribber Clamp | 11 Close Knit Bar |
| 2 Swing Handle | 12 Needle Pusher (2/1, 2/2) |
| 3 Ribber Arm | 13 Side Hanger |
| 4 Ribber Carriage | 14 Hanger Comb |
| 5 Auxiliary Piece (L) | 15 Edge Weight |
| 6 Auxiliary Piece (R) | 16 P Carriage |
| 7 Screw Driver | 17 P Presser |
| 8 Cast-on Comb (short) | 18 Hook Tool |
| Cast-on Wire (short) | 19 Double-eye Transfer Tool |
| 9 Cast-on Comb (long) | 20 Spare Needle Envelope (incl. 3 needles) |
| Cast-on Wire (long) | |
| 10 Ribber Weight (large) | |

SETTING THE RIBBER TO THE KNITTER



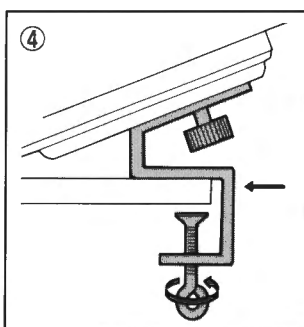
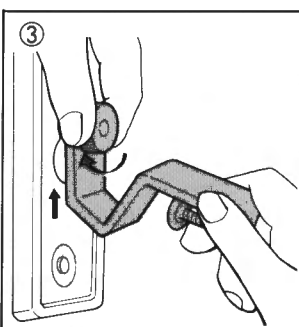
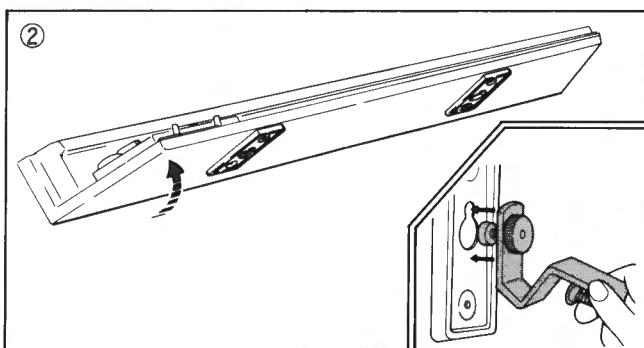
Set up Knitter

Set up Knitter referring to pages 3–4, but the following differences must be observed so as to attach Ribber.

1. Fasten the Knitter to table, using Ribber Clamps instead of Knitter Clamps.

① Take Ribber Clamps and turn screws in arrow direction as far down as they go.
DO NOT USE KNITTER CLAMPS.

② Raise front of Knitter and insert screw head into keyhole slot.

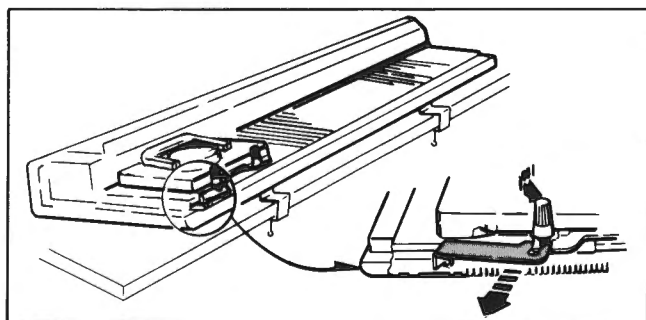


③ Pull clamps upwards and fasten screws.

④ Place clamps on table edge and push them backwards until they are flush with table.

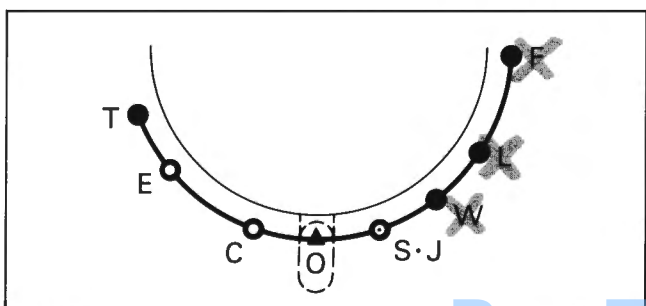
Tighten clamps firmly by turning screws in arrow direction.

DO NOT USE TOO MUCH FORCE.



2. Remove Carriage Fastener.

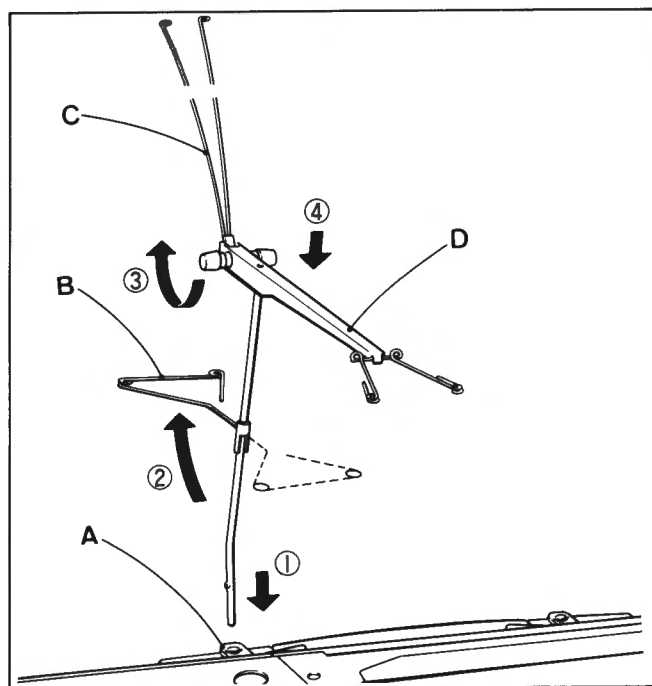
DO NOT ATTACH KNITTER ARM TO CARRIAGE.
LACE CARRIAGE CAN NOT BE USED WITH RIBBER.



3. Set Cam Lever to "O" (STOCKINET).

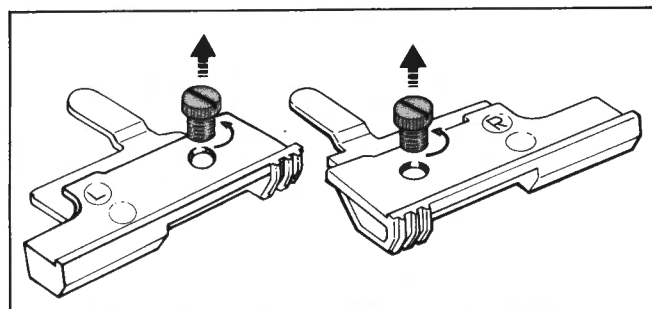
IMPORTANT:

Cam Lever should never be set to "L" (PUNCH LACE), "F" (KNIT-IN) or "W" (WEAVING) when using Ribber.



4. Assemble Auto-Tension and Yarn Rod as follows.

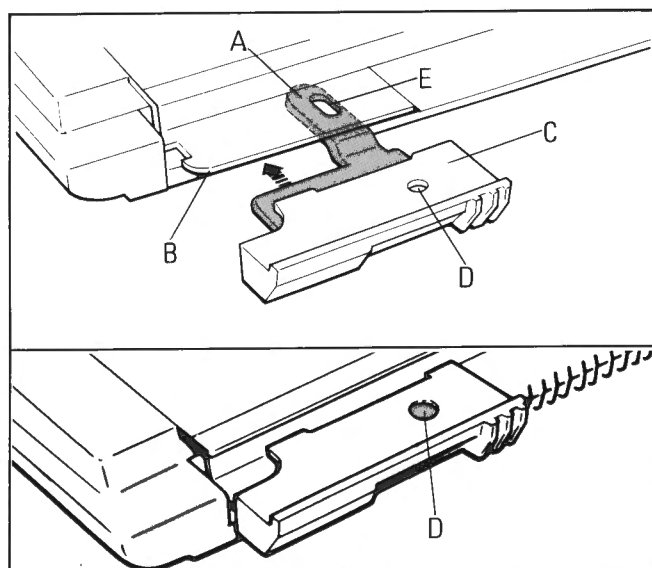
- ① Insert the bent and short end of Yarn Rod into the bracket socket "A".
- ② Turn Tension Guide "B" to the back.
- ③ Turn Tension Springs "C" upwards till it clicks into position.
- ④ Place Auto-Tension "D" securely onto Yarn Rod.



Attach Ribber Needle Bed to Knitter

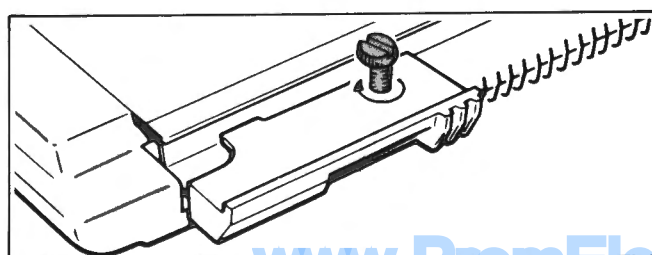
Take out Auxiliary Pieces, marked "L" and "R", and insert them into left and right ends of Knitter Needle Bed respectively as instructed below.

1. Remove Ribber Joiner Screws.

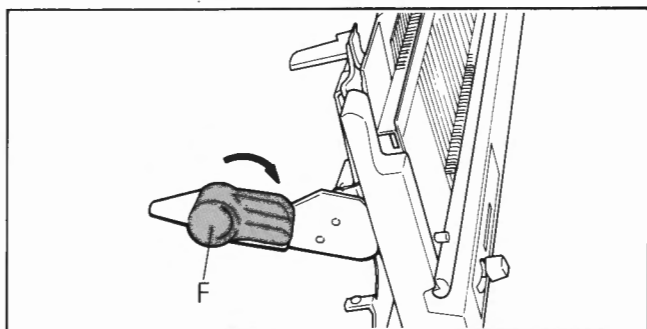
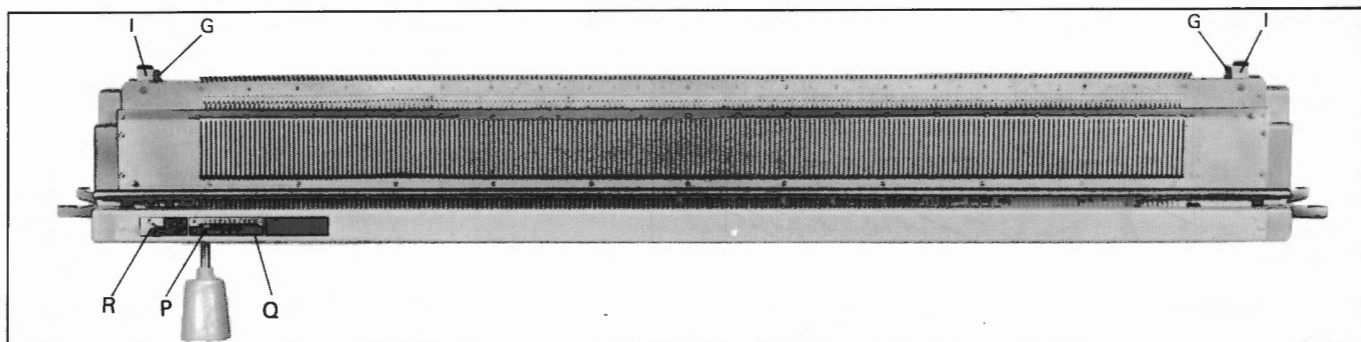


2. Insert finger "A" of Auxiliary Piece into underneath the front edge "B" of Knitter Bed and push backward until plastic part "C" of Auxiliary Piece covers front edge of Bed.

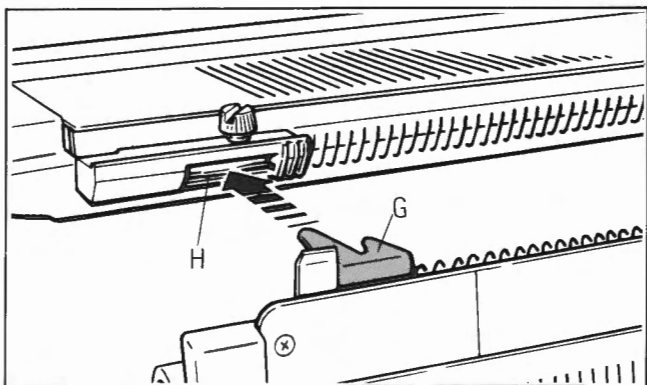
Ensure hole "D" of Auxiliary Piece corresponding with slot "E" on Bed.



3. Insert Ribber Joiner Screws on left and right side into Auxiliary Pieces and fasten by 3-4 turns only.

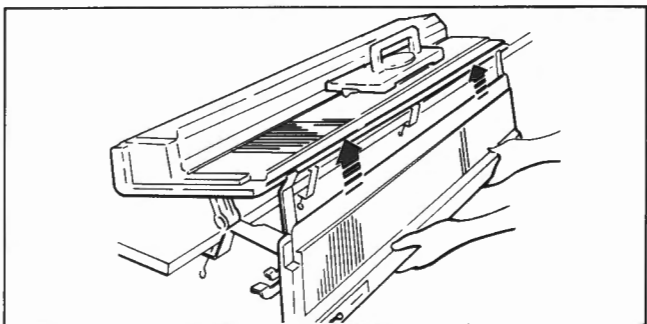


4. Bring down both Push-up Cams "F" forward.



5. Hold Ribber with both hands and insert Ribber Joiners "G" on both sides into slots of Auxiliary Pieces "H".

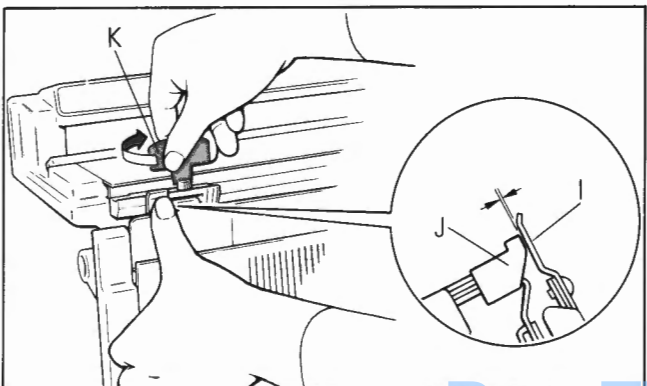
It will be easier to insert the right side first, then the left side.



CHECK POINT

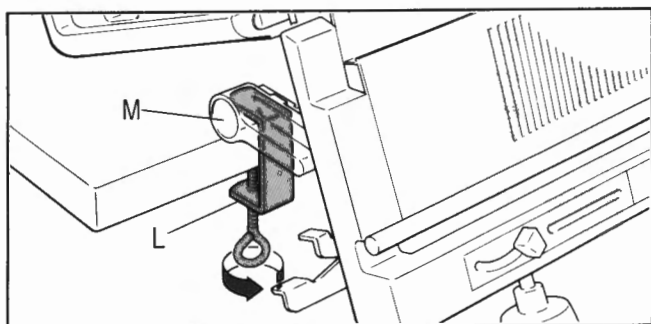
Ensure Ribber Needle Bed is at its highest position.

If not push the Bed with both hands as far up as it goes.



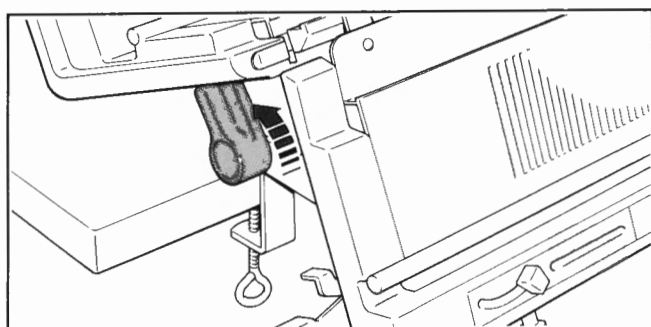
6. Push Ribber on both sides towards Knitter until there is no clearance between Ribber Stopper "I" and Auxiliary Piece "J".

Fasten both screws with Screw Driver "K".

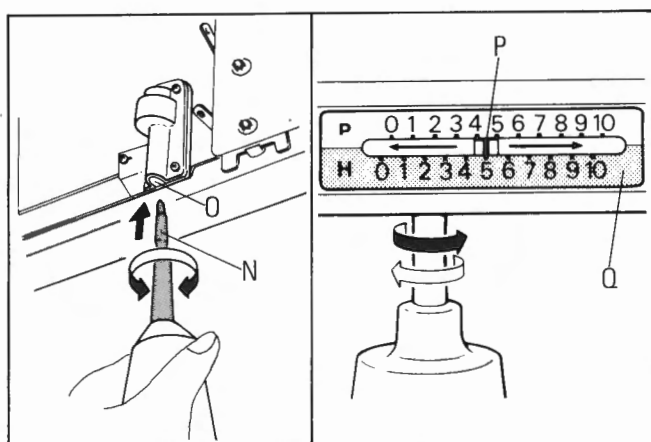


7. With Knitter Clamps "L", secure foot of Push-up Cams "M" on table.

DO NOT USE TOO MUCH FORCE.



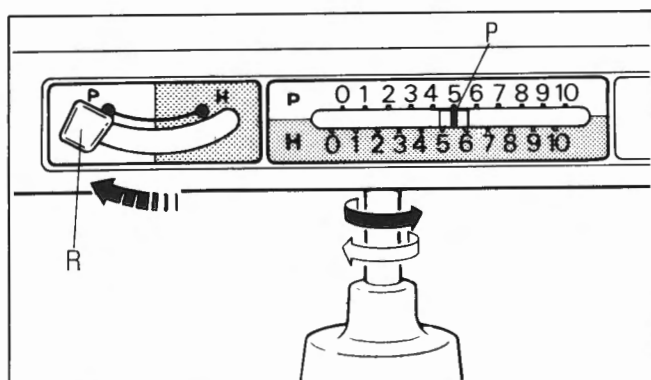
8. Raise both Push-up Cams in arrow direction.



9. On back of left side of Ribber, insert Swing Handle shaft "N" from underneath into Swing Bearing "O".

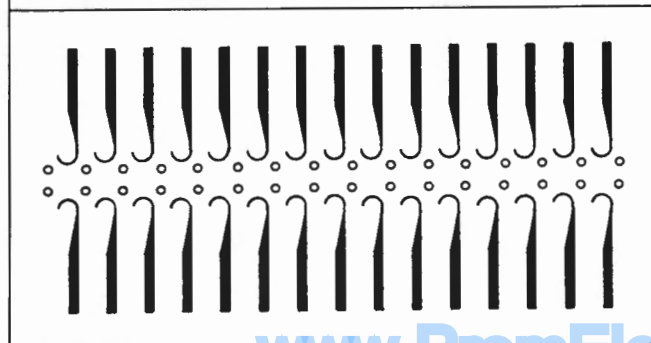
Push Handle in a twisting manner until you hear a click with a slight jerk.

Ensure that Pointer "P" on Swing Indicator "Q" moves when turning Handle to the left and the right.



10. Set Half-Pitch Lever "R" to P (left side).

By turning Handle, set Indicator Pointer "P" at 5 on upper scale P.

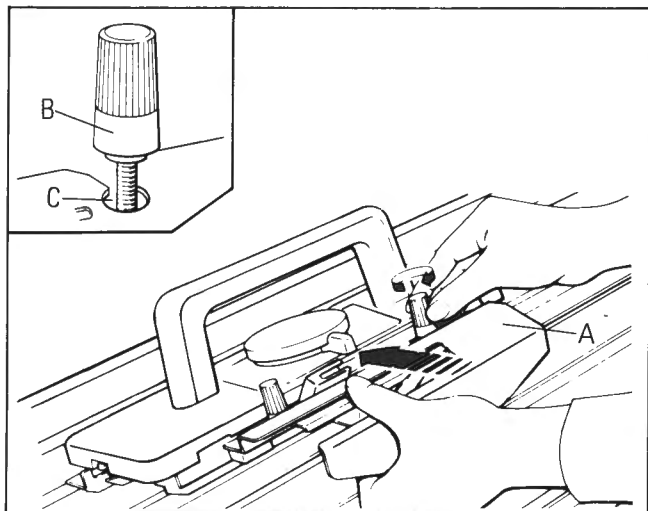


CHECK POINT

When joining Ribber to Knitter has been finished, check the positioning of Ribber against Knitter by pushing up several needles on both beds up. The needles on both beds must confront with each other as shown.

If not, loosen Ribber Joiner Screws and Clamps securing Push-up Cams, then pat lightly either end of Ribber. Then fasten them again.

The needles pushed up must be back to original position.



Assemble Ribber Arm to Knitter Carriage and Ribber Carriage to Ribber Needle Bed.

1. Loosen both Arm Nuts of Knitter Carriage.

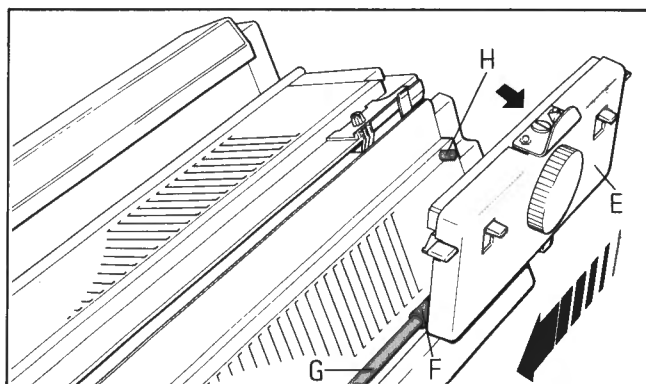
Take Ribber Arm "A" and slide it under two Arm Nuts "B".

Push Ribber Arm as far back as it goes and tighten Arm Nuts firmly by turning them in arrow direction.

IMPORTANT

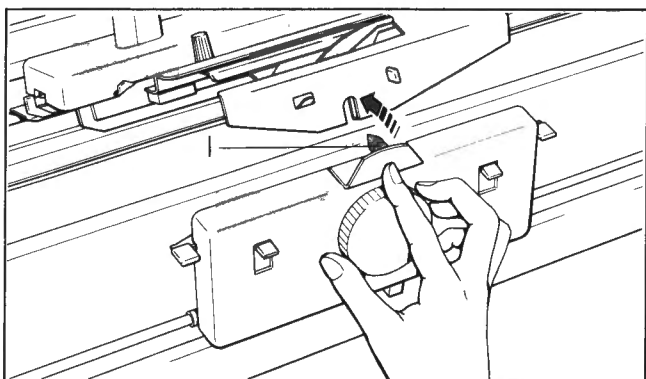
Ensure that Arm Nuts "B" fit correctly into cutout "C" of Ribber Arm.

If Cam Lever is set at "F" (KNIT-IN) or "L" (PUNCH LACE), Ribber Arm will not fit on Knitter Carriage.



2. Take Ribber Carriage "E", and fit its pipe "F" on the Ribber Rail "G" from the right side.

Tilt the Ribber Carriage towards you to clear the Stopper Pin "H".

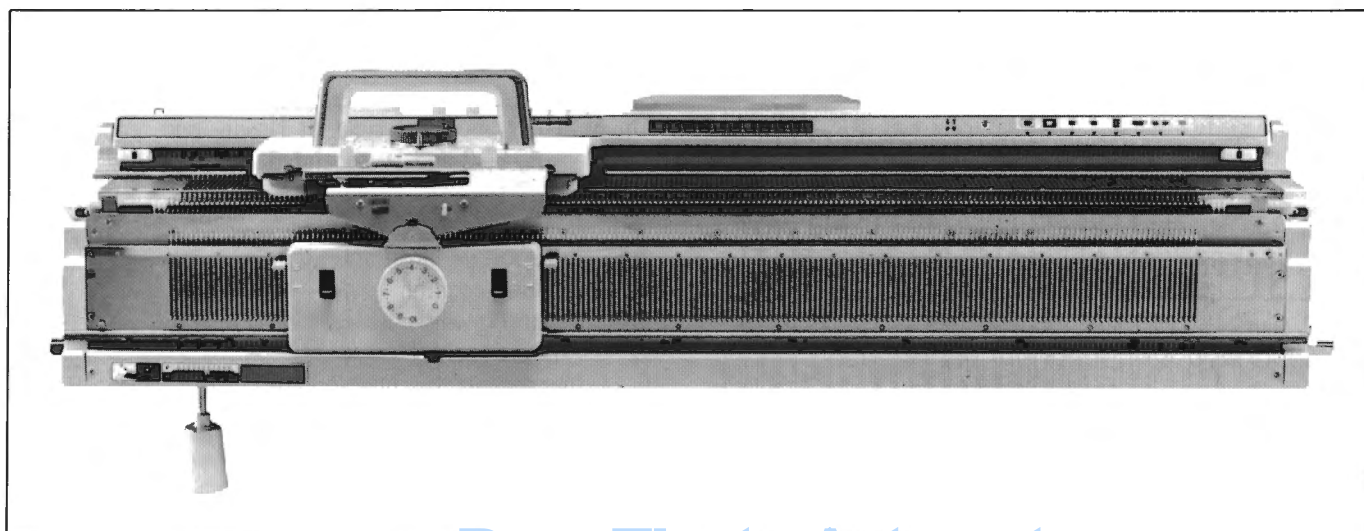


3. Move Carriage to Knitter Carriage.

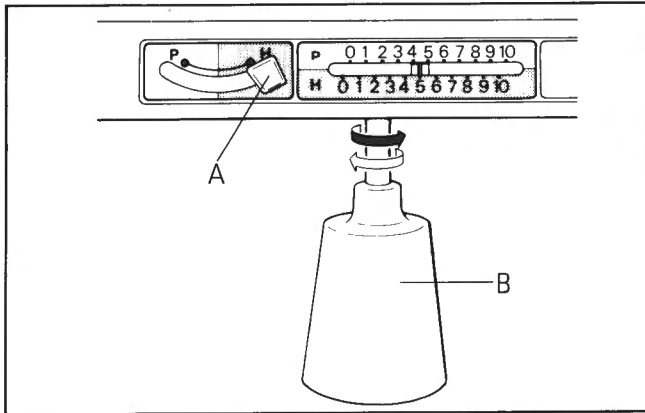
Push in Link Pin "I" into the slot of Arm until you hear a click.

CHECK POINT

Move Carriage a few times across Needle Bed to ensure Knitter/Ribber Carriage and Ribber Arm are assembled correctly.



RIBBER NEEDLE BED



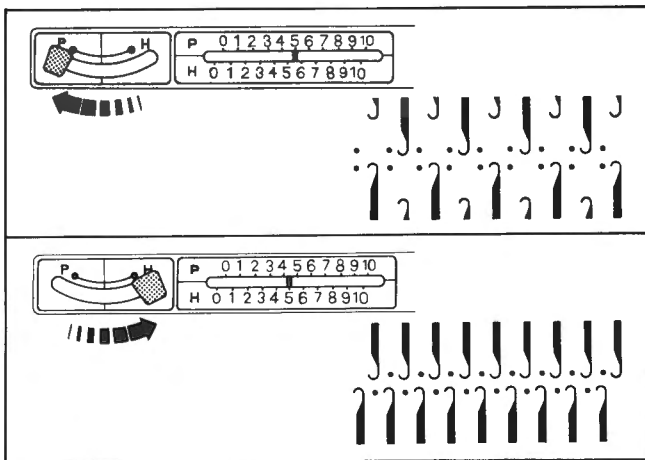
Half-Pitch Lever and Swing Indicator

There are two setting positions (P or H) for Half-Pitch Lever "A" for Ribber needle against Knitter needle.

Position of Ribber needle against Knitter is subject to the setting of Half-Pitch Lever.

Swing Handle

By rotating Swing Handle "B" either to the right or left, Ribber Needle Bed can be moved to either right or left.



Swing Indicator "C" shows the position of Ribber needle on P scale (upper) or on H scale (lower).

P position

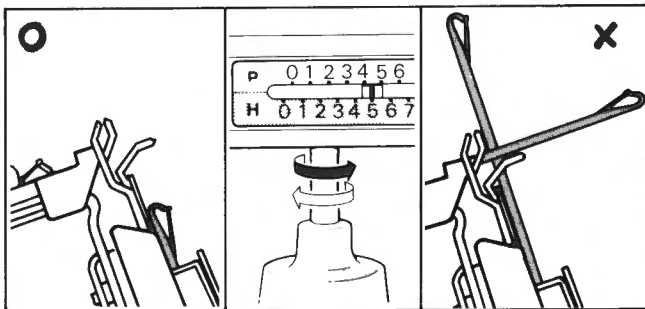
Half-Pitch Lever is set to P when every other needle selection is used.

Read the number on P scale (upper) of Swing Indicator.

H position

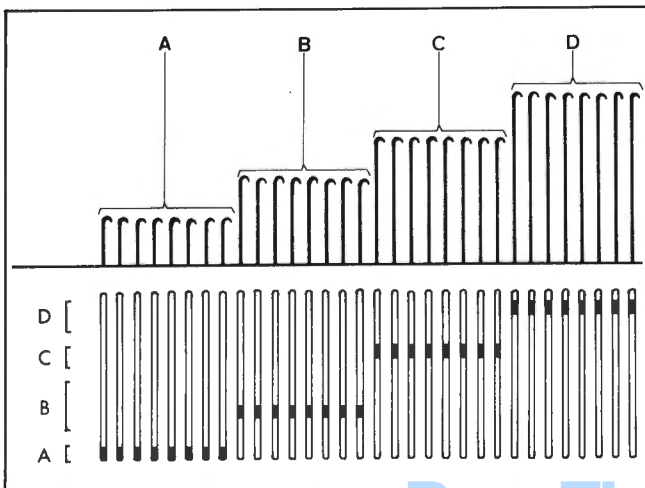
Half-Pitch Lever is set to H when every needle selection is used.

Read the number on H scale (lower) of Swing Indicator.



IMPORTANT:

Do not turn Swing Handle when needles on Ribber are crossed with those of Knitter.



Needle Positions

On both left and right sides of Needle Bed, you will see markings A, B, C and D associated with brackets "]".

These four needle positions are selected during knitting.

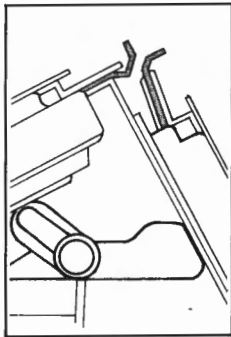
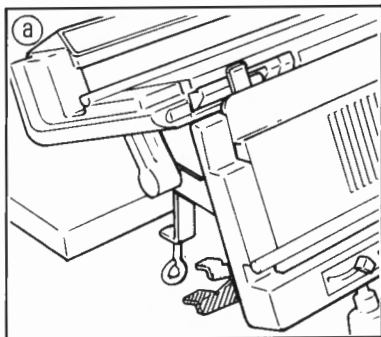
A — Non-working position

B — Working position

C — Needles in this position always operate.

D — Holding position

(Needles in this position are knitted back to B position when Russel Levers are at = position.)

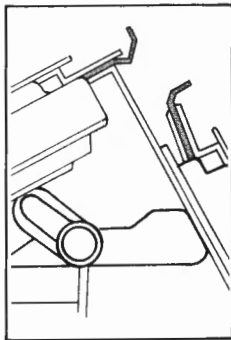
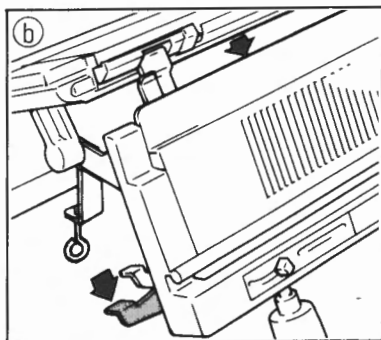


Drop Levers

On both left and right sides of Needle Bed you will find Drop Levers (marked red). Using these levers you can change position of Needle Bed.

(a) Top position (knitting position)

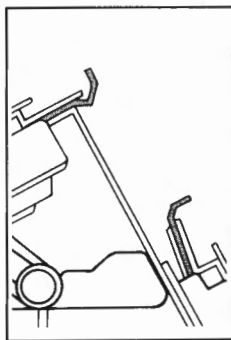
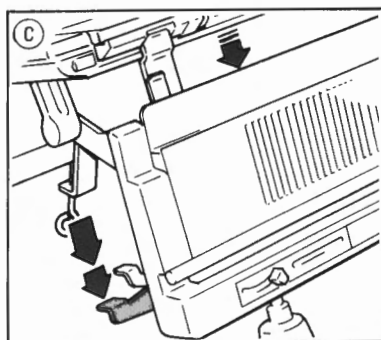
This position is used for knitting rib stitches.



(b) Middle position

Depress Drop Levers on both sides once, and Ribber Bed is lowered to its middle position.

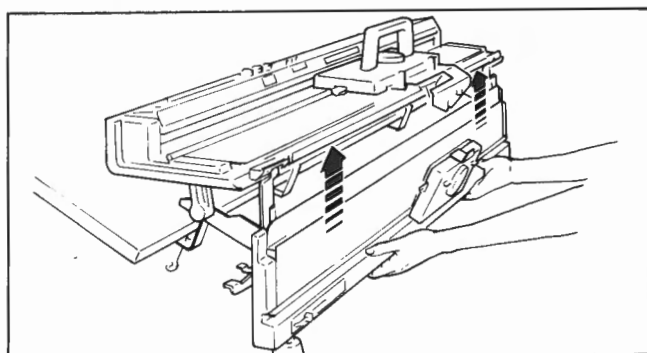
This position is used when picking up stitches.



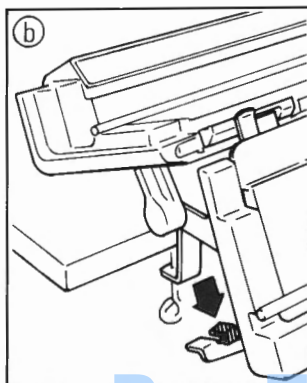
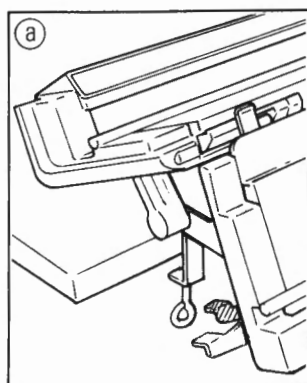
(c) Lowest position

Depress Drop Levers twice, and Ribber Bed is lowered to its lowest position.

This position is used when knitting only on Knitter.



To restore Ribber Bed to its top position, lift up both ends of the Bed with your hands.



Pile Levers

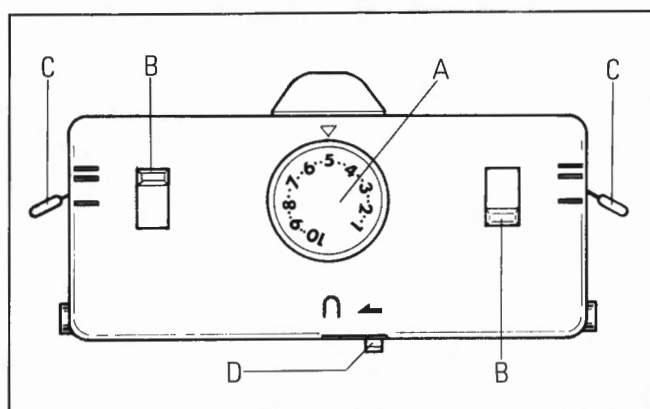
Above Drop Levers, Pile Levers (marked blue) are located, and are used to broaden the distance between Knitter and Ribber.

(a) For normal knitting ensure both Pile Levers are in upper position.

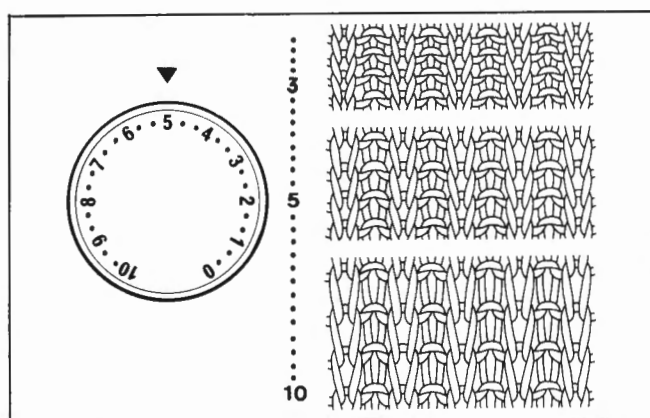
(b) For pile knitting ensure both Pile Levers are in lower position.

To restore the levers to upper position, lift them up with your hands.

RIBBER CARRIAGE



- A — Stitch Dial
- B — Set Levers
- C — Russel Levers
- D — Pick Knob



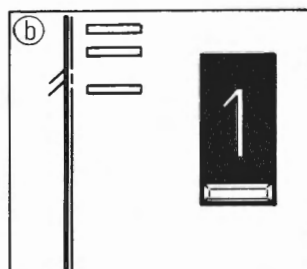
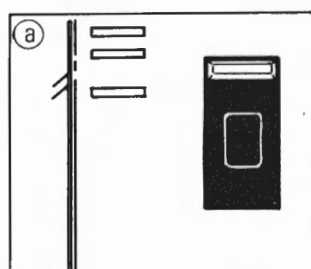
Stitch Dial

Controls stitch size.

Set a selected number or dot to ▼ mark.

The larger the number the larger the stitch, and the smaller the number the smaller the stitch.

According to the thickness of yarn to be used, select proper setting of Stitch Dial. (Refer to page 61.)

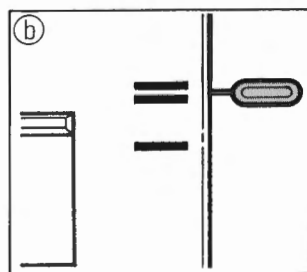
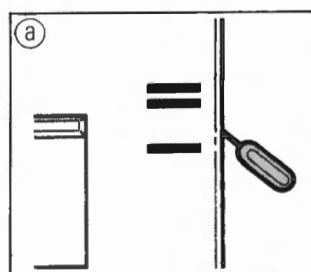


Set Levers

Control needles in "B" position.

- (a) NON KNITTING POSITION, needles in B position will not knit.
- (b) KNITTING POSITION, needles in B position will knit.

Left lever works when moving Carriage to the left.
Right lever works when moving Carriage to the right.

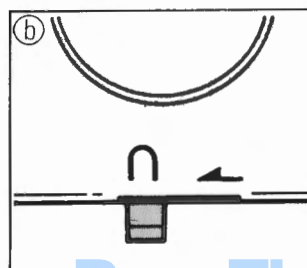
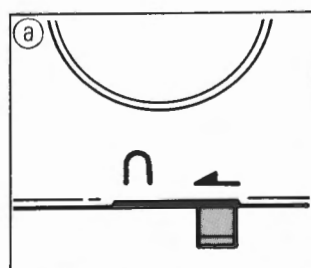


Russel Levers

Control needles in "D" position.

- (a) NON KNITTING POSITION, needles remain in D position.
- (b) KNITTING POSITION, needles in D position will knit back to B position.

Left lever works when moving Carriage to the left.
Right lever works when moving Carriage to the right.

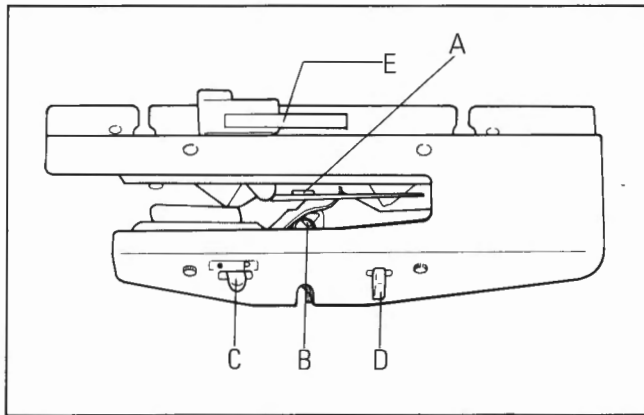


Pick Knob

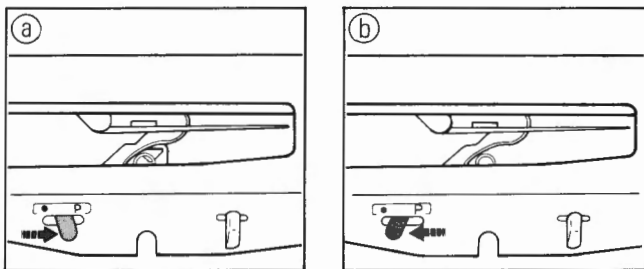
Works on the needles in B position when Set Lever on the leading side is set at 0.

- (a) NON KNITTING POSITION, yarn is not knitted.
- (b) PICK POSITION, yarn is laid into needle hook only.

RIBBER ARM

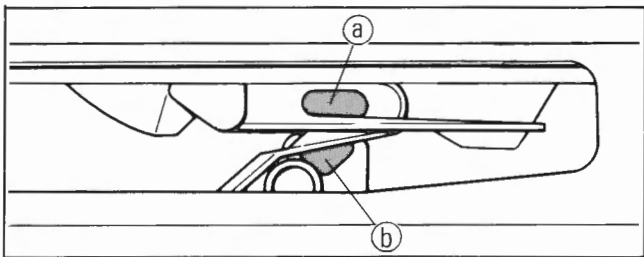


- A — Main Yarn Feeder
- B — Auxiliary Yarn Feeder
- C — Auxiliary Yarn Feeder Lever
- D — Link Knob
- E — Driving Lever



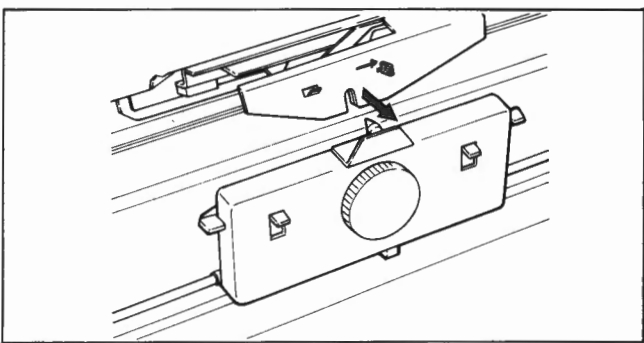
Auxiliary Yarn Feeder Lever

- (a) In pile knitting only, set this lever to P mark.
- (b) In ordinary knitting, be sure to set this lever to ● mark.



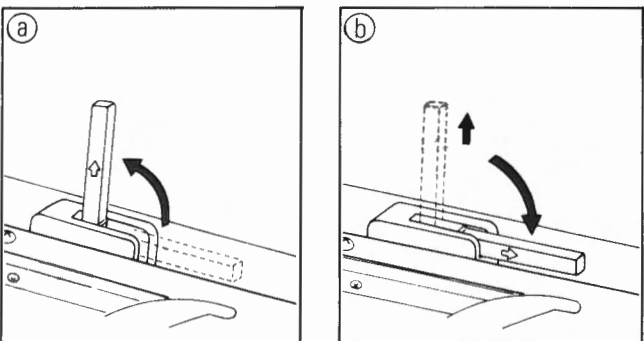
Yarn Feeders

- (a) Main Yarn Feeder, used for ordinary rib stitches.
- (b) Auxiliary Yarn Feeder, used with Main Yarn Feeder in pile knitting only.



Link Knob

Push the Knob to the right to disconnect Ribber Carriage.

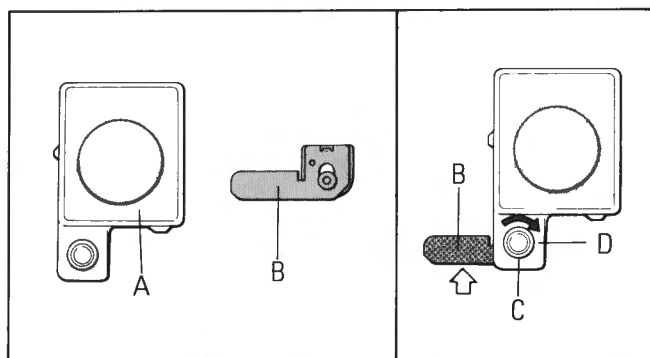


Driving Lever

- (a) When knitting with Yarn Changer, raise this lever.
- (b) When knitting without Yarn Changer, keep this lever in the rest position.

To lay down, slightly pull it upwards with your fingers and then lay it down.

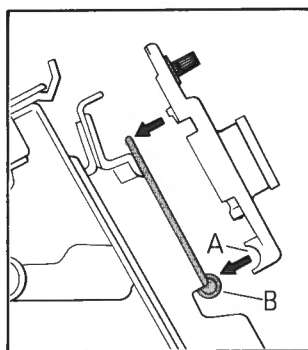
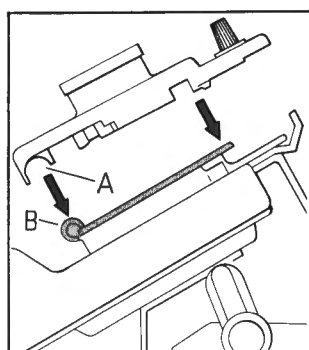
P CARRIAGE



In drive lace knitting, use P Carriage "A" without P Presser "B".

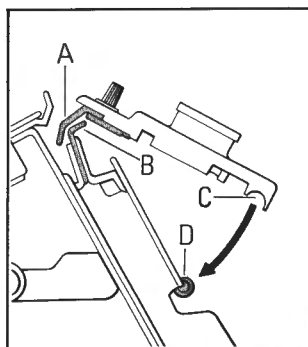
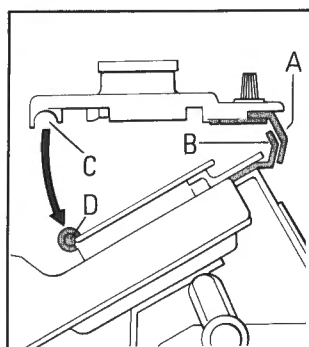
In pile knitting, use P Carriage "A" with P Presser "B" attached.

Place P Presser "B" underneath Arm "C" and secure with fastening screw "D".



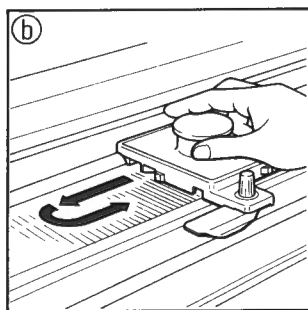
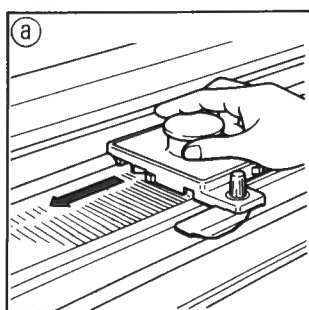
WITHOUT P PRESSER

Place P Carriage straight onto Knitter or Ribber Needle Bed ensuring rail guide "A" fits correctly on rail "B".



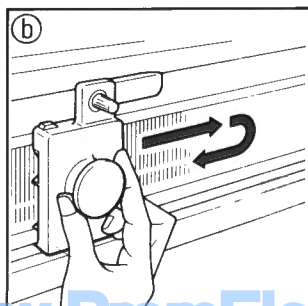
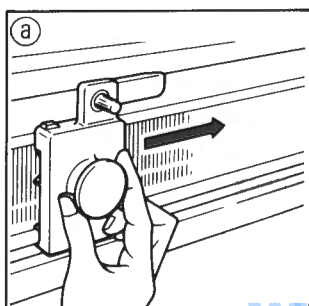
WITH P PRESSER ATTACHED

Place P Presser "A" first over Sinker Posts "B" thereafter place rail guide "C" onto rail "D".



On Knitter always start from the right side.

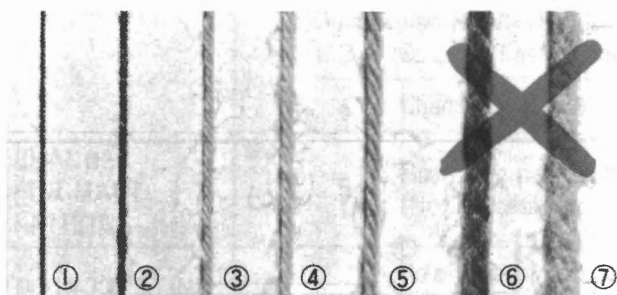
- Ⓐ Move P Carriage once (right→left).
Stitches will be behind latches and needles are aligned in C position.
- Ⓑ Move P Carriage twice (right→left→right).
Stitches have slipped off needles.



On Ribber always start from the left side.

- Ⓐ Move P Carriage once (left→right).
Stitches will be behind latches and needles are aligned in C position.
- Ⓑ Move P Carriage twice (left→right→left).
Stitches have slipped off needles.

YARN AND STITCH DIALS



Stitch Dial setting will vary according to thickness of yarn and type of knitting.

For your reference, recommended numbers are instructed below.

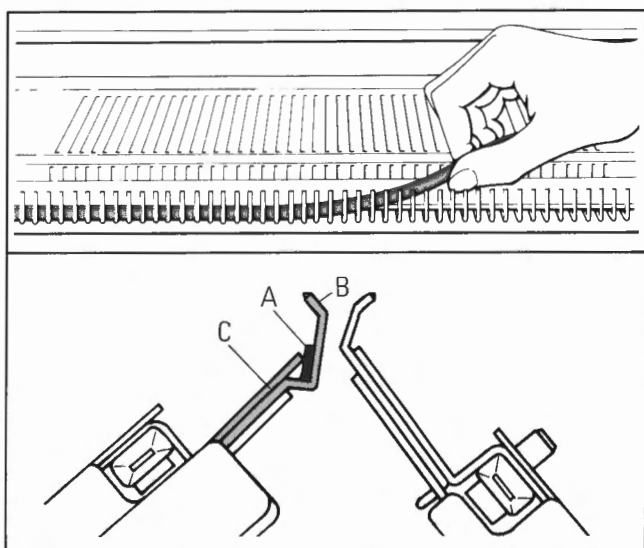
Photograph shows actual size of yarns.

Very thick yarns (6, 7) are not suitable for rib knitting.

The table below shows the recommended Stitch Dial settings for each type of yarn and type of knitting.

TYPE OF YARN		thin ① ②		light ③	medium ④		thick ⑤	
TENSION DIAL		7		5 – 7		3 – 5		1 – 3
STITCH DIAL								
CAST ON (every needle selection)	initial row	0	0	0	0	0	0	–
	subsequent rows	0	0	1	1	2	2	–
CAST ON (every other needle selection)	initial row	–	–	0	0	0	0	0
	subsequent rows	–	–	0	0	0	0	2
DOUBLE RIB		0 – 1		1 – 2		3 – 4		–
K1. P1. RIB		–		0 – 1		2 – 3		6 – 7
K2. P2. RIB		–		2 – 3		3 – 4		6 – 7
WIDE RIB *		–		1–2	3–4	3–4	5–6	5–6 7–8
TUBULAR KNITTING *		2–3	4–5	4–5	6–7	5–6	7–8	–

* It is recommended to set the ribber Stitch Dial to two full numbers higher than that of the knitter.



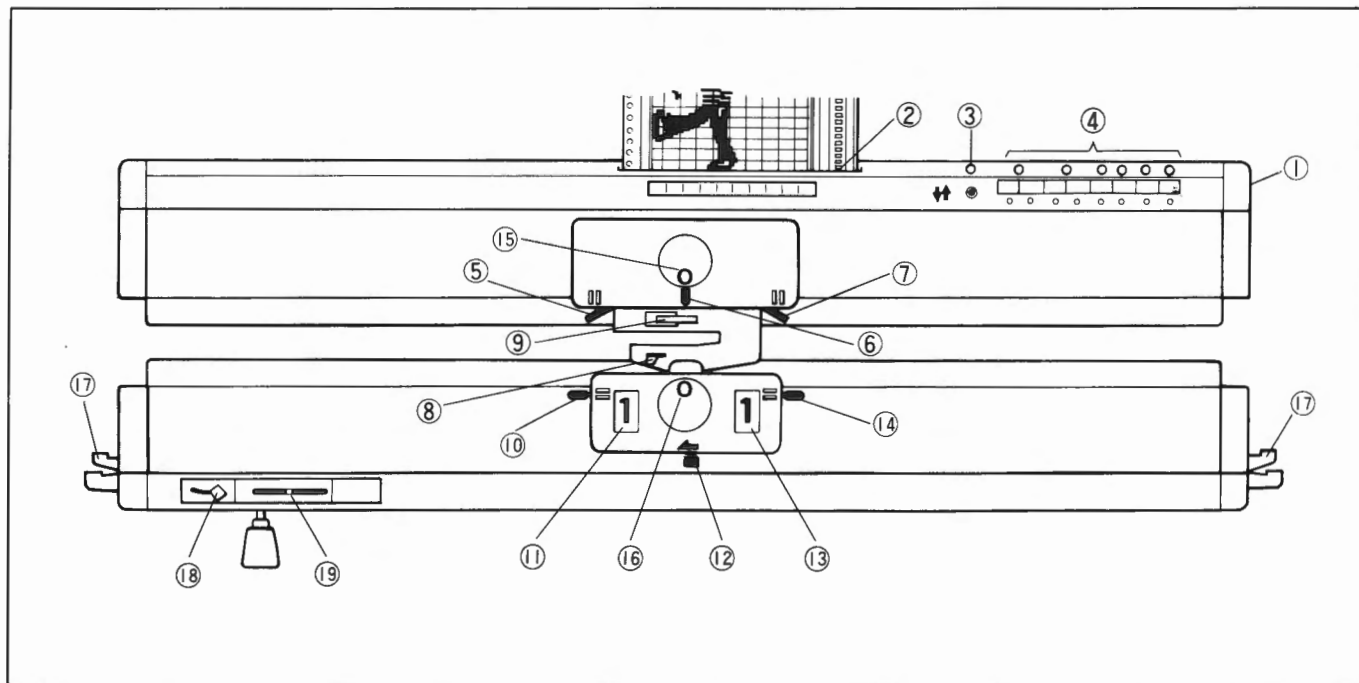
IMPORTANT:

When knitting with thin or light yarns or in tuck ribs with Punch Card, use Close Knit Bar.

Before arranging needles, place Close Knit Bar "A" between Sinker Posts "B" and front edge "C" of Knitter Needle Bed.

OPERATION TABLE

For cast on and main knitting, Operation Table as shown below is given to instruct settings and operation of machine.



	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬	⑭	⑮	⑯	⑰	⑱	⑳
①	1		◎			0		●	→	=	1	←	1	=	0	0	↑	H	5
2																			→
3																			
4						C					0				2	2			≡)3
5																			
②	1					T					1				3	3			5
2																			4



If the diagram shown is given beside the needle arrangement diagram in the Operation Table, set the Point Cams and Needle-1 Cam in the same step.

CAST-ON	①	1	Set machine controls for the initial row.
		2	Arrange needles for knitting the initial row. (Set the Point Cams and Needle-1 Cam when the Pattern Card is in use.)
		3	Suspend Cast-on Comb with Weights.
		4	Change machine controls for knitting subsequent 3 rows.
CHANGES FOR MAIN KNITTING		5	Rearrange needles for main knitting by transferring stitches. (Not necessary if needle arrangement for main knitting is the same for cast-on.)
MAIN KNITTING	②		Re-set machine controls for working main knitting. Follow the sequence 1, 2.....and repeat the same.

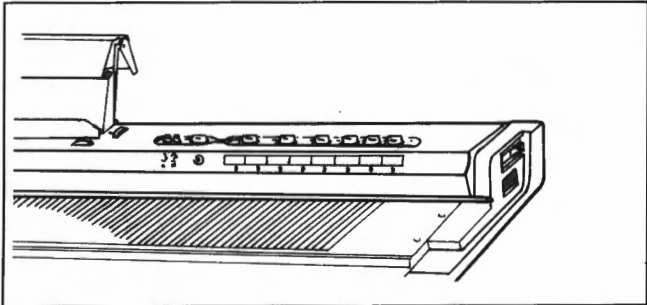
	①	ON-OFF SWITCH	 – Turn ON the machine.
PATTERN CONTROLS	②	Pattern Card	 – Set the Pattern Card.
	③	Inspection Button	 – Light is ON.  – Light is OFF.
	④	Pattern controls	 – Set the pattern controls (Pattern Width, Card Buttons and Pattern Buttons) as instructed.
KNITTER CARRIAGE	⑤	Russel Lever (left)	*
	⑥	Cam Lever	O – STOCKINET T – TUCK E – ENGLISH RIB C – CIRCULAR S – SLIP Never set to F (KNIT-IN), L (PUNCH LACE) and W (WEAVING) in rib knitting.
	⑦	Russel Lever (right)	*
RIBBER ARM	⑧	Auxiliary Yarn Feeder Lever	
	⑨	Driving Lever	 – resting position  – working position
RIBBER CARRIAGE	⑩	Russel Lever (left)	*
	⑪	Set Lever (left)	
	⑫	Pick Knob	
	⑬	Set Lever (right)	
	⑭	Russel Lever (right)	*
STITCH DIALS	⑮	Knitter Stitch Dial	} Refer to table on next page.
	⑯	Ribber Stitch Dial	
RIBBER NEEDLE BED	⑰	Pile Levers (left & right)	 – upper position  – lower position
	⑱	Half-Pitch Lever	
	⑲	Swing Indicator	
	⑳	Arrow mark indicates knitting direction of Carriage and number shows the number of rows required to be knitted.	

* Always set Russel Levers at II and = except for working partial knitting.

CAST-ON AND KNITTING

Following the Operation Table, try cast-on and knitting in Double Rib without using the Pattern Card.

For the rib stitches without using the Pattern Card, the machine is not necessary to be connected to A.C. mains.

[illegible]

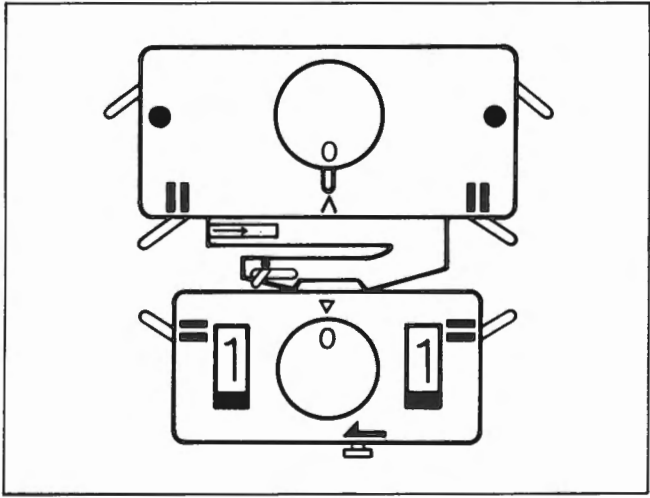
CAST-ON

1 – 1 Set machine controls for the initial row.

ON-OFF SWITCH..... OFF

PATTERN CONTROLS

No Buttons are operated.



STANDARD CARRIAGE

Russel Levers (left & right).....II

Cam Lever....."0" (STOCKINET)

RIBBER ARM

Auxiliary Yarn Feeder Lever.....●

Driving Lever..... resting position

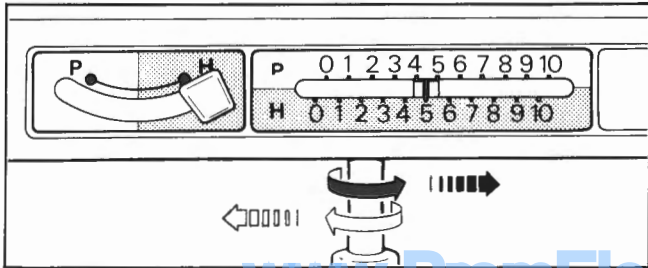
RIBBER CARRIAGE

Russel Levers (left & right).....

Set Levers (left & right).....1

Pick Knob.....▲

STITCH DIALS (Knitter & Ribber)... 0

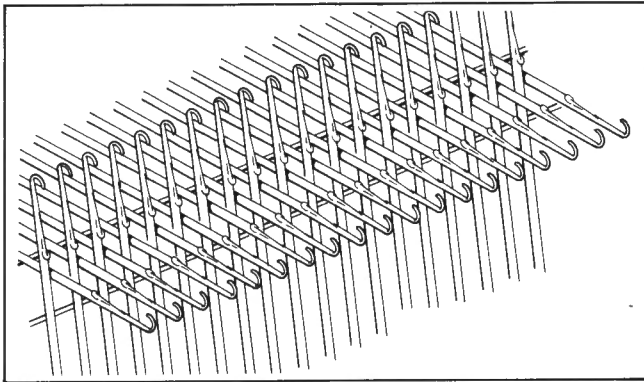


RIBBER NEEDLE BED

Pile Levers (left & right).....upper position

Half-Pitch Lever.....H

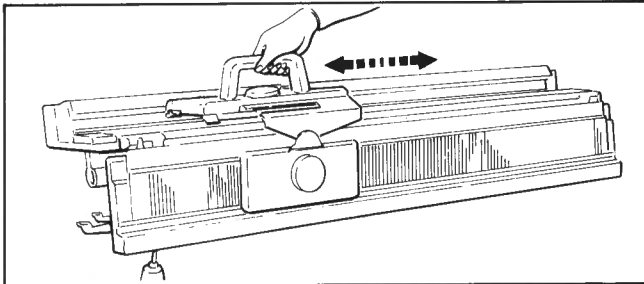
Swing Indicator.....5



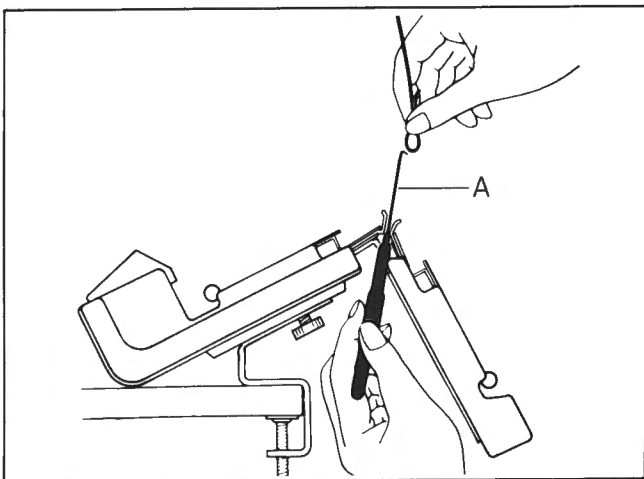
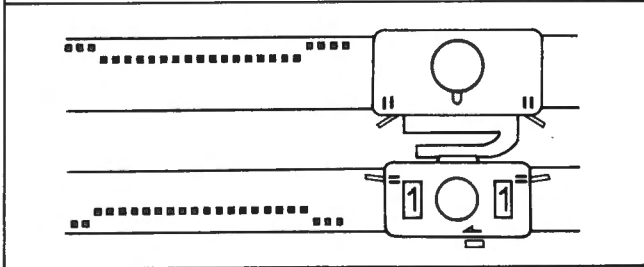
① – 2 Arrange needles for knitting the initial row.

1. Arrange needles of both beds for cast-on.

- (1) On both of Knitter and Ribber Beds, push 25 needles on each side of centre(0) up to D position.

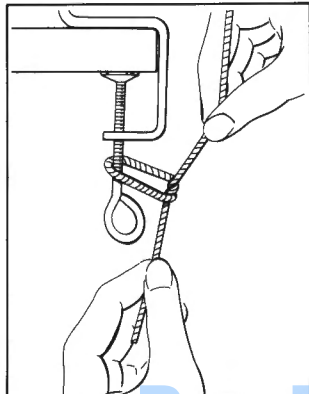
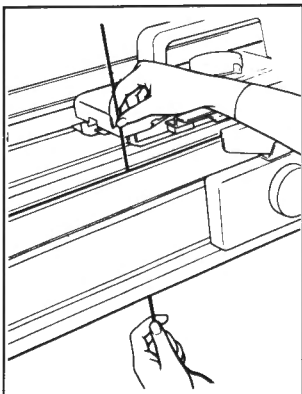


- (2) Move Carriage 2–3 times carefully across needles in D position and leave it at right side.
(Needles in D position will be aligned in B position on both beds.)

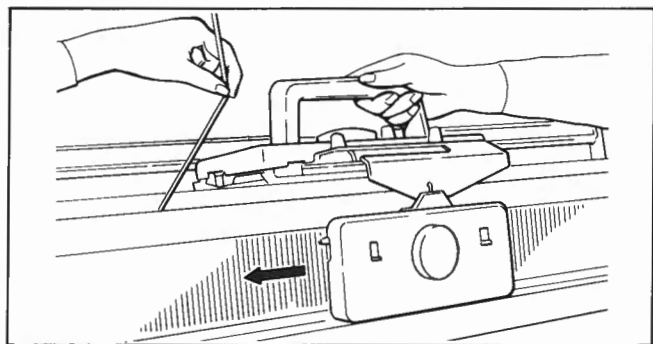


2. Thread yarn into Yarn Feeder.

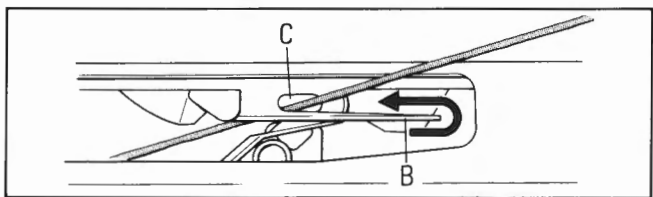
- (1) After threading yarn through Auto-Tension, make a loop at the end of yarn and hold it at the left side of both beds.
- (2) Insert Hook Tool "A" from underneath, catch yarn end, and pull it down.



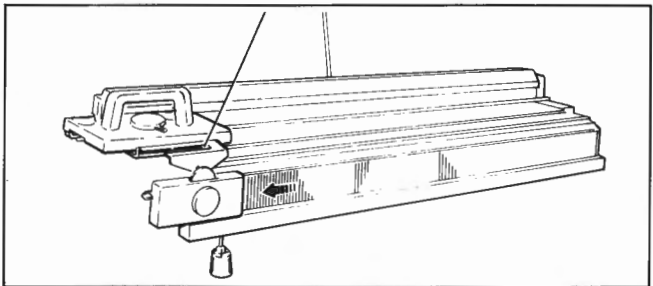
- (3) Hold yarn end and tie it around Clamp screw.



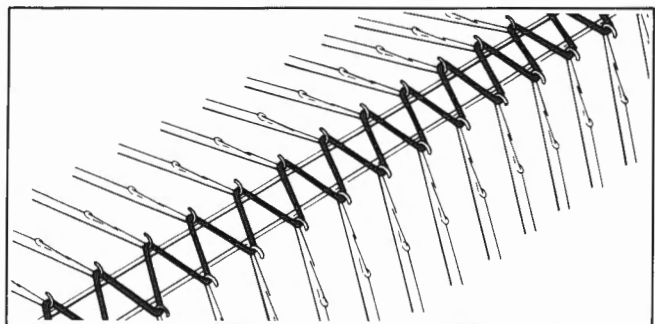
(4) Move Carriage from right to left till yarn goes into Yarn Feeder.



(5) Guide yarn along Yarn Guide "B" to thread it into Main Yarn Feeder "C".



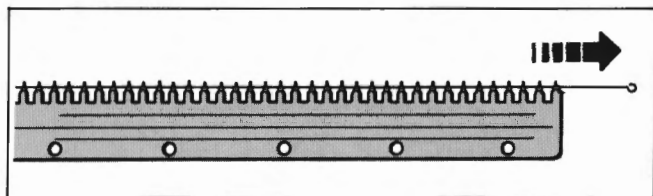
(6) Move Carriage to left end of Needle Bed.



3. Knit the initial row.

Take up slack of yarn and move Carriage from the left to the right.

Yarn will be hooked alternately on Knitter and Ribber needles in zigzag.

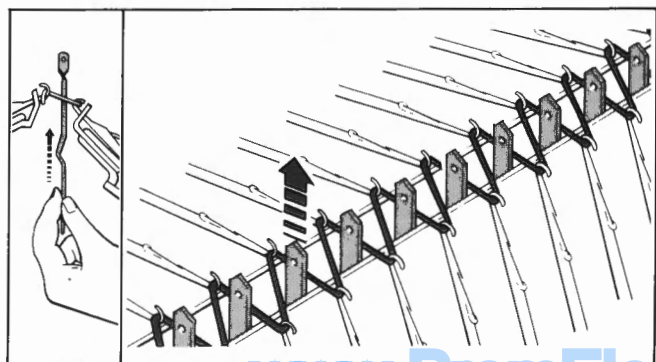


① – 3 Suspend Cast-on Comb with Weights.

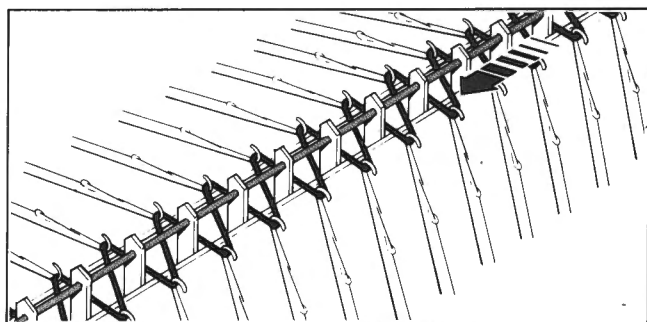
1. Suspend Cast-on Comb.

(1) Take out short Cast-on Comb (100-needle) and remove wire from its teeth.

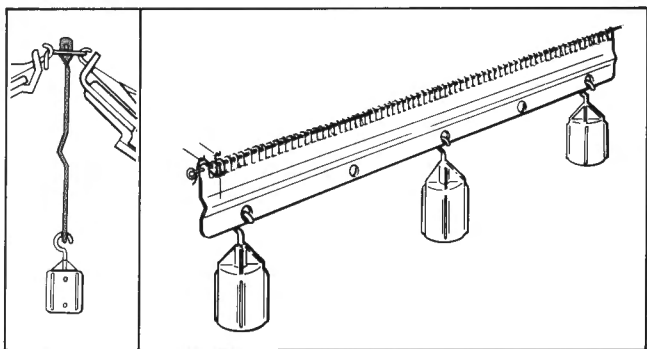
(2) From underneath, insert Comb between Knitter and Ribber Bed, then push it carefully upwards until teeth clear zigzagged yarn.



Hang Comb so that it is balanced horizontally between working needles.



(3) Insert Wire through holes of Cast-on Comb teeth.



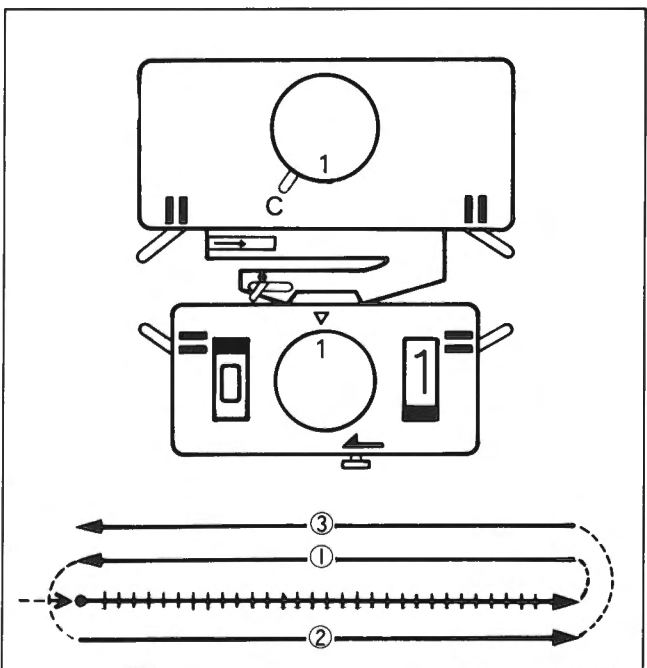
2. Hook Weights.

Use two Ribber Weights (large) and hook them onto left and right sides of Cast-on Comb.

For your reference use up to

80 needles	2 Weights
120 needles	3 Weights
160 needles	4 Weights
200 needles	5 Weights

Hook Weights at even intervals.



① – 4 Change machine controls for knitting subsequent 3 rows.

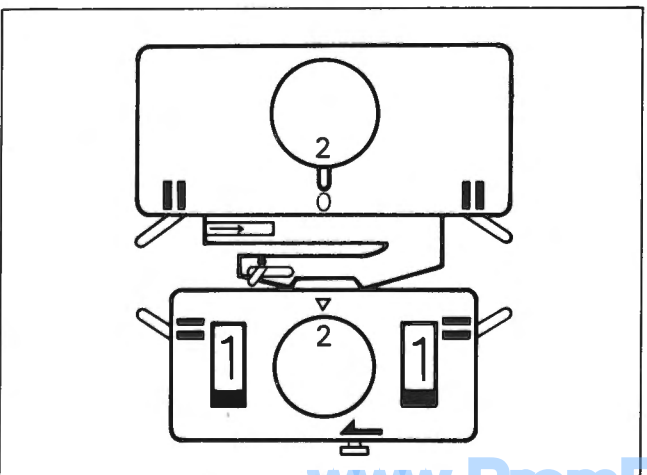
Change Carriage settings.

Cam Lever.....	C (CIRCULAR)
Set Lever (left).....	0
Stitch Dials (Knitter & Ribber).....	1

Knit 3 rows.

CAST-ON IS COMPLETED.

Release the yarn from the Clamp screw.



② Re-set machine controls for working main knitting.

(Needle arrangement for main knitting is the same as for cast-on.)

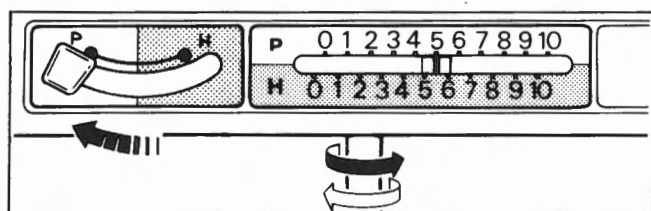
1. Change Carriage setting.

Cam Lever.....	0 (STOCKINET)
Set Lever (left).....	1
Stitch Dials (Knitter & Ribber).....	2
Other settings unchanged.	

2. Knit 20 rows by moving Carriage smoothly across Needle Bed.

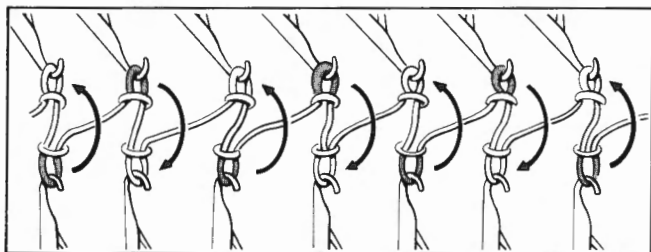
DOUBLE RIB IS KNITTED.

Continue on next page for transferring stitches to work
K1.P1. rib.

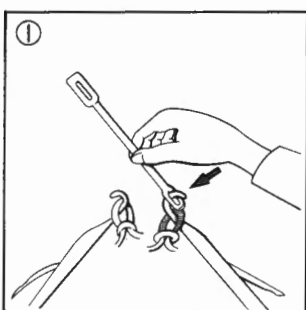


For practice, continue to knit in K1.P1. rib following the instructions set forth.

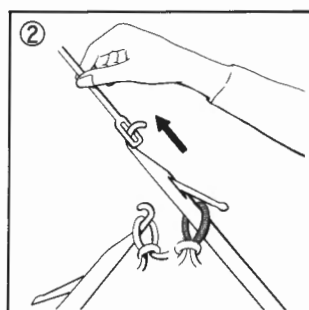
1. Set the Half Pitch Lever to "P".



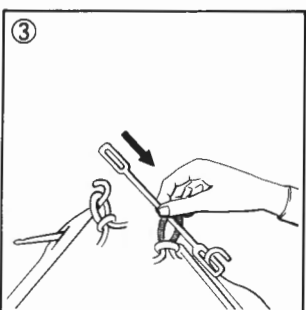
2. Transfer every other stitch from Knitter onto Ribber and from Ribber onto Knitter alternately to rearrange the needles for K1.P1. RIB using Double-eye Transfer Tool as follows.



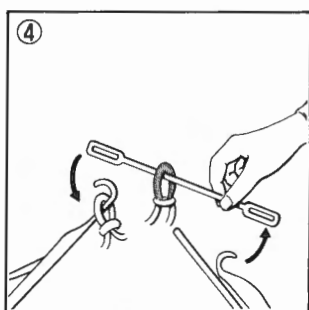
① Insert eye of Double-eye Transfer Tool into Ribber needle hook.



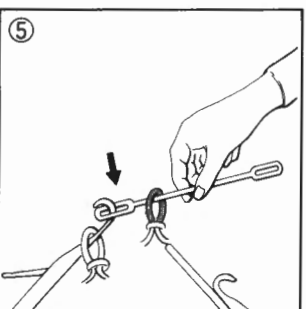
② Pull Ribber needle to D position.



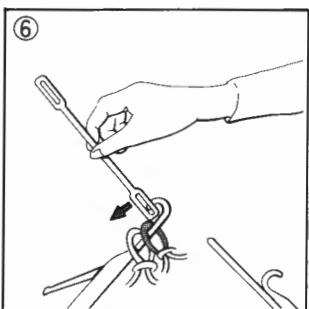
③ Push Ribber Needle to A position.



④ Remove eye of Transfer Tool from Ribber needle hook.

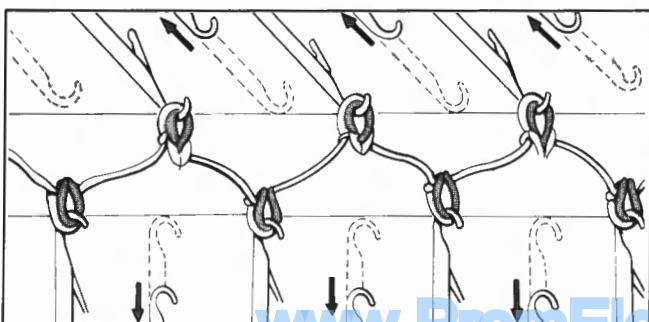


⑤ Insert opposite eye into Knitter needle hook.



⑥ Tilt Transfer Tool until stitch slides into Knitter needle hook.
Remove Transfer Tool.

Push needle in B position slightly towards A position ensuring that transferred stitch lies correctly in needle hook.



Continue to transfer every other stitch till all the needles are aligned as shown.

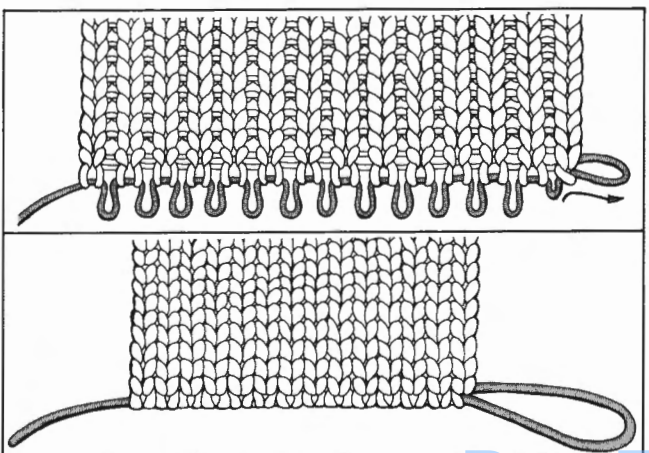
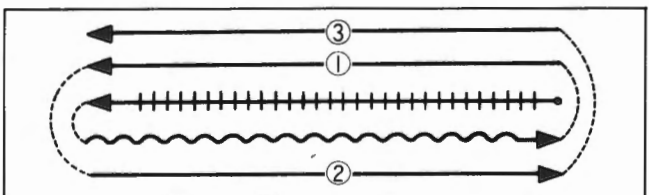
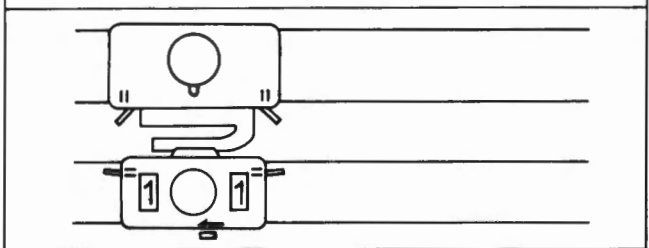
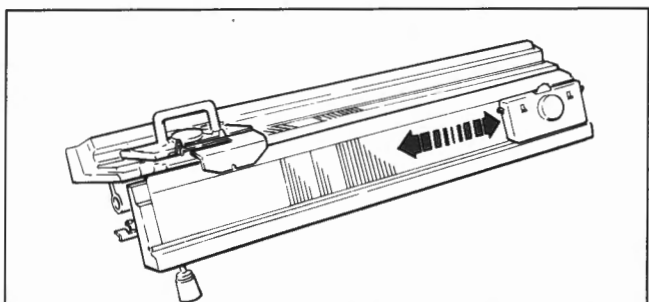
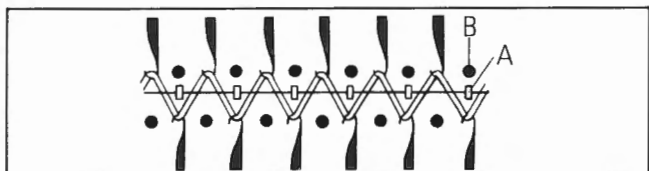
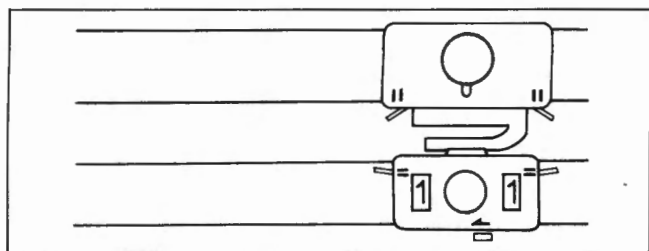
Ensure empty needles are in A position.

3. Knit 20 rows.

K1.P1. RIB IS KNITTED.

Referring to page 71, remove the fabric from the machine.

CAST-ON FOR TIGHTER EDGE



To make the cast-on edge of the fabric tighter, when knitting with thinner yarn, set the Carriages as instructed in the operation table, but operate them following the procedure set forth below:—

- ① – 1 Set machine controls for the initial row and have Carriage on the right side.
- ① – 2 Arrange needles, and knit the initial row from the right to the left.
- ① – 3 Suspend Cast-on Comb with Weights.

Insert Cast-on Comb so that its teeth "A" confront with Knitter Sinker Posts "B" as illustrated.

- Disconnect Ribber Carriage and move it twice across the needles to drop stitches on Ribber needles.

If Cast-on Comb is suspended incorrectly, it will drop onto the floor.

- Connect Ribber Carriage and knit one row with same Carriage settings.

- ① – 4

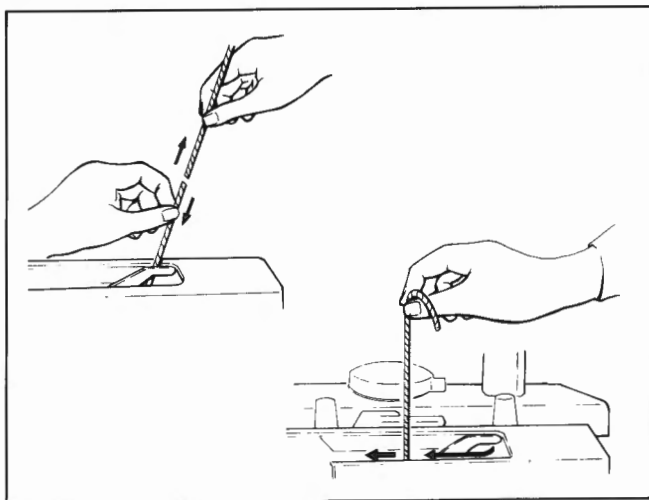
As required in operation table, knit subsequent 3 rows.

CAST-ON FOR TIGHTER EDGE IS COMPLETED.

When the garment has been completed, pull the yarn of the initial row of cast-on towards the direction opposite to its yarn end slightly before pressing it with a steam iron so that the stitches on the initial row align neatly.

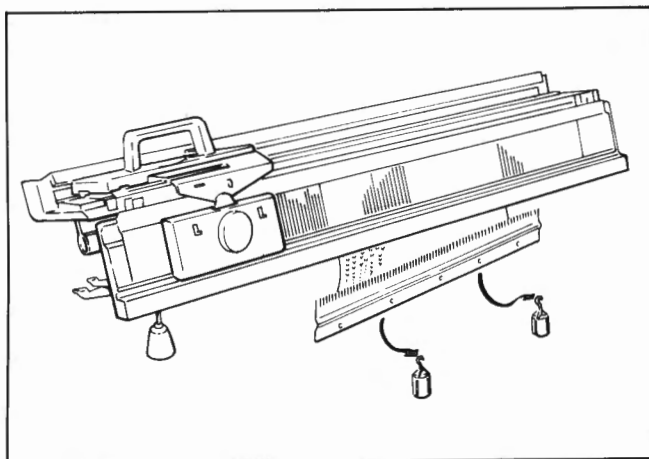
After pressing the edge has been finished, pull out the yarn completely in the same direction as above.

REMOVE THE FABRIC FROM THE MACHINE

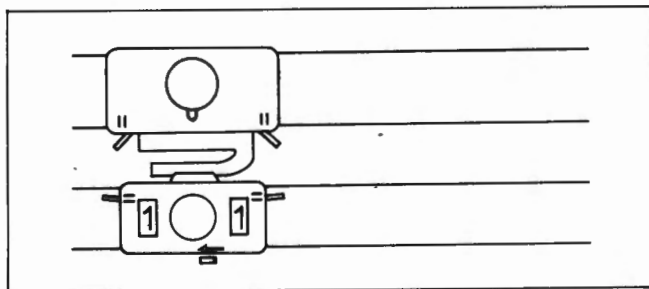


1. Cut yarn above Yarn Feeder.

Remove the yarn from Feeder and drop yarn end between Knitter and Ribber sinker posts.

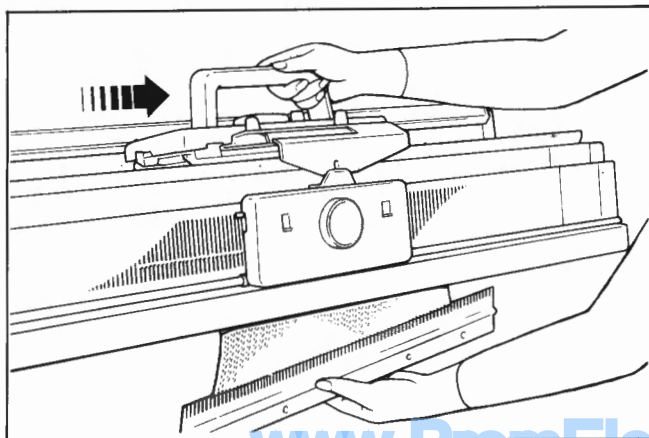


2. Remove Weights from Cast-on Comb.



3. Change Carriage settings as follows.

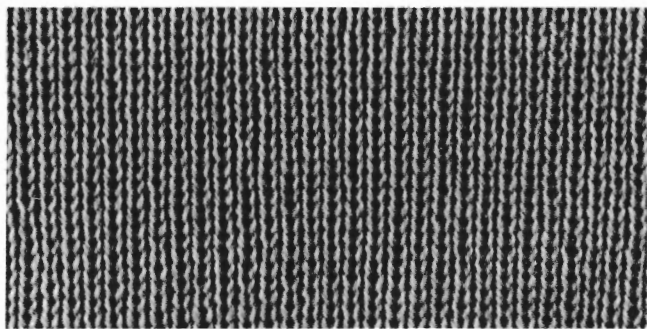
Cam Lever.....0 (STOCKINET)
Set Levers.....1
Russel Levers.....II



4. Holding Cast-on Comb, move Carriage once across needles.

The stitches are released from needles.

VARIOUS RIB STITCHES



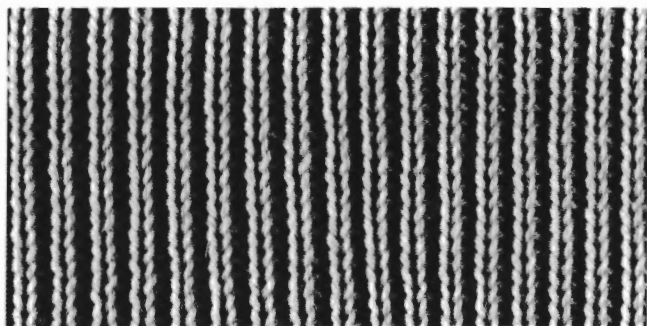
DOUBLE RIB

Use every needle of Knitter and Ribber.

The sample is knitted using thin yarn.

Use Close Knit Bar (refer to page 61).

①	I		◎	II	O	II	●	→	=	1	←	1	=	0	0	↑	H	5	
2																			→
3																			
4				C						0									→→→)3
②	I				O					1									→→



K1. P1. RIB

Use every other needle of Knitter and Ribber.

The sample is knitted using medium yarn.

①	I		◎	II	O	II	●	⇒	=	1	↖	1	=	0	0	↑	P	5	
2																			→
3																			
4					C					0									⇒⇒⇒)3
②					O					1				2	2				⇒⇒

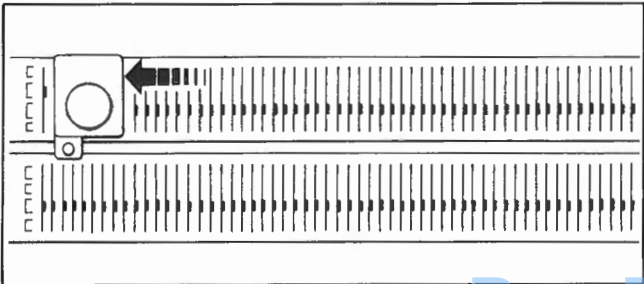


While Knitter Carriage knits in stockinet, Ribber Carriage knits with selected needles making ridges. By swinging Ribber, these ridges make various swung patterns.

The sample is knitted using medium yarn.

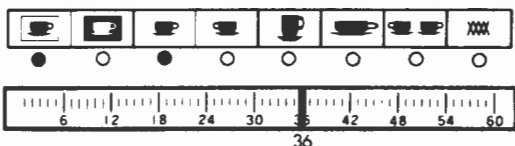
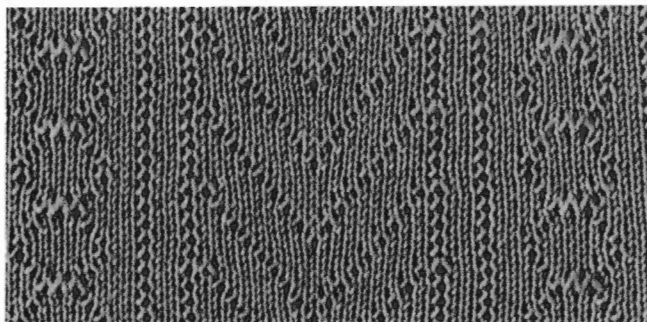
[illegible]

* *Knit swinging the Ribber by 1 pitch on every row to the right extreme, and then to the left extreme, to make zigzag pattern.*
Push 1–5 end needles to D position before knitting the next row.



If stitches tend to float...

Knit pushing needles on the Bed having more number of needles (on Knitter) to C position using P Carriage.



36

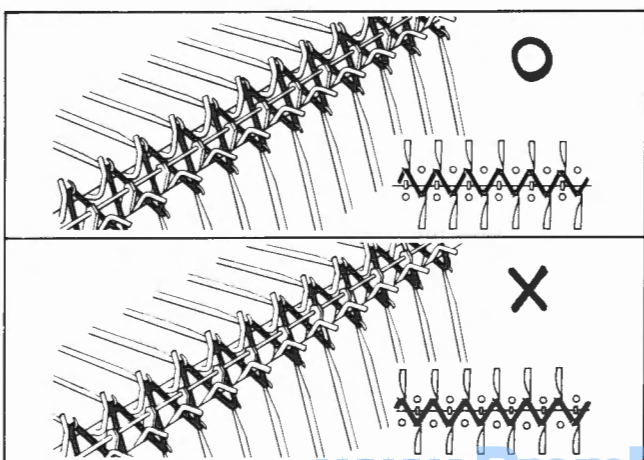
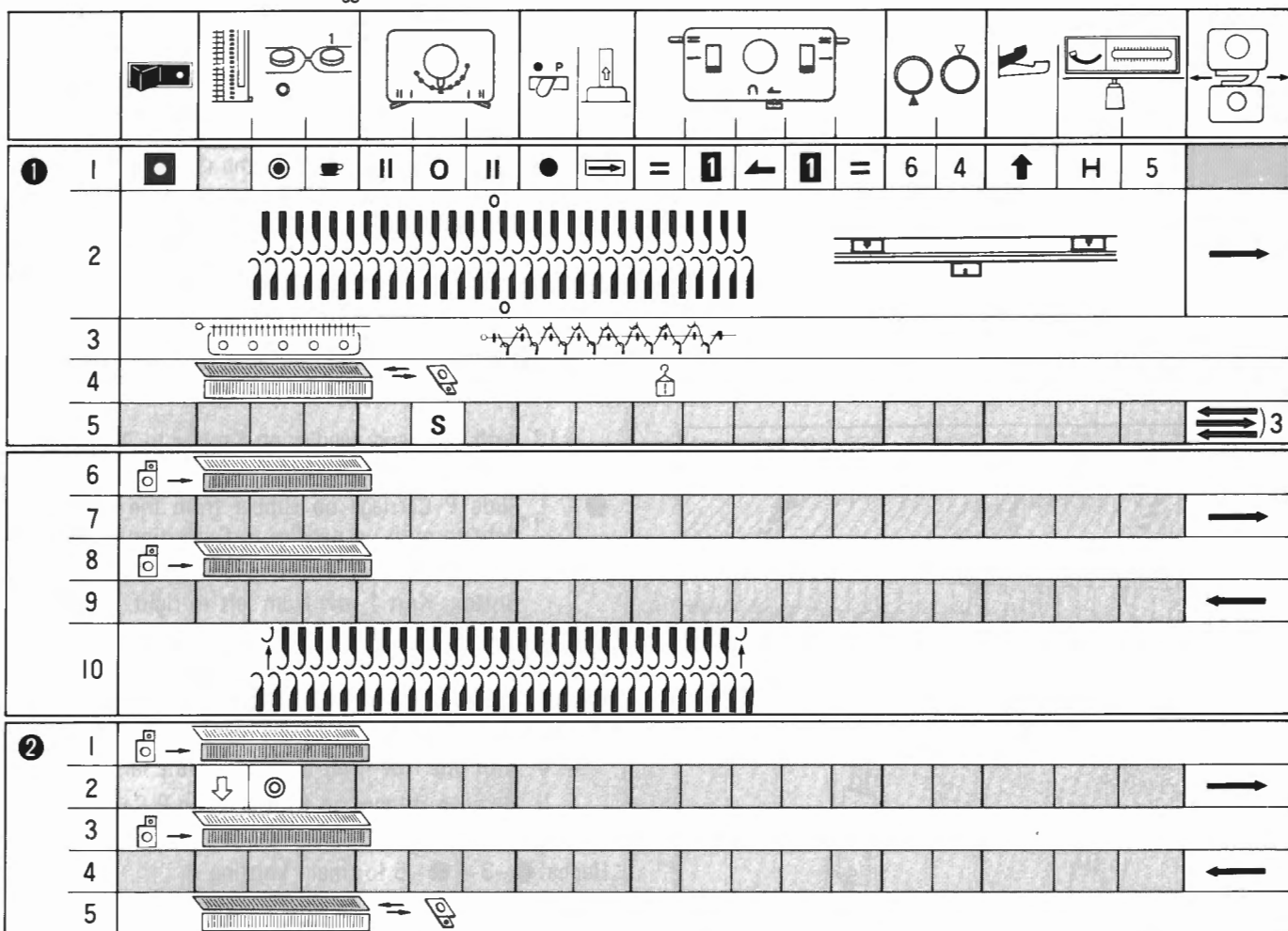
DRIVE LACE

The needle arrangement is the same as for the Double Rib, but on the knitter, the needles selected by the Pattern Card are fed with the yarn, and those stitches are released to form bigger loops, while on the Ribber all the needles knit every row.

Light yarn is suitable for this type of knitting.

The sample is knitted with the Pattern No.12—(35).

NOTE: If the Drive Lace knitting follows the other pattern knitting, turn OFF the machine once to clear the old memory before setting the machine for "DRIVE LACE".

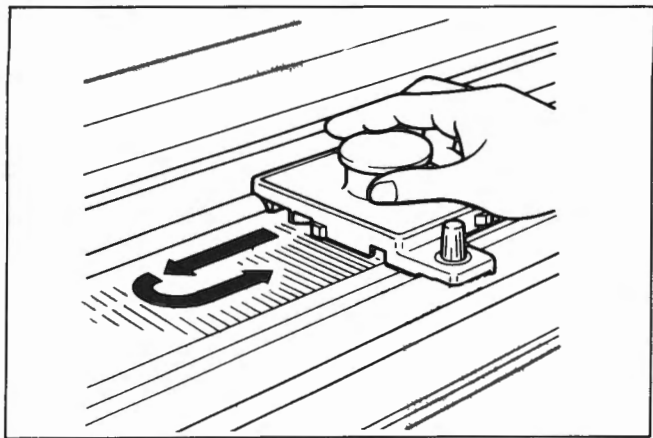


① — 1 Set machine controls as instructed.

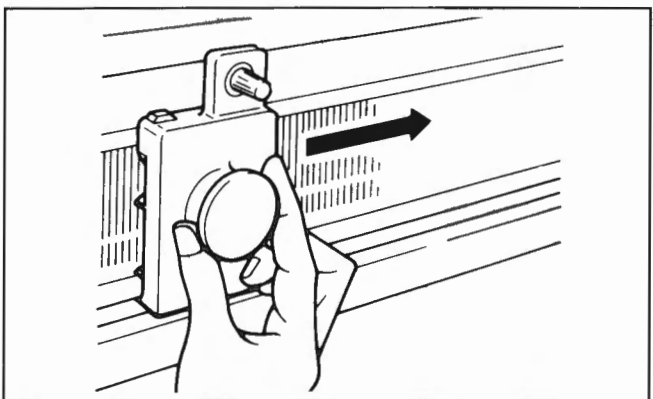
Set Stitch Dials to the same as main knitting.

Do not use the Button 1 with its right light on and Button 3, 4 and 6.

- 2 Arrange needles as instructed and knit from the left to the right with waste yarn.
- 3 When suspending Cast-on Comb (without Weights), insert it so that its teeth face Ribber Sinker Posts as illustrated.



- 4 Place P Carriage (without P Presser) on the right side of Needle Bed (refer to page 60). Move P Carriage to the left and back again so that stitches are removed and the needles align in B position again.



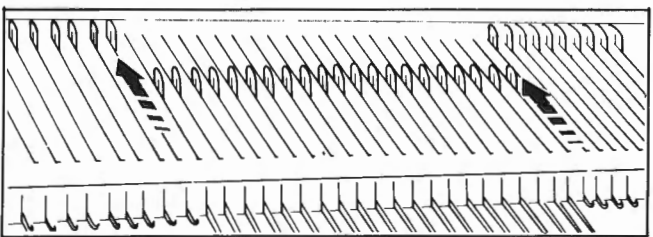
- 5 Set Cam Lever to "S" (SLIP) and knit 3 rows with waste yarn.

- 6 Place P Carriage on the left side of Ribber Needle Bed (refer to page 60), and slide it to the right to push up needles to C position.

- 7 Exchange waste yarn for main yarn in Yarn Feeder and knit from the left to the right.

- 8 Slide P Carriage on Ribber from the left to the right.

- 9 Knit from the right to the left.



- 10 Push both end needles on Knitter to A position.

- ② — 1 Slide P Carriage on Ribber from the left to the right to push up needles to C position.

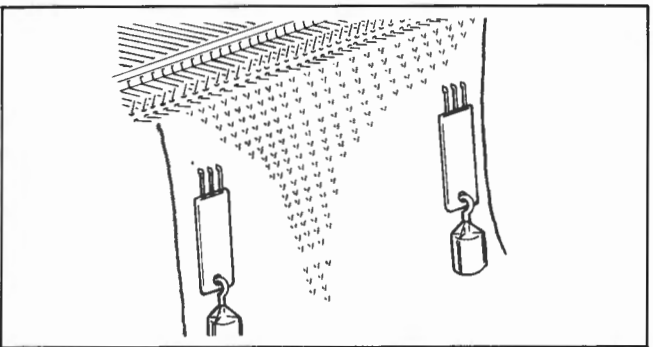
- 2 Set the Pattern Card and push OFF the Inspection Button. Knit 1 row from left to right. (On Ribber, all the needles in C position knit, and on Knitter, only selected needles knit.)

- 3 Push up Ribber needles to C position using P Carriage.

- 4 Knit one row from the right to the left.

- 5 Remove stitches on Knitter using P Carriage. Then knit 1 row from left to right.

Repeat ②—3—②—5 for main knitting.



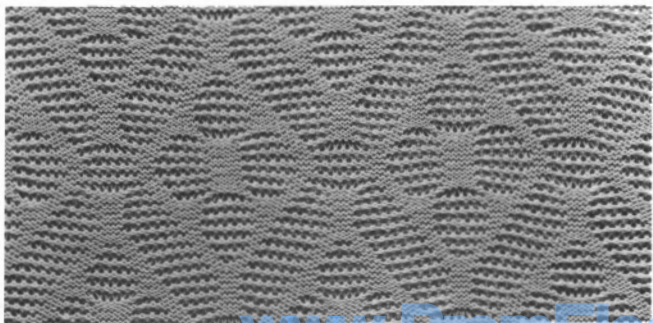
Suspend Hanger Combs with Weights after 10 rows and advance them every 10 rows upwards.

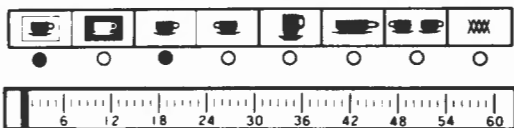
MESH KNITTING

Mesh-like knitting is worked in the same manner as done for drive lace knitting using thin yarn.

The sample is knitted with Pattern No.13—(41).

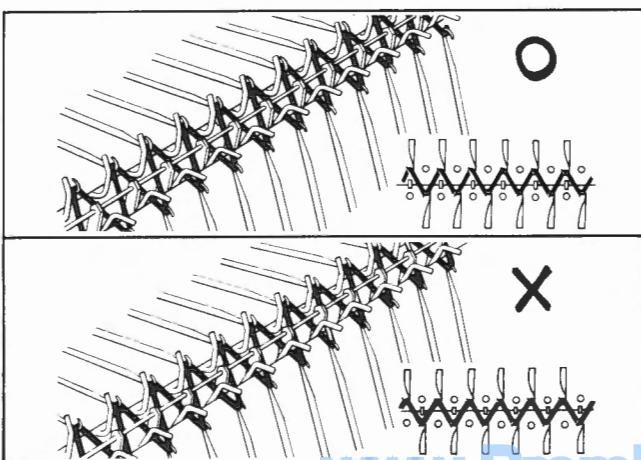
When steaming, slide the iron in the direction of wale of the fabric.



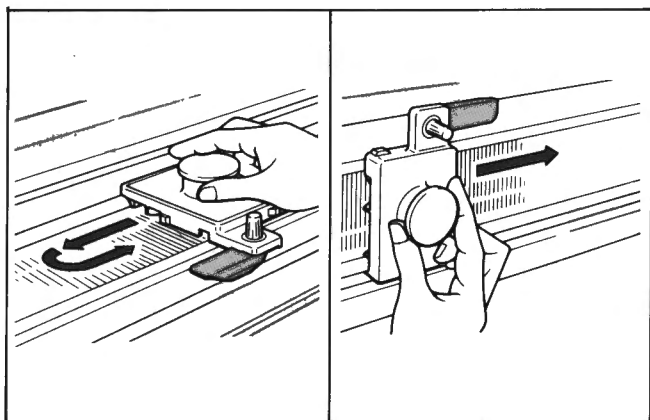


NOTE: If the PILE KNITTING follows the other pattern knitting continuously, turn OFF the machine once to clear the old memory before setting the machine for "PILE KNITTING".

①	I	●	◎	☐		O		●	→	=	1	↙	1	=	6	4	↑	H	5		
2																					→
3																					
4																					
5				S																↔) 3	
6																					
7				P													↓			→	
8																					
9																				←	
10																					
②																					
2		↓	◎																	→	
3																					
4																				←	
5																					



- ① — 1 Set machine controls as instructed.
Set Stitch Dial to the same number as for main knitting.
Do not use the Button 1 with its right light on and Button 3 and 6.
- 2 Arrange needles as instructed and knit from the left to the right with waste yarn.
- 3 When suspending Cast-on Comb, insert it so that its teeth face Ribber Sinker Posts as illustrated.



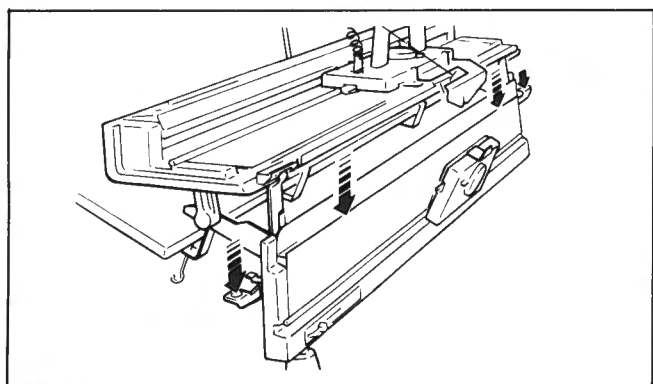
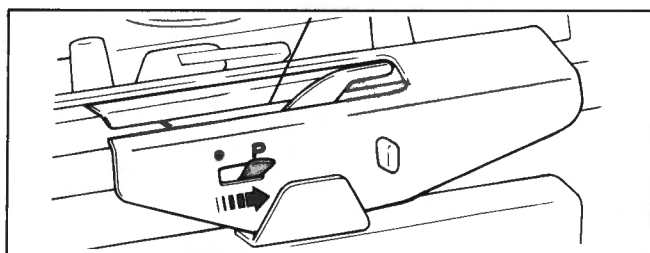
- ① — 4 Place P Carriage with P Presser attached on the right side of Knitter Needle Bed (refer to page 60). Move P Carriage to the left and back again so that stitches on knitter are removed and the needles are aligned in B position again.

- 5 Set Cam Lever to "S" (SLIP) and knit 3 rows with waste yarn.

- 6 Place P Carriage on the left side of Ribber Needle Bed (refer to page 60), and slide it to the right to push up needles to C position.

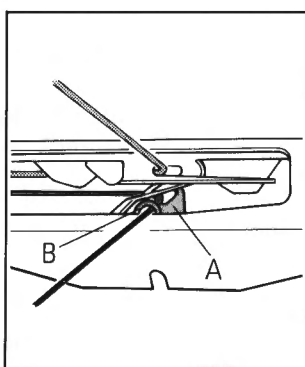
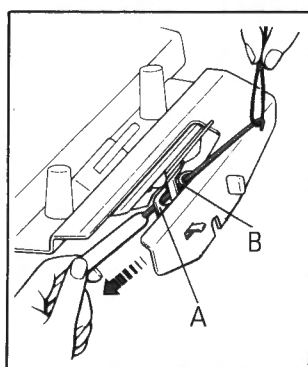
- 7 Exchange waste yarn for pile yarn in main Yarn Feeder.

Set Auxiliary Yarn Feeder Lever to P (right) position, and thread ground yarn into Auxiliary Yarn Feeder following the manner below.



- (1) Lower Ribber Needle Bed to the middle position by depressing Drop Lever (red mark) once.

- (2) Thread ground yarn through Auto-Tension.



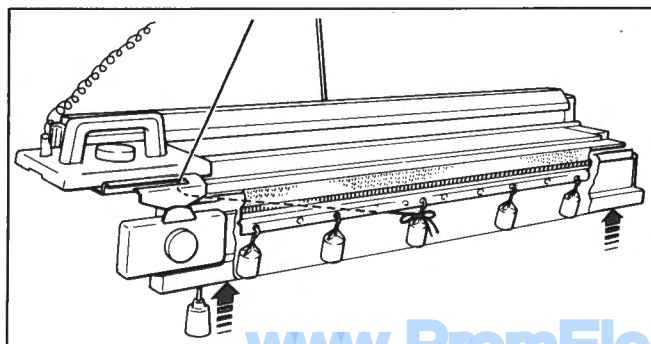
- (3) Make a loop on yarn end and hold it above Auxiliary Yarn Feeder.

- (4) Insert Hook Tool from underneath through Auxiliary Yarn Feeder "A" and Yarn Guide "B", then catch yarn loop.

- (5) Pull Hook Tool downwards threading yarn through Yarn Guide and Auxiliary Yarn Feeder.

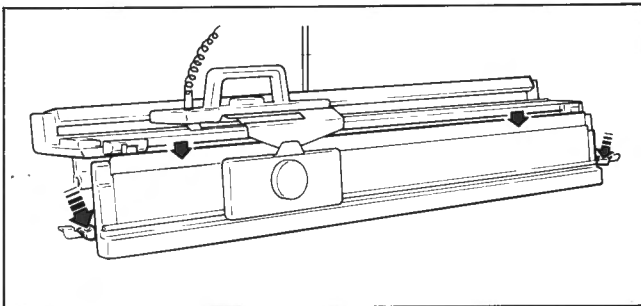
- (6) Tie yarn end to hook of Weight on Cast-on Comb.

- (7) Push up Ribber Needle Bed to its top position. Ensure Ribber needles are correctly lined up in B position.



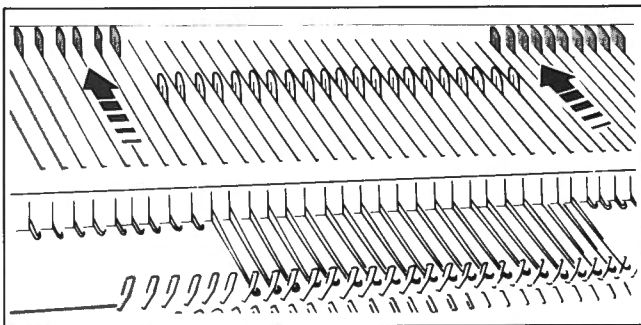
IMPORTANT:

Ensure Link Pin on Ribber Carriage is joined properly to Ribber Arm.

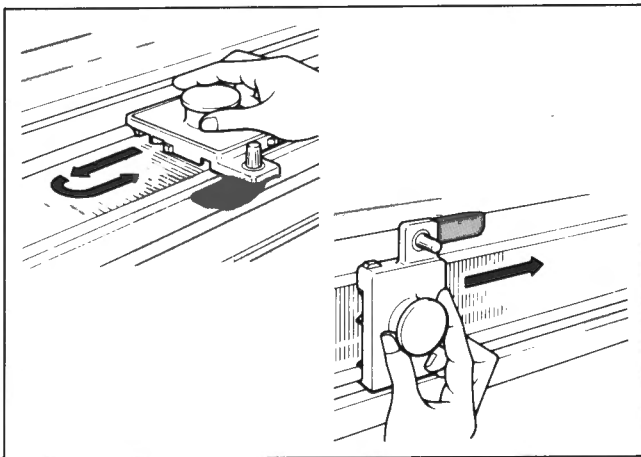


- (8) Depress both Pile Levers (marked blue) to widen space between Knitter and Ribber Needle Bed.
- (9) Knit from the left to the right.

If the yarns, pile yarn and ground yarn, get entangled or loosened, pull the yarns back to yarn balls at the back of Auto-Tension before moving Carriage.



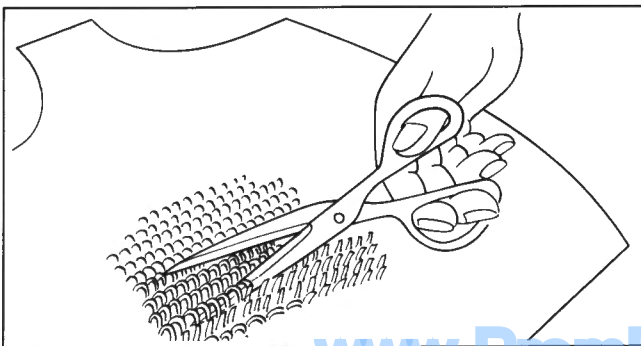
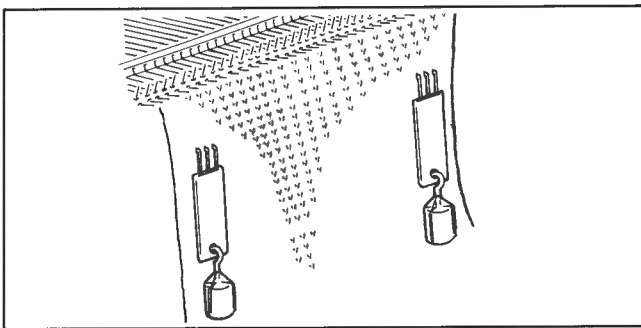
- 8 Slide P Carriage on Ribber from the left to the right.
- 9 Knit from the right to the left.
- 10 On Knitter, push 5 needles back to A position at both sides of fabric to have plain edge for seaming.



- ② – 1 Slide P Carriage on Ribber from the left to the right to push up needles to C position.
- 2 Set the Pattern Card and push OFF the Inspection Button.
Knit 1 row from the left to right.
- 3 Slide P Carriage from the left to the right.
- 4 Knit 1 row from the right to the left.
- 5 Remove stitches on Knitter using P Carriage.
Then knit 1 row from left to right.

Repeat ②–3 — ②–5 for main knitting.

Suspend Hanger Combs with Weights after 10 rows and advance them every 10 rows upwards.



To cut loops, spread fabric on a flat surface.

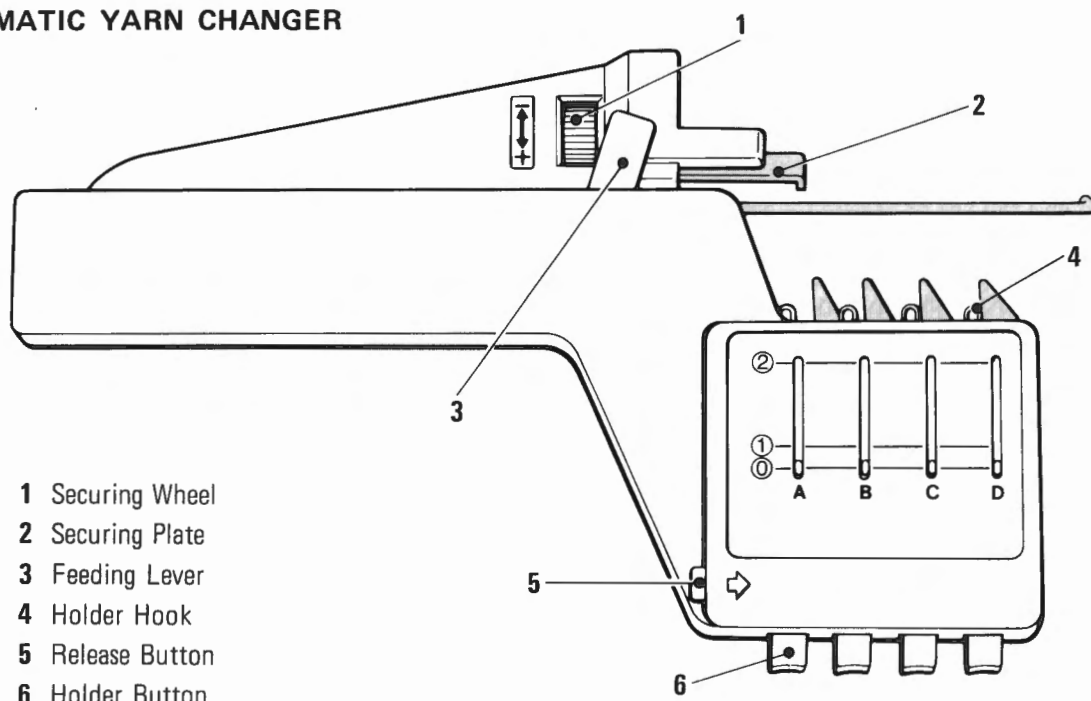
Insert one scissor blade into centre of loops and cut open.

Give steam to the surface of the fabric.

DO NOT PRESS.

AUTOMATIC YARN CHANGER AND ACCESSORIES

AUTOMATIC YARN CHANGER

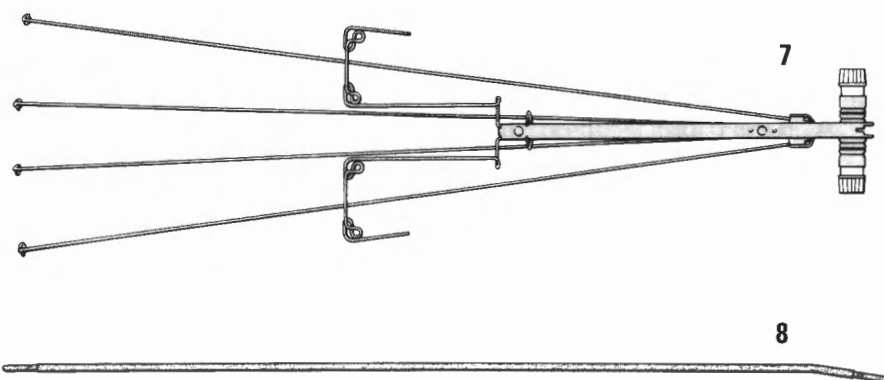


- 1 Securing Wheel
- 2 Securing Plate
- 3 Feeding Lever
- 4 Holder Hook
- 5 Release Button
- 6 Holder Button

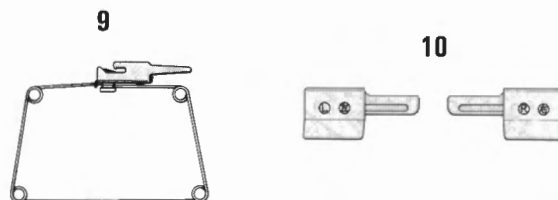
Holder positions

- ②..... Yarn is in the Yarn Feeder
- ①..... Yarn is to be knitted in next turn.
- ①..... Yarn is rested.

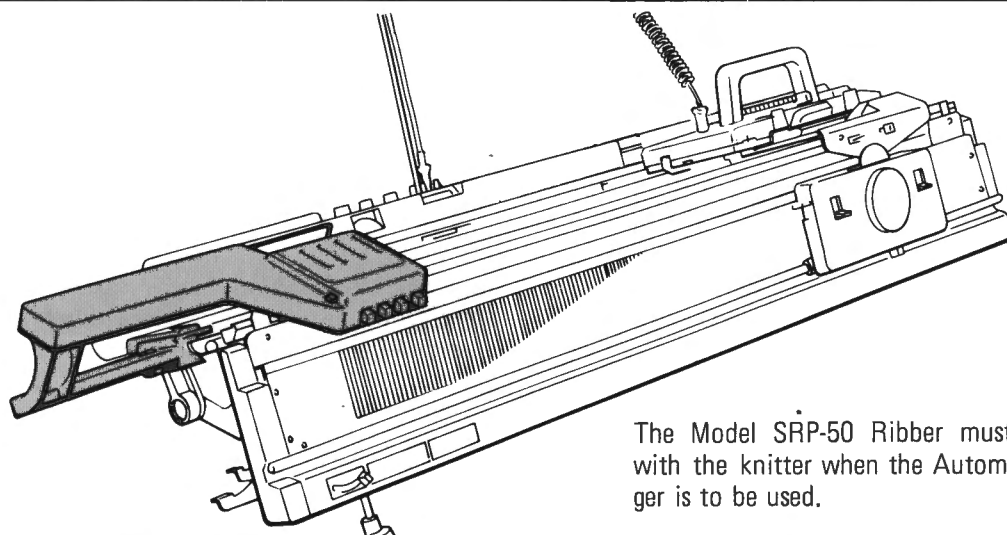
ACCESSORIES



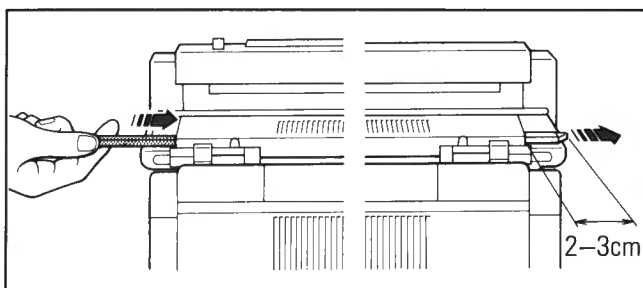
- 7 4-Colour Auto-Tension
- 8 Yarn Rod
- 9 Tension Guide
- 10 End Stitch Holder



SETTING UP THE AUTOMATIC YARN CHANGER

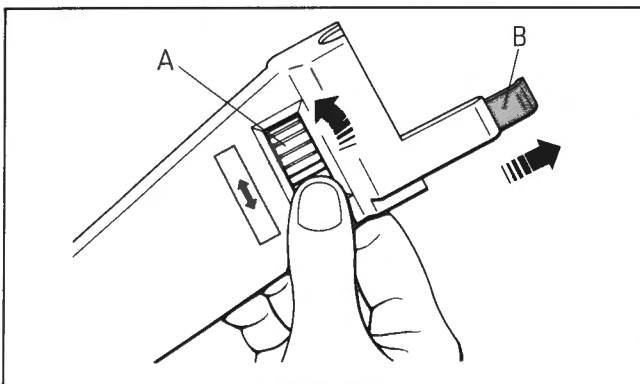


The Model SRP-50 Ribber must be connected with the knitter when the Automatic Yarn Changer is to be used.

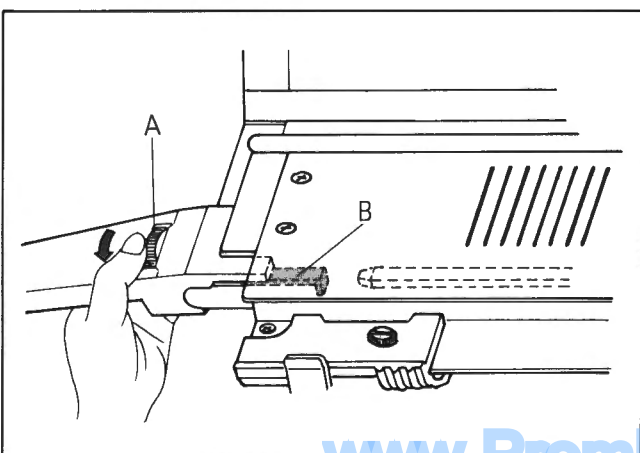


Make sure that the Ribber, SRP-50, is correctly attached to Knitter, before attaching Yarn Changer following the procedure below.

1. Using a pencil, push Needle Retainer from left side of Knitter Needle Bed until you can see right end of Needle Retainer protruding 2–3cm.



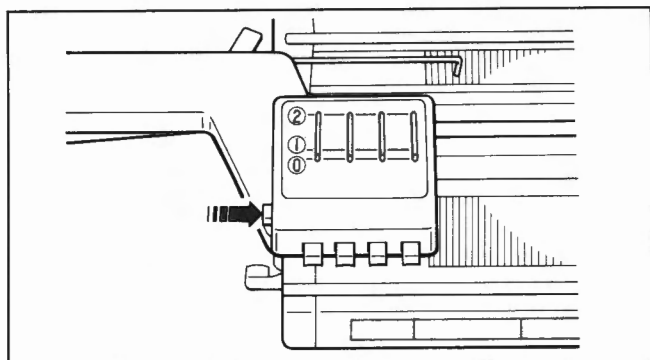
2. Loosen Securing Wheel "A" of Yarn Changer in the direction as shown until it stops.
(As Securing Wheel is loosened, Secruing Plate "B" moves forward.)



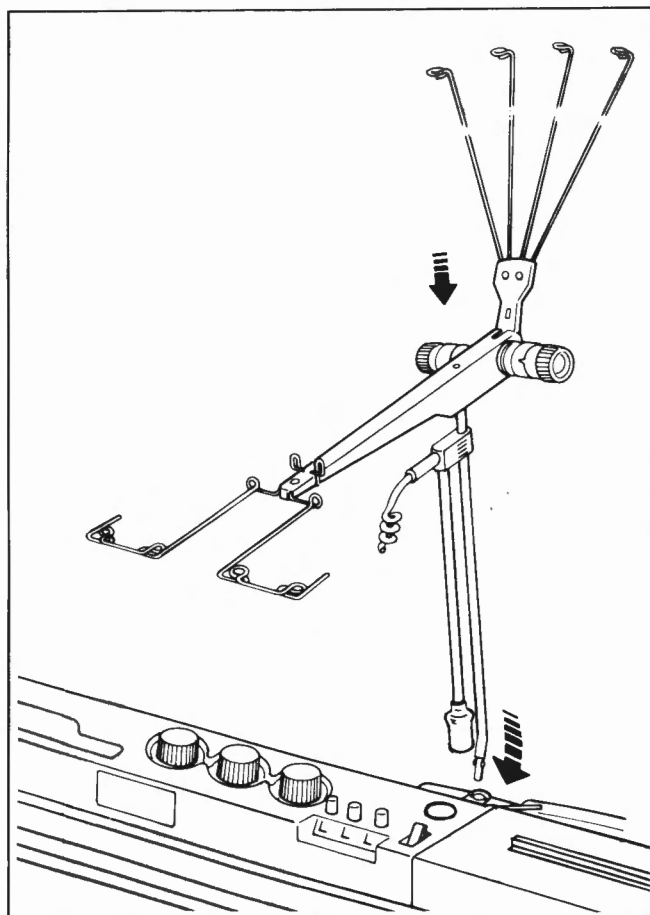
3. Insert Securing Plate "B" into Guide Hole of Needle Retainer and turn Securing Wheel "A" in the arrowed direction, as shown in the opposite diagram until Securing Plate is firmly installed.

Be sure that the edge of Yarn Changer is firmly set against Side Cover.

(While Yarn Changer is being used on the Knitter, right end of Needle Retainer must remain protruded by 2–3cm.)

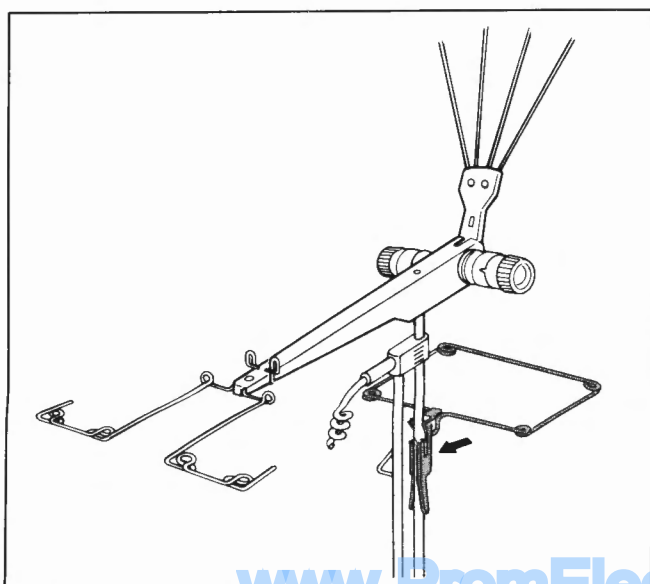
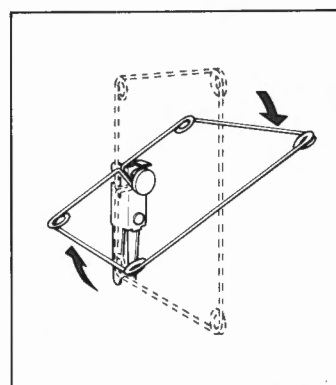


4. Push Release Button to align four Holder Buttons in ① position.
(In this position, those Holders remain inactive.)

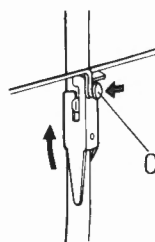


5. Attach the Curl Cord to the Yarn Rod and install the Rod into the hole located at the left of Carrying Handle, with 4-Colour Auto-Tension on top.

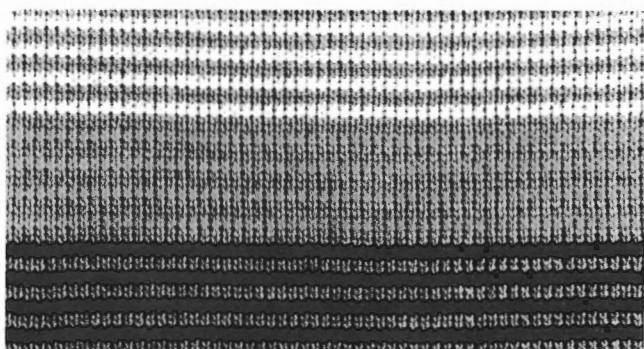
6. Turn the quadrangular Tension Guide in the arrow mark direction as shown.



7. Depressing the extruded part "C" of Tension Guide in the arrowed direction, insert the Guide from underneath.



BASIC KNITTING

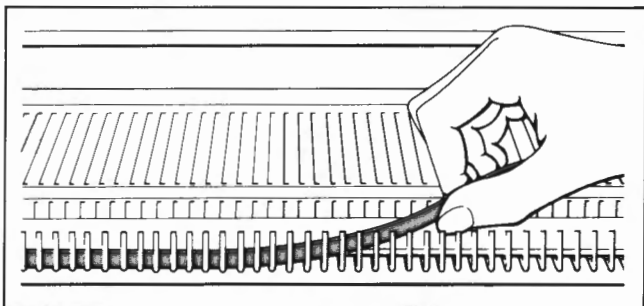


Using the Yarn Changer, but without using the Pattern Card, you can knit striped pattern on the fabric easily.

The sample opposite is knitted using four colours in Double Rib stitch.

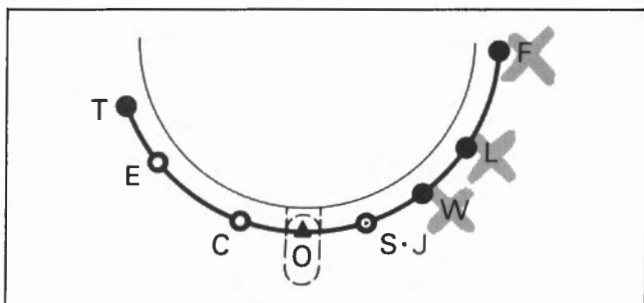
Holder **A** = Purple
Holder **B** = Black
Holder **C** = Red
Holder **D** = Yellow

Try to knit the striped pattern following the procedure below.

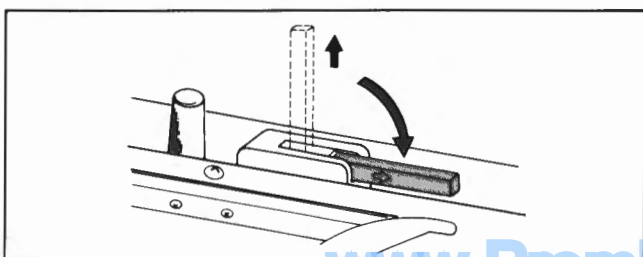
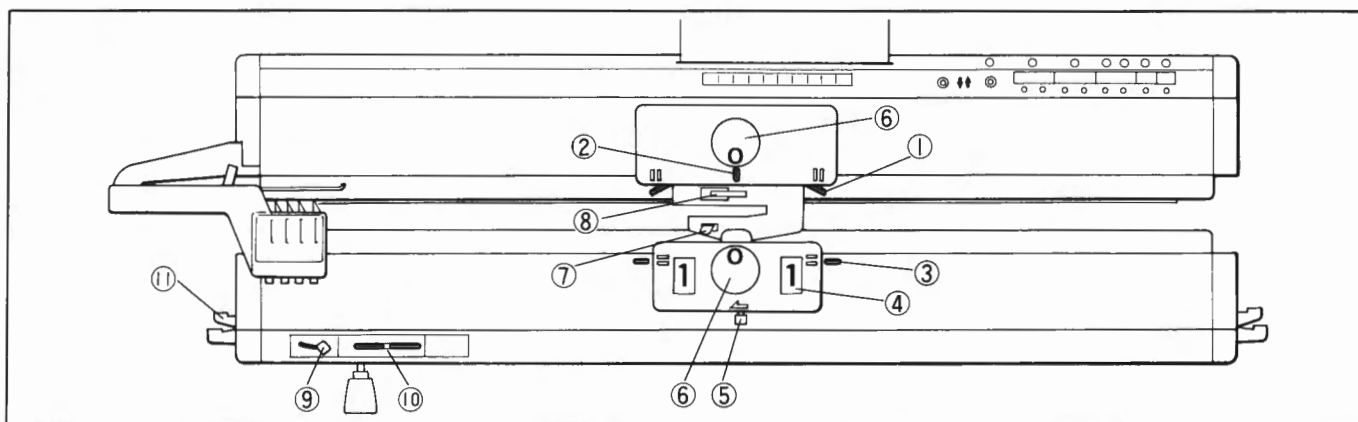


1. Insert Close Knit Bar between Knitter sinker posts and front edge of needle bed.

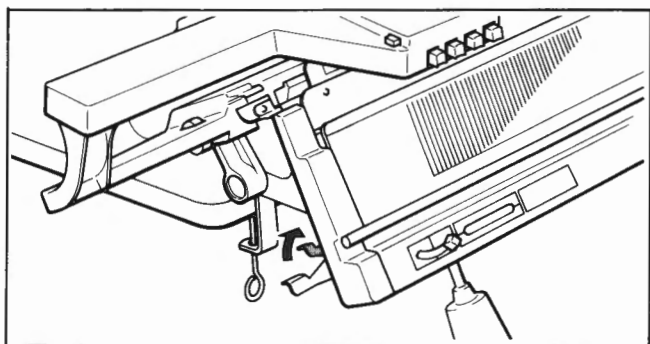
2. Set machine controls as instructed below and also related to the diagram further below.



- ① Russel Levers (Knitter) **II**
- ② Cam Lever* **0** (STOCKINET)
*Never set Cam Lever to "F" (KNIT-IN), "L" (PUNCH LACE) and "W" (WEAVING) while using Yarn Changer.
- ③ Russel Levers (Ribber) **=**
- ④ Set Levers **1**
- ⑤ Pick Knob **▲**
- ⑥ Stitch Dials (Knitter & Ribber) **0**

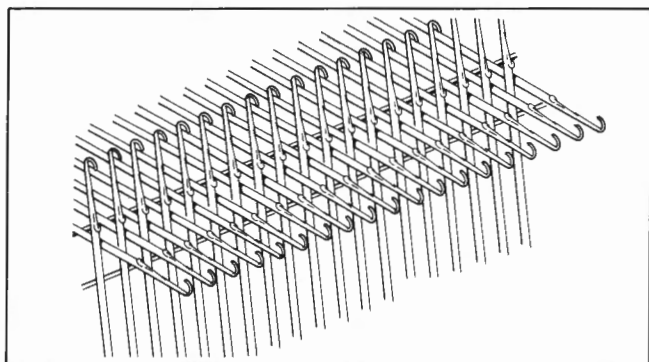


- ⑦ Auxiliary Yarn Feeder Lever ●
- ⑧ Driving Lever resting position*
*If Driving Lever is in upright position, lay the lever after pulling it up lightly.

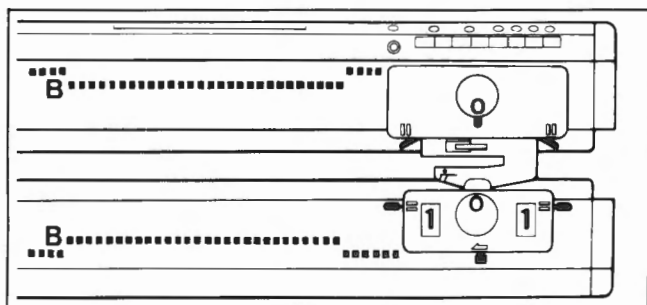


- ⑨ Half-Pitch Lever.....H
- ⑩ Swing Indicator.....5
- ⑪ Pile Levers (left & right).....upper position*

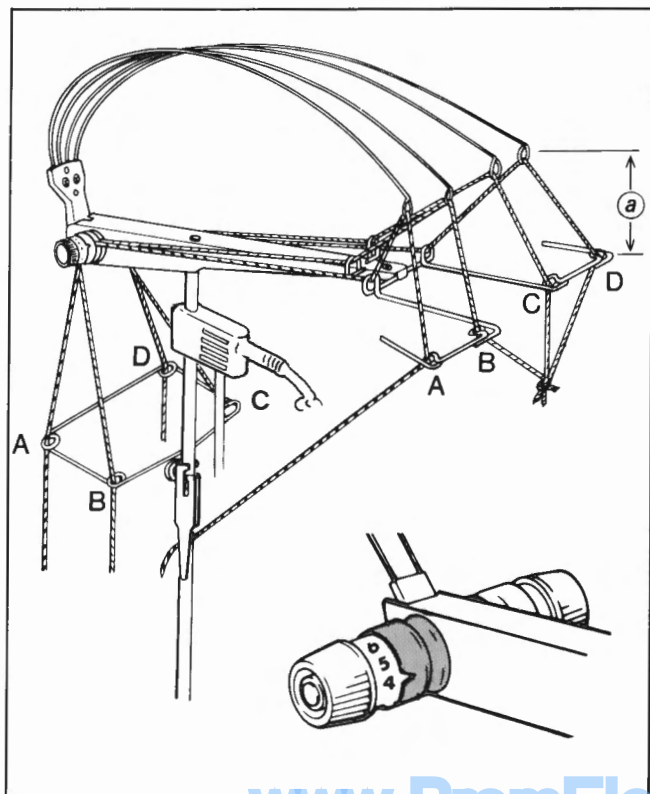
*If Pile Levers are at lower position push it up so as the distance between Knitter and Ribber is narrowed.



3. Using the straight edge of Needle Pusher push the same number of needles on Knitter and Ribber to D position.



4. Move Carriage 2–3 times to align needles in B position and leave Carriage at the right.



5. Thread four yarns of different colours into Auto-Tension.

Guide the yarns as illustrated and designate the yarns as A, B, C and D from the left.

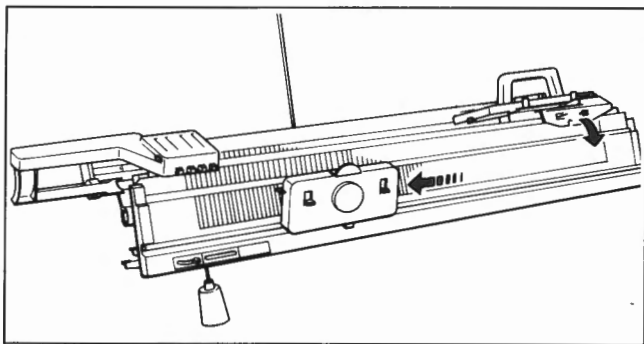
Hook the yarn A in Yarn Clip, this yarn is to be threaded into Yarn Feeder.

Tie the ends of other yarns, B, C, and D as illustrated.

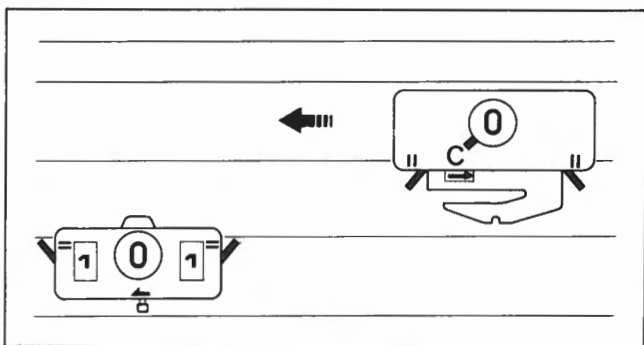
Adjust Tension Dial according to the thickness of yarn as shown in the diagram.

Kind of yarns	Light yarn	Thin yarn
Tension Dial	4 – 5	5 – 6

If different thickness of yarns are used together, adjust the Tension Dial to maintain the distance (a) between the tip of the Tension Spring to the top of Auto-Tension within 10–30cm.



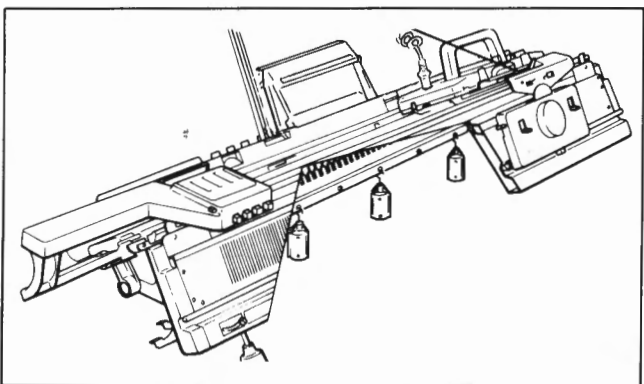
6. Disconnect Ribber Carriage from Arm and move it to the side of Yarn Changer, tilting it towards you.



7. For Knitter Carriage, set Cam Lever to "C" (CIRCULAR).

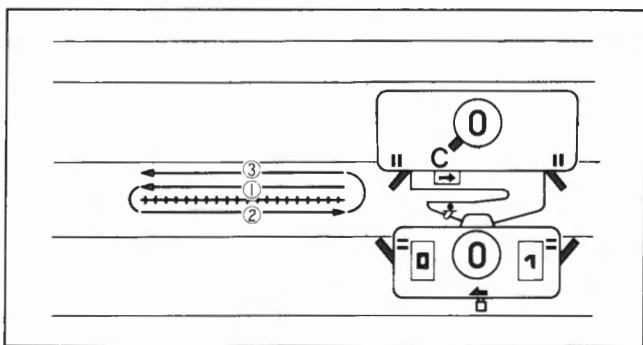
Remove yarn A from Yarn Clip and thread it into Yarn Feeder.

Holding the yarn underneath the machine, and move Knitter Carriage from the right to the left without knitting and connect it to the Ribber Carriage.



8. Re-set Cam Lever to "O" (STOCKINET) and knit the initial row from the left to the right.

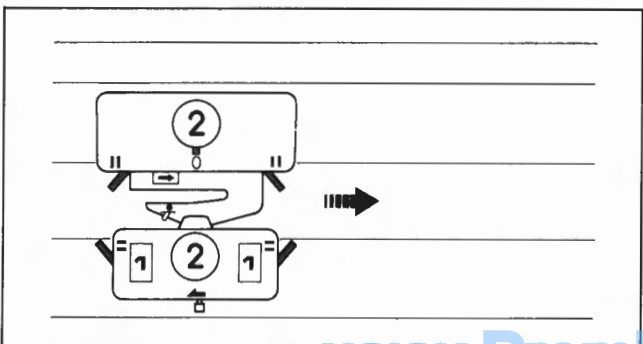
9. Suspend Cast-on Comb with Weights.



10. Knit subsequent 3 rows for cast-on changing the carriage settings as follows:

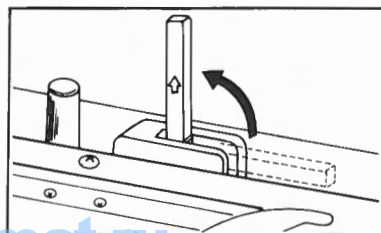
Cam LeverC (CIRCULAR)

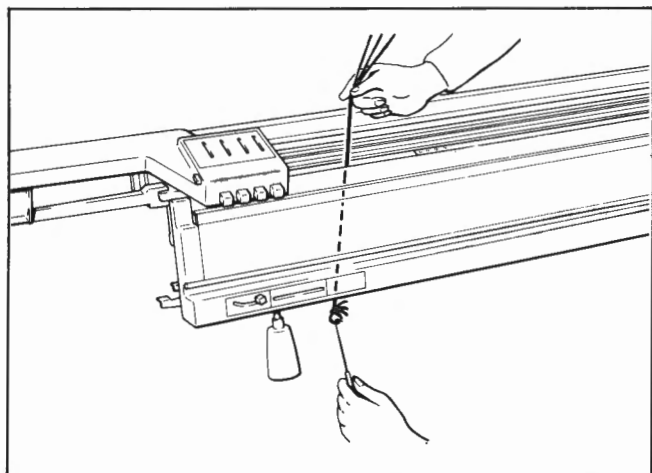
Set Lever (left).....**0**



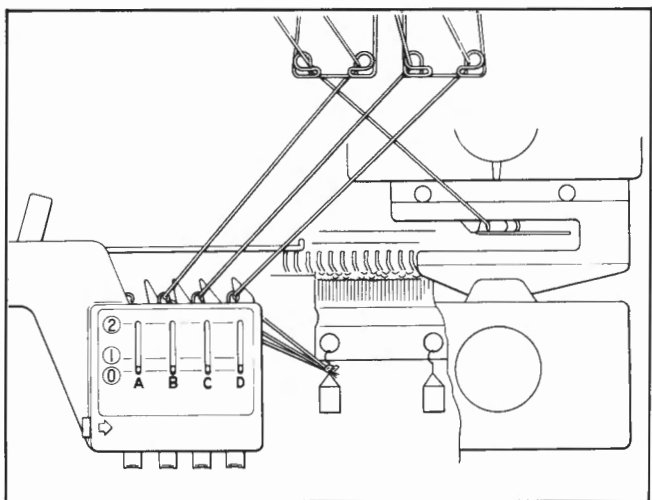
11. Re-set left Set Lever to **1** and set Stitch Dials to 2, then knit one row from the left to the right.

Set the Driving Lever to the upright position.





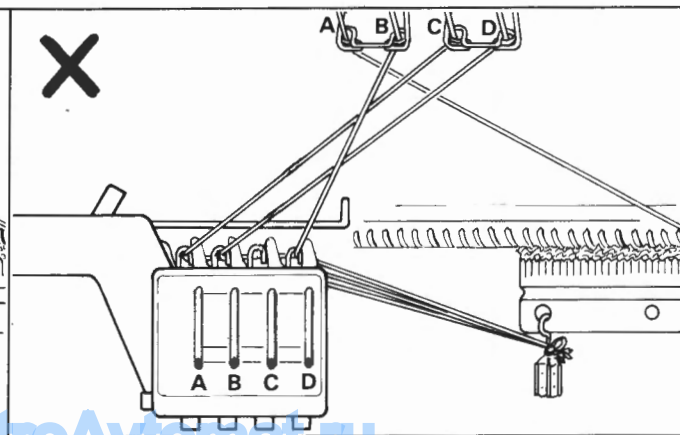
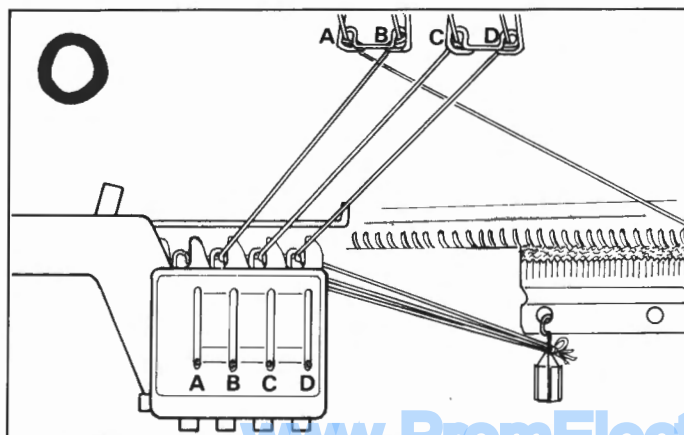
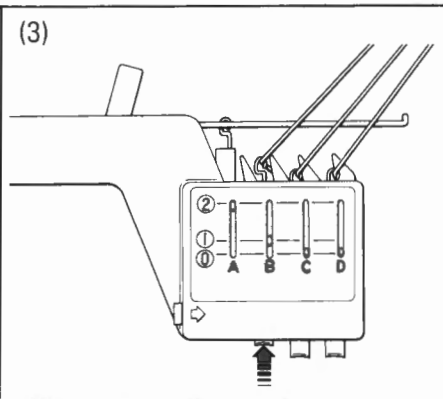
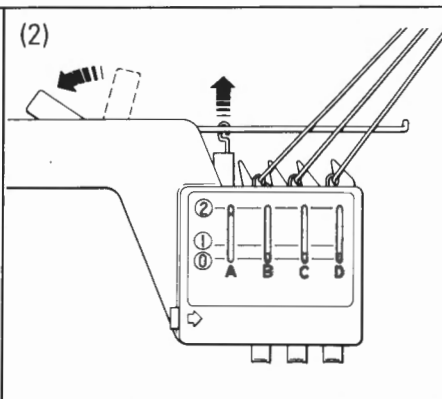
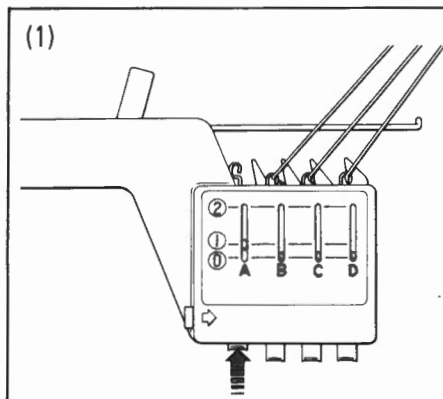
12. Hang the knot of the three yarns between both needle beds at the left side. Insert Hook Tool from underneath and catch the knot.

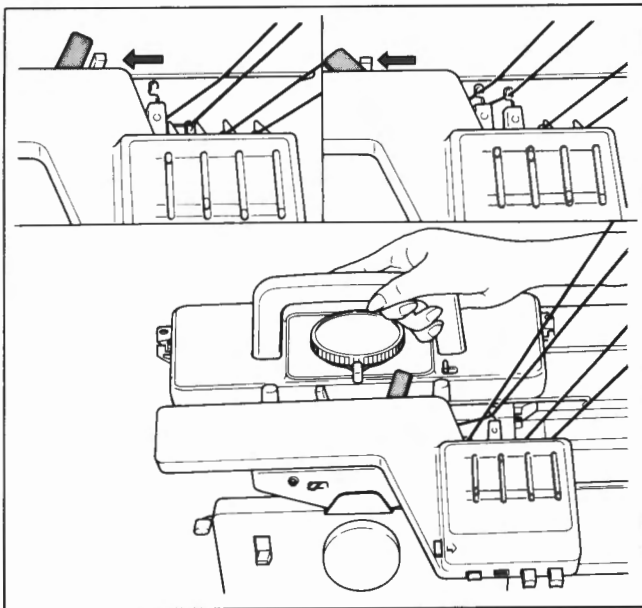


13. Hook the knot on Weight Hook suspended on Cast-on Comb.
Hook yarn B on Holder B, yarn C on Holder C and yarn D on Holder D respectively.
(Arrange the yarns so that they are not entangled with Sinker Posts.)

14. Arrange Holders as follows.

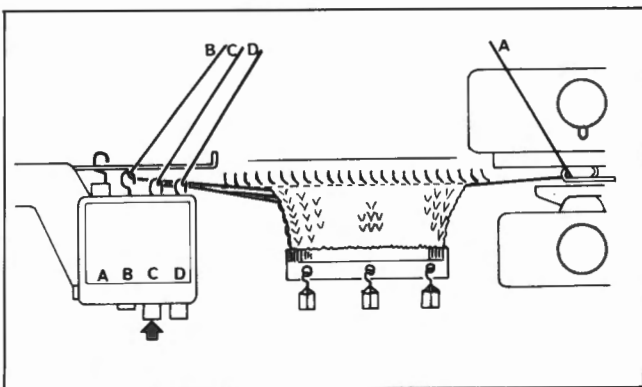
- (1) Push Holder Button A. The Holder is positioned in the ① position.
- (2) Push Feeding Lever to the left to bring out Holder A to the ② position.
- (3) Push Holder Button B. Holder is positioned in the ① position.





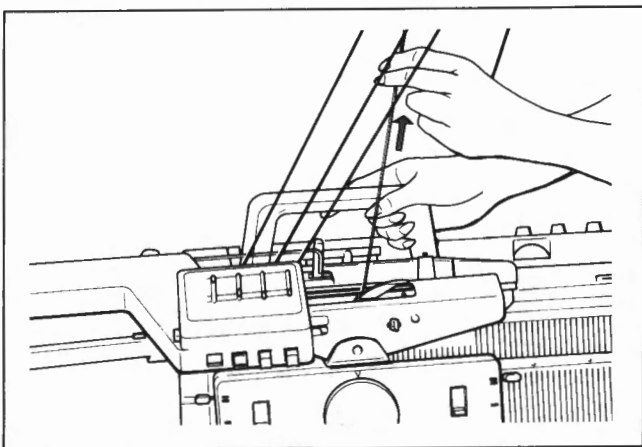
15. For main knitting set both Stitch Dials to 4 and move Carriage from the right to the left till Driving Lever hits Feeding Lever and yarn changing is completed. When yarn changing is accomplished, a clicking sound is heard.

Repeat this procedure until you knit desired number of rows changing yarns automatically. (Yarn A and yarn B are knitted alternately every two rows.)



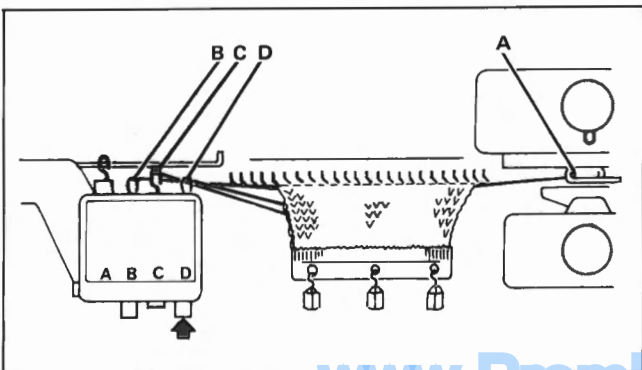
16. To exchange yarn B for C, leave Carriage at right side with yarn A in Yarn Feeder and push Holder Button C. (Holder B will be back to ① position.)

17. Knit desired number of rows changing two yarns A and C.



If more than three yarns are used, the Auto-Tension may not be able to take up slack on the yarn properly. In this case, slightly pull up the yarn above the Yarn Feeder, and also to correct possible entanglement of the yarns.

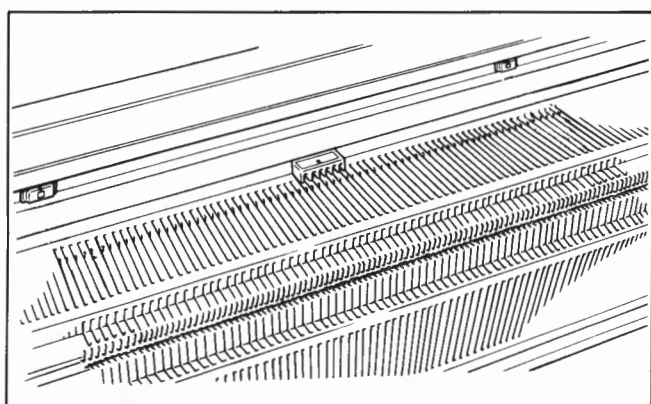
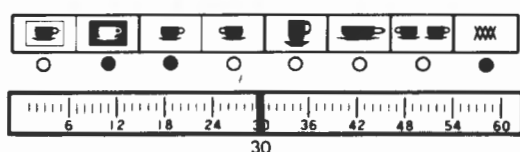
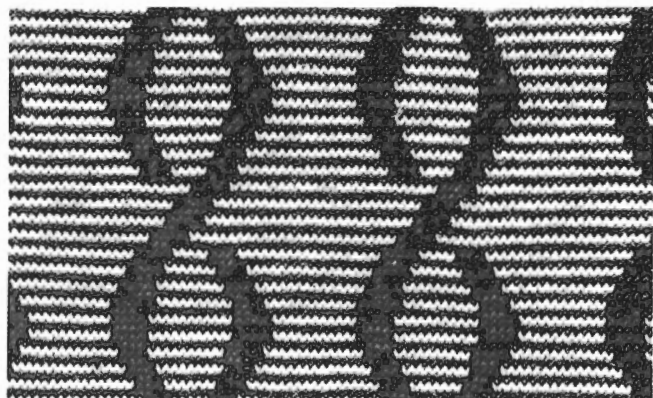
When the Automatic Yarn Changer YC-5 is used, the 4-Colour Auto-Tension must be used together.



18. In the same manner as done in step 16, change yarn C to D.

Repeat steps 15–18 to knit striped pattern in double rib.

DOUBLE JACQUARD



Double Jacquard — a fabric knitted with the use of the Pattern Card, and having no floats of yarn on its back. Using this Yarn Changer and a Pattern Card, pattern is formed on the knitter side, with the Cam Lever set at "J" (JACQUARD), and Ribber knits every row.

The sample is knitted with the Pattern No.13—(39).

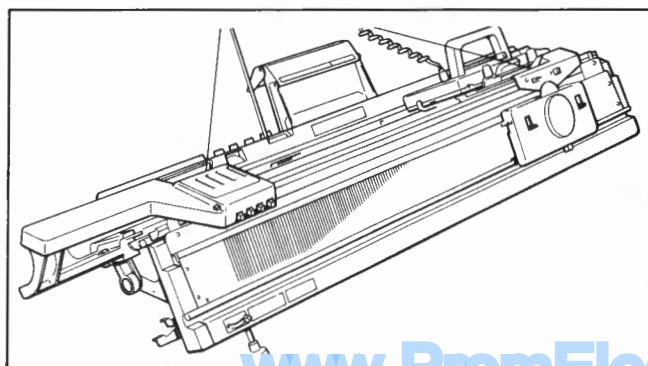
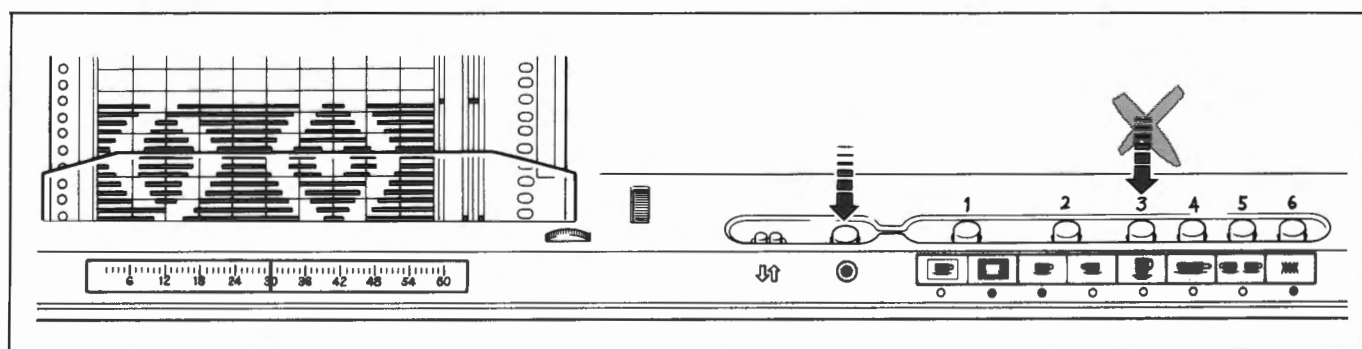
PREPARATORY STEPS

Referring to steps 1—7 for basic knitting on pages 89—91, set the machine controls and arrange the needles for cast-on.

Set the Point Cams and the Needle-1 Cam.

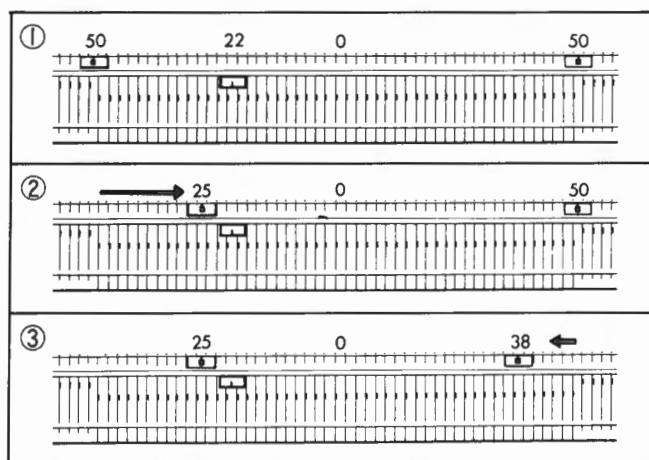
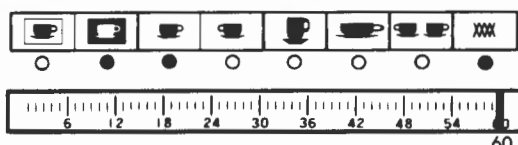
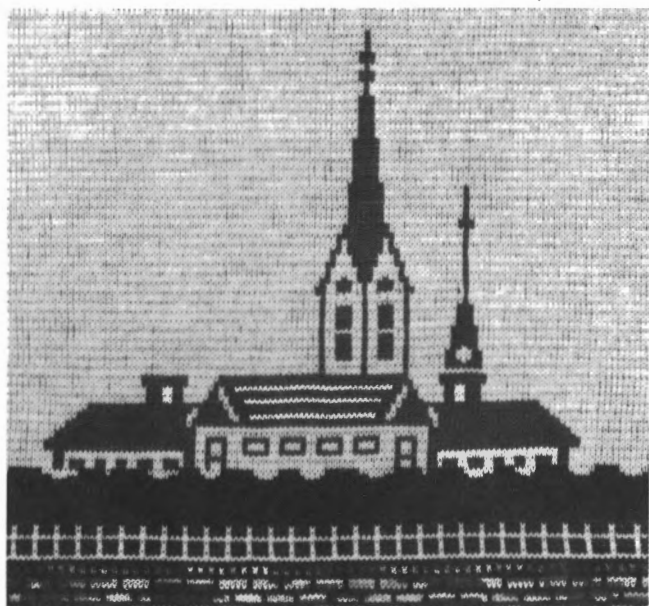
Turn on the machine and push on the Inspection Button to set pattern controls. (Refer to pages 19—21.)

Note: Use the Button 1 with its right light on for the first row of pattern.
DO NOT USE THE BUTTON 3.



Cast on and arrange the Holders, referring to pages 91—92. (Have the Carriage at the right side.)

Push off the Inspection Button. (Light is off.)



Single motif and magic point knitting are also possible in Double Jacquard.

The sample is knitted with the Pattern No.15—(45).

The sample is knitted using four yarns of different colours over 100 needles with the use of the Button 5 (Mirror Image) partially.

The pattern to be knitted next is ten rows below the row visible at the Card Slit.

On the Notation Column, mark at 41st and 61st rows before setting the Pattern Card into the machine.

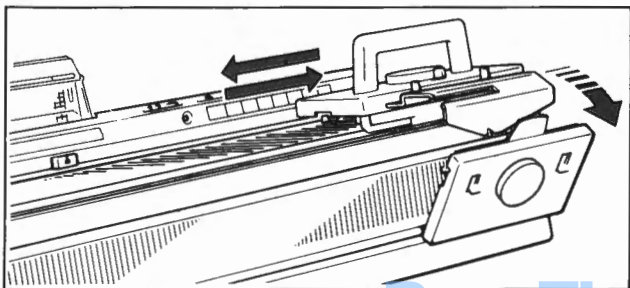
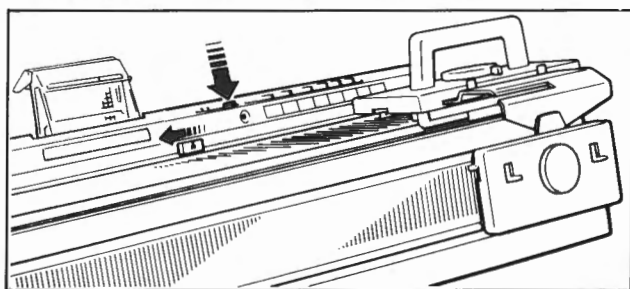
Set the Point Cams and Needle-1 Cam as illustrated in diagram ① and work ordinary Double Jacquard. (1st row to 40th row of the Pattern Card.) — 80 rows of knitting.

When the 41st row is read the mark on the Notation Column comes to the Card Slit, and the Carriage is at the right side.

Push on the Pattern Button 5 (Mirror Image). Move the Point Cams as illustrated in diagram ② and knit from 41st row to 60th row.

When the 61st row is read, move the right Point Cam referring to the instruction below, and memorize its position before knitting. Then knit from 61st row to 150th row.

When the Card has returned to the first row, lay down the Driving Lever and continue to knit with the yarn A.



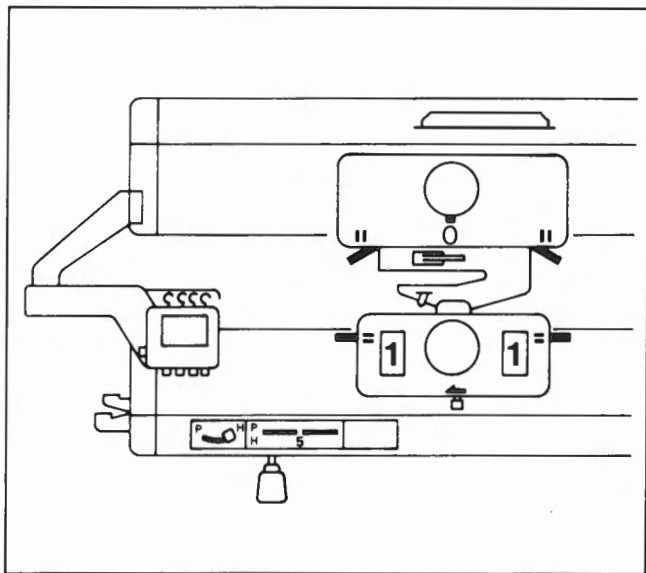
To move the RIGHT Point Cam,

- (1) Leave the Carriage at the right side.
- (2) Push on the Inspection Button.
- (3) Move the RIGHT Point Cam to specified position.
- (4) Disconnect the Ribber Carriage.
- (5) Move the Knitter Carriage twice without knitting by pushing the Release Lever.
- (6) Push off the Inspection Button.
- (7) Connect the Ribber Carriage.

KNITTING ON THE KNITTER USING THE YC-5

With the use of the Yarn Changer, and supported by the Ribber, stripe pattern in stockinet, tuck and slip stitches in colours, using the Pattern Card for the knitter can be knitted easily.

Cast on using the Knitter and the Ribber and then follow the procedure set forth below.



1. Set the machine controls as follows:

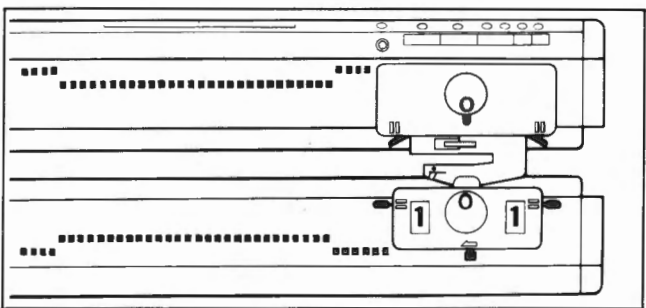
KNITTER

Cam Lever "0" (STOCKINET)
 Russel Lever..... II (both)
 Auto-Tension Dial..... To be adjusted.

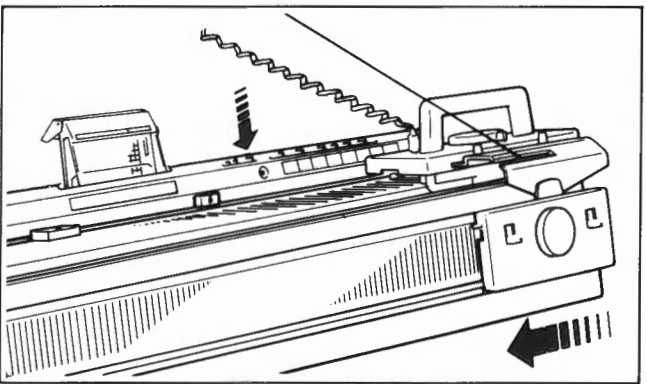
RIBBER

Set Lever..... ① (both)
 Pick Knob.....
 Russel Lever..... = (both)
 Driving Lever..... resting position
 Auxiliary Yarn Feeder Lever
 Pile Lever.....
 Swing Indicator H-5

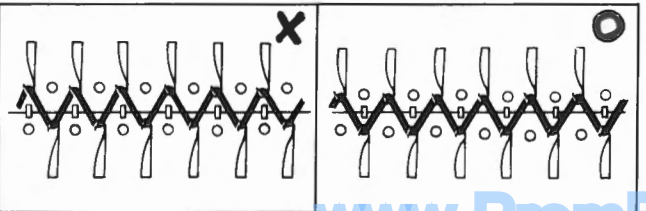
Stitch Dials (Knitter & Ribber).....
 Select the number according to thickness of yarn.
 (Refer to page 95.)



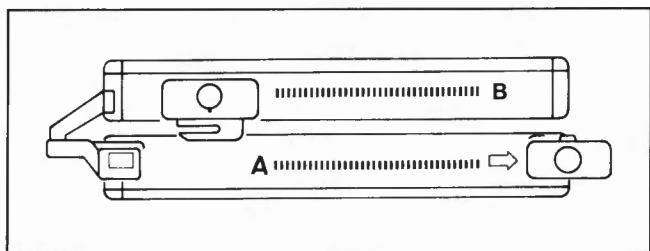
2. Arrange the needles for Double Rib and move the Carriage 2-3 times and leave it at the right side.



3. Turn ON the machine and push ON the Inspection Button.
4. Set the pattern controls, Point Cams, and the Needle-1 Cam at either of the Point Cams.
5. Thread waste yarn through Yarn Feeder and knit one row from right to left. (The yarn will be hooked alternately on the two rows of needles in service in a zigzag pattern.)

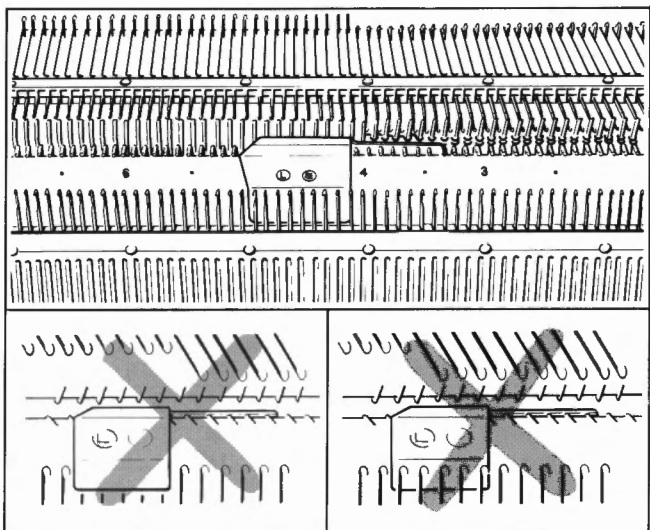


6. Insert Cast-on Comb between Knitter and Ribber so that its teeth face to Knitter Sinker Posts, and then suspend Weights on the Comb as shown opposite.



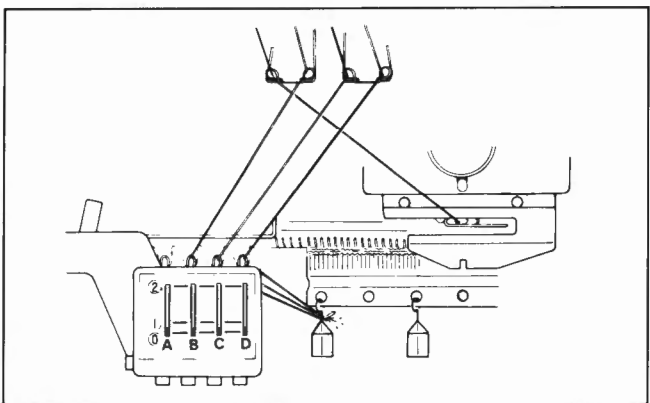
7. Disconnect Ribber Carriage from Arm. Move Ribber Carriage from the left to the right removing stitches on Ribber, then remove the Carriage from Needle Bed.

8. Push Ribber needles to A position using Needle Pusher.



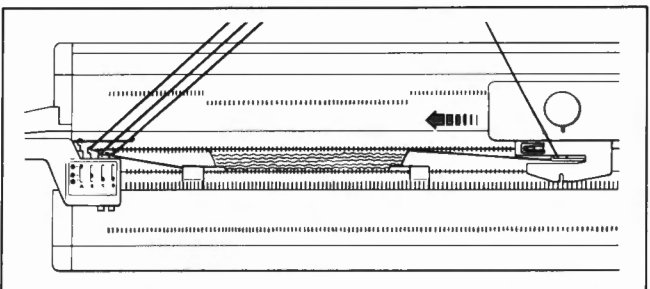
9. Insert End Stitch Holders under Ribber needles as far as they go at both ends of fabric as shown on the left. By setting the Holders, both end stitches of fabric and the yarn are pressed against Knitter Sinker Posts.

Place End Stitch Holder 1—2 needles off the end of fabric as illustrated below. If you place the bent portion of the Holder under needles in B position, Yarn Feeder and needles may be damaged.



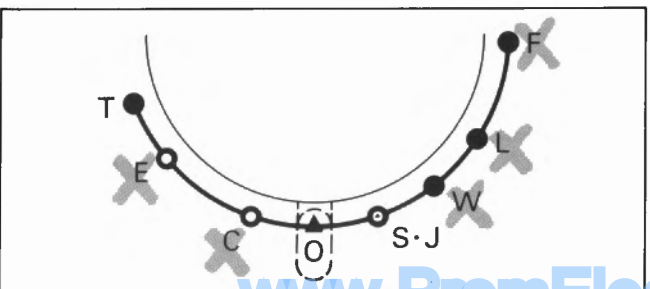
10. Knit three rows in waste yarn using Knitter Carriage. Exchange waste yarn for main yarn and knit two rows leaving Carriage at the right side.

11. Place the contrast yarns into Holders of YC and arrange their positions.



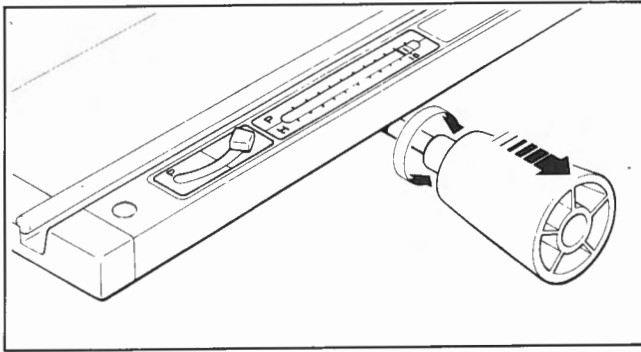
12. Raise the Driving Lever and knit one row from the right to the left reaching the yarn changer.

13. Push OFF the Inspection Button.

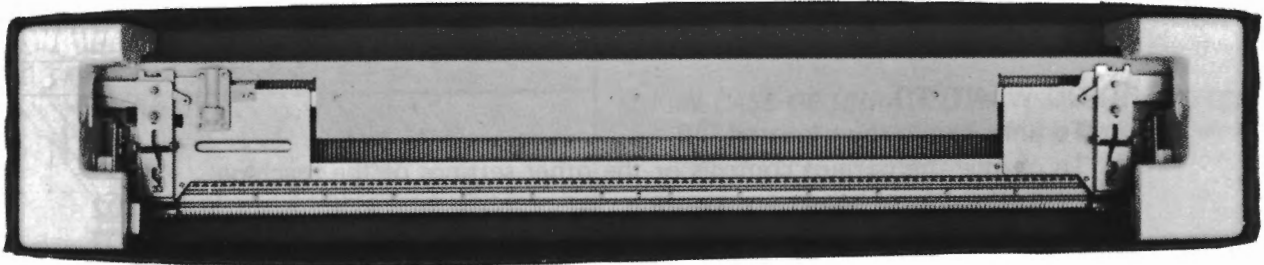


14. With the Cam Lever at the position you desire (O, T or S), start to knit changing yarns by pushing the Holder Buttons at the row you desire.

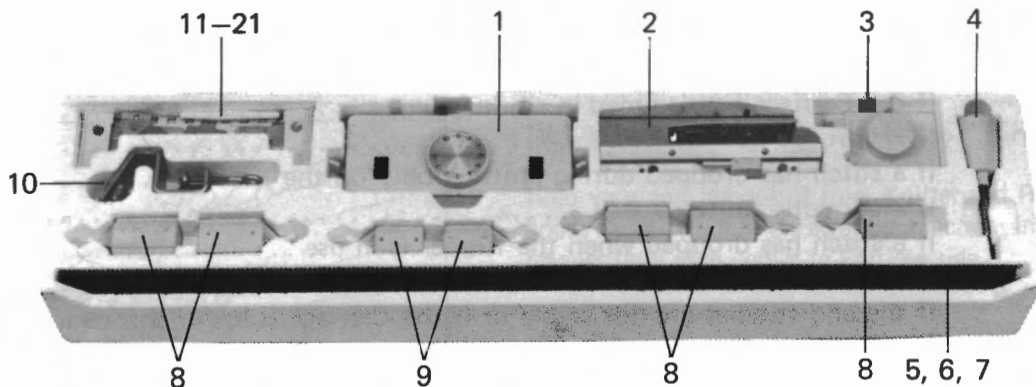
REPACKING THE RIBBER



1. Disassemble Ribber by reversing the Procedure for assembling. Set Swing Handle at H-10 and pull it out in a rotating manner.
2. Before putting back Needle Bed into the box, fit plastic packings to both ends of Needle Bed in the following manner:—
Raise Needle Bed with its Sinker post upward, and its back side facing you, fit the packings engraved "R" to right end, and "L" to left end.



3. Replace Accessories as shown below.



- | | |
|-------------------------|--|
| 1 Ribber Carriage | 11 P Presser |
| 2 Ribber Arm | 12 Needle Pusher (2/1, 2/2) |
| 3 P Carriage | 13 Screw Driver |
| 4 Swing Handle | 14 Auxiliary Piece (L) |
| 5 Close Knit Bar | 15 Auxiliary Piece (R) |
| 6 Cast-on Comb (long) | 16 Side Hanger |
| Cast-on Wire (long) | 17 Hanger Comb |
| 7 Cast-on Comb (short) | 18 Hook Tool |
| Cast-on Wire (short) | 19 Double-eye Transfer Tool |
| 8 Ribber Weight (large) | 20 Spare Needle Envelope (incl. 3 needles) |
| 9 Edge Weight | |
| 10 Ribber Clamp | |

TECHNICAL HINTS

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IF YOU WANT TO...

To unravel the rows knitted

IN CASE OF UNRAVELLING THE FABRIC ONLY ON THE KNITTER.

- (1) Hang the Claw Weights on both edges of the fabric.
- (2) Holding the fabric downwards with your left hand, pull yarn sideways.
- (3) Lift the yarn upwards and very slightly backwards. The stitches of previous row slide back onto needle hooks.

IN CASE OF UNRAVELLING THE LACE STITCH FABRIC, place the transferred stitches back to their original needles before unravelling.

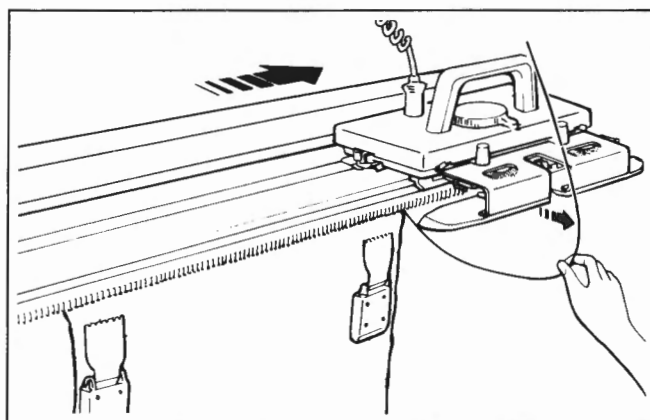
IN CASE OF UNRAVELLING RIB STITCHES.

Hold yarn and unhook it from Knitter and Ribber needle hooks by pulling it in the arrowed directions in a zigzagging manner until yarn comes to Carriage side.

Ensure all stitches are in the needle hooks and the needles are in B position.

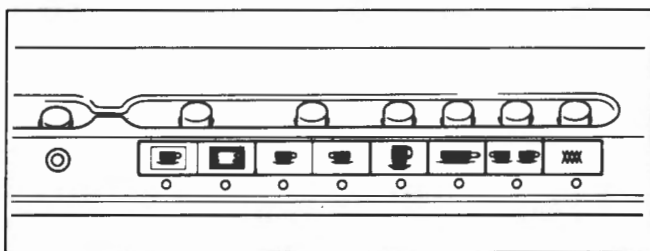
If some of stitches are not in needle hooks, place them into the hooks using the Transfer Tool.

Repeat the above procedure until the required number of rows have been unravelled.



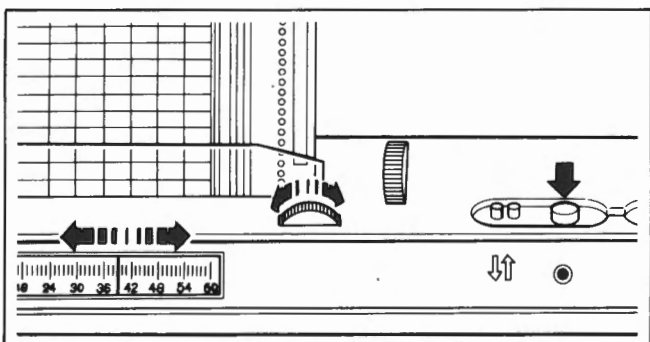
To change the pattern controls or the other settings of the machine in the course of pattern knitting

Before changing the Pattern Controls or the other settings of the machine, have the Carriage on the right or left side off the edge of the fabric, and remove the yarn from the Yarn Feeder.



TO RE-SET THE PATTERN BUTTONS

Push ON or OFF the selected Pattern Button, and start knitting.

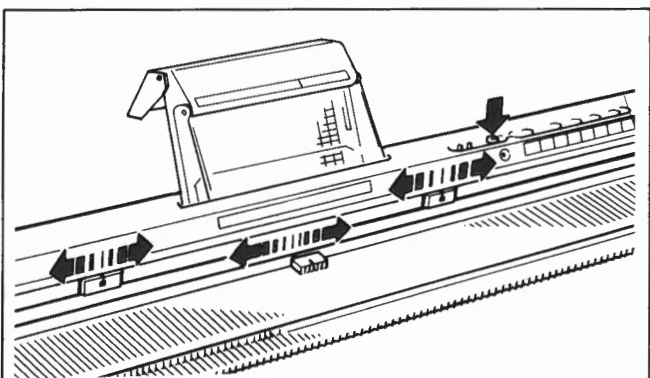


TO CHANGE THE PATTERN WIDTH OR THE PATTERN CARD

Push ON the Inspection Button. (Light is on.)

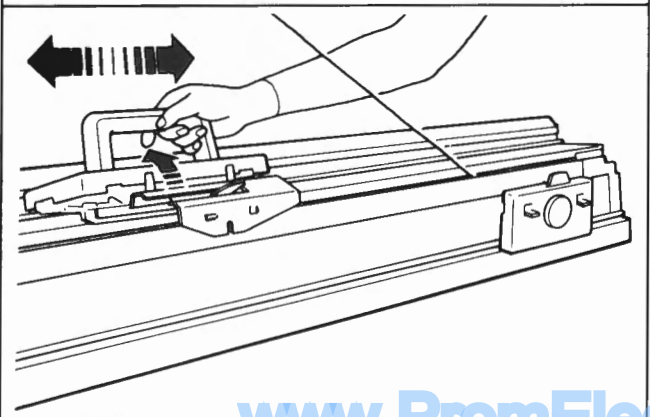
Re-set the Pattern Width Indicator, or exchange the Pattern Cards.

Push OFF the Inspection Button and start knitting.



TO CHANGE THE POSITIONS OF BOTH POINT CAMS AND/OR NEEDLE-1 CAM.

Push ON the Inspection Button (Light is on.) and replace the Point Cam and/or Needle-1 Cam.

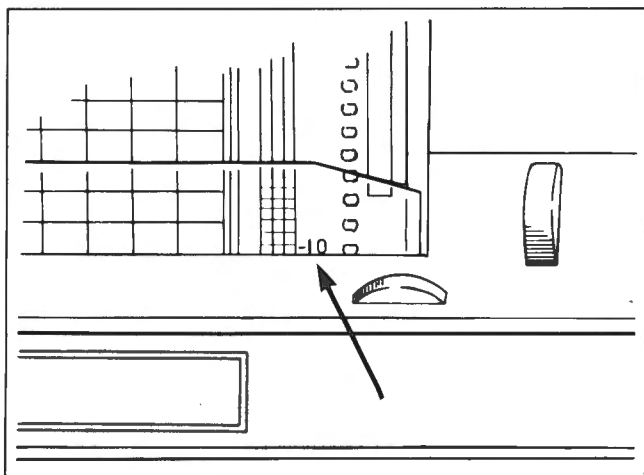


To memorize the new positions of the Point Cams and/or the Needle-1 Cam, move the Carriage twice without knitting (by pushing the Release Lever.)

(If the SRP-50 Ribber is in use, disconnect the Ribber Arm from the Knitter Carriage and pass it twice without knitting – by operating the Release Lever.)

Re-set the Carriage to the original setting.

Push OFF the Inspection Button and start knitting.

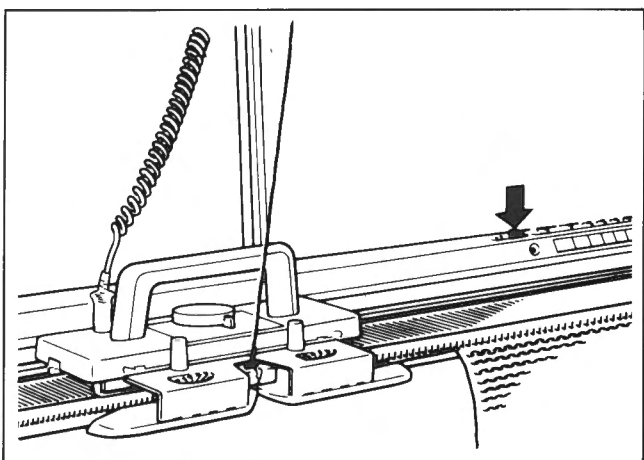


To turn off the machine during knitting

Put a mark at the row visible at the Card Slit before turning off the machine.

To start knitting again,

1. Turn on the machine, and move the Carriage twice to memorize the positions of the Point Cam and Needle-1 Cam.
2. Set the Pattern Card so that the mark is above the Card Slit. (Inspection Button light is off.)
3. Push ON the Inspection Button. (Light is on.)
4. Push OFF the Inspection Button to memorize the row to be knitted next. (Light is off.)

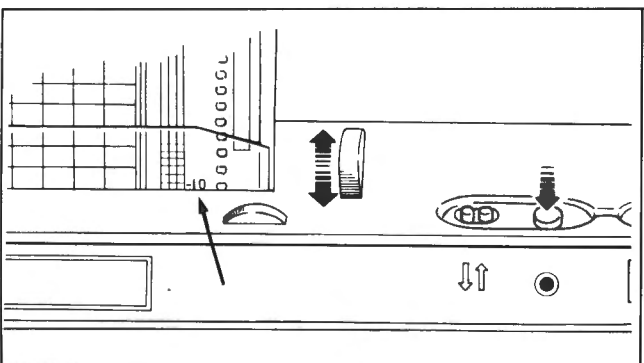


To knit stockinet in the course of pattern knitting

Push ON the Inspection Button and knit with the Cam Lever at "O" (STOCKINET).

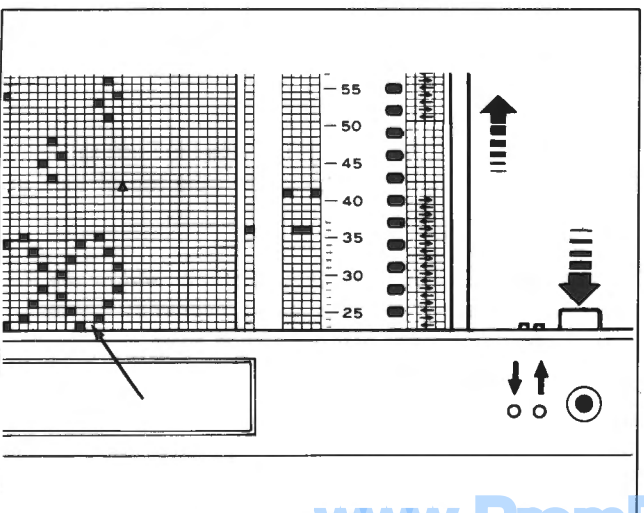
If you fail to push "ON" the Inspection Button, the Pattern Card continues to advance.

To knit in pattern knitting again, re-set the Cam Lever to the original position and push the Inspection Button OFF.



To knit a selected pattern row repeatedly

1. Push ON the Inspection Button.
2. Set the selected pattern row of the Pattern Card at the Card Slit.
3. Push OFF the Inspection Button, the Card goes in and the selected pattern row is memorized.
4. Push ON the Inspection Button, the Card comes out and stops.
5. Start knitting, the same row is knitted repeatedly.



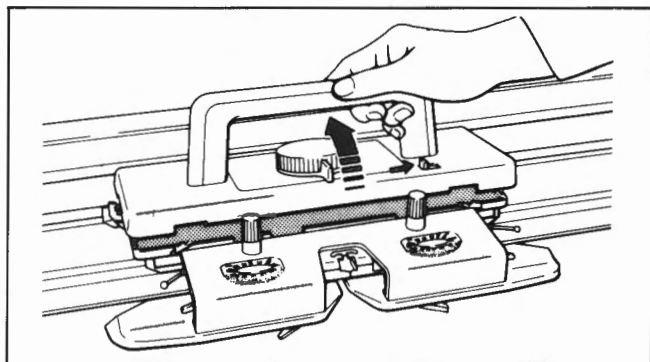
To check the knitted row with the pattern on the Pattern Card

1. Push ON the Inspection Button, and the Card comes out by 10 rows to show the pattern to be knitted on the next row at the Card Slit.
2. Feed the Card an additional row to the direction opposite the Feeding Direction Pointer. This row of pattern is corresponding to the last row knitted and hooked on the needles.

To start knitting again, return the Card by one row reaching its original position. Push OFF the Inspection Button.

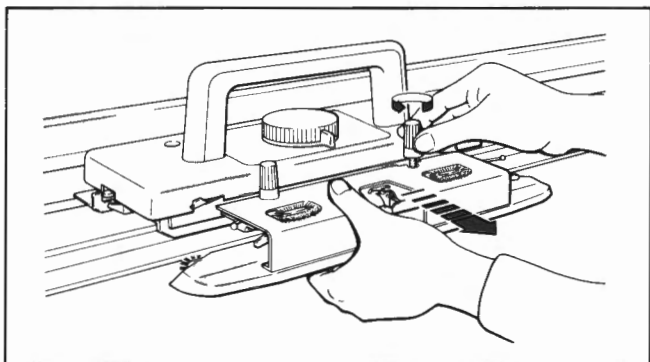
IN CASE OF LACE STITCH, check the arrow mark on the Pattern Card with the position of the Carriage before starting to knit again.

WHAT TO DO IF...

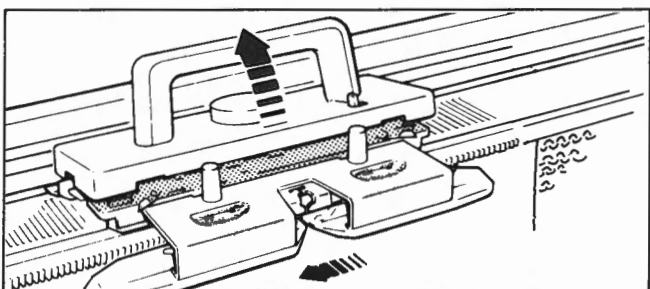


If the Standard Carriage has jammed...

1. Remove the yarn from the Yarn Feeder.
2. Push the Release Lever in the arrow direction, and the top of the Carriage lifts open.

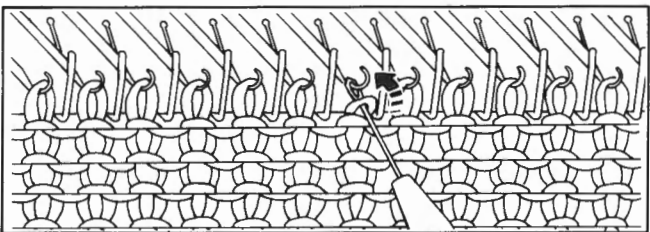


If the yarn has entangled with the Brushes on the Arm or Yarn Feeder, remove the Arm from the Carriage and disentangle the yarn.

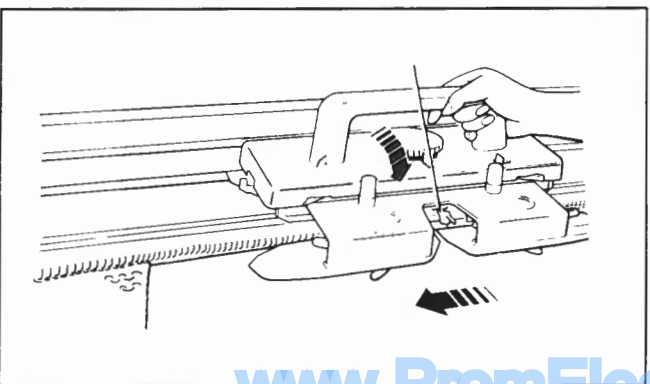


3. With the top of the Carriage up, move the Carriage in its proceeding direction till it gets clear of the fabric.

If the Point Cams are in use, move the Carriage until it passes the Cam.

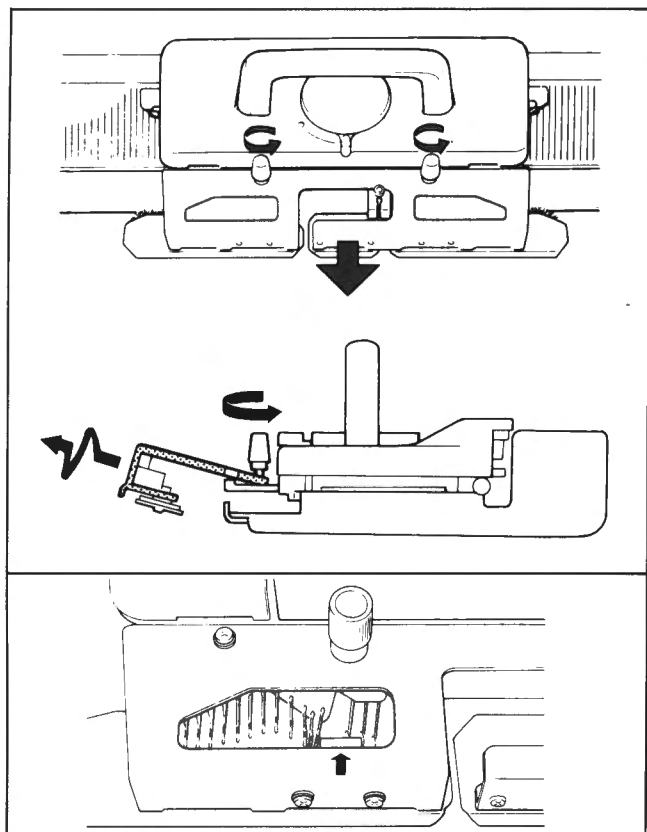


4. Check the stitches, and if stitches have moved behind the latches, replace them into the hooks using a Transfer Tool.
5. Align the working needles in B position and unravel the incomplete row referring to page 101.



6. With the top of the Carriage up, pass the Carriage to the side with the yarn end, press down the top of the Carriage and continue to knit.

If the Row Counter, the Knit Contour and/or the Pattern Card is/are in use, refer to "If incorrectly knitted..." on pages 108 & 109 before knitting again.



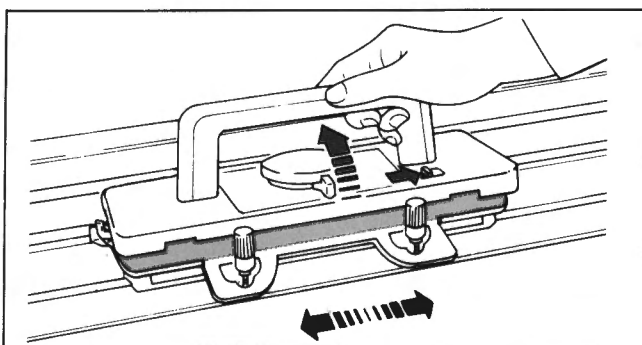
If the Lace Carriage has jammed...

DO NOT PUSH THE CARRIAGE BY FORCE.

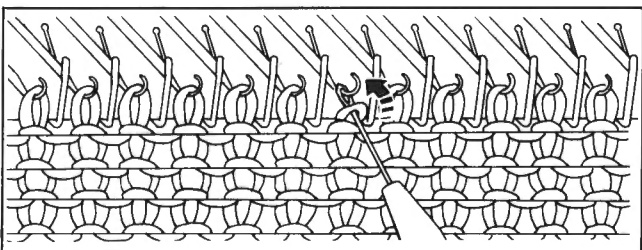
1. Remove the yarn from the Yarn Feeder, and loosen the Arm Nuts.
2. Lift up the front of the Arm, and carefully remove it from the needles by moving it up and down.

If the hooks of the needles are caught in the Arm, carefully displace them using a Transfer Tool.

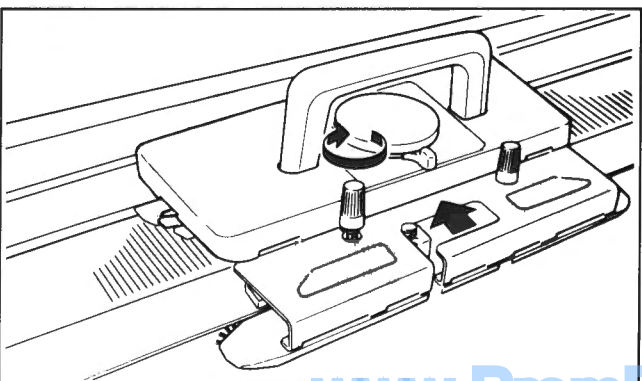
3. Remove the Arm from the Carriage.



4. Push the Release Lever to lift up the top of the Carriage. Move the Carriage in its proceeding direction and off the working needles.

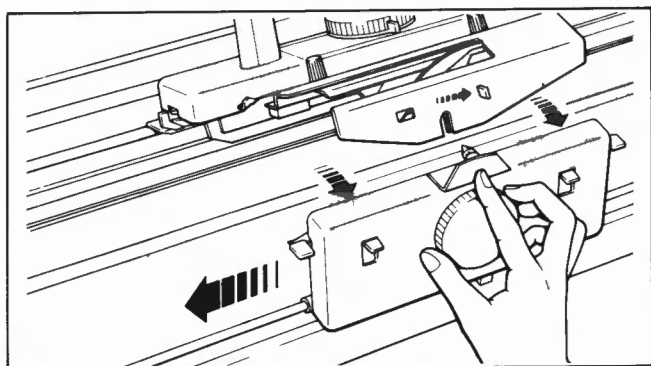


5. Check the stitches, and if stitches have moved behind the latches, replace them into the hooks using a Transfer Tool.
6. Align the working needles in B position and unravel the incomplete row referring to page 101.



7. With the top of the Carriage up, pass it to the side with the yarn end, press down the Carriage, and continue to knit.

If the Row Counter, the Knit Contour and/or the Pattern Card is/are in use, refer to "If incorrectly knitted..." on pages 108 & 109 before knitting again.

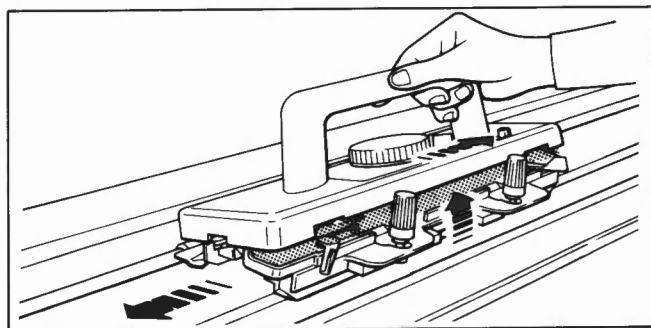


If the Carriage has jammed in rib knitting...

1. By pushing the Link Knob, disconnect the Ribber Carriage from the Arm and tilt it towards you, then move it to either end of the needle bed.

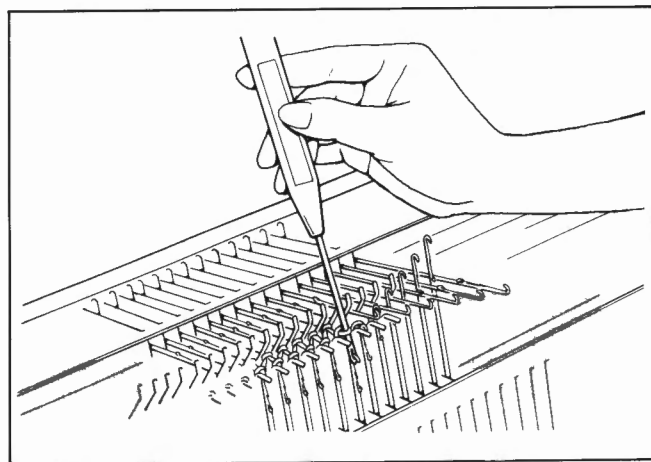
DO NOT PUSH OR PULL THE CARRIAGE BY FORCE.

2. Remove the Ribber Arm from the Standard Carriage.



3. Lift open the Carriage by pushing the Release Lever, and move it in its proceeding direction and off the working needles.

If the Point Cams are in use, move the Carriage until it passes the Cam.

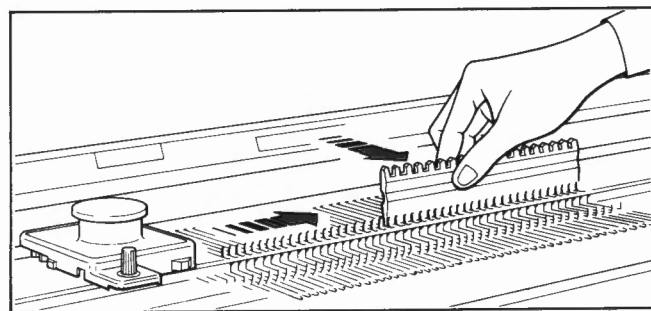


4. Check the stitches, and if stitches have moved behind the latches, replace them into the hooks using a Transfer Tool.

5. Align the working needles in B position and unravel the incomplete row referring to page 101.

6. Pass the Carriage to the side with the yarn end and press down the Carriage to continue knitting.

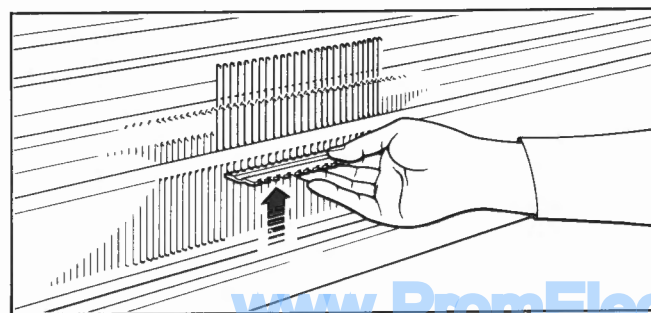
If the Row Counter, the Knit Contour and/or the Pattern Card is/are in use, refer to "If incorrectly knitted..." on pages 108 & 109 before knitting again.



If P Carriage has jammed...

If it jammed on the Knitter...

Regardless of direction in which you are moving P Carriage, remove it and push all the needles to D position, then move P Carriage from the left to the right.

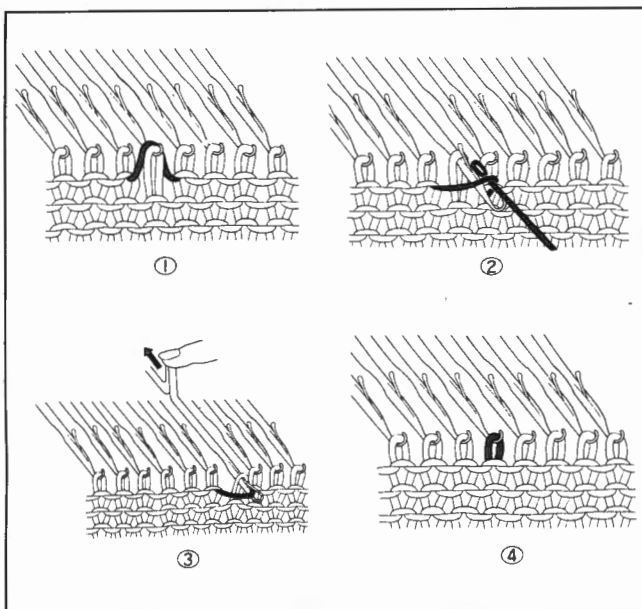


If it jammed on the Ribber...

Remove P Carriage and push all the needles to D position using Needle Pusher, then knit the next row.

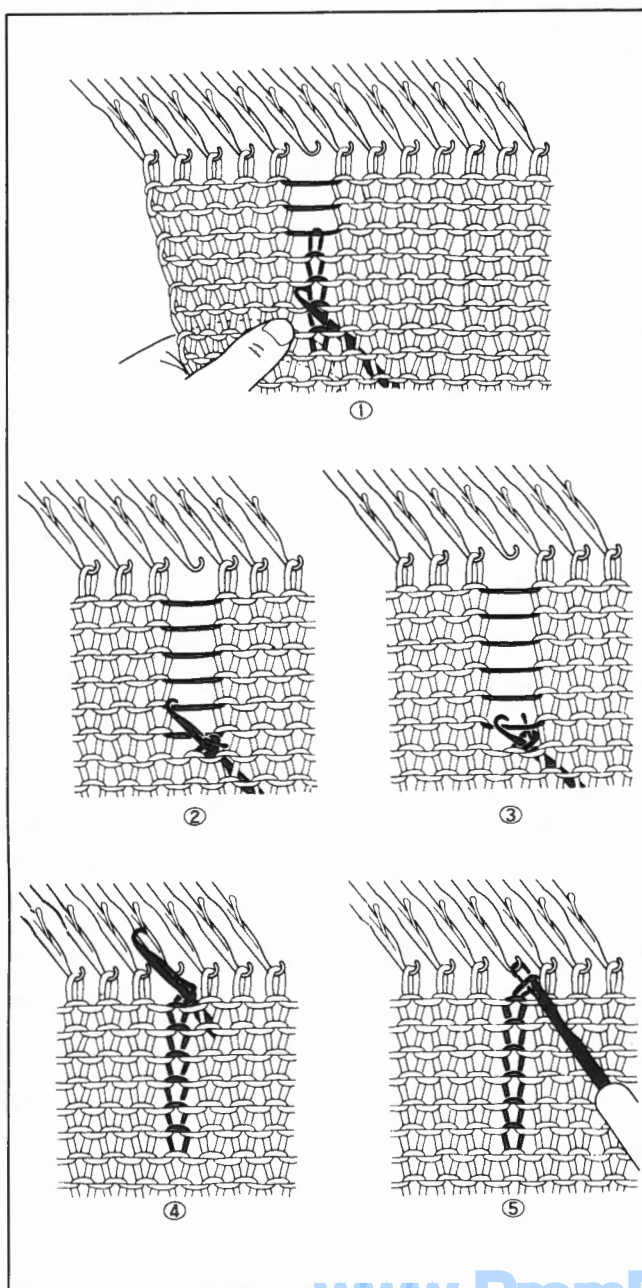
If you have failed to align needles into C position for cast-on using P Carriage, push all the needles to D position and move P Carriage twice across the needles starting from right side.

(Needles will align in C position.)



If a stitch has dropped during knitting only on the Knitter...

1. Insert a One-Eye Transfer Tool into a stitch below the dropped stitch and replace it into needle hook together with loose yarn.
2. Slowly pull the needle out until the stitch is behind the open latch leaving the loose yarn in the hook.
3. Push the needle back so the latch will close and the stitch behind will slide over the hook reforming a stitch as illustrated.

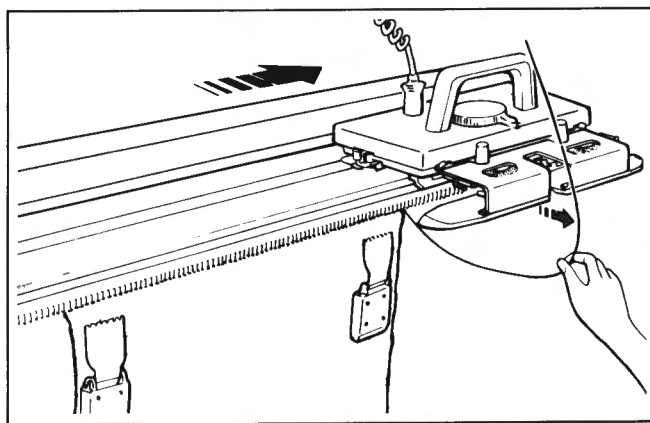


IN CASE A STITCH HAS DROPPED AND RUN DOWN FOR SEVERAL ROWS:

1. Insert a Tappet into a stitch a few rows below the dropped stitch from the side away from you. Unravel the stitches down to the Tappet Tool.

Hint With the other hand, pull the fabric downwards. This makes unravelling easier.

2. Push the Tappet Tool toward you so the stitch will be behind the open latch. Catch the yarn crossing above into the hook.
3. By pulling the Tappet Tool backwards, the latch will close and the loose yarn will be trapped in the hook.
4. Continue pulling and the old stitch will slide down over the closed latch forming a new stitch in the hook.
5. Repeat this operation up to the top.
6. Place the top stitch onto the needle hook.



If incorrectly knitted...

Have the Carriage outside of the fabric (working needles) and remove the yarn from the Yarn Feeder.

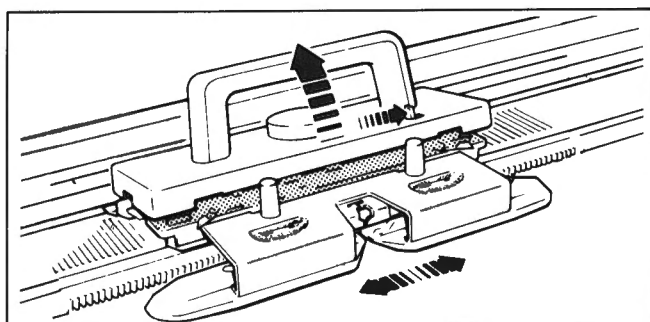
Refer to page 101, and unravel the incorrectly knitted rows.

IN CASE OF USING PATTERN BUTTON 3:

If an odd number of rows are unravelled, unravel an extra row making the total unravelled rows an even number.

IN CASE OF DOUBLE JACQUARD:

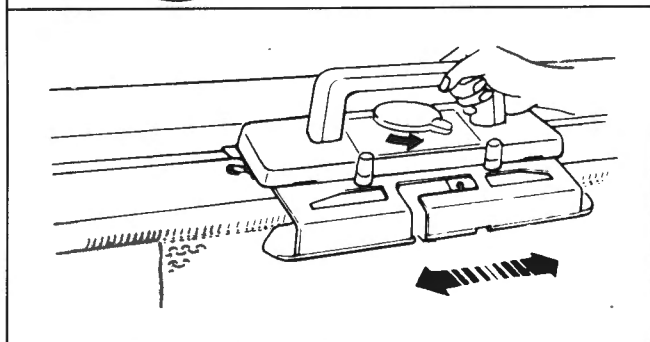
If the yarn end is at the left side unravel an additional row so that it comes to the right side.



Replace the yarn into the Yarn Feeder, or if the Carriage is at the side opposite the yarn, pass it to the side with the yarn following the instruction given for each knitting.

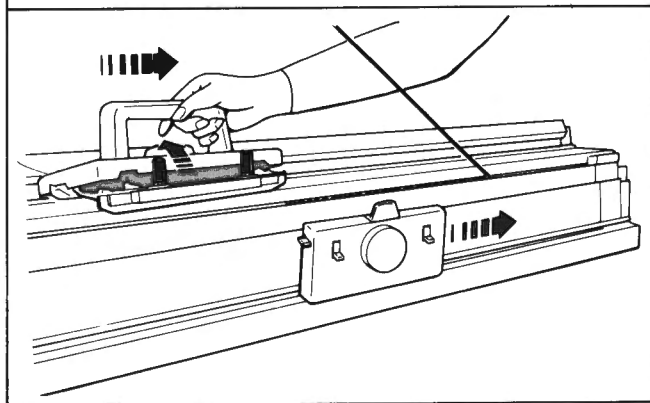
IN CASE OF USING THE STANDARD CARRIAGE:

Push the Release Lever and lift up the Handle, then move the Carriage to the side of the yarn.



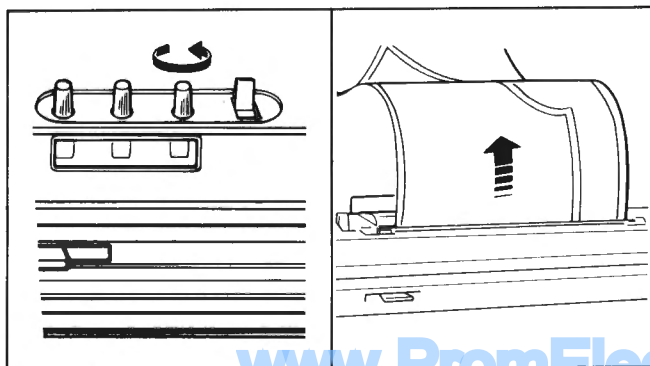
IN CASE OF USING THE LACE CARRIAGE:

Set the Cam Lever to "N", and pass the Carriage to the side with the yarn.



IN CASE OF USING THE RIBBER:

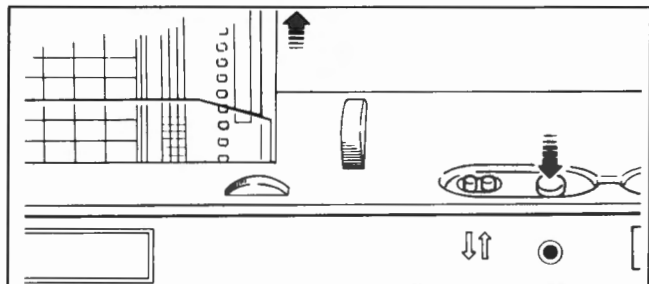
- (1) Disconnect Ribber Carriage from Arm and move it to yarn side while tilting Carriage.
- (2) Remove the Ribber Arm from the Standard Carriage.
- (3) Lift up the Handle of the Carriage, and move the Carriage to the side of the yarn.
- (4) Connect the Ribber Carriage and Arm to the Standard Carriage.



If the Row Counter is in use, return it by the same number as unravelled.

If the Knit Contour is in use, return the Pattern Paper as many rows as unravelled referring to page 21 of the "Knitting Manual", and start knitting.

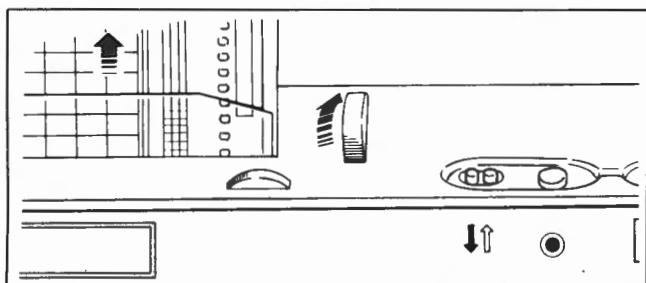
But if a Pattern Card is used together, refer to the next page.



If a Pattern Card is in use, reset it in the following manner.

Push ON the Inspection Button.

(Light is on and the Pattern Card comes up 10 rows.)

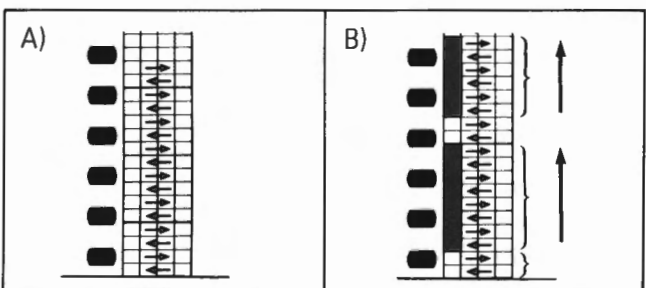
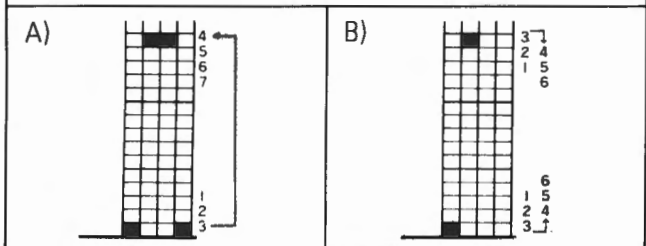


Return the Card by the same number of rows as unravelled in the direction opposite to that effected by the Feeding Direction Pointer.

A) When returning the Pattern Card, if you reach the first row of the pattern before returning the total rows required, turn the Card to the top row, and count the remaining rows.

B) If the pattern is knitted reversedly from the top to the first row, count the rows in the direction reverse to that the Card advances.

Do not count the top or low end row twice.

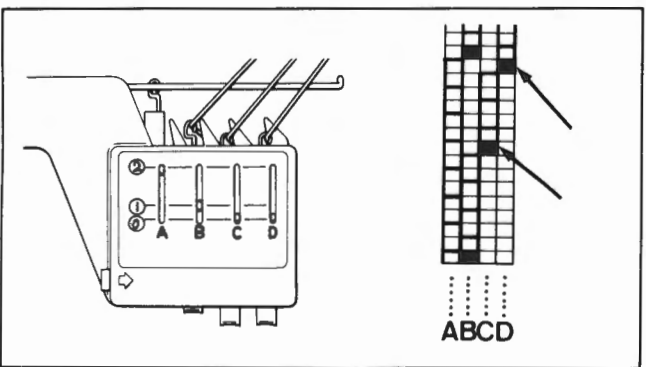


IN CASE OF USING PATTERN BUTTON 3:

Return the Card by half the number of rows unravelled.

IN CASE OF LACE STITCH:

Return the Pattern Card by the same number of rows as unravelled, but skipping the rows for transferring stitches which are marked black in the Notation Column.



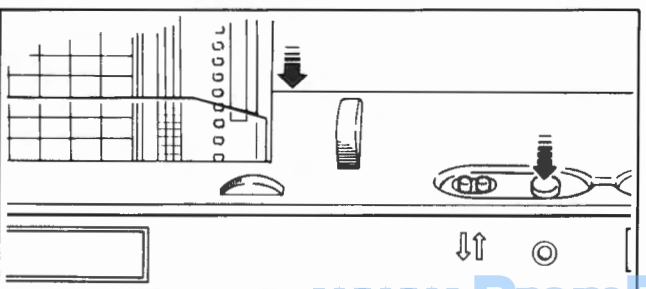
IN CASE OF DOUBLE JACQUARD:

If an even number of rows unravelled, return the card half the number of rows as unravelled.

If an odd number of rows unravelled, return the card half the number of rows as unravelled minus one.

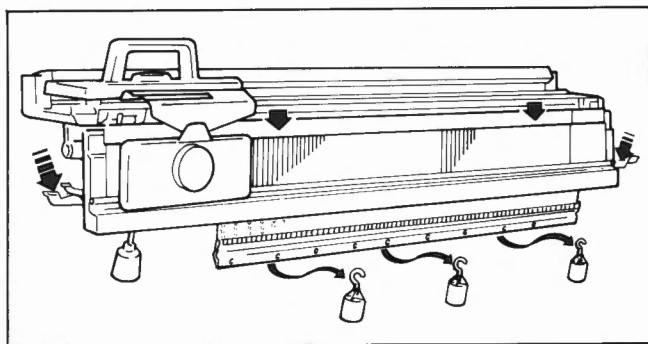
Since the two lamps of the Button 1 light up alternately on every two rows of knitting, reset the Button 1 according to the number of rows unravelled.

Re-arrange the Holder Buttons of the Yarn Changer to correspond with the mark in the Notation Column.



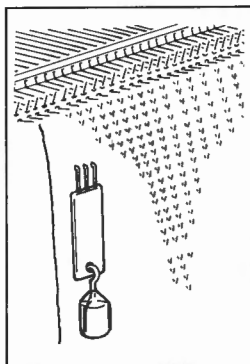
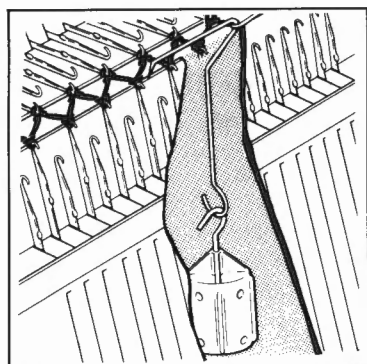
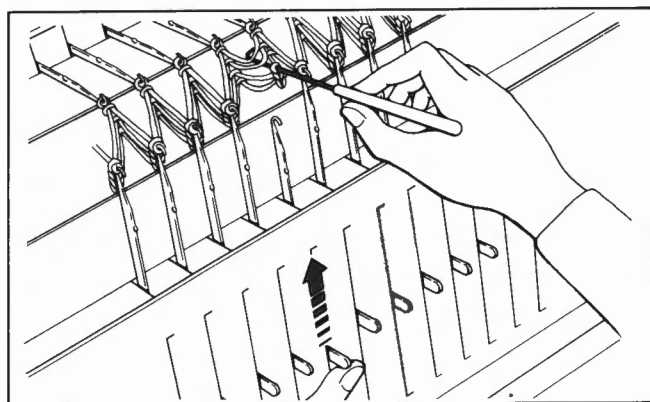
Push OFF the Inspection Button. (The Pattern Card is fed downwards by 10 rows and the row to be re-knitted is memorized.)

Then start re-knitting.



If a stitch has dropped when the Ribber is in use...

1. Remove Weights from Cast on Comb as they may cause dropped stitches to run.
2. Depress Drop Lever and bring down Ribber to middle position.
3. With Hook Tool, pick up dropped stitch and place it back on needle hook. Then reform stitches by moving needle back and forth or by using Tappet Tool.
4. Raise Ribber to original position, hook Weights on Cast-on Comb and align needles.

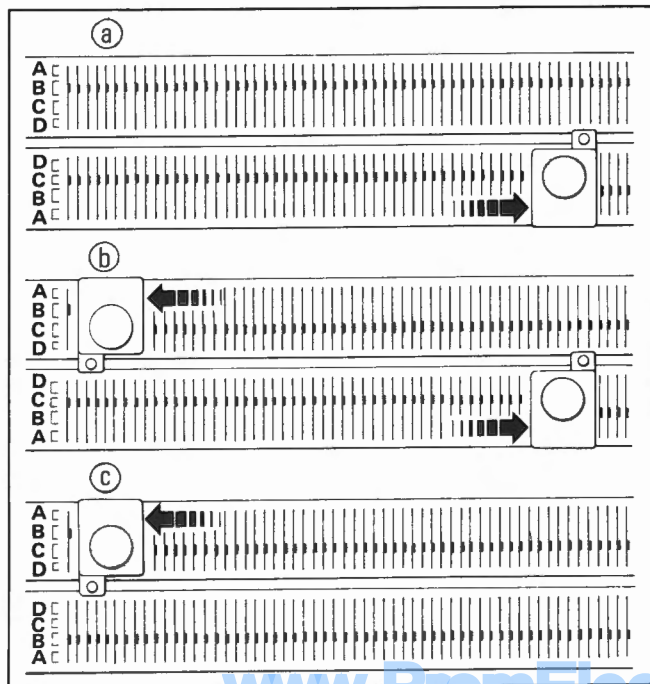


If stitches float when the Ribber is in use...

When edge stitches tend to float, suspend Edge Weight and advance it at an interval of 10–15 rows.

If stitches of half length of knitting float, check to see if Cast-on Comb with Weights is suspended horizontally.

Use of Hanger Comb with Weight is also effective.



When stitches on full length float, push needles to C position using P Carriage (without P Presser) and knit.

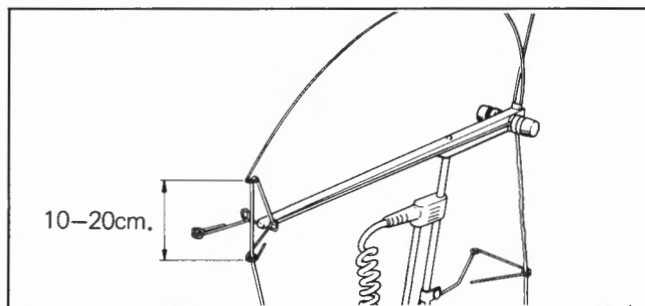
In case of circular knitting, push up needles to D position either on knitter or ribber to be knitted next.

In case of pin tuck knitting, push up Ribber needles for rows of pin tuck knitting. (a)

In case of wide rib, push up Knitter and Ribber needles on every row. (b)

Firstly, slide P Carriage from the left to the right on Ribber, and secondly slide P Carriage from the right to the left on Knitter.

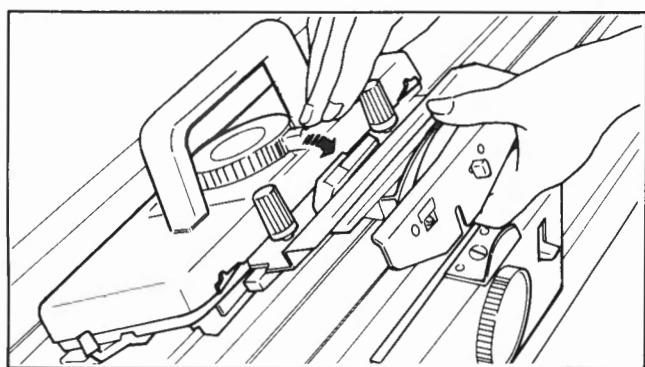
In case of variation swing, push up needles on the bed having more number of needles. (a) (c)



If the end stitches are not stable or if the Carriage is heavy to operate...

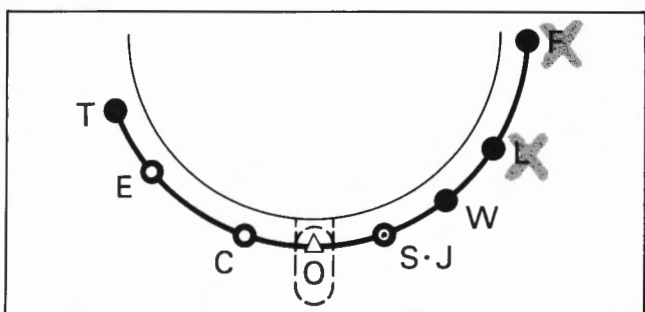
Check the following points.

- Is the yarn coming out freely from the inside of yarn ball. (☞ P.2)
- Is the yarn threaded into the Auto-Tension correctly. (☞ P.8)
- Is the machine lubricated properly. (☞ P.114)

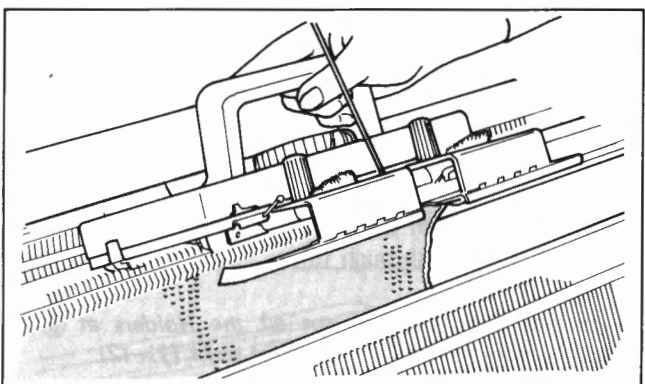


If the Ribber Arm does not fit on the Standard Carriage properly...

1. Check to see if the top of the Standard Carriage is down to close.
The top of the Carriage must be down.



2. Check the setting of the Cam Lever. It should be set at "O" before mounting the Ribber Arm, never at F (KNIT-IN) or L (PUNCH LACE).



If you knit with the Knitter only as the Ribber is connected...

1. Disconnect Ribber Arm and Carriage from Knitter Carriage.
2. Lower Ribber to its fullest extent by pushing down Drop Levers twice.
3. Install Knitter Arm and start knitting.

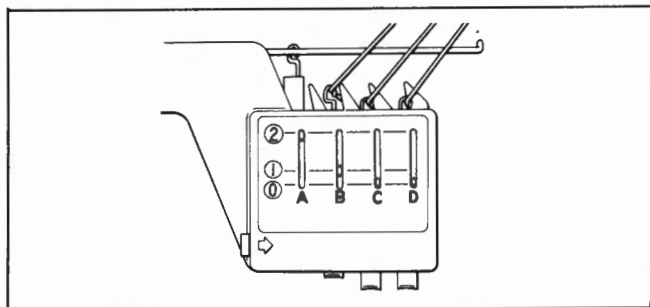
To use the Lace Carriage as the Ribber is connected, refer to page 35, for special cares to take.

Type of knitting	2-Colour A.T.	4-Colour A.T.
Stockinet (medium yarn)		
K1.P1. rib (medium yarn)		

If you use 4-Colour Auto-Tension for knitting other than double jacquard...

The tension springs of the Four-colour Auto-Tension are stronger than those on the Two-colour Auto-Tension. If you use the Four-Colour Auto-Tension for normal knittings, set the Tension Dial and Stitch Dial as follows.

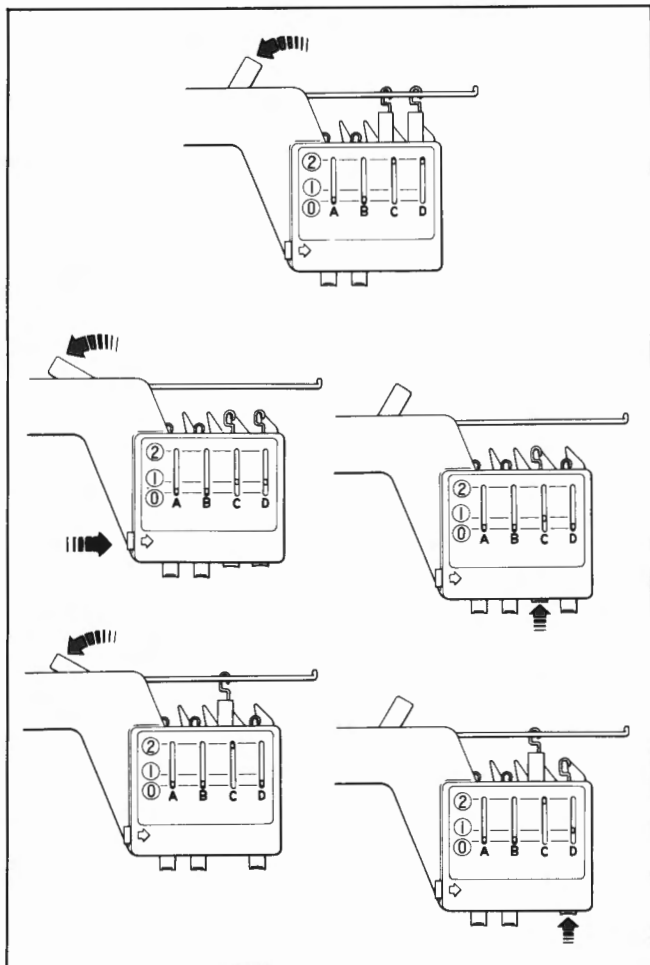
Tension Dial.....Refer to page 8.
Stitch Dial.....Use 1 number larger.



If the Holder Buttons of the Yarn Changer were erroneously operated...

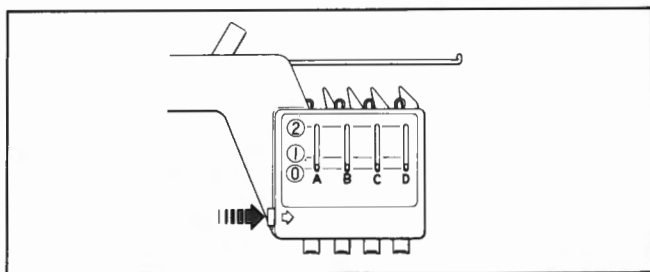
Correct positions of the Holders while knitting are as below.

- ②.....1 Holder (Knitting yarn)
- ①.....1 Holder (Yarn to be changed next)
- ①.... 2 Holders (Resting yarns)



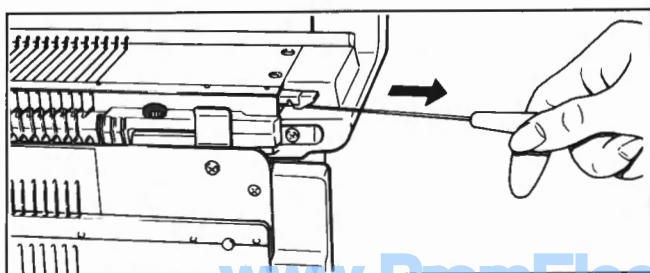
In case of more than two Holders positioned in ②.

- (1) Push Feeding Lever to the left, and the Holders in ② move back into ①.
- (2) Push Release Button, and all the Holders align in ①.
- (3) Push the Holder Button to set it into ① which should hold the yarn in Yarn Feeder.
- (4) Push Feeding Lever to the left to push the Holder from ① into ②.
- (5) Push Holder Button holding the yarn to be changed next, from ① into ①.
Then rearrange yarns on the Holders.



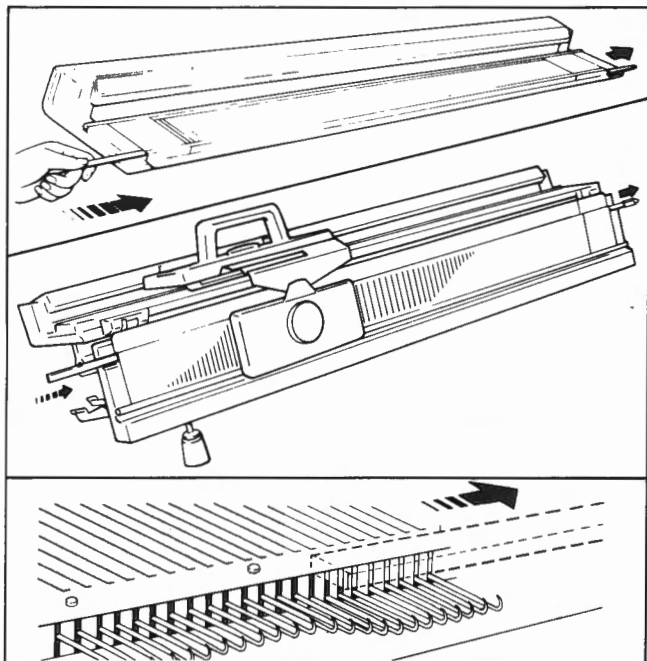
In case of more than two Holders positioned in ①, follow the above steps (2) through (5).

To repack Yarn Changer, set all the Holders at ① by operating as instructed in the above steps (1)–(2).



If the Yarn Changer got stuck on the Needle Bed...

Pull out Needle Retainer toward right by 2–3cm. using Hook Tool, then loosen Securing Wheel until it stops.

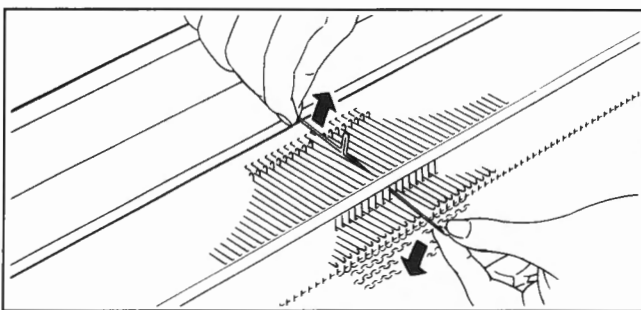


If a needle has been damaged...

Using a pencil or a screw driver, push the Needle Retainer to either direction.

If the Yarn Separators are in use, remove them before removing the Needle Retainer.

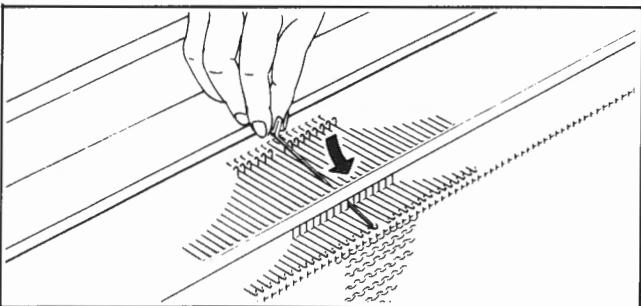
Pull the Needle Retainer toward one end until it clears the needle to be replaced.



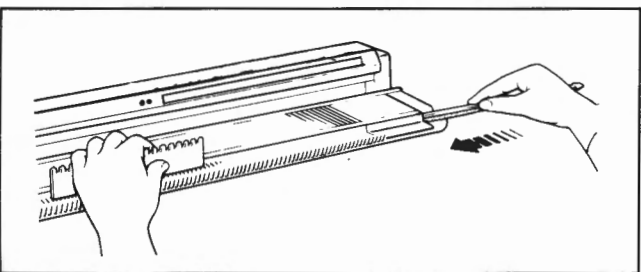
Push the damaged needles to D position. Close the latch and press the needle down. The shank will come out of the needle bed.

If a stitch is hooked on the needle, using the Tappet Tool pick up the stitch and transfer it to the new needle.

Lift up the needle by holding the shank and pull it to remove from the Needle Bed.

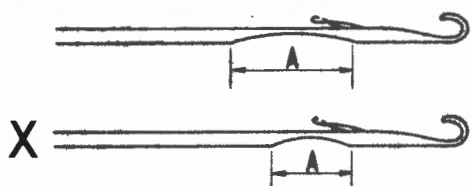


To replace a new needle (see NOTE), open its latch and slide it into the Needle Bed groove until the hook comes out of the front opening of the Needle Bed. Push the needle back to A position by holding the butt.



Insert the Needle Retainer back into the Needle Bed by holding its right end.

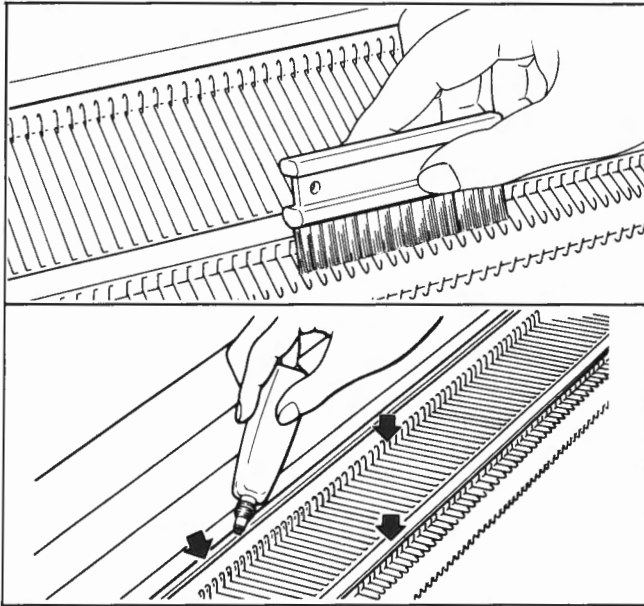
To insert the Needle Retainer, press the floated needles to the front edge of the Needle Bed using the Needle Pusher.



NOTE:

The needle used on this machine has longer cutout at its bottom, so it is necessary to specify its Part Number when ordering. (Part No.01130616)

MAINTAINING THE MACHINE

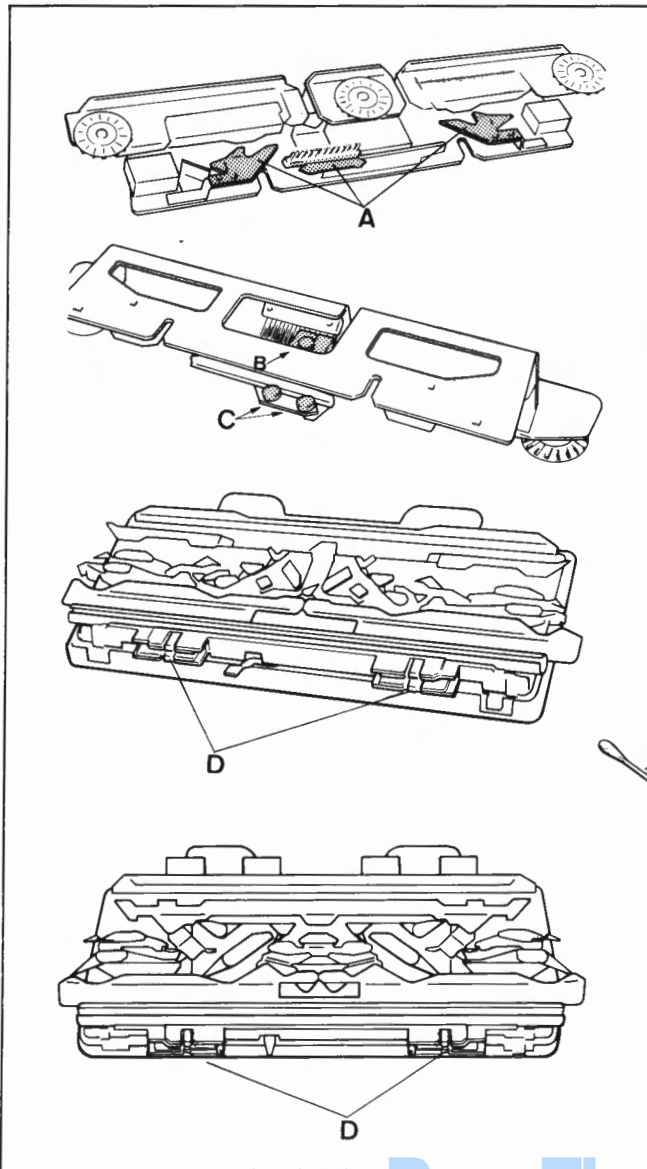


Needle Bed

With Cleaning Brush remove lint or dust from Needle Bed.

Apply oil along the rail, front guide of the Needle Bed and needle butts.

(Do not apply excessive oil.)

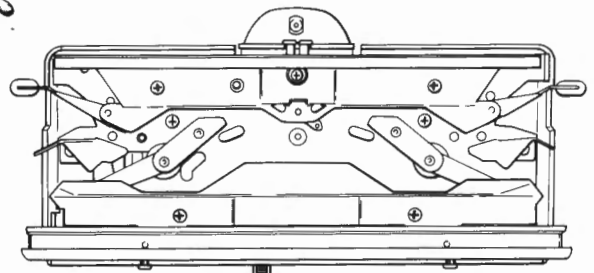
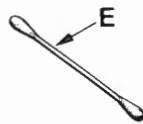


Carriage and Arm

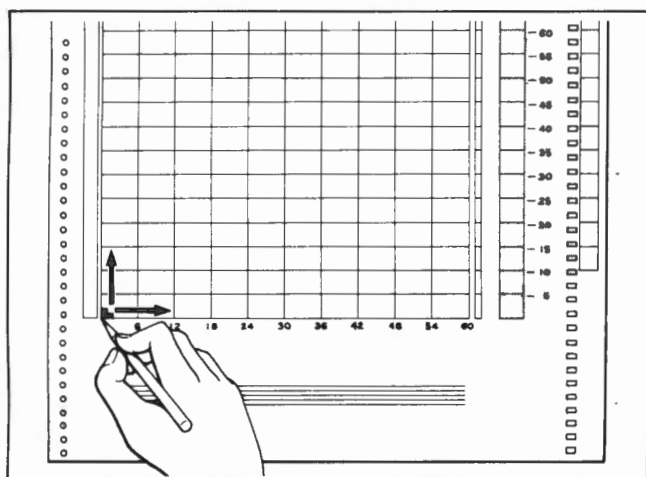
The metal parts "A", on the back of the Lace Arm must be handled very carefully, not to bend or scratch them.

Remove any lints from the Rollers "B" and Yarn Feeder "C" of the Lace Arm using the Cleaning Brush, and from the Sensors "D" using the Sensor Cleaner "E".

With the oil damped cloth, apply oil to the underside of the Standard Carriage (a), Lace Carriage (b) and Ribber Carriage (c).



DRAWING A PATTERN ON THE DESIGN CARD



Draw your own pattern or trace a pattern from the pattern book onto the Design Card accompanied with the Pattern Card set using a Design Pencil.

Fill up the sections neatly for the pattern with the following care.

Start filling the sections from the bottom left corner.

Work on a solid plane surface.

Darkness of each section must be even.

To avoid failure in drawing, make a rough sketch and trace it onto the Design Card.

Incorrect drawing can be erased using a plastic eraser.

* In a picture or a letter image, draw the entire area rather than section by section. (Three-star Pencil is recommended.)

* For geometric pattern, fill up sections one by one with care. (One-star pencil is recommended.)

Take care when drawing a pattern design for the following type of knitting.

In Single Motif:

As the Button 1 is used with its left light on, draw the area to be knitted in single motif.

In Tuck or Slip stitch pattern:

As the Button 1 is used with its right light on, draw the area to be tucked or slipped.

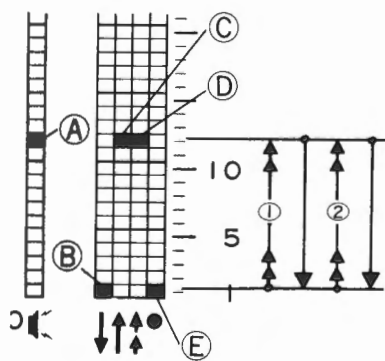
Buzzer Column and Instruction Columns.

Put marks to correspond with the first and end row of the pattern as shown below.

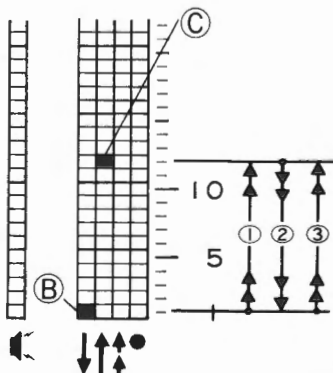
Notation Columns

Mark with an ordinary pencil at the rows to change the yarns or to change the settings for knitting.

In case of knitting in the same direction continuously



In case of knitting in both directions row by row



Markings on each column

- Ⓐ Tells quick motion or yarn change.
- Ⓑ Moves the Card downwards.
- Ⓒ Changes the feeding direction (The Card is fed upwards.)
- Ⓓ Actuates quick motion.
- Ⓔ Stops quick motion.

PATTERN AND STITCH TYPE POSSIBILITIES

The list below shows that each pattern can be used for various stitch types.

PATTERN NUMBER	KNIT-IN (FAIR ISLE)	TUCK STITCH	SLIP STITCH	WEAVING	PUNCH LACE	PIN TUCK	TUCK RIB	DRIVE LACE KNITTING	MESH KNITTING	PILE KNITTING	DOUBLE JACQUARD
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	○										○

For the patterns for Lace Carriage, Pattern No.L-(1) through L-(14) are for Normal Lace, and the Pattern No.L-(15) through L-(20) are exclusively for Fashion Lace.

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