

SINGER* **Magic memory** KNITTING MACHINE

INSTRUCTION BOOK

MODEL KE-1200
(K-19)

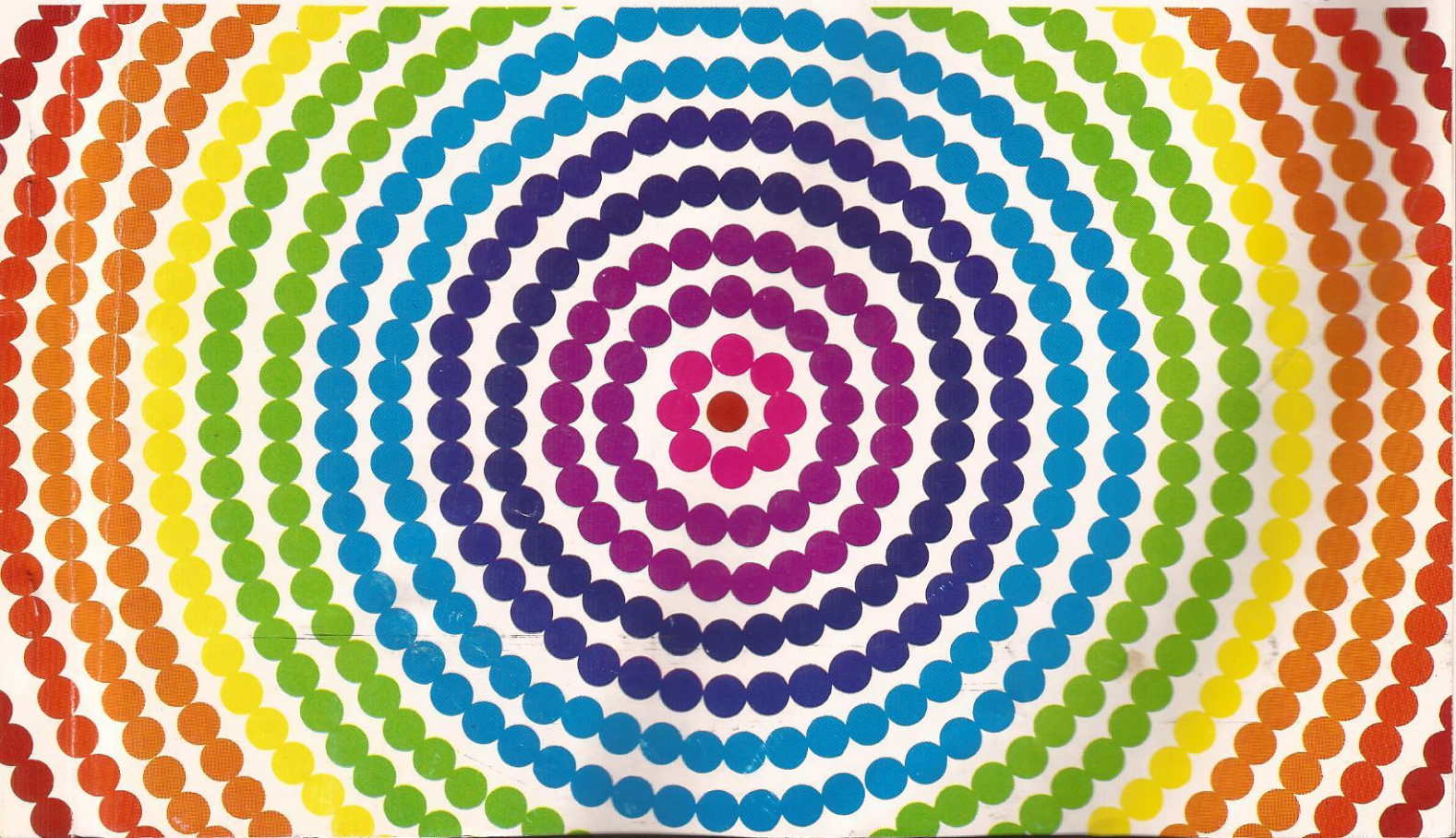


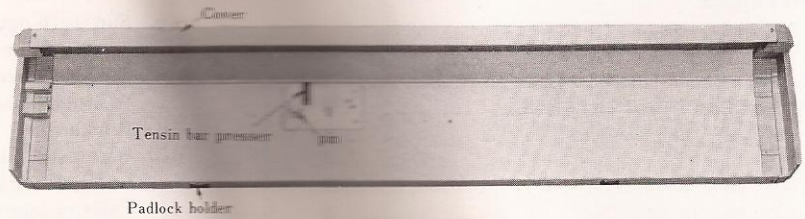
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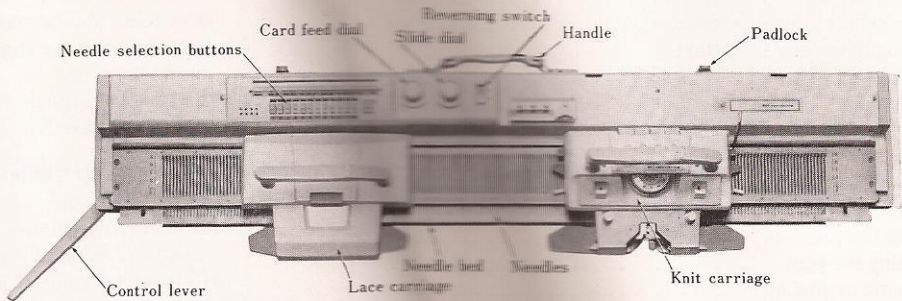
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NAMES OF PARTS

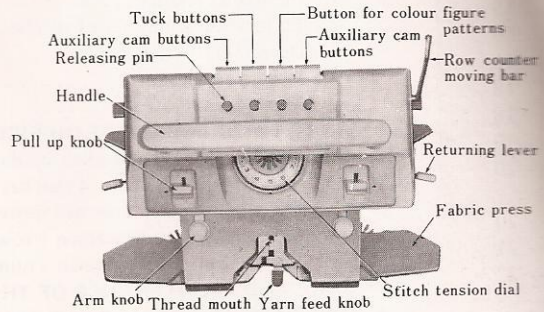
Case cover



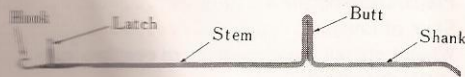
The machine body

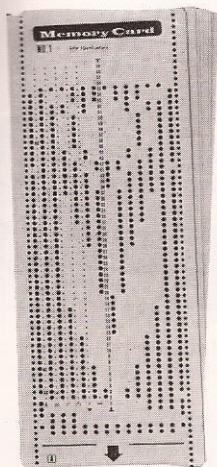


Knit carriage

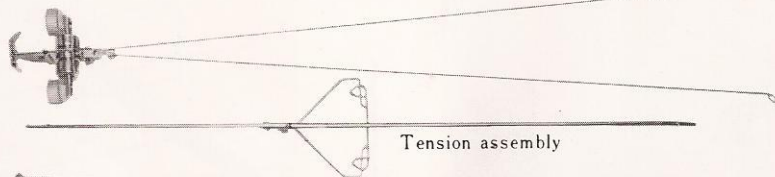


Needle





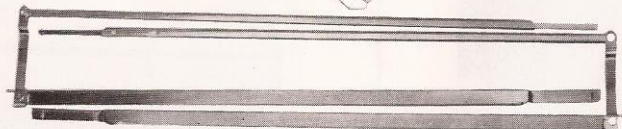
Memory card



Tension assembly



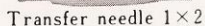
Threader arms



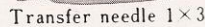
Auxiliary rail



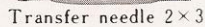
Oil



Transfer needle 1x2



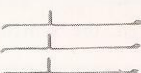
Transfer needle 1x3



Transfer needle 2x3



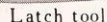
Plate weight



Spare needles



Installing tools



Latch tool



Control lever



Weights



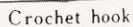
Carriage stopper



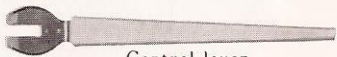
Brush



Sewing needle



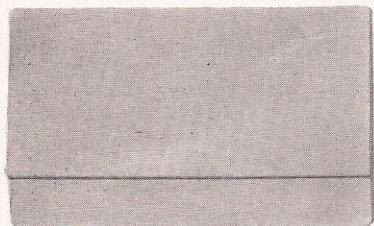
Crochet hook



Removable cord



Row counter



Accessories box



Lace Case



Pattern book

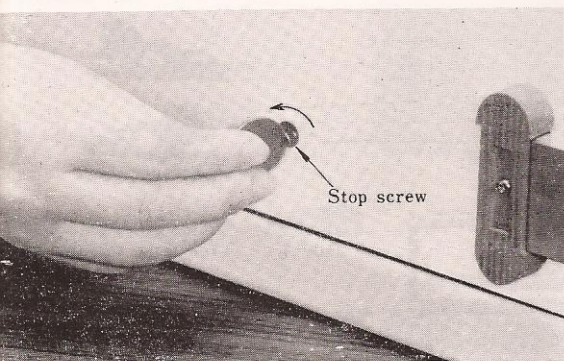


Name plate

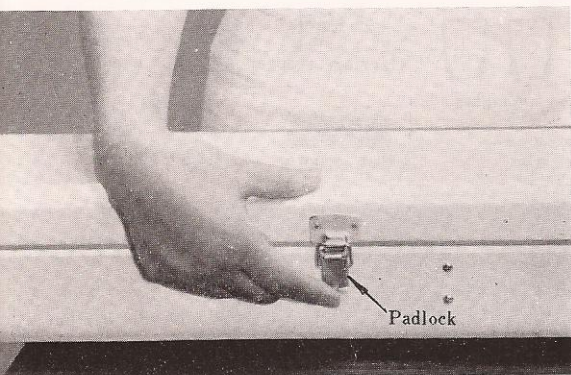


Needle bar key

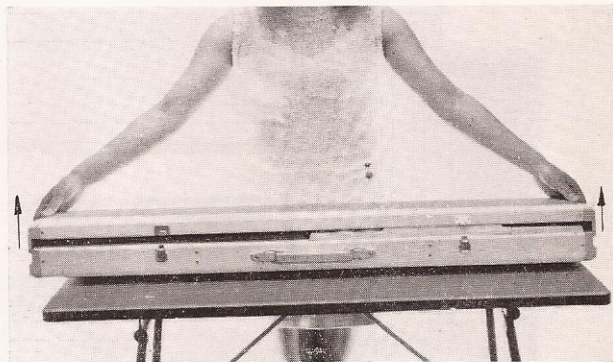
HOW TO SET UP THE MACHINE



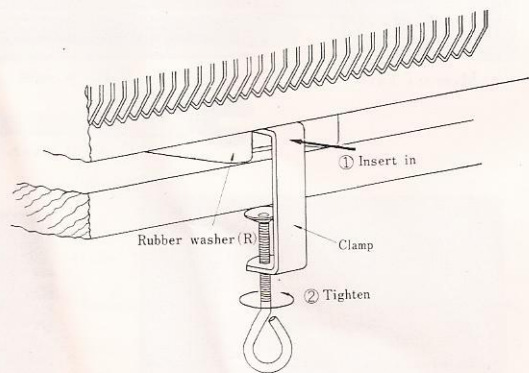
Remove the stop screw on the back of the knitting machine.



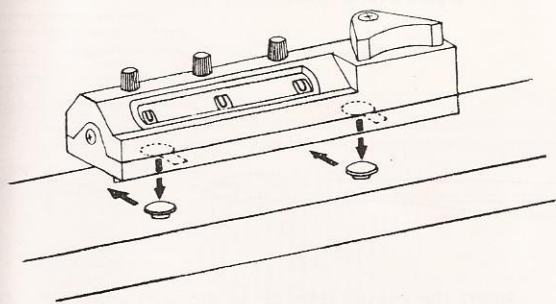
Place the knitting machine on the table with the handle on the far side and remove the padlock.



c. Lift up the cover a little and remove by pulling it towards you.

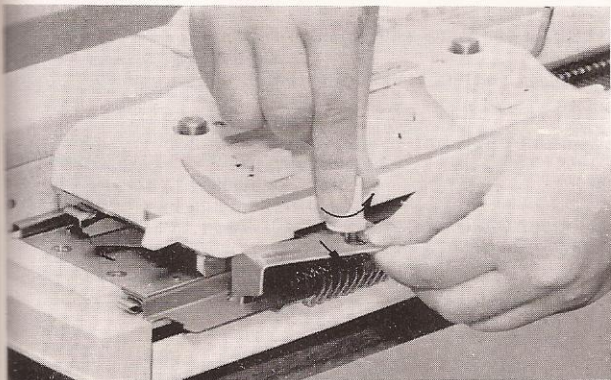


d. Take out the clamp from the accessories box and insert it to the rubber washer on the back of the knitting machine. Rotate the tightening knob to the right and set it firmly on the table.

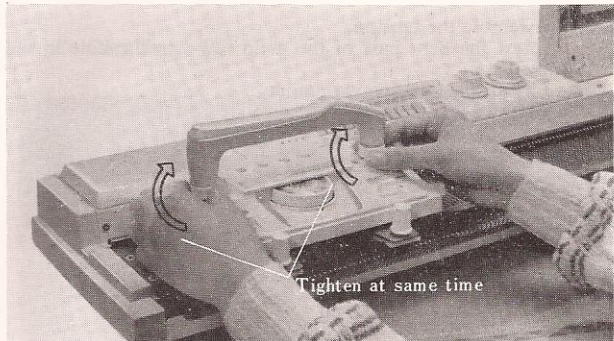


f. Match the holes at the bottom side of the row counter with the pin of the back cover and push it to the opposite side.

* When removing the row counter, pull it towards the operator.

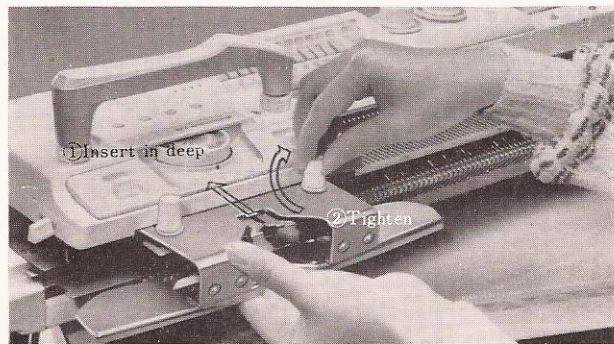


f. Remove the carriage stopper.



g. Attach the handle to the carriage.

* Note: Tighten right and left nuts of the handle at the same time.

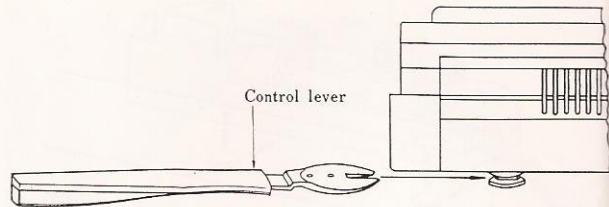
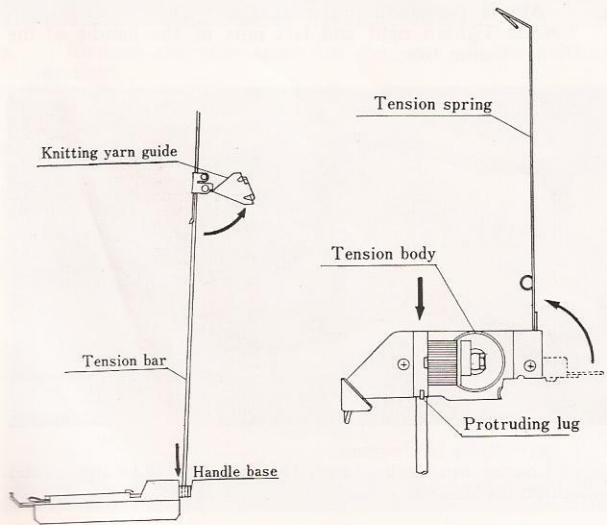


h. Attach the fabric press.

Loosen the knobs, insert the fabric press in firmly and tighten the knobs.

- i. Assemble the tension.
Insert the bent part of the main rod into the hole in the handle base.
Lift up the knitting yarn guide.

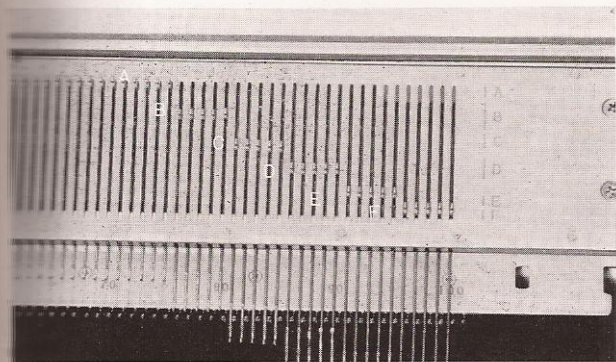
- j. Insert the tension spring.



- k. Insert the control lever on to the shaft under the left of the main machine.

BASIC KNOWLEDGE BEFORE KNITTING

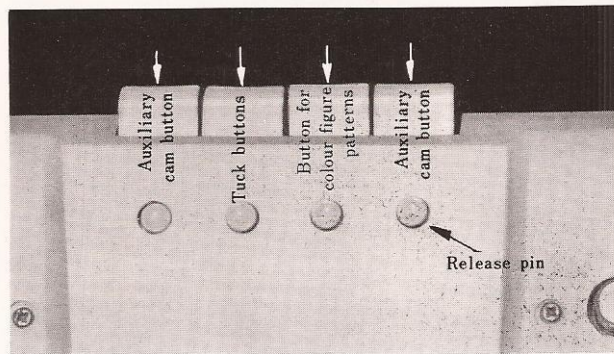
1. Positions of the knitting needles



There are 6 positions for the needles which are marked on each side of the grooved plate.

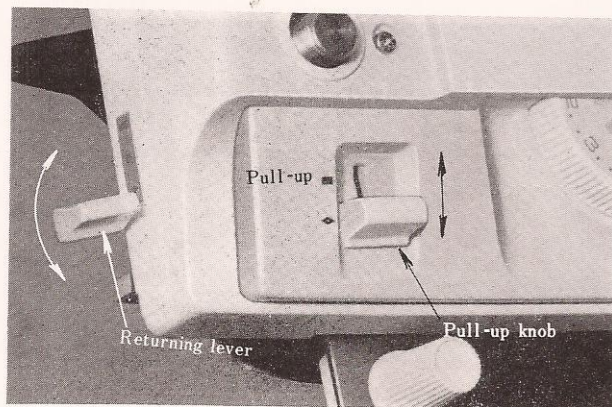
- A: Denotes needles at rest (position of knitting needles not in use).
- B: Position for plain knitting.
- C: Position for plain knitting (used for return knitting of stitches from E or F positions.)
- D: Position of selected needles.
- E: Position of pull-up knitting.
- F: Position of needles holding sets which do not require knitting, (used for shaping 1 side of neck at a time, or when shaping hems or bust darts, etc.)

2. Cam buttons



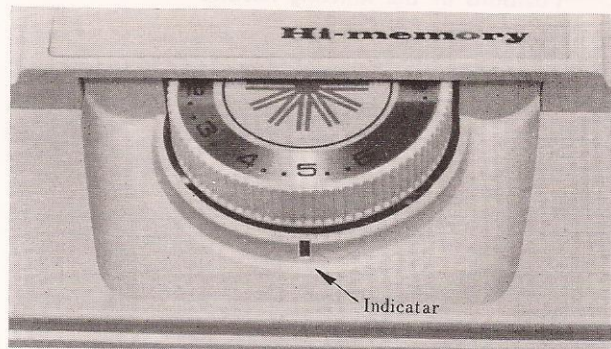
- a. Cam buttons are used for colour figured patterns, slip-stitch patterns and tuck patterns.
 - Auxiliary cam button: Used for simple casting on, slip-stitch and tuck patterns.
 - Tuck button: Used for knitting tuck patterns.
- b. To set the buttons press them according to which pattern is required.
 - To release the buttons press the release pins.

3. Pull-up knobs and returning levers



- a. Pull-up knobs
There are two positions: Pull-up "■" position and "◆" normal position.
- b. Returning levers
For these there are three positions: ■, ●, ◆
- : Used for pull-up patterns and when needles holding stitches need to remain in F position.
 - : Used when shaping in pull-up patterns to bring needles in D or E positions back to B position, but to leave needles in F position unmoved.
 - ◆: Used to bring needles from D, E or F positions back to B position, and also for plain knitting or patterns not using pull-up knobs.

4. Stitch tension adjusting dial



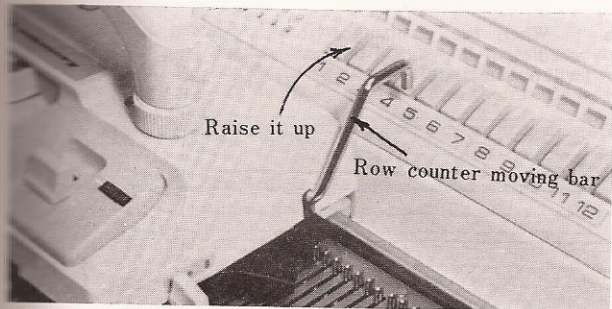
- a. The stitch length must be adjusted according to the thickness of the knitting yarn and the stitch size required for the pattern.

Example

Knitting yarn	Tension number
2 ply	0 ~ 4
3 ply	3 ~ 6
4 ply	5 ~ 8
Double knitting	7 ~ 10

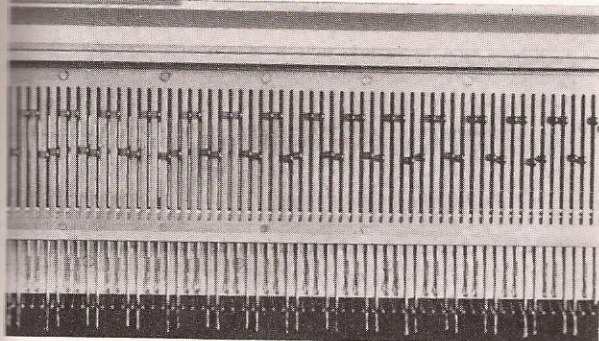
- b. Machines do vary slightly and it is **essential** to check your tension even where a tension number is given in a Singer pattern.

5. Row counter moving bar



If in position as illustrated, the bar operates the row counter every time the carriage is taken across.

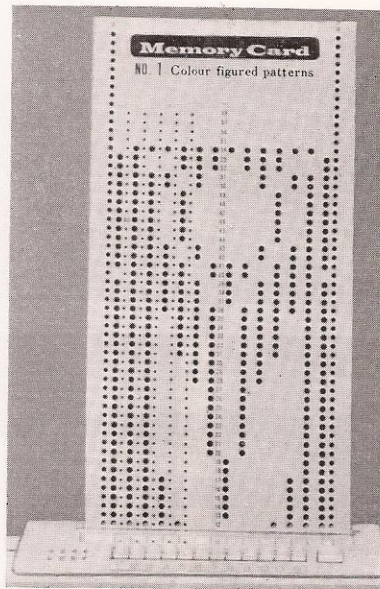
6. Needles selection



Many variations of patterns are achieved by changing the selection of the needles. The illustration shows pairs of needles alternately in B and D positions.

Variations of needle selection are made by use of the needle selection buttons, slide dial and reversing switch or with a memory card.

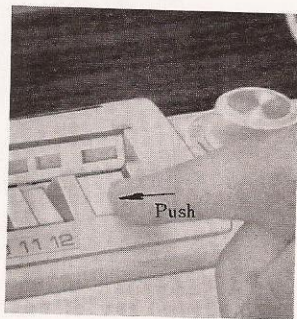
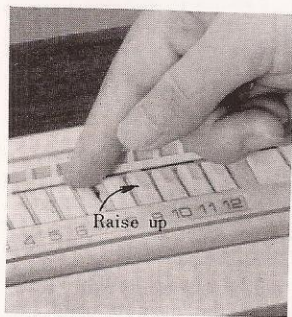
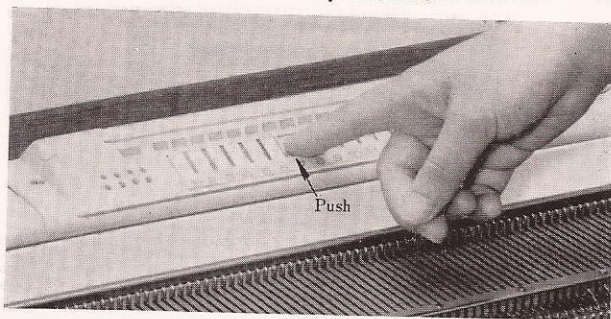
7. Automatic selection of needles



Use memory card for this operation. Electricity will "read" the distributed row of the holes of the memory card and automatically select the knitting needles.

* When using the memory card, be sure to return all the needle selection buttons to the original position.

8. Selection of needles by buttons

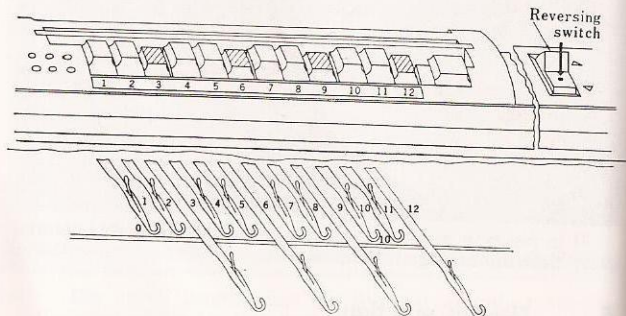


Use selection buttons for various patterns. Push the desired buttons and freely select the knitting needles.

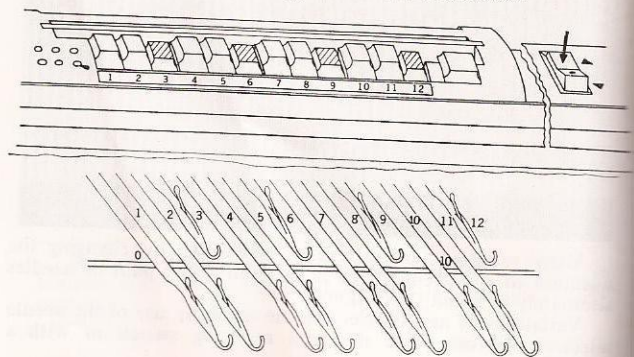
* When using the selection buttons, be sure to remove the memory card.

9. The reversing switch

- a. When the reversing switch is pressed towards \blacktriangledown the needles in B position corresponding to the pressed buttons will be selected.



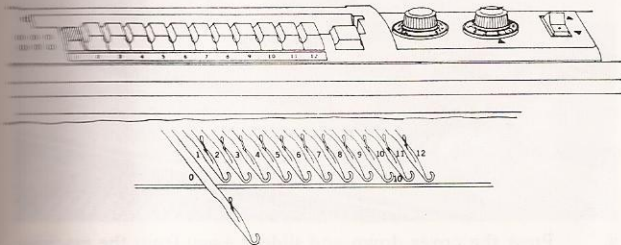
- b. When the reversing switch is pressed towards \blacktriangle the needles corresponding to the pressed buttons will remain in B position and the remaining needles will be selected.



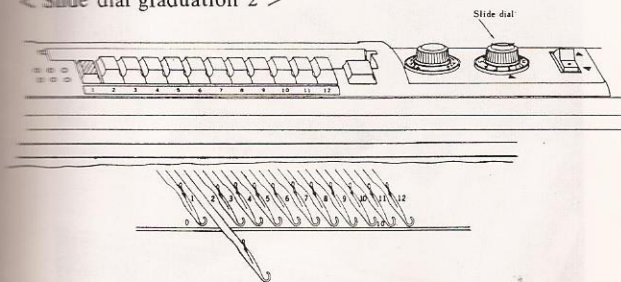
10. Slide dial

- a. If the slide dial is on 1 (SD1) the button numbers correspond to the numbered needles at the right of the centre "0", and continue in multiples of 12 across the needle bed.

< Slide dial graduation 1 >

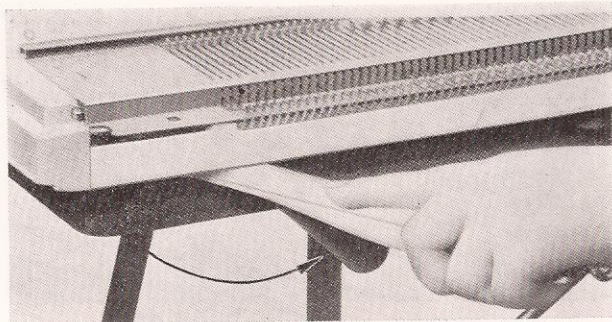


< Slide dial graduation 2 >



- b. If the slide dial is changed to 2 (SD2), the needle selection moves 1 position to the right, and so on to SD12. For a further move to the right return to SD1.

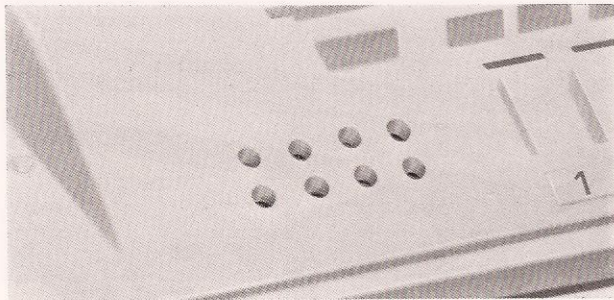
11. Control lever



The control lever performs 4 functions: (1) turning electricity to "ON" and "OFF", (2) selecting needles, (3) automatic feeding of the memory card, and (4) turning the buzzer switch to "ON" or "OFF".

As all of these 4 functions are performed when the control lever is pulled to right, pull the control lever to the right without stopping then gently allow it to return to the left.

12. The buzzer

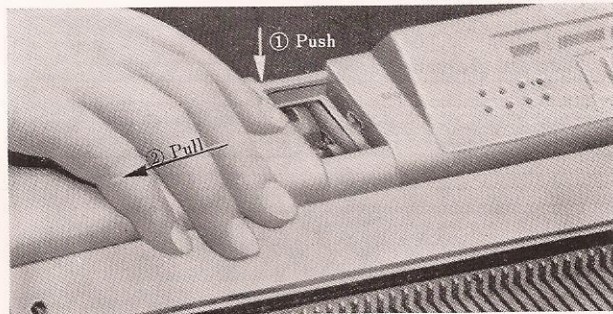


The buzzer will issue a warning sound when any operation is required during the running of a memory card other than the pulling of the control lever and movement of the knit carriage. When this warning is sounded watch the card aperture and follow the operational codes which appear.

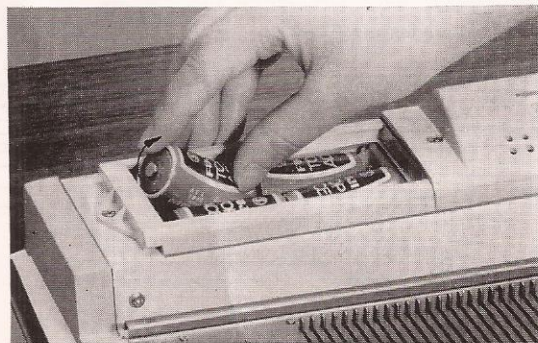
13. Power source

Power is supplied by 4 batteries of 1.5 Volt, UM 2.

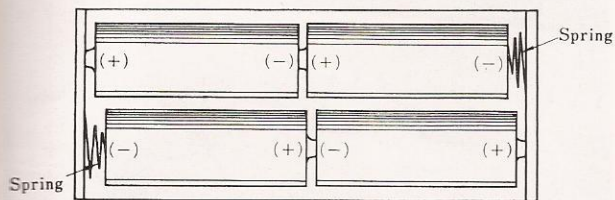
How to change the batteries.



a. Press the cover down and slide it away from the machine.



b. Catch the plus side (protruding part) of the battery with the finger and pull it up.



c. If the batteries are inserted from the minus side they will go in easily.

Be sure to arrange them in the order shown in the diagram or the control lever will not select the needles.

* Note: When the knitting machine is not in use, be sure to remove the batteries from the machine.

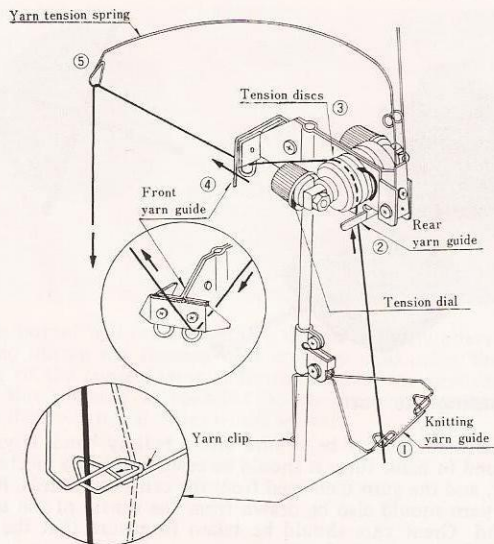
HOW TO KNIT



1. Winding the yarn

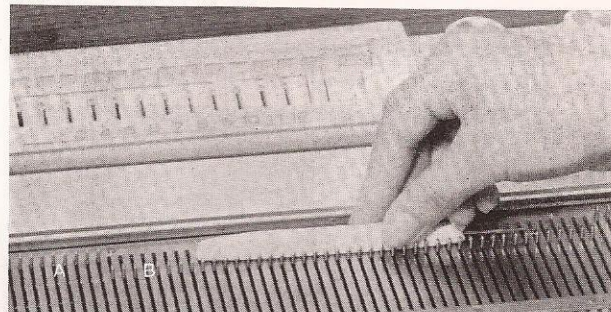
Yarn should never be wound into a ball by hand. If yarn is purchased in hank form it should be rewound with a mechanical winder, and the yarn then used from the centre outwards. Ready balled yarn should also be drawn from the centre of the ball or rewound. Great care should be taken to ensure that the yarn unwinds freely without knots.

2. Threading the yarn

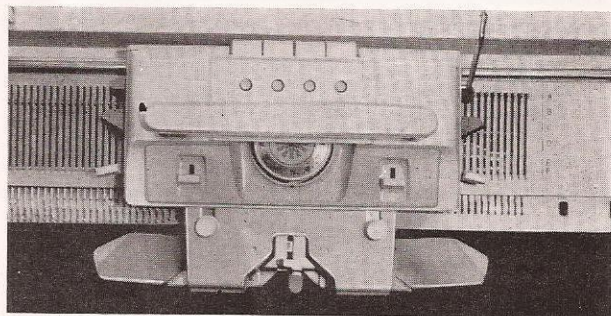


- a. Use a 4-ply yarn for the following examples.
- a. Take the yarn up through the knitting yarn guide and between the rear yarn guide and the tension discs. Take the yarn through the tension discs to the front discs. Take the yarn through the tension spring wire down. Slip the yarn through the end of the tension spring wire and down under the yarn clip to hold it until required.
- b. The tension disc does not affect the stitch size but is important in maintaining the correct pressure on the yarn as it is fed to the machine. For a 4-ply set the dial on 3 or 4. For finer yarns use a higher number, for thicker yarns use a lower number.

3. Automatic casting on

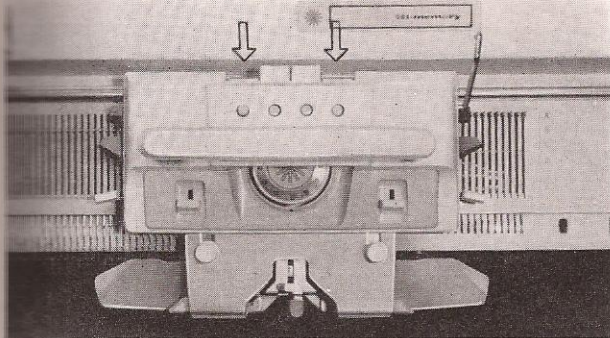


- a. Bring out the required number of knitting needles from the A position to the B position.

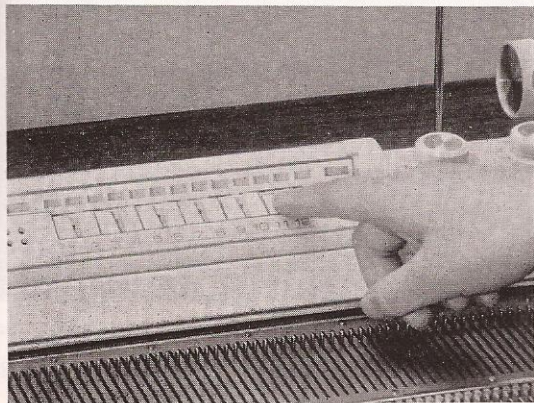


- b. Set buttons, knobs and levers of the carriage as follows: -

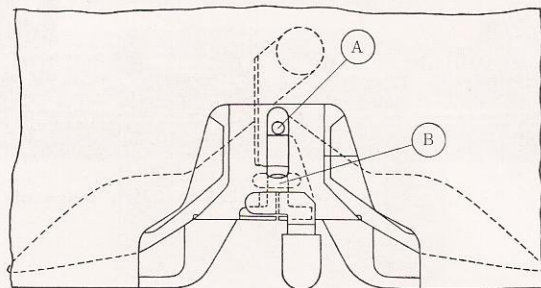
Cam buttons: all released
 Pull-up knobs: both right and left on **◆** mark
 Returning levers: both right and left on **◆** mark
 Move carriage across to left and right bringing the needles evenly to correct position.



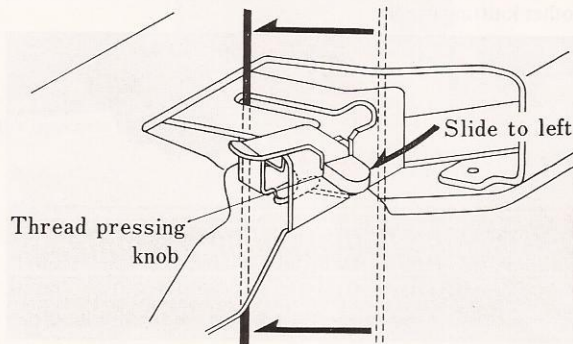
- c. Move the carriage to the right side of the machine and set it as follows:—
 Press both right and left auxiliary cam buttons
 Set tension dial on 2



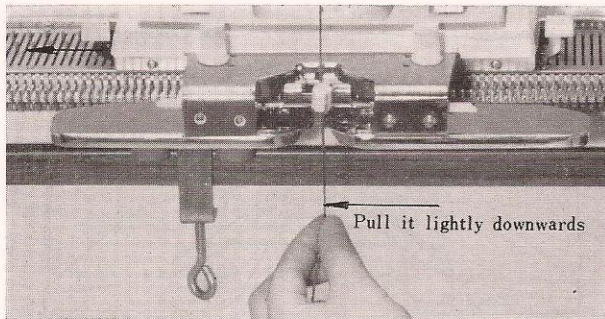
- d. Push every other needle selection button to make 1 - 1 needle selection. Pull the control lever fully to right.



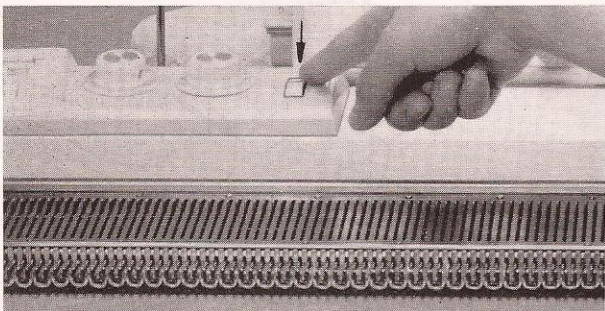
- e. Complete threading of machine as follows:—



- f. Push the thread pressing knob to the left and insert the knitting yarn deep into the centre groove.
 After checking that the knitting yarn has been correctly inserted into the thread mouth A, return the thread pressing knob to right.



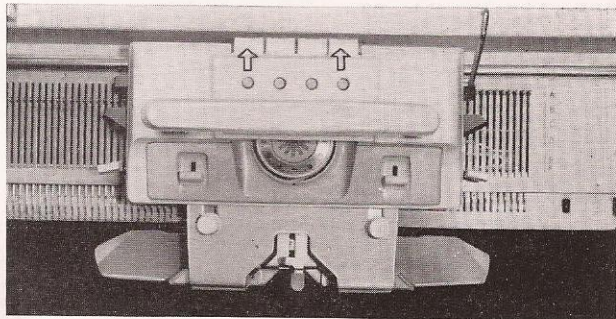
- g. Start knitting.
 Pull the end of the yarn lightly with the left hand and push carriage gently toward left.
 The knitting yarn will be caught on the hook of every other knitting needle.



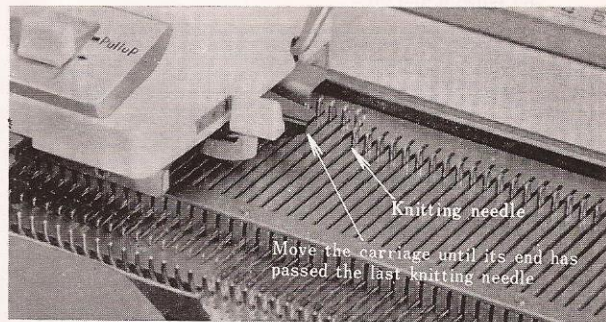
- h. *Push the reversing switch, select the needles and take the carriage across.*

The knitting yarn is now caught on the hooks of the remaining needles.

Change tension dial to 6. Row counter now shows 2 rows have been worked. Repeat from * to * until row counter shows 12.

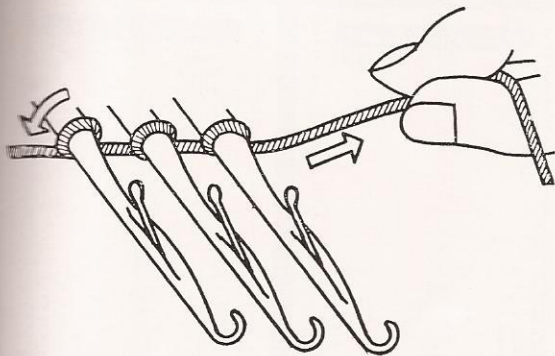


- i. Release both right and left auxiliary cam buttons of the carriage.



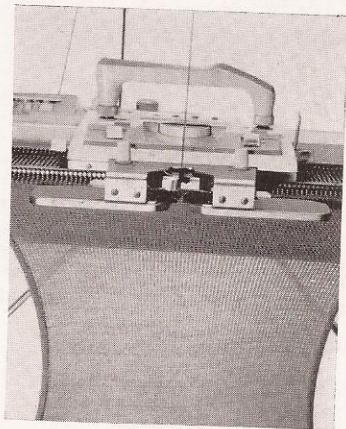
- j. If the carriage is moved to right and left, plain stocking stitch will be knitted.
 Move the carriage until its end is beyond the knitting needles.

4. To cast on by hand

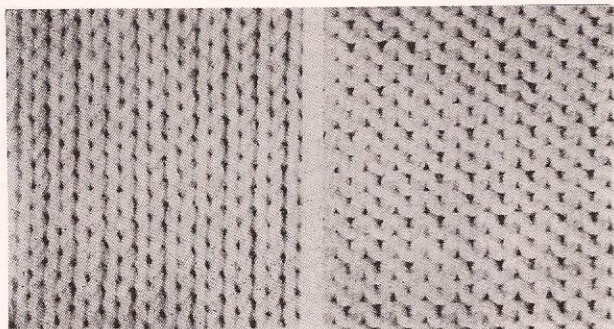


After threading yarn into machine as far as tension spring, make a slip knot loop in the end of the yarn and secure it on the left-hand clamp under the machine table. Bring the required number of needles to B position making sure that all the latches are open. Hold the yarn firmly in the right hand, bring the first needle forward to C position, then wind the yarn under the needle and round over the top at the same time pulling the needle back to B position or a little further. Push the next needle forward and continue in this way until all stitches are cast on. Now slide the yarn into thread mouth A. Pull the yarn firmly from behind the tension assembly to ensure that the yarn does not become slack. If the yarn is allowed to slacken, some stitches may unwind.

5. The "knit" and "purl" sides of stocking stitch



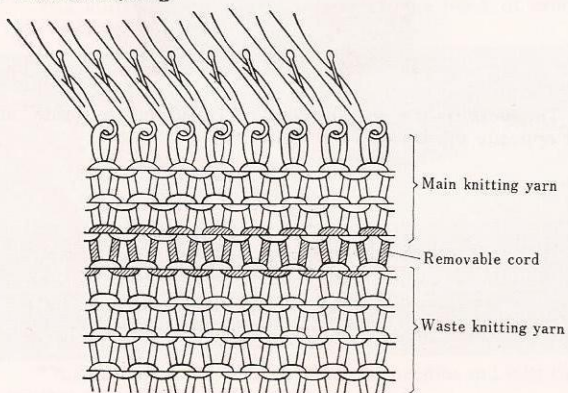
The work on the operator's side is called the "purl side" and the opposite side is called the "knit side".



Knit Side

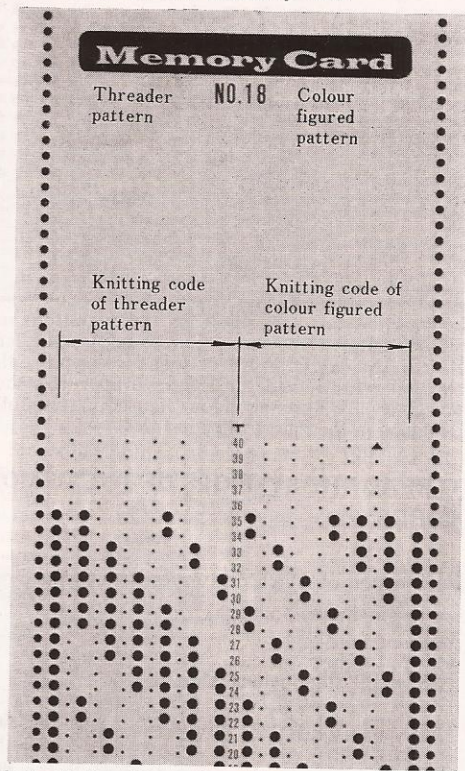
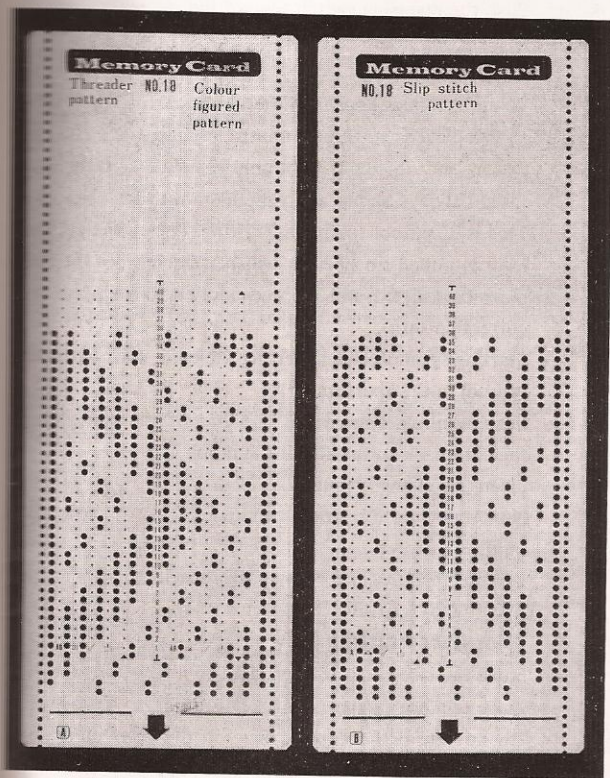
Purl side

6. Waste knitting.



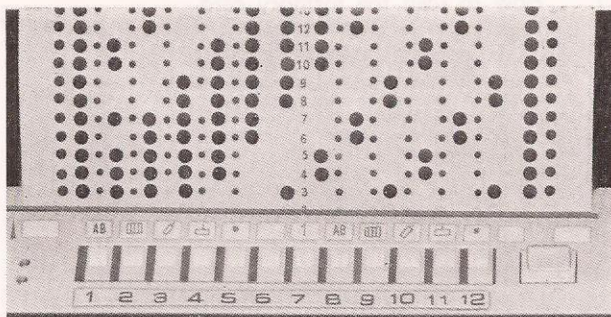
When making a garment with a hem which is turned up on the machine, cast on in waste yarn, knit 1 row with removable cord and then commence knitting in main yarn. After the hem has been turned up and a few more rows knitted the cord can be pulled out and the waste knitting comes away.

1. How to read the memory card



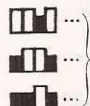
- a. Most of the 20 cards which come with the machine contain instruction codes for using the card in 3 or 4 different ways, giving an almost infinite variety of possible patterns.


Select the stitch from the Pattern Book and take the corresponding card for the type of stitch chosen.







- b. The card contains codes showing the operations required to produce different patterns. For example: the left-hand side of card 18A contains instructions for knitting a threader (or weaving) pattern and the left-hand apertures show the required codes. To knit the colour figured pattern follow the codes showing in the right-hand apertures.



HOW TO READ THE SYMBOLS OF THE MEMORY CARDS



 ... } Indication of which cam buttons should be pressed to give the required pattern.

 ... Shows all cam buttons released.

 ... Set the left and right returning levers to the  mark.

 ... Set the left and right returning levers to the  mark.

 ... Set the left and right pull-up knobs to the  mark.


 ... Set the left and right pull-up knobs to the "pull-up"  positions.

- ▼ ... Push the reversing switch toward the ▼ mark.
- ▲ ... Push the reversing switch toward the ▲ mark.

A,B,C,D A denotes main knitting yarn, B,C and D denote different colours.

Where 2 letters appear in the same aperture the first is to be placed in thread mouth A and the second in thread mouth B. Where only 1 letter appears this should always be placed in thread mouth A.

- ... This is a symbol for plain knitting. (When the control lever is pulled no needles will be selected but the row must be knitted and the lever pulled to maintain the correct pattern).

 ... Starting symbol. (When setting the card, start with this symbol in the aperture).

T ... Stop symbol. This means the end of the card. Wind the card back to the starting symbol.

- ... Means no change required.

Numbers printed down middle of card show the number of rows.

Be sure to move the carriage from right to left for the first row of knitting.

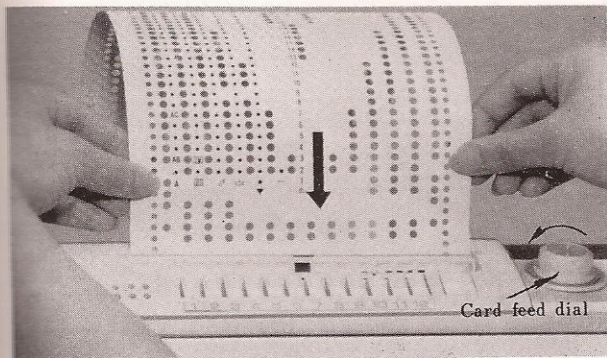
For Lace knitting only

← ... Move the lace carriage from right to left.

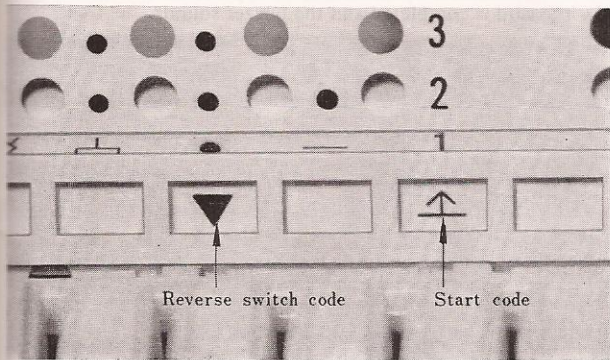
→ ... Move the lace carriage from left to right.

Do not move the knit carriage on the rows on which the lace carriage marks (← • →) appear.

2. Preparation before knitting



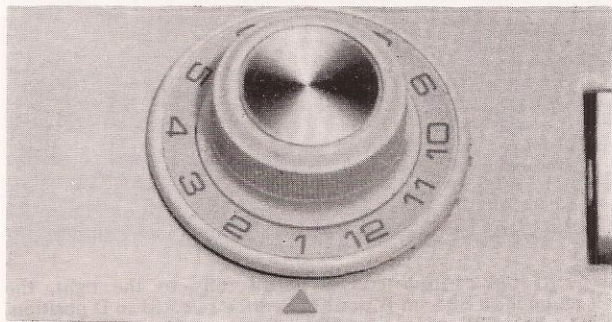
- a. Insert the card into the panel taking care to feed it in straight.



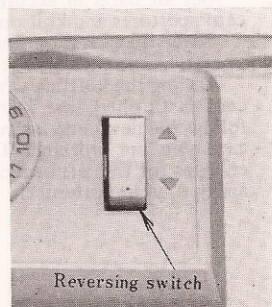
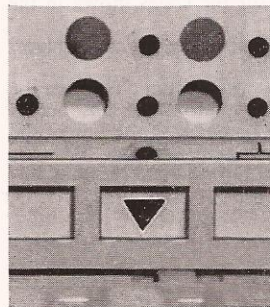
- b. Rotate the card feed dial forward until the start mark (\triangle) appears in the aperture.
When a card is to be used, be sure that all the needle selecting buttons are cleared.

3. Start of knitting

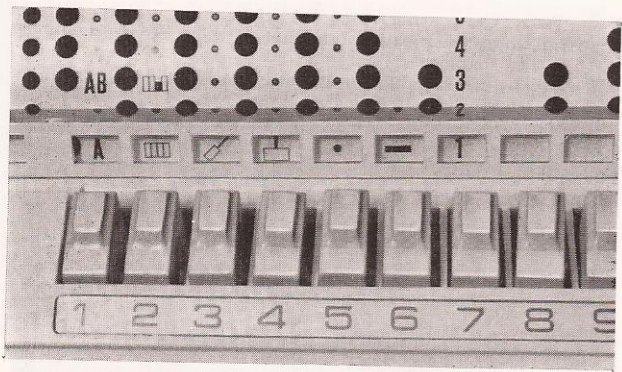
- a. Place the carriage to the right side unless pattern instructions specifically state that carriage can start at left to reverse shaping.
* This is not suitable for all cards and should only be done where Singer pattern instructions say so.



- b. Singer patterns usually indicate the slide dial (SD) number required. When working sample pieces, SD1 will place the left-hand needle of the pattern repeat at the centre of the machine. SD7 will bring the centre of the card pattern to the centre of the machine.



- c. Push the reversing switch according to the code (∇ \blacktriangle) shown in the aperture.



- d. If the control lever is pulled fully to the right, the required needles in B position will be selected to D position. Allow the control lever to return. The card has now moved down 1 place and the codes appear in the card apertures.

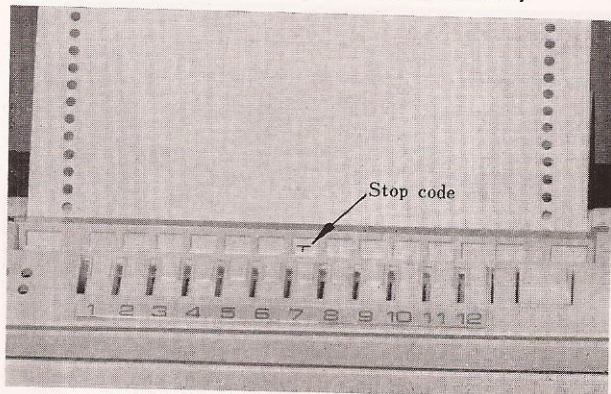
Note: If the control lever is stopped during the movement, the card may not be fed.

- e. Set all parts in accordance with the codes shown in the card apertures and knit one row.

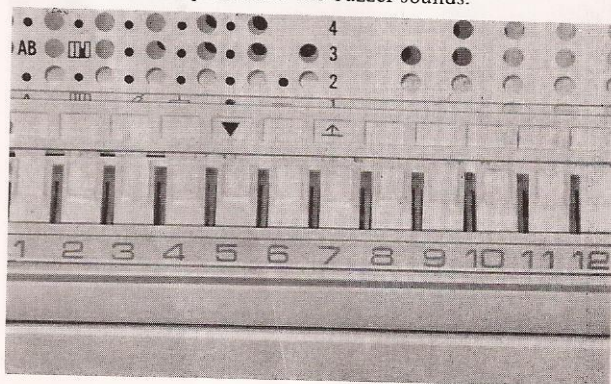
After that keep on knitting by repeating the control lever operation and the carriage operation.

During the knitting when a change is required or when the card is finished, the buzzer will sound. When this occurs follow the new code instruction if it applies to the side of the card you are working. The buzzer will sound if the code changes for the left or right side of the card and this may not apply to your pattern.

4. When knitting the same pattern continuously



- a. When the stop mark (τ) appears on the card aperture the card is completed and the buzzer sounds.

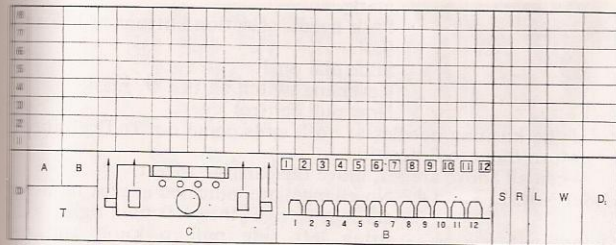


- b. Rotate the card feed knob in the reverse direction until the start mark (\uparrow) appears in the aperture. Continue knitting as before.

PATTERN CHARTS

Many simple pattern stitches are used in Singer instruction books which involve the use of charts, and charts are also used in the Pattern Book in connection with Memory Cards to make "Applicable patterns".

1. How to read the Applicable Pattern Charts and Charts shown on following pages



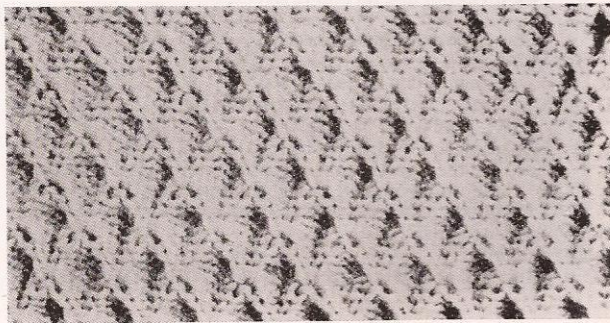
Key to yarn colours used in Pattern Book

BRC	.....	Brown colour
GC	.....	Grey colour
BC	.....	Blue colour
OC	.....	Orange colour
GRC	.....	Green colour
YC	.....	Yellow colour
CC	.....	Cream colour

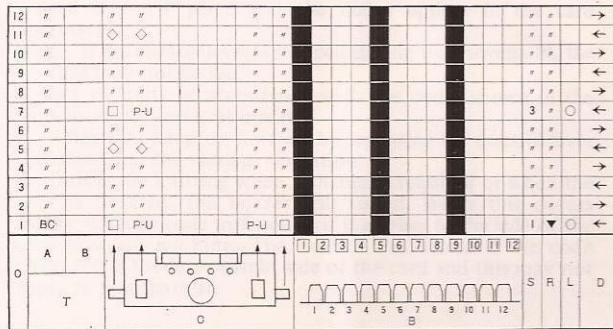
- O = Order, and indicates order of operation.
- T = Thread mouth (A or B).
- C = Carriage and indicates the operation of cam buttons, pull-up knobs and returning levers.
- B = Needle selection buttons, push the button number as indicated by the ■ mark.
- S = Slide Dial number.
- R = Reversing switch, on ▲ or ▼.
- D = Direction carriage is to be moved. At the ◁ mark take the carriage across and back again, thus knitting 2 rows.
- L = Control lever. Operate the lever at the ○ mark to select the needles, then knit 1 row. ◎ mark indicates the operation of the control lever at the beginning of each row where 2 rows are indicated in the D column.
- W = Weaving yarn.
- P-U = Pull up.
- LC = Direction of lace carriage.

2. Pull-up knitting

This is a pattern which combines stocking stitch and pull-up knitting.



Purl Side



Knit a few rows in stocking stitch ending with the carriage at the right.

Order No. 1

The yarn is in thread mouth A. Place both pull-up knobs on the "pull-up" position. Place both returning levers on the "■" mark.

Push needle selection buttons in 1, 5 and 9.

Slide dial on 1.

Reversing switch on the ▼ mark.

Now pull control lever.

* If the knitting needles at both ends come out to D position, return them to B position.

When all above are set, move the carriage to left.

Order Nos. 2, 3 and 4 No changes are indicated except to move carriage to right then left then right.

Order No. 5

Bring left side pull-up knob and returning lever to ◆ marks, then move the carriage to left.

Order No. 6

Move the carriage to right.

Order No. 7

Bring the left side pull-up knob and returning lever to the "pull-up" and ■ marks.

Change the slide dial to 3. Pull the control lever and knit the row.

Order Nos. 8, 9 and 10

Move carriage to right left and right.

Order No. 11

Bring the left side pull-up knob and returning lever to the ◆ marks and knit the row.

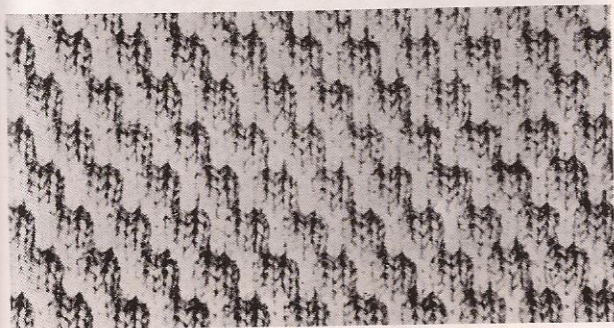
Order No. 12

Move the carriage to right.

12 rows have been knitted. Repeat from Order No. 1.

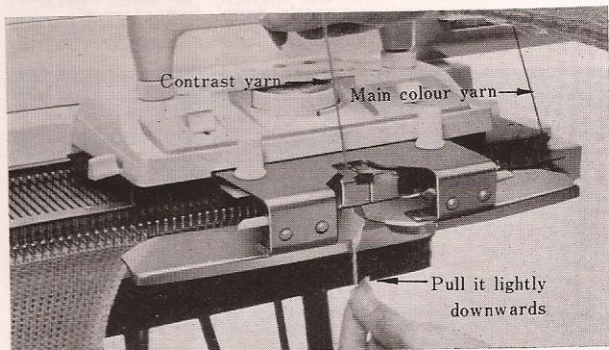
3. Colour scheme pull-up patterns

Thread the grey (main colour) knitting yarn in the right hand side of the tension and the brown yarn in the left side. Push the brown yarn under the yarn clamp and leave it there. Thread the grey yarn through thread mouth A, and knit a few rows ending with carriage at right.



Knit side

12	#		#	#						#	#	→			
11	GC	◇	◇							#	#	←			
10	#		#	#						#	#	→			
9	#		#	#						#	#	←			
8	#		#	#						#	#	→			
7	BRC	□	P-U							3	○	←			
6	#		#	#						#	#	→			
5	GC	◇	◇							#	#	←			
4	#		#	#						#	#	→			
3	#		#	#						#	#	←			
2	#		#	#						#	#	→			
1	BRC	□	P-U			P-U	□			1	▽	←			
	A	B													→
0	T										S	R	L	D	



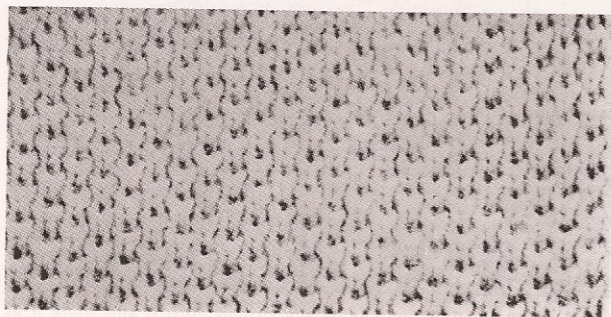
Take the grey yarn out of the thread mouth and hang it at the right hand side of the groove plate. Take the brown yarn and place it in thread mouth A. Now work order Nos. 1, 2, 3 and 4 as for the first example.

Take out the brown yarn and hang it at left of machine, then replace the grey yarn in the thread mouth. Work order Nos. 5 and 6.

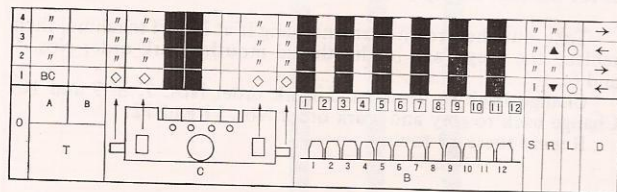
Change back to brown and work order Nos. 7, 8, 9 and 10. Change back to grey and work order Nos. 11 and 12. Repeat these 12 rows.

4. Tuck knitting

This is one form of knitting pattern which is knitted by every alternate needle to produce a gentle, dappled appearance.



Knit Side

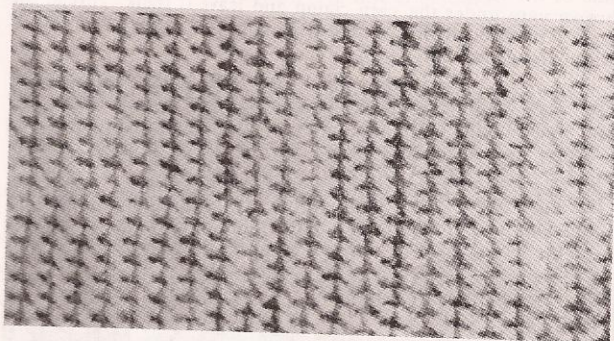


Once the buttons are set the pattern is achieved by changing the reversing switch on every other row.

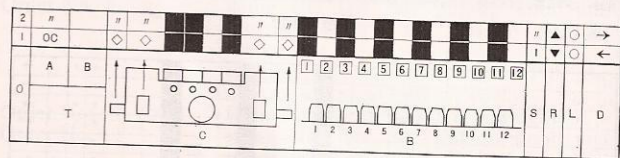
* When selecting the needles, if the knitting needles at each edge remain in B position, bring them out to D position.

5. Continuous tuck knitting

This is another form of tuck knitting which is best knitted by one colour to produce a three-dimensional appearance. Use the purl side as the right side.



Purl Side



Once the buttons are set this pattern is achieved by changing the reversing switch on every row.

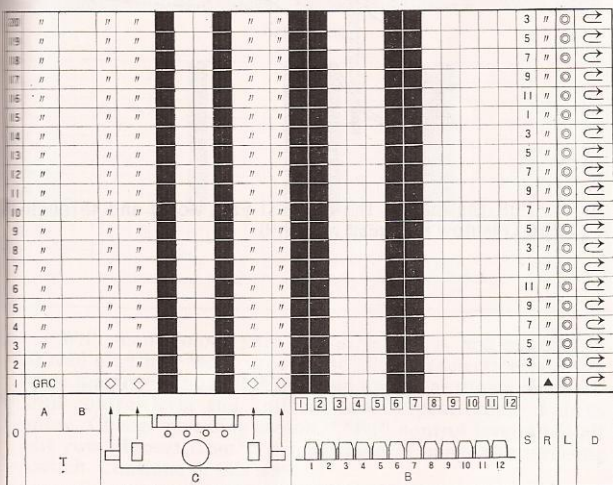
* When selecting the needles, if the needles at each end remain at B position, bring them out to the D position.

6. Slip stitch pattern

In this type of stitch some needles do not knit on some rows and the yarn lays across the work to form the pattern.

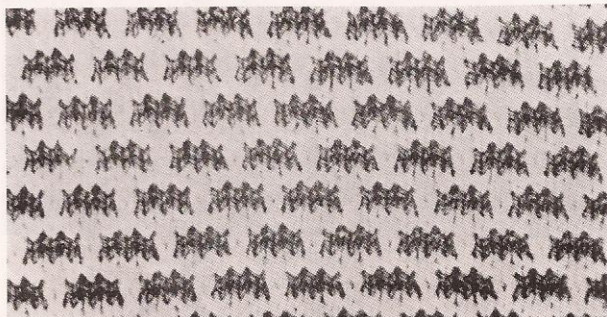


Purl Side

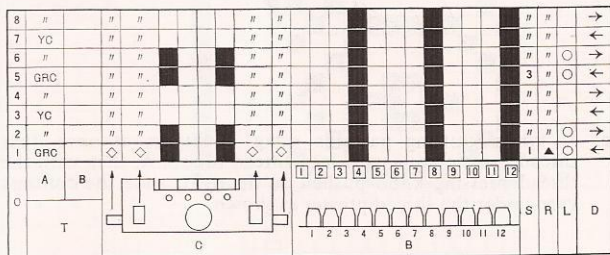


7. Coloured slip stitch patterns

Many kinds of different coloured stitch pattern can be created by combining different colour yarns with the knitting yarn or varying the number of rows.



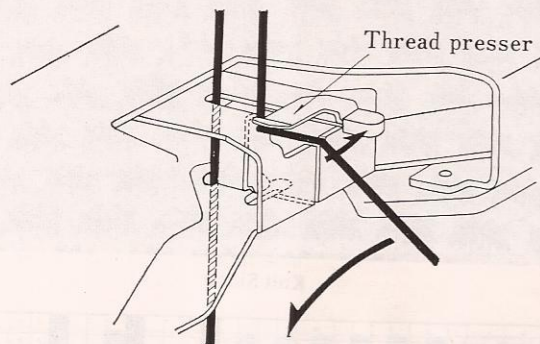
Knit Side



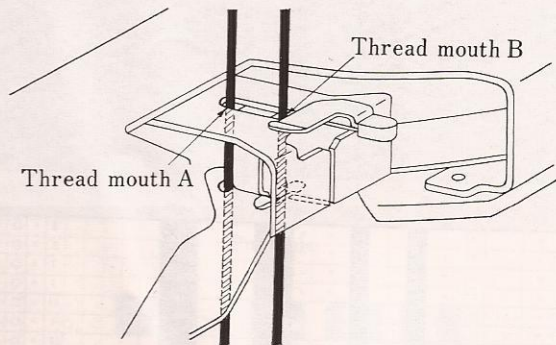
Note: When selecting the needles, if the end needles remain at B position, bring them out to D position.

8. Colour figured patterns

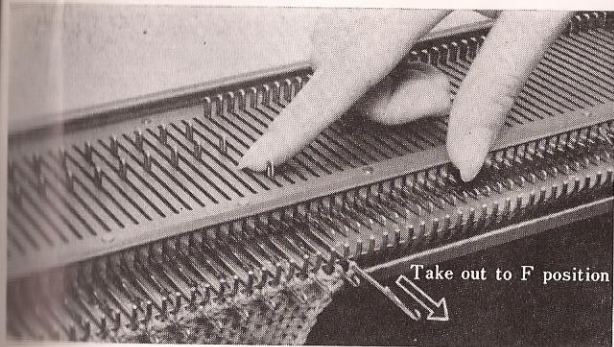
These are patterns created by combining colours to produce designs. Two colours can be knitted at the same time which makes this particularly easy.



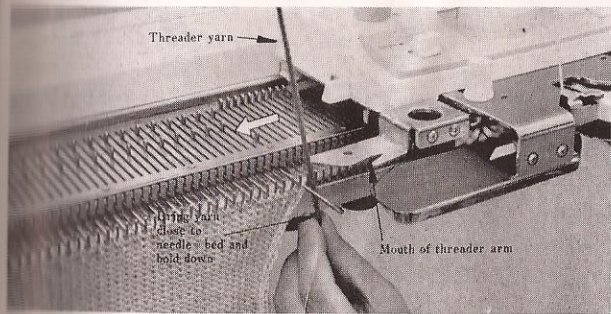
- a. When knitting patterns using 2 colours at once, first thread main colour yarn into thread mouth A, then with the thread pressing knob pushed to the right, slide the contrast yarn under the thread presser as shown.



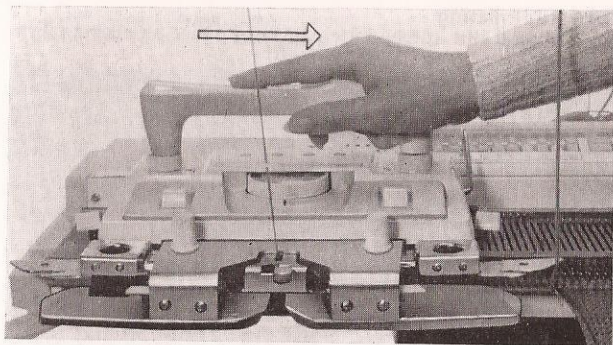
- b. Pull the end of the contrast yarn down and through the slot. It is now in thread mouth B.



Set all parts according to order No. 1 of work table.
 Bring the needle nearest to the carriage out to F position.
 This operation should be performed each time a row is knitted.



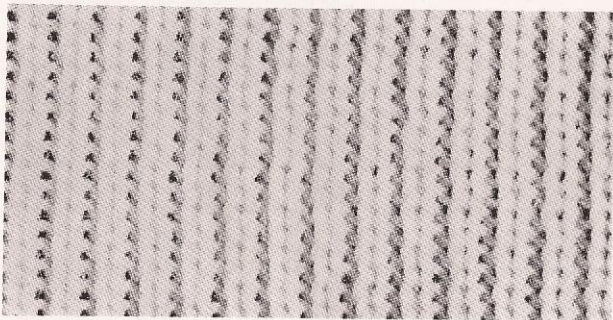
Hold the end of the yarn with your fingers and bring it close to the sinkers and knit one row.
 The weaving yarn enters the mouth of the threader and is taken across the work at the correct tension.



- f. Remove the wearing yarn from the threader arm. Take out one knitting needle at left edge to F position.
- g. Push the reversing switch toward ▲ mark and select the needles. Move the carriage to right. (Order No. 2 Work Table)
- h. The weaving yarn will enter right side of the thread mouth naturally and will be woven into the knitted fabric. Repeat these 2 rows.

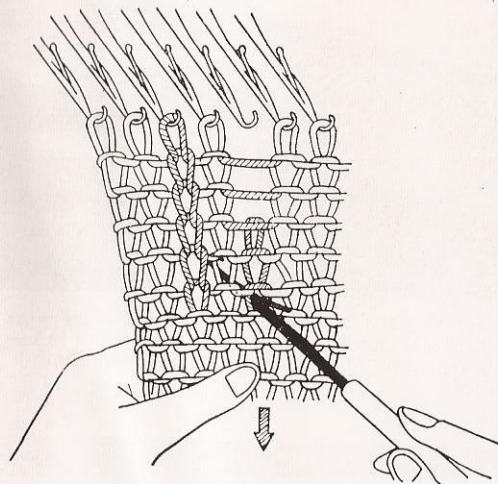
10. Rib knitting

Purl and knit stitches alternate to produce an elastic fabric.

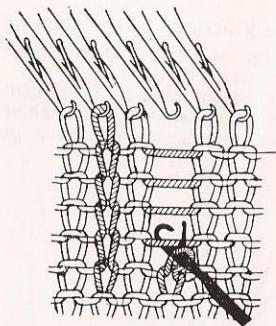


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—	—	—	—	—	—	—	—	—	—	—	—
P	K	P	K								

P=Purl
K=Knit

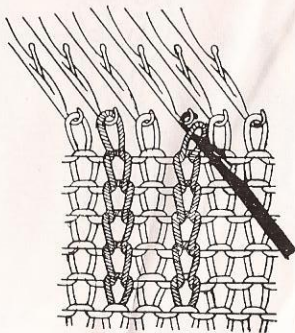


- a. Knit in stocking stitch as many rows as required but using a stitch tension 2 or 3 degrees tighter than normal.
- b. Remove 1 of the stitches to be ribbed from the needle.
- c. Insert the latch tool into the stitch on the row where the ribbing is to start and press the tool downwards until the stitch runs down.



d Push the latch tool forward so that the stitch lays behind the latch.

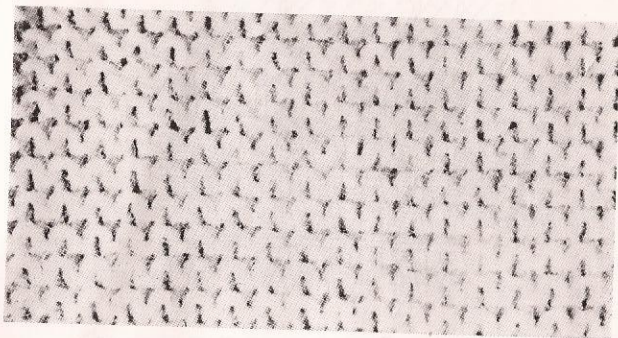
e Catch the horizontal thread above the stitch into the hook and pull the tool backwards. The latch will close and you can draw the thread on the hook through the stitch thus making a new knit stitch. Repeat steps d and e to the top of the work.



f Transfer the knitted stitch to the empty needle on the machine.

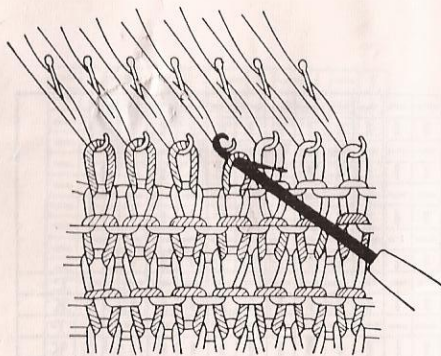
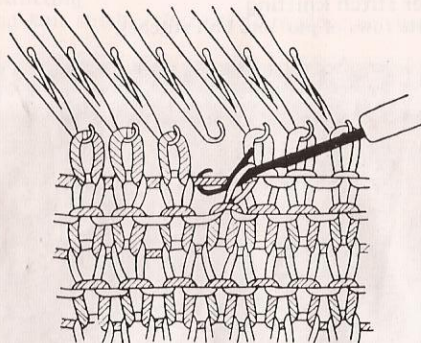
11. Garter stitch knitting

Alternate rows of purl and knit stitches.



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										P
—	—	—	—	—	—	—	—	—	—	K
										P
—	—	—	—	—	—	—	—	—	—	K

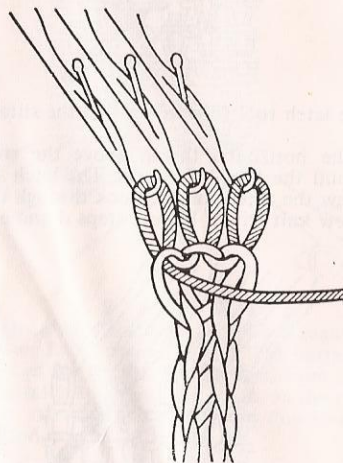
Knitting Code



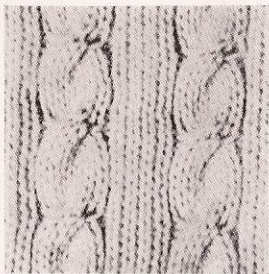
- Knit 2 rows of stocking stitch.
- Open up all the latches of the knitting needles.
- With the latch tool change the last row of stitches to knit stitches.
- Repeat steps a to c.

12. Cord or tube knitting

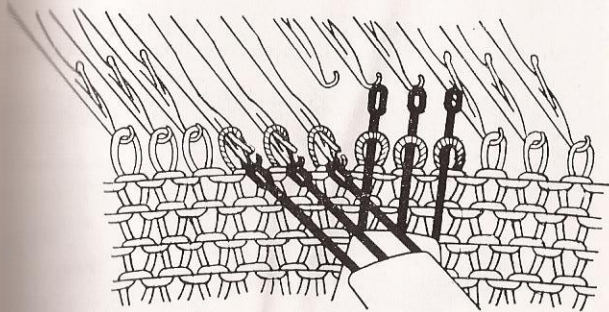
- Depending on the size of the cord, bring 3 or 4 needles to F position and cast on by hand.
- Press the right hand auxiliary cam button.
- Set the tension 2 degrees tighter than normal.
- Take the carriage across and back pulling the knitting down at first.



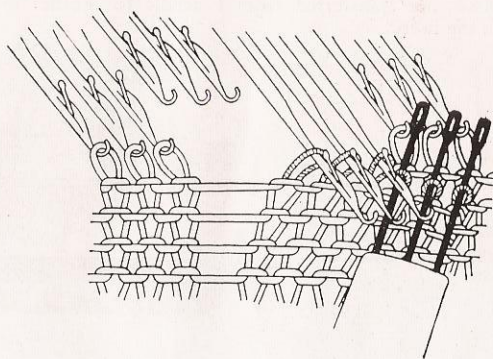
13. Cable or rope patterns



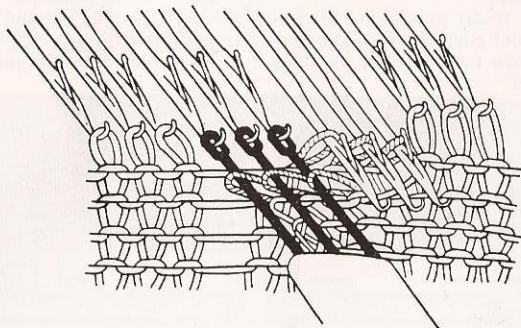
When 6 stitches are to be twisted:



Use 2 transfer tools with 3 needles each. Slip 3 of the stitches to be crossed onto each tool taking care to hold the tool upwards so that the stitches do not slip off.



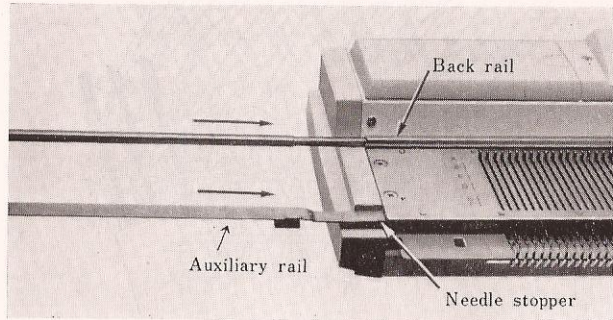
- b. Cross the tools over and slip the stitches from the left onto the 3 right hand needles.



- c. Slip remaining stitches onto the other 3 needles.
d. Knit 9 rows.
e. Repeat steps a to d.

LACE KNITTING

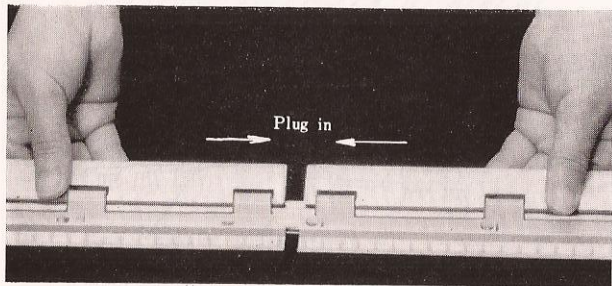
Stitches are transferred from 1 needle to another to form holes in the fabric.



1. Preparations before starting the knitting

- a. Attach the auxiliary rail to left and right of the grooved plate.

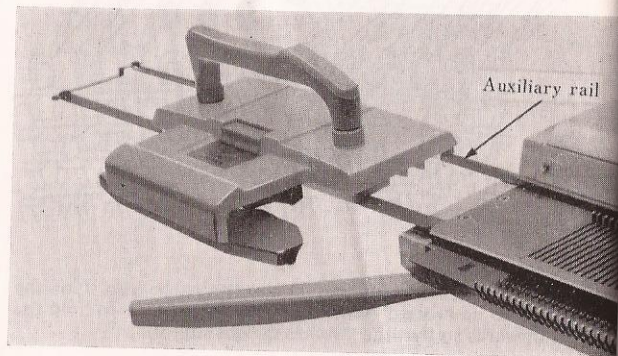
Insert square end into the groove at the rear rail and the other edge between the needle stopper and the groove plate. When removing the auxiliary rail, lift it up a little and pull it out.



- b. Connect the 3 weight plates according to the width being knitted.



- c. Attach a handle to the lace carriage. Tighten the nuts of the handle on both sides at the same time.
- d. Push the release button in centre, place the lace carriage correctly on the rear rail of the groove place, then let go off the button.



- e. Slide the carriage to left and leave it on top of the left auxiliary rail.

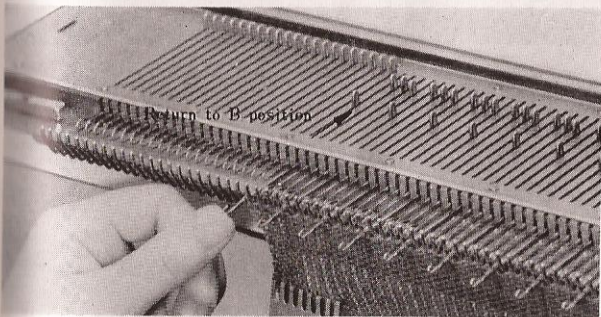
2. How to use the lace carriage

When using the lace carriage work with a slightly looser tension than normal.

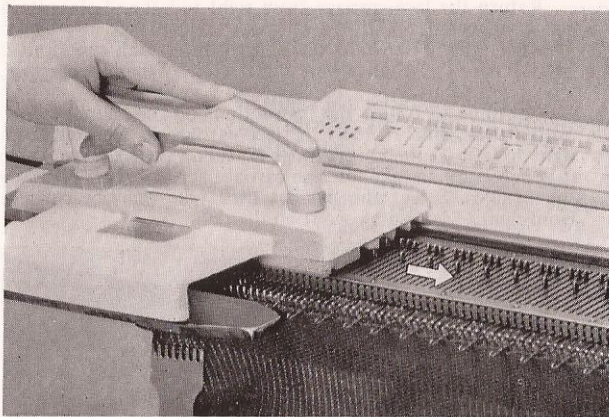
a. Knit a few rows in stocking stitch then hang the plate weights onto the knitted cloth. After a few more rows add the side weights. These should be moved up every few rows as required.

b. Insert Memory Card 19A for Lace Knitting and select the needles.

Note: If 2 adjacent needles are selected the stitches cannot be transferred.

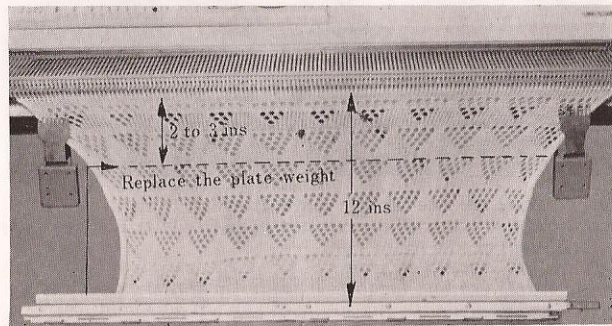


c. If the end needle is selected return it to B position.



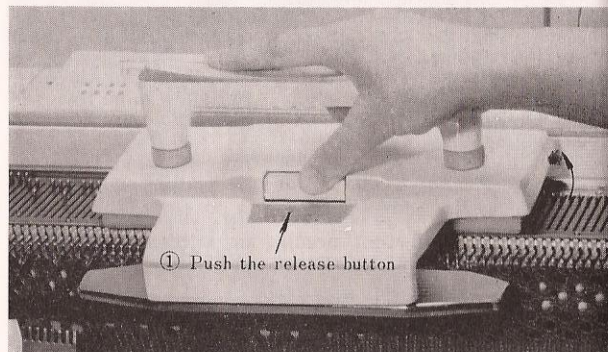
d. Move the lace carriage gently from left to right. The stitches of the selected needles will transfer to their adjacent needle to the right.

- e. Return the lace carriage from right to left and place it on the auxiliary rail on left.
- f. Remembering to pull the control lever each time knit 2 rows. Where the stitches were transferred by the lace carriage, a hole will be made.
- g. Continue to follow the instructions on the memory card, noting that after 16 rows the lace carriage is operated from right to left. As the knit carriage is also on the right hand side it is necessary to take the lace carriage across before selecting the needles. Select the needles then take the lace carriage from right to left and leave it on the rail.

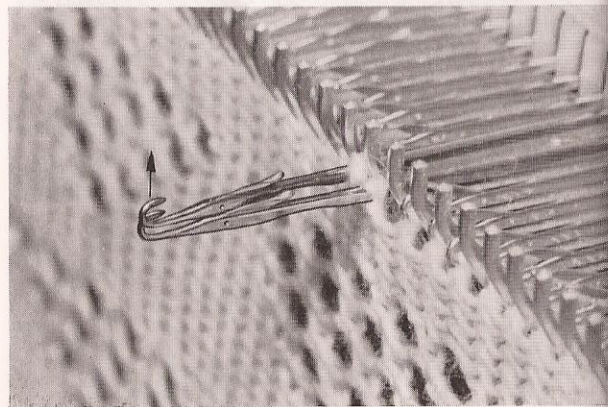


Remember to re-hang the weights every 2 or 3 inches.

3. If the lace carriage stops moving during knitting

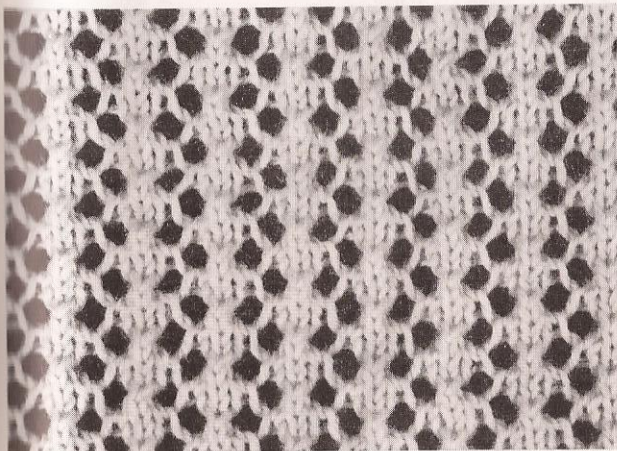


- a. Push the centre release button and remove the lace carriage.

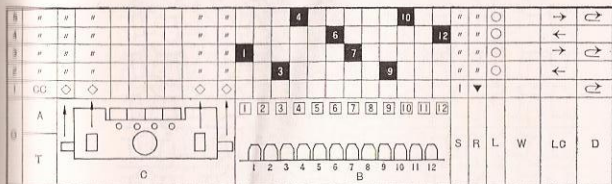


- b. If 2 needles have become twisted uncross them carefully. Replace the carriage at side as before and take it across again.

Lace knitting pattern No. 1



Knit Side



Order No. 1

Set the knit carriage for stocking stitch. Slide dial on 1, reversing switch on Knit 2 rows.

Order No. 2

Press the 3 and 9 needle selection buttons and select the needles. Pass the lace carriage from right to left. Release the buttons.

Order No. 3

Press the 1 and 7 needle selection buttons and select the needles. Pass the lace carriage from left to right. Knit 2 rows. Release the buttons.

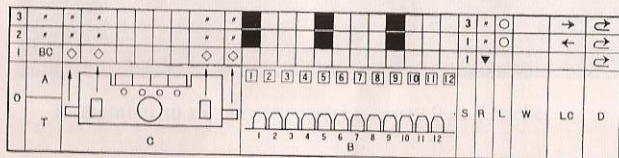
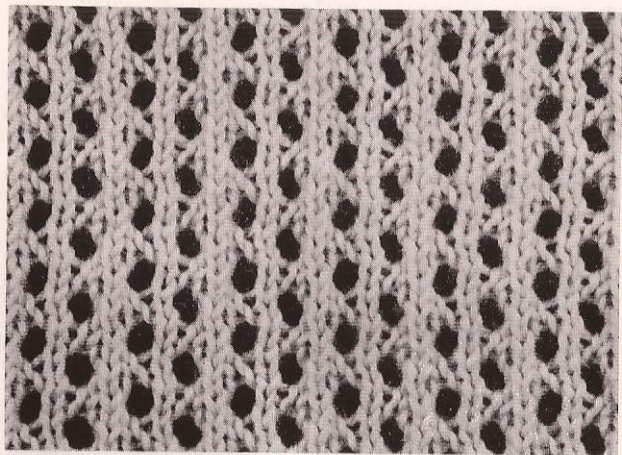
Order No. 4

Press the 6 and 12 needle selection buttons and select the needles. Pass the lace carriage from right to left. Release the buttons.

Order No. 5

Press the 4 and 10 needle selection buttons and select the needles. Pass the lace carriage from left to right. Knit 2 rows. Release the buttons. Repeat Orders Nos. 2-5 and keep on knitting.

Lace knitting pattern No. 2



Order No. 1

Set the knit carriage for stocking stitch.
Slide dial on 1, reversing switch on ▼.
Knit 2 rows.

Order No. 2

Press the 1, 5 and 9 needle selection
buttons and pull the control lever. Take
the lace carriage from right to left then
knit 2 rows.

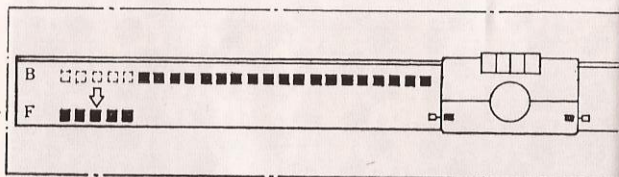
Order No. 3

Slide dial on 3 and select the needles.
Take the lace carriage from left to right.
Knit 2 rows. Repeat Orders 2 and 3 and
keep on knitting.

VITAL POINTS TO REMEMBER IN KNITTING

1. Horizontal shaping

When knitting bust darts, shaped hems, mitred corners or any part when more rows are required on some needles than others, horizontal shaping is used.

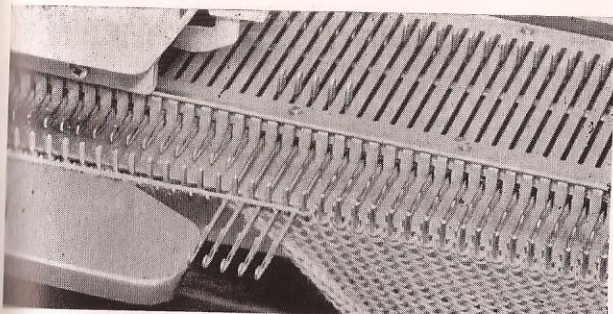


Examples 1 and 2 are both suitable for use with stocking stitch, pull-up patterns, tuck patterns, colour-figured patterns and slip-stitch patterns.

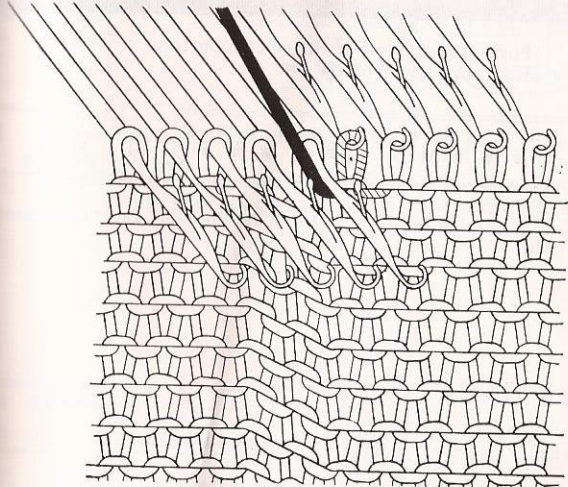
Example 1

Shaping is required 20 stitches wide and 8 rows deep.
Carriage is at right.

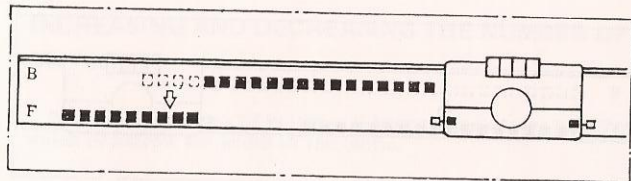
- Push left and right returning levers to ■.
- Bring 4 needles at left (opposite side to carriage) out to F position.



- c. Knit one row. Only the knitting needles left in B position will knit and the yarn will be taken across the stem of the needles in F position.

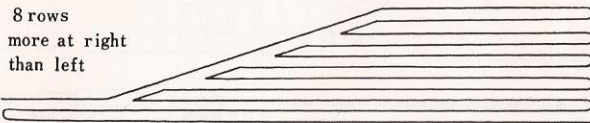


- d. Take the knitting yarn round the nearest needle in F position.
 e. Knit one row.
 Note: If yarn is not taken round the nearest needle a hole will be made.

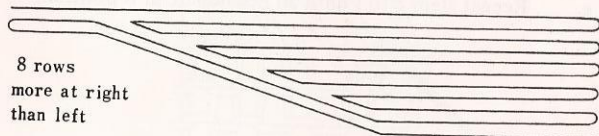


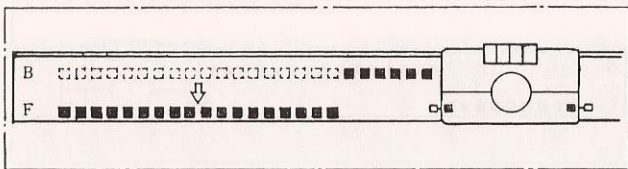
- f. Bring 4 more needles to F position and repeat steps c to e. Continue in this way until 20 needles are in F position and 8 rows have been knitted.
 g. Push the returning levers to \blacklozenge and knit 1 row. All the knitting needles in F position will knit and line up in order at B position.

The above method will give a dart shaping thus:-



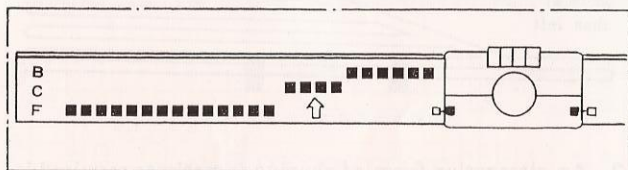
2. An alternative form of shaping sometimes required is thus:-





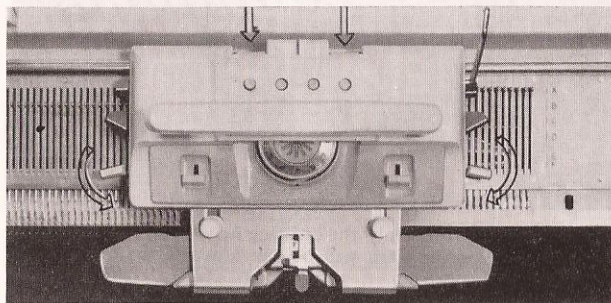
Examples 2

- a. Bring 20 needles at left to F position.
- b. Push the returning levers to ■ .
- c. Knit one row.
- d. Wind the yarn round the nearest needle in F position.
- e. Knit one row.

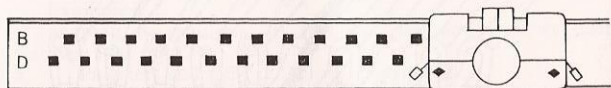


- f. Push 4 needles nearest to carriage back to C position.
- g. Repeat steps c to f until all needles are in B position.

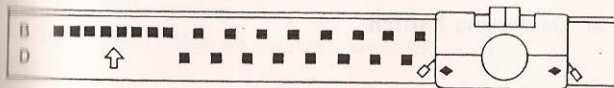
3. Horizontal shaping of Lace knitting



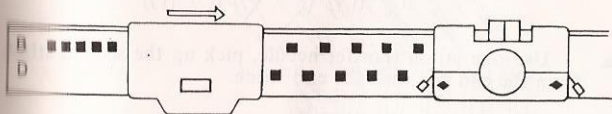
- a. Push right and left auxiliary cam buttons.
Returning levers on ◆ .



- b. Select the needles by following the work table or memory card.

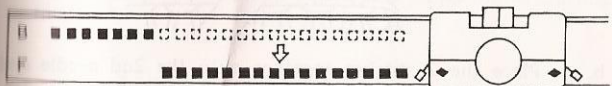


- e. Return the needles not to be knitted to B position.



- d. Move the lace carriage according to the work table or memory card.

Note: If the work table shows to move the lace carriage more than once in succession, repeat operations b, c and d.

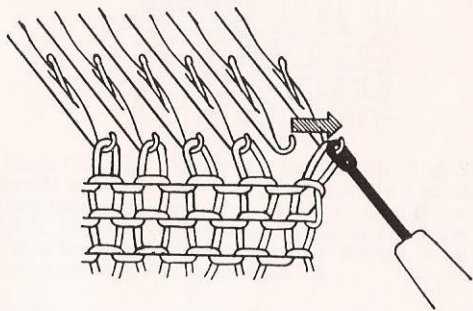


- e. Bring all the needles to be knitted to F position and knit the row.

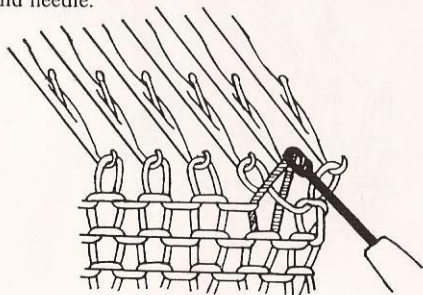
INCREASING AND DECREASING THE NUMBER OF STITCHES

During the process of knitting, it becomes necessary to either widen or narrow the width of the fabric.

1. Increasing 1 stitch



- Bring one needle on the side to be increased from A position to B position.
- Using the single transfer tool transfer the end stitch out to the end needle.

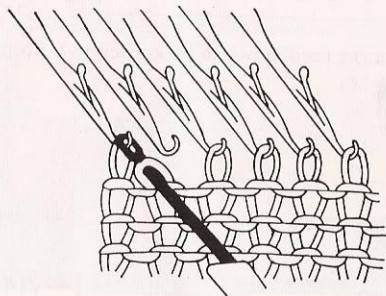


- Lift the loop below the stitch on the 3rd needle and place it onto the empty needle.

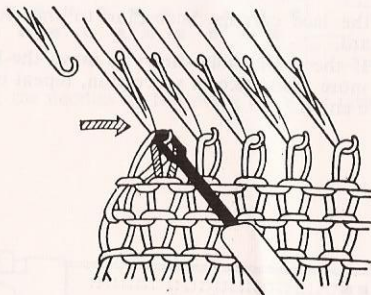
2. To increase a number of stitches

Cast on the number of stitches required by hand. (See page 14) This can only be done on the same side as the carriage, and if necessary stitches are cast on at the beginning of 2 or more consecutive rows.

3. Decreasing 1 stitch



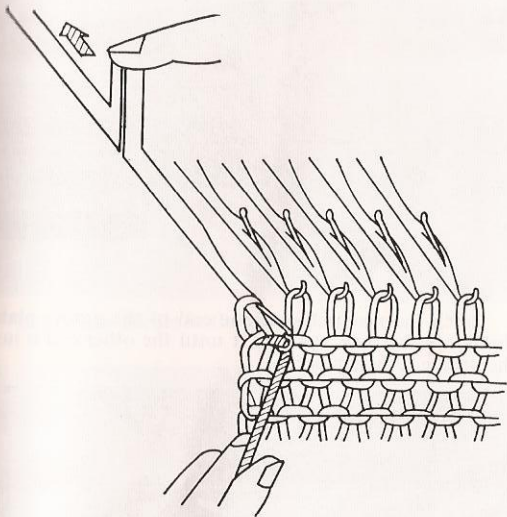
- a. Use one stitch transfer needle, pick up the second stitch from the end and then the end stitch.



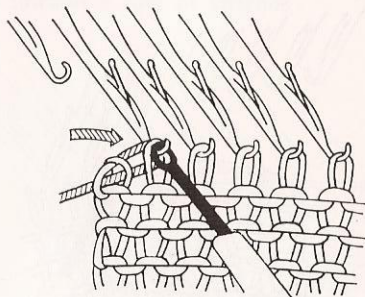
- b. Place the 2 stitches together onto the 2nd needle and return the empty needle at the end to A position.
- c. Alternatively, use the 3-stitch transfer tool to move the 3 end stitches 1 position towards the centre. Push empty needle to A position. This gives a “fully-fashioned” appearance to the fabric and is ideal for raglan shapings.

Simple casting off

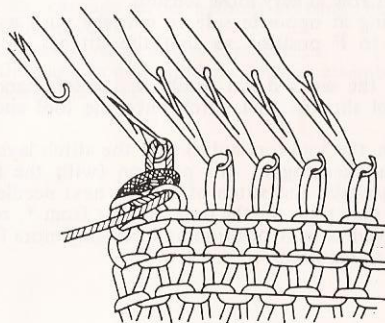
This is always done on the same side as the carriage.

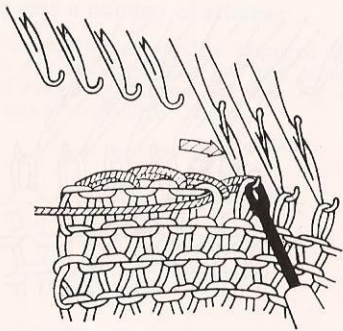


Bring the end needle forward so that the stitch goes behind the latch. Take the yarn over the needle in front of the latch and pull the needle back to B position thus knitting the stitch.



- b. *Using the single transfer tool transfer this stitch onto the 2nd needle and push the empty needle back to A position. Bring the needle forward so that both stitches are behind the latch, take the yarn over the needle and pull the needle back thus knitting 2 stitches together. Repeat from * until required number of stitches are cast off.





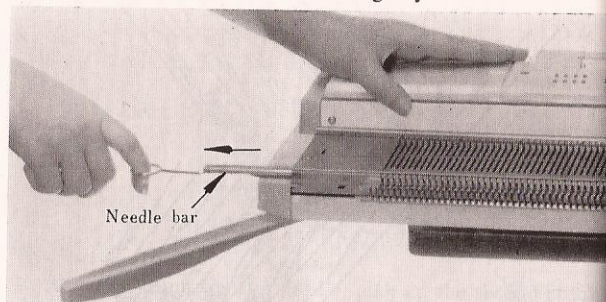
5. Chain casting off.

- a. Knit 1 row at very loose tension.
- b. Starting at opposite side to carriage push a few needles forward to F position so that the stitches lay behind the latches.
- c. Hold the work down firmly in the left hand. Using the latch tool slip the first stitch onto the tool and off of the needle.
- d. *Push the tool forward so that the stitch lays behind the latch, and keeping in this position (with the forefinger if necessary) take the stitch off of the next needle and pull it through the stitch on the tool. Repeat from *, replacing the empty needles in A position and bringing more forward to F position as required.

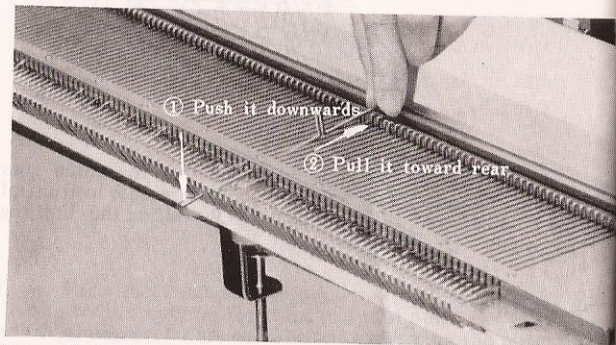
WHAT TO DO IN CASE OF DIFFICULTIES

1. When the knitting needles are damaged

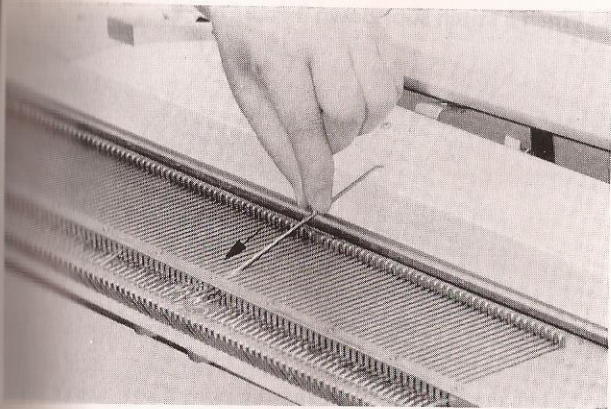
When the knitting needles become bent or the latches are damaged, replace them in the following way:



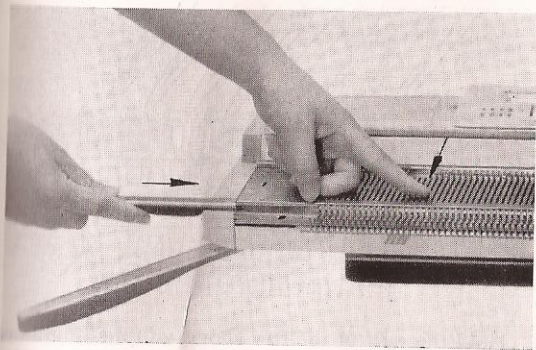
- a. Catch the needle bar at one end of the groove plate with the needle bar key and pull it until the other end is just past the needle to be replaced.



- b. Push the needle to F position, then press the hook end downwards and the shank end will come up.
- c. Pull the shank end up and back until it is out of the plate.

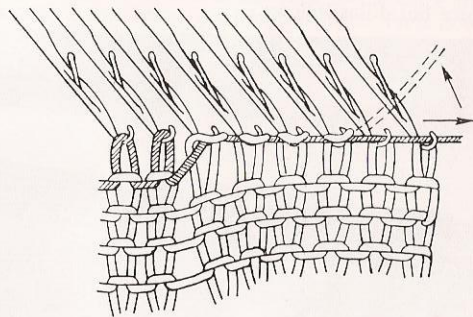


Insert new needle in the reverse order.



When the new needle is in place push the needle bar back as before, at the same time keeping it in place by pressing forward on some of the needle butts.

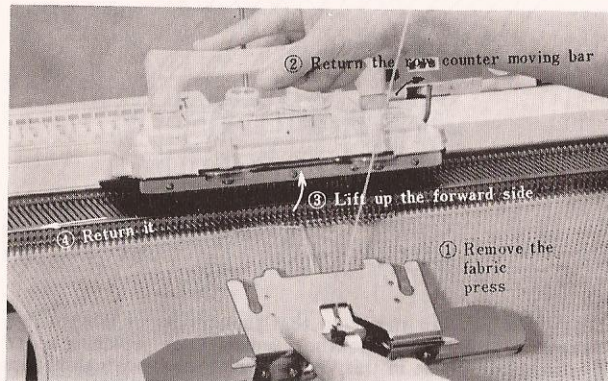
2. How to unravel a row of stitches



- a. Pull the yarn firmly so that the stitches of the previous row are lifted up onto the needles. Keep replacing a few stitches at a time in this way by pulling and moving the yarn backwards and forwards until the row is unravelled.
- b. Take the carriage across without knitting (both auxiliary cam buttons pressed).
- c. Correct row counter and re-thread yarn.
- d. Pull the yarn from behind the tension assembly to ensure that it does not become slack.

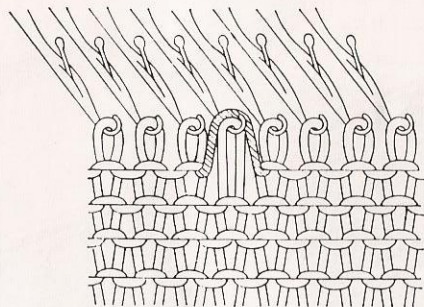
3. When the carriage does not move

When the carriage stops during knitting do not try to move it by force but do as follows:—

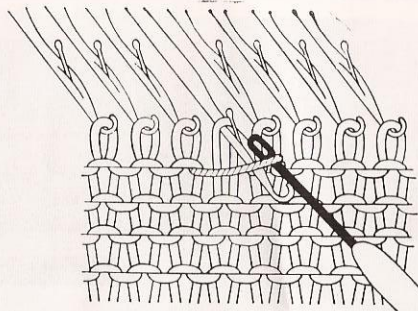


- Loosen the knobs and remove the fabric press.
- Return the row counter moving bar.
- Lift up the front of the carriage slightly and slide the carriage sideways away from the work.
- Unravel the stitches of the last row.
- Pull the yarn from behind the tension assembly to ensure that it does not become slack.
- Replace the fabric press and re-thread the yarn.
- Correct the row counter.

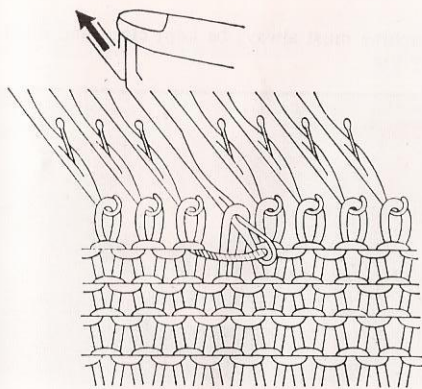
4. When a stitch slips down 1 row



- Lift the dropped stitch and the yarn of row above onto the empty needle.



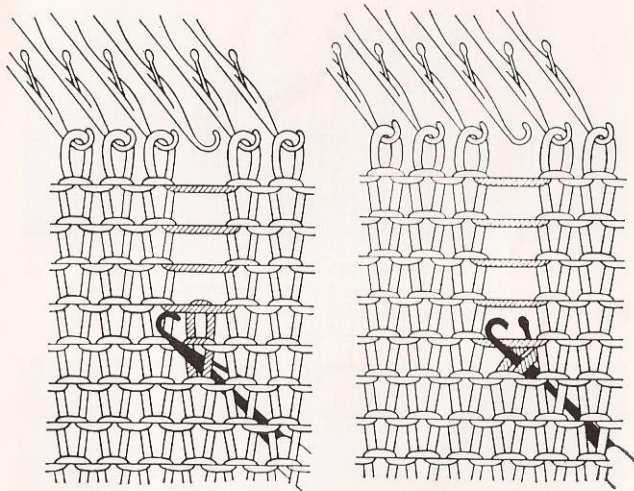
- Hold the yarn of the row above with the single transfer tool, push the needle forward so that the stitch lays behind the larch. Drop the yarn down in front of the larch.



Pull the needle back to B position thus re-knitting the stitch.

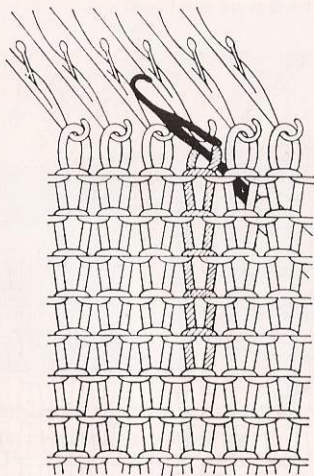
5. When a stitch slips down a number of rows

- a. Hold the latch tool at the back of the work and push it through 1 row below the dropped stitch. Press down lightly so that the stitch is on the hook.



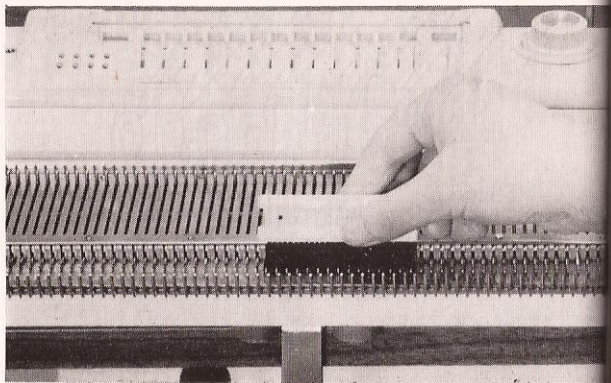
- b. Push the latch tool forward so that the stitch lays behind the latch.
- c. Catch the yarn of the row above into the hook and pull the tool back drawing the stitch through.

- d. Repeat b and c until all the rows are knitted up.
- e. Replace last stitch on needle.

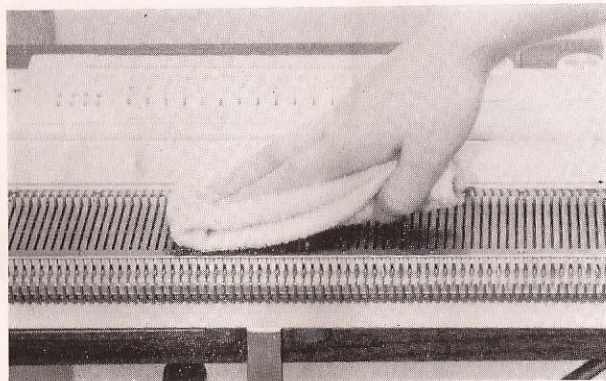


CARE AND MAINTENANCE OF THE MACHINE

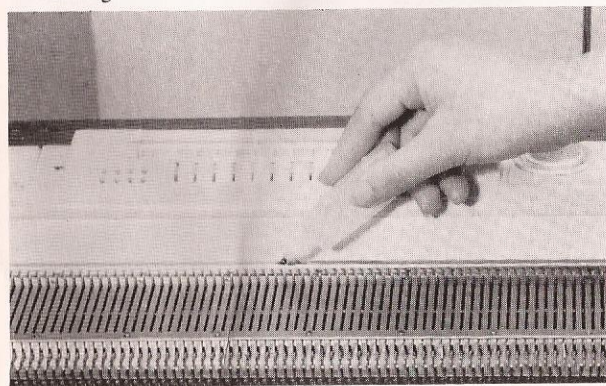
The machine must always be kept clean and oiled to ensure satisfactory use.



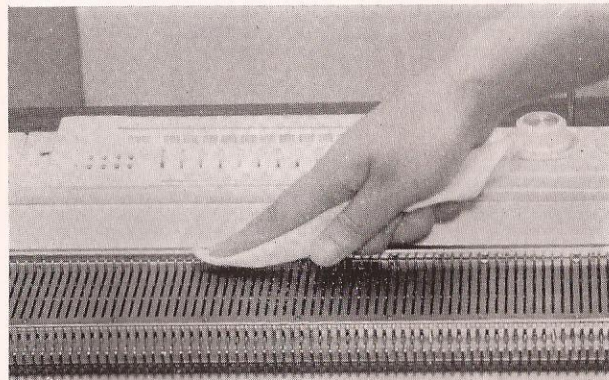
- a. Use the brush from the accessory box to remove dust and loose fibres.



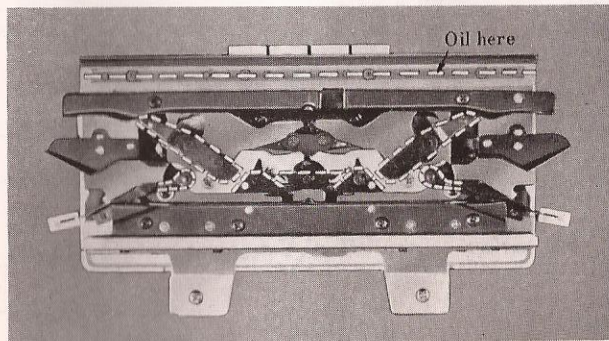
- b. Wipe away all dust and grit from the groove plate with a soft rag.



- c. Apply oil lightly to the front and rear rails. If the oiler is pressed lightly with fingers, the oil will seep out to the tip of the brush.
Note: Be sure to use only the oil in the accessories box.

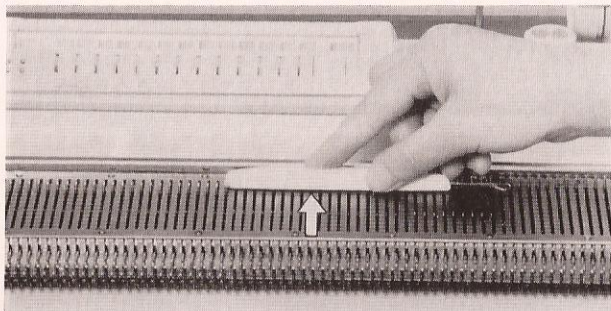


- d. Soak the oil thoroughly into the rag and wipe the grooves of the groove plate and the butts of the knitting needles.
Note: Do not apply oil directly to the groove plate and the knitting needles.

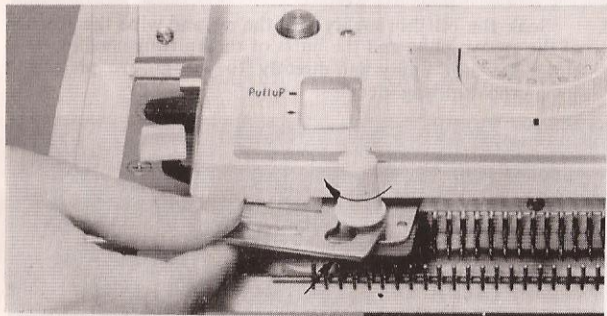


- e. Apply oil to the underside of the carriage. Wipe away all dirt and apply oil to the dotted line shown in the picture.
f. Keep the machine in a dry, steam-free atmosphere.

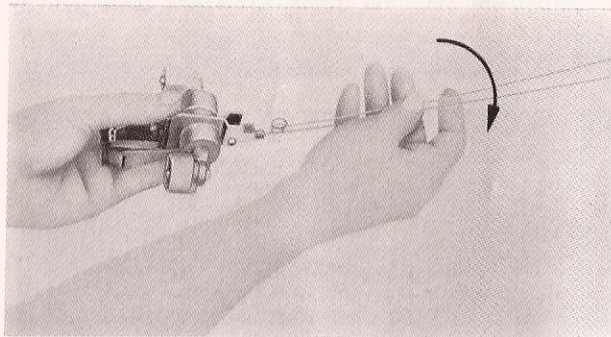
HOW TO PACK THE MACHINE AWAY



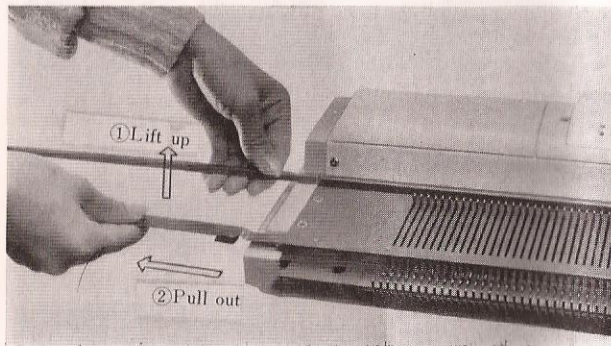
- a. Push all the needles to A position.



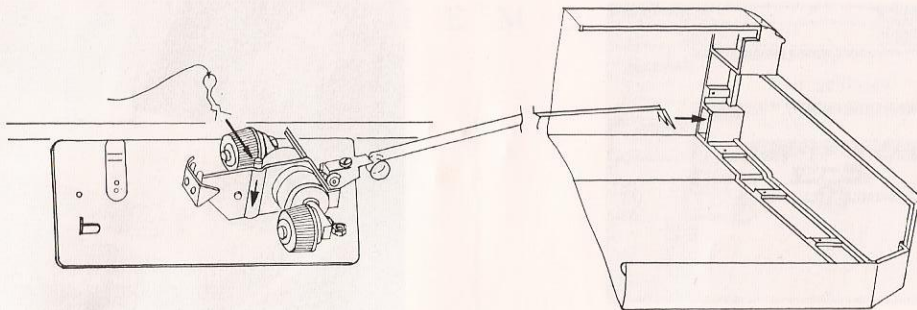
- b. Remove the carriage handle and the fabric press and push the carriage to the left of the groove plate. Secure the carriage with the carriage stopper.



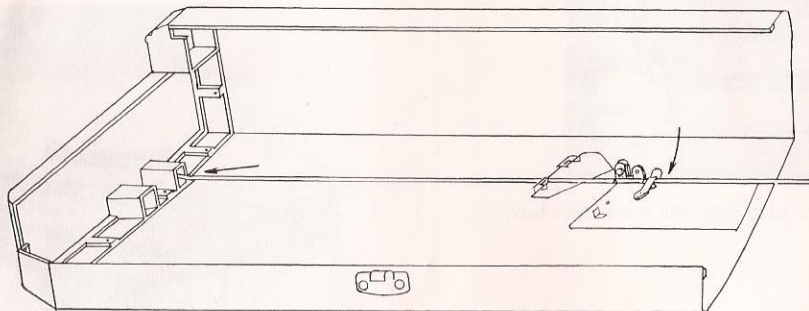
- c. Remove the tension assembly and lay the tension spring in horizontal position.



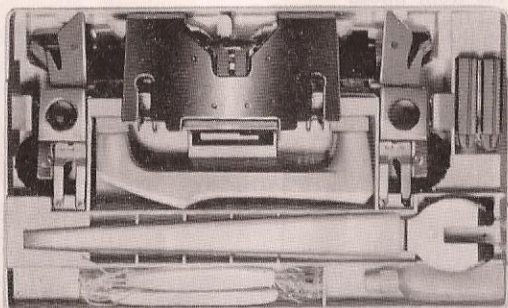
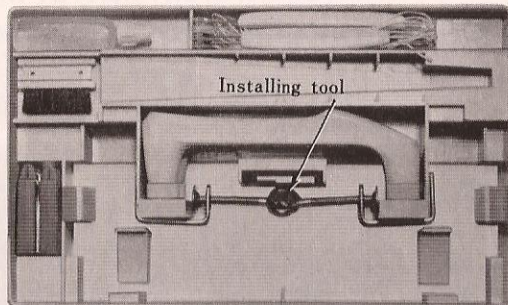
- d. Lift up the auxiliary rail slightly and pull it out.



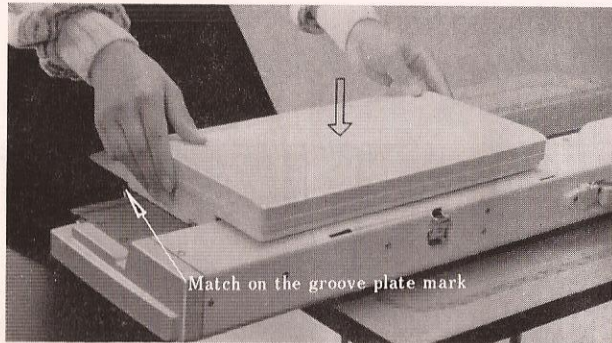
- e. Store up the tension assembly in the case. Plug in the tension assembly to the shaft by placing the front thread guide and plug in the pin and set it. Put the tip of the tension spring into the hole of the side plate on the right side.



- f. Knock down the knitting yarn guide and store away the tension rod. Insert the tip into the hole of the side plate on the left side and set it with the tension rod presser.



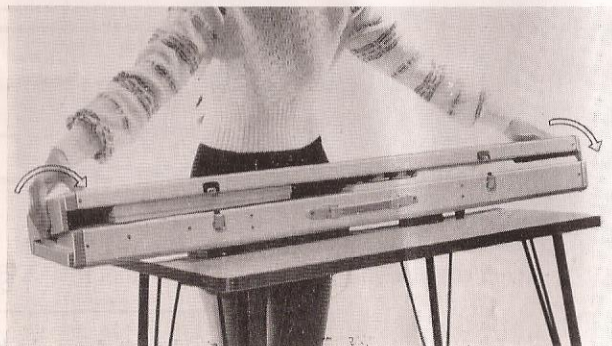
g. Store away the accessories parts into the accessories box.



h. Store away the accessories box on the right side of the main machine.

After verifying that the needles are at A position, put the right end of the accessories box so that it will be at A, B, C positions of the carved marks of the grooved plate.

If the needles are not arranged in order, they can not be stored away.



i. Put the cover on and set it with the padlock.

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