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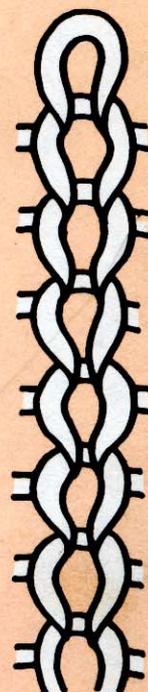
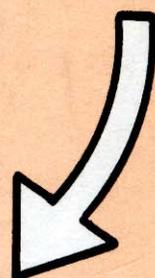
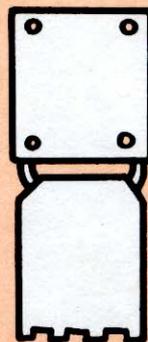
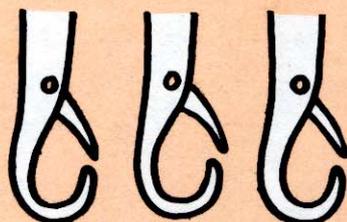
Getting to know your

Zippy de~luxe Lace Carriage

Knitmaster's unique
single action transfer
lace carriage will
knit:

- *Stocking stitch
- *Plain lace
- *Fashion lace

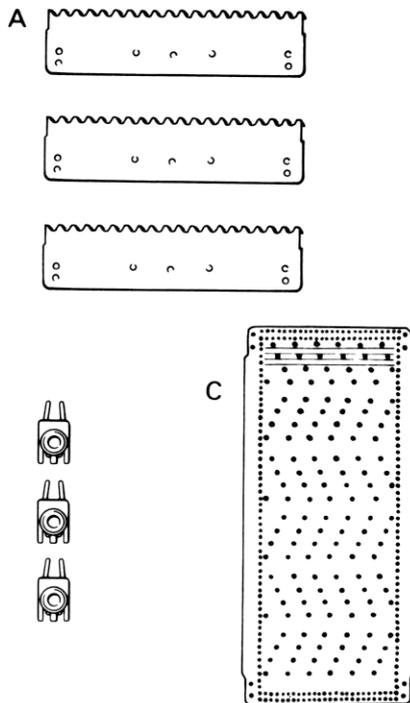
The lace carriage is
available as an
optional accessory
for your Zippy
de-luxe.



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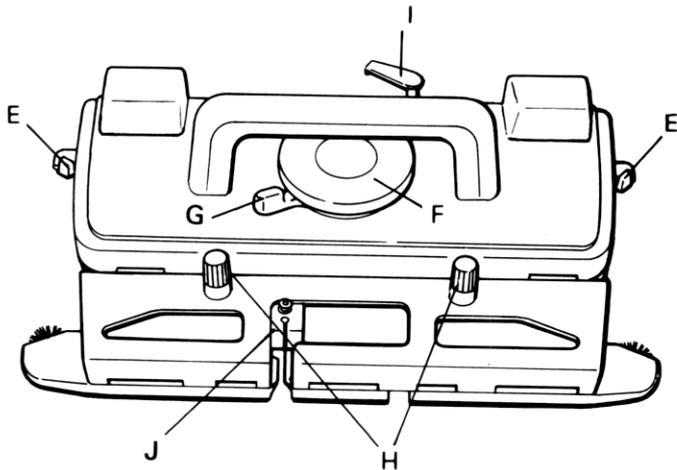
ACCESSORIES AND CARRIAGE



ACCESSORIES

Remove the Accessories from the packing.

- A — Wide Claw Weight (3)
- B — Edge Pin (6)
- C — Punch Card (10)

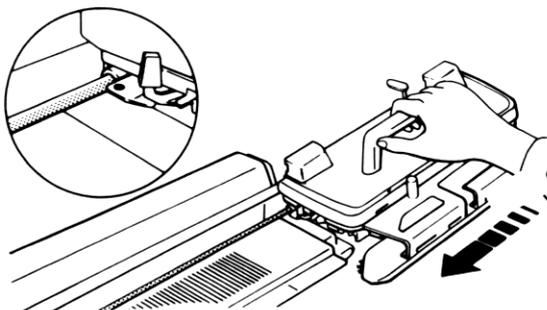


CARRIAGE

Lace Carriage and Arm has been packed in styrofoam packing. Remove it from the packing and raise the Carriage Handle.

- E — Side Levers
- F — Stitch Dial
- G — Cam Lever
- H — Arm Nuts
- I — Row Counter Tripper
- J — Yarn Feeder

Place the Lace Carriage on the Needle Bed at the right side.





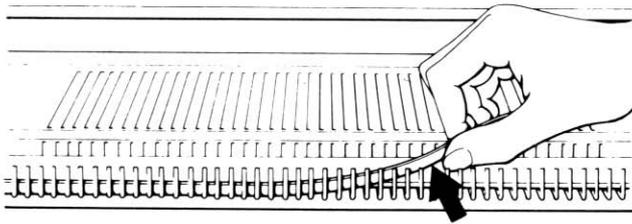
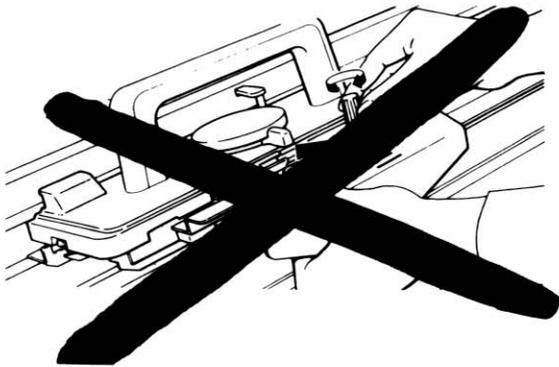
Note for using the Lace Carriage

IMPORTANT:—

① *Do not attach the Main Carriage Arm to the Lace Carriage.*

② *Do not connect the Ribber Arm to the Lace Carriage.*

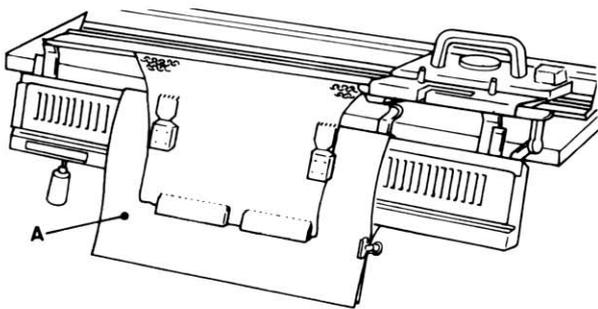
The Ribber Arm can only be connected to the Main Carriage.



If you knit with Ribber connected,

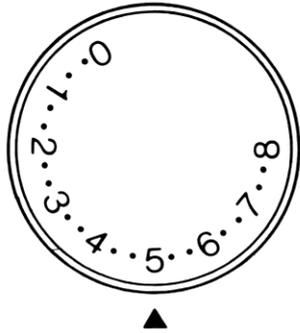
* Set the Ribber at lower position.

* Remove the Close Knit Bar from the Needle Bed, if it is in use.



Cover the Ribber needles and sinker posts, and bring the knitting in front of the Ribber. Plastic Ribber Needle Bed Covers are available as an accessory.

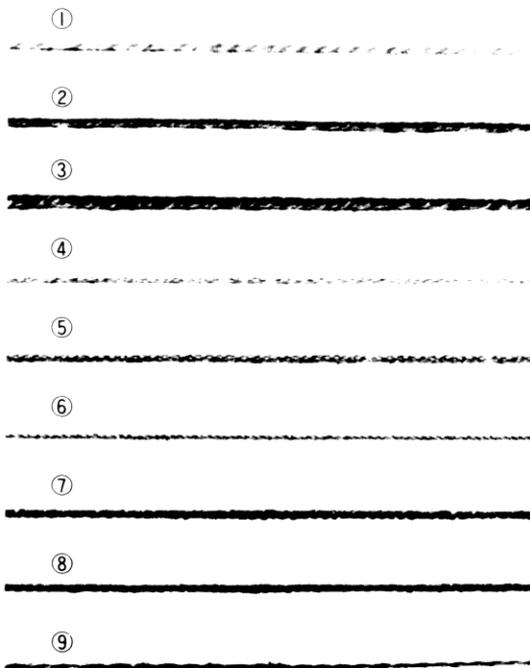
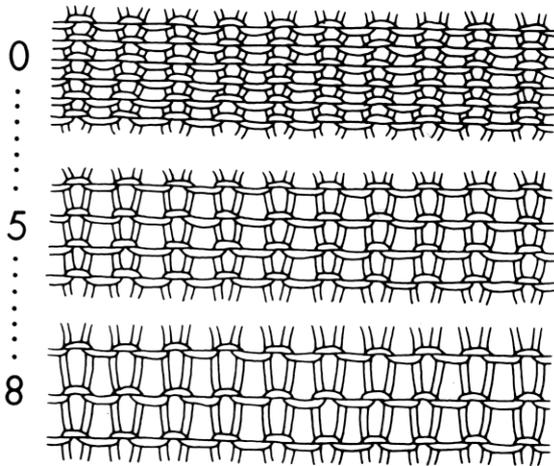
YARN AND STITCH DIAL



Stitch Dial

Use this to regulate the size of stitches.
Set the numbers to the ▲ mark at the front.

The higher the number on the Stitch Dial, the larger the stitch size (the fabric is loose).
The lower the number, the smaller the stitch (the fabric is tight).



Yarn and Stitch Dial

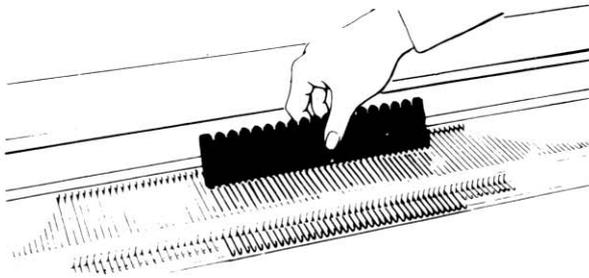
Type of yarn	Stitch Dial (stockinet)	Stitch Dial (lace)
① Thin yarn (2-ply)	2 ~ 3	(3) ~ 4
② Light yarn (3-ply)	3 ~ 5	4 ~ 5
③ Medium yarn (4-ply)	4 ~ 6	5 ~ 6
④ Cotton thread (thin)	3 ~ 4	4 ~ 5
⑤ Cotton thread (regular)	4 ~ 5	5 ~ 6
⑥ Synthetic (thin)	2 ~ 3	(3) ~ 4
⑦ Synthetic (regular)	3 ~ 4	4 ~ 5
⑧ Synthetic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

Note:

Do not adjust the Stitch Dial to the numbers in brackets for Punch Card No. L-5, L-6 and L-7 which produce meshlike patterns.

Do not use heavy knop yarn or thick mohair yarn.

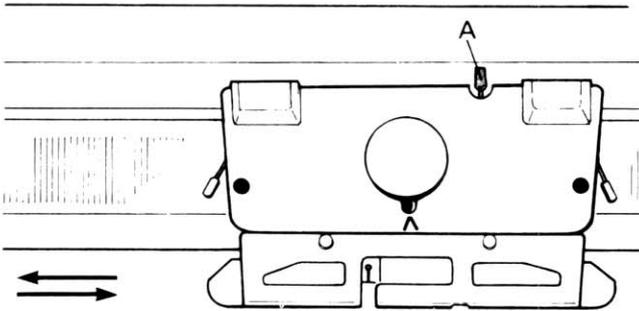
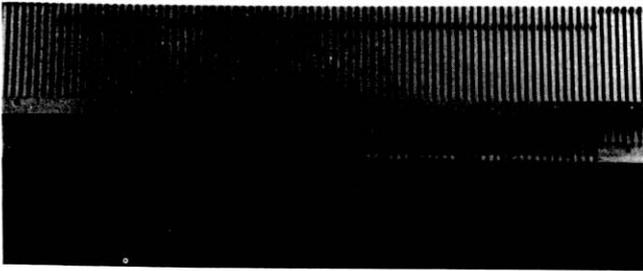
CAST-ON AND KNITTING



Cast-on

Push 35 needles at the left and right side of centre(0), (70 needles in total) from A to B position using the flat edge of the Needle Pusher.

Never push needles to C or D position. This will cause damage to the needles.



Cam Lever..... ^
Side Levers..... ●

The Cam Lever is connected to the Row Counter Tripper "A".

Cam Lever position

^ — Plain Lace..... Row Counter is operated.

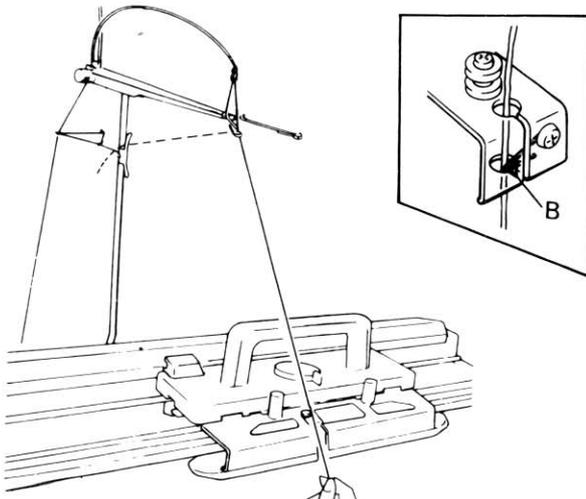
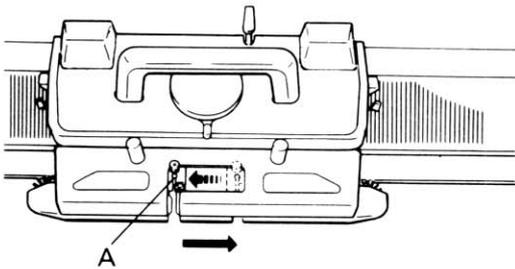
⌘ — Fashion Lace..... Row Counter is not operated.

Do not adjust the Row Counter Tripper by hand.

Slowly move the Carriage across the Needle Bed until it has passed all the needles.

Place the Carriage at the right side.

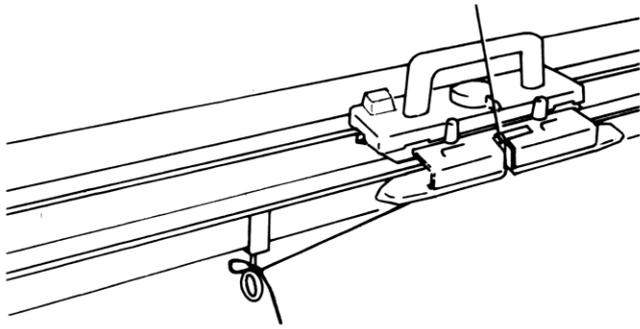
Move the Carriage to the right to move Yarn Feeder "A" to the left side of the Arm. The Yarn Feeder must be at this position to thread up the yarn.



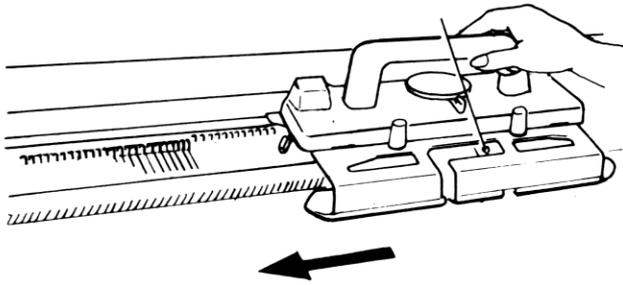
Remove the yarn end from Yarn Clip and bring it down to the Carriage.

Hold the yarn with both hands and slide it into the Yarn Feeder.

The yarn must be pushed behind guide pin "B".

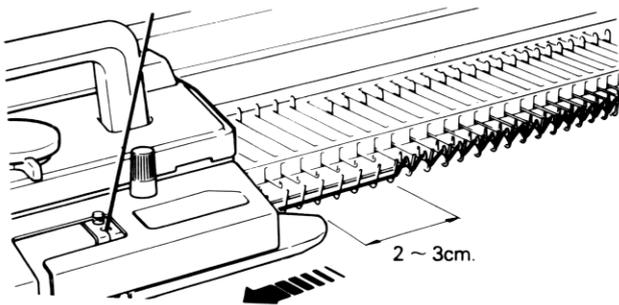


Fasten the yarn end to the clamp nearest the Carriage.

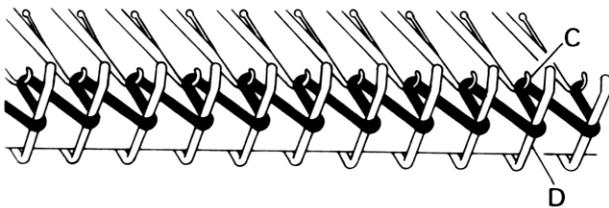


Eliminate slack yarn by pulling the yarn down at the back of Yarn Rod.

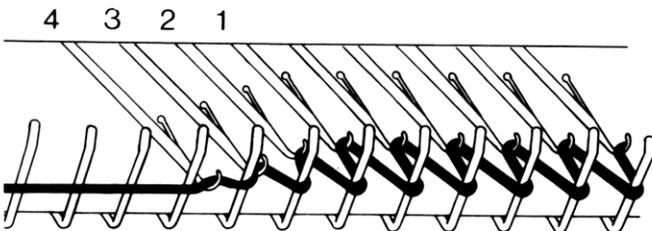
Slowly move the Carriage from right to left until it has passed all the needles in B position.



Be sure to take the Carriage past the last knitting needle by 2 — 3cm.

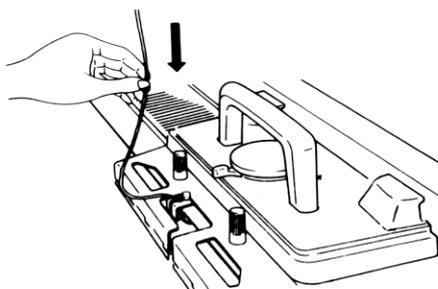


Even loops have been formed between needle hooks "C" and sinker posts "D".

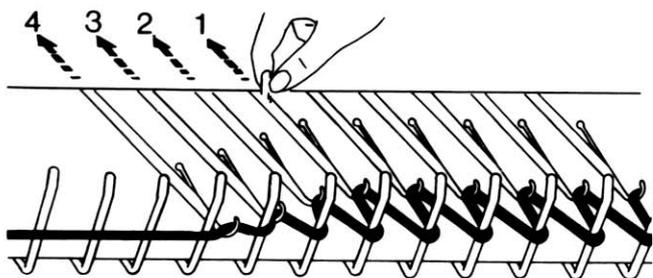


When knitting the first row, the loops may get smaller towards the edge.

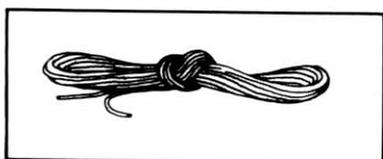
To achieve a successful cast-on, these smaller loops must be increased in size.



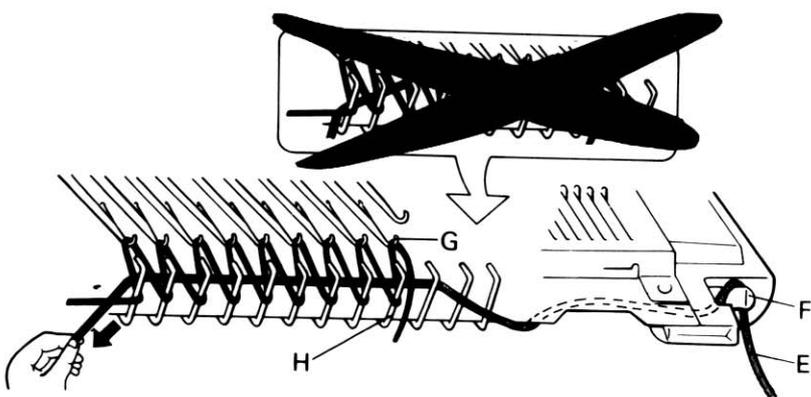
To correct, hold yarn above the Yarn Feeder and pull it down to allow some slack.



Starting with needle "1", push the needles with small loops one by one back to B position.

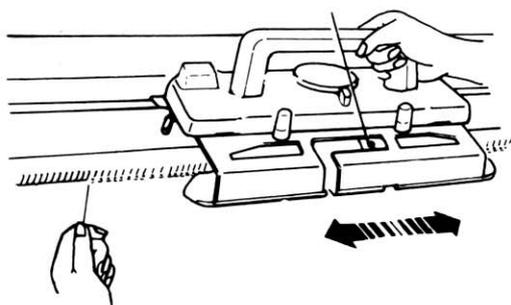


Undo the ravel cord. Make sure there are no knots in the cord.



Place the end of the Ravel Cord "E" in the clip "F" at the right end of needle bed as shown. Lay the Ravel Cord across the yarn loops between needle hooks "G" and sinker posts "H". Pull the Ravel Cord with the left hand.

Ensure that the Ravel Cord lies across the loops and is not caught in the needle hooks.

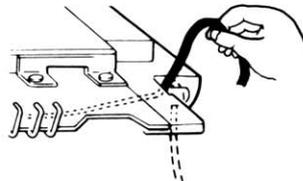
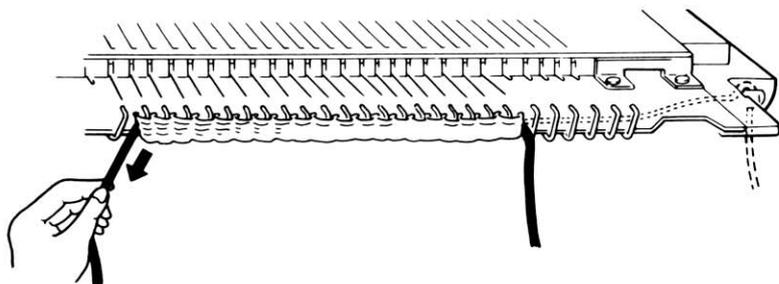


While pulling down the left end of the Ravel Cord, move the Carriage to the right side.

Knit 5 — 6 rows.

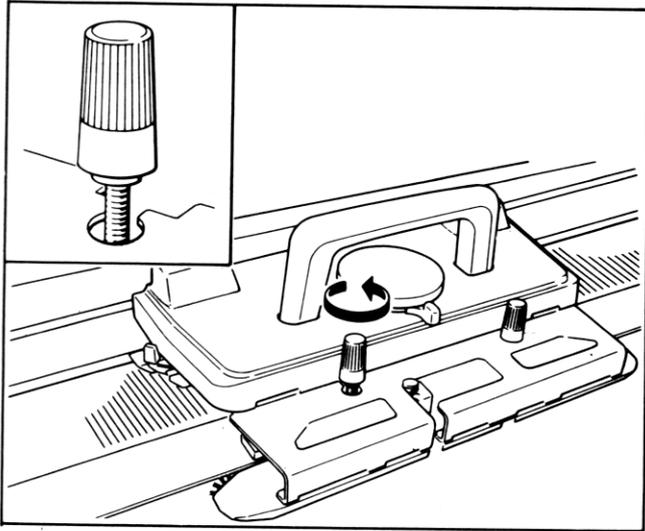
Release the end of the Ravel Cord from the clip and pull it out from the left.

The cast-on has been completed.



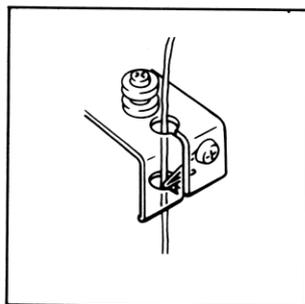
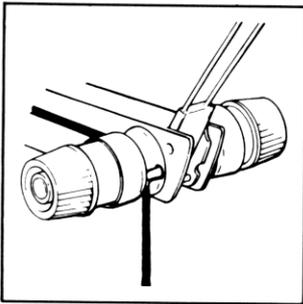
Knitting Stockinet

Remove yarn end from the clamp.
Move the Carriage from side to side to knit Stockinet.

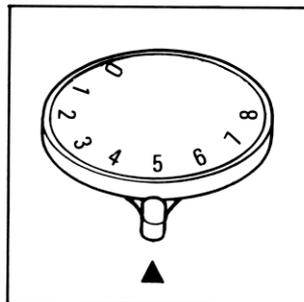
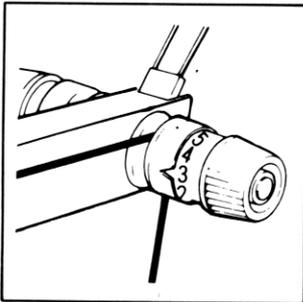


Check Points

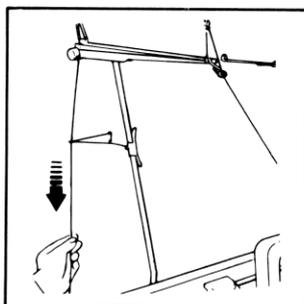
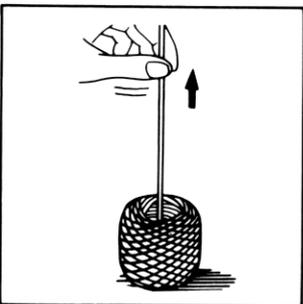
If you have any difficulty in knitting the first row, ensure that...
Arm is attached to the Carriage correctly.



Yarn is threaded correctly through the Auto Tension and Yarn Feeder.

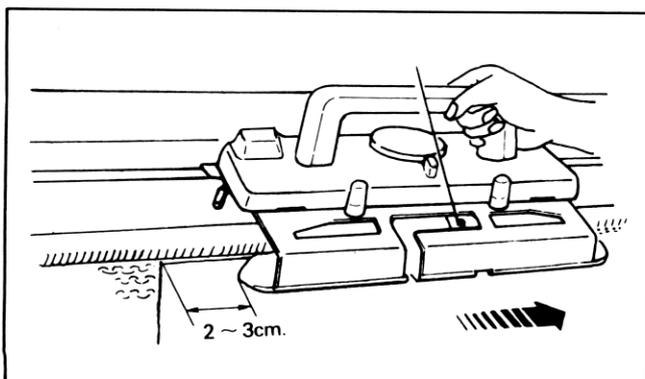


Tension Dial, Stitch Dial and Cam Lever set correctly.

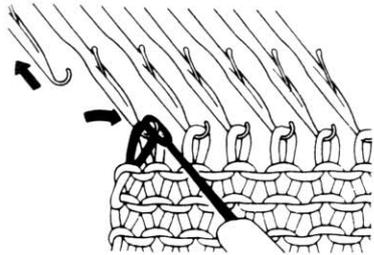


Yarn is wound correctly.

Slack yarn is eliminated and Tension Spring is almost horizontal.



Arm has passed the working needles by approximately 2 — 3cm.
before beginning the next row.



Decreasing 1 stitch

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

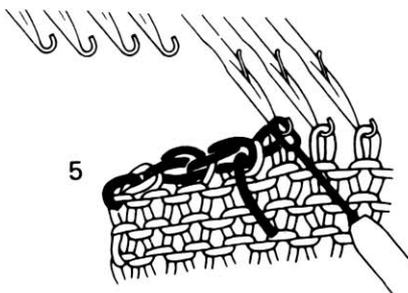
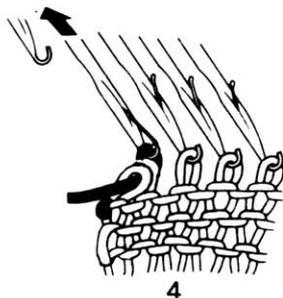
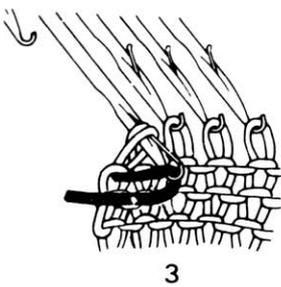
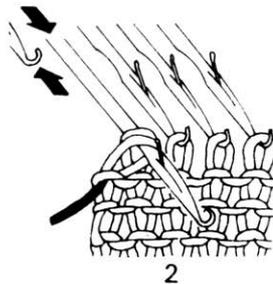
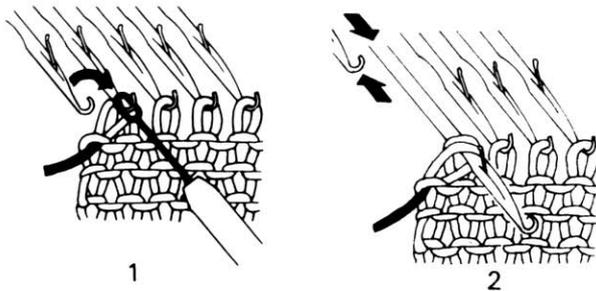
Using the Transfer Tool, transfer the end stitch onto the adjacent needle.

Push the empty needle back to A position.



Decreasing multiple stitches

You can decrease only on the Carriage side.



To decrease at the left:—

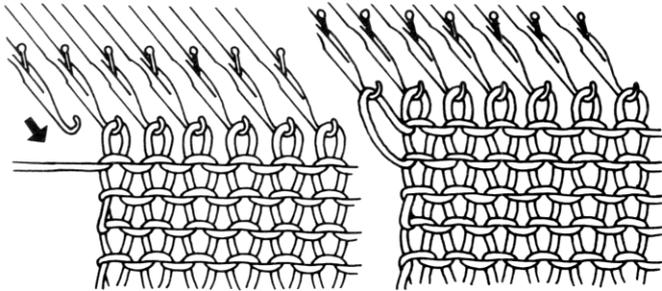
1. With the Carriage at the left, hold the fabric back towards the Knitter. Transfer the end stitch to its adjacent needle. Push the empty needle back to A position.
2. Push the second needle to D position until both stitches are behind the latch.
3. Lay yarn from left to right in the open hook of the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

* Repeat in reverse to decrease at the right.



Increasing 1 stitch

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

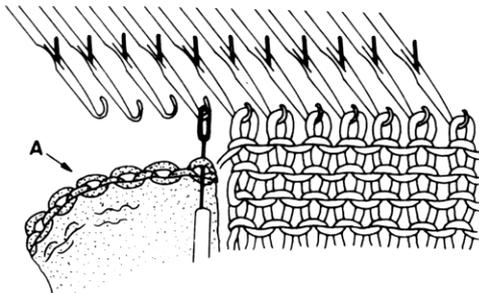


Push 1 needle on the Carriage side from A to B position.

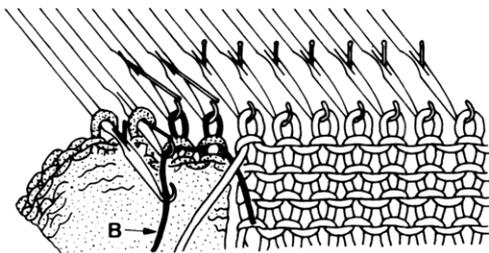


Increasing multiple stitches

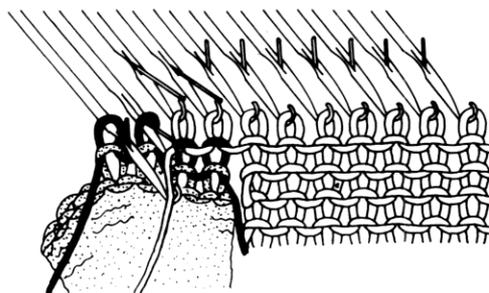
You can increase only on the Carriage side.



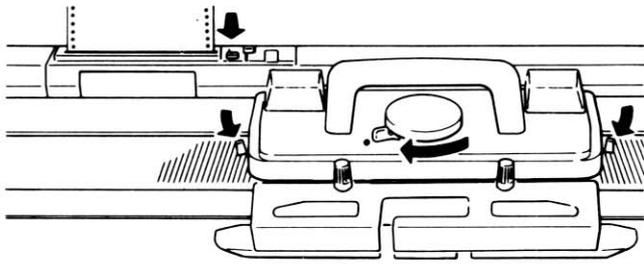
1. Push the required number of needles for increase from A to B position.
Take a piece of waste knitting, and using the Transfer Tool, pick up stitches from it and hook them on the needles.



2. Push the needles from B to D position and lay Ravel Cord "B" on needle hooks.
(Stitches of the knitted piece are behind needle latches.) Push the needles back one by one and form stitches.



3. Push the needles from B to D position and lay the main yarn on the needle hooks.
Push the needles back one by one and form stitches in the same way as with the Ravel Cord. Knit the required number of rows.
4. Before removing Ravel Cord, back stitch through stitches immediately above Ravel Cord. (See Page 56 of 'Getting to know your Zippy de-luxe'.)



Moving the Carriage without Knitting.

Remove the yarn from the Yarn Feeder.

Side Levers..... ●
 Cam Lever..... ☰

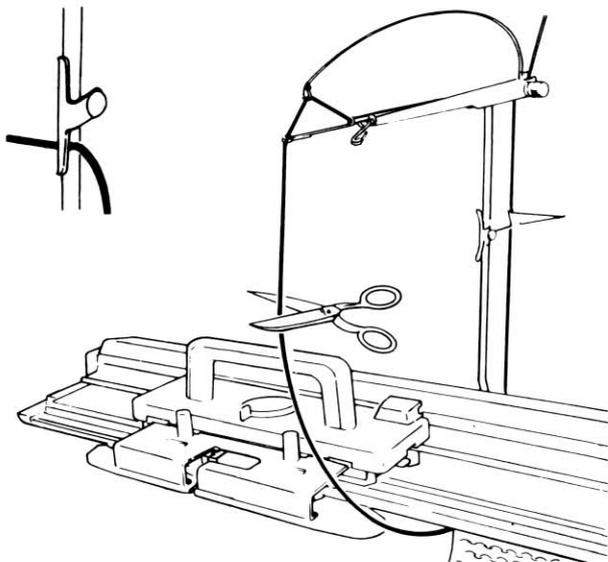
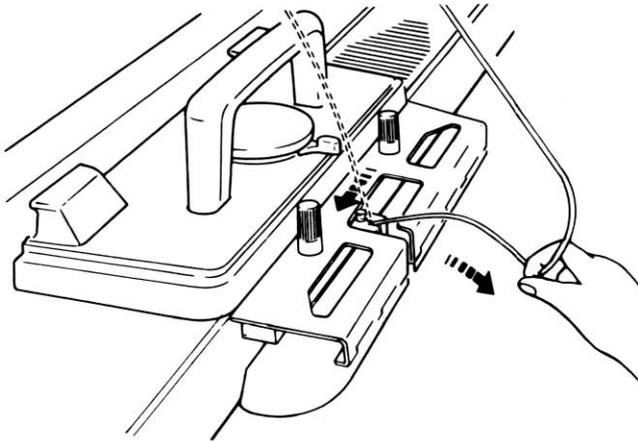
Move the Carriage across the fabric.

Removing knitted fabric

— without casting off —

This is useful for removing tension swatches and samples quickly.

Move the Carriage a little way to the right. Place the Yarn Feeder at the left side and remove the yarn by pulling it towards you.



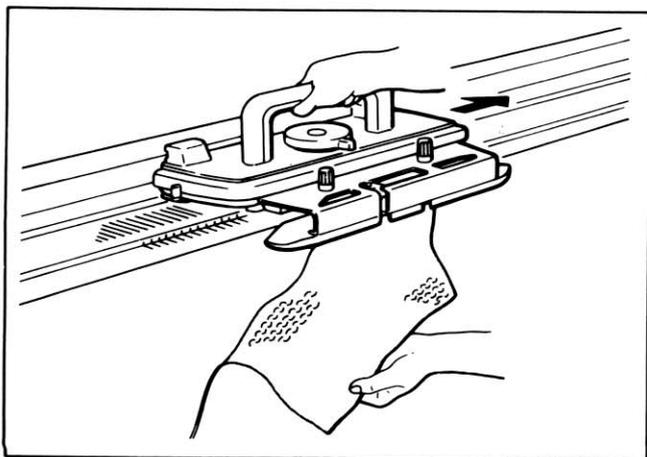
Hold the yarn between the Carriage and Tension Spring and cut it.

Place the yarn end into the Yarn Clips.

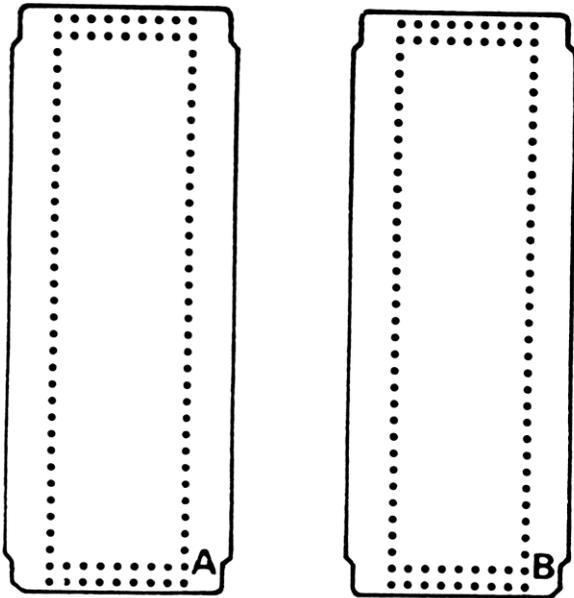
Remove weights from the fabric.

Set Cam Lever to "A" and move Carriage across the fabric.

The fabric comes off the needles.



PATTERN KNITTING WITH LACE CARRIAGE



Standard Punch Card for Lace Carriage

10 Punch Cards are numbered L-1 ~ L-10.

Punch Cards No. L-1 ~ L-8 are for plain lace. Each Punch Card can be used in two ways and is marked "A" and "B".

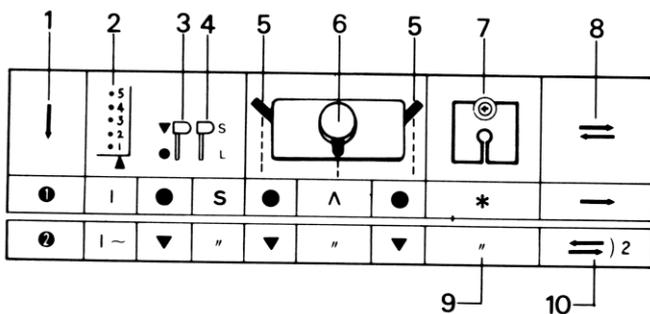
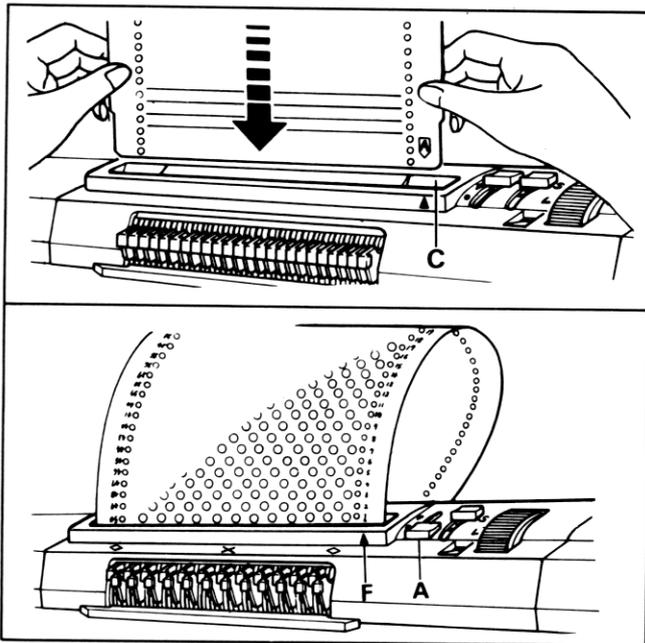
If "A" or "B" side of Punch Card is inserted into the Pattern Card Panel, direction of pattern can be changed.

Punch Card No. L-9 and L-10 are for fashion lace. Only "A" side can be used.

Important: Do not fold or bend the Card.

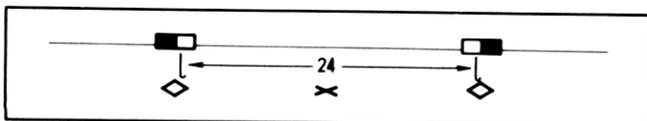
Setting up the pattern panel.

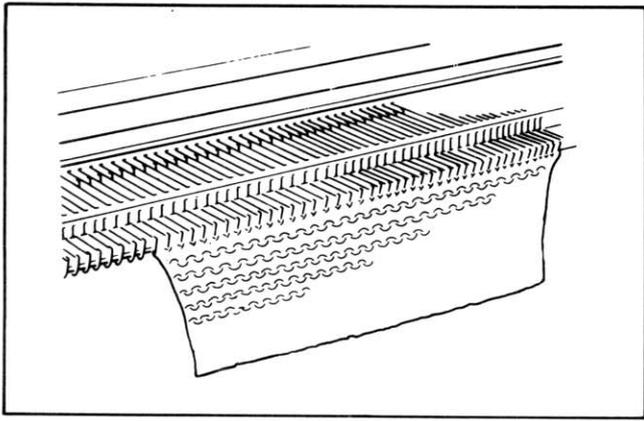
See pages 20-21 of 'Getting to know your Zippy de-luxe.'



Reading Operation Table

- 1 — Order
- 2 — Card Memory Number
- 3 — Stop Knob
- 4 — L Knob (always set at "S" while lace knitting.
- 5 — Side Levers
- 6 — Cam Lever
- 7 — Yarn Feeder
- 8 — Knitting direction
- 9 — * mark shows yarn is in the Yarn Feeder
- 10 — the required number of rows should be knitted.

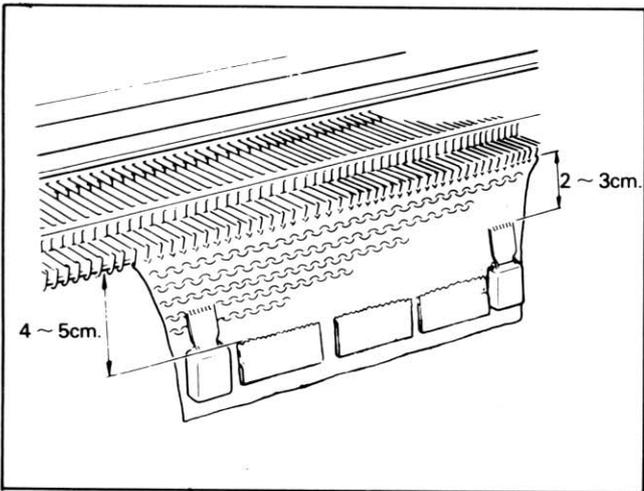




Caution on Lace Knitting

Before beginning lace knitting, knit about 30 rows in Stockinet.

When you use A side of the Punch Card, place the Carriage at the left side of the Needle Bed. To knit 1 row to memorize the pattern.

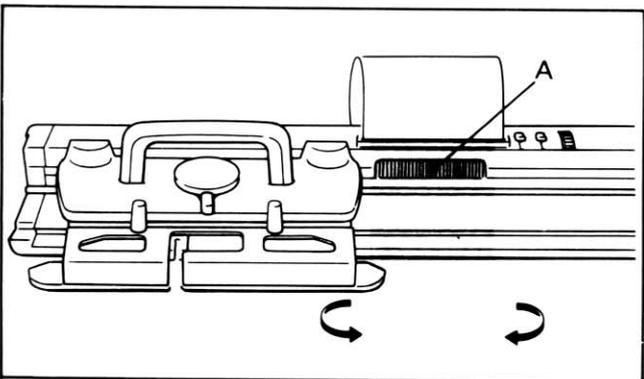


Hook Wide Claw Weights on the knitting approximately 4 —5cm. down from the Needle Bed.

Hook claw weights at both edges of the knitting approximately 2-3cm down from the Needle Bed.

Move the Weights up as knitting progresses.

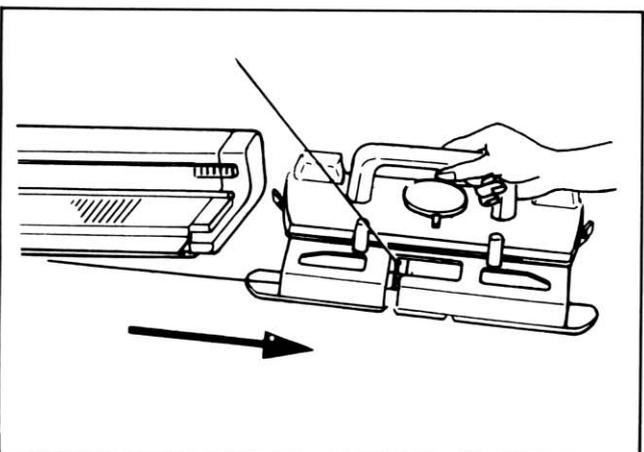
While Lace knitting, do not set the L Knob to L.



Make sure that the Carriage has passed the 24 needles in front of the Touch Levers "A".

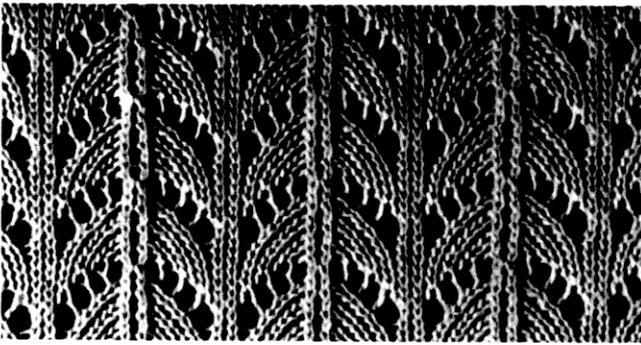
Move the Carriage at an even speed.

Do not remove the Carriage from the Needle Bed when the Punch Card is being used.

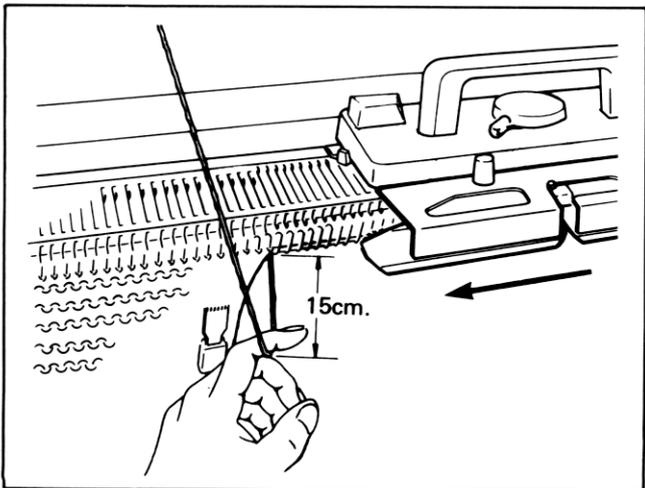
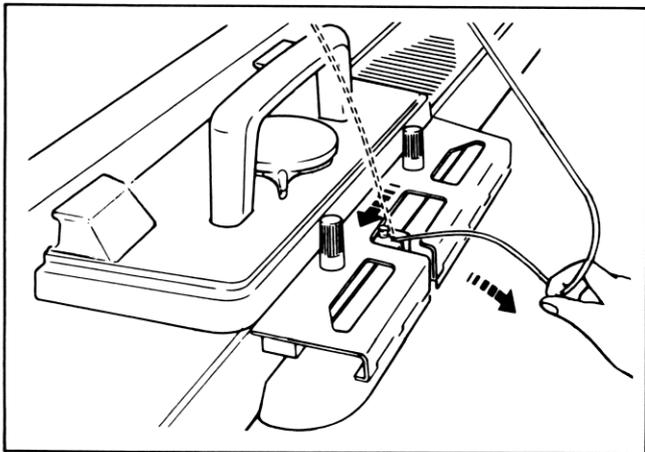


If the Carriage has been removed from the Needle Bed by accident, see pages 19-20 for adjustment.

FASHION LACE



1	↓	5 4 3 2 1	PP ^S L					
	●	●	S	●	Λ	●	*	—
2	1~2	▼	"	▼	"	▼	*	≡) 2
	3~10	"	"	"	∩	"		≡) 8
3	11~12	"	"	"	Λ	"	*	≡) 2
	13~18	"	"	"	∩	"		≡) 6
4	19~20	"	"	"	Λ	"	*	≡) 2
	21~24	"	"	"	∩	"		≡) 4
●	25~26	"	"	"	Λ	"	*	≡) 2
	27~28	"	"	"	∩	"		≡) 2



To transfer stitches several times in each row or to transfer stitches in both directions in one row, move the Carriage to knit and transfer alternately.

The sample is knitted with Punch Card No. L-10-A.

Use Wide Claw Weights and the Claw Weights.

Set the controls as required in ORDER 1.

Knit 1 row from left to right.

Set the Edge Pins as shown on page 13.

When increasing or decreasing, move the Edge Pin to follow increased or decreased needles.

Set the Controls as required in ORDER 2.

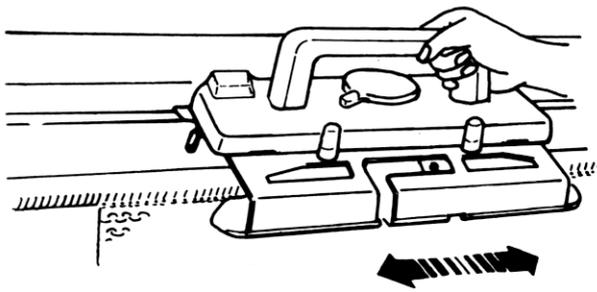
Knit 2 rows finishing with the Carriage at the right side.

Cam Lever..... ∩

Remove the yarn from the Yarn Feeder by pulling it towards you.

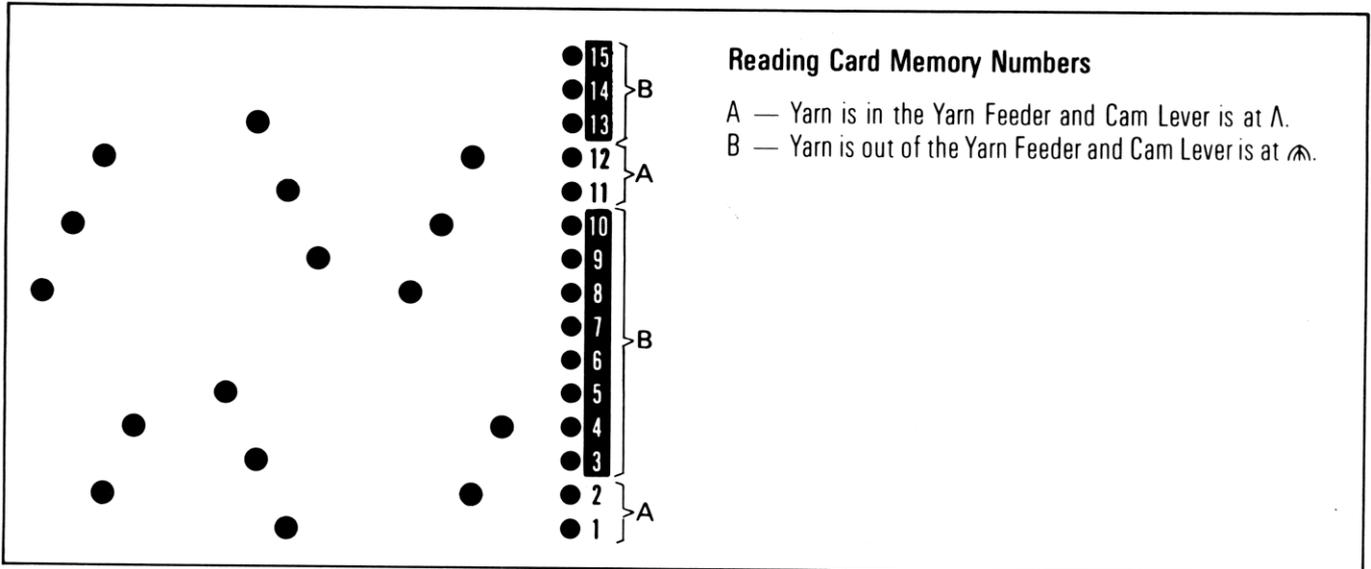
The yarn will be released from Guide Pin.

With the left forefinger, pull the yarn down approximately 15cm. from the Needle Bed and slightly towards you leaving a space so that the Carriage does not catch the yarn.



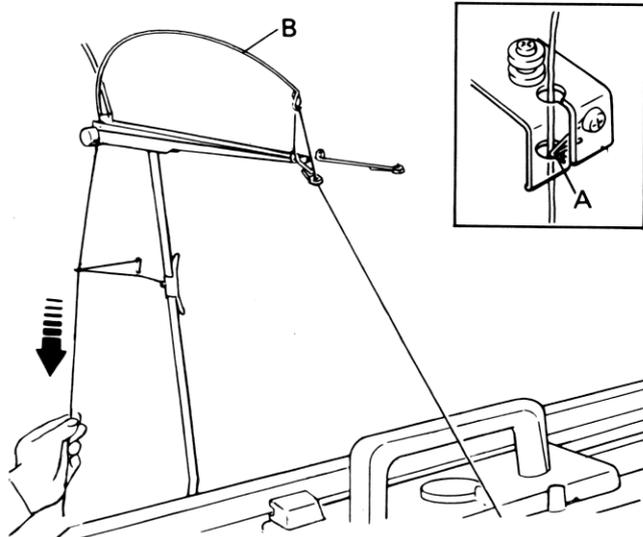
Move the Carriage 8 times over the marked Card Memory Numbers 3 — 10, finishing with the Carriage at the right side of the Needle Bed.

During this, the Carriage does not knit but transfers stitches to their adjacent needles.



Reading Card Memory Numbers

- A — Yarn is in the Yarn Feeder and Cam Lever is at A.
- B — Yarn is out of the Yarn Feeder and Cam Lever is at B.



Replace the yarn in the Yarn Feeder.

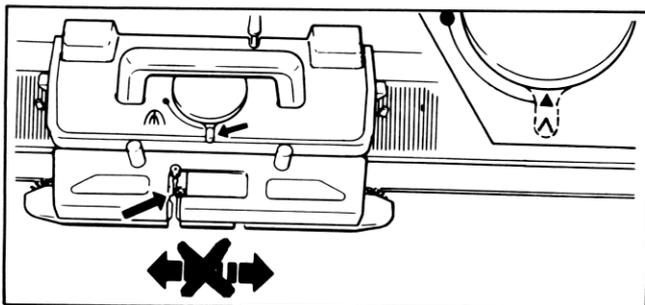
Yarn must be behind the Guide Pin "A".

Eliminate slack yarn by pulling the yarn down at the back of the Yarn Rod until tension spring "B" is almost horizontal.

Set the Cam Lever to A as required in ORDER 3.

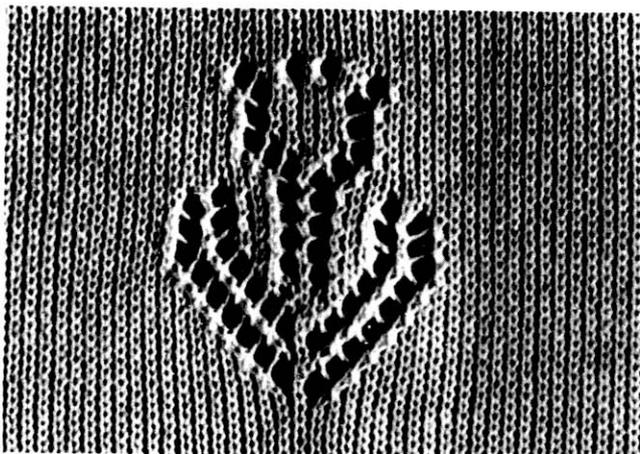
Knit 2 rows over the Card Memory Numbers 11 — 12.

From the card Memory Number 13, knit the required number of rows following the instructions for READING CARD MEMORY NUMBERS.



Do not move the Carriage while the Cam Lever is at A without yarn in Yarn Feeder, or the fabric will drop from the machine.

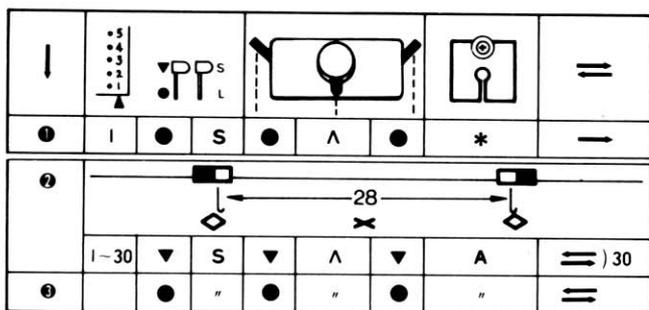
SINGLE MOTIF



Make a pattern where you like on the fabric.

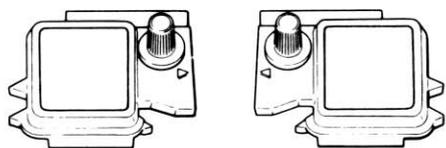
The sample is knitted with Punch Card No. L-8-A.

Use the Wide Claw Weights and Claw Weights.

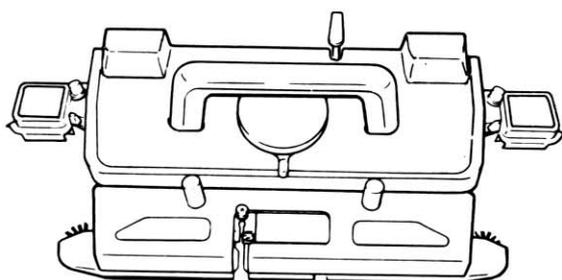


Set the controls as required in ORDER 1.

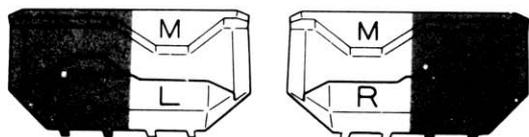
Knit 1 row from left to right.



Prepare the left and right Magic Cams.



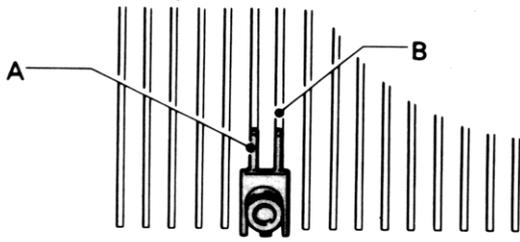
Attach the Magic Cams to the Carriage as shown in the diagram. Bring the side levers forward. Using the white nut on the Magic Cam, screw the cams into the metal plate at the side of the carriage. Set the side levers back.



Prepare the left and right Point Cam M.

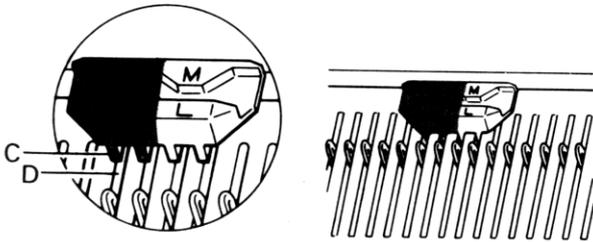
left Point Cam — marked M, L
right Point Cam — marked M, R

Prepare two Edge Pins.



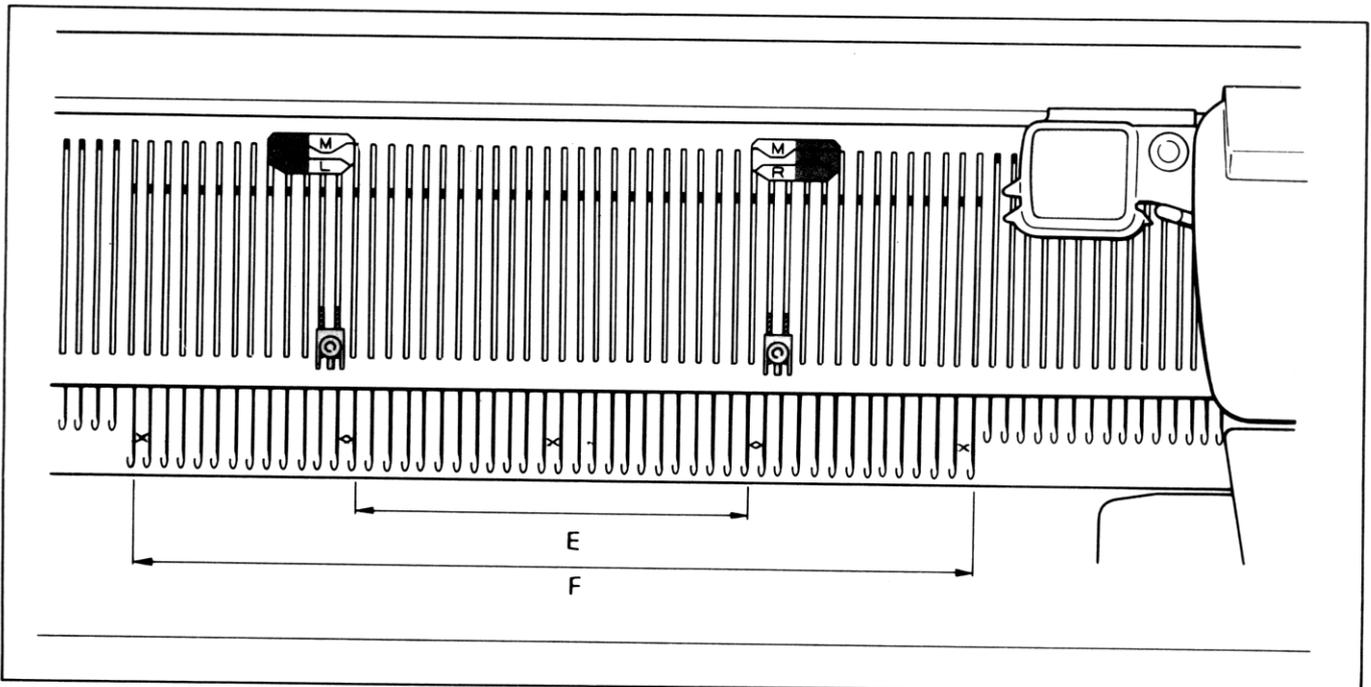
Set the Edge Pins so that the knobs are between the first and second needles adjacent to the last needles knitting single motif lace. (In this case the 13th and 14th needles)

Ensure that the two studs "A" of the Edge Pin fit correctly into the needle grooves "B", at the front of the Needle Bed.



Set the left and right Point Cams M with their division lines between the second and third needles adjacent to the last needles working single motif. (In this case, the 14th and 15th needles)

Make sure that the four studs "C" of the Point Cam M fit correctly into the needle grooves "D", at the back of the Needle Bed.



Edge Pins and Point Cams must be positioned as shown in the diagram above.

E — range of Single Motif
F — width of the fabric.

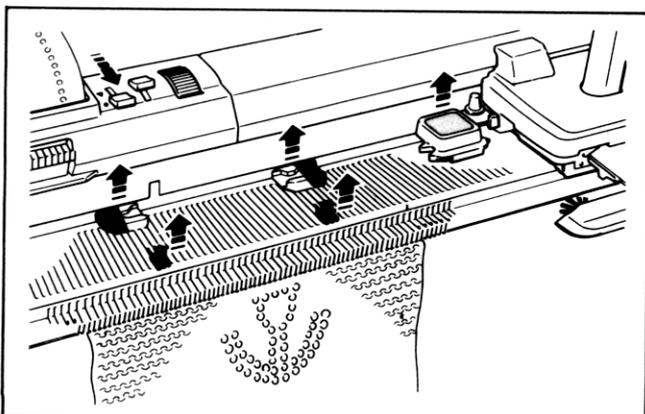
Set the controls as required in ORDER ●.

Knit 30 rows in single motif.

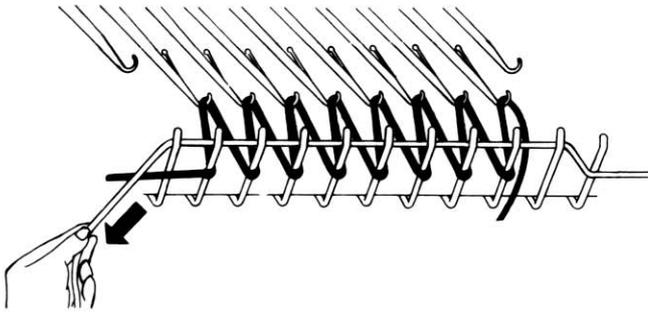
After the single motif has been finished, remove the Magic Cams, Point Cams M and Edge Pins.

Both Side Levers.....●
Stop Knob.....●

Continue knitting in Stockinet.



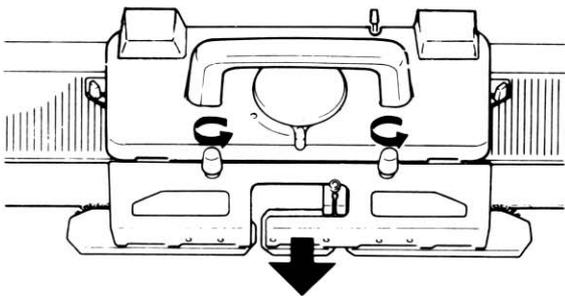
HELPFUL HINTS



If cast-on row has not knitted...

Ensure that the Stitch Dial is set to approximately 6 for the first row. This setting makes large loops between sinker posts and needle hooks, and thus you are able to pull out the Ravel Cord easily. Pull the Ravel Cord firmly before you move the Carriage.

Pull out the Ravel Cord after knitting 6 — 7 rows.

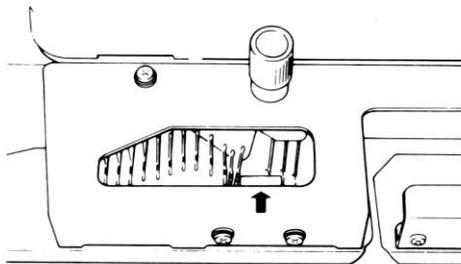
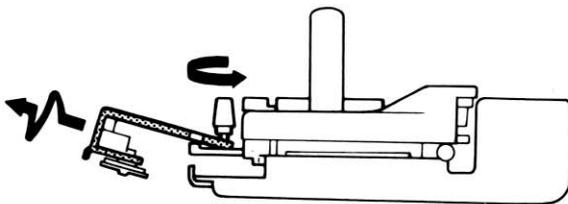


If the Carriage has jammed...

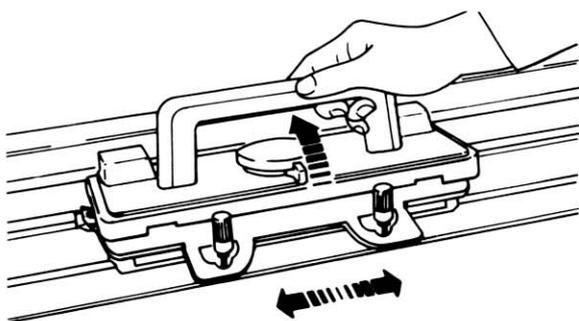
In the middle of row, do not force the Carriage. Proceed as follows: —

In pattern knitting, set the Stop Knob to ● and remove the Magic Cams if they are in use, before moving the Carriage.

1. Remove yarn from the Yarn Feeder.
2. Loosen the Arm Nuts and remove the Arm.



If needle hooks are jammed inside of the Arm, remove them carefully using the Transfer Tool.

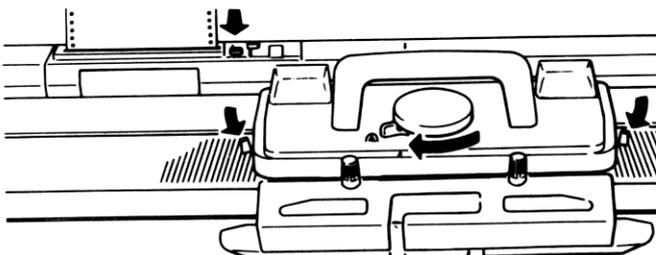
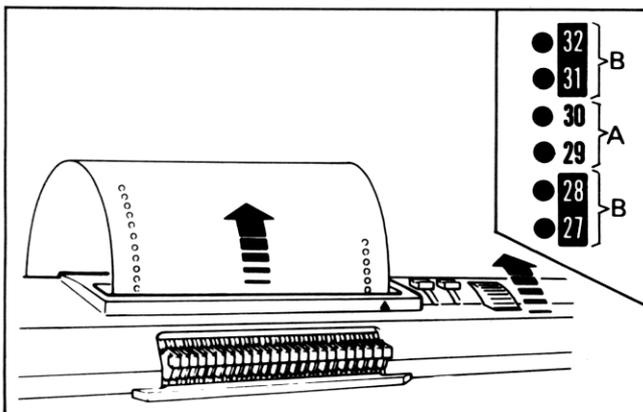
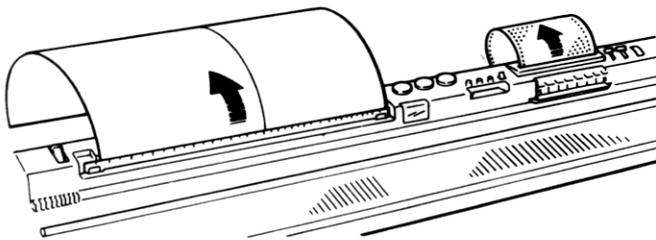
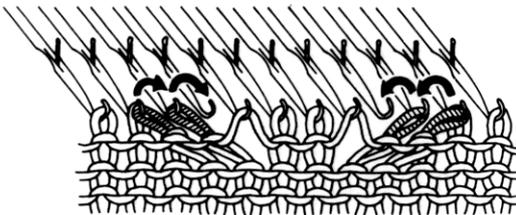
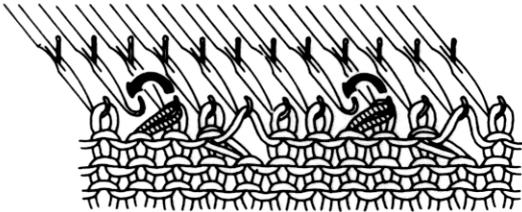
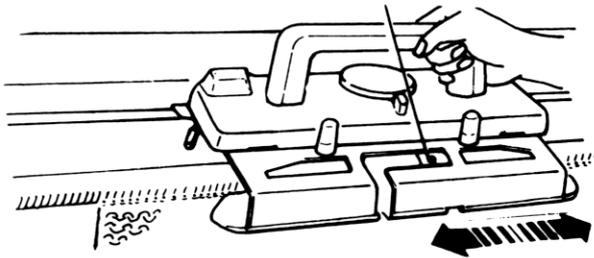


3. Cam Lever.....☰
- Both Side Levers.....●

4. With the Carriage Handle raised, move the Carriage in the same direction until it has passed the knitting needles.



5. If stitches have slipped behind the latches of needles, use the Transfer Tool to replace these stitches in the needle hooks. Unravel the knitted stitches (see page 19) and align the needles in B position.



6. Replace the Carriage at the same side as the yarn without knitting.

If the Punch Card is in use, memorize the pattern with the Carriage, with the Stop Knob at ●. (see below.)

7. Reset the Carriage, and replace the Arm.

- Cam Lever..... original position
- Side Levers..... original position
- Stop Knob..... ▼
- Replace Magic Cams if in use

8. Replace the yarn in Feeder and continue knitting.

To unravel the knitting

Unravel the stitches knitted in Stockinet referring to the instructions for main Carriage, and place the transferred stitches back to their original needles before unravelling the row.

If using PUNCH CARD, wind back the Card and memorize the pattern with the Carriage, with the Stop Knob set at ●. (see below).

To memorize the pattern

Memorizing the pattern is required when:

1. Carriage has been removed from the Needle Bed.
2. Knitting has been unravelled.
3. Yarn is entangled in Memory Drums.

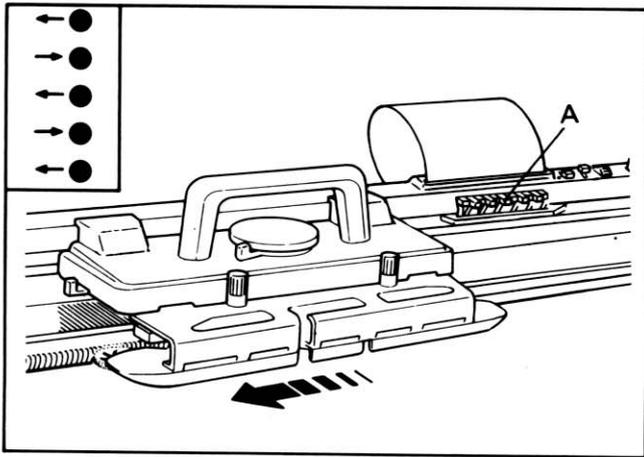
After unravelling, turn back the Punch Card and Row Counter by the same number of rows unravelled.

When the Punch Card for Fashion Lace (L-9 and L-10) is in use, return the Card by the same number unravelled, counting only the Card Memory Numbers "A" skipping the marked Card Memory Numbers "B".

"B" sections are not knitted rows, but rows for transferring stitches.

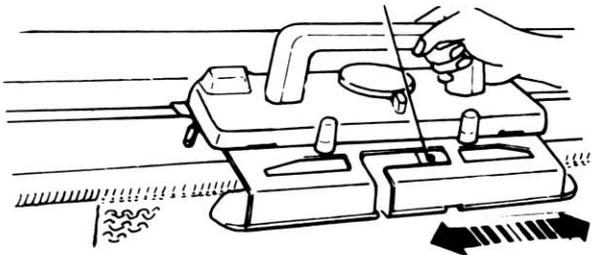
- Stop Knob..... ●
- Cam Lever..... ▲
- Side Levers..... ●

Remove yarn from the Yarn Feeder.



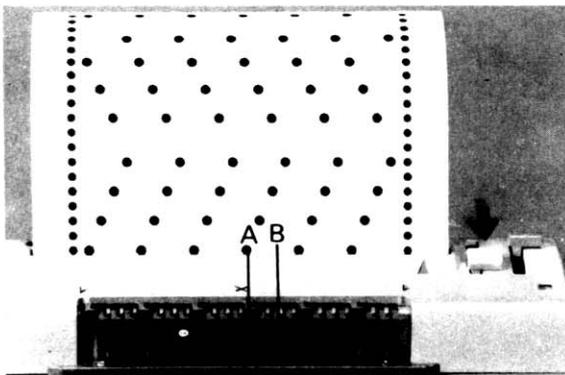
Move the Carriage once or twice across the Needle Bed until it has passed the 24 needles in front of the Touch Levers "A" and finish at the yarn side of the knitting

Make sure that the arrow mark on the Punch Card corresponds with the Carriage direction.



Insert yarn into the Yarn Feeder and set the Controls to their original position.

Continue to knit.

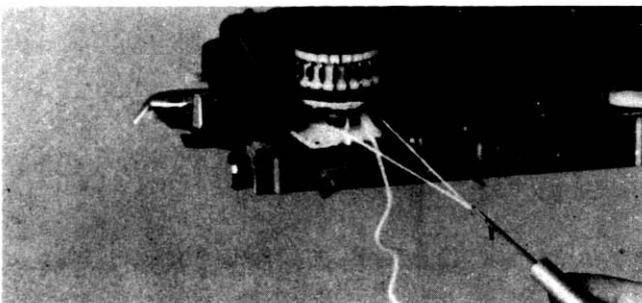


To check the pattern with the Card

By setting the Stop Knob to ●, the pattern of the row is indicated by Touch Levers.

Touch Levers at the back position "A" show the punched area of the pattern card.

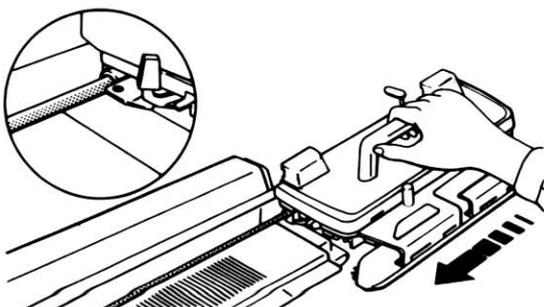
Touch Levers at the front position "B" show the non-punched area of the pattern.



If yarn is entangled in Memory Drums...

If yarn becomes entangled inside the Memory Drums, move the Carriage to the side of the Needle Bed and carefully remove the yarn using the Tappet Tool.

If this happens during pattern knitting, memorize the pattern.



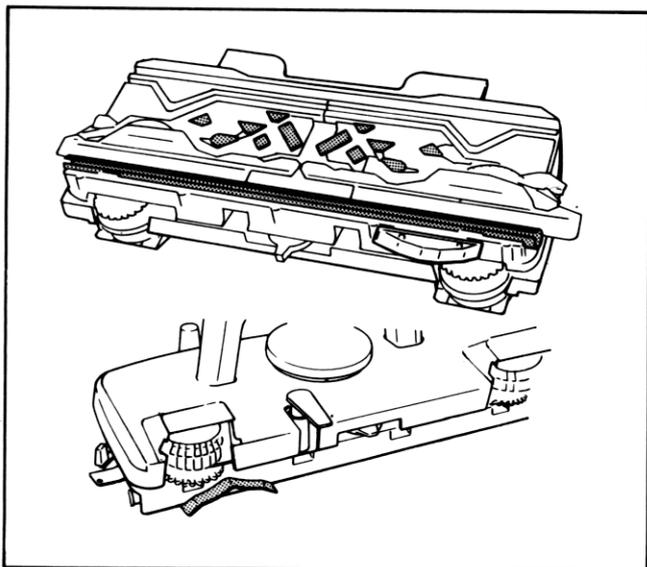
If the Carriage has been removed from the Needle Bed...

Replace it on the Needle Bed by sliding the Carriage pipe onto the rail.

Make sure that the Carriage moves smoothly on the Needle Bed.

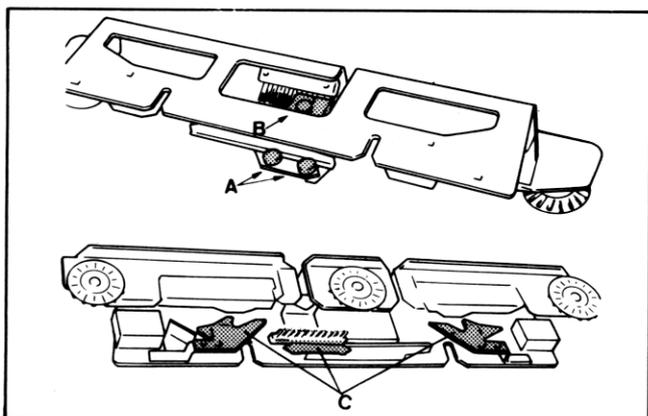
If the Punch Card is in use, memorize the pattern.

MAINTENANCE



CARRIAGE

Turn over the Carriage and brush off all fluff, and oil the metal parts, slider and Carriage pipe.

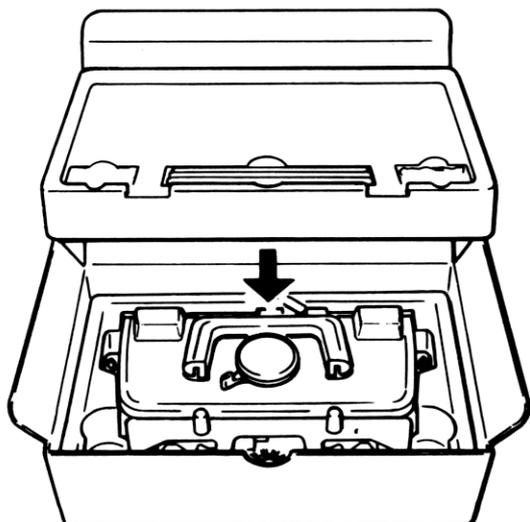


Arm

Remove any fluff that may be around the rollers "A" and Yarn Feeder "B". Oil the metal parts at the back of the Arm.

The metal parts "C" of the Lace Carriage Arm must be handled very carefully.

REPACKING



Attach the Arm to the Carriage.

Lay the Carriage Handle down.

Replace the Carriage into the styrofoam packing.

Replace the Accessories into the upper styrofoam packing and place over the Carriage.

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