



KS858
KS777
KS895

TOYOTA
knitting machines

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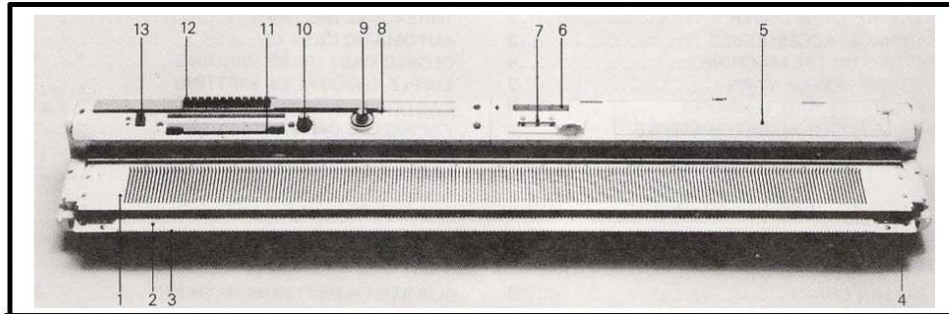
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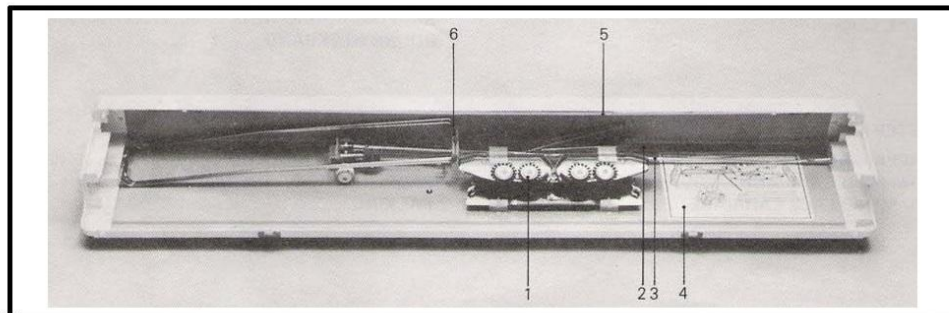
STEP 1

MACHINE



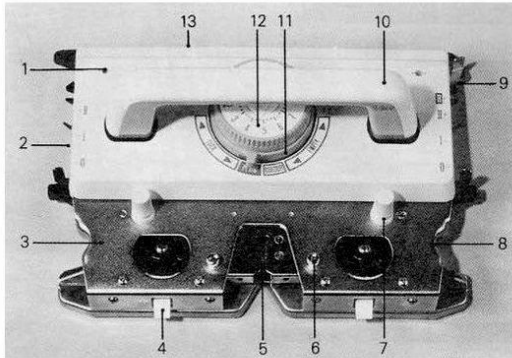
- | | |
|------------------|--------------------|
| 1 Needle bed | 8 Zigzag indicator |
| 2 Latch needles | 9 Zigzag dial |
| 3 Sinker hooks | 10 Feeder dial |
| 4 Yarn holder | 11 Card slot |
| 5 Accessory case | 12 Push buttons |
| 6 Tool stand | 13 Card stop lever |
| 7 Row counter | |

CASE COVER



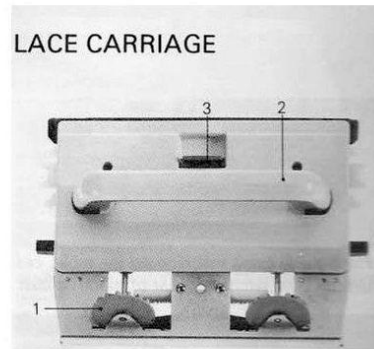
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|----------------------|
| 1 Fabric presser |
| 2 Upper tension unit |
| 3 Upper tension rod |
| 4 Packing diagram |
| 5 Cast on comb |
| 6 Extension rails |

MAIN CARRIAGE



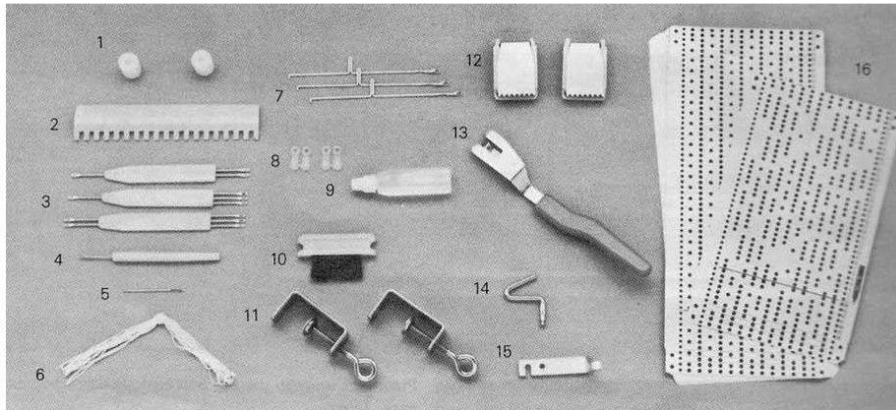
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|---------------------------------|----------------------------------|
| 1 Grooves for row counter lever | 8 Weaving yarn guides |
| 2 Side levers | 9 Carriage release lever |
| 3 Fabric presser | 10 Carriage handle |
| 4 Weaving levers | 11 Pattern dial |
| 5 Yarn feeder | 12 Tension dial |
| 6 Small thumb screws | 13 Adjustment marks for plaiting |
| 7 Thumb screws | |

LACE CARRIAGE



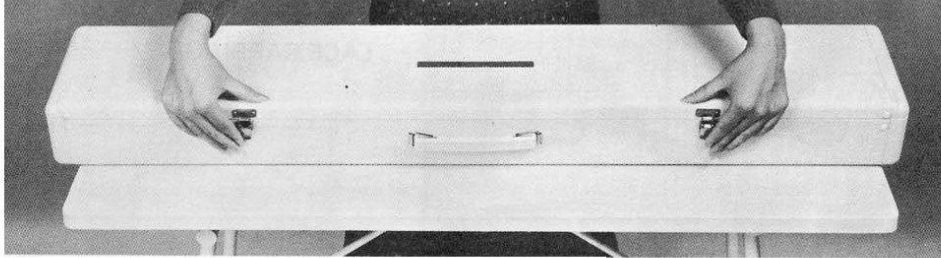
- | |
|--------------------------|
| 1 Wheels |
| 2 Carriage handle |
| 3 Carriage release lever |

ACCESSORIES

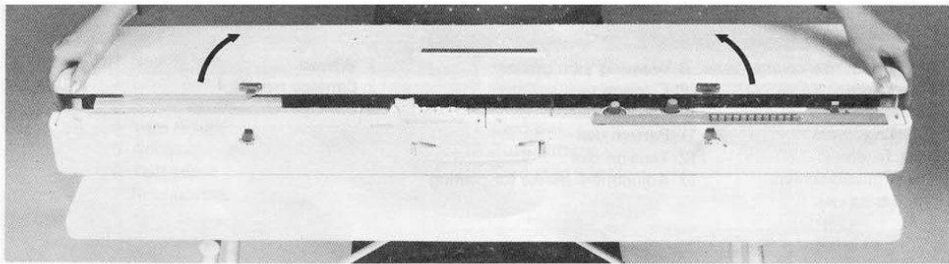


- | | | |
|-------------------|-----------------------|----------------------|
| 1 Paraffin wax | 7 Spare latch needles | 13 Selector lever |
| 2 Selector comb | 8 Card snaps | 14 Row counter lever |
| 3 Transfer tools | 9 Oil | 15 Carriage lock |
| 4 Latch tool | 10 Brush | 16 Punch cards |
| 5 Tapestry needle | 11 Clamps | |
| 6 Nylon cord | 12 Weights | |

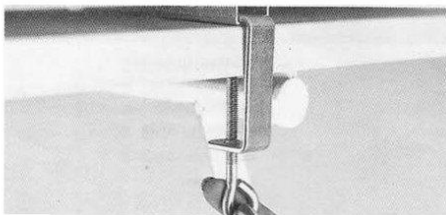
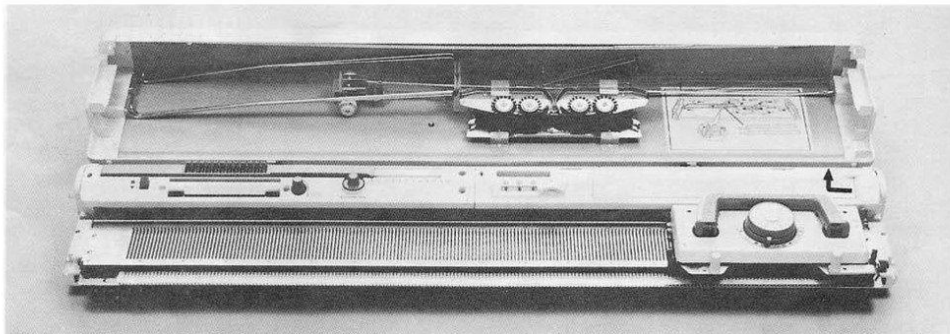
SETTING UP THE MACHINE



Place the knitting machine on the table - case handle away from you - and unlock both sides

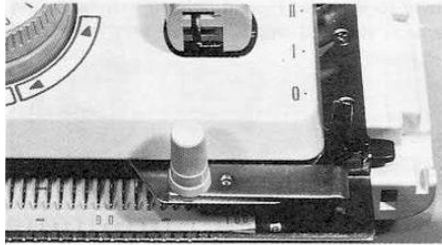


Lift up cover and move it towards you

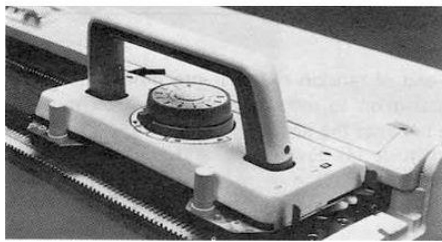


Push the lock lever to the left and remove the lid of the accessory case (arrow).

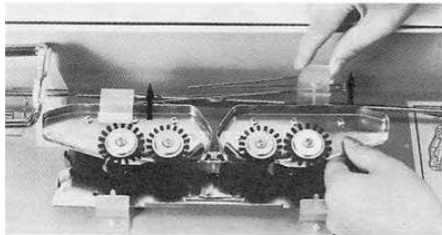
Take both table clamps from the accessory case. Insert the clamps into the slot on the underside of the needle bed and secure it to the table.



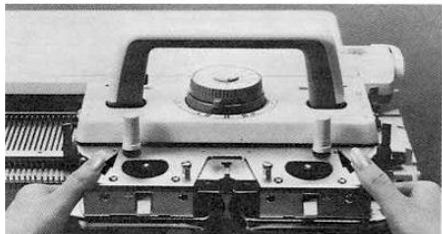
While not in use, the carriage is locked to the needle bed. Turn thumb screw at right of carriage in direction of arrow. Pull carriage lock towards you and remove it from carriage and needle bed. Place carriage lock in accessory case.



Raise the handle. (To fold down handle, push button on inside of handle [small arrow] and fold down).



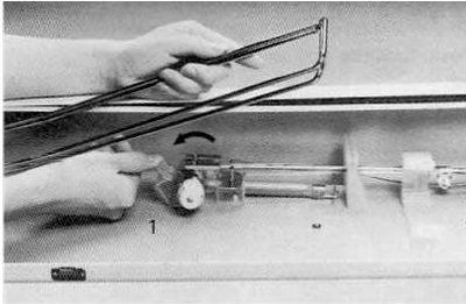
Unhook the two lock levers and remove fabric presser from case cover.



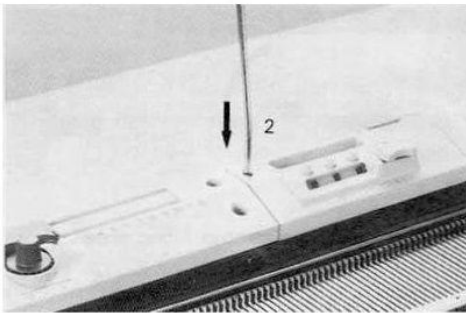
Loosen thumb screws and slide fabric presser on to carriage. Be sure that cutouts fit round the screws and two pegs of carriage (arrows) into holes of fabric presser. Tighten screws.



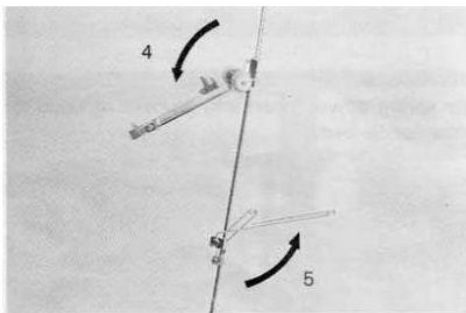
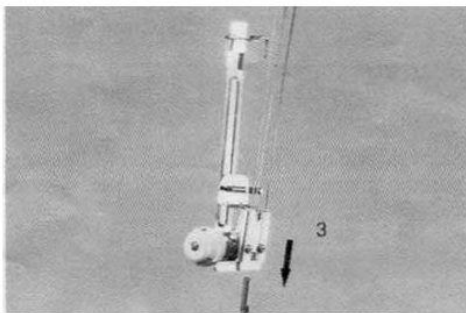
Remove Selector lever from accessory case. Hold it with the spring down, insert into grooves of knob on the left under the needle bed.



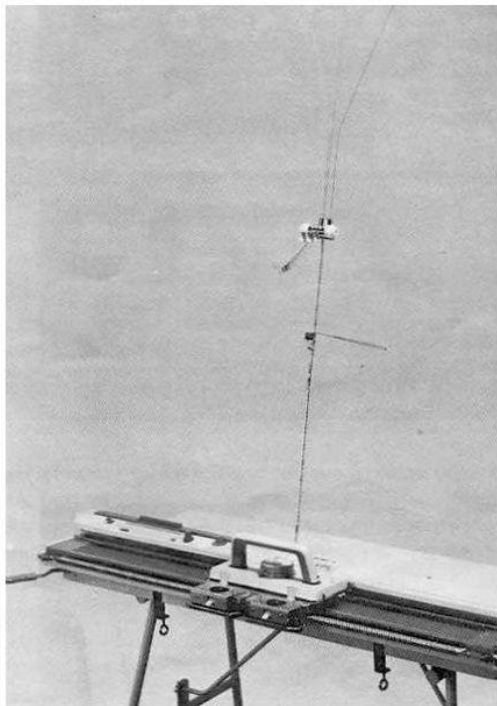
Unhook lock lever to the left (1), and holding extension rails up, remove tension rod and upper tension unit from case cover.



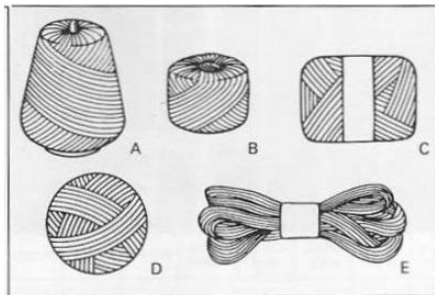
Insert angled end of tension rod well into groove (2). Slide upper tension unit on to rod, the end of the rod must fit firmly into the notch of the tension unit (3). Pull front yarn guide (4) downwards, and pull the rear yarn guide at the back of rod (5) upwards.



Your machine is set up.



PREPARATION OF YARN

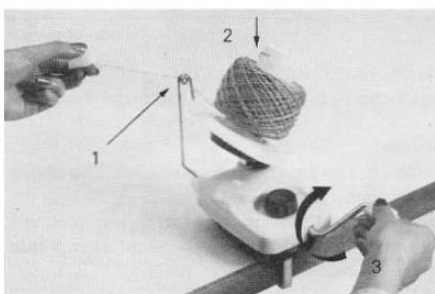


A wide range of yarns and wools can be knitted on your machine. However, if this is the first time that you are using a knitting machine, use a soft, medium thickness wool to start with.

Careful preparation of yarn is important, it makes knitting more enjoyable and saves a lot of trouble.

The top picture shows yarns wound up in five different ways. A-cone type and B-wound ball type are ready and suitable for machine knitting.

Do NOT use C,D or E as they are. They must be re-wound first.



To prepare your yarns you should use the wool winder, a useful OPTIONAL accessory. Insert the yarn end through guide (1) and across the top of the spool (2), then turn handle (3).

While winding let the yarn run through or over wax, this will smooth the yarn. After the first winding the ball will be somewhat tight so you will need to re-wind a second time

For this, first remove the yarn end from the top of the spool and then remove the ball.

Start re-winding with the inside end of the ball.

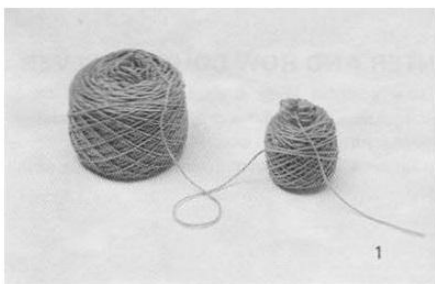
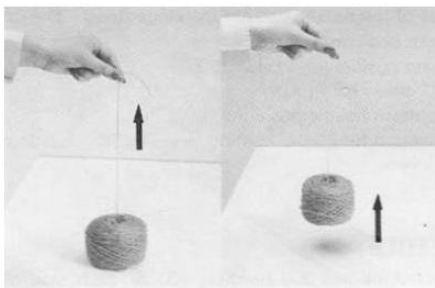
Do not use tangled or knotted yarn, untie or break the yarn and wind a new ball. Knots can cause carriage jamming or faulty knitting.

To start knitting, pull the end of yarn from inside of ball.

The yarn end should come freely from the centre WITHOUT lifting the ball off the table.

Diagram Far LEFT: Correct

LEFT : Too tight.



If the yarn does NOT flow smoothly, pull out a small amount from the centre and start knitting with the yarn end (1).

It is impossible to knit from a hank (E in the top picture) unless a skein holder, another optional accessory, is used.

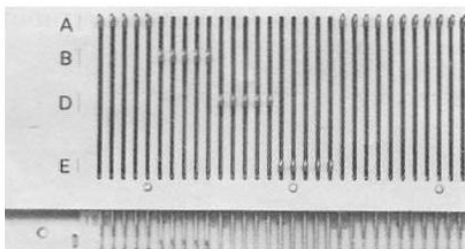
To wind a hank thread one end through guide and across top of the spool and wind as explained above.

YARN TYPES AND TENSIONS

	1	2	3	4	5	6	7	8	9	10	11	12	13	14
TYPE OF YARN ACTUAL SIZE														
NAMES	COTTON	FINE	SOFT 2PLY	FINE MEDIUM 3PLY	MEDIUM 4PLY	THICK 2PLY	THICK 3PLY	CREPE 4PLY	WOOL 6PLY	CREPE 8PLY	WOOL 12PLY	BOUCLE	THIN MOHAIR	TWEED
TENSION	2-4	3-5	1-3	2-4	3-5	5-6	4-6	5-7	6-8	8-9	8-10	4-6	4-6	4-6
LACE KNITTING	(3)-4	4-5	(3)-4	4-5	5-6	5-6	5-6	6-7	(7-8)	—	—	4-6	4-6	—

• Use every other needle

- Do not use tension numbers in parentheses for punch cards No. 1, 18, 19, and 20.
- In the centre of the carriage is the Tension dial. This dial gives you a choice of more than 30 settings. Two little dots between the numbers are also Tensions.
Set your machine to the most suitable number according to this chart.
- There are too many different types of yarn to tell you which Tension to use for which type of yarn. The above chart can only be a general guide, as names and types vary in each country.
- As for hand knitting, you need to find the correct Tension (stitch size) for the yarn you wish to use. You will soon find out which stitch patterns look better when knitted with the correct stitch size (Tension) after a little practice.



NEEDLE POSITION

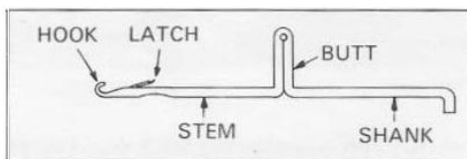
On BOTH sides of the needle bed are markings A—B—D—E. These are needle position.

A - Non-knitting position.

B - Working position for PLAIN.

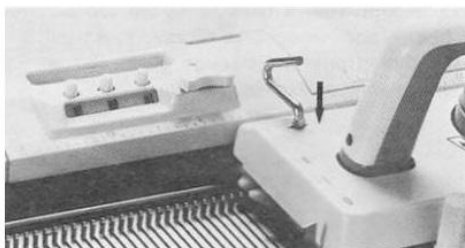
d - Selected pattern needle position.

E - Holding position for partial knitting and TUCK knitting with side levers.



LATCH NEEDLE

The knitting machine has 200 needles, 100 on each side of the centre, numbered in groups of 10 on the needle bed.

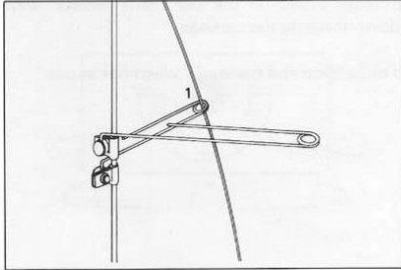


ROW COUNTER AND ROW COUNTER LEVER

Take out the row counter lever from the accessory case. Insert it into either right or left of the grooves on the carriage. Remove it when machine is not in use.

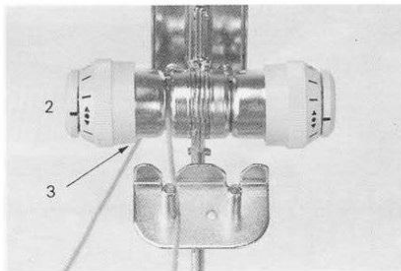
To re-set the numbers on the row counter, turn the small screws at the top.

THREADING THE YARN



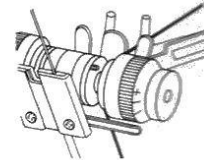
Place a ready wound ball behind the machine.
Pull out yarn end from entre of ball. Thread yarn end through the LEFT side yarn guide at the rear of rod (1).

* In case yarns are threaded through both right and left tensions, place each ball of wool apart.

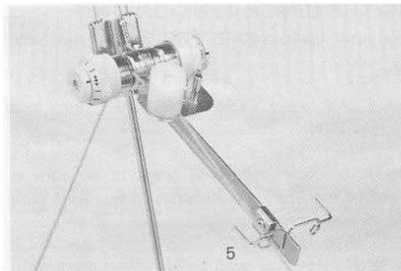
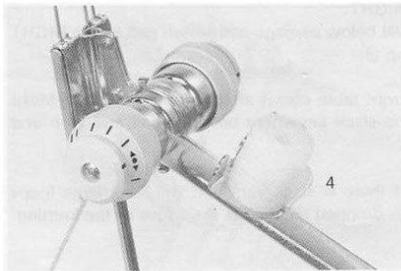


Take thread to upper tension unit and in front of rear pin (2).

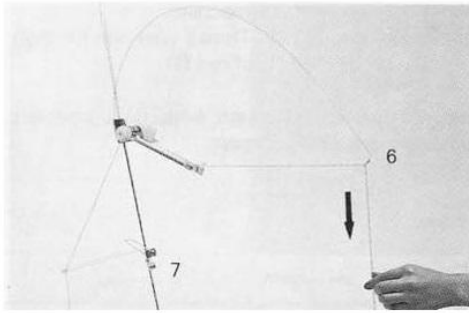
Separate the two metal discs and pull thread between discs and UNDER pin BETWEEN the discs (3). Yarn MUST be UNDER the small pin.



Place paraffin wax on its pin and pull yarn under wax (4).

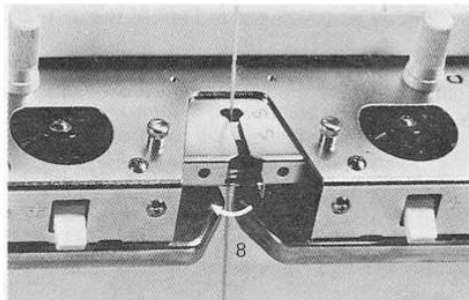


Bring yarn to the front and thread through the LEFT side front yarn guide (5).

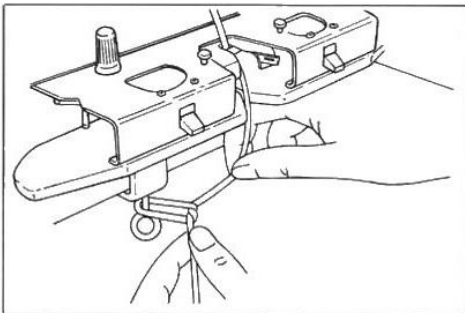


Thread yarn through eyelet on the LEFT side tension wire (6) and pull it down towards the carriage.

Hang yarn end on tension rod holder (7) when not in use.



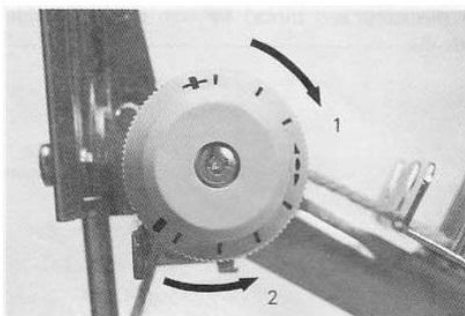
Slide open the yarn feeder ①, (8).
Thread yarn through and close feeder.



Carriage is at RIGHT.
Pull yarn DOWN below carriage and fasten end to the RIGHT side table clamp (9).

Release yarn from table clamp after knitting one row. Make sure there is no slack anywhere between ball and yarn end at table clamp.

Please note: If there is slack yarn you will have large loops or dropped stitches at the edges of the knitting.



ADJUSTING THE UPPER TENSION UNIT

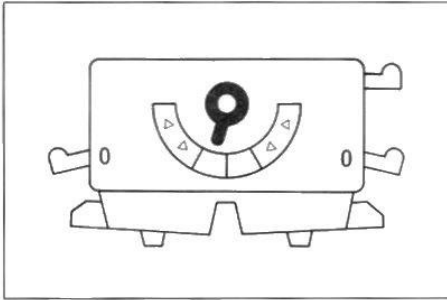
For FINE yarns that need MORE PRESSURE, turn dial towards + . (arrow 1)

For THICK yarns that need LESS PRESSURE, turn dial towards - . (arrow 2)

Turn dial forwards or backwards until pressure on yarn is correct and eyelet of the LEFT side tension wire is level with front yarn guide as in top picture.

AT THE SAME TIME PULL DOWN YARN AT THE BACK OF THE TENSION UNIT, this way you avoid having slack yarn between carriage and yarn ball.

AUTOMATIC CAST ON

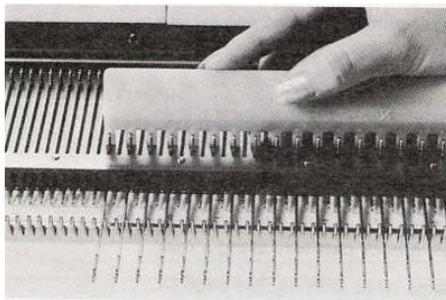


Yarn is threaded through all LEFT side threading points of upper tension unit and into feeder ①.
 Row counter shows 000.
 Set tension dial according to your yarn.

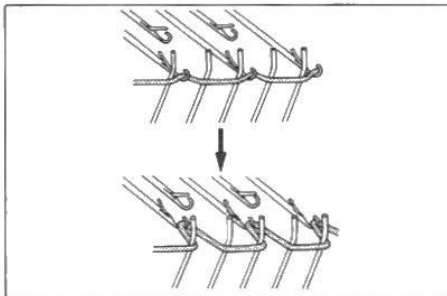
Carriage is at RIGHT and set to neutral.

Carriage settings:

1. Pattern dial to PLAIN.
2. Both side levers to 0.
3. Both weaving levers, DOWN.



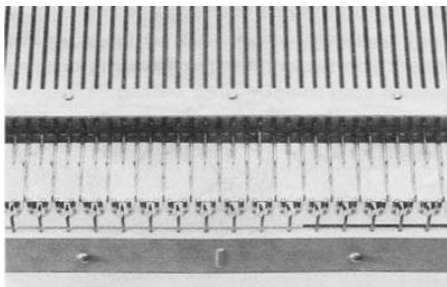
Take selector comb, and with its 1/1 edge bring every other needle to E position.
 Slowly move carriage to the left, passing needles in E position.



You will find that on the left edge 2 or 3 needles are pulled to the front and yarn is straight.

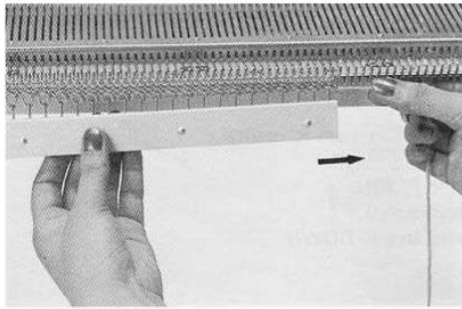


With left hand pull yarn a little towards right from feeder, with right thumb push edge needles to B position.



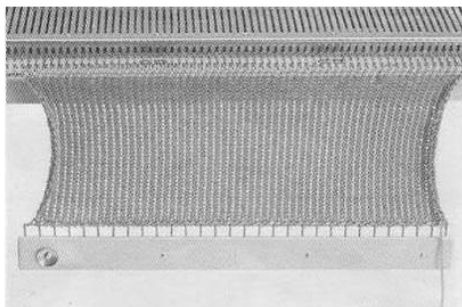
Remove cast on comb from case cover.
 Hang cast on comb on loops, be sure it is balanced.

Using straight edge of selector comb, bring remaining needles in A position to B position.



Slowly knit to the right, past working needles.
All needles in B position have loops.
Knit 4 more rows.

At beginning of knitting pull thread to the right, this will tighten the loops of the first row and prevent cast on comb from dropping off the knitting.



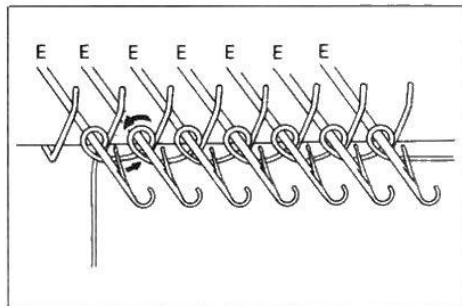
Continue knitting, after a while break thread above carriage and attach upper end to rod and pull lower end down below carriage.

Hold cast on comb and slide carriage across knitting, the stitches will now come off the needles.

Re-wind yarn from its end, it can be used again.

- * Reverse carriage after going 5 cm past knitting. Do not move it back part-way along a row.
- * If carriage jams while knitting, see page 44.

CLOSED CAST ON BY WINDING



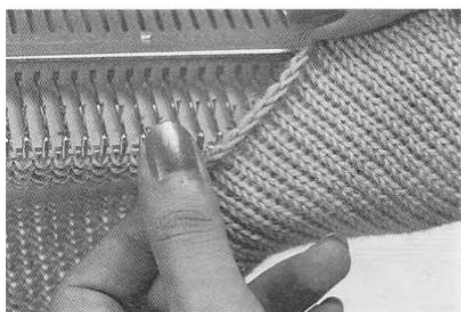
Carriage at right, set neutral.
Thread col. 1 (main yarn) through LEFT side upper tension unit and attach end on to rod.

With straight edge of selector comb bring required needles from A to E position.

Loop yarn end round LEFT end needle in E position, and continue winding as in diagram.

Take care not to wind too TIGHT or too LOOSE.

NOTE: ALWAYS start winding yarn on OPPOSITE side of carriage. When carriage is at RIGHT, start at LEFT as shown, and when carriage is at LEFT start at RIGHT in a clockwise direction.



Thread yarn into feeder ①. Push back all loops against sinker hooks. Check yarn tension. Knit first few rows bringing needles to E position each time. Continue knitting.

SIMPLE REMOVAL OF KNITTING

As explained before there is one easy and simple way to remove knitting from the machine.

First break yarn, attach upper end to rod and remove lower end from feeder ①.

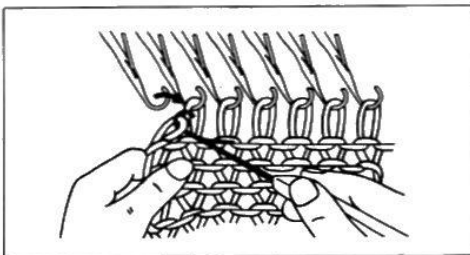
Hold knitting and move carriage across needle bed. Since there is no yarn in feeder ① knitting will fall off the needles automatically.

Use this method of removing knitting when you knit tension swatches, samples or when you have made a mistake and need to unravel to start knitting again.

Use this method of removing knitting when you knit tension swatches, sample or when you have made a mistake and need to unravel to start knitting again.

CASTING OFF WITH BIG LOOPS

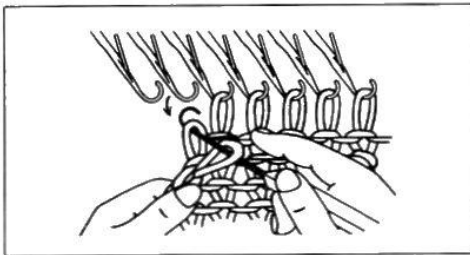
This method of casting off is used when knitting with thin to medium thick yarns since the last row will be knitted using a larger Tension setting. We suggest you use this cast off method when using a yarn that needs Tension 7 or LESS.



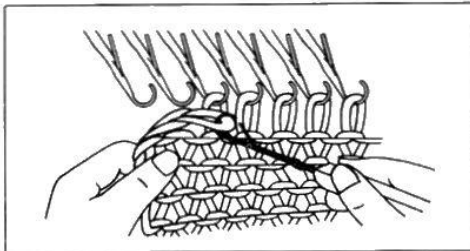
Finish knitting with carriage at LEFT.

Assuming your tension setting is 6. Set Tension to 10, knit one row. Break yarn BELOW carriage, attach upper yarn end to rod.

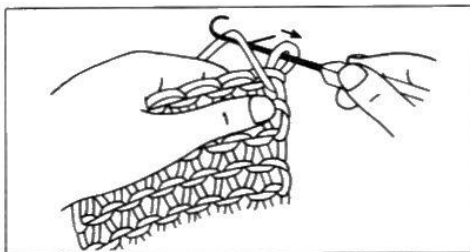
Insert latch tool into 1st stitch on the LEFT.
Remove stitch from needle.



Push latch tool forward until stitch is BEHIND latch.
Put your forefinger on latch and hold down stitch.
Insert latch tool into 2nd stitch and remove it from needle.



Pull the 2nd stitch through the 1st one.
Let the 2nd stitch slide behind latch and hold it down.
Remove the 3rd stitch from its needle and pull it through the 2nd stitch.
Continue this way until last stitch is on latch tool and behind latch.



Pull yarn end through last stitch to cast it off.

NOTE: When you have knitted the last row with loose Tension to the LEFT, you must start casting off on the RIGHT edge.

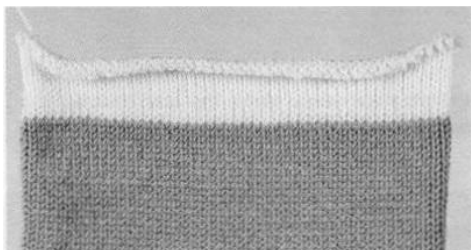
ALWAYS start casting off on the opposite side of carriage.

It will be easier to cast off if you bring the needles to E position.

TAKING OFF ON WASTE YARN

Many pieces of garments knitted on a machine are removed on waste yarn to leave the stitches open for later work.

For waste yarn use a contrasting colour. This makes it much easier to pick up stitches when doing finishing work. Also the waste yarn should be of similar thickness to the garment's yarn (col. 1). Otherwise the edges of the last rows will be distorted.



When knitted piece is finished break col. 1 and remove from feeder.

Thread waste yarn through upper tension unit and into feeder ①.

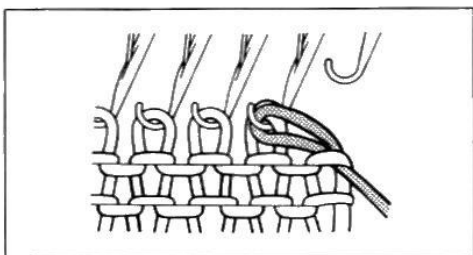
Knit approx. 10 rows of waste yarn, and remove waste yarn from feeder.

Move carriage across needle bed and knitting will come off the needles.

BIND OFF

Using this method you can either decrease or cast off stitches.

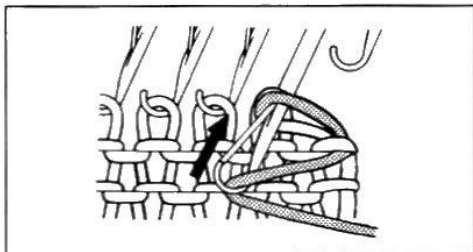
Start casting off at carriage side.



Assuming carriage at right:

Using single transfer tool transfer RIGHT edge stitch to its adjacent needle at LEFT.

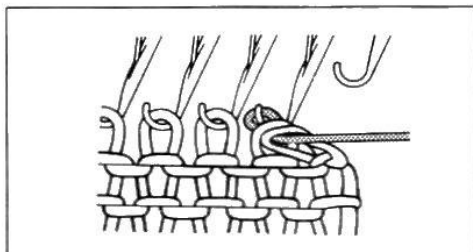
Push needle with two stitches from B to E position.



Push needle with two stitches back to D position, these two stitches must remain behind latch.

Needle latch must be open.

Pull yarn from carriage and place it from RIGHT to LEFT across open needle hook.



Pull needle back to B position. The yarn has been pulled through both stitches and has now formed a loop in the needle hook.

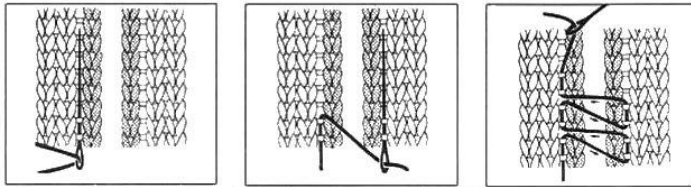
Repeat this until required number of stitches are cast off or last stitch at left is reached.

Remove knitting from machine.

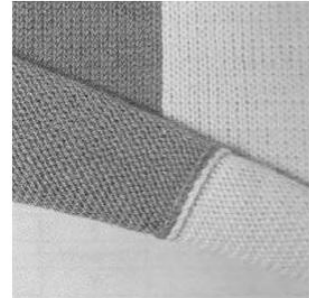
DO NOT PULL THE YARN TOO TIGHT otherwise the width of your cast off will not correspond to the width of your garment.

FINISHINGS

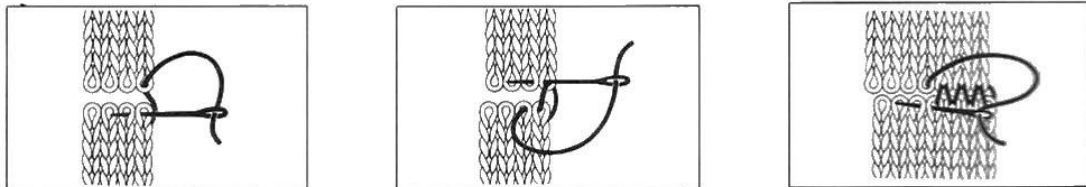
MATTRESS STITCH OR INVISIBLE SEAMS



Always take one edge stitch of each piece of knitting.
Pick up two crossbars alternately. Hold seam and pull sewing thread so that edges are pulled together and leave an invisible seam.

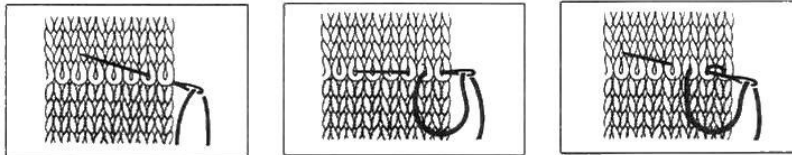


GRAFTING



Finish pieces with waste knitting. Turn in waste yarn and graft stitches.
This is ideal for joining shoulder seams, attaching hems and cuffs and other applications where you do not want noticeable seams between two pieces.
After a little practice you will be able to graft stitches so that the seams will become practically invisible.

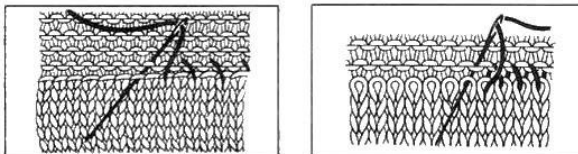
BACKSTITCH



Place edge row of one piece over edge of other.
Insert needle through both layers of knitting and bring out through 2nd stitch.
Insert needle into 1st stitch, through knitting and bring out through 3rd stitch and then into 2nd stitch, through knitting and bring out through 4th stitch.

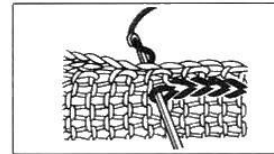


SEWING UP HEM



When sewing up hems, make sure you always sew through stitches of the SAME row otherwise the hem will not be straight.

CROCHET SEAM



STEP 2

Card NO.	FAIRISLE	WEAVING	TUCK		SLIP	LACE
			DIAL	LEVER		
1	X	X	X		X	X
2	X	X		X		X
3	X			X		X
4	X					
5	X					
6	X					
7	X					
8	X				X	
9	X	X				
10		X				
11	X	X				
12		X		X		
13	X			X		
14	X			X		
15					X	
16	X	X			X	
17						X
18						X
19						X
20						X

PATTERN CHART

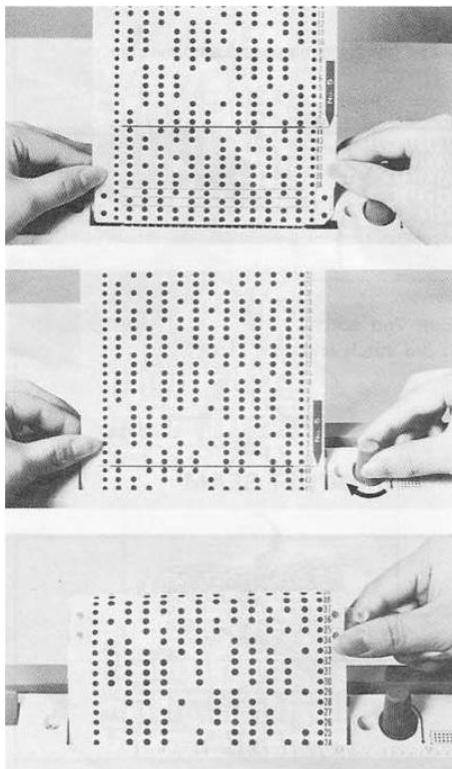
This chart shows which type of stitch pattern can be knitted with each punch card.

The x mark means that this card can be knitted in this type of stitch pattern.

For example:

Card No. 1- Fairisle,
Weaving,
Tuck,
Slip, and
Lace patterns

INSERTING PUNCH CARD



Take punch card No. 5 and hold it with number on the RIGHT side.

Hold card above card slot and insert it.

The first horizontal card-match line should be level with card slot.

Turn feeder dial clockwise (as shown by arrow) for two or three rows of punch holes.

Check that card is feeding in level.

Turn feeder dial until punch card is half way through card slot.

Overlap card ends, from end on top of back end and adjust snap holes.

Join ends with two card snaps.

Turn punch card and set it to row 1.

* Do not reverse punch card when overlapped edges of punch card are in the machine.

FAIRISLE PATTERNS WITH PUNCH CARDS

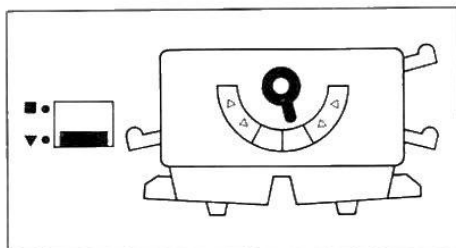
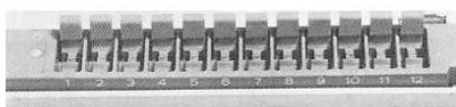
- For Fairisle patterns, you will knit TWO different colours in ONE row automatically.
To make matters simple, we will call the main yarn -- col. 1 and the contrasting yarn col. 2. Every additional colour will have the following number.
- We recommend that all colours for Fairisle patterns should be of the same thickness.
- When knitting Fairisle pattern with more than two colours you will need to feed the additional colours by hand. Just insert the col. 3 into the feeder after having removed the previous col. and while knitting, hold the thread above carriage as for knitting with nylon cord.
- Thread col. 1 through all LEFT side threading points of upper tension unit, and thread col. 2 through all RIGHT side. Hook the short tension wire to RIGHT upper tension unit.

Cast on and knit several rows of plain stitch with col. 1.

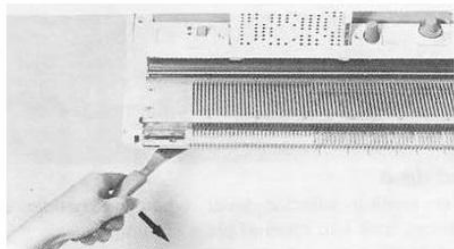
Carriage at RIGHT.

All push buttons are in not-selected position (away from you).

Set punch card No. 5



- 1 Card stop lever to ▼ .
- 2 Pattern dial to COLOUR.
- 3 Both side levers to 0.
- 4 Both Weaving levers, DOWN.

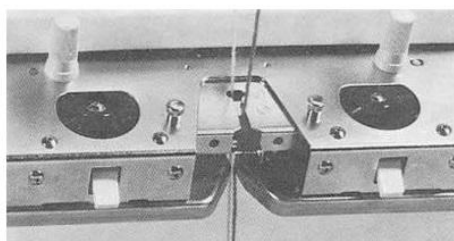


Turn selector lever inwards as far as it will go.

Needles are now selected.

Fully return selector lever to original position.

- When end needle at carriage side is selected and knitting goes away from sinker hooks, push it back to sinker hooks.



Thread col. 2 into feeder ② , well BEHIND spring clip.

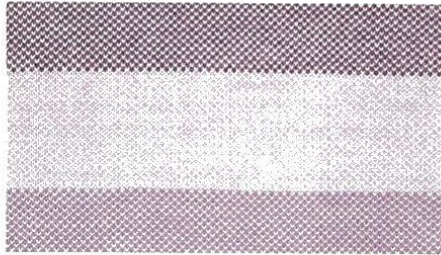
Knit one row to LEFT, needles in B position have knitted col. 1 and needles in D position have knitted col. 2.

Turn selector lever for each row.

- Hook weights on edges of knitting 5 cm below needle hooks.

MARKINGS ON PUNCH CARDS

- -Change colours in feeder ②.
- -Change colours in feeder ①.



Card No. 1
Change col. 2 every 30 rows.

* After turning selector lever when no needle is selected, turn selector lever once more and continue knitting Fairisle.



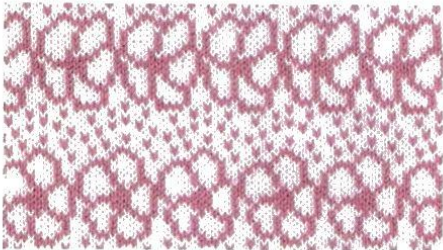
Card No. 2



Card No. 3
After turning selector lever when no needle is selected, knit two rows of plain knitting and change to col. 2.



Card No. 4
After turning selector lever when no needle is selected, knit 6 rows of plain knitting.



Card No. 5



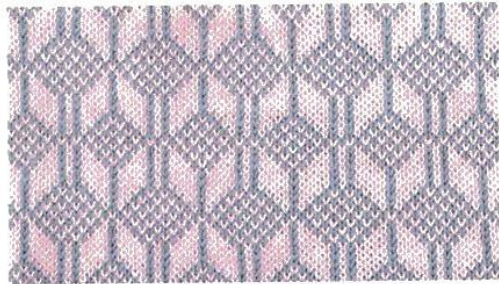
Card No. 6
After turning selector lever when no needle is selected, knit two rows of plain knitting.



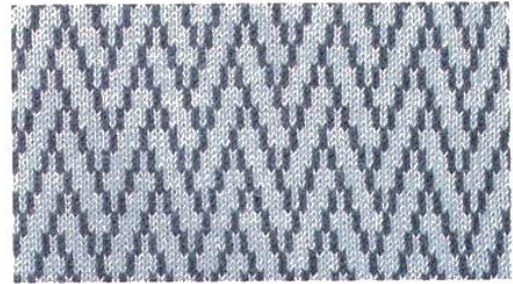
Card No. 7



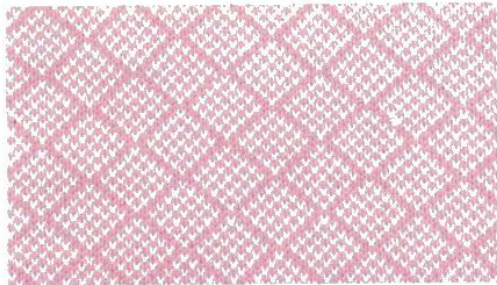
Card No. 8
After turning selector lever when no needle is selected, knit 8 rows of plain knitting.



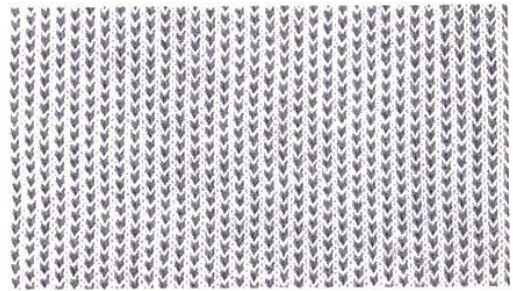
Card No. 9



Card No. 10



Card No. 11



Card No. 12



Card No. 13



Card No. 14



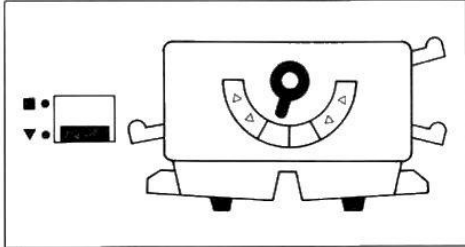
Card No. 15



Card No. 16

WEAVING PATTERNS WITH PUNCH CARDS

When knitting woven materials, we recommend that you use a fine to medium type yarn for knitting and a heavy type yarn for the contrast.



Cast on and knit several rows of plain stitch.

Carriage at RIGHT.

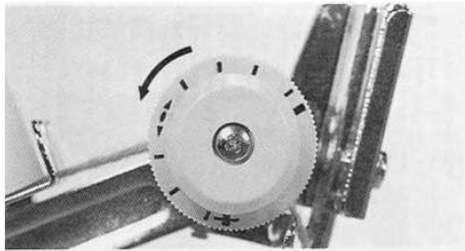
Insert punch card No. 2.

1 Card stop lever to ▼ .

2 Pattern dial to PLAIN.

3 Both side levers to 0.

4 Both weaving levers up to + .



Thread weaving yarn through all RIGHT side threading points of upper tension unit.

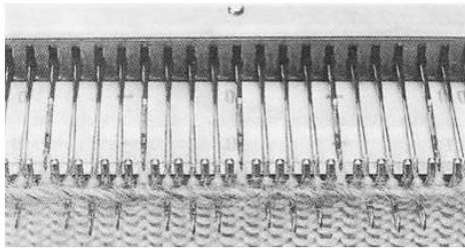
Do not thread into yarn feeder ② .

Adjust tension discs, the RIGHT side one to the thickness of the weaving thread between $\frac{1}{2}$ and — .

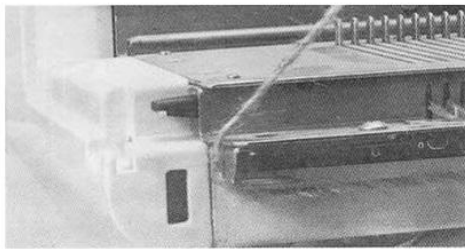
Select needles by turning selector lever.

At RIGHT edge bring the FIRST needle to D position.

According to weaving yarn in use, change tension dial on carriage. When using 6 ply (9 in picture on P. 8), change tension dial 1 full number larger and when 8 ply (10 in picture on P. 8), change it 2 full numbers larger.



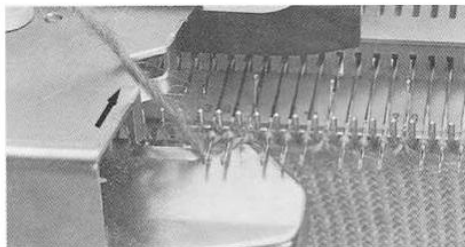
Take weaving thread and lay it across selected needles to the LEFT, just in FRONT of sinker hooks.



Hook weaving thread to yarn holder on the LEFT.

Knit one row to LEFT.

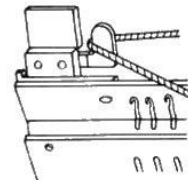
Remove weaving thread from yarn holder and pass it under carriage to the RIGHT.

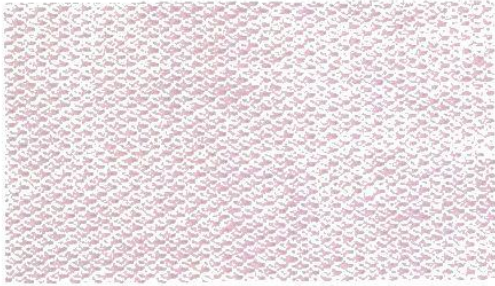


Select needles and on LEFT edge bring the first needle to D position. Knit 1 row to RIGHT.

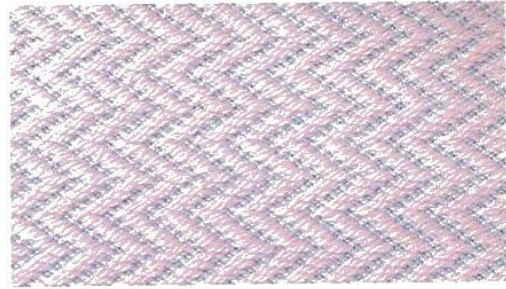
Be sure the weaving yarn is caught in WEAVING YARN GUIDE (arrow).

- When working weaving stitch with ribber attached to main knitter, hook weaving thread to the plate as in diagram.





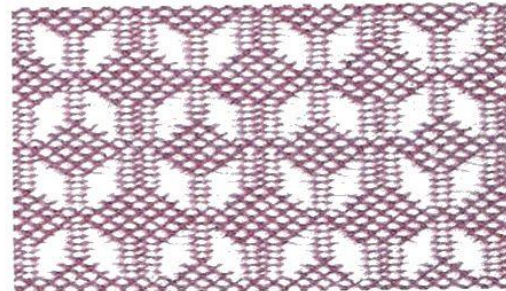
Card No. 1



Card No. 2



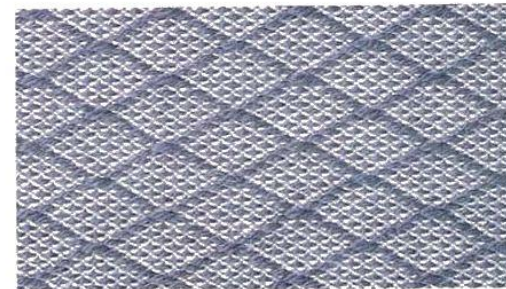
Card No. 3
After turning selector lever when no needle is selected, knit 4 rows of plain knitting.



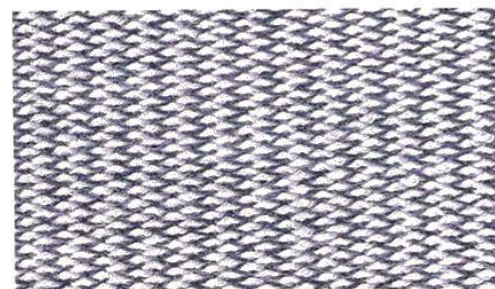
Card No. 9



Card No. 10



Card No. 11

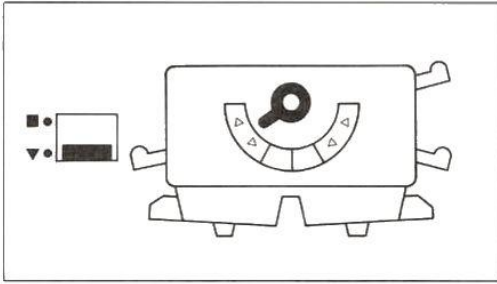


Card No. 12
Setting pins on needle bed. Transfer stitches marked ○ to the next needle and bring these needles back to A position.



Card No. 16

TUCK STITCH PATTERNS WITH PUNCH CARD USING PATTERN DIAL

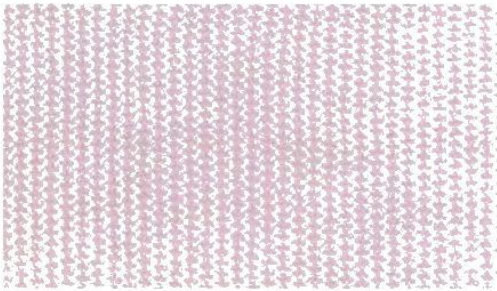


Cast on and knit several rows of plain stitch.
Carriage at RIGHT.

Insert punch card No. 1.

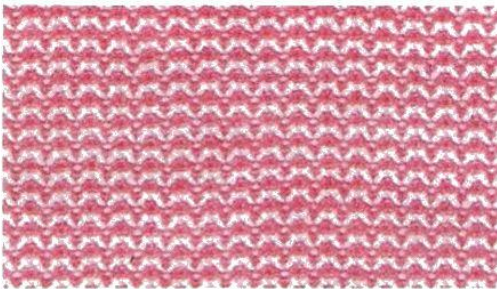
- 1 Card stop lever to ▼ .
- 2 Pattern dial to TUCK.
- 3 Both side levers to 0.
- 4 Both weaving levers, DOWN.

Select needles by turning selector lever and knit one row.
Continue knitting.

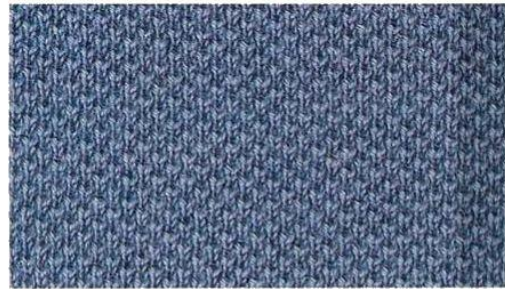


Card No. 1
Pattern dial to TUCK.

NOTE: When knitting Tuck patterns the 1st or 2nd stitches may not be selected.
In this case we recommend bringing these needles at BOTH ends to D position.



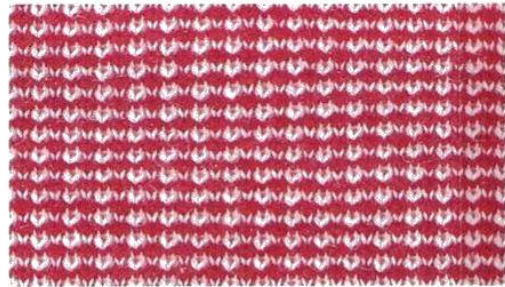
Card No. 1
Pattern dial to TUCK.
Change col. 1 every two rows.



Card No. 1
Pattern dial to ◀ (TUCK).
Turn selector lever and knit two rows.
Repeat.

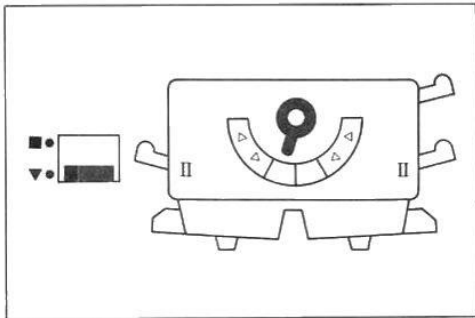


Card No. 1
Card stop lever to ■ .
Pattern dial to ◀ (TUCK).
Turn selector lever and knit two rows.
Repeat.
22



Card No. 1
Pattern dial to ◀ (TUCK).
Turn selector lever and knit two rows with col. 1
Turn selector lever and knit two rows with col. 2.

TUCK STITCH PATTERNS WITH PUNCH CARD USING SIDE LEVERS



Cast on and knit several rows of plain stitch.

Carriage at RIGHT.

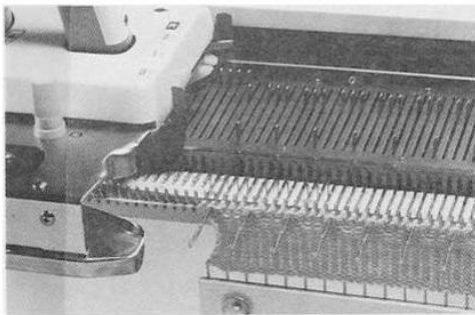
Insert punch card No. 12.

1 Card stop lever to ▼ .

2 Pattern dial to PLAIN.

3 Both side levers to II .

4 Both weaving levers, DOWN.



(METHOD I)

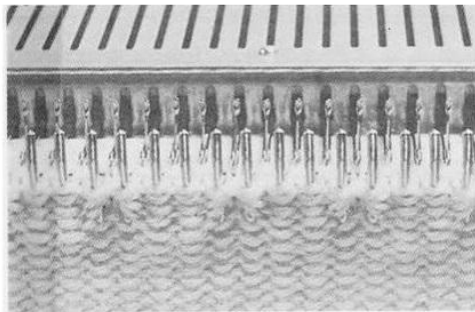
Select needles by turning selector lever.

Knit three rows.

The yarn has been tucked by needles in E position.

Set side lever at RIGHT to 0.

Knit one row to RIGHT.

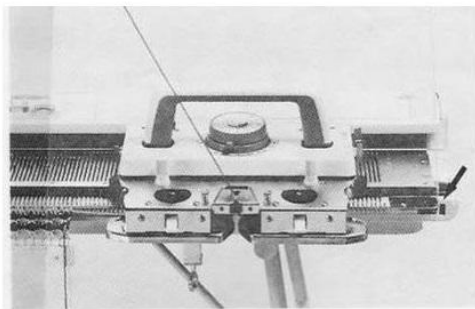


The needles previously in E position have been returned BACK to B position.

Select the needles by turning selector lever.

Set side lever at RIGHT to II .

Continue knitting.

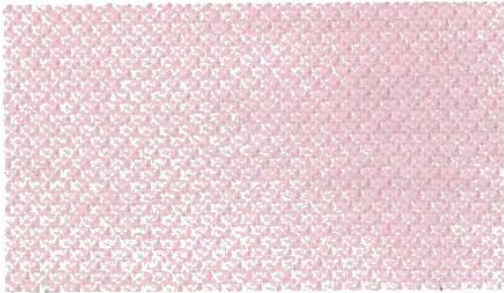


* When changing colours during Tuck stitch pattern, hook yarn not to be used on RIGHT side yarn holder.

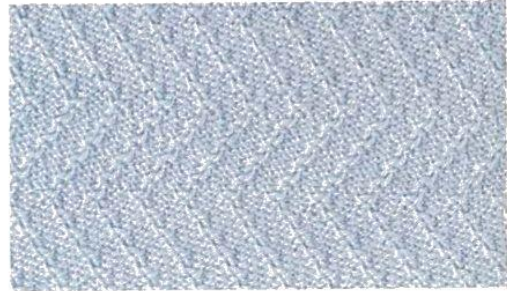
* When 2 edge needles on each side are selected, push them back to B position.

(Method II)

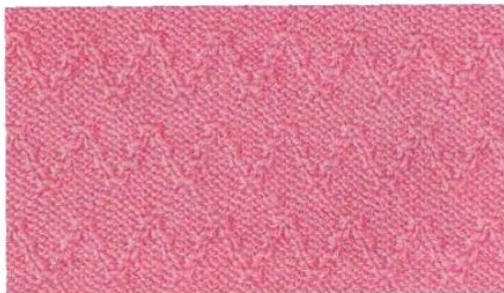
Select needles by turning selector lever. Knit two rows. Set side lever at LEFT to "0". Knit one row to LEFT. Set side lever at LEFT to " II ". Select needles and knit two rows. Set side lever at RIGHT to "0" and knit one row to RIGHT. Set side lever at RIGHT TO " II ". Repeat above steps.



Card No. 1
Method II



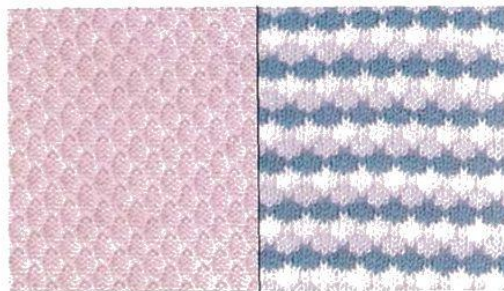
Card No. 2
Method II



Card No. 3 Method II
After turning selector lever when no needle is selected, knit two rows of plain knitting.



Card No. 9
Method II



Card No. 12
Method I (See P. 23) /Change col. 1 every 4 rows.



Card No. 13
Method II

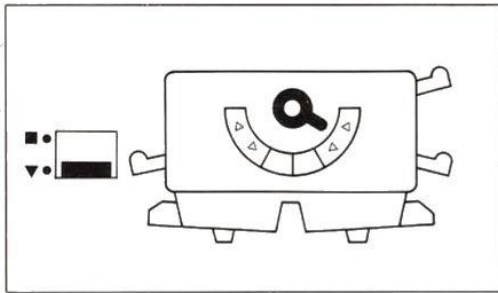


Card No. 14
Method II



Card No. 17
Method II

SLIP STITCH PATTERNS WITH PUNCH CARDS



Cast on and knit several rows of plain stitch.
Carriage at RIGHT.

Insert punch card No. 16

- 1 Card stop lever to ▼ .
- 2 Pattern dial to EMPTY.
- 3 Both side levers to 0.
- 4 Both weaving levers, DOWN.

NOTE: When knitting EMPTY patterns the 1st or 2nd stitches may not be selected.

In this case we recommend bringing these needles at BOTH ends to D position.



Card No. 1



Card No. 8

After turning selector lever when no needle is selected, knit 4 rows of plain knitting.

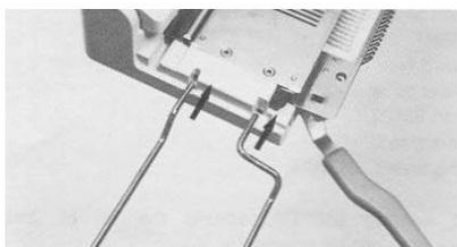


Card No. 15

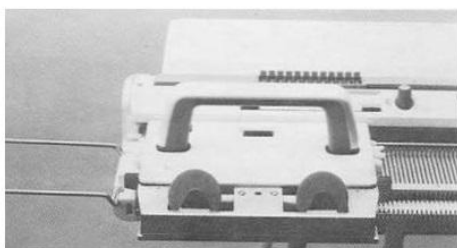


Card No. 16

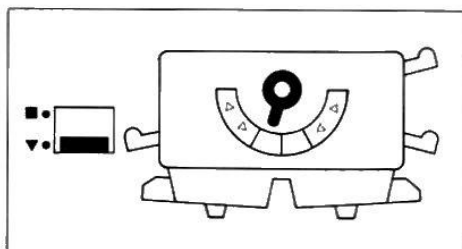
LACE STITCH PATTERN WITH PUNCH CARDS



Remove BOTH extension rails from case cover.
Hold one rail with curved side in front of you, and slot edges of the rail into needle bed as far as they will go.
Insert the other rail at the other side of needle bed.

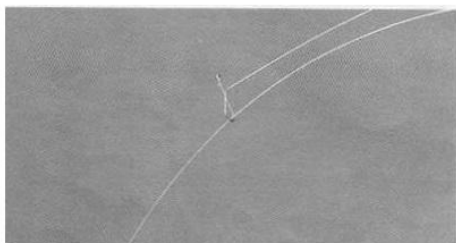


Raise handle of lace carriage. Place lace carriage on LEFT side on needle bed, out of knitting.
Push release lever towards you, lower front of carriage on front rail and lower back of carriage on back rail.



Before starting lace knitting you must do certain rows of plain knitting approx. 5 cm long.

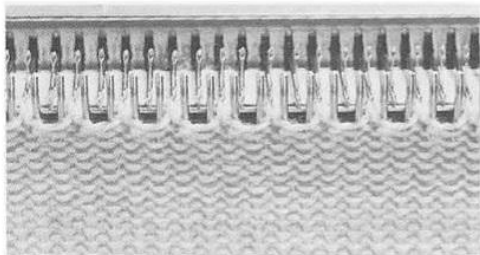
Method I .
Main carriage at RIGHT.
Set punch card No. 1.
Set main carriage for PLAIN knitting.



- Hook short tension wire to the one used for lace yarn.
- Turn tension disc towards + , the edge stitches will then be knitted neatly.
- Attach weights to edges of knitting 5 cm below top row.
- Put wax ring on to pin.



Knit two rows with main carriage, carriage at RIGHT.
Select needles by turning selector lever.
Push the two edge needles at EACH side BACK to B position if they have been selected to D position. This is to avoid dropping stitches.



SLOWLY slide lace carriage across knitting towards the RIGHT, out of knitting and at LEFT of the main carriage.

While sliding lace carriage across, press it on to needle bed as if ironing.

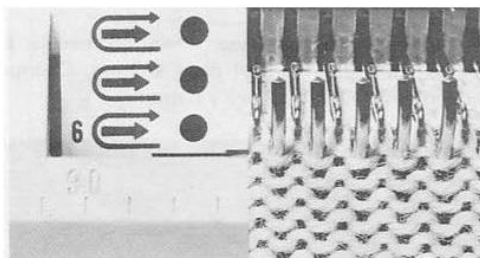
Stitches of selected needles have been transferred to adjacent needles to LEFT.

Slide lace carriage back to LEFT.
Knit two rows with MAIN carriage.



Move lace carriage to the RIGHT.
Select needles by turning selector lever.
Slide lace carriage to the LEFT.
Repeat above steps.

DO NOT TOUCH THE KNITTING, THE CAST ON COMB OR WEIGHTS while you slide lace carriage across for transferring stitches, this will result in dropped stitches.



Method II

There are four punch cards which have arrows on the LEFT side. (No. 17. 18. 19. 20)

This shows direction in which you should slide lace carriage.

Let's set punch card No. 17.

Carriage is set for plain knitting.

Now look at the arrow. It shows 6 \Leftarrow which means to knit 6 rows with main carriage (6 \Leftarrow) and move lace carriage to the RIGHT. (\rightarrow)

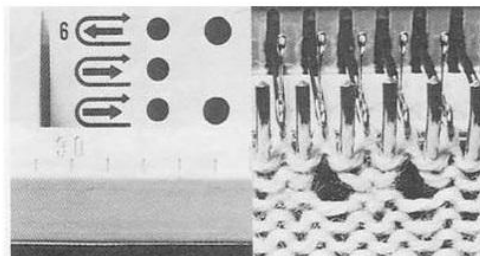
Knit 6 rows and finish at the RIGHT.

Since you have to move lace carriage to the RIGHT, set it at the LEFT. Turn selector lever and slide lace carriage to the RIGHT.

Continue sliding lace carriage in direction arrows show until \Leftarrow mark appears on punch card.

Knit two rows with main carriage. Turn selector lever and slide lace carriage to the RIGHT.

Repeat above.



- Remember you always start moving MAIN carriage from the RIGHT and finish at RIGHT, but for LACE carriage, it is opposite (from the LEFT and finish at LEFT.)
- After having knitted 10 cm of lace pattern move up weights 5 cm, and after 20 cm or so move up cast on comb and insert through knitting 5 cm below top edge.
- If there are some loops which stay over needles after knitted one row with main carriage, set carriage for EMPTY \blacktriangleleft and move carriage over knitting so that loops will be knitted.
- always look at the arrow before turning selector lever.
- If lace carriage jams, see page 45.



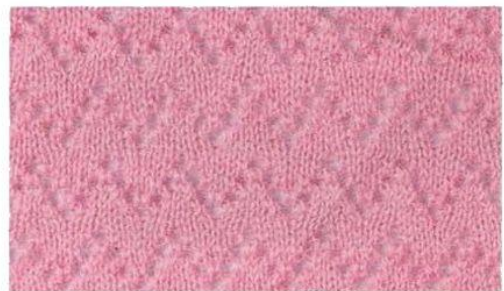
Card No. 1
 Method I explained on P. 26.
 Change direction of lace carriage every two rows.



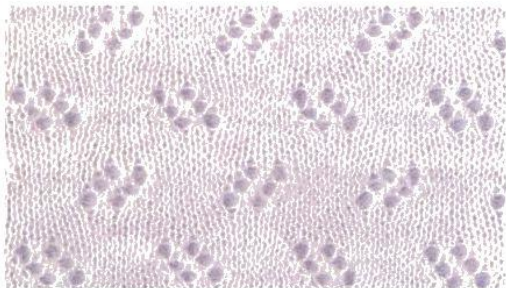
Card No. 1
 Change direction of lace carriage every 10 rows.



Card No. 2
 Change direction of lace carriage every 10 rows.



Card No. 3
 After turning selector lever when no needle is selected, knit four rows of plain knitting. Change direction of lace carriage every pattern.



Card No. 17
 Method II explained on P. 27.



Card No. 18



Card No. 19
 10 \Leftarrow — Knit 10 rows of plain knitting.
 Turn selector lever and move lace carriage to Right.

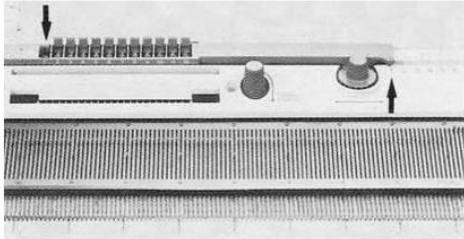


Card No. 20

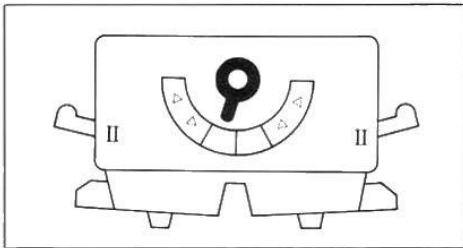
PUSH BUTTONS AND ZIG ZAG DIAL

Many times you will want to knit a small band or border in stitch pattern but wish to avoid punching a card, at these times, the push buttons and zigzag dial come in very handy indeed. These two features add much to the versatility of your knitting machine. Use the push buttons on their own or with the zigzag dial.

The settings of the zigzag dial affect the settings of the push buttons ONLY, not the needle selection of the punch cards.



The picture shows the 12 numbered push buttons and the zigzag dial. When push button 1 is DOWN and the zigzag dial is at 1, the FIRST needle at setting pins on needle bed will be selected.

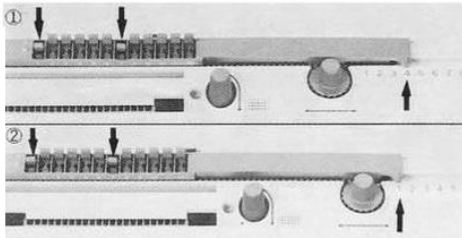


TUCK STITCH PATTERNS

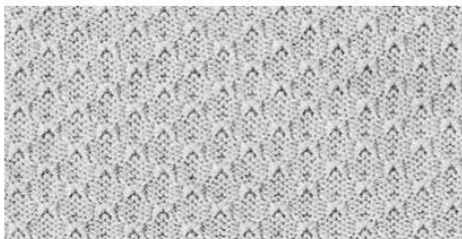
Pattern 1

Let's assume the cast on over 60 needles is finished and that you have knitted several rows, carriage is at RIGHT.

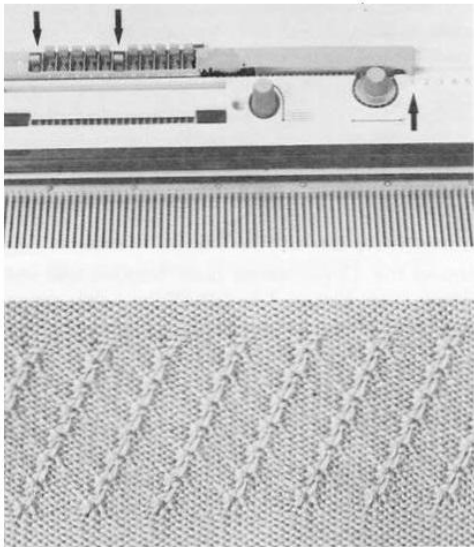
- 1 Pattern dial to PLAIN.
- 2 Both side levers to II .
- 3 Both weaving levers, DOWN.



- ① Push DOWN buttons 1 and 7.
Set zigzag dial to 4.
Select needles by turning selector lever.
When 2 edge needles on each side are selected, push them back to B position.
Knit three rows.
Set RIGHT side lever to 0.
Knit one row.



- ② Set zigzag dial to 1.
Set Both side levers to II .
Select needles by turning selector lever.
Knit three rows.
Set RIGHT side lever to 0.
Knit one row.
Continue in this way.

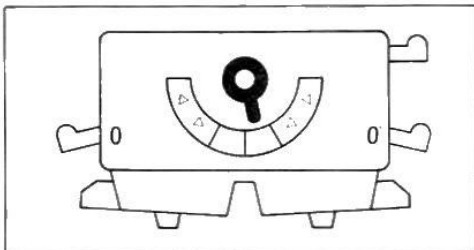


Pattern 2

Set carriage as for Pattern 1.

- 1 Push DOWN buttons 1 and 7.
- 2 Set zigzag dial to 1.
- 3 Select needles by turning selector lever.
- 4 Knit three rows.
- 5 Set RIGHT front lever to 0.
- 6 Knit one row.
- 7 Turn zigzag dial one position, zigzag dial will be on 2.
- 8 Set RIGHT side lever back to II .

Repeat steps 4 to 8 five more times, turning zigzag dial to the next LARGER number.

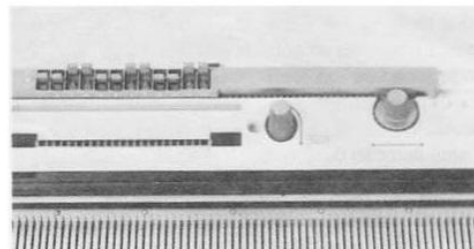


FAIRISLE PATTERNS

Pattern 1

Let's assume the cast on is finished using 60 needles and you have knitted several rows, carriage is at RIGHT.

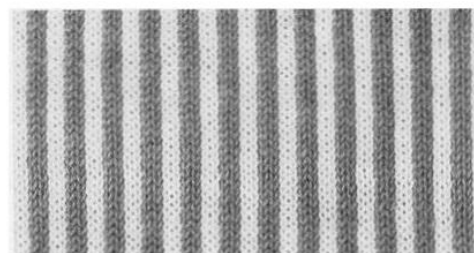
- 1 Pattern dial to COLOUR.
- 2 Both side levers to 0.
- 3 Both weaving levers, DOWN.



Push buttons 1,2,5,6,9 and 10 DOWN.

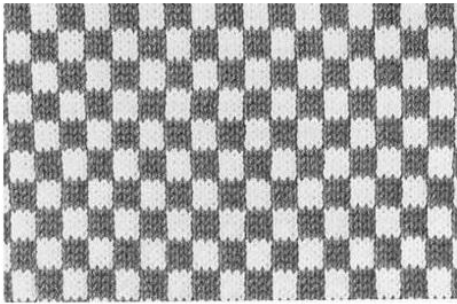
Set zigzag dial to 1.

Select needles by turning selector lever.



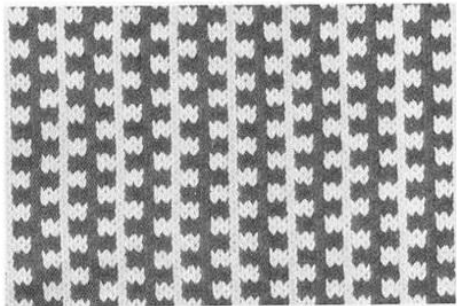
Thread col. 2, and knit one row.

Continue knitting by turning selector lever for each row.



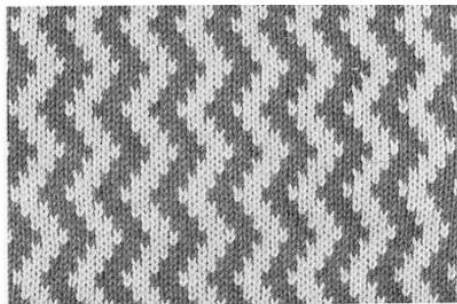
Pattern 2

- 1 Set carriage as for pattern 1.
- 2 Push buttons 1,2,3,7,8 and 9 DOWN.
Set zigzag dial to 1.
- 3 Select needles by turning selector lever.
- 4 Thread col. 2.
- 5 Knit four rows, turning selector lever for each row.
- 6 Set zigzag dial to 4.
- 7 Knit four rows, turning selector lever for each row.
Repeat above steps.



Pattern 3

- 1– 4 Follow above steps.
- 5 Knit two rows, turning selector lever for each row.
- 6 Set zigzag dial to 3.
- 7 Knit two rows, turning selector lever for each row.
- 8 Set zigzag dial to 1.
- 9 Knit two rows, turning selector lever for each row.
Repeat steps 6–9.



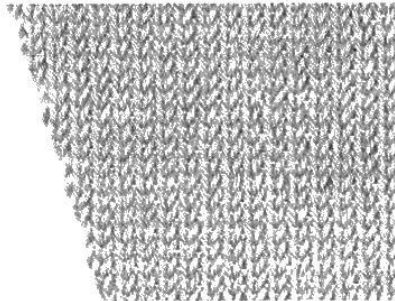
Pattern 4

- 1– 4 Follow above steps.
 - 5 Knit two rows, turning selector lever for each row.
 - 6 Set zigzag dial one position LARGER.
Zigzag dial will be on 2.
 - 7 Knit two rows, turning selector lever for each row.
Repeat 6 and 7 until you finish on number 4 of zigzag dial.
- Now turn zigzag dial to 3 and knit zigzag pattern back to 1.

Note:

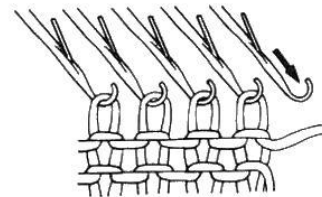
Before you start knitting a stitch pattern using a punch card, make sure there are NO push buttons DOWN since this will affect your stitch pattern.

STEP 3

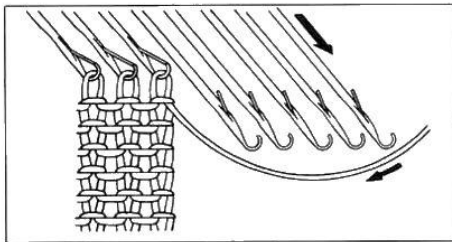


SIMPLE INCREASE OF ONE STITCH

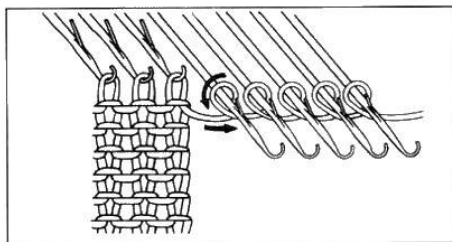
You can increase one stitch only on the carriage side by this method.
Push adjacent empty needle from A to B position on carriage side. Move carriage across knitting.



INCREASING SEVERAL STITCHES

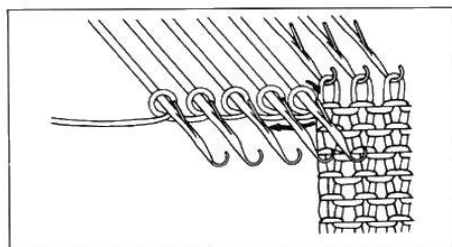


Increasing stitches on the side where the carriage is:
To increase 5 stitches on the RIGHT, bring next 5 empty needles on the right of the knitting from A to E position.



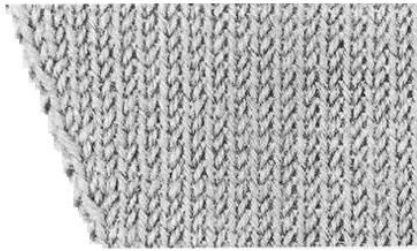
Pull some yarn from below carriage and wind round needles evenly as shown by arrows.
Push back all loops against sinker hooks.

Check yarn tension and if necessary adjust it.
Knit 1 row. Needles have been knitted back to B position.
For next 3 or 4 rows, knit bringing those needles to E position each time.



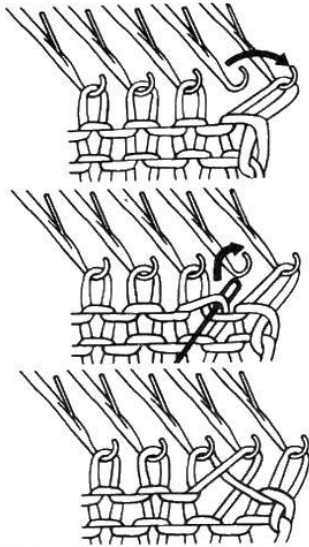
To increase 5 stitches on the LEFT, bring next 5 empty needles on the left of the knitting from A to E position.
Wind yarn round needles as shown by arrows.
Check yarn tension and if necessary adjust it.
Knit 1 row. Knit bringing those needles to E position each time for the next 3 or 4 rows.
Continue knitting.

FASHION INCREASE OF ONE STITCH



Fashion increase gives a clean, straight edge and makes seaming easier, too.

You can increase a stitch at each edge of the same row.

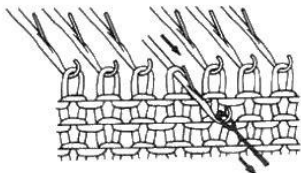


With transfer tool, transfer end stitch to adjacent empty needle.

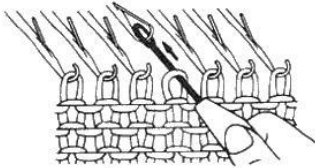
Pick up loop below the 2nd stitch and lift it onto empty needle.

You have now increased a stitch "fully fashioned".
The photograph shows stitches increased every 4 rows.

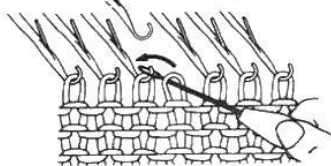
HOW TO TRANSFER STITCHES



The transfer tools are very useful and practical accessories. They are mainly used for transferring stitches. Take transfer tool and place eyelet onto needle hook. Pull needle forward to E position.

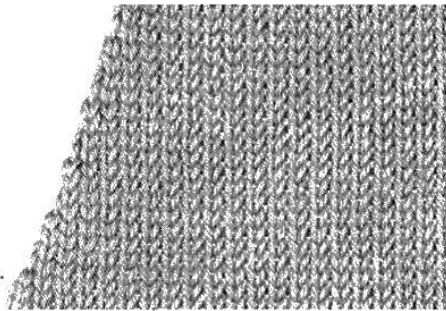


Push tool backwards until needle is in A position. The stitch will slide over needle latch and on to stem of transfer tool.

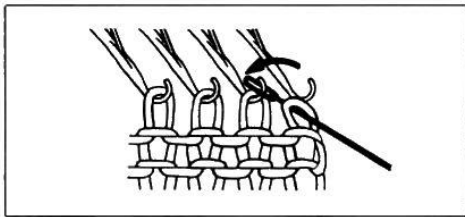


Lift transfer tool out off needle hook. Move it to the LEFT and place eyelet onto needle hook of adjacent needle. Tilt tool upwards, the stitch will slide off and onto needle hook. You have now transferred a stitch with the transfer tool.

SIMPLE DECREASE OF ONE STITCH

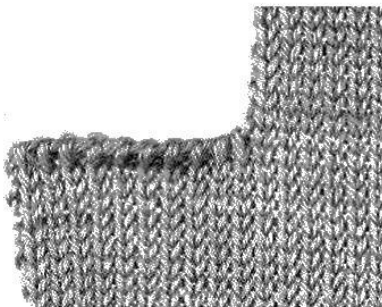


You can decrease a stitch at each edge of the same row.

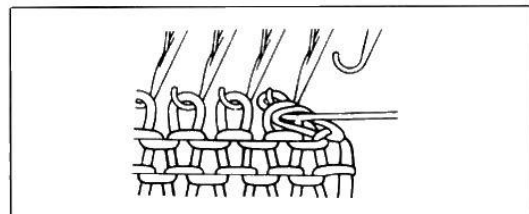
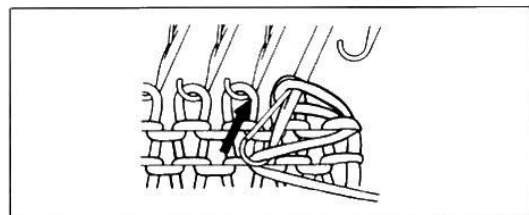
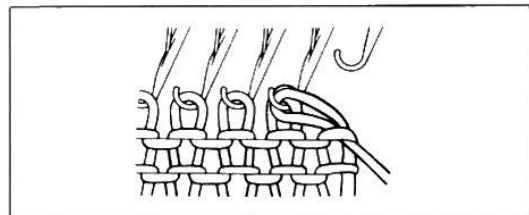


With single transfer tool remove edge stitch off its needle and transfer it to adjacent needle inside knitting. Push empty needle back to A position.

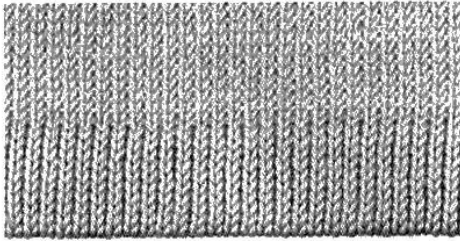
DECREASING SEVERAL STITCHES



Use the same method as for CASTING OFF explained on page 14.

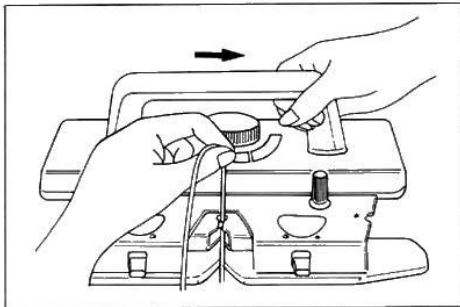


PLAIN HEM

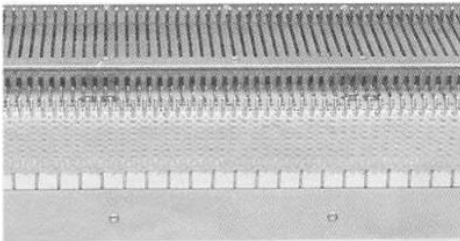


A hem is started with some waste knitting.
Waste yarn will be removed after turning up the hem.

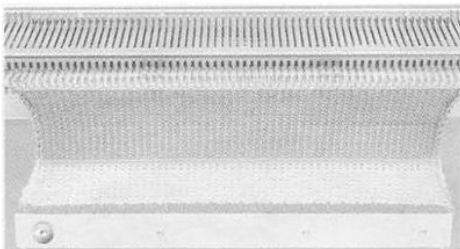
Carriage is at right.
Thread waste yarn through right side upper tension unit.
Cast on using cast on comb as explained on pages 11 and 12.
Knit 10 rows, carriage at left and settings neutral.



Thread nylon cord into feeder ① and knit one row to right.
While moving carriage, let nylon cord slide through your fingers so that it can be knitted.

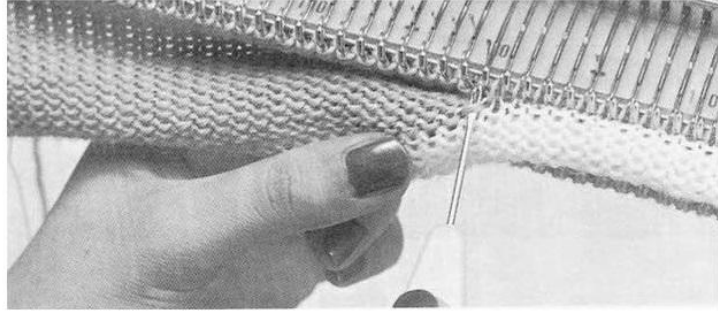
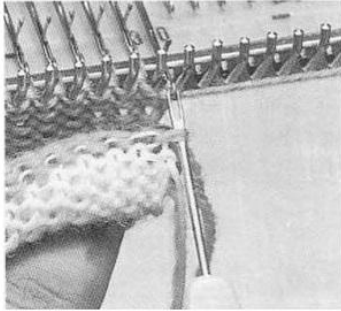


Remove nylon cord from feeder and let it hang down from the knitting.
The nylon cord will later be removed from the knitting thus separating the waste yarn from the hem.
Thread col.1 through left side upper tension unit and into feeder ①.
Check and adjust yarn tension below and above carriage, there should not be any slack yarn anywhere.



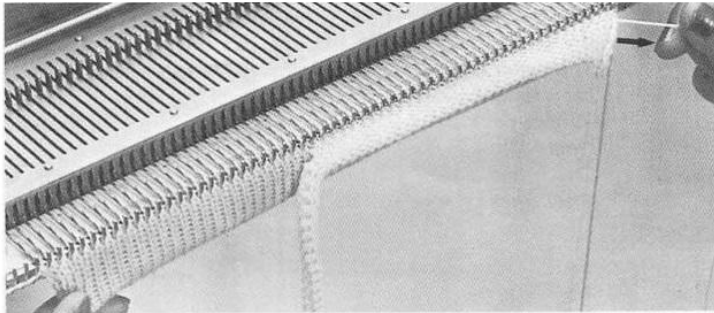
Let's assume you will knit a garment with Tension 6.
Set row counter to 000.
Knit 1 row Tension 6, row counter at 1.
Knit 9 rows Tension 5, row counter at 10.
Knit 1 row Tension 7, row counter at 11.
Knit 11 rows Tension 6, row counter at 22.

The first half, the back side of the hem, is knitted with tighter tension to keep its shape.
The normal stitches of row 1 make it easy to pick up the loops when turning up the hem.
Row 11 with loose tension is "the turning row".



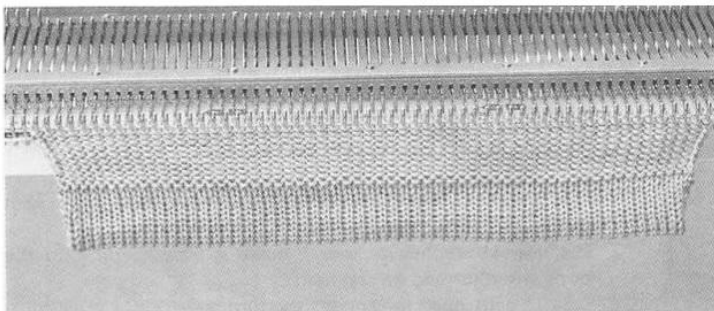
Remove cast on comb from the knitting. Open needle latches. Fold hem half way up. Take single transfer tool and insert it into 1st loop of 1st row knitted in col. 1, above nylon cord (small picture). Place tool onto 1st needle in B position on the RIGHT, let loop slide onto needle hook. This needle will now have two stitches. Lift following stitches of row knitted after nylon cord onto their needles. All needles will now have 2 stitches.

After a little practice you can use double or triple transfer tool and lift 2 or 3 stitches onto the needles at a time.



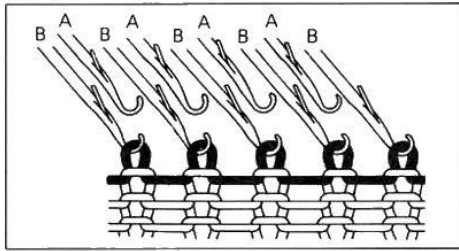
Pull out nylon cord from hem. Rows knitted with waste yarn will fall away from hem.

Knit 1 row with Tension 7.2. Re-set to Tension 6 and continue knitting.



Attach cast on comb to knitting above hem. When knitting hems using thick yarns, bring needles to E position after having pulled out nylon cord from knitting.

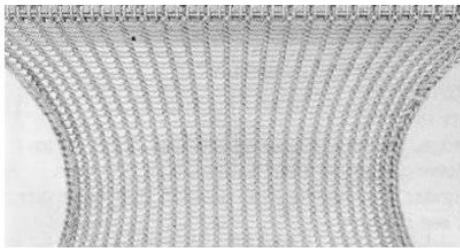
DOUBLE 1—1 WELT



Carriage at RIGHT, all settings neutral.

With the 1/1 edge of selector comb, push every 2nd needle from A to B position.

Make cast on using waste yarn and hang cast on comb onto loops. Knit 10 rows with every 2nd needle. Carriage at LEFT. Thread nylon cord into feeder ①, knit one row to right.

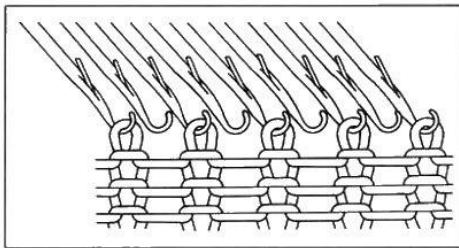


Thread col. 1 through upper tension unit and into feeder ①. Check that there is no slack yarn above or below carriage. Set row counter to 000.

Assume you are using a medium type of yarn suitable for Tension 6.

Set tension dial to 3.

Knit number of rows required for depth of welt, approx. 50 rows.



With straight edge of selector comb bring remaining needles in A position to B position.

Remove cast on comb from knitting.



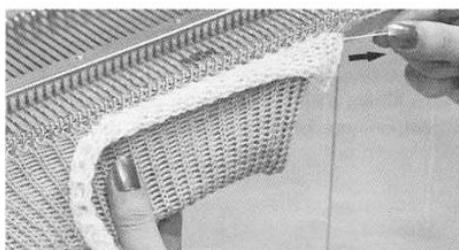
Fold hem half way up.

Take single transfer tool and slide it into the FIRST loop of the FIRST row knitted in col. 1 above nylon cord.

Lift loop onto the FIRST EMPTY needle in B position.

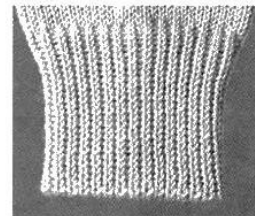
Continue lifting loops onto empty needles until welt has been completely turned up.

Hang last loop on the left end needle.

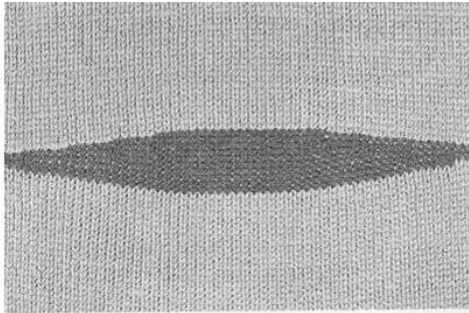


Pull and remove nylon cord from welt.

Continue knitting.

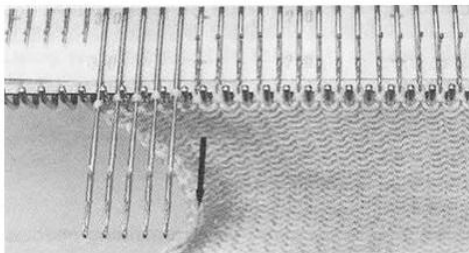


BUST DARTS - PARTIAL KNITTING IN PLAIN AND PATTERN KNITTING



Use this technique not only to make bust darts but to create shapes such as shoulder slopes, round necklines, heels and toes of socks.

Partial knitting is the technique of knitting only part of a row by holding a certain number of needles in E position.



Carriage at RIGHT.

Both side levers to I .

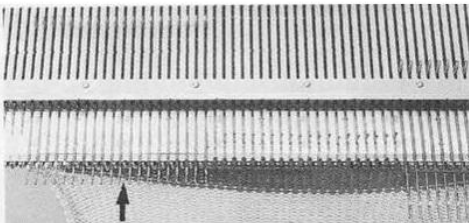
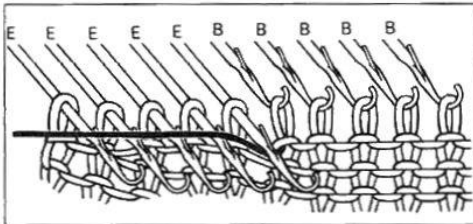
* ON LEFT edge, push a group of needles from B to E position following your garment pattern. Knit one row.

Bring yarn under first needle in E position and let it pass over others, see diagram.

On RIGHT edge, push a group of needles from B to E position. Knit one row.

Bring yarn under first needle in E position and let it pass over others.

Repeat from * required times.



Now finish partial knitting.

Carriage at RIGHT.

Push back all E position needles at LEFT to D position, the position just before dots on needle bed.

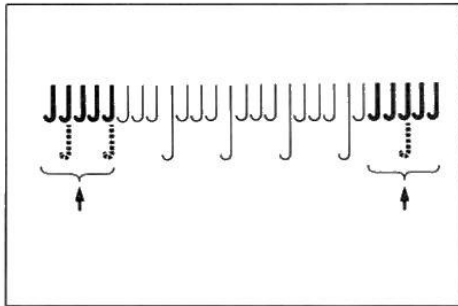
Knit to LEFT.

Both side levers to 0.

Knit to RIGHT, all needles will be knitted back to B position. Continue knitting.

NOTE: Make sure the yarn is not round any pins or sinker hooks when placing yarn under and over the needles. When moving carriage towards the knitting, pull up the yarn above carriage lightly to adjust tension. When knitting, move carriage just past the needles in B position, not past all needles as this would make your yarn tension too loose.

BUST DARTS – PARTIAL KNITTING IN LACE PATTERN



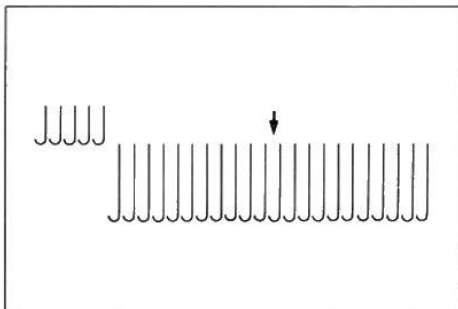
*** Select needles.**

At both edges, push back selected needles from D to B position, which are in a group of needles not to be knitted following your garment pattern.
(5 in top diagram.)

When shaping only at one side of knitting, be sure to work this at opposite side of carriage.

Slide lace carriage so that stitches are transferred.

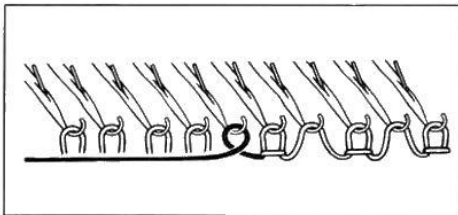
Repeat from * until mark \Leftarrow appears on punch card.



Leaving a group of needles in B position at LEFT, bring other needles to E position.

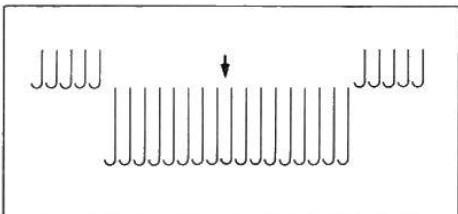
Set pattern dial to EMPTY \blacktriangleleft \blacktriangleright .

Knit one row with main carriage to LEFT.



At carriage side, hook yarn in hook of first needle which was in B position.

Check yarn tension.



Leaving a groups of needles in B position not to be knitted at BOTH edges, bring other needles to E position. (When shaping only at one side, leave a group of needles at one side and bring other needles to E position.)

Knit one row with main carriage to RIGHT.

Repeat above steps required times.

- When knitting make sure you move carriage out of the knitting, and pass the needles in B position too.
- As you continue knitting move up the comb and the weight and balance in order to eliminate dropping stitches and the knitting from slanting.

SHAPING ROUND NECK

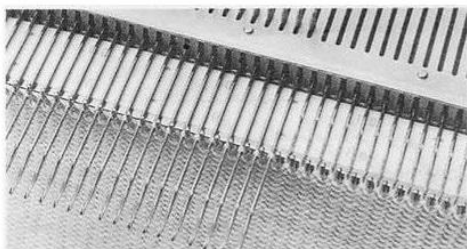
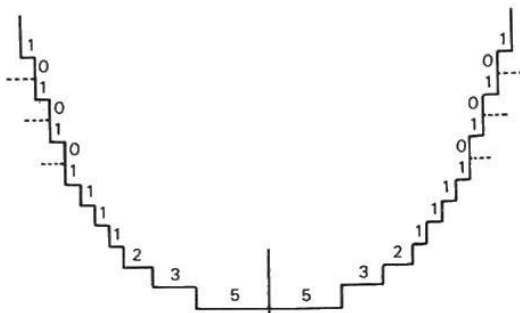
Use this method when you are knitting PLAIN stitch and also when the KNIT side is to be the RIGHT side of the garment.

Shape the neckline by using partial knitting method and then decreasing. This gives an elastic neck edge.

Make a sample piece of a round neck according to the instructions below:

Cast on with 60 needles, knit 30 rows, carriage at RIGHT.

For the neck edge hold or decrease 34 stitches, 17 on each side of centre, in the following way, 5-3-2-1-1-1-0-1-0-1-0-1.



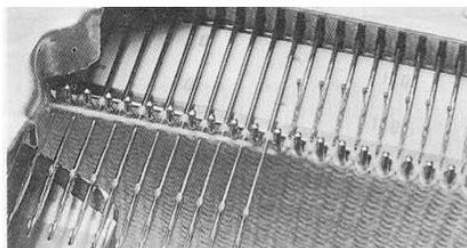
KNIT THE RIGHT HALF OF A ROUND NECK FIRST.

Carriage at RIGHT, both side levers to I.

Bring to E position all needles at left of centre and 5 at right of centre.

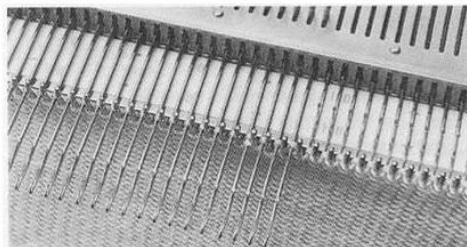
Note row number.

Knit one row to LEFT, and pass needles in B position, stop at needles in E position.



Bring yarn under the first needle in E position (needle 5). Let yarn pass over other needles. Check yarn tension.

Attach a weight to knitting on the RIGHT of needles in E position.



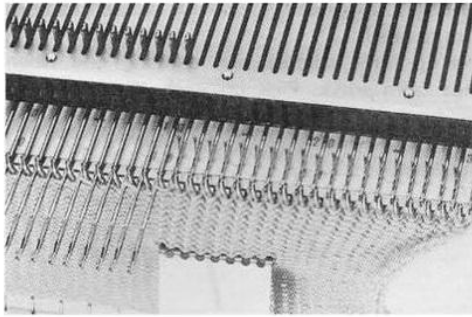
Knit to RIGHT.

Yarn is wound round needle 5 in E position.

—3— Move the 3 needles next to the last needle to E position.

Knit to LEFT.

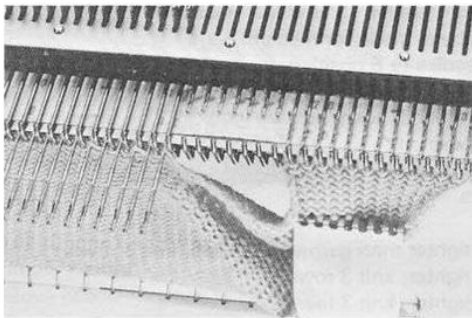
Bring yarn under the first needle and knit back to RIGHT.



—2— To the RIGHT of needles in E position bring 2 more needles forward.

Knit to LEFT. Bring yarn under the first needle and knit to RIGHT.

—1— You are now decreasing stitches.
Instead of bringing a needle to E position, transfer one stitch to adjacent right needle. One stitch is now decreased.
Push empty needle to A position.
Knit 2 rows.

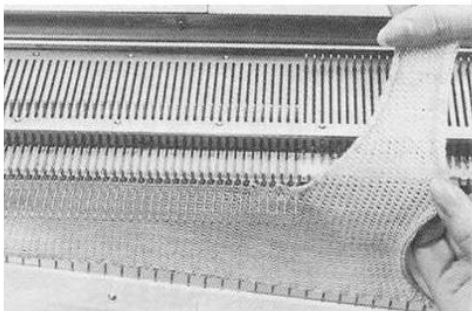


Repeat —1—3 times.
Carriage at RIGHT.

—0— This time do not bring any needles to E position, but knit 2 rows.
Attach weight to knitting under LEFT edge of needles in B position.

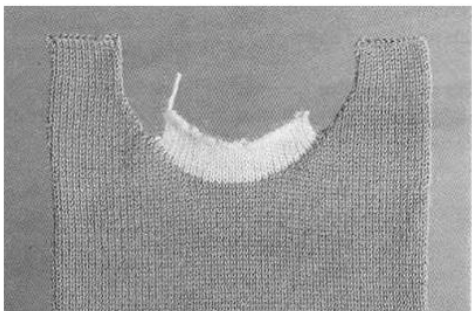
—1— Decrease one stitch.

Repeat —0— and —1— twice.
Carriage at RIGHT.



Needle positions are as follows: to LEFT of centre ALL needles, to RIGHT of centre 10 needles in E position, also 7 empty needles in A position and 13 needles in B position.

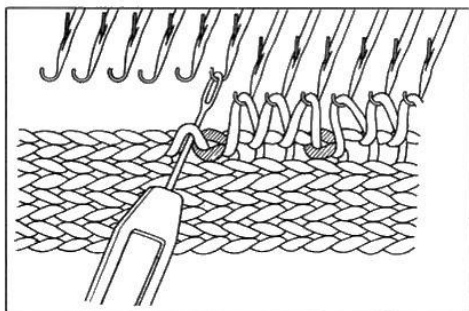
Knit 10 more rows straight up and cast off the 13 stitches.
Remove yarn from feeder, slide carriage across needles in E position to LEFT of knitting.
Now knit the LEFT half of the round neck.
Set row counter to number noted before.
Knit the LEFT half in the same way but with reversed shaping.



Set both side levers to 0. With waste yarn knit 10 rows over needles in E position and remove knitting from machine.
This picture shows a round neck edge knitted according to above instructions.

Rows knitted using waste yarn will be unravelled later when you have put the neck edge stitches on to the needles for knitted the neckband.

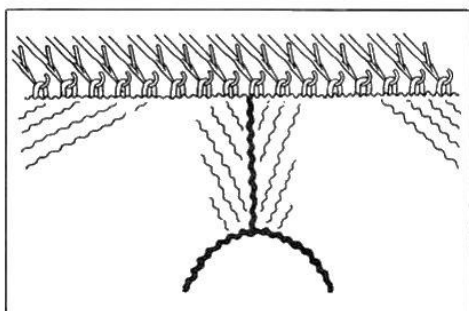
ROUND NECKBAND



With the RIGHT side of garment facing you pick up stitches of neck edge on to needles.

Repeat picking up three stitches and omitting one when making stitches from rows. Pick up each stitches when making stitches from stitches.

Do not pick up shoulder stitches.



Thread yarn into feeder ① and knit neckband as follows:

* This is a general guide for medium yarn.

Bring all needles to E position.

With garment Tension, knit 1 row.

Wind yarn round each outside empty edge needle and bring to E position.

Knit two rows.

T. 1 number tighter than garment Tension, knit 3 rows.

T. 2 number tighter, knit 3 rows.

T. 3 number tighter, knit 3 rows.

With garment Tension, knit 1 row.

T. 3 number tighter, knit 3 rows.

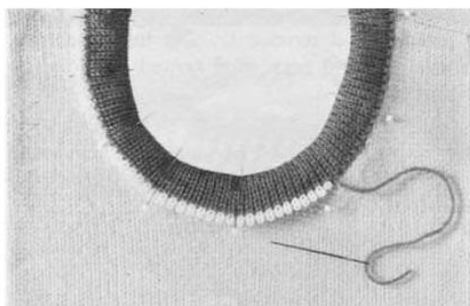
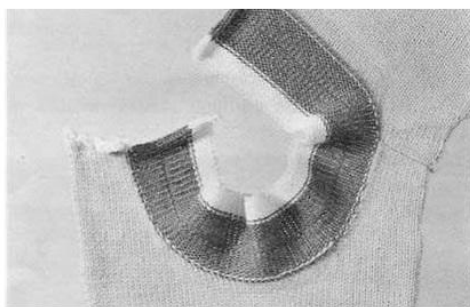
T. 2 number tighter, knit 3 rows.

T. 1 number tighter, knit 3 rows.

With garment Tension, knit 5 rows.

Thread waste yarn, knit 10 rows.

Remove knitting.



Join other shoulder.

Mattress stitch neckband seam.

Fold neckband to outside of garment at loose centre row.

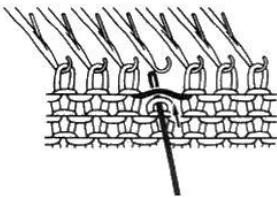
Pin neckband along edge over the rows of waste knitting.

Backstitch along edge, see page 15.

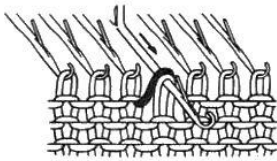
STEP 4

REPAIRING A DROPPED STITCH

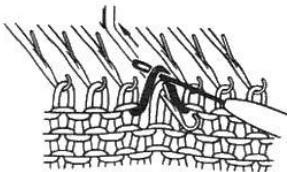
One row



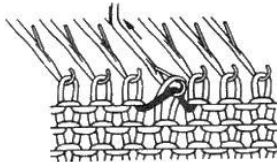
Insert transfer tool into dropped stitch.



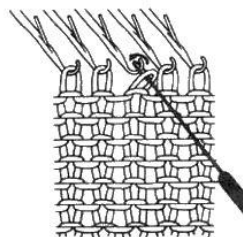
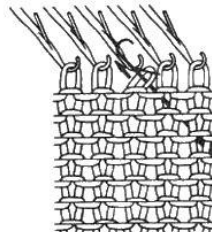
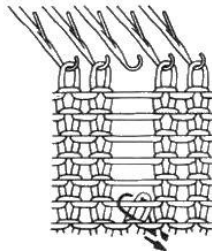
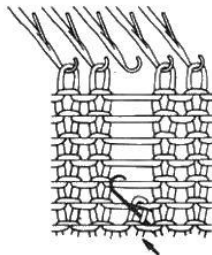
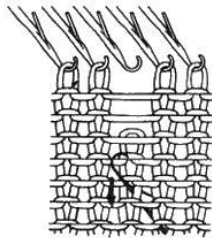
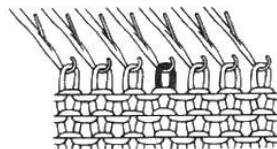
Lift dropped stitch and loose bar onto empty needle.
Move needle forward to E position.



Lift up loose bar while at the same time sliding needle back to D position.



Let loose bar drop onto needle hook and pull needle back to B position.



Several rows

Take latch tool and insert it from BEHIND into knitting, 1 or 2 rows BELOW dropped stitch.

Push DOWN latch tool so that stitches unravel down to latch tool.

* Move latch tool towards you and let stitch slide BEHIND latch.

Hook next loose bar onto latch tool hook. Pull back latch tool, latch will close over bar.

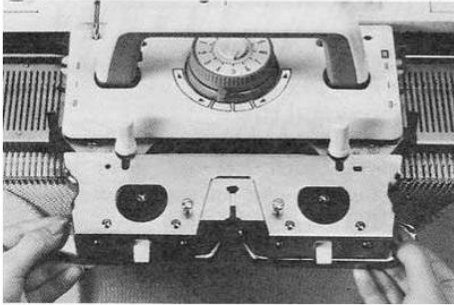
Pull latch tool further back and bar is pulled through stitch, a new stitch is on the latch tool hook.

Repeat from * until you have top stitch on the latch tool hook.

Insert transfer tool into last stitch from front.

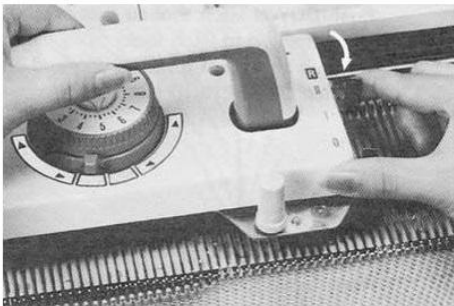
Remove latch tool carefully from knitting. Place stitch onto empty needle hook.

JAMMED, CARRIAGE

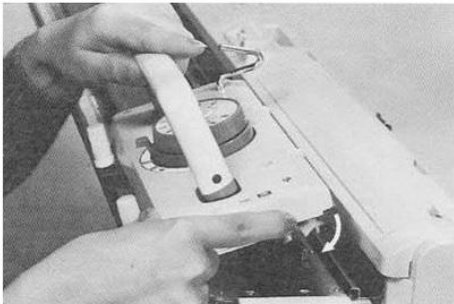


NEVER FORCE THE CARRIAGE IF JAMMED, proceed as follows:

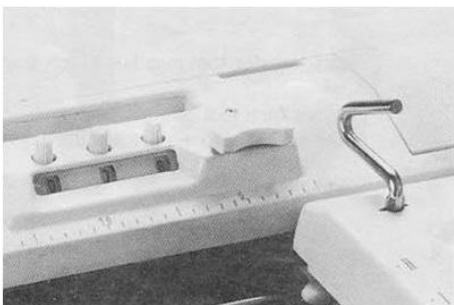
- 1 Remove yarn from feeder ①.
- 2 Loosen BOTH thumb screws and remove fabric presser. When lifting up fabric presser make sure no needles are caught in feeder.



- 3 Remove row counter lever from carriage.
- 4 Push carriage release lever towards you. Lift up back of carriage and then pull carriage forward off needle bed.



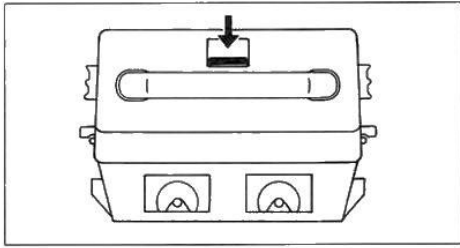
- 5 Place carriage on needle bed out of the knitting. Lower front of carriage onto front rail. Keep carriage release lever towards you, lower back of carriage onto back rail.
- 6 Put back stitches onto needle hooks and set all needles to B position, see page 43.
- 7 Unravel stitches of last row or rows to edge of knitting on carriage side.



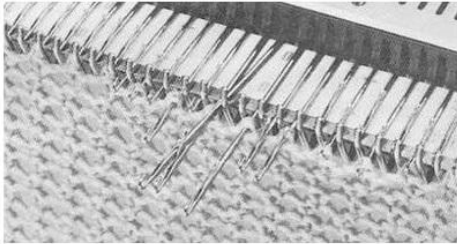
- 8 Attach fabric presser to carriage and rethread yarn. Check yarn tension.
- 9 Turn row counter BACK for unravelled rows and set row counter lever to working position.

- * When using a punch card, turn it back the same number of rows as those unravelled.
- * If butts of some needles stay lower than others, push needles to E position and then bring back to B position.

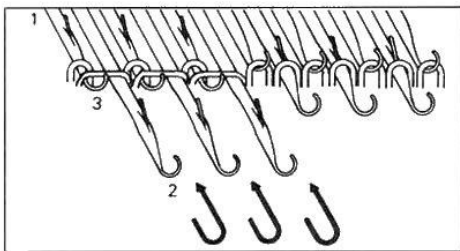
JAMMED LACE CARRIAGE



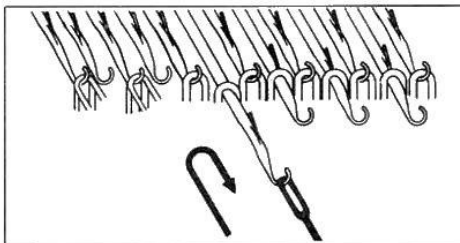
- 1 To remove lace carriage push release lever towards you, lift back of carriage off needle bed, and pull it forward.
- 2 Replace lace carriage on extension rail in the direction it came from.
Remove weights and cast on comb from knitting.



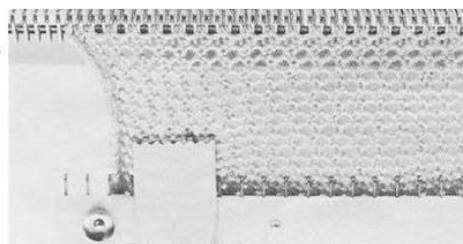
- 3 Separate crossed needles by lifting them up.



- 4 Some needles will have both a stitch and a loop as in diagram.
Bring pattern needles to E position and back to B position.
Loops will come off and be transferred to adjacent needles (2).

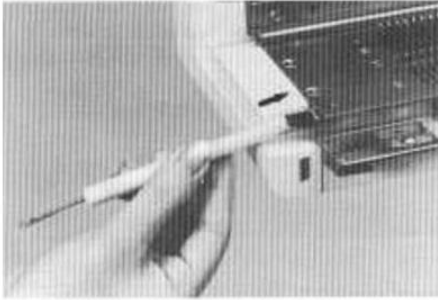


- 5 If stitches are BEHIND needle latches, put them onto needle hooks.
Set all needles to B position.



- 6 Turn back punch card.
Re-hook weights and cast on comb to knitting.
Turn selector lever and slide lace carriage as shown by arrow.
Remember, do NOT touch knitting while transferring stitches.
Also, if the two edge needles are selected, bring them back to B position before transferring stitches.

CHANGING A NEEDLE

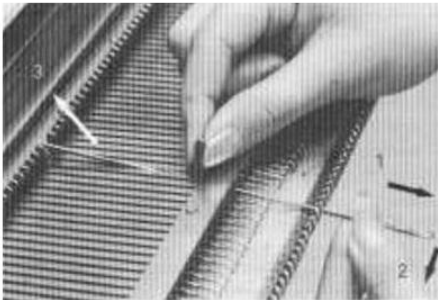


You will have to change a needle when a butt or hook is bent or a needle latch does not move smoothly. These cause faulty needle selection.

If the needle that needs changing is on the LEFT side of the needle bed insert latch tool or pencil into needle bed on the LEFT.

Push tool until bar comes out on the RIGHT of needle bed.

Pull out bar until damaged needle is free.



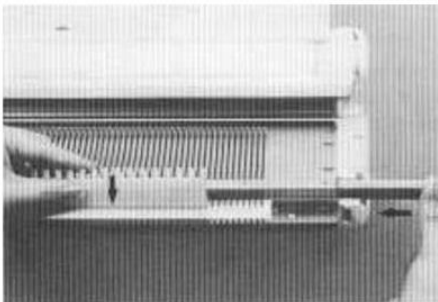
Holding needle by its butt, slide it to E position (1), push down hook (2) so that needle shank comes out of needle bed at the BACK and over panel board of machine.

Close needle latch and pull out needle from back (3).



Take a spare needle and open needle latch, slide needle inside groove towards front into E position (1).

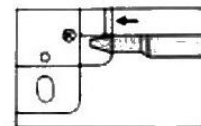
Lower needle shank into groove and move needle back to A position (2).



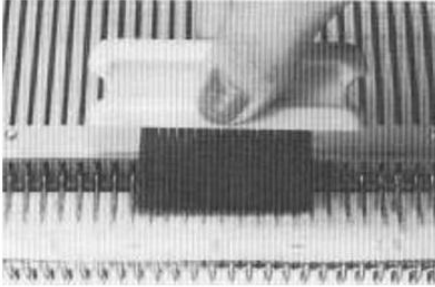
Push needle-press bar back into needle bed, while moving bar hold needles down with the straight edge of selector comb.

In case you had to remove the bar completely out of the needle bed, make sure you re-insert it with the foam rubber band on the under side of the bar (diagram)

Be careful when using the latch tool to push out the bar, you could hurt your hand with the hook

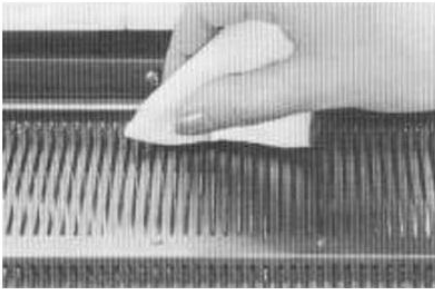


PROPER CARE OF THE MACHINE



DUSTING

You should clean the machine after completing every garment. Bring all needles to A position. With the small brush remove all dust and lint from the front edge of needle bed, on plastic film.

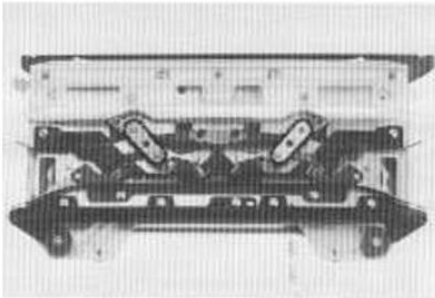


CLEANING AND OILING

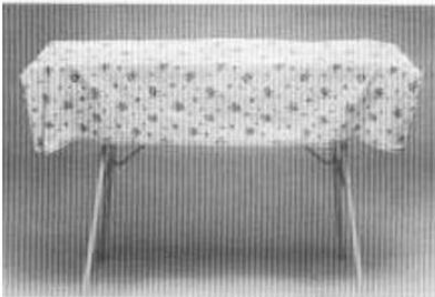
Remove all small yarn threads that may be caught around the brushes under the fabric presser.

With a clean cloth clean rear and front rails, needle butts and needle bed.

Put some oil on a cloth, rub it along needle butts and along back and front rails of needle bed. Wipe off excess oil. Never apply oil directly from oil tube.



Take a clean cloth and rub cams and parts under the carriage. Put some oil on a cloth and rub along the two cams (dotted lines) and rails under the carriage. Wipe off excess oil.

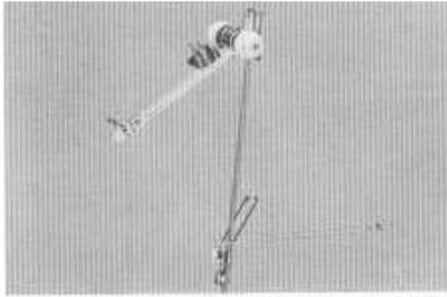


WHILE NOT IN USE

Cover the machine and store it in a cool and dry place, or pack it as explained on the next page.

- Use detergent to clean the case cover, carriage cover and panel board
- When you use the machine after having stored it for a long time, wipe off the old oil and oil as above. Before commencing a garment, knit 20–30 rows of plain stitch using old yarn to remove dirt from the needles and needle bed.

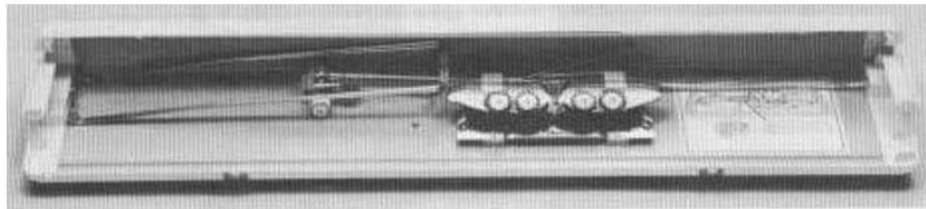
PACKING



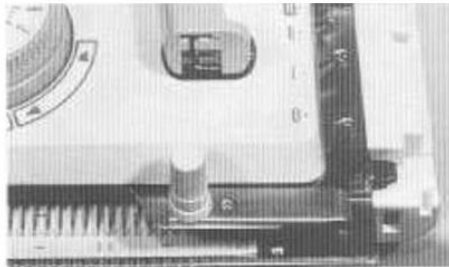
- 1 Push all needles back to A position.
- 2 Fold upper tension unit. Twist tension wires around tension rod three times and replace them in case cover.



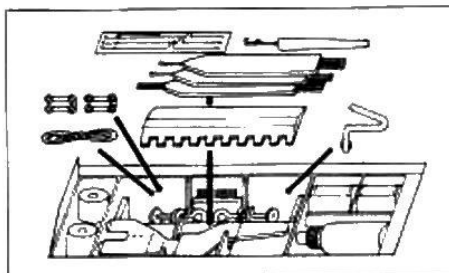
- 3 Remove fabric presser from carriage and place it in case cover.



On the inside of the case cover, store extension rails, upper tension unit, cast on comb and fabric presser. Follow the packing instructions on the label inside the cover.



- 4 Slide carriage to RIGHT, secure with carriage lock.
 - When carrying the machine, be sure carriage is secured with carriage lock.
- 5 Remove row counter lever
- 6 Push button inside handle and fold down carriage handle backwards.



- 7 Place the following in accessory case: table clamps, weights, oil, paraffin wax, transfer tools, latch tool, selector comb, tapestry needle, spare needles, nylon card, brush, selector lever, card snaps and row counter lever.
- 8 Take the case cover and slide in from the front to the back over the machine, the projections on each edge of case cover must fit the shape of the machine front. Lock both latches.



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