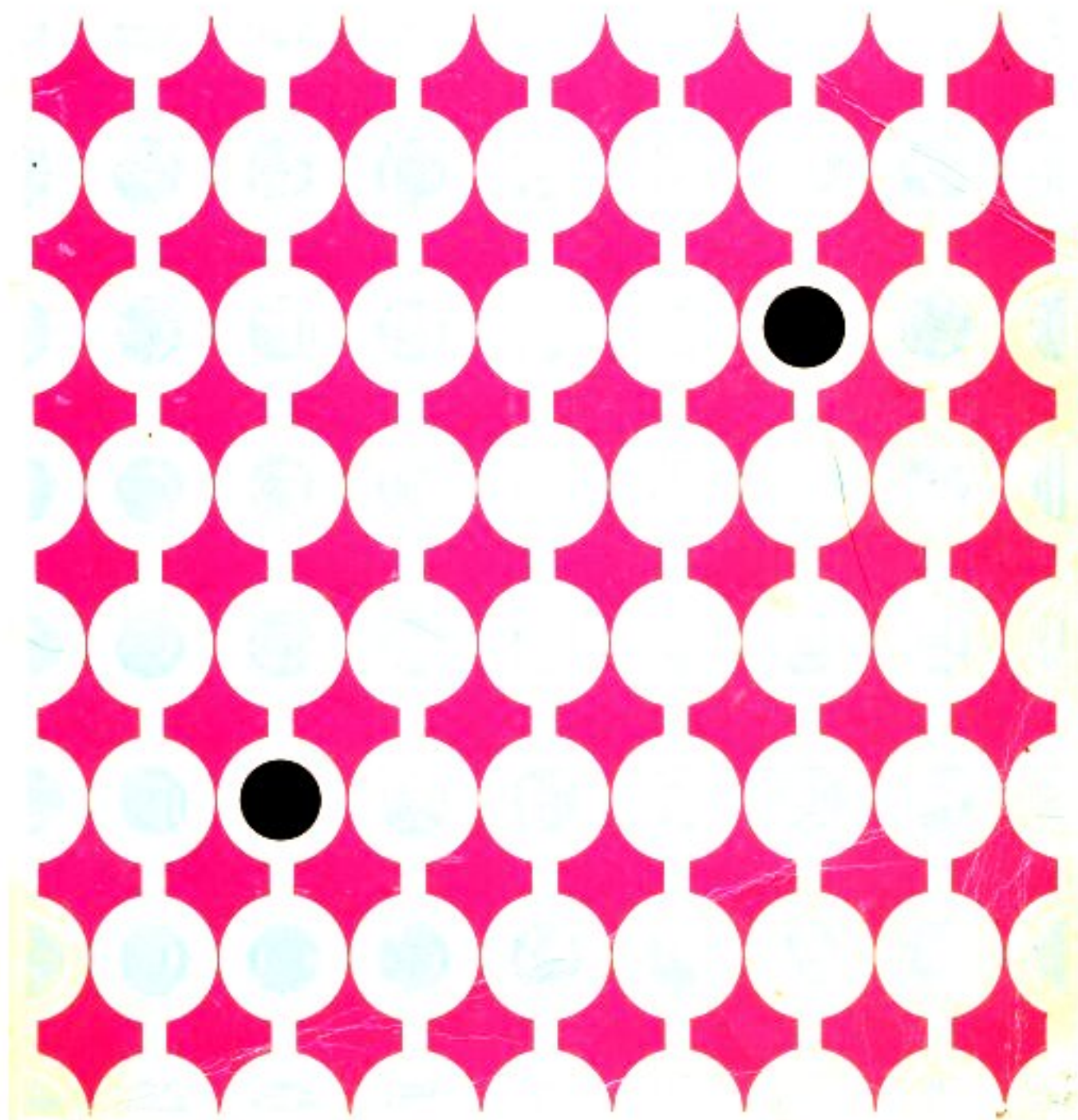


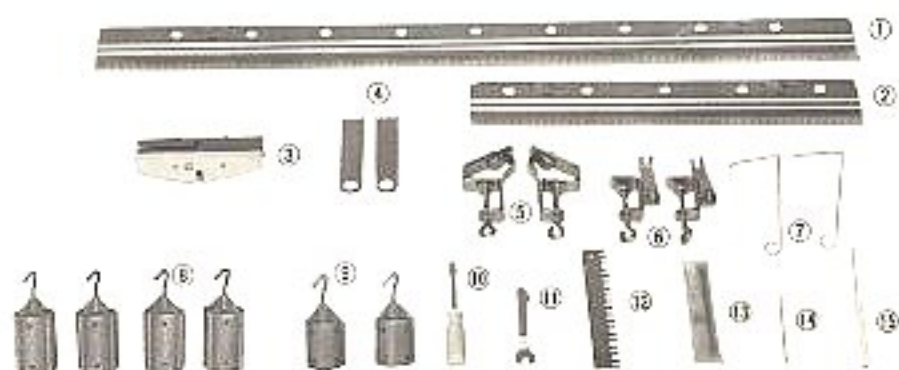
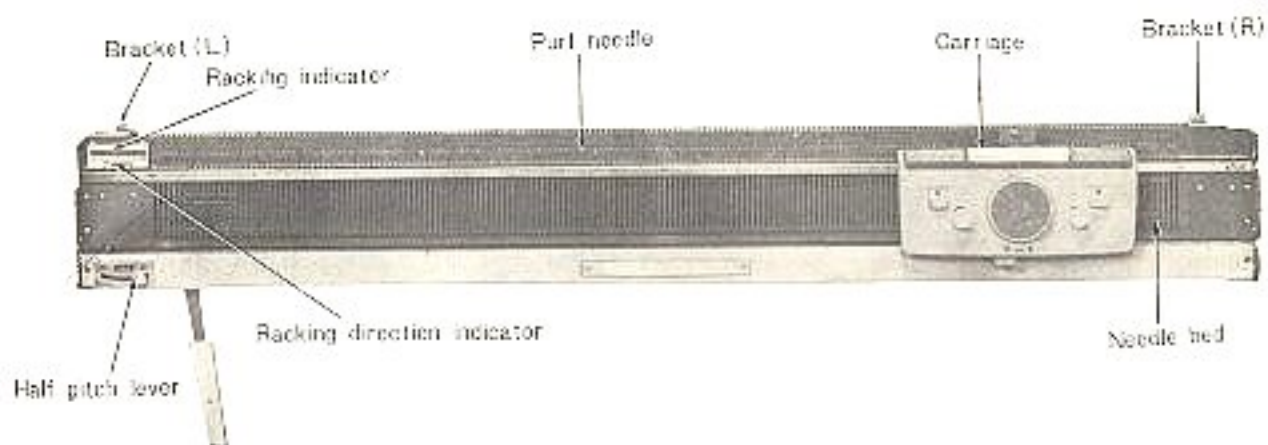
RIBBING ATTACHMENT

KR586/587

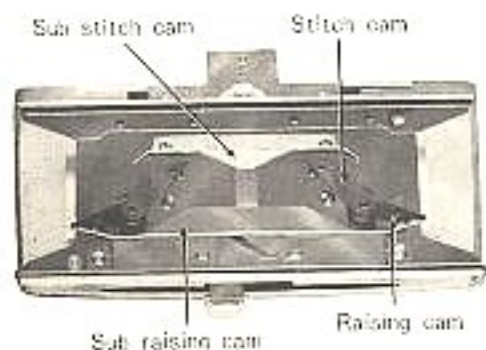
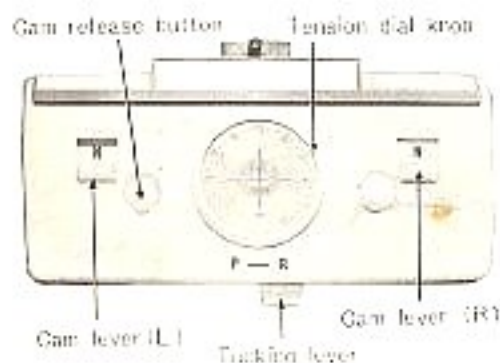


- I N D E X -

PREPARING THE KNITTING MACHINE TO FIT	
THE RIBBING ATTACHMENT	1
PREPARING THE RIBBER BEFORE FITTING ONTO KNITTER	1
FIXING THE RIBBER TO THE KNITTER	1
FIXING THE REINFORCING CLAMP TO THE RIBBER	4
NEEDLE POSITIONS IN THE NEEDLE BED	5
THE CARRIAGE	6
KNITTING GAUGE	7
RACKING INDICATOR	8
THE JOINT COUPLING ASSEMBLY	9
HOW TO USE ACCESSORIES	10
HOW TO KNIT 1 x 1 RIB	11
HOW TO KNIT 2 x 2 RIB	14
HOW TO KNIT FULL NEEDLE RIB	19
HOW TO KNIT 2 x 1 RIB	22
HOW TO KNIT CIRCULAR KNITTING	25
HOW TO KNIT "U" STYLE KNITTING	28
HOW TO KNIT ENGLISH RIB	29
HOW TO KNIT FISHERMAN'S RIB	30
HOW TO KNIT RACKING PATTERN	31
HOW TO KNIT RACKING PATTERN OF ENGLISH RIB	34
HOW TO KNIT TUCKING PATTERN OF RIB	36
HOW TO KNIT ZIGZAG PATTERN	37
INCREASING THE STITCHES	39
DECREASING THE STITCHES	40
PARTIAL KNITTING OF RIBBING	41
1. How to convert from rib to plain knitting or from plain knitting to rib	42
2. How to pick up dropped stitch	43
3. To unlock the carriage	44
4. Undoing rows or unravelling	44
5. How to remove the knitting from knitter	44
6. How to use the knitter as a single bed with the ribber attached	45
7. Binding off and finishing edge of ribbing	45
HOW TO REPLACE THE PURL NEEDLE	46
MAINTENANCE	47
IMPORTANT ADVICE	48
ADJUSTMENT OF THE RIBBER	49



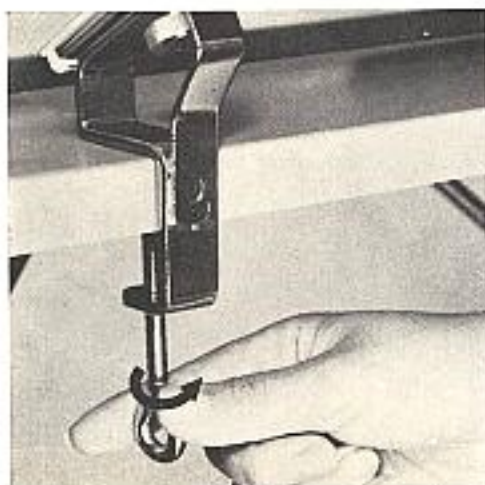
STANDARD ACCESSORIES



1.	Cast-on comb, large & Wire	1 set
2.	Cast-on comb, small & Wire	1 set
3.	Connecting arm assembly	1 pce.
4.	Claw type weight hanger	2 pcs.
5.	Table clamp	2 pcs.
6.	Reinforcing table clamp	2 pcs.
7.	Wire-loop type weight hanger	2 pcs.
8.	Large weight	4 pcs.
9.	Small weight	2 pcs.
10.	Screw driver	1 pce.
11.	Spanner	1 pce.
12.	1/1 needle pusher	1 pce.
13.	Spare needle	5 pcs.
14.	Double eyelet transfer needle	1 pce.
15.	Work hook	1 pce.

NOTE: The above list is for the KR-586 ONLY.
And the Table clamps are not included for the KR-587.

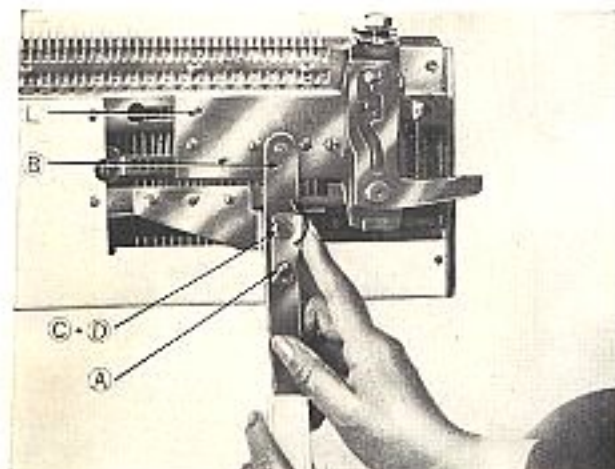
PREPARING THE KNITTING MACHINE TO FIT THE RIBBING ATTACHMENT



- 1) Secure the knitter onto a flat table. Use table clamps especially provided as an accessory for the ribber, instead of the regular knitter clamp which is used only when normal knitting work is done.

* Special Instruction for the KR-587.
Please use the Table clamps included in the accessory box for knitting machine.

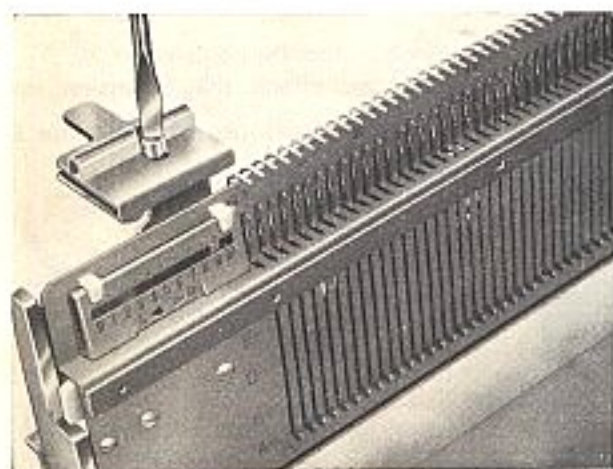
PREPARING THE RIBBER BEFORE FITTING ONTO KNITTER



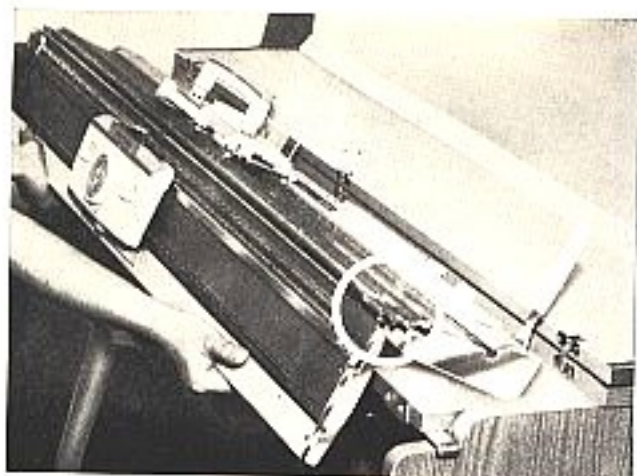
- 1) Set the racking lever on the back side of the ribber.

Open the lever lock (A), fit the pin (B) of the lever into the groove of the guide plate (L) and fit the hole (C) on the stud (D) of the guide plate and lock racking lever.

FIXING THE RIBBER TO THE KNITTER



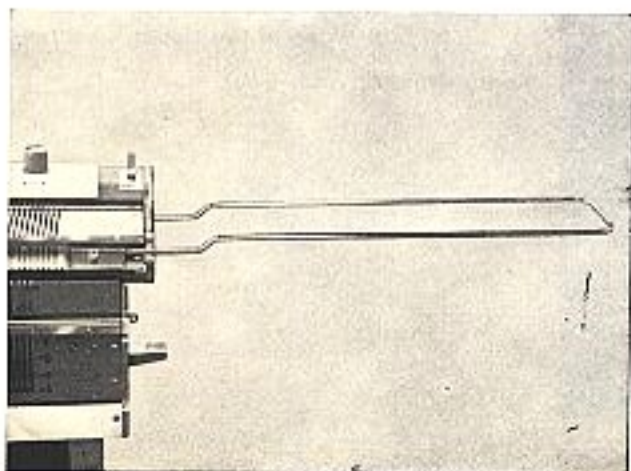
- 1) Remove the screws from the brackets on both sides of the ribber by screw driver.



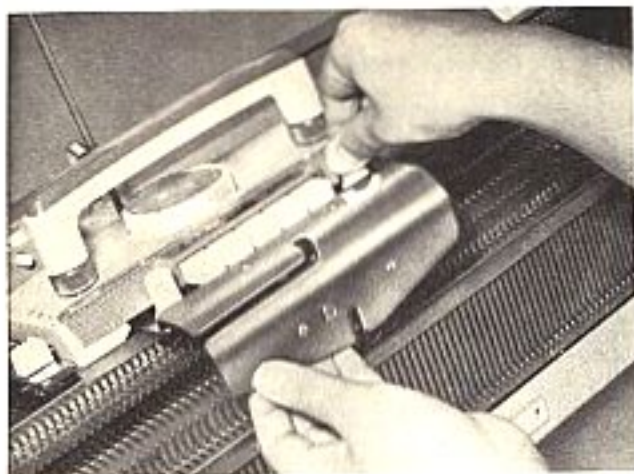
- 2) Holding the ribber with both hands so that the gates of the ribber is up and the purl needle butts are toward you. Insert the lips of the brackets beneath the knitter bed as far as they will go.



- 3) Attach both brackets to the knitter with fastening screws.



- 4) You can attach the Extension rail included accessories of knitter for L carriage if you require.



5) Fit the connecting arm on the knitter's carriage.

Loosen the thumb screws, set the connecting arm assembly onto the knitter's carriage instead of using the sinker plate assembly.



6) With both hands, push down the levers of the brackets.

The ribber will come down one step. This position is used for picking up dropped stitches.

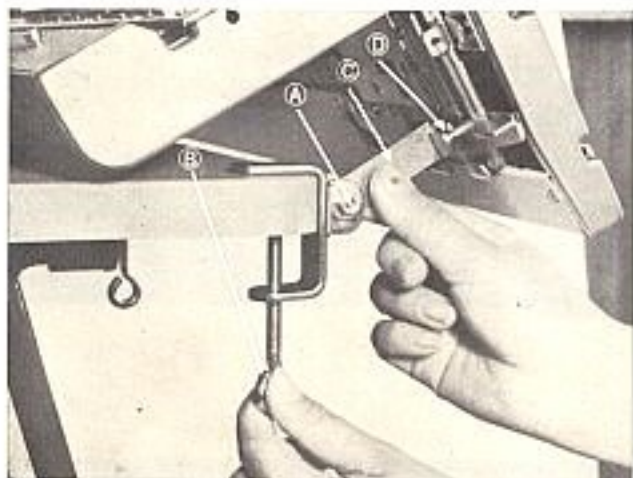
Push down the levers again and the ribber will come down one more step. At this position the ribber is at rest and single bed knitting work can be done without removing the ribber.

7) When you return to working position. Lift up the ribber with your hands as high as it will go until it stays in position without holding.

FIXING THE REINFORCING CLAMP TO THE RIBBER

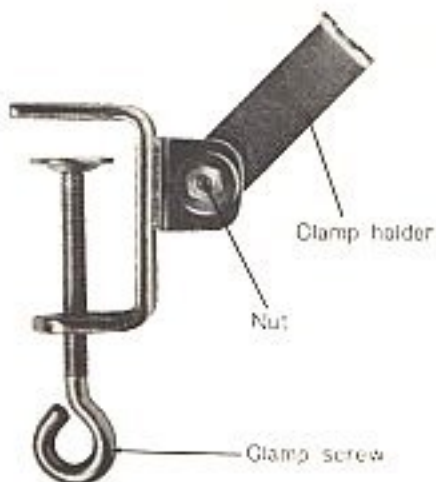
To prevent shimmying of the ribber in operation, use reinforcing clamps.

The reinforcing clamps are used to secure both ends of the ribber onto the table.

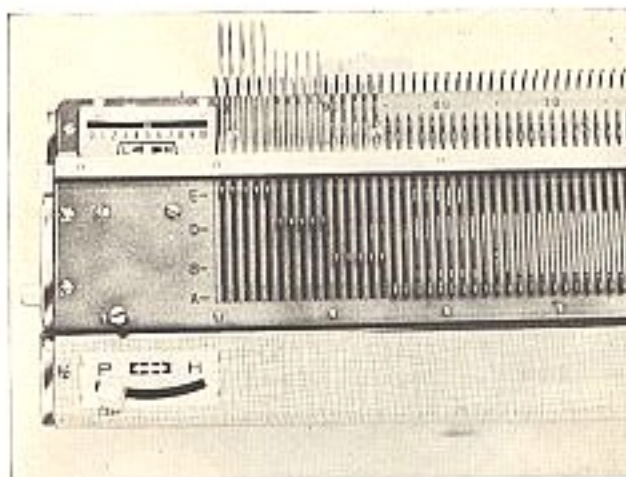


- 1) Take out the clamp from the box.
- 2) Unscrew the clamp screw.
- 3) Loosen the nut (A) of the clamp with spanner.
- 4) As shown in figure, slide the fork of the clamp holder (C) into the groove of the stud (D) on the back of the bracket and secure the clamp screw (B).

5) Tighten down the nut (A) with spanner.



NEEDLE POSITIONS IN THE NEEDLE BED



There are 4 needle positions.

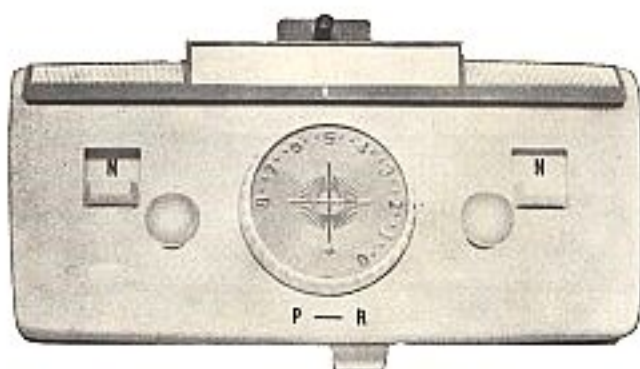
POSITION "A" – Resting or non-knitting position. (against the base of the needle-grooves).

POSITION "B" – Knitting or working position.

POSITION "D" – When the needles are brought in this position from the Position "E", they will automatically back to the Position "B" by operation of the carriage.

POSITION "E" – Holding or partial knitting position.

THE CARRIAGE



CAM-LEVERS : There are two cam levers on either side of the tension control knob. Each of these levers has two positions.

POSITION "N" ; - is used for normal ribbing and double bed knitting.

POSITION "PR" ; - is used for Fisherman's rib and other special ribbing effects when the tucking lever is on the Position "P".

TUCKING-LEVER: Tucking-Lever is underneath of the tension control knob, this lever has two positions; shown on the carriage as P and R.

POSITION "P" - is used for Fisherman's rib and other special ribbing effects.

POSITION "R" - is used for Normal rib.

RELEASE BUTTON: The Release buttons are used for releasing the Carriage (R) when it was jammed.

In lower position - This is normal position, and the needles are worked by operating the Carriage.

In upper position - If the Carriage (R) is jammed, pull up both Release Buttons so as to make the Carriage (R) freely.

KNITTING GAUGE



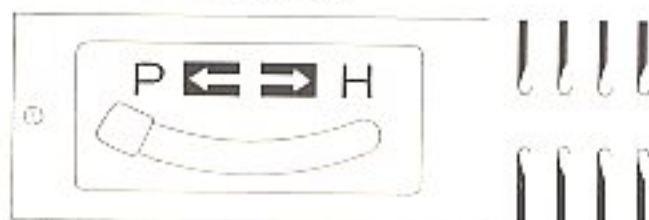
WHEN KNITTING BY MACHINE, IT IS ONE OF THE MOST IMPORTANT OPERATION TO CHOOSE THE SUITABLE TENSION FOR GOOD RESULTS.

The tension in knitting denotes the size of the stitch. The tension dial on the ribber is graduated from "0" to "8", each space between numbers being subdivided into three parts. The figure "0" denotes the tightest tension, i.e. the smallest stitch and the "8" denotes the loosest or largest stitch. The tension at which a garment is knitted depends not only on personal taste, but also on the type of garment required and the thickness of the wool.

The following chart can only be considered a rough guide for your reference.

Pattern Wool	1 x 1 rib		Full rib		2 x 2 rib		Circular	
	KH Dial No.	KR Dial No.	KH Dial No.	KR Dial No.	KH Dial No.	KR Dial No.	KH Dial No.	KR Dial No.
Fine wool	3-4	2-3	4-5	3-5	4-5	3-5	4-5	4-5
Fine 3 ply wool	4-5	3-5	5-7	5-7	5-7	5-6	5-6	5-6
Coarse 3 ply wool	5-7	5-7	6-9	7-8	6-9	6-7	6-7	6-7

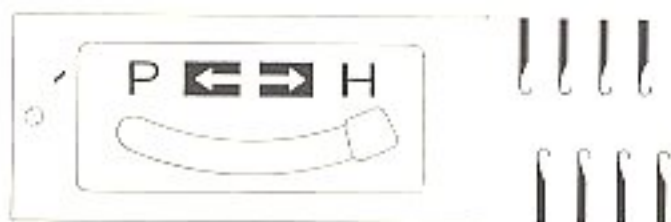
RACKING INDICATOR



1) HALF PITCH LEVER

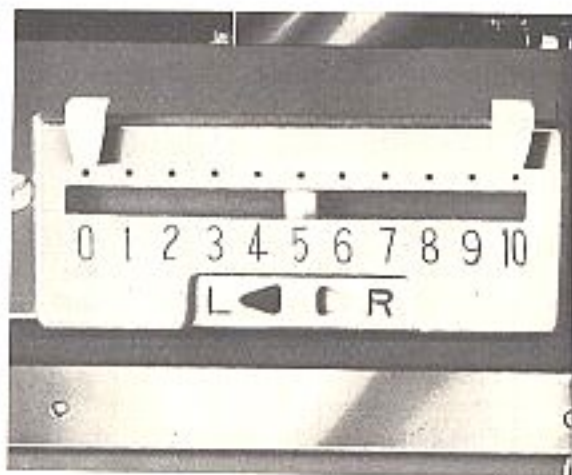
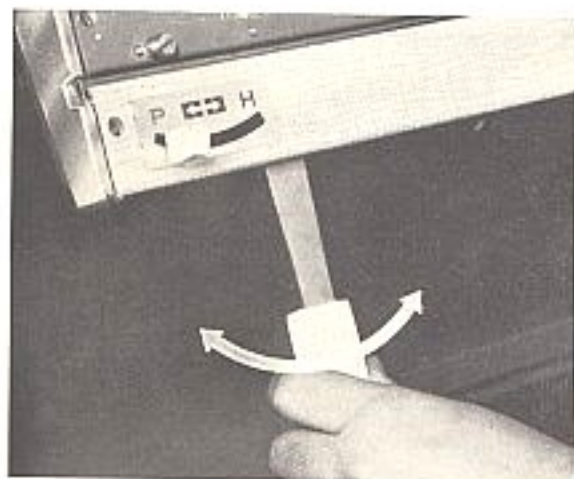
Half pitch lever is on the left side below the needle bed.

2 positions of the half pitch lever are shown on the indicating plate of the needle bed cover as P and H.



Position P: Plain needles and purl needles directly opposite to each other.

Position H: Purl needles are halfway between two plain needles.



2) RACKING LEVER

Racking lever is used for racking pattern and zigzag pattern.

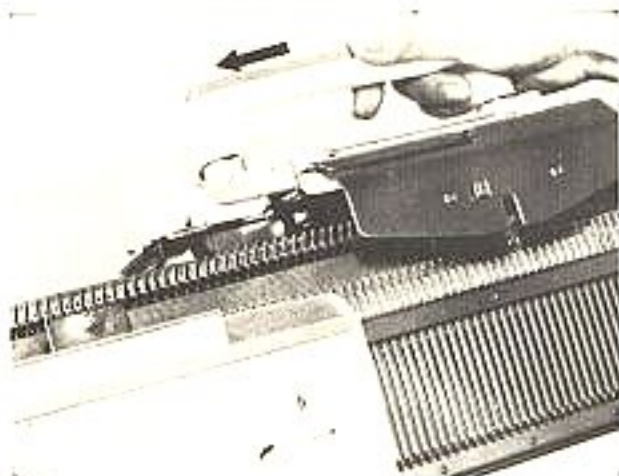
Lever in vertical position is center position. By moving lever to left or right from vertical position, ribber moves 5 pitches to left or right.

Normally, set the indicator to No.5 which shows center position.

The two moving indicators on the indicating plate for racking are used as an index of the racking range.

Arrow head indicates the direction of racking.

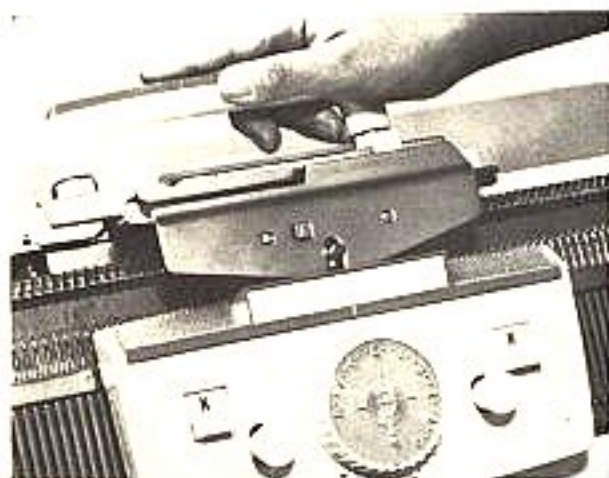
THE JOINT COUPLING ASSEMBLY



1) TO CONNECT THE CARRAIGE

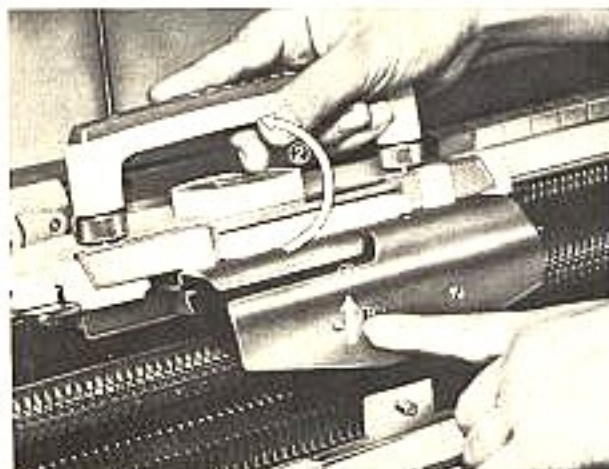
Move the KH carriage slowly to the KR carriage, (See Fig.1) until the connecting hook catches the pin of KR carriage.

Fig. 1



Then it will connect to the carriage of the ribber with the connecting arm. (Fig.2)

Fig. 2



2) TO REMOVE THE CARRAIGE

By pressing the connecting hook release button , you can remove the carriage of ribber from the carriage of knitter.

Fig.3

HOW TO USE ACCESSORIES

1) CAST-ON COMB (LARGE AND SMALL)

Cast-on comb is used for casting-on the first row of stitches which is the foundation of the knitting.

2) WEIGHTS

Number of weights to be used depends on the width of knitting and pattern.

Hang the weights on the cast-on comb so that they hold the knitting work in balance.

Standard weights chart for knitting stitch width.

No. of stitches	large weight	small weight
–50	1	–
50–100	2	–
100–150	3	2
150–200	4	2

3) WIRE-LOOP TYPE WEIGHT HANGERS

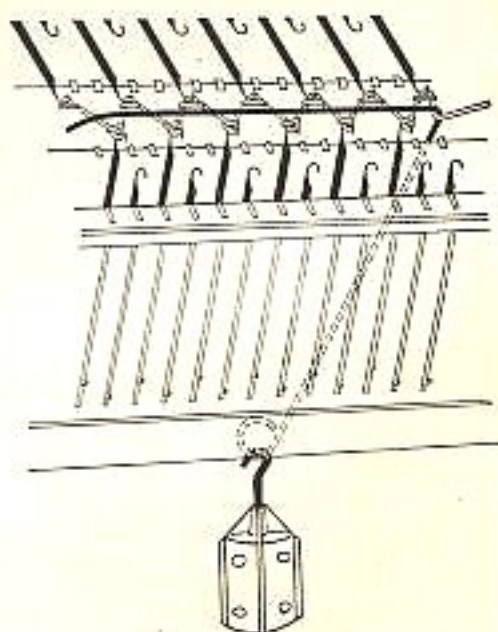
The wire loop type weight hangers are used for hanging small weights to give tension to the edges of the knitting work and also used as a small cast-on comb for casting on work of less than 20 stitches.

4) HOOK

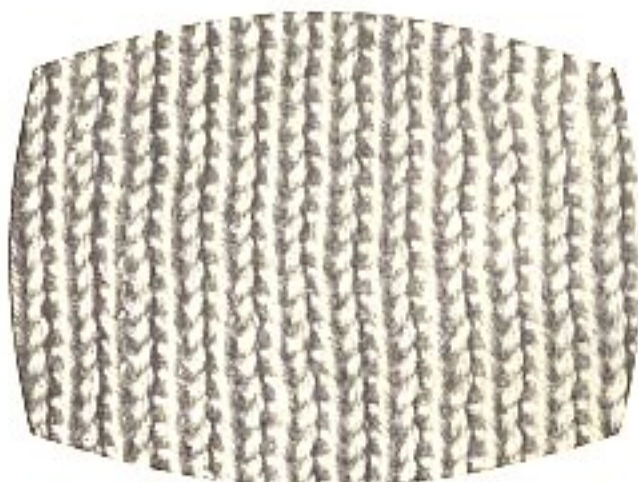
The hook is used to pick up dropped stitches.

5) CLAW-TYPE WEIGHT HANGERS

The claw-type weight hangers are used to hang the small weights to give tension to the edge of the knitting work.



HOW TO KNIT 1 x 1 RIB



1 x 1 RIB is most widely used for waist bands in sweaters, cuffs, collars, pockets and for many other decorative purposes. The rib is produced by having knit stitch over knit stitch and purl stitch over purl stitch, in vertical lines, and is soft and elastic.

I Casting on for 1 x 1 rib

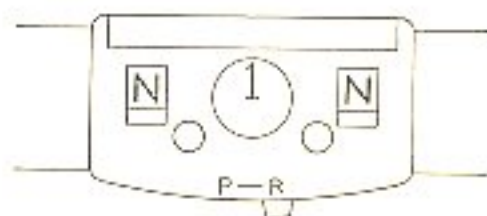
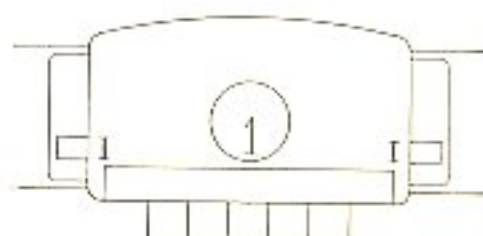
(1) Setting of carriage

Carriage (K)

Pattern selector button:	Plain knitting
Holding cam lever:	{L} 1, {R} 1
Tension dial:	1

Carriage (R)

Cam lever:	{L} N, {R} N
Tucking lever:	R
Tension dial:	1



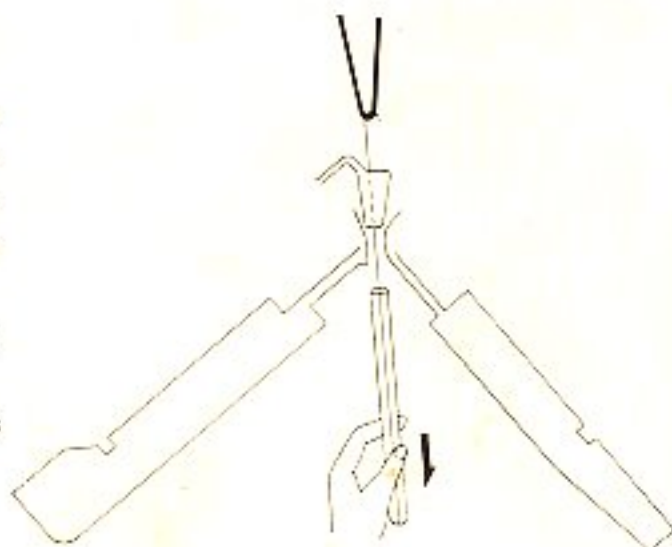
(2) Needle arrangement

- Set the half pitch lever on "P"
- By using 1/1 needle pusher, arrange the plain needles and purl needles in position "B" alternately.

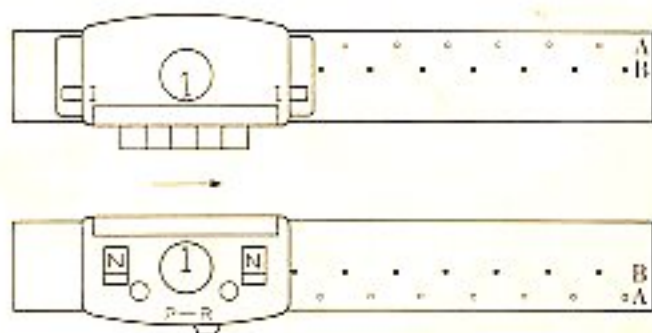
Note: Both end needles must be plain needles.



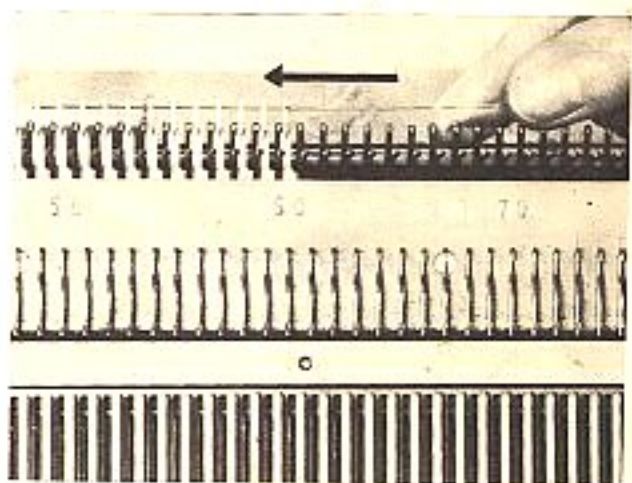
- (3) Setting of needles in normal position
- By operating the connected carriage a few times over all arranged needles, the needles on K and R needle beds are set in normal position.
 - Leave the connected carriage at left side of the needle beds.
 - The plain needles and purl needles will be set on position "B".



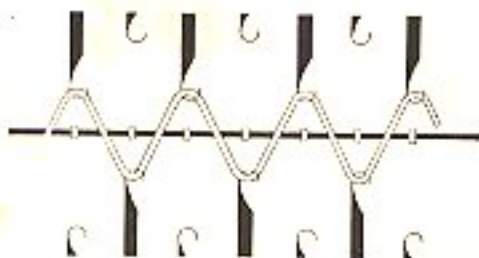
- (4) First row knitting
- Put the hook into the yarn feeder between the knitter and the ribber from underneath, hook the yarn from underneath, hook the yarn and pull it down.
 - Operate the connected carriage from left to right (The yarn will hang on plain and purl needles.)



- (5) Hang on the cast-on comb
- Pull out the wire from the cast-on comb. (Select large or small cast-on comb depending on the knitting width) Hang on the cast-on comb with the face having the protrusions facing you and the comb on top.
 - Put in the cast-on comb between the knitter and the ribber from underneath and insert the comb between the plain and purl needles in such a way that the top of the comb does not disturb or drop the yarn hanging between the needles. Pass the wire through the top of the combs with your right hand. While holding the comb with your left hand.



- c. Turn the loose end of the yarn around the cast-on comb knob to keep it out of the way and to tense the first stitch.

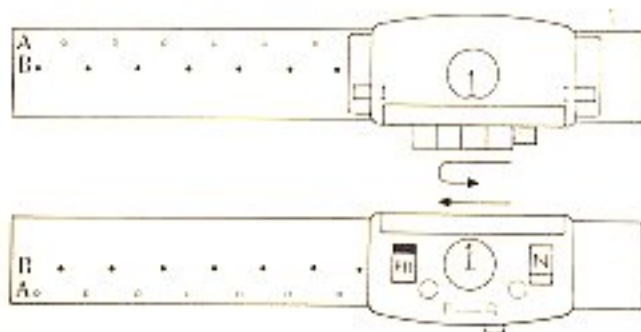


(6) Hang on weights

Hang weights as per standard weight chart (page 10) on the cast-on comb to keep balance.

(7) Perfect selvedge

Set the carriages as shown in the figure.

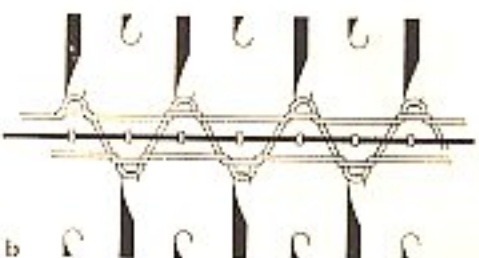


- a. Move the connected carriage from right to left.
(Only the plain needles knit the stitch.)

- b. Move the connected carriage from left to right.
(The purl needles knit the stitch.)

- c. Move the connected carriage from right to left.
(Only the plain needles knit the stitch.)

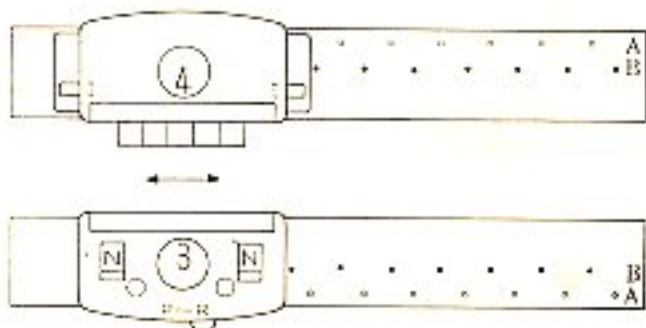
* The automatic Cast-on is now complete.



II 1 x 1 Rib knitting

- * Set the connected carriage as shown in the figure and move it back and forth.

Then, you can make easily 1 x 1 Rib.



HOW TO KNIT 2 x 2 RIB



2 x 2 Rib is 2 knit and 2 purl rib. In one row, 2 knit stitches alternate with 2 purl stitches and vertically form knit stitch over knit stitch and purl stitch over purl stitch.

I Casting on for 2 x 2 rib

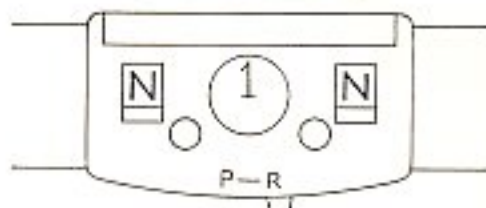
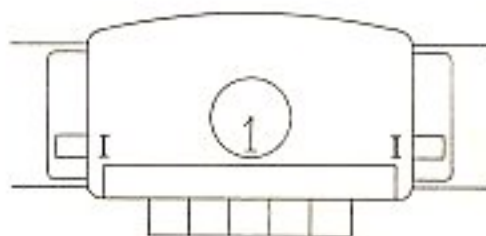
(1) Setting of carriage

Carriage (K)

Pattern selector button: Plain knitting
 Holding cam lever: (L) I, (R) I
 Tension dial: 1

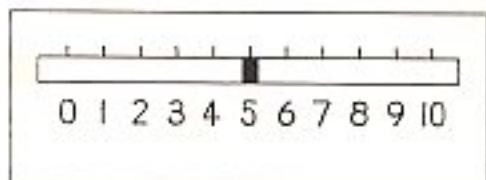
Carriage (R)

Cam lever: (L) N, (R) N
 Tucking lever: R
 Tension dial: 1



(2) Needle arrangement

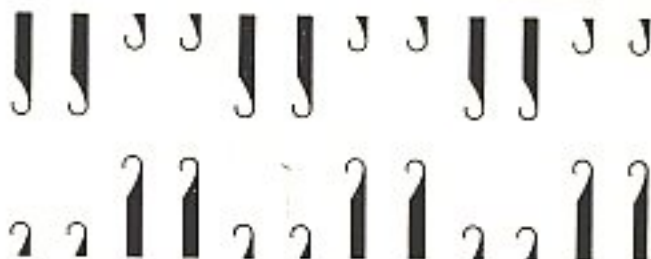
a. Set the racking indicator on No. 5.



b. Set the half pitch lever on "P".



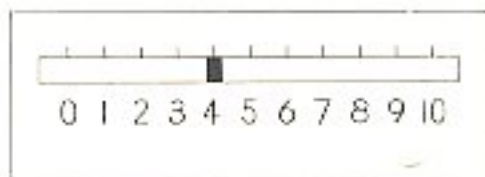
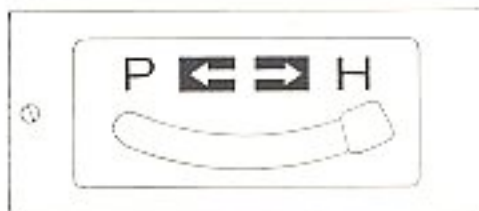
c. Arrange every other 2 plain needles in position "B" and every other 2 purl needles in position "B" as shown in right figure, manually.



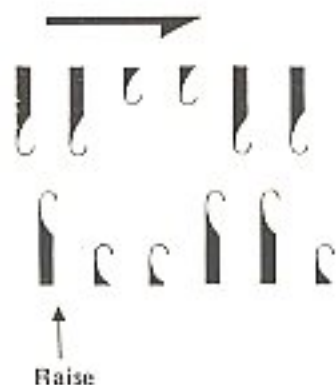
Note: Both end needles must be plain needles.

d. Set the half pitch lever on position "H"

e. Set the racking indicator on No. 4.

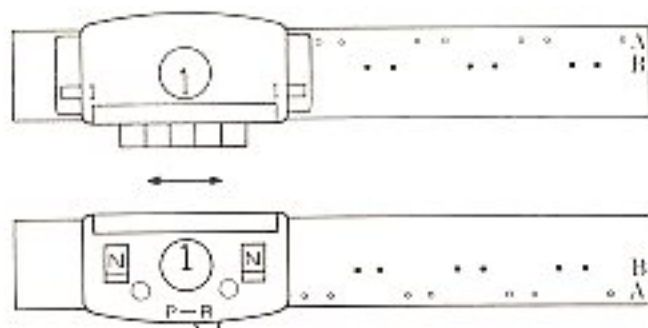


f. Raise a purl needle in the left side to position "B".



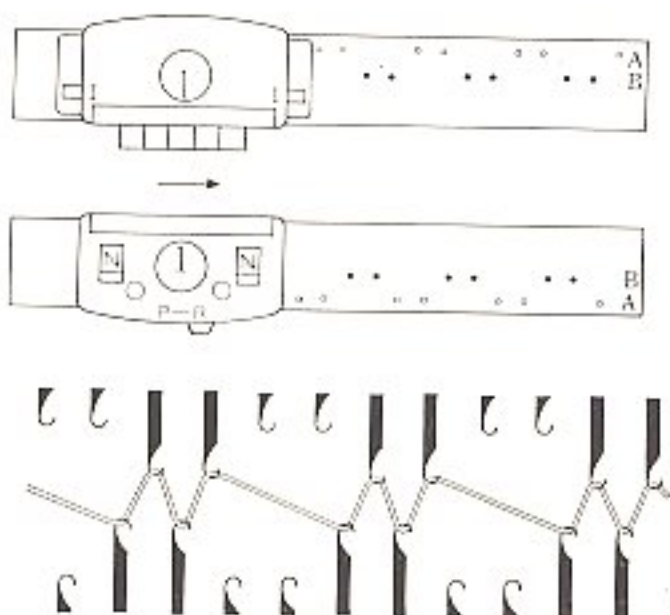
(3) Setting of needles in normal position

- By operating the connected carriage a few times over all arranged needles, the needles on K and R needle beds are set in normal position.
- Leave the connected carriage at left side of the needle beds.
- The plain needles and purl needles will be set on position "B"



(4) First row knitting

- Put the hook into the yarn feeder between the knitter and the ribber from underneath, hook the yarn and pull it down.
- Move the connected carriage from left to right. (The yarn will hang on plain and purl needles.)



(5) Hang on the cast-on comb

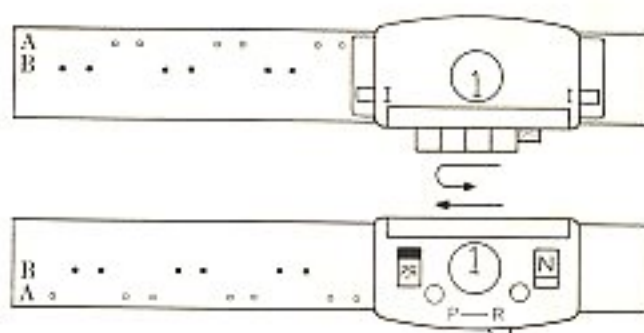
- Pull out the wire from the cast-on comb. (Select large or small cast-on comb depending on the knitting width)
Hang on the cast-on comb with the face having the protrusions facing you and the comb on top.
- Put in the cast-on comb without wire, between the knitter and the ribber from underneath and insert the comb between the plain and purl needles in such a way that the top of the comb does not disturb or drop the yarn of zigzag which is hanging between the needles. Pass the wire through the top of the combs with your right hand.
- Turn the loose end of the yarn around the cast-on comb knob to keep it out of the way and to tense the first stitch.



(6) Hang on weights.

Hang weights as per standard weight chart (page 10) on the cast-on comb to keep balance.

(7) Perfect selvedge

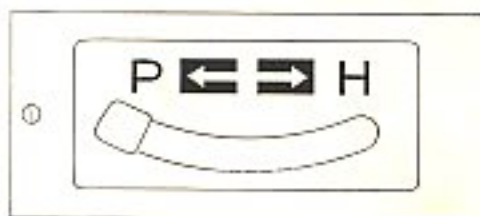


Set the carriages as shown in the figure.

- Move the connected carriage from right to left. (Only the plain needles knit the stitch.)
- Move the connected carriage from left to right. (The purl needles knit the stitch.)
- Move the connected carriage from right to left. (Only the plain needles knit the stitch.)

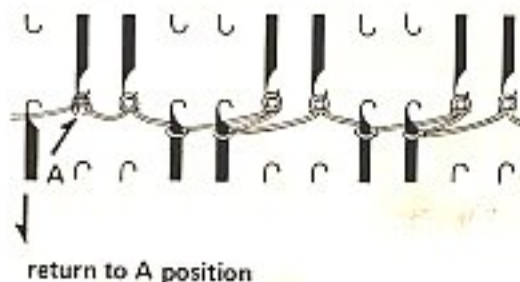
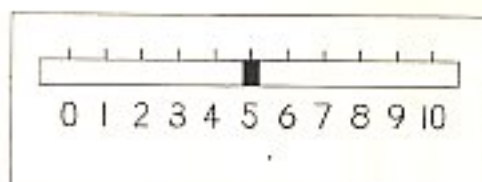
(8) Needle arrangement to change from selvedge the 2 x 2 rib knitting.

- Set the half pitch lever to position "P".

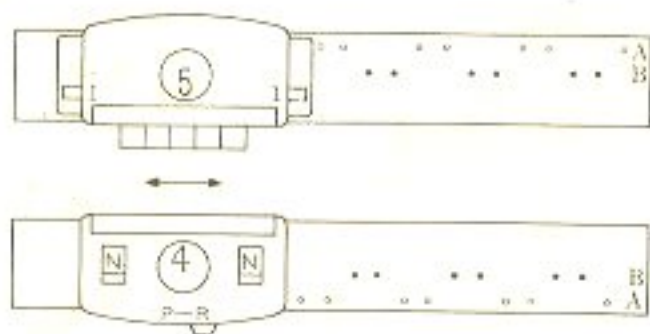


- Set the racking indicator on No. 5.

- Transfer the stitch of left end purl needle to the left end plain needle which has one stitch, and return the empty purl needle to position "A".

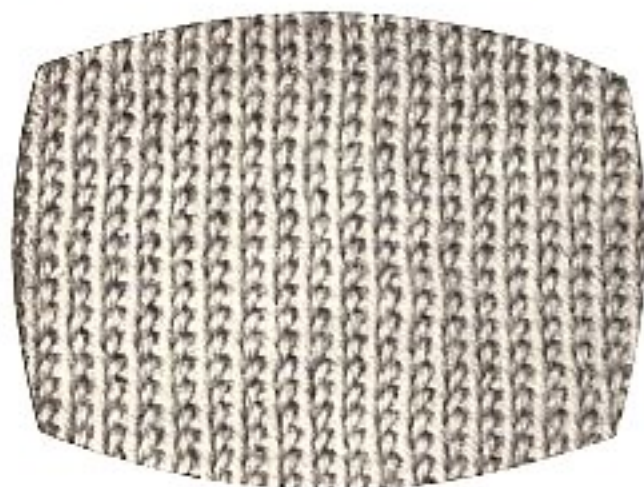


II 2 x 2 Rib knitting



- * Set the connected carriage as shown in the figure, and move it back and forth. Then, you can make easily 2 x 2 Rib.

HOW TO KNIT FULL NEEDLE RIB



1 Casting on for full needle rib

{1} Setting of carriage

Carriage (K)

Pattern selector button:	Plain Knitting
Holding cam lever:	(L) 1, (R) 1
Tension dial:	1

Carriage (R)

Cam lever:	(L) N, (R) N
Tucking lever:	R
Tension dial:	1

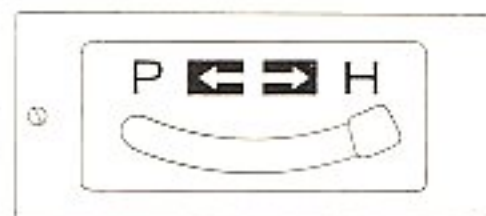
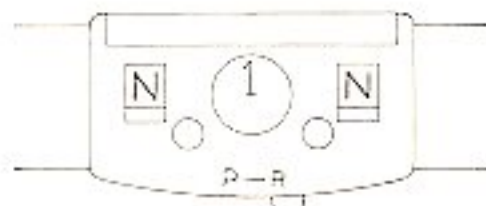
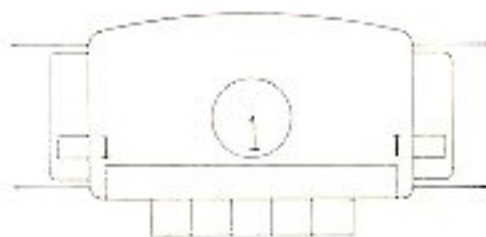
{2} Needle arrangement

- Set the half pitch lever on "H".
- By using the back side of 1/1 needle pusher, arrange all plain needles and all purl needles in position "B".

Note: Both end needles must be plain needles.

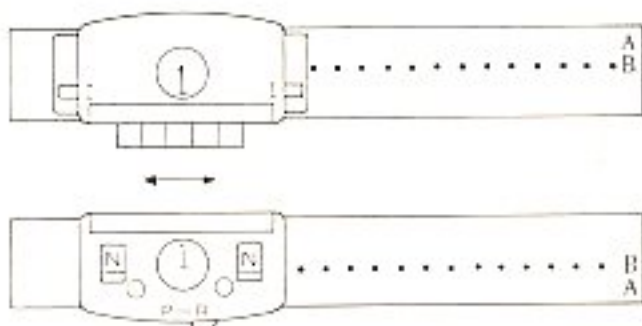
Knitting system of full needle rib is the same as for 1 x 1 rib. Difference is the needle arrangement only. In 1 x 1 rib, every other needle are used but in full needles rib, all needles are used.

The rib is used for thin yarn (ex.2ply)



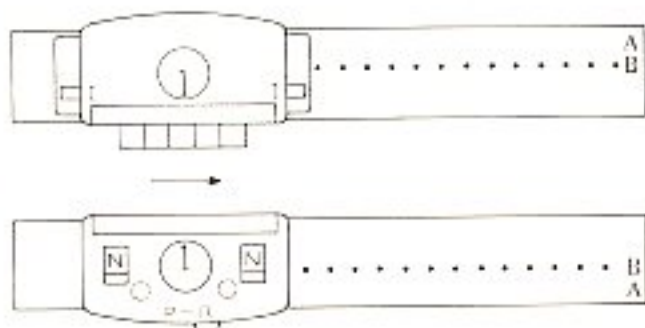
(3) Setting of needles in normal position.

- By operating the connected carriage a few times across the needles of both beds, the needles of K and R needle beds are set in normal position.
- Leave the connected carriage at left side of the needle beds.
- The plain needles and purl needles will be set on position "B".



(4) First row knitting

- Put the hook into the yarn feeder between the knitter and the ribber from underneath, hook the yarn and pull it down.
- Move the connected carriage from left to right. (The yarn will hang on plain and purl needles.)



(5) Hang on the cast-on comb

- Pull out the wire from the cast-on comb. (Select large or small cast-on comb depending on the knitting width). Hang on the cast-on comb with the face having the protrusions facing you and the comb on top.
- Put in the cast-on comb between the knitter and the ribber from underneath and insert the comb between the plain and purl needles in such a way that the top of the comb does not disturb or drop the yarn hanging between the needles. Pass the wire through the top of the combs with your right hand while holding the comb with your left hand.
- Turn the loose end of the yarn around the cast-on comb knob to keep it out of the way and to tense the first stitch.



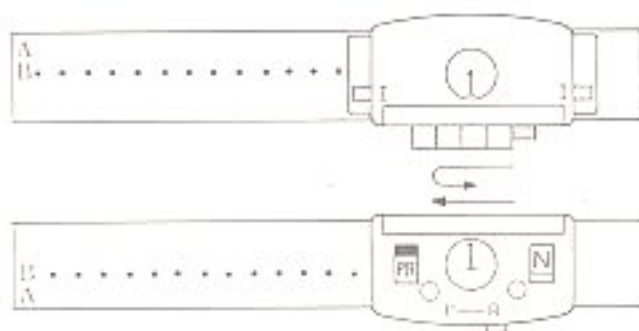
(6) Hang on weights.

Hang weights as per standard weight chart (page 10) on the cast-on comb to keep balance.

(7) Perfect selvedge

Set the carriages shown in the figure.

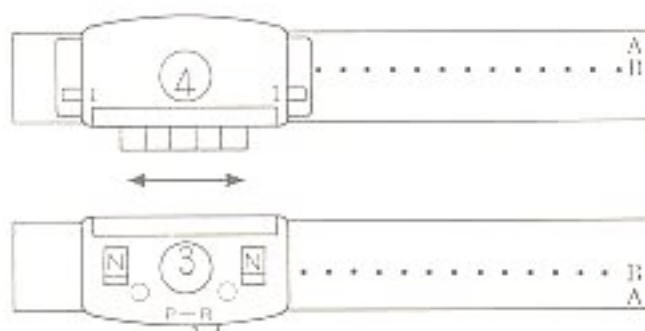
- Move the connected carriage from right to left. (Only the plain needles knit the stitch.)
- Move the connected carriage from left to right. (The purl needles knit the stitch.)
- Move the connected carriage from right to left. (Only the plain needles knit the stitch.)



II Full needle Rib knitting

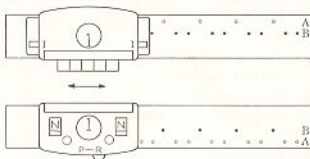
- * Set the connected carriage as shown in the figure, and move it back and forth.

Then, you can make easily Full needle Rib.



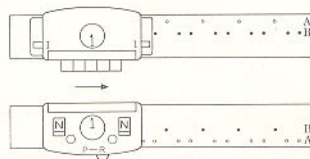
(3) Setting of needles in normal position

- a. By operating the connected carriage a few times across the needles of both beds, the needles on K and R needle beds are set in normal position.
- b. Leave the connected carriage at left side of the needle beds.
- c. The plain needles and purl needles will be set on position "B".



(4) First row knitting

- a. Put the hook into the yarn feeder between the knitter and the ribber from underneath, hook the yarn and pull it down.

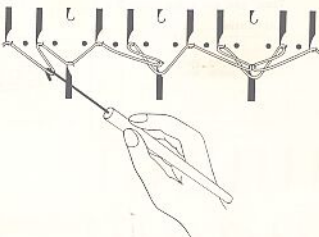


- b. Move the connected carriage from left to right (The yarn will hang on plain and purl needles.)
- c. By using the hook, hang the loops between 2 plain needles on the purl needles, as shown in right figure.



(5) Hang on the cast-on comb

- a. Pull out the wire from the cast-on comb. (Select large or small cast-on comb depending on the knitting width) Hang on the cast-on comb with the face having the protrusions facing you and the comb on top.



- b. Put in the cast-on comb between the knitter and the ribber from underneath and insert the comb between the plain and purl needles in such a way that the top of the comb does not disturb or drop the yarn hanging between the needles.

Pass the wire through the top of the combs with your right hand while holding the comb with your left hand.

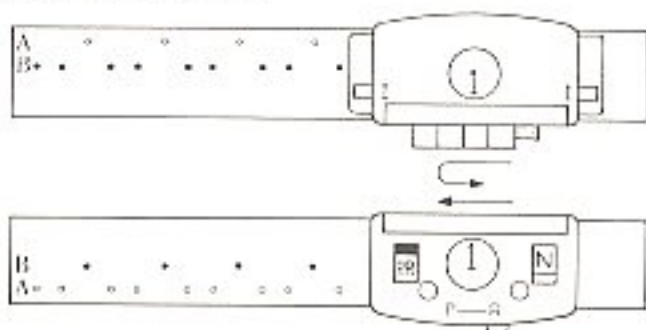
- c. Turn the loose end of the yarn around the cast-on comb knob to keep it out of the way and to tense the first stitch.

(6) Hang on weights.

Hang weights as per standard weight chart (page 10) on the cast-on comb to keep balance.

(7) Perfect selvedge

Set the carriages as shown in the figure.

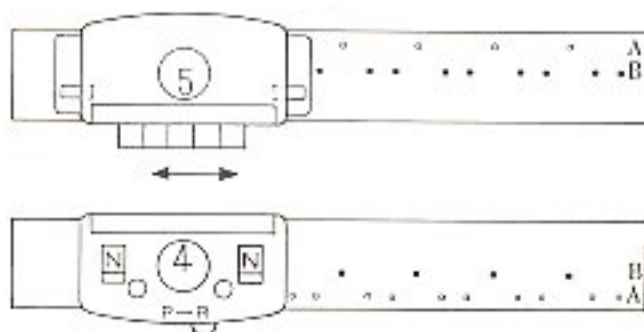


- Move the connected carriage from right to left. (Only the plain needles knit the stitch.)
- Move the connected carriage from left to right. (The purl needles knit the stitch.)
- Move the connected carriage from right to left. (Only the plain needles knit the stitch.)

II 2 x 1 Rib knitting

- * Set the connected carriage as shown in the figure and move it back and forth.

Then, you can make easily 2 x 1 Rib knitting.



HOW TO KNIT CIRCULAR KNITTING



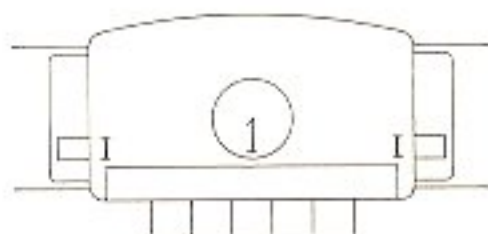
Circular knitting is made up of only plain knit stitches, and is a jointless tube. Size of tube depends on the number of needles.

I Casting on for circular knitting

(1) Setting of carriage

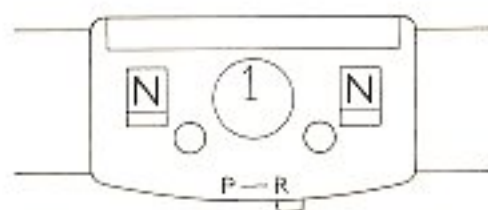
Carriage (K)

Pattern selector button: Plain knitting
 Holding cam lever: (L) I, (R) I
 Tension dial: 1



Carriage (R)

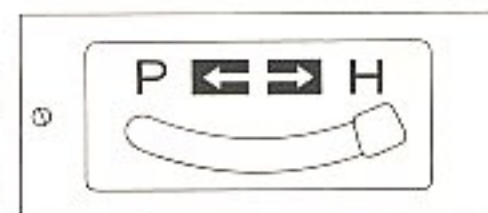
Cam lever: (L) N, (R) N
 Tucking lever: R
 Tension dial: 1



(2) Needle arrangement

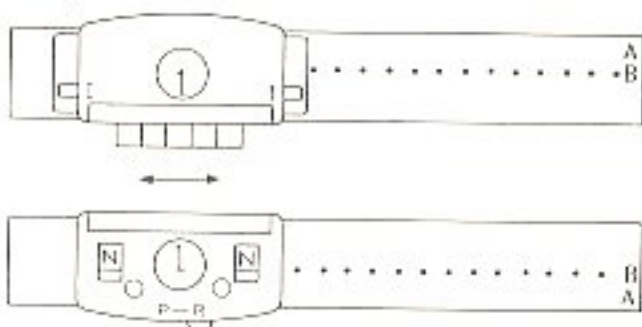
- Set the half pitch lever on "H".
- By using back of 1/1 needle pusher, arrange the plain needles and purl needles in position "B" as shown in right figure.

Note: Number of needles on both beds must be same.



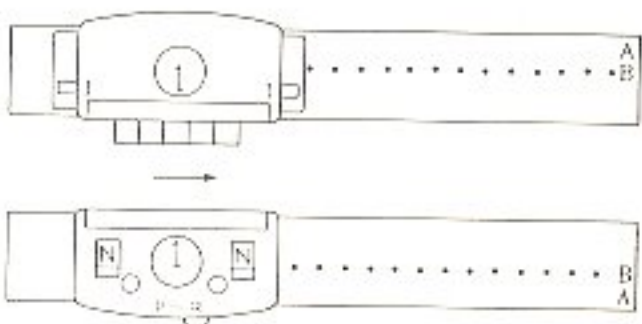
(3) Setting of needles in normal position

- a. By operating the connected carriage a few times across the needles of the both beds, the needles on K and R needle beds are set in normal position.
- b. Leave the connected carriage at left side of the needle beds.
- c. The plain needles and purl needles will be set on position "B".



(4) First row knitting

- a. Put the hook into the yarn feeder between the knitter and the ribber from underneath, hook the Cast-on thread and pull it down.
- b. Move the connected carriage from left to right. (The yarn will hang on plain and purl needles.)



(5) Hang on the cast-on comb

- a. Pull out the wire from the cast-on comb. (Select large or small cast-on comb depending on the knitting width)
Hang on the cast-on comb with the face having the protrusions facing you and the comb on top.
- b. Put in the cast-on comb between the knitter and the ribber from underneath and insert the comb between the plain and purl needles in such a way that the top of the comb does not disturb or drop the Cast-on thread hanging between the needles.
Pass the wire through the top of the combs with your right hand, while holding the comb with your left hand.
- c. Turn the loose end of the Cast-on thread around the cast-on comb knob to keep it out of the way and to tense the first stitch.

(6) Hang on weights.

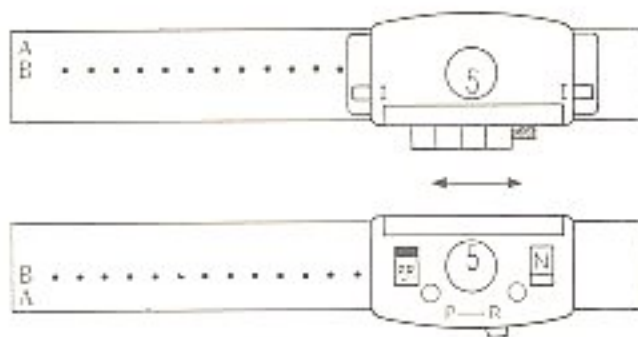
Hang weights as per standard weight chart (page 10) on the cast-on comb to keep balance.

(7) Change the thread of yarn feeder into the original yarn.

II Circular knitting

- * Set the connected carriage as shown in the figure, and move it back and forth.

Then, you can make easily Circular Knitting.

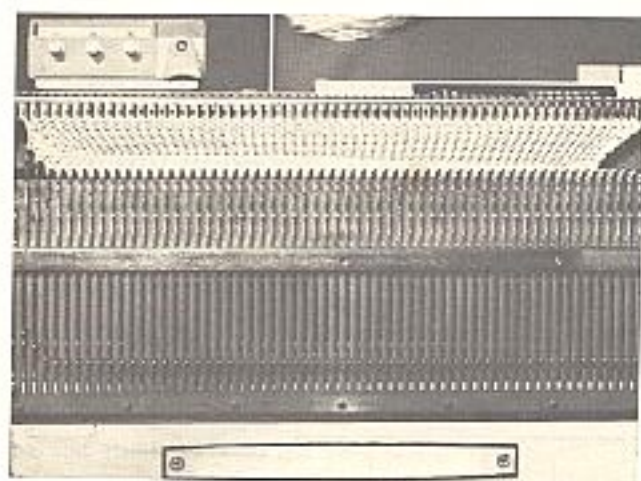


III Finish

- * After taking the Cast-on comb off, pull out the Cast-on thread. So, you can get the Circular knitting.



HOW TO KNIT "U" STYLE KNITTING



This garment is made of all plain knitting stitches. The knitter side and the ribber side are connected at only one side. This knitting is used for work of more than 200 stitches width. In the following, the garment is knitted with closed left side and open right side.

I Casting on for "U" style knitting.

This is the same as for circular knitting.

II "U" style knitting.

- (1) Set the connected carriage as shown in the Fig. 1, and knit 2 rows.

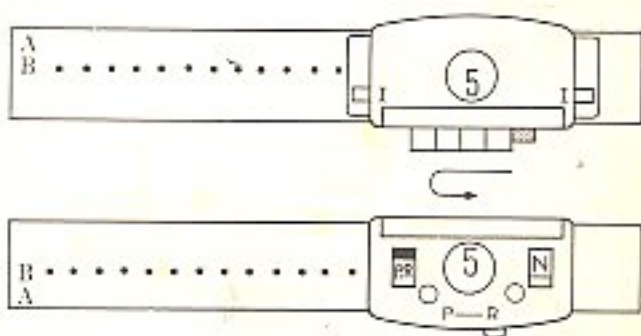


Fig. 1

- (2) Reset the connected carriage as shown in the Fig. 2, and knit 2 rows.

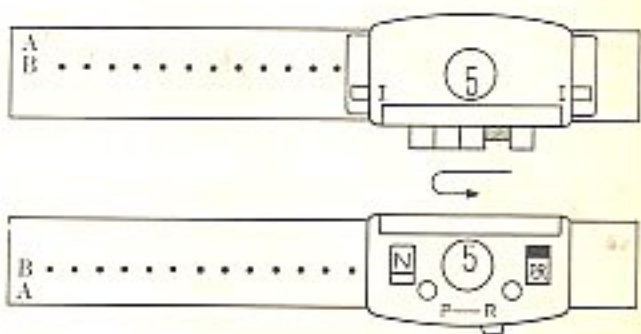
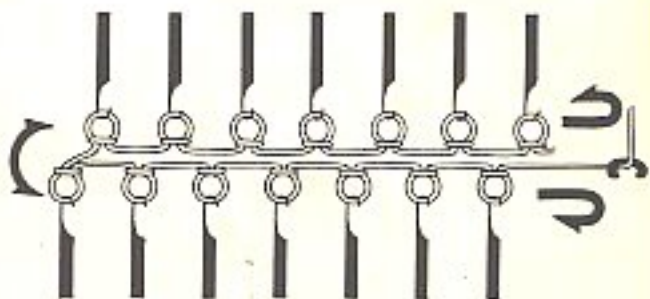


Fig. 2

- (3) Repeat steps (1) to (2), then you can make easily "U" Style Knitting.



HOW TO KNIT ENGLISH RIB



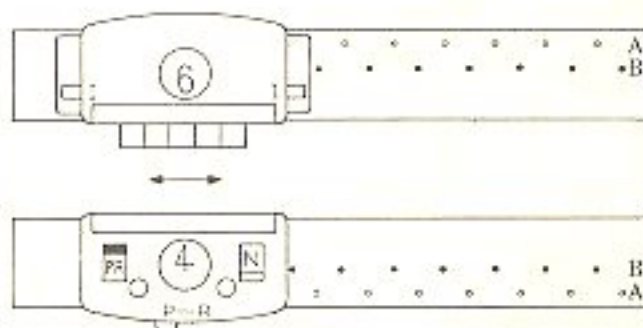
English rib is a variety of 1 X 1 Rib and knitter side is plain stitch but ribber side is tuck stitch.

I Casting on for English rib.

This is the same as for 1 X 1 rib

II English rib knitting

Set the connected carriage as shown in the figure, and move it back and forth. Then, you can make easily English Rib.



HOW TO KNIT FISHERMAN'S RIB

Fisherman's rib is made of tucking stitches on both sides of garment.

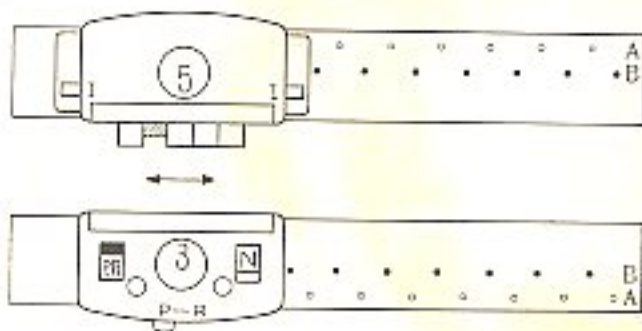


I Casting on for fisherman's rib

This is the same as for 1 X 1 rib.

II Fisherman's rib knitting

- * Set the connected carriage as shown in the figure, and move it back and forth. Then, you can make easily Fisherman's Rib.



HOW TO KNIT RACKING PATTERN



1 Casting on for racking pattern knitting

(1) Setting of carriage

Carriage (K)

Pattern selector button: Plain Knitting

Holding cam lever: (L), (R)

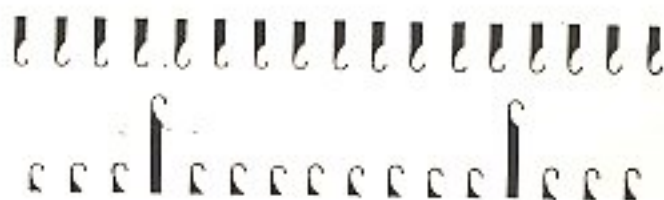
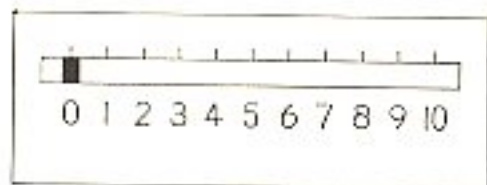
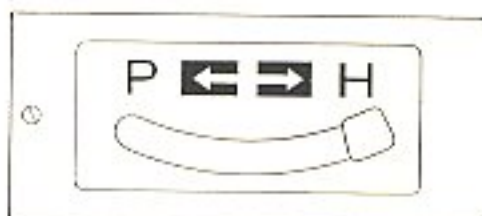
Tension dial: 5

Carriage (R)

Cam lever: (L)N, (R)N

Tucking lever: R

Tension dial: 5

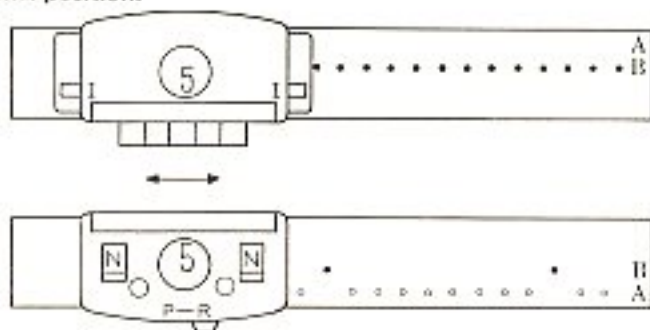


(2) Needle arrangement

- Set the half pitch lever on "H".
- Set the racking indicator on "0".
- Raise all plain needles of knitting width to position "B".
- Raise every eighth purl needle as shown in above figure to position "B". By changing the needle arrangement in the purl side, you can get many variation of racking patterns.

(3) Setting of needles in normal position

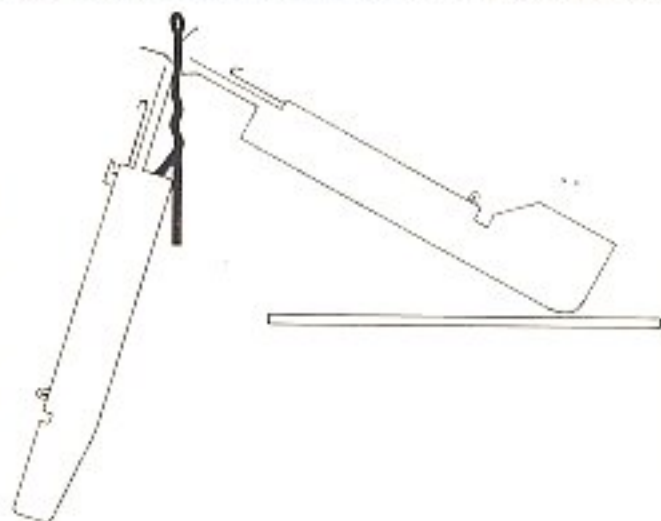
- By operating the connected carriage a few times across the needles of both beds, the needles on K and R needle beds are set in normal position.
- Leave the connected carriage at left side of the needle beds.
- The plain needles and purl needles will be set on position "B".
- Make sure that all latches of the needle are open.



(4) Thread in the yarn feeder.

(5) Hang on the cast-on comb.

- Hold the cast-on comb (with wire) with the face having the protrusions facing you and the comb on top.
- Put in the cast-on comb between the knitter and the ribber from underneath and hang on the back of the ribber in such a way that the comb and the gate of the knitter are directly opposite to each other.



(6) First row knitting

- Move the connected carriage from left to right (The yarn will hang on plain and purl needles.)

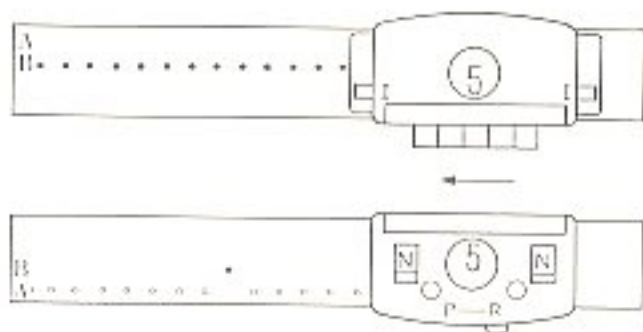


- Unhang the cast-on comb from the back of the ribber.
- Cast-on comb will come down and hang on the loops between the plain and purl needles.

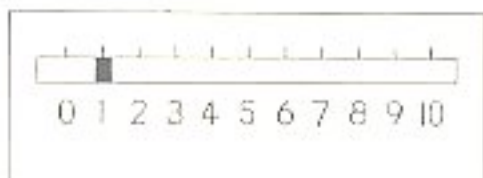
(7) Hang the weights. See chart on page (10).

II Knitting of racking pattern

- a. Move the connected carriage from right to left. (The plain and purl needles knit the stitch.)



- b. Set the racking indicator on No.1.

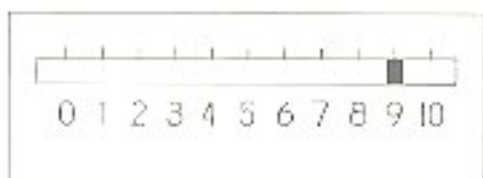


- c. Move the connected carriage from left to right, and set the racking indicator on No.2.



- d. Repeat step (a) to step (c) until racking indicator indicates No.10.

- e. Move the connected carriage from right to left, and set the racking indicator on No.9. (return to No.9)



- f. Repeat step (e) until the racking indicator indicates No.0.

- g. The pattern knitted from step (a) to step (f) is one cycle.

HOW TO KNIT RACKING PATTERN OF ENGLISH RIB

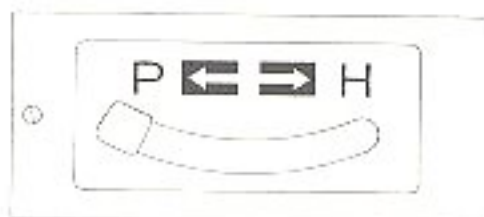
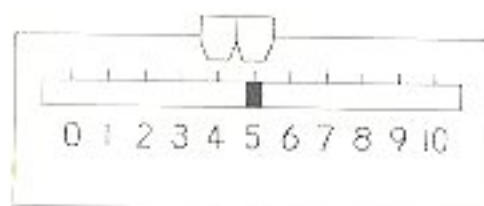


1 Casting on for racking pattern of English Rib.

(1) Needle arrangement

- Set the racking lever on No.5.
- Set the cursors on the racking indicator to No.4, and No.5.
- Set the half pitch lever on "P".
- By using 1 X 1 needle pusher, arrange the plain needles and purl needles in position "B" alternately.

Note: Both end needles must be plain needles.



(2) Setting of needles in normal position

This is the same as for 1 X 1 rib.

(3) First row knitting

This is same as for 1 X 1 rib.

(4) Hang the cast-on comb

This is the same as for 1 X 1 rib.

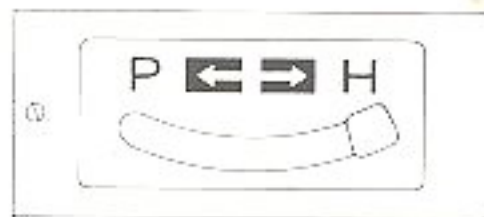
(5) Hang on weights

This is the same as for 1 X 1 rib.

(6) Perfect selvage:

This is the same as for 1 X 1 rib.

(7) Set the half pitch lever to position "H".



II Knitting of racking pattern of English rib.

(1) Setting of carriage is same as for English rib.

(2) Knitting

a. Move the connected carriage from left to right (Only plain needles knit the stitch and the two threads hook on the purl needles)

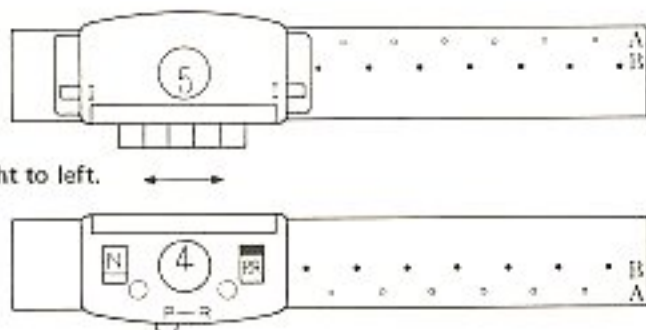
b. Set the racking indicator on No.4.

c. Knit 2 rows

d. Set the racking indicator on No.5.

e. Move the connected carriage from right to left.

f. Repeat from step (a) to step (e).



HOW TO KNIT TUCKING PATTERN OF RIB



Tucking pattern of rib is a variation of 1 X 1 rib or full needle rib.

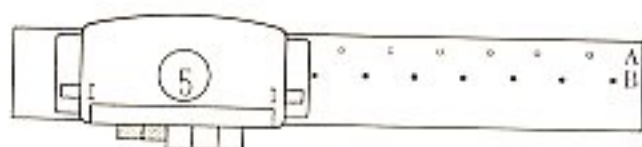
In the following description, tucking pattern of 1 X 1 rib is made.

- I Casting on for tucking pattern of 1 X 1 rib

This is the same as for 1 X 1 rib

- II Knitting of tucking pattern of 1 X 1 rib.

- (1) Set the carriages as shown in the figure.



- (2) Knitting

- a. Press down the needle selector buttons **1** and **5**, and set The Set-lever. (Reverse lever in position "A" and Slide meter on position 1)



When you select the needles, both end needles on knitter must be in position "E".

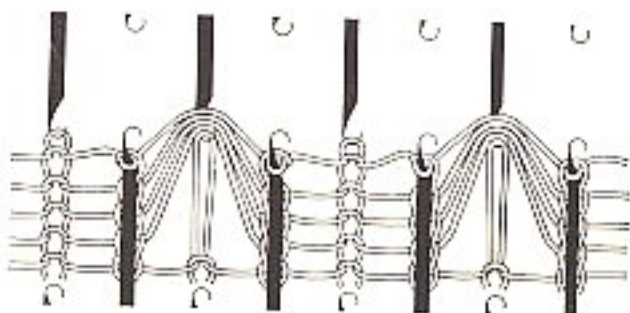
- b. Move the connected carriage from left to right.

- c. Select the same needles as in step (a).

- d. Move the connected carriage from right to left.

- e. Repeat from step (a) to step (d), 2 times.

- f. Set the Slide meter on position 3, and set The Set-lever.



- g. Move the connected carriage from left to right

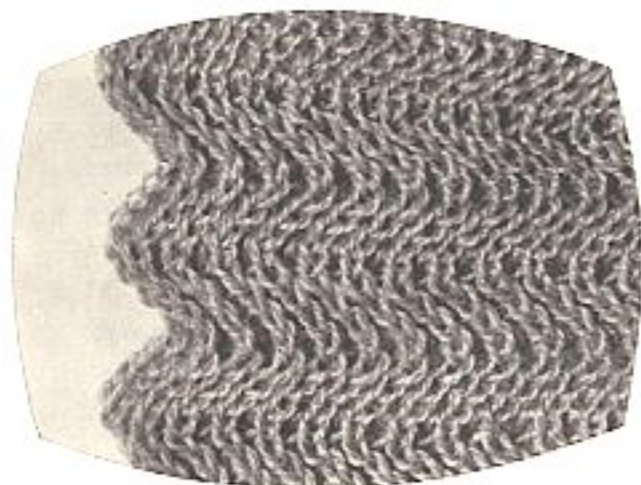
- h. Select the same needles as in step (f).

- i. Move the connected carriage from right to left.

- j. Repeat from step (f) to step (i), 2 times.

- k. The pattern knitted from step (a) to step (j) is one cycle.

HOW TO KNIT ZIGZAG PATTERN

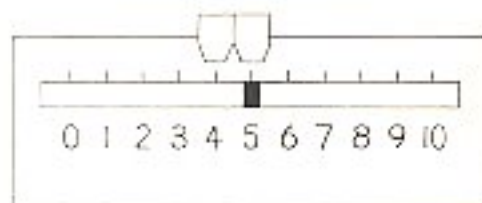
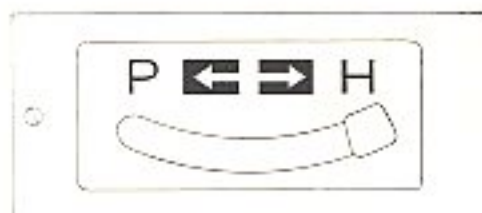


Zigzag pattern is racking pattern of fisherman's rib. In following description, two ply wool is used to make the racking pattern of all needles using fisherman's rib.

I Casting on for Zigzag pattern

This is the same as for full needle rib. Set the half pitch lever to position "H".

Set the racking indicator on No.5. Place the cursors on the racking indicator on No.4 and No.5.

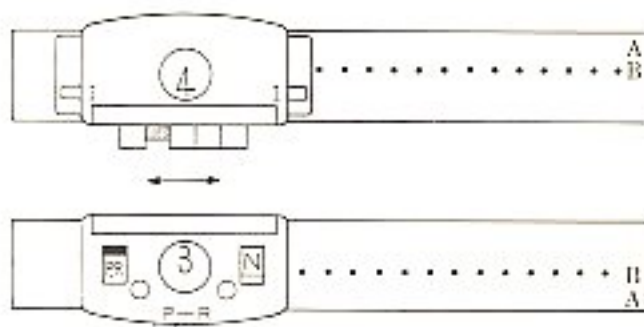


II Knitting of zigzag pattern

(1) Set the carriages as shown in the figure.

(2) Knitting

- Raise the left end needle of the work to position "E".
- Move the connected carriage from left to right. (The plain needles have two loops in their hook and the purl needles knit the stitch.)
- Set the racking indicator on No.4.
- Move the connected carriage from right to left.
- Set the racking indicator on No.5.
- Repeat from step (a) to step (c), 9 times.
- Raise the left end needle of the work to position "E".
- Move the connected carriage from left to right.
- Set the racking indicator on No.4
- Move the connected carriage from right to left.
- In this step, do not swing the racking lever. From next row, zigzag direction changes.



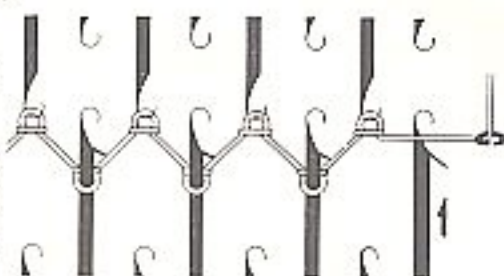
- l. Raise the left end needle of the work to position "E".
- m. Move the connected carriage from left to right.
- n. Set the racking indicator on No.5.
- o. Move the connected carriage from right to left.
- p. Set the racking indicator on No.4.
- q. Repeat from step (g) to step (p), 9 times.
- r. Raise the left end needle of the work to position "E".
- s. Move the connected carriage from left to right.
- t. Set the racking indicator on No.5.
- u. Move the connected carriage from right to left.
- v. In this row, do not swing the racking lever.
- w. Repeat from step (a) to step (v).

INCREASING THE STITCHES

I Increasing one stitch on one side of knitting width

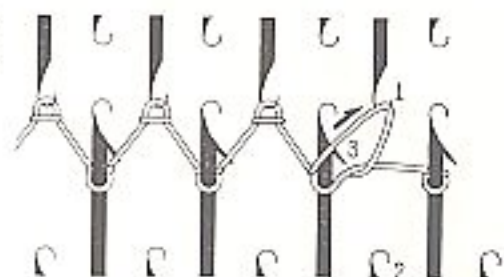
(1) Simple method

- Place the carriage on the side which you want to increase.
- Raise into action one end needle from the resting position (A) on the side nearest the carriage.
- The empty needle will pick up the yarn as it knits the next row.



(2) Full fashioned method

- Use 1 needle transfer tool, move the 1st stitch (1) out to the adjacent empty needle (2). Now 2nd needle from the end becomes empty.
- Onto the empty needle pick up either neighbouring lower loop (3).



II Increasing more than two stitches on either side of the garment.

- Place the carriage opposite to the side you want to increase.
- Bring into action on the side opposite to the carriage as many needles as the number of stitches to be increased.
- Move the carriage.
- The yarn will hang on increased needles on both sides.
- Hang weight hanger for side tension and small weight on the yarn which is shaping zigzag line.
- Continue the knitting.

DECREASING THE STITCHES

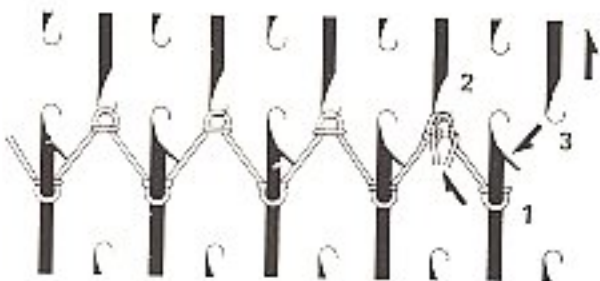
I Decreasing one stitch on either end.

- (1) Simple method is to use the single transfer tool. Transfer the end stitch to the 2nd needle, and take the empty needle out of action.



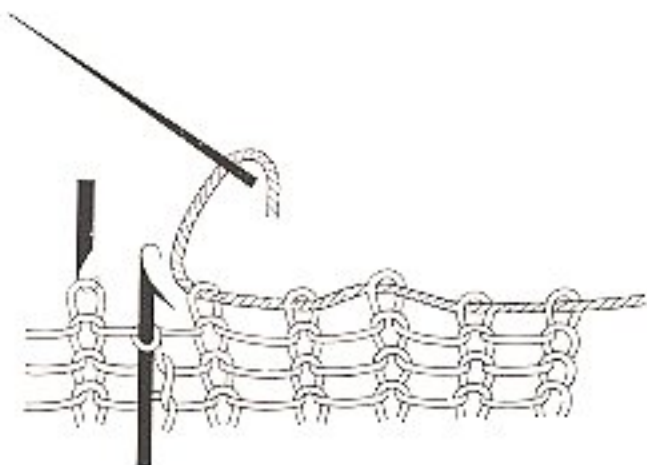
(2) 2nd method

- a. Use two-needle transfer tool. Transfer the end stitch to the 2nd needle and the 2nd needle to the 3rd needle.
- b. Take the empty needle out of action.



II Decreasing more than 2 stitches

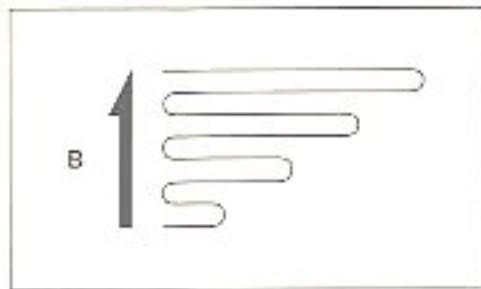
- a. Place the carriage opposite to the side you want to decrease.
- b. Use the tapestry needle. Transfer the stitches which you want to decrease to the stem of the tapestry needle and pass through loops of stitches to be decreased.
- c. Take the empty needles out of action.



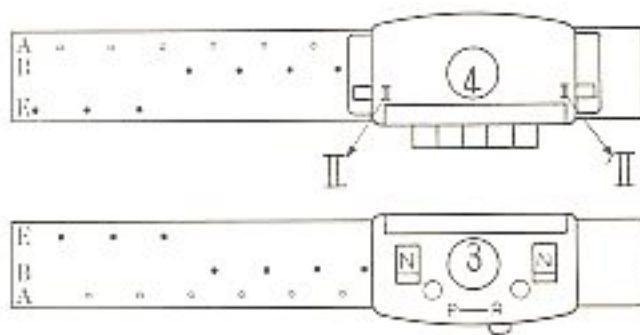
PARTIAL KNITTING OF RIBBING

Partial knitting is used for shaping of garment, making darts, shaping of a heel, vertical and horizontal buttonholes, neck opening, pockets etc. There are two cases, one is decreasing of knitting part, another one is increasing of knitting part.

This general explanation begins from one row before partial knitting of ribbing, from left to right.



- Set the carriages as shown in the figure.
- Raise the nonknitting needles of K and R beds to position "E".
- Move the connected carriage from right to left.



- To avoid a hole in the knitting before knitting on the return course, hook the yarn lying across the K and R needle beds into the hook of the raised needle nearest the knitting.
- Move the connected carriage from left to right.
- Repeat from step (b) to step (e) for the length of the buttonhole or the pattern.

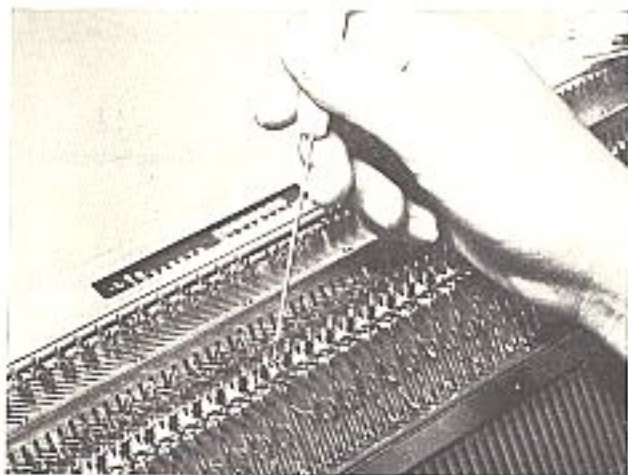
Note: If partial knitting is being used for diagonal color knitting in step (b) and (e), the number of needles raised should be increased or decreased according to the pattern and the direction in which the stripe will run.

2. HOW TO PICK UP DROPPED STITCH

First, take off the weights and prevent dropping of multiple rows.

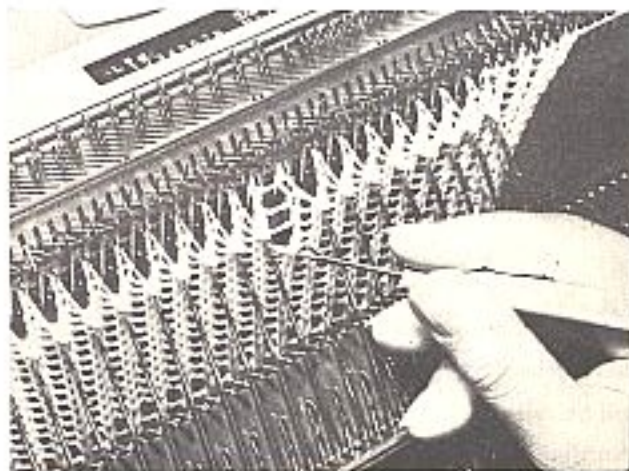
A. In case one stitch is dropped.

- a. With the single transfer tool, pick up the stitch and the unknitted yarn and put them both on the empty needle.



B. In case multiple rows are dropped.

- a. Open the gate by pushing down both bracket levers and catch the lowest loop of the dropped stitches with the latch tool.
- b. With the latch tool, make the stitches and hang the final stitch on the empty needle.



3. TO UNLOCK THE CARRIAGE

When the carriage is jammed;

- a. By pressing the connecting hook release button, remove the carriage (R) from the carriage (K)
- b. Lift the front of the carriage (K) and move to the side where the row commenced,
- c. Pull up the release buttons of the carriage (R) and move to same side as carriage (K).

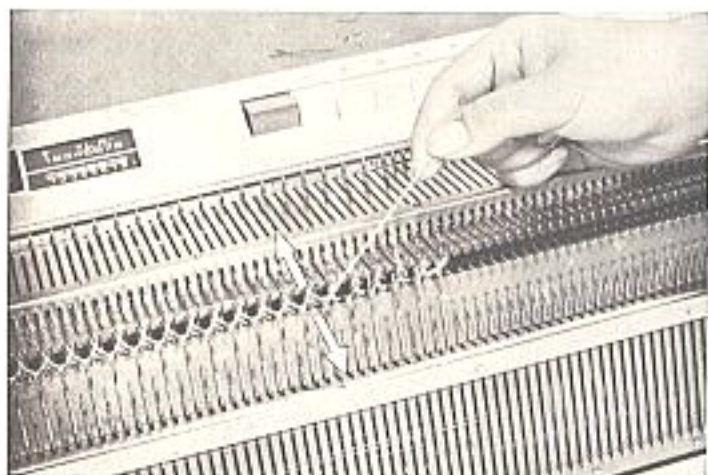
Note: Return the release buttons before beginning to knit again.

4. UNDOING ROWS OR UNRAVELLING

If you have knitted more rows than necessary, do not remove work from the knitter. Simply unravel one or several rows by doing the following.

Pull the yarn slightly, drawing it out of the stitches.

The stitches of the previous row will slip into the hook of the needles automatically as the yarn is raised in an upward movement towards the needle bed.



5. HOW TO REMOVE THE KNITTING FROM KNITTER

A. Unbound method

- a. Take out the yarn from the yarn feeder.
- b. Take off the weights hanging on the cast-on comb.
- c. Move the connected carriage across the needles of the both needle beds.
- d. Then, the work will be released.

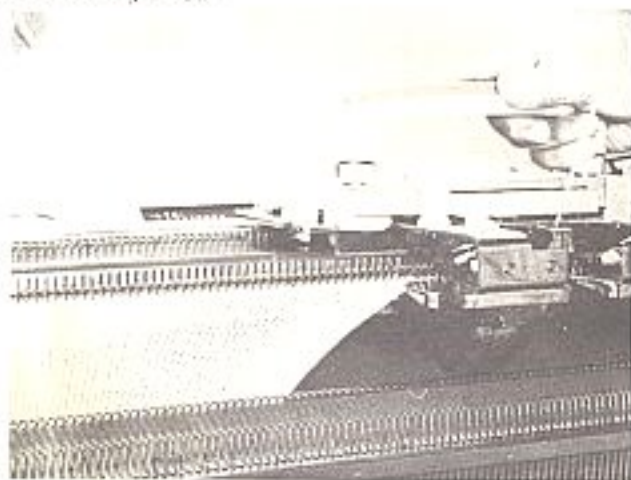
B. To transfer to hand knitting needle.

At first, convert from rib to plain knitting as described in Item "How to convert from 1 x 1 rib to plain knitting".

Then transfer the stitches to hand knitting needle.

6. HOW TO USE THE KNITTER AS A SINGLE BED WITH THE RIBBER ATTACHED

- push down both bracket levers of the ribber and the ribber will come down one step. Push down both levers again and the ribber will come down one more step.
- Take off the connecting arm assembly from the carriage (K) and convert it to the sinker plate assembly.
- The knitter can be used as a single bed.

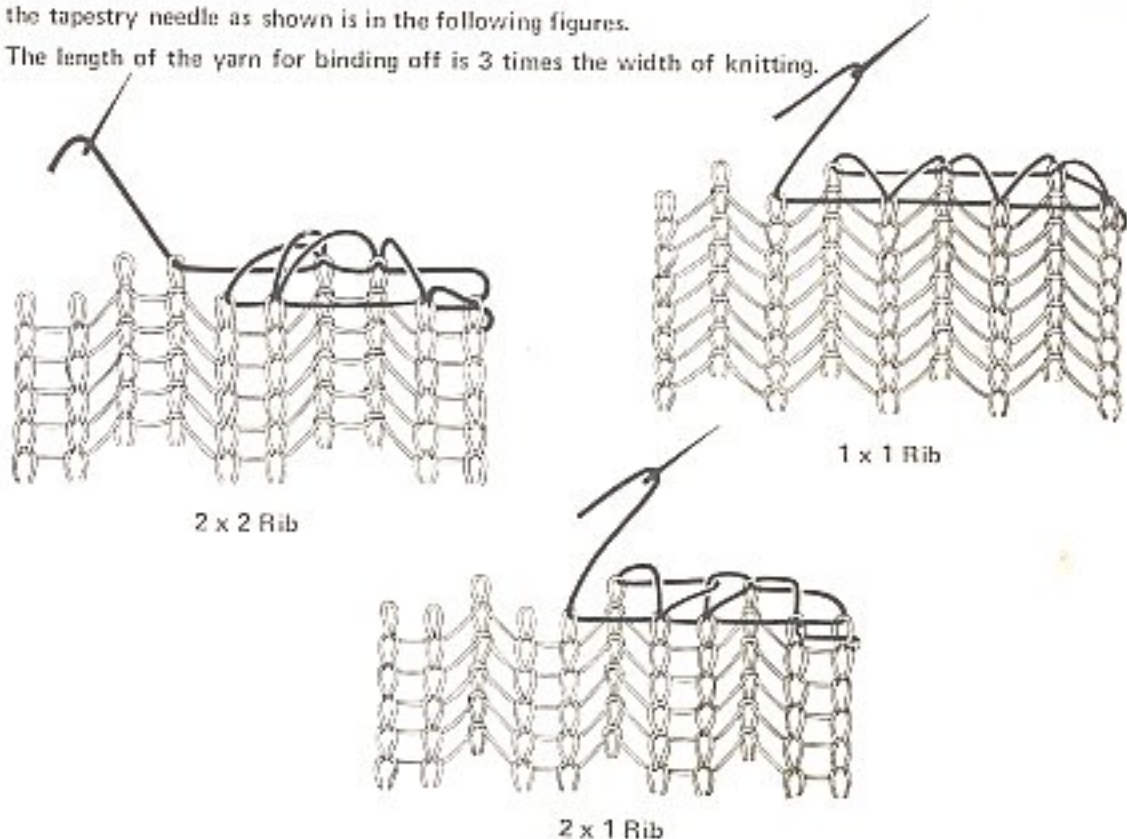


7. BINDING OFF AND FINISHING EDGE OF RIBBING

This method is used for binding off the stitches of the last row by using the yarn of rib knitting. Binding off is the same as selvedge.

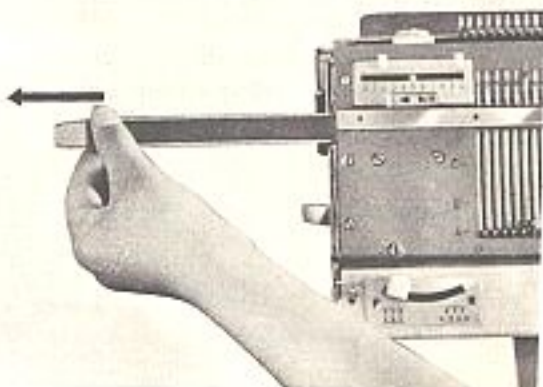
When you finish ribbing, knit one or three rows of circular knitting. Then bind the last row by using the tapestry needle as shown in the following figures.

The length of the yarn for binding off is 3 times the width of knitting.

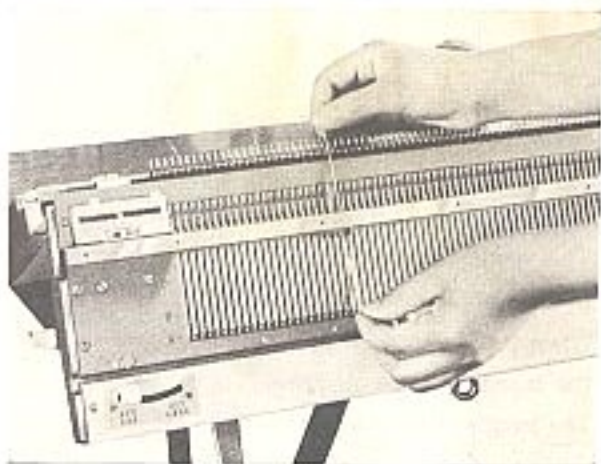


HOW TO REPLACE THE PURL NEEDLE

- a. Push the needle plastic bar from either side.
- b. Slide out by hand from the ribber until the needle you wish to change is freed.
- c. Bring forward the needle as far as it will go.



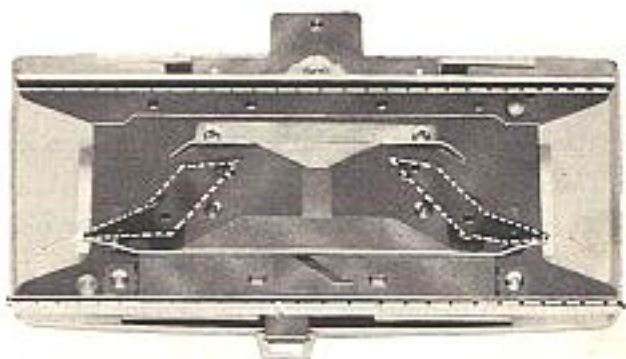
- d. Push down the hook of the needles until the shank of the needle rises free of the needle bed.
- e. Grasp the shank and draw it out backwards.
- f. Replace new needle with latch opened.
- g. Push in the bar, making sure that the flat face is down.



MAINTENANCE

Each time you finish work, service your machine as follows:

- a. Clean the machine of all wool lint with hand brush.
- b. Polish each part with soft oil cloth.



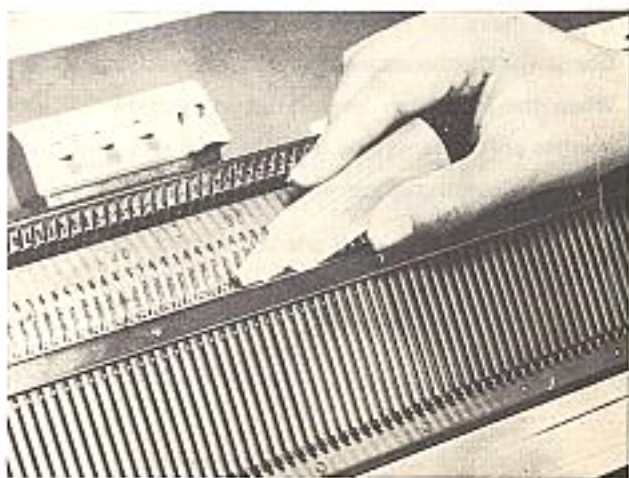
c. Oiling

Oil the following parts.

1. Back side of the carriage
2. Rails of the needle bed
3. Needle butts

Wipe off stained oil.

- d. Keep your machine in a dry place.



IMPORTANT ADVICE

- Casting on combs and weights

Hang these on the garment so that good balance is obtained.

- Dropped stitch

To pick up dropped stitches, first, take off the weights and slide down the ribber one step, then pick up the dropped stitch with hook.

- Knitting with different number of knitting and purl needles.

Always be sure number of needles of the knitter side is more than the purl side.

- When the garment does not come down as you knit row by row, check to see whether some loop hangs on the gate of needle bed, or not.

If a loop is found hanging on the gate, take it off with hook.

Otherwise, increase the number of weights.

- Move the racking lever carefully

Do not move the racking lever when needles are raised over the needle bed gates

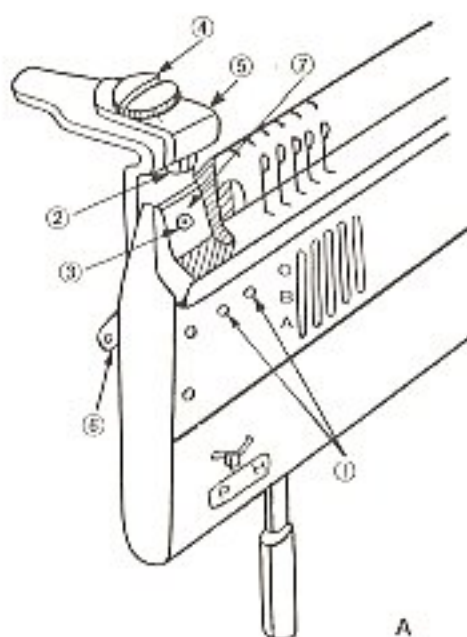
- Check the needle arrangement before you move the carriage.

When the half pitch lever is set in position "P", do not knit with knitting needles and the purl needles on the same line because they will crash together and damage

- Move the connected carriage carefully and do not move it quickly.

ADJUSTMENT OF THE RIBBER

- (1) Position adjuster screws
- (2) Distance adjuster bolt
- (3) Height adjuster nut
- (4) Thumb screw
- (5) Bracket stopper
- (6) Height adjuster
- (7) Slide plate



1. HOW TO ADJUST THE POSITION OF THE RIBBER

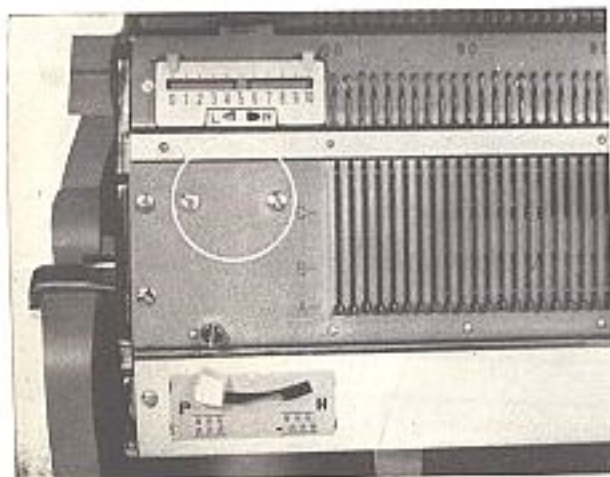
When the Half Pitch Lever is set on position "P", the Needle Gate Pegs of both Beds are directly opposite to each other. If were not, please adjust the position of the Ribber as per the following method.

METHOD;

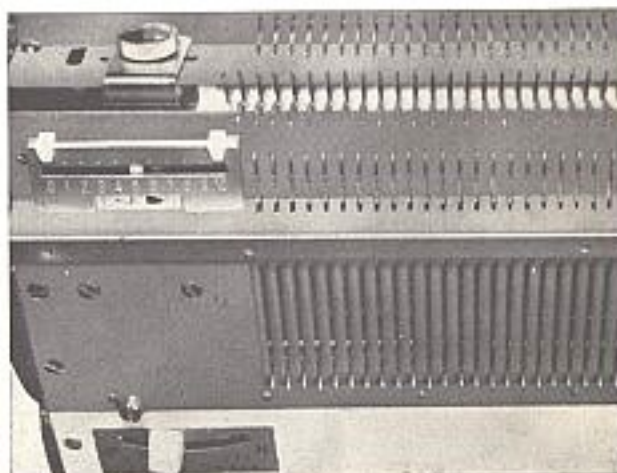
- 1) Loosen the two Screws which are beside the mark "C" on the left side of the Needle Bed of the Ribber. (see Fig. B)
- 2) By moving the Racking Handle. You can adjust the position.

NOTE: When the Racking Indicator is set on the position No. 5, the end Gate Peg of the Ribber and the second Gate Peg from the end of the Knitter should be in a line. (Fig. C)

- 3) Fasten these Screws tightly.



B

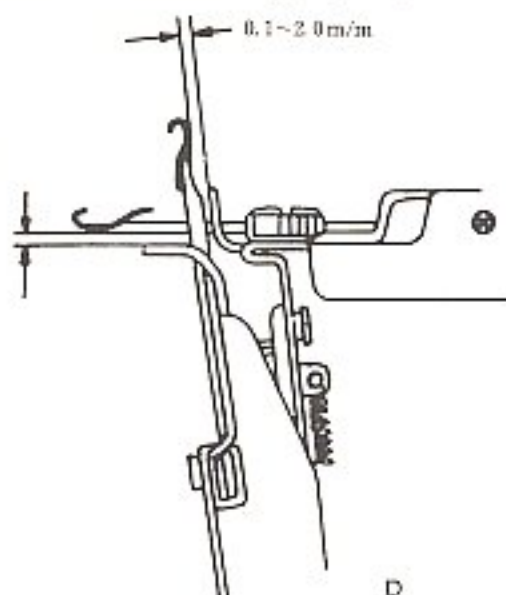


C

2. HOW TO ADJUST THE DISTANCE BETWEEN THE TWO BEDS

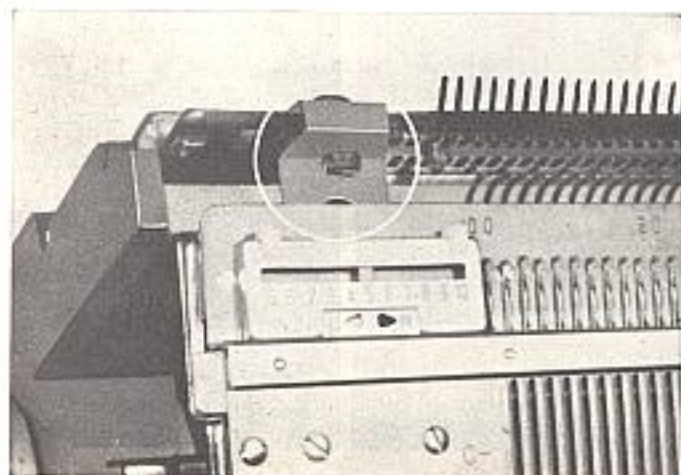
Raise up a few Needles on both ends of the Ribber, and check the distance between the back of the Purl Needle and the Gate Peg. It should be 0.1–2.0m/m width as per the Fig. D.

If the distance is not, please adjust the distance appropriately.



METHOD;

- 1) By pushing down the Levers on both Brackets, let down the Ribber one step.
- 2) Under both Bracket Stoppers, you will find out the Bolts. (see Fig. E)
Loosen these Bolts by a Spanner included in the Accessory.
- 3) Return the Ribber to normal position, and loosen the Thumb Screws on both Brackets.
- 4) Obtain the proper distance. (0.1–2.0m/m: from back of the Purl Needle to the Gate Peg of the Knitter.) see Fig. D.
- 5) At the same time, push both Bracket Stoppers as far as they go in. Then, fasten the Thumb Screws tightly.
- 6) Let down the Ribber one step again. And fasten the Bolts by the Spanner tightly.

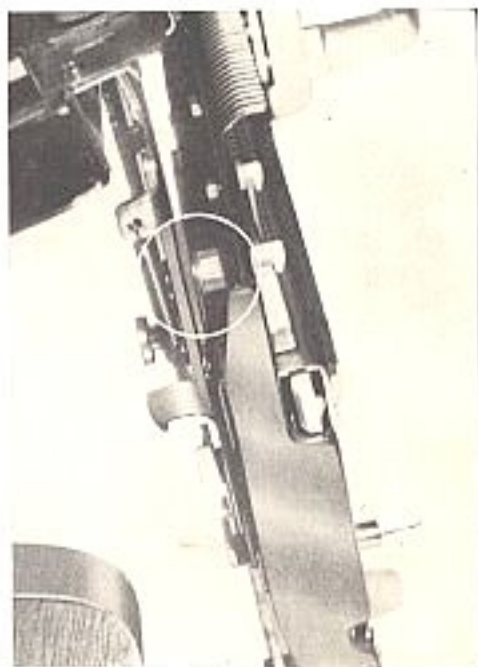
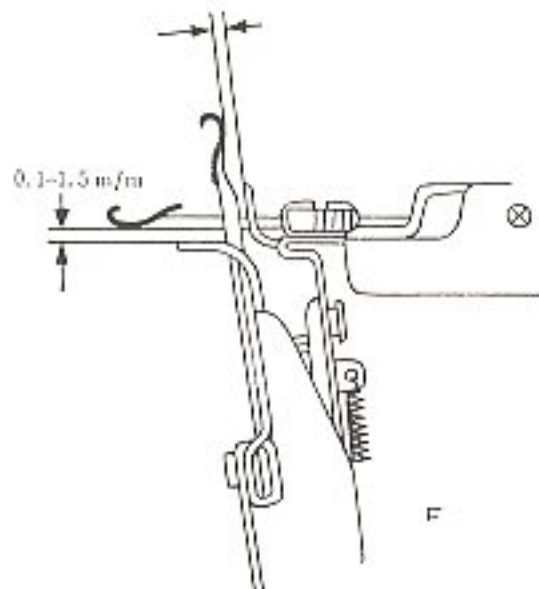


3. HOW TO ADJUST THE HEIGHT OF THE RIBBER

After adjustment of the distance, you should begin to adjust the height of the Ribber.

Raise up a few Needles on both ends of the Knitter, and check the distance between the back of the Plain Needle and the Gate peg of the Ribber. It should be 0.1–1.5m/m width which the Wire-Loop Type Weight Hanger can pass between the back of the Plain Needle and the Gate Peg of the Ribber. (Fig. F)

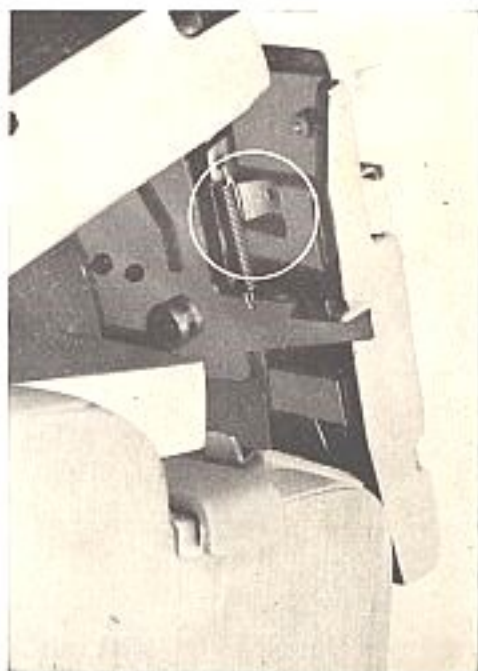
If the distance is not, please adjust the height of the Ribber.



G

METHOD;

- 1) By pushing down the Levers on both Brackets, let down the Ribber one step.
- 2) At the back of the Ribber, you will find out the Nuts, (see Fig. G) loosen these Nuts by the Spanner in the Accessory.
- 3) Return the Ribber to normal position, and adjust the distance by moving both Height Adjusters. (see Fig. H)
- 4) Let down the Ribber one step again, and fasten the Nuts by the Spanner tightly.



H