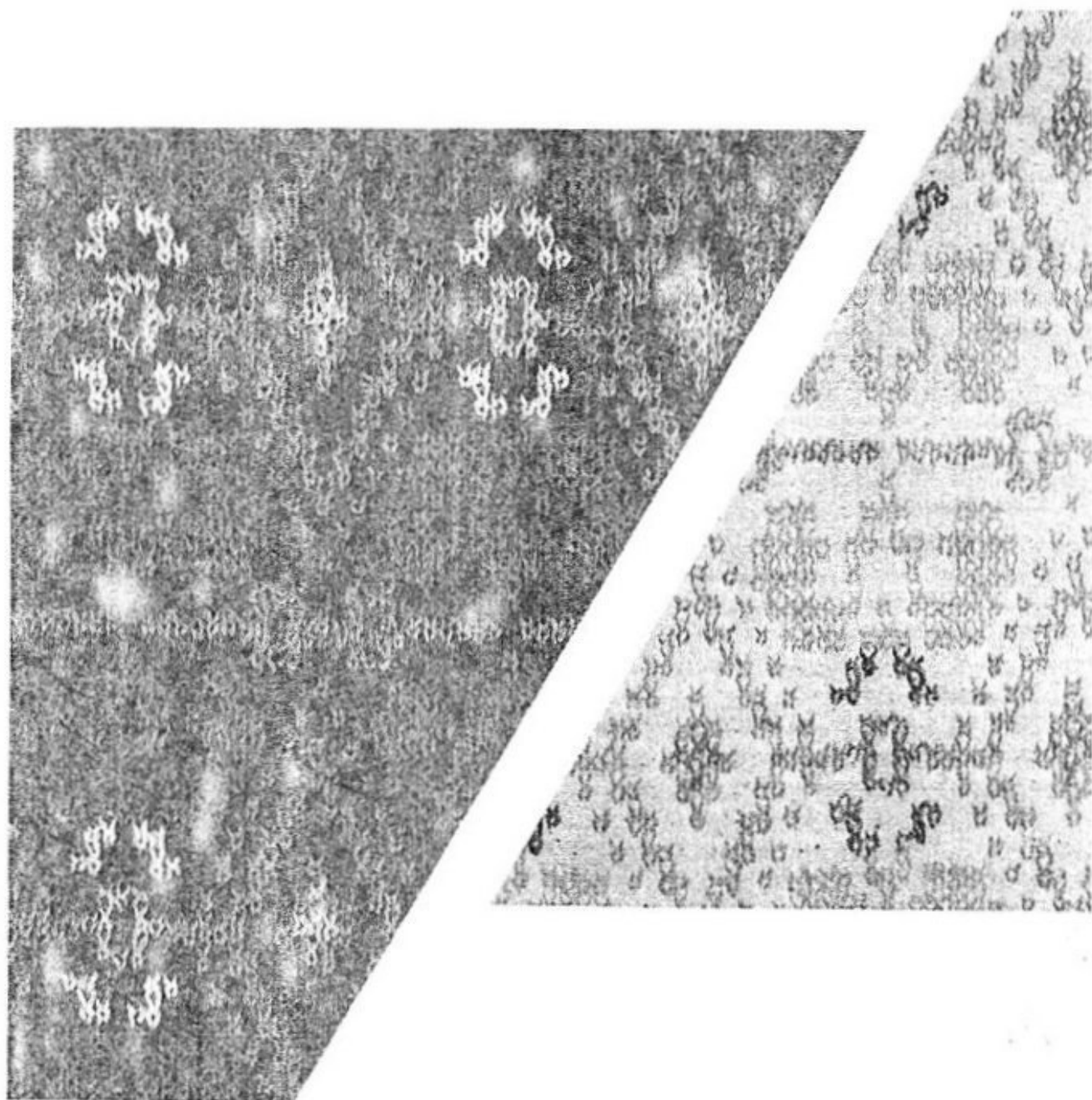


Instruction manual for manual colour changer



IMPORTANT SAFETY INSTRUCTIONS

- When you use the Sinker Plate Assembly, remove the Changer Arm to prevent the damage. (See page 5 on this manual.)
- Securely fasten the Setting Knob to prevent the Colour Changer from dropping off.

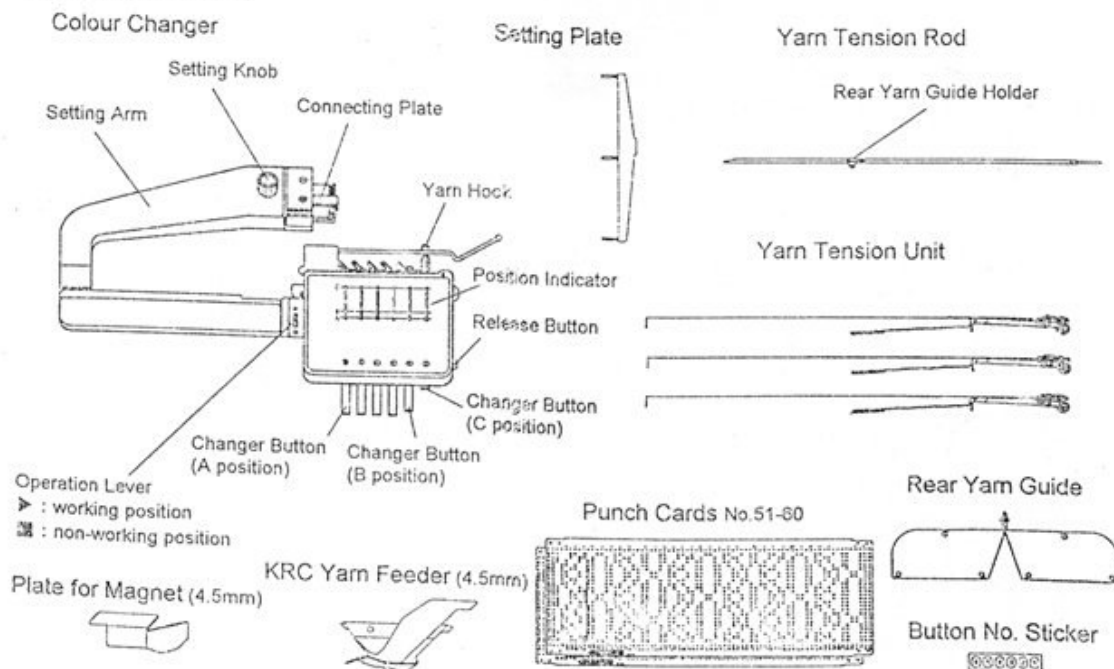
● **THANK YOU FOR CHOOSING OUR COLOUR CHANGER**

- To fully enjoy all the features incorporated, however, we suggest that you study this booklet.

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Name of parts	1
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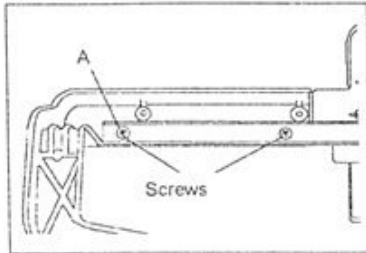
[Names of parts]



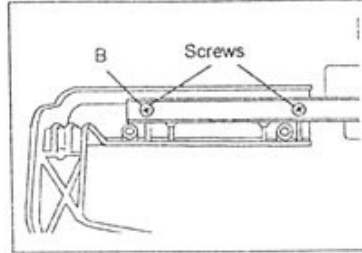
【 How to set 】

※ There are two positions for installing the Setting Plate on the Arm, Hole A for a 4.5mm Pitch Machine and Hole B for a 9mm Pitch Machine. Turn over the Colour Changer and make sure the setting position is suitable for your knitting machine.

《 4.5mm Pitch Punch Card or Electronic Machine 》



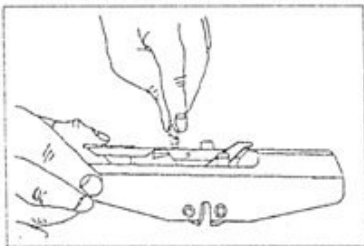
《 9mm Pitch Punch Card or Electronic Machine 》



※ When you change the setting position on the Arm, loosen the screws with a Phillips screwdriver and tighten them following above figures.

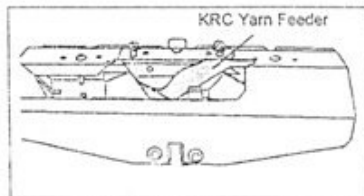
④ Set up the Plate for Magnet and the KRC Yarn Feeder on your 4.5 mm pitch ribbing attachment according to the following instructions:

◆ How to set the KRC Yarn Feeder (4.5 mm)



(1) Loosen two screws with the accessory Spanner or a coin and remove the Yarn Feeder from the Connecting Arm.

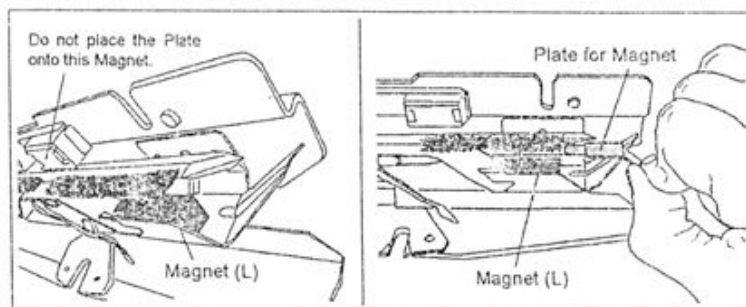
※ When you finished with the Colour Changer, reconnect the Yarn Feeder back to the Connecting Arm.



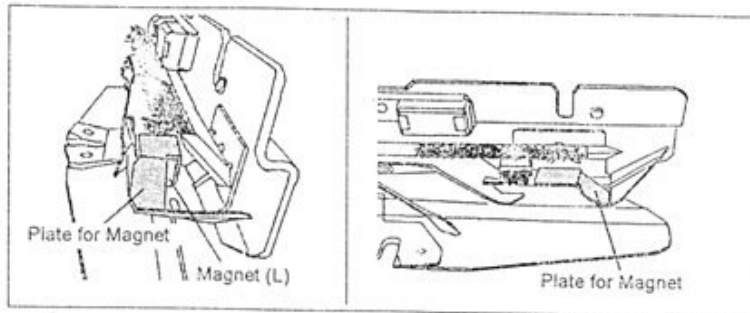
(2) Set the KRC Yarn Feeder to the Connecting Arm as shown in the figure. Then, fasten the screws.

◆ How to set the Plate for Magnet (4.5 mm)

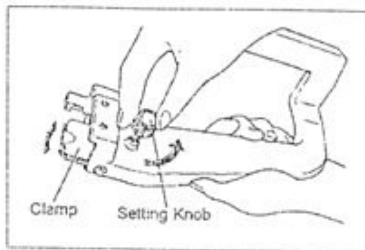
(1) Turn over the Connecting Arm of the KRC Yarn Feeder.
The Plate for Magnet is for only covering a left Magnet with a brush.



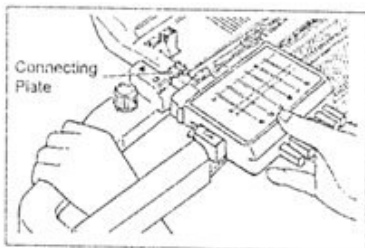
- (2) Slide the Plate for Magnet onto the left Magnet from the edge until it fits over the magnet.
 ※ The Plate for Magnet fits by a magnetic hold. Then, remove the Plate for Magnet when you are not using the Colour Changer.



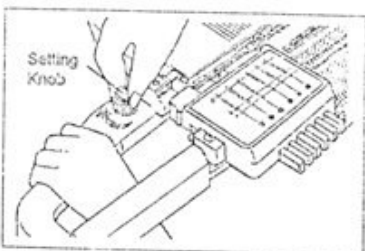
- ⑨ After setting up the ribbing attachment to the knitter, set up the Colour Changer.



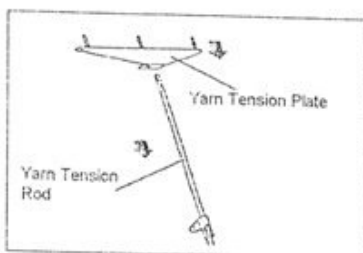
- (1) Loosen the Setting Knob as much as possible until the Connecting Clamp opens fully.



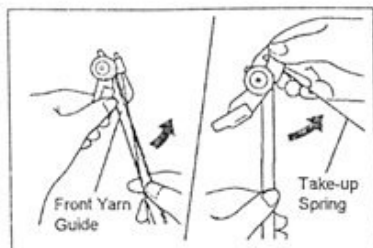
- (2) Push the projecting part of the Connecting Plate against the end of the Felt Bar and insert it as far as possible.



- (3) Pressing the Setting Arm to the knitter, fasten the Setting Knob.

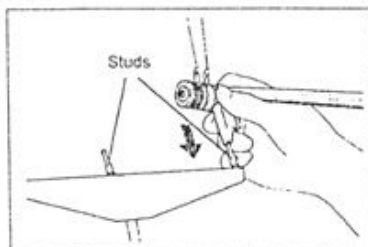


- (4) Insert the Yarn Tension Rod into the hole at the rear of the machine.
 Insert the Yarn Tension Plate into the Yarn Tension Rod.
 ※ Set up the Rod and Plate securely.
 ※ Yarn Tension Unit that comes with the knitting machine is not used.

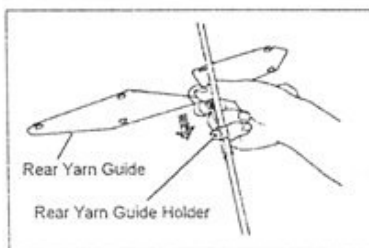


(5) Open the Front Yarn Guide in the direction of the arrow.

(6) Turn the Take-up Spring until it clicks.

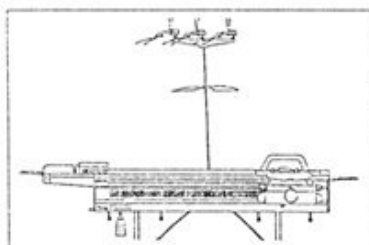


(7) Insert the Yarn Tension Unit into the Stud on the Yarn Tension Plate.
 ※ When you set up the Changer with a bulky machine, insert the middle and left Yarn Tension Units.



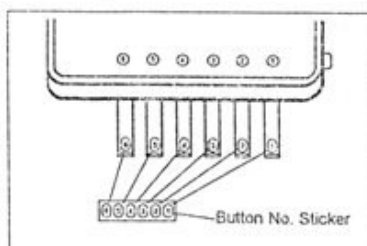
(8) Set the Rear Yarn Guide on the Tension Stand.

(9) When using a 4.5mm Pitch Machine, set the Extension Rails into the machine.



☛ The figure shows the Colour Changer set up on the machine.

◆ If the Changer Button No. appears illegible when changing the yarn manually...



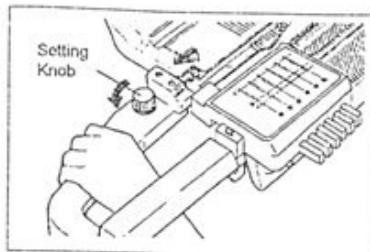
1. Wipe the Changer Buttons with a dry cloth.

2. Remove each Sticker from the paper and put it on the corresponding Changer Button as shown in the figure.

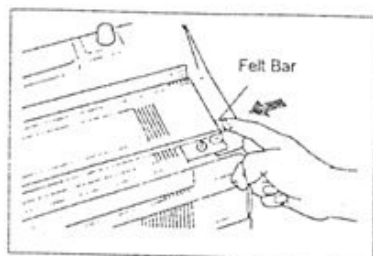
※ Do not use alcohol, benzene, thinner or petrol when you wipe the Colour Changer.

※ Make sure the Stickers are placed in the concavities on the Buttons. If the Stickers are not in the proper positions, the Buttons may not work correctly.

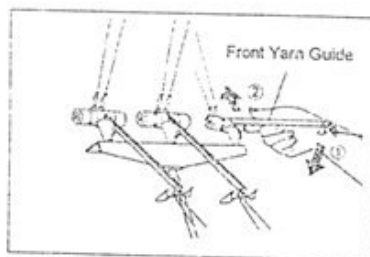
【 How to take off 】



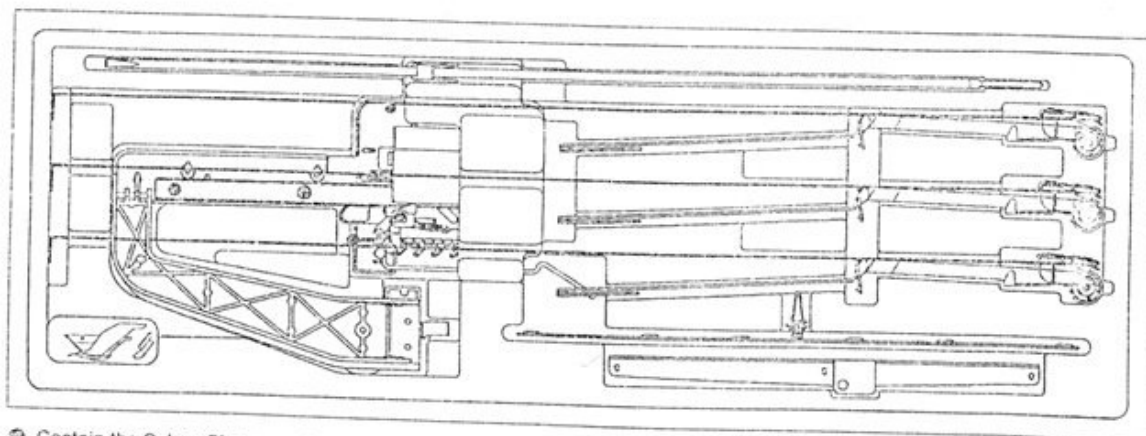
- (1) Push the Changer Button so Position Indicator is at C position, and the Indicator will come to B position. Push the Release Button to return the Yarn Hook to A position. Loosen the Setting Knob on the Setting Arm. While lifting up the Setting Arm on the side of the Setting Knob, pull out the Setting Arm.



- (2) After the Setting Arm is released, push the Felt Bar back, which has been pushed out on the right side of the knitter.



- (3) Press down the Front Yarn Guide on the knitter and then take off the Yarn Tension Unit.



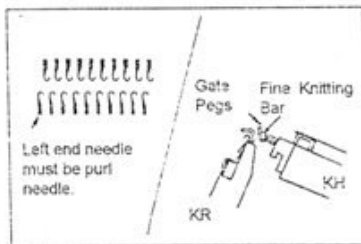
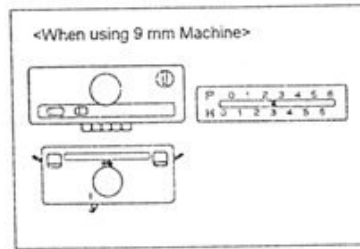
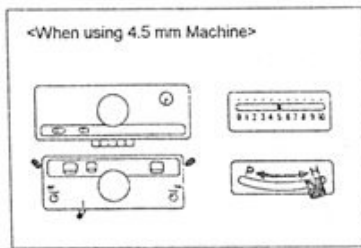
② Contain the Colour Changer set as shown above.

【 How to knit stripes 】

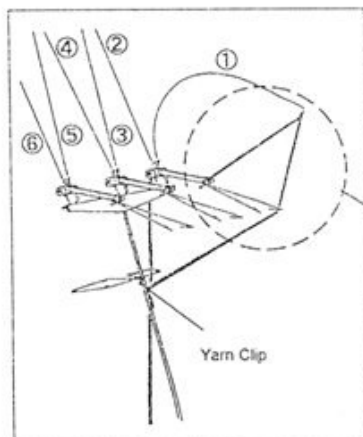
● Let's try with basic stripes first.

- Use the Fine Knitting Bar.
- Prepare six yarns. (four yarns for bulky machine)
- 4.5mm Pitch Punch Card or Electronic Machine fine yarn
- 9mm Pitch Punch Card or Electronic Machine thick yarn

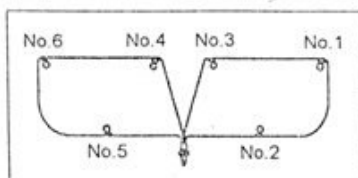
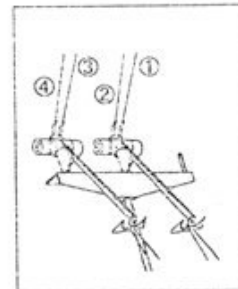
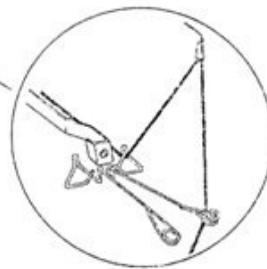
(1) Set the knitter and ribber as shown in the figure.
Set the Operation Lever to non-working position "B".



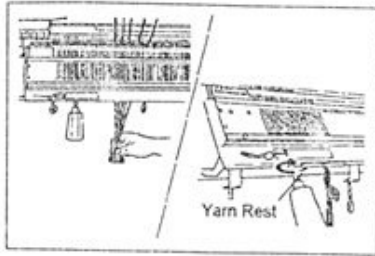
(2) Insert the Fine Knitting Bar behind the Gate Pegs on the knitter, so that it slips slightly underneath the needle bed.
Align both plain and purl needles in B position. (Bring forward a purl needle so that the left end needle is a purl needle and right end is a plain needle.)
After operating the Carriages two or three times, place the Carriages on the right side.



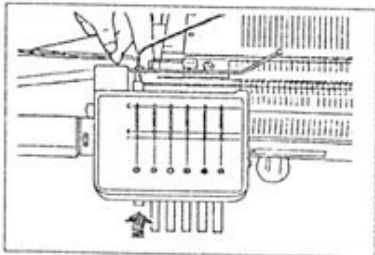
(3) Thread the yarn for yarn No. 1 through the right Yarn Tension Unit, and hook the end of the yarn on the Yarn Clip.
Thread five other yarns through the Yarn Tension Unit in the same manner.
※ When you thread four or fewer yarns, use two left Yarn Tension Units as shown in the right figure.



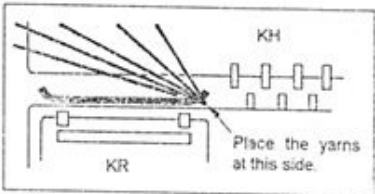
※ Thread the yarns through the Rear Yarn Guide as shown in the figure.



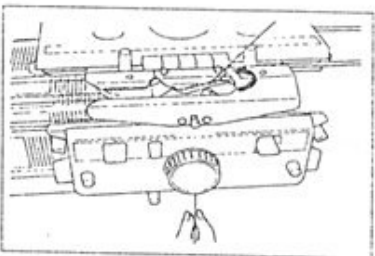
- (4) Remove the ends of the left five yarns from the Yarn Clip, and tie five yarns together. Pass it between the Gate Pegs. Hold the ends of the yarns with the Yarn Rest on the lower portion of the ribber.



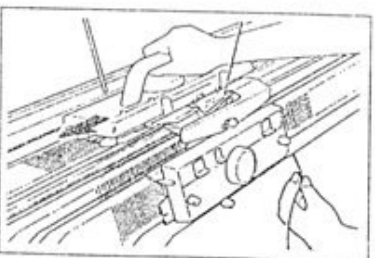
- (5) Push Changer Button No.6, so the Position Indicator will come to C position. Hook the left end yarn onto the Yarn Hook and push Button No.6 and the Position Indicator will return to B position. Continue with Yarn Hook No.5, 4, 3 and 2 in the same way. Push the Release Button so that all Position Indicators will return to A position.
 ※ Please be careful not to cross the yarns.
 ※ When you thread four yarns, use Yarn Hook No.1-4.



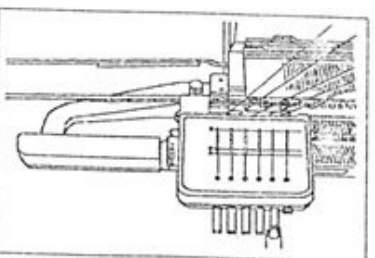
- (6) Push Changer Button No.1, so the Position Indicator will come to C position. Leave the right end yarn in the Yarn Clip. Place the other yarns on the Yarn Guide of the Changer as shown in the figure when using a 4.5mm Pitch Machine.



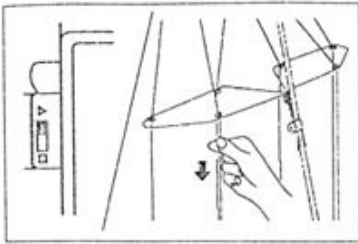
- (7) Remove the right end yarn from the Yarn Clip and thread it into the Yarn Feeder.
 ※ Make sure that the yarn is not caught on the Gate Pegs or other parts of the machine.



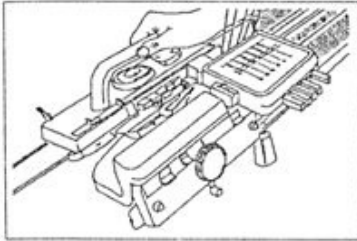
- (8) While holding the yarn end, move the Carriages to the other side to cast on. Hang on the Cast-on Comb and Weights. You can make a Full Needle rib with Yarn No.1 (right end yarn) by moving the Carriages.



- (9) To change the yarn, stop the Carriages on the right side of the needle bed.
 a. Push the Changer Button with the yarn which you want to knit next. The Position Indicator will come to B position.
 (Ex. Push Changer Button No.2 so the Position Indicator will come to B position.)



- b. Set the Operation Lever to "▶"(working position).
 ※ If the yarn slackens, pull it back on the Rear Yarn Guide.



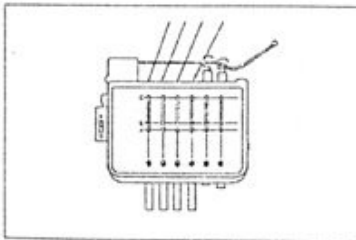
- (10) Move the Carriages from right to left until you hear a click.
 (Yarn Hook No.1 will catch the yarn so Position Indicator No.2 will come to C position.)

- (11) Move the Carriages to the right so that yarn will automatically change.
 (Yarn No.2 will come into the Yarn Feeder.)
 ※ If the yarn slackens, pull it back on the Rear Yarn Guide.

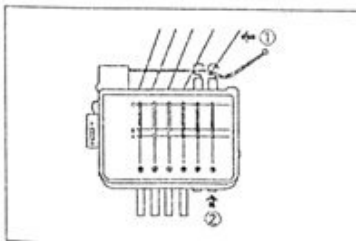
- (12) Repeat above steps (9)-(11), and you will produce stripes with ease.
 ※ Poor quality yarn may create yarn change errors. In this case, pull up the yarn to be knitted by hand so that the yarn will go into the Feeder. Particularly on the Bulky Punch Card or Electronic Machine, pull the yarn up every row.

- (13) After all of the yarns are knitted in, remove the ends of the yarns from the Yarn Rest.

◆ If the Yarn Feeder should catch two yarns together...



- If the yarns are not running smoothly from the balls(cones), two Yarn Hooks may come into working position and the Yarn Feeder may catch them together.
 ※ Always make sure that each yarn runs from the ball(cone) smoothly.



- If two Yarn Hooks come into working position...
 Return the yarn which is not knitted next into a corresponding Yarn Hook. Push the Changer Button, and the Yarn Hook will return to B position.

【 How to knit Multi-colour Rib 】

③ Knitting Multi-colour Rib without yarn floats.

- Use the Fine Knitting Bar.
- When knitting 3/4 colours in a row pattern, we recommend you use 1/1 needle selection on the ribber.
- ※ When you pattern knit in 1/1 needle selection, refer to "How to knit Multi-colour Rib" in the instruction manual of the ribber.

◆ APPROXIMATE TENSION CHART

※ When knitting 3/4 colours in a row pattern, set the Tension Dial on the ribber to the smaller number than the knitter.

Machine	Yarn				
	Very fine	Fine	Medium	Thick	Very Thick
4.5 mm pitch	2 ~ 3	3 ~ 4	—	—	—
9 mm pitch	—	—	1 ~ 2	2 ~ 3	3 ~ 4

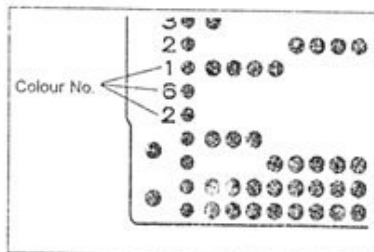
※ When using the Colour Changer on a 4.5mm Pitch Machine, 5 needles at the Changer side may not work correctly or 3 needles on a 9mm Pitch Machine. Do not place those needles into working position.

《 Original Patterns 》

③ Pictures of original pattern No.51-60 are given on the attached sheet of paper.
The numbers on the pictures coincide with the numbers on the original Punch Cards.

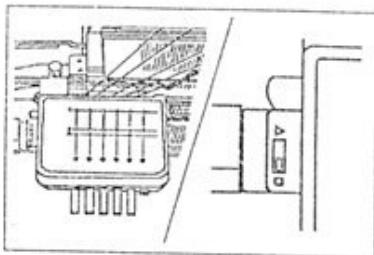
- Pattern No.51-59 with "▽" marks are three colours in a row patterns.
When you knit three colours in a row pattern, set the Card Lock Lever to "▽".
- Pattern No.60 is two colours in a row pattern.
- Using the Plastic Snaps, join Pattern No.59 A and B cards to allow them to rotate.

◆ Three colours in a row pattern (Ex. Use Pattern No.52.)



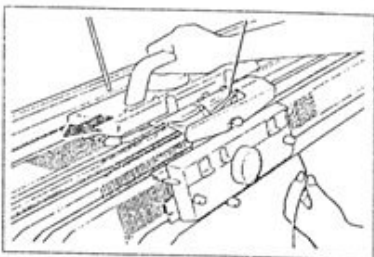
(1) Set the Carriages for full needle rib. (See steps (1)-(2) on page 6.)
※ Arrange the needles of the KR in even numbers when you knit with the 1/1 needle selection system. (Refer to the manual of the ribber.)

(2) By reading the Colour No. on the left side of the Punch Card, set the necessary number of yarns on the Yarn Tension Unit. (Refer to (3) on page 6.)

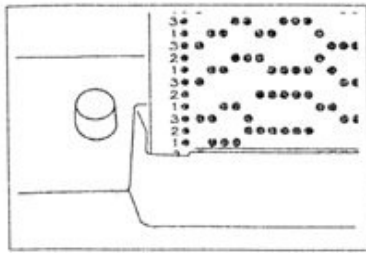


(3) Thread the yarns, except the main yarn, in the Colour Changer. Set the Operation Lever to "C". (Refer to (4)-(5) on page 7.)

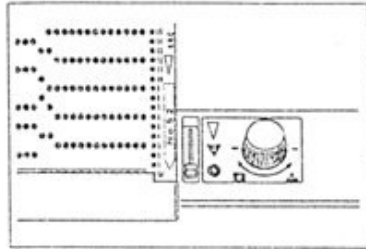
(4) Push Changer Button No.1 so the Position Indicator will come up to C position.



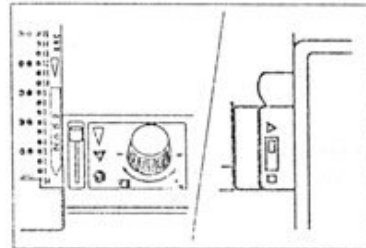
(5) Thread the main yarn into the Yarn Feeder of the Carriage and then operate to cast on. (Refer to (7)-(8) on page 7.)



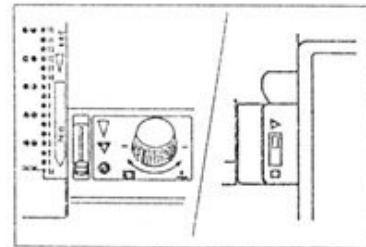
- (6) Knit a few rows in full needle rib ending with the Carriages at the right. Set the Card to start and then read the Colour No. at the left side of the Punch Card. According to the Colour No., do the following steps.



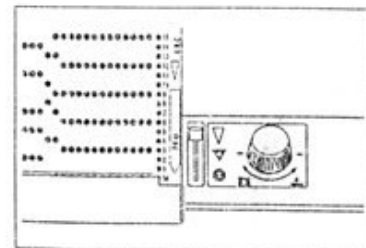
- When starting with Colour No. 1
 - a. Set the Card Lock Lever at "A". Set the Change Knob to KC and move the Carriages from right to left by one row. (The needles are selected.)



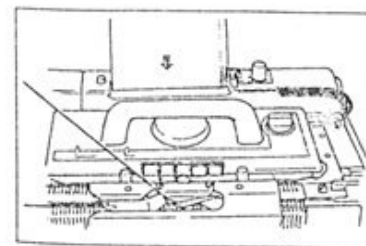
- b. Set the Card Lock Lever at "V" and push both PART buttons at the same time. Set the Operation Lever on the Colour Changer to "▶" (working position).
- ※ When you knit the pattern with 1/1 needle selection system, refer to the steps (4)-(6) of "How to" knit Multi-colour rib knitting pattern using the Double Colour Changer (1/1 Needle Selection).



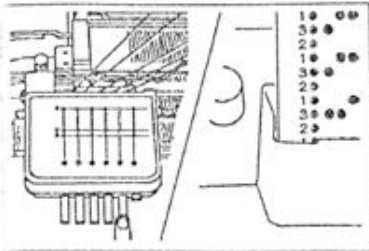
- When starting with other yarns
 - a. Push the Changer Button No. which is indicated by the number shown on the left side of the Punch Card, and the Position Indicator will come to B position. Set the Card Lock Lever to "A" and the Operation Lever on the Colour Changer to "▶" (working position). Set the Change Knob to KC and move the Carriages from right to left by one row. (The needles are selected.)



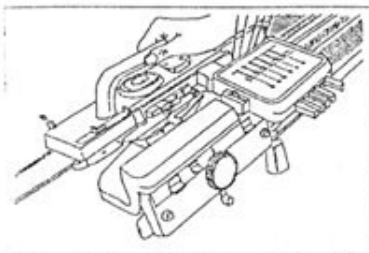
- b. Move the Carriages to the Changer side until you hear a click. The Yarn Hook will catch the yarn and the Yarn Hook pushed at step a. will come up. Set the Card Lock Lever to "V" and push both PART buttons at the same time.
- ※ When you knit the pattern with 1/1 needle selection system, refer to steps (4)-(6) of "How to" knit Multi-colour Rib knitting pattern using the Double Colour Changer (1/1 Needle Selection).



- (7) Move the Carriages from left to right and back again a little farther to the left. Stop the Carriages after insuring that the Punch Card has rotated one row.



- (8) Push the Changer Button No. which is indicated by the number shown on the left side of the Punch Card, and the Yarn Hook will come to B position.
 ※ If the yarn slackens, pull it back on the Rear Yarn Guide.



- (9) Move the Carriages from right to left until you hear a click.

- (10) Repeat step (9) to knit Multi-coloured Rib.

➤ If you do not want to change the yarn...

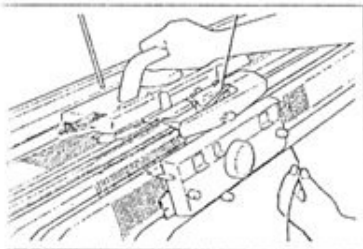
If continuing to knit in the same colour, set the Operation Lever to "A". So, you can knit with the same yarn.

If you want another colour before one row (Carriages are on the right side) push the Changer Button.

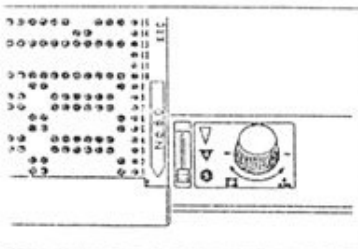
When you change the yarn again, set the Position Indicator which you want to knit next to B position and the Operation Lever to "A" one row before you change the yarn. (The Carriages are on the right of the needle bed.)

➤ Two colours in a row pattern

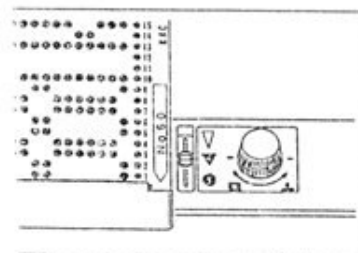
(Ex. Use the Card No.60.)



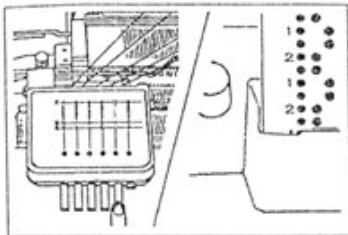
- (1) Repeat steps (1)-(5) on page 9 to knit full needle rib.



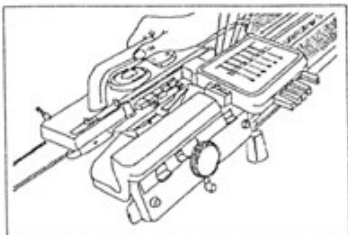
- (2) Knit a few rows ending with the Carriages on the left.
 Set the Card at the start and then set the Card Lock Lever at "A".
 Set the Change Knob to KC and then move the Carriages to the right. This selects the needles on the knitter.



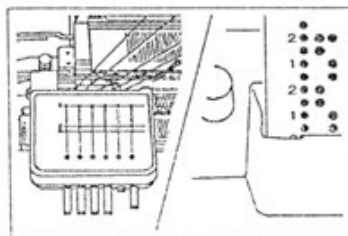
- (3) Set the Card Lock Lever at "V" and then push both PART buttons in at the same time.
 ※ If your ribber has 1/1 needle selection system, refer to (4)-(6) in "How to" knit Multi-colour Rib in the instruction manual of the ribber.



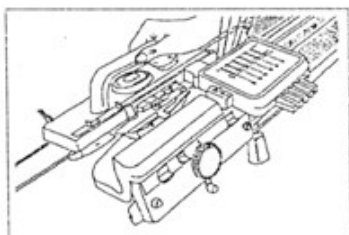
- (4) Push the Changer Button No. which is indicated by the number shown on the left of the Punch Card, and the Position Indicator will come to B position. Set the Operation Lever to "▶".



- (5) Move the Carriages towards the Colour Changer until you hear a click. The Yarn Hook No. pushed at (4) will come to C position.



- (6) Move the Carriages from left to right. Push the Changer Button which is indicated by the number shown on the left of the Punch Card, and the Position Indicator will come to B position.
※ If the Position Indicator is at B position, move the Carriages without pushing the Button.



- (7) Move the Carriages from right to left until you hear a click.

- (8) Repeat steps (6)-(7) to knit Multi-coloured Rib.

◆ When you change two yarns every other row
When two Yarn Hooks are placed in B and C position, two yarns are changed automatically by only moving the Carriages.

◆ When you do not want to change the yarn

If you wish to continue the same colour No., set the Operation Lever to "▶", so, you can knit with the same yarn.

If you want to knit with another colour, before one row (Carriages are on the right side) push the Changer Button.

When you change the yarn again, set the Position Indicator which you want to knit next to B position and the Operation Lever to "▶" one row before you change the yarn. (The Carriages are on the right of needle bed.)

◆ Note

· When yarn is in the Yarn Hooks without knitting for many rows, the yarn might wear thin by the Carriages movement. Be especially careful when using very fine yarns.

· When knitting Multi-colour rib patterns, set the Change Knob to KCII or set the end needle selection mechanism to OFF according to the manual.

· When you use 9mm Pitch Punch Card or Electronic Machine, use four yarns.

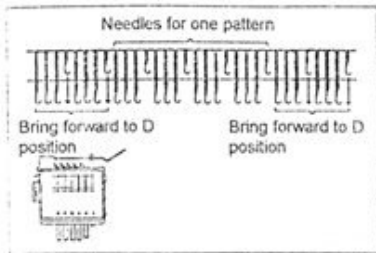
· On a 9 mm pitch knitting machine, three or four-colour-in-a-row patterns cannot be knit. We do not recommend you knit these pattern on a bulky knitter as incorrect needle selection might occur.

· We recommend you knit two colours in a row pattern, because a 9mm Pitch Machine has no 1/1 needle selection system.

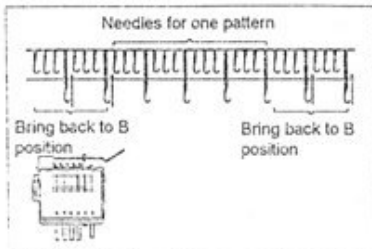
【 How to knit a one point pattern 】

※ When you knit a pattern with an Electronic Machine, refer to the instruction manual of the knitter.

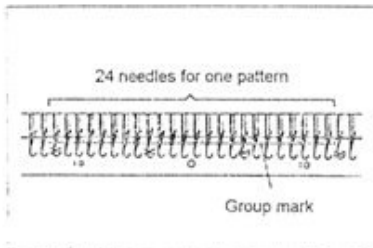
● For casting-on and changing the yarn, do the same as for knitting Multi-colour Rib, the needle arrangement for eliminating unnecessary pattern on the knitter is different.



● When the Position Indicator for a main yarn is placed at C position bring forward the needles where the pattern is not required from B position to D position. And then move the Carriages.



● When the Position Indicator with another yarn is placed at C position bring back the needles where the pattern is not required from D position to B position and then move the Carriages.



※ As the same yarn is knitted from one side to another and back again, this operation is required for every row.

※ It is easy to see which needles should be brought forward or back if you use the needle selection mark on the Needle Position Indicator (number strip under the needles).

【 Important points to remember 】

《 How to correct an error when pattern knitting 》

※ See "What to do if you make mistakes in pattern knitting" of the KH manual.

- (1) Follow the steps in the manual before taking off the Carriages.
- (2) Remove both the KH and KR Carriages, and place the KH Carriage at the right side of the work and KR Carriage at the left side of the work.
(For "how to" take off and set, refer to the ribber manual.)
- (3) Unravel the incorrect row. Putting the ends of all yarns on the left side, thread each of the yarns into respective Buttons on the Colour Changer.
Push the Release Button to return all Position Indicators to A position.
- (4) After unraveling, align the needles on both knitter and ribber in B position.
- (5) Rewind the Punch Card as many rows as you unraveled following "What to do if you make mistakes as you knit pattern knitting" of the KH instruction manual.
- (6) Leave the KH Carriage as it is (Cam Button : PART L & R, Change Knob : KC) and move the KH Carriage from right to left.
(The yarn is free from the Yarn Feeder this time. The plain needles are selected.)
- (7) Connect both KH and KR Carriages with the Connecting Arm.
- (8) Move the Carriages to the left end and then push the Button for the colour No. indicated on the Punch Card.
- (9) Continue to knit, following the steps of "What to do if you make mistakes in pattern knitting" in the KH manual.

※ If you find an error, and can catch the wrong yarn before the Carriages are in work, set the Change Knob on the KH Carriage to N.L. and return the Carriages to the left end.
After pushing the correct button, set the Change Knob to KC and push in both Part Buttons.

※ If you find an error when pushing the Button on the Colour Changer before you move the Carriages, just push the correct button.

◆ How to correct the Changer Button

※ While using the Colour Changer, the Position Indicators should be at one of the following position.

C position 1 Indicator
B position 1 Indicator
A position 4 Indicators

● If more than two Indicators come up to C position

1. Push the Changer Buttons which should not be at C position so Indicators will return to B position. Then push the Release Button so all Indicators return to A position.
2. Push the Changer Button which should have the yarn in the Yarn Feeder to B position.

● If more than two Indicators come up to B position

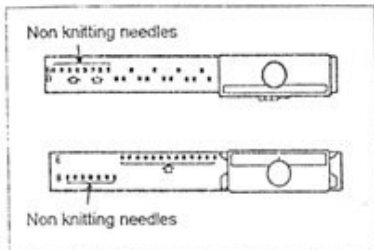
1. Simply push the Release Button, all Indicators come to A position.
2. Push the Changer Button which should have the yarn in the Yarn Feeder to B position.

《 Partial knitting of Multi-colour Rib 》

※ When you knit Multi-colour rib using 1/1 needle selection and shape neck line or shoulder line etc., knit by increasing and decreasing method instead of partial knitting.

④ Explanation is made of left side partial knitting.

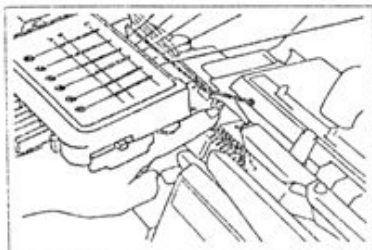
- (1) Place the Carriages at the right side of the machine.
- (2) Set the Cam Lever R.L. on the KR Carriage to P.R.
(Tucking Lever is set at R and Holding Cam Lever R.L. is at N.)



- (3) Bring the knitting needles selected at non-knitting position back to B position and bring forward the purl needles for knitting to E position.

- (4) Move the Carriages to the left and then change the yarn.

- (5) Bring the knitting needles selected at non-knitting position back to B position and bring forward the purl needles for knitting to E position.



- (6) Holding the non-knitting yarn from the Colour Changer so as to pass it through the Gate Pegs by hand (hereafter this operation is repeated,) and then move the Carriages to the right. Now you have completed the first row of partial knitting. From now on, for increasing or decreasing the non-knitting needles, repeat steps (3) to (5).

⑤ The right side partial knitting is done in the same way as for left side, but there is no need to hold the non-knitting yarns between the Gate Pegs.

【 How to produce a Punch Card for Multi-colour Rib 】

④ When you knit Two colours in a row pattern

⑤ Before making a card

We can work Fairisle patterns on the single bed in one operation of the Carriage using a Punch Card. However, the same card cannot be used for the double bed as well because two yarns cannot be knitted in one operation of Carriages when using the ribber. You knit the main yarn and the contrast yarn separately when knitting Multi-colour Rib. So the first row is punched for the needle selection of the main yarn, then, the second row is punched for the needle selection of the contrast yarn. In order to avoid having trouble changing the yarn every row, the card is arranged to change the yarn every other row. Punch the 3rd row of the Card for the contrast yarn, then, 4th row for the main yarn. After the first four rows have been knitted, two complete rows of the Multi-colour Rib will have been completed.

Even if there is only one colour in one row, separate the row into portions of the main yarn and contrast yarn. The row is left blank for the colour not used. Print a yarn reference number on the left hand side of the Punch Card so that you know when to change yarns. Print seven rows above the row at which you change yarn, because the Punch Card moves down by 7 rows before it reaches the patterning mechanism.

- Knit with the main yarn(1)
- ⊙···Knit with the contrast yarn (2)
- ⊠···Knit with the contrast yarn (3)

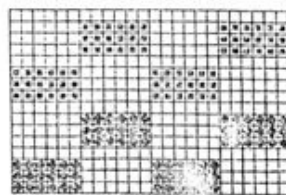
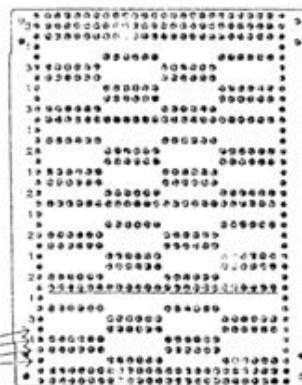


Diagram for Fairisle pattern



Revised Punch Card for Multi-colour Rib

◆ When you knit three/four colours in a row pattern

㊦ Before making a Card (Three colours in a row pattern using the Card Lock Lever "∇")

Three rows on the Punch Card are equivalent to two rows of Fairisle pattern of actual knitting.

Before making the Punch Card, give each colour No. to each colour on the pattern. The first row is punched for the needle selection for the smallest colour No. to be used on the first row of the pattern. The second row is punched for the next colour No. The third row is punched for the remaining colour No.'s. After punching the first three rows, repeat above steps to punch out card.

Even if there is only one colour in one row, separate the row into the portions of the main yarn and contrast yarns. The row is left blank for the colour not used.

Print a yarn reference number on the left hand side of the Punch Card so that you know when to change yarns.

Print seven rows above the row at which you change the yarn, because the Punch Card moves down by 7 rows before it reaches the patterning mechanism.

- ☐...Knit with the colour No.1
- ×...Knit with the colour No.2
- △...Knit with the colour No.3
- ...Knit with the colour No.4
- ★...Knit with the colour No.5
- ◇...Knit with the colour No.6

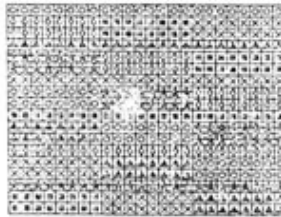


Diagram for Fairisle pattern



Revised punch card for Multi-colour Rib

※ To change the yarn every other row, set the Card Lock Lever to "∇".

