

Instruction manual for electronic colour changer



IMPORTANT SAFETY INSTRUCTIONS

- ※ Never operate this appliance if it has a damaged Cable.
- ※ An appliance should never be left unattended when the Electronic Box (CB-1/DB-1) is switched on.
- ※ Never plug in the MD Cable to connect the Changer and the Electronic Box with wet hands.
- ※ When you connect the MD Cable, turn the power off and connect it to the Colour Changer and then the machine. When you disconnect the MD Cable, turn the power off and disconnect it from the machine and then the Changer. Connecting/disconnecting the MD Cable when the power switch is on could cause electrical shock or damage the machine.
- ※ Fasten the MD Cable with the Cable Binder around the Changer Arm so that the Carriages will not touch the Cable.
- ※ When you use the Sinker Plate Assembly, remove the Changer Arm to prevent damage. Touching the Changer Arm and the Sinker Plate will cause damage. (See page 5 of this manual.)
- ※ Securely fasten the Setting Knob to prevent the Colour Changer from dropping off.

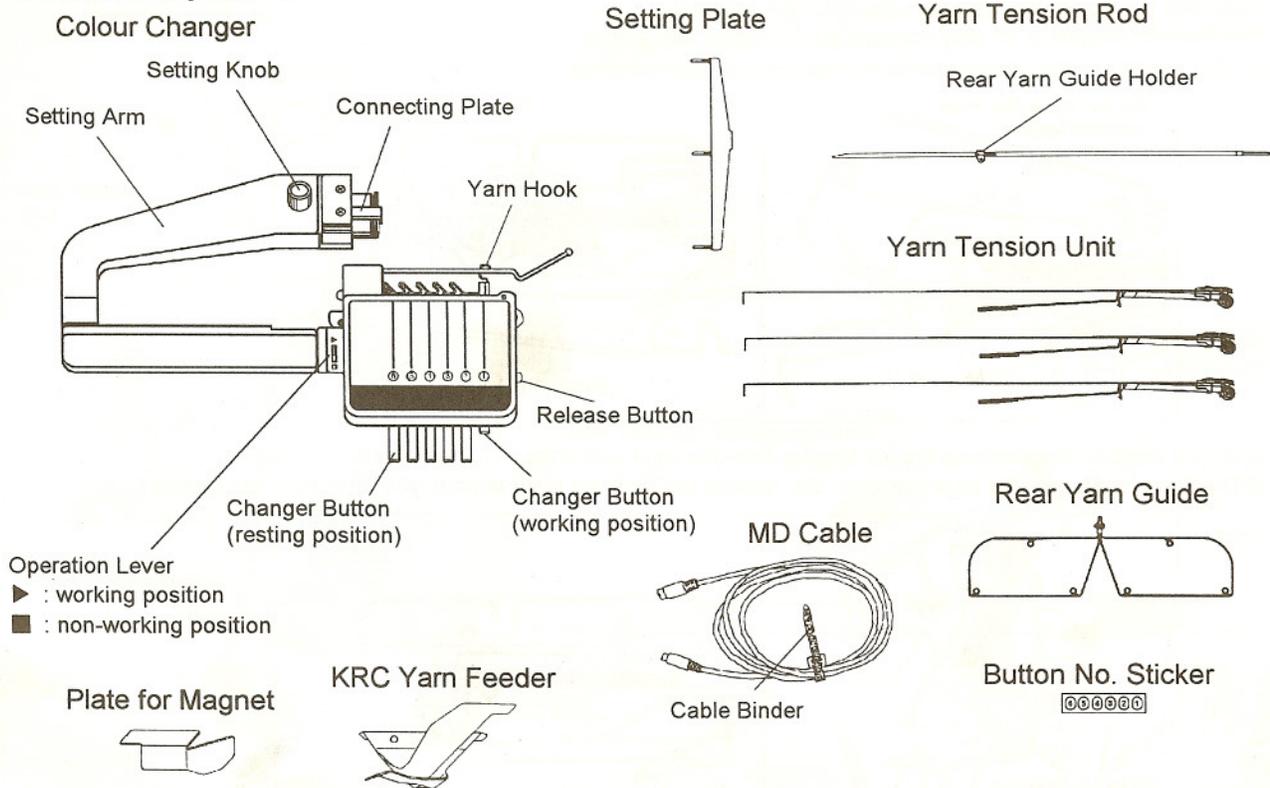
● THANK YOU FOR CHOSING OUR COLOUR CHANGER.

- To fully enjoy all the features incorporated, however, we suggest that you study this booklet.
- You can change the yarns automatically when connecting this Colour Changer with the Electronic Box (CB-1/DB-1). When you use this Colour Changer with other knitting machines, push the Changer Buttons to manually change the yarns.

【 CONTENTS 】

Name of parts	2
How to set	2
How to take off	6
How to knit Multi-colour Rib	7
· Automatic yarn changing	7
· Personally created with 3/4 colours or pattern No.479-483 in Stitch World III	7
· Personally created with 2 colours or pattern No.1-107 and No.509-518	10
· Pattern No.484-498 in Stitch World III	12
· Manual yarn changing	13
Important points to remember	15
· How to correct an error when pattern knitting	15
· Partial knitting of Multi-colour Rib	15

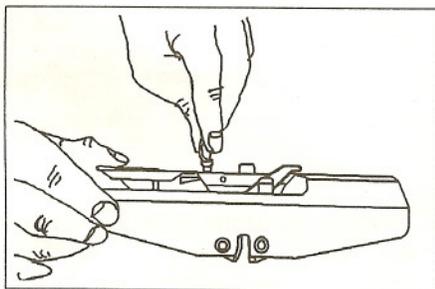
【 Names of parts 】



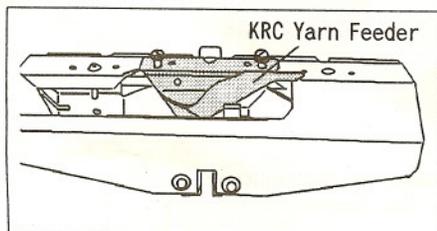
【 How to set 】

● Set up two parts on your ribbing attachment according to the following instructions:

◆ HOW TO SET THE KRC YARN FEEDER



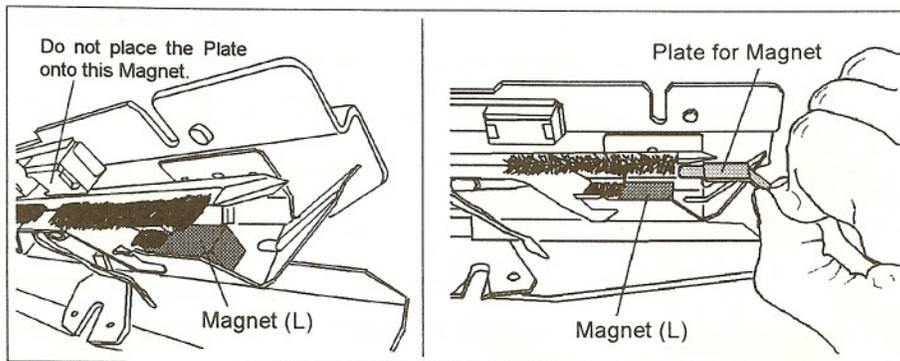
- (1) Loosen two screws by the accessory Spanner or a coin and remove the Yarn Feeder from the Connecting Arm.
※ When you are through with the Colour Changer, put the Yarn Feeder back to the Connecting Arm.



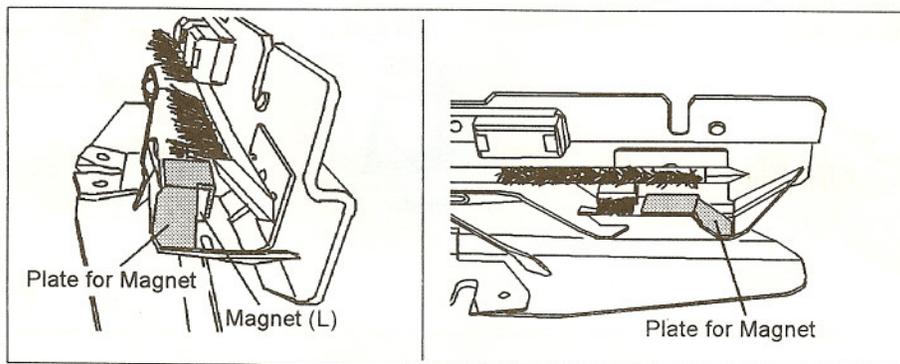
- (2) Set the KRC Yarn Feeder to the Connecting Arm as shown in the figure. Then, fasten the screws.

◆HOW TO SET THE PLATE FOR MAGNET

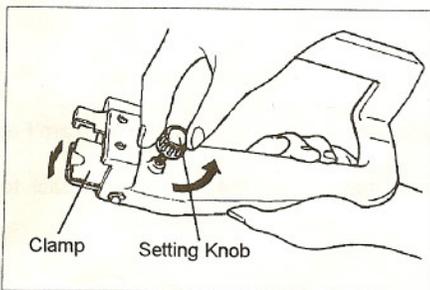
- (1) Turn over the Connecting Arm with the KRC Yarn Feeder.
The Plate for Magnet is for only covering a left Magnet with a brush.



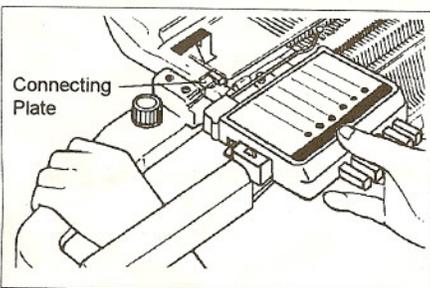
- (2) Slide the Plate for Magnet onto the left Magnet from the edge until it fits with the magnet perfectly.
※The Plate for Magnet fits by a magnetic. So, remove the Plate for Magnet when you do not use the Colour Changer.



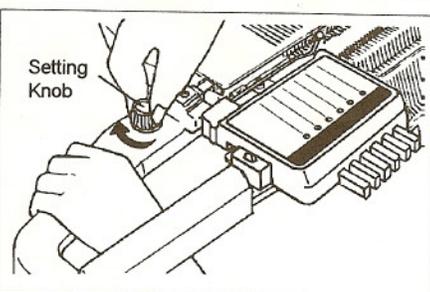
- After setting up the ribber attachment to the knitter, set up the Colour Changer.



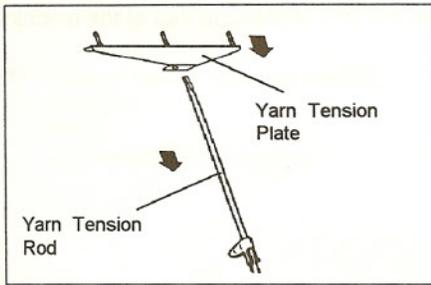
- (1) Loosen the Setting Knob as much as possible until the Connecting Clamp opens fully.



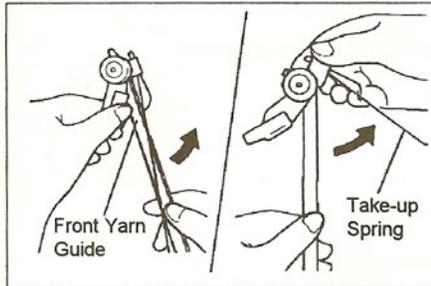
- (2) Push the projecting part of the Connecting Plate against the end of the Felt Bar and insert it as far as possible.



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

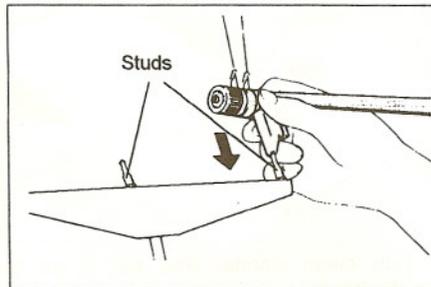


- (4) Insert the Yarn Tension Rod into the hole at the rear of the machine.
 Insert the Yarn Tension Plate into the Yarn Tension Rod.
 ※ Set up the Rod and Plate securely.
 ※ The Yarn Tension Unit that comes with the knitting machine is not used.

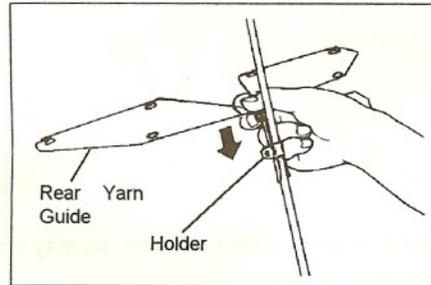


- (5) Open the Front Yarn Guide in the direction of the arrow.

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

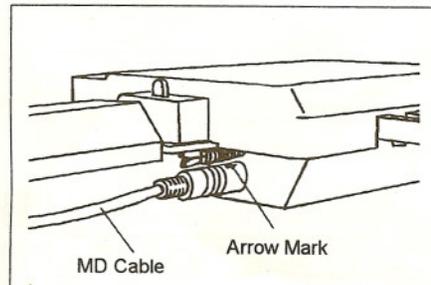


- (7) Insert the Yarn Tension Unit into the Stud on the Yarn Tension Plate.
 ※ When you set up the Changer with a bulky machine, insert the middle and left Yarn Tension Units.

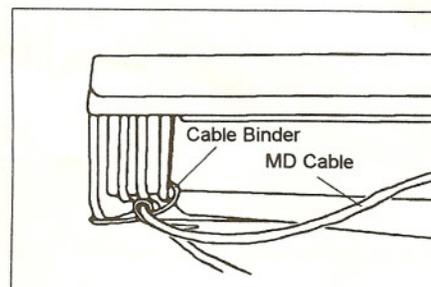


- (8) Set the Rear Yarn Guide on the Tension Stand.

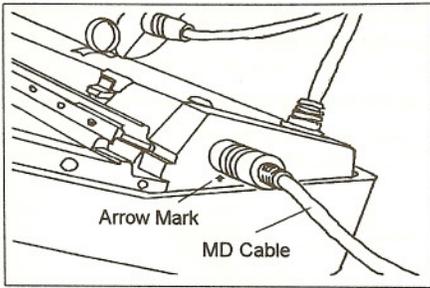
- (9) When using a 4.5mm Pitch Machine, set the Extension Rails into the machine.



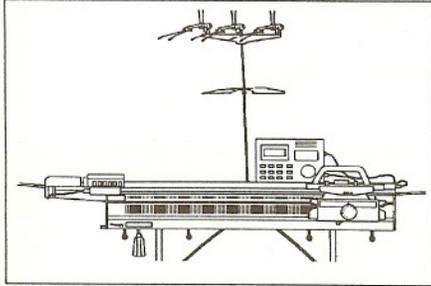
- (10) Turn off the power of the Electronic Box (CB-1/DB-1).
 Hold the end of the MD Cable with the Cable Binder.
 With the arrow mark facing you, insert it into the jack on the Changer.
 NOTE:
 Do not insert or remove the MD Cable to/from the machine with the power switch on.
 Do not connect the MD Cable with the machine when you are changing the yarns manually.



- (11) Place the MD Cable behind the knitting machine. Fasten the MD Cable around the Setting Arm with Cable Binder so that the Carriage will not touch the Cable.

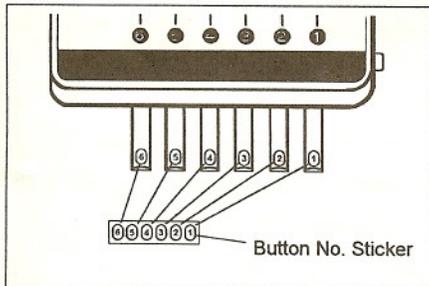


(12) Insert the other end of the MD Cable into the jack at the right end of the machine, matching both arrow marks.



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

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



1. Wipe the Changer Buttons with a dry cloth.

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

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

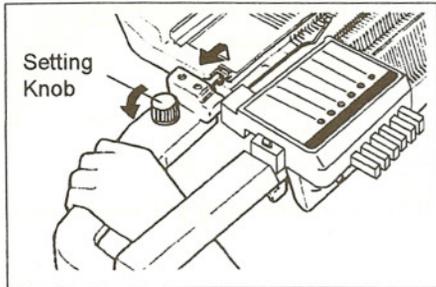
※ Make sure the Stickers are placed in the concavities on the Buttons. If the Stickers are not in proper position, the Buttons may not work correctly.

【 How to take off 】

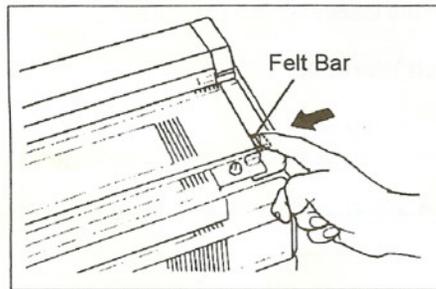
- (1) Turn off power. Remove the Cable Binder from the Setting Arm and disconnect the MD Cable from the knitter and then from the Changer.

NOTE:

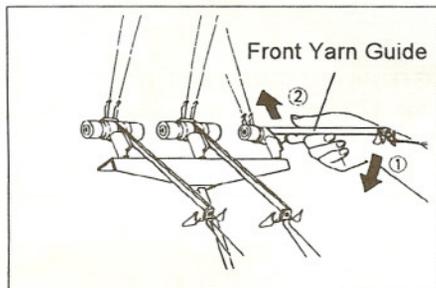
Connecting/disconnecting the MD Cable when the power switch is on will cause electrical shock or damage the machine.



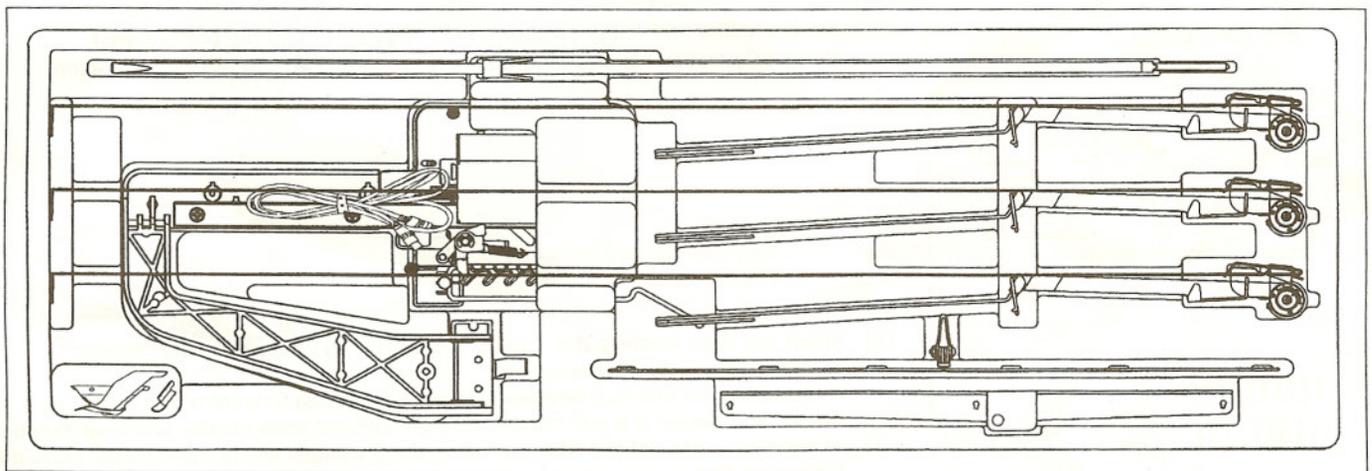
- (2) Push the Release Button to return the Yarn Hook to resting position. Loosen the Setting Knob on the Setting Arm. While lifting up the Setting Arm on the side of the Setting Knob, pull out the Setting Arm.



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



- (4) Press down the Front Yarn Guide on the knitter and then remove the Yarn Tension Unit.



● Contain the Colour Changer set as shown above.

【 How to knit Multi-colour Rib 】

● Knitting Multi-colour Rib without yarn floats.

- Use the Fine Knitting Bar.
- When you knit 3/4 colours in a row pattern, we recommend you to use the 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.

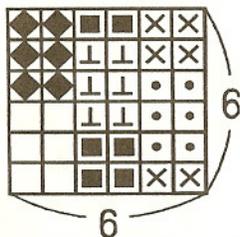
Machine \ Yarn	Very fine	Fine	Medium	Thick	Very Thick
4.5 mm Pitch	2 ~ 3	3 ~ 4	—	—	—
9 mm Pitch	—	—	1 ~ 2	2 ~ 3	3 ~ 4

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

《 Automatic yarn changing 》

- ※ All yarns can be changed automatically by transferring the memo data information from the Electronic Box (CB-1/DB-1).

◆ Personally created patterns with 3/4 colours or pattern No.479-483 in Stitch World III

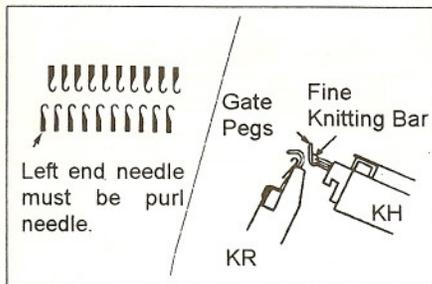
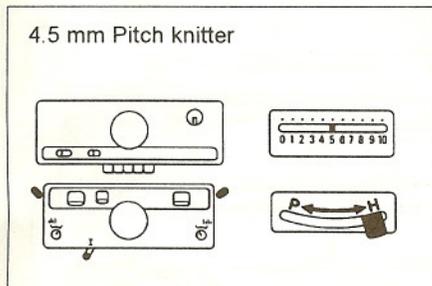
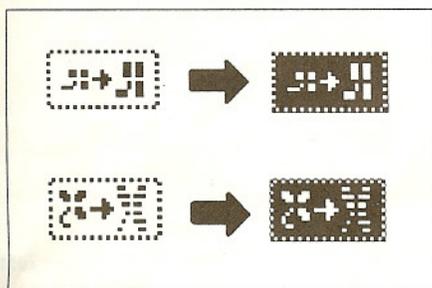


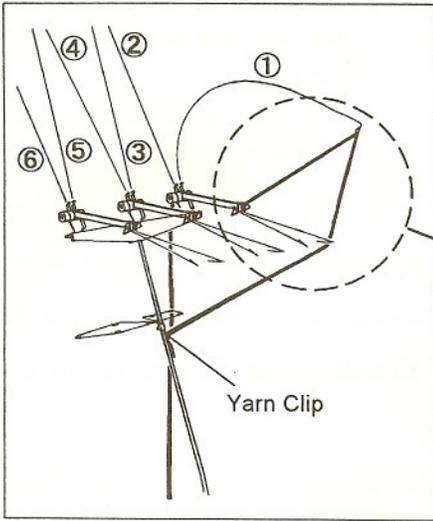
- Let's try to knit three-colours in a row using six yarns.
Create a new pattern in the figure following the steps of example 6 on page 51 of the KH manual.
The numbers used in pattern creation are equivalent to yarn numbers on the Colour Changer.

- Turn on (MC RIB) and (DOUBLE LENGTH) in PATTERN VARIATION.
Follow the steps of example 1 on page 47 to program the pattern in all-over patterning.
Prepare six very fine yarns.

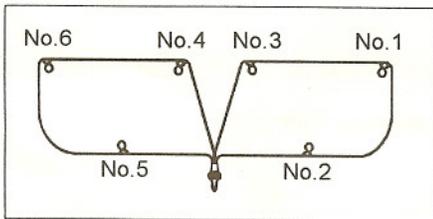
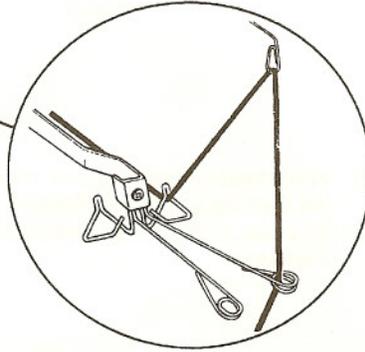
- (1) Set the knitter and ribber as shown in the figure. Turn off the power switch.
Set the Operation Lever on the Colour Changer to "■" (non-working position).

- (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. Use even number of needles on the ribber.) After operating the Carriages two or three times, place the Carriages on the right side.

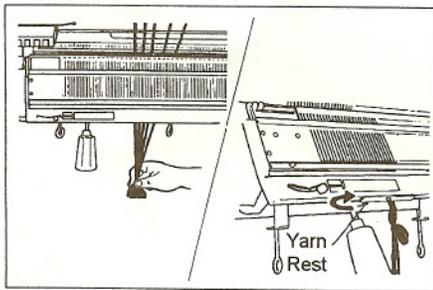




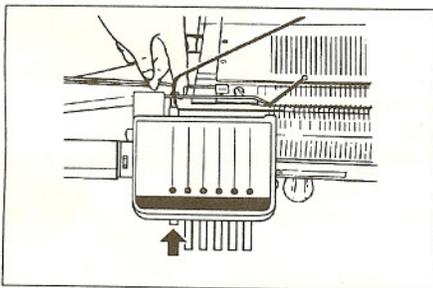
- (3) Thread the yarn for yarn No.1 through the right Yarn Tension Unit, and hook the end of the yarn on the Yarn Clip.
Thread five other yarns through the Yarn Tension Unit in the same manner.



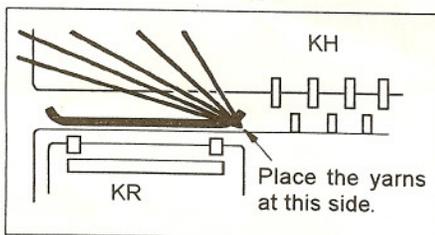
※ Thread the yarns through the Rear Yarn Guide as shown in the figure.



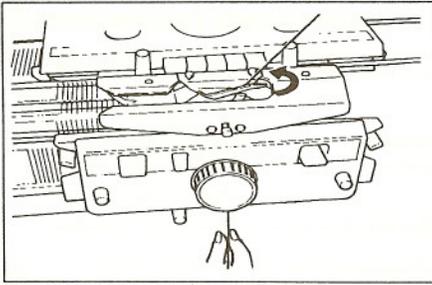
- (4) Remove the ends of the left five yarns from the Yarn Clip, and tie five yarns together. Pass them between the Gate Pegs. Hold the ends of the yarn with the Yarn Rest on the lower portion of the ribber.



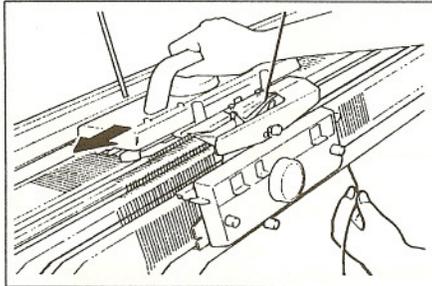
- (5) Set Changer Button No.6 to working position by pushing it and hook the left end yarn onto the Yarn Hook. By pushing Changer Button No.5 the Yarn Hook No.6 will return to the resting position. Continue for Yarn Hook No.5, 4, 3 and 2. Push the Release Button so that all Buttons will return to the resting position.
※ Please be careful not to cross the yarns.



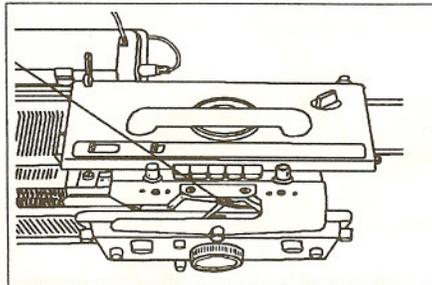
- (6) Leave the right end yarn in the Yarn Clip. Place the other yarns on the Yarn Guide of the Changer as shown in the figure. Turn the power on, and push  Key to load the stop screen.



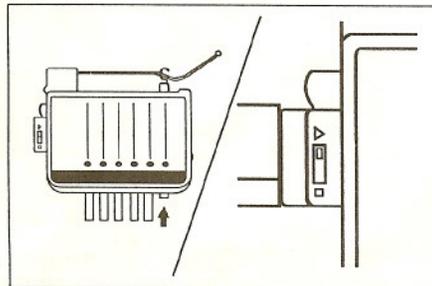
- (7) Remove the right end yarn from the Yarn Clip and thread it into the Yarn Feeder.
 ※ Make sure that the yarn is not caught on the Gate Pegs or other parts of the machine.



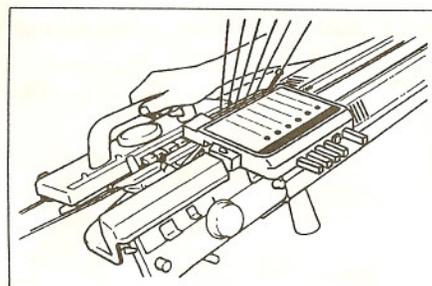
- (8) While holding the yarn end, move the Carriages to the other side to cast on. Hang the Cast-on Comb and Weights.
 You can make a Full Needle rib with Yarn No.1 (right end yarn) by moving the Carriages.



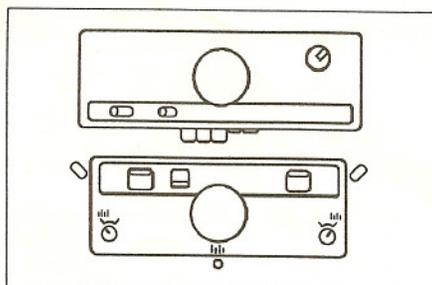
- (9) Knit a few rows ending with the Carriages outside the right Position Sensor. Set the Change Knob to KCII.
 ※ If the yarn slackens, pull it back on the Rear Yarn Guide.



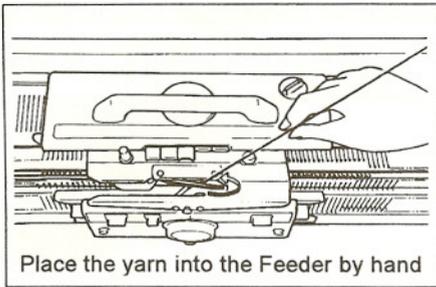
- (10) Push the Changer Button No.1, the Yarn Hook will come up. Turn the Operation Lever to "▶" (working position).



- (11) Move the Carriages towards the Colour Changer until you hear a click.
 (The needles on the knitter are selected.)
 The Yarn Hook No.1 will catch the yarn and the Yarn Hook of number shown on the Display will come up.



- (12) Set the Carriages of the knitter and ribber as shown in the figure.



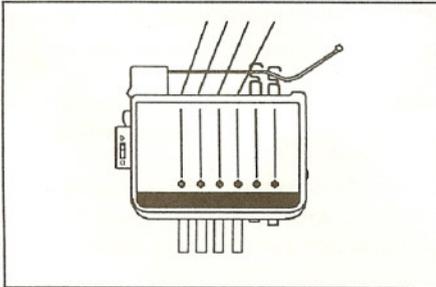
- (13) Push  Key, and the knitting screen appears. Move the Carriages to the right so that the yarn will automatically change.
- ※ If the yarn slackens, pull it back on the Rear Yarn Guide.
 - ※ Occasionally, you will find that the yarn you have selected has not been picked-up into the Yarn Feeder. If this occurs, place the yarn into the Feeder by hand.

(14) Knit two rows, the Carriages are on the left side of the needle bed. Move the Carriages towards the Colour Changer until you hear click.

(15) Repeat above step (14). After all of the yarns are knitted in, remove the ends of the yarns from the Yarn Rest.

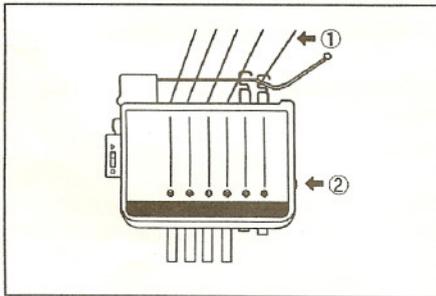
- ※ Make sure that the Carriages are moved to the Changer side until your hear a click.

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



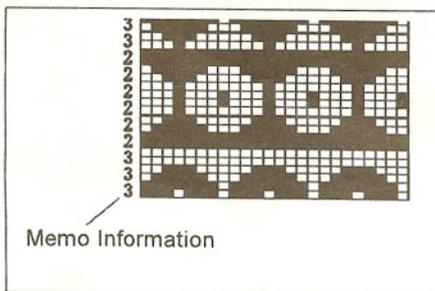
When the yarns do not come from the balls(corns) smoothly, two Yarn Hooks may come to working position and the Yarn Feeder may catch them together.

- ※ Always make sure that each yarn comes from the ball (corn) smoothly.



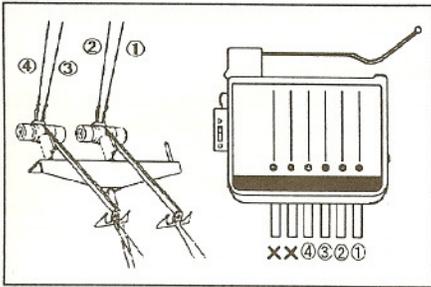
If the two Yarn Hooks come to working position...
Return the yarn which is not knitted next into a corresponding Yarn Hook. Push the Release Button, and the Yarn Hook will return to the resting position.

◆ Personally created patterns with 2 colours or pattern No.1-107 and No.509-518

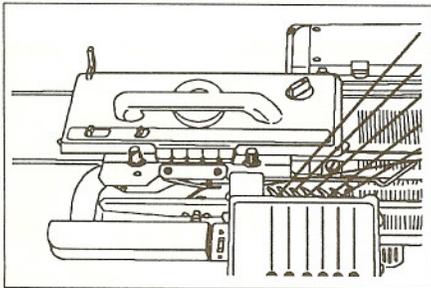


- Let's try to knit "Stitch World III" pattern No.82.
See the diagram of pattern No.82 on page 68. Prepare the yarns according to the memo information.
(With no number at the left of the diagram, prepare two yarns, Colour No.1 as a main yarn, Colour No.2 as a contrast yarn.)

- Turn on (MC RIB) in PATTERN VARIATION. Program (ALL OVER PATTERNING) following example 1 on page 47 of the KH manual.
(When you knit the pattern as a motif, see example 2 and 3 on page 48.)
Prepare fine four yarns.

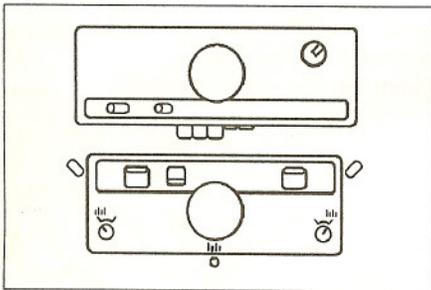


- (1) When you thread four or fewer yarns, use two left Yarn Tension Units as shown in the figure. Thread the yarns into each corresponding hook on the Colour Changer. Thread four yarns into Yarn Hook No. 1-4. Do not use Yarn Hook No. 5 and 6. Follow the steps (1)-(8) on page 7-9 to knit full needle rib with yarn No. 1.

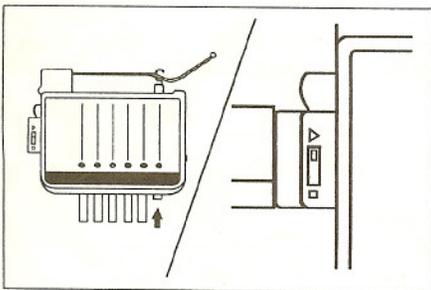


- (2) Knit a few rows ending with the Carriages outside the left Position Sensor. Set the Change Knob to KCII.
 ※ If the yarn slackens, pull it back on the Rear Yarn Guide.

- (3) Move the Carriages to the outside of the right Position Sensor. The needles are selected.



- (4) Set the Carriages on the knitter and ribber as shown in the figure. Push \leftarrow Key to load the knitting screen.

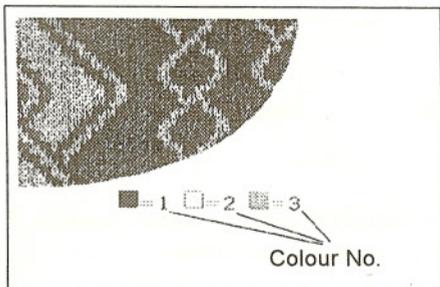


- (5) Push Button No.1 so that the Yarn Hook will come up. Set the Operation Lever to "▶" (working position). Move the Carriages toward the Colour Changer until you hear a click. The Yarn Hook No. shown on the Display will come up.

- (6) Move the Carriages to the right so that the yarn will automatically change.
 ※ If the yarn slackens, pull it back on the Rear Yarn Guide.
 ※ Occasionally, you will find that the yarn you have selected has not been picked-up into the Yarn Feeder. If this occurs, place the yarn into the Feeder by hand.

- (7) Repeat steps (14)-(15) on page 10.

◆ Pattern No.484-498 in Stitch World III



- Let's try to knit "Stitch World III" pattern No.498. See the diagram on page 60.

- Turn off all variation icons. Program (ALL OVER PATTERNING) following the steps of example 1 on page 47 of the KH manual. Prepare three very fine yarns. Follow steps (1)-(7) on page 11 using Yarn Hook No.1-3.

◆NOTE

- When a yarn keeps in the Yarn Hooks without knitting many rows, the yarn might wear out by the Carriages movement. Be careful especially when you use very fine yarns.
- When knitting Multi-colour rib pattern, set the Change Knob to KCII or set the end needle selection mechanism to OFF according to the manual.
- When you change memo information, bear in mind the following points to prevent dropping stitches.
 - ※ Do not enter any number except 1-6 or delete the memo information.
 - Make sure each row has colour No. after changing the memo.
- Do not push any Changer Button while the yarn is automatically being changed .
- Pattern does not always start with Colour No.1 so decide which yarn should cast on according to the pattern.
- Do not thread the yarn into the Yarn Hook No.,not used in the pattern.
- When the Change Knob is set on N.L. or the yarn is not changed, turn the Operation Lever to "■" (non-working position).
- When you change the pattern during knitting, place the Carriages to the outside Position Sensor and program a new pattern. When the Carriages are on the Changer side, program a new pattern after you hear a click.

《 Manual yarn changing 》

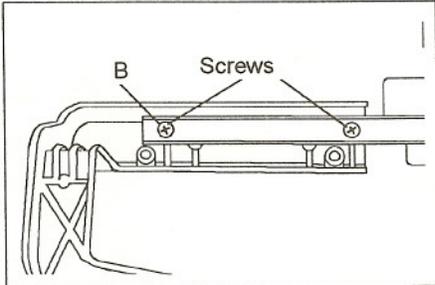
※ NOTE

- When you change the yarns manually, do not connect the MD Cable.
- Always set the Operation Lever to "■" (non-working position).

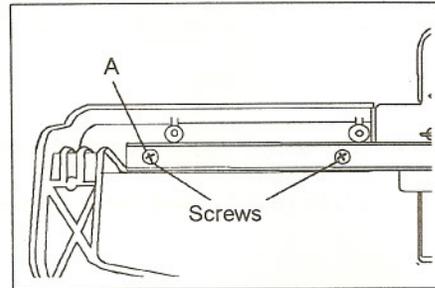
- When you use the Bulky Punch Card or Electronic Machine, change the position of the Changer.

- (1) Turn over the Changer and loosen two screws on the Setting Plate.

[When you use 9 mm Pitch punch card or electronic machine] [When you use 4.5 mm Pitch punch card or electronic machine]



The place on which you put the Setting Plate on 9 mm Pitch Machine



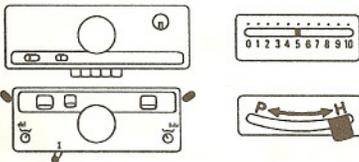
The place on which you put the Setting Plate on 4.5 mm Pitch Machine

- (2) When you use 9 mm Pitch Machine, put the holes of the Setting Arm onto the holes for B. Tighten two screws on the Setting Plate.

- (3) When you use 4.5 mm Pitch Machine, tighten screws on the holes for A.

- Let's try with basic stripes. Prepare six fine yarns.

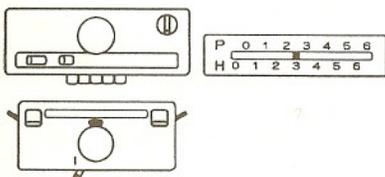
< When using 4.5 mm Machine >



- (1) Set the knitter and ribber as shown in the figure.

< When using 4.5 mm Machine >

< When using 9 mm Machine >

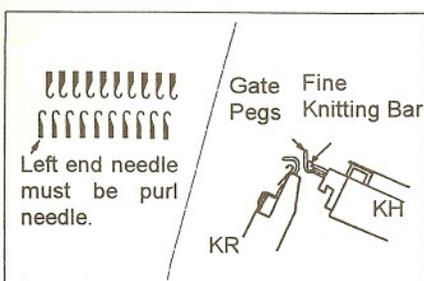


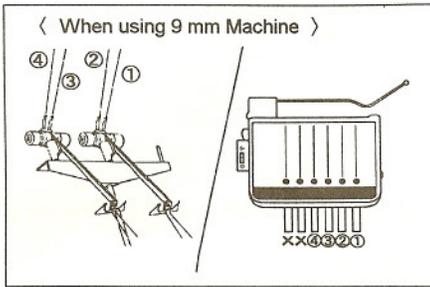
< When using 9 mm Machine >

- (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.

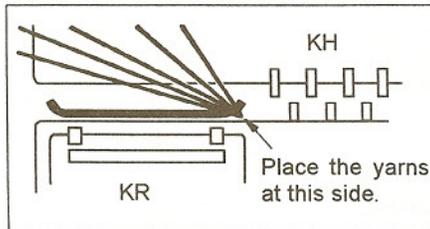




(3) Follow steps (3)-(5) on page 8 for threading the yarns.

NOTE:

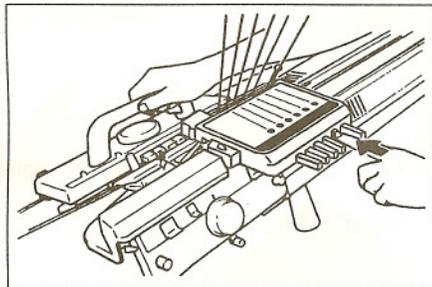
When you use a bulky knitter, use four Yarn Tension Unit from the left and thread the yarns into the Yarn Hook No.1-4.



(4) Leave the right end yarn in the Yarn Clip.

Place the yarns on the Yarn Guide as shown in the figure.

(5) Follow steps (7) and (8) on page 9.



(6) Push the Changer Button for the yarn in the Yarn Feeder and move the Carriages towards the Colour Changer to the end of the needle bed. To change the yarn, push the Changer Button for the yarn you want to knit.

※ If the yarn slackens, pull it back on the Rear Yarn Guide.

(7) If the Carriages are moved to the right, the yarn is changed.

※ Occasionally, you will find that the yarn you have selected has not been picked-up into the Yarn Feeder, particularly on the Bulky Machine. If this occurs, place the yarn into the Feeder by hand.

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

(9) Repeat steps (6)-(7) and you can produce the stripes with ease.

※ When you change the yarn by pushing the Button on an electronic machine, see "Double Bed Colour Changer" in the KH manual.

◆NOTE

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

【 Important points to remember 】

《 How to correct an error when pattern knitting 》

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

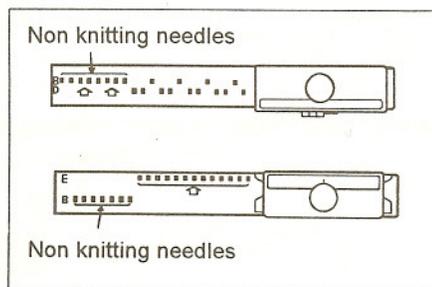
- (1) Follow the steps in the manual before taking off the Carriages.
- (2) Remove both the KH and KR Carriages, and place the KH Carriage at the right side of the work and KR Carriage at the left side of the work.
(For "how to" take off and set, refer to the ribber manual of the ribber.)
- (3) Unravel the incorrect row. Putting the ends of all yarns on the left side, thread each of the yarns into respective Buttons on Colour Changer.
- (4) After unraveling, align the needles on both knitter and ribber at B position.
- (5) Return the rows to as many as you have unraveled, in the pattern.
- (6) When changing the yarn automatically, set the Operation Lever to "▶" (working position).
When changing the yarn manually, set the Operation Lever to "■" (non-working position).
- (7) Leave the KH Carriage as it is (Cam Button : PART L & R, Change Knob : KCII) and move the KH Carriage from right to left. The yarn is free from the Yarn Feeder this time. The plain needles are selected.
Move the KH Carriage from right to left, and the needles are selected.
- (8) Connect both KH and KR Carriages with the Connecting Arm.
- (9) Move the Carriages to the left end and then push the Button for the yarn which you will knit next.
(The Yarn Hook for the colour No. shown on the Display will come up automatically when using the automatic yarn changing.)
- (10) Continue to knit, following the steps of "what to do if you make mistakes in pattern knitting" in the KH manual.

《 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 or decreasing method instead of partial knitting.

● Explanation is made of left side partial knitting.

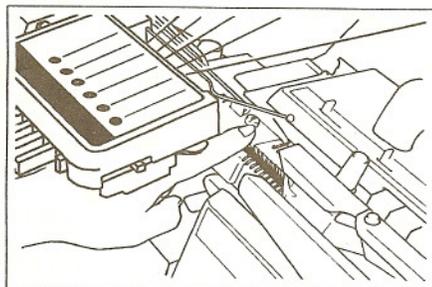
- (1) Place the Carriages at the right side of the machine.
- (2) Set the Cam Lever R.L. on the KR Carriage to P.R.
(Tucking Lever is set at R and Holding Cam Lever R.L. are at N.)



- (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 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 (6).

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